Phase Two Environmental Site Assessment

Nouvelle École Élémentaire Catholique Avalon III
2666 Tenth Line Road, Ottawa, Ontario

Client:
Conseil des écoles catholiques du Centre-est (CECCE)
4000 rue Labelle
Ottawa, Ontario K1S 3S1

Type of Document:
Draft

Project Name:
Phase Two Environmental Site Assessment

Project Number:
OTT-22017859-A0

Prepared By: Leah Wells, P.Eng.

Reviewed By: Mark McCalla, P.Geo.

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

Date Submitted:
2023-03-09

Legal Notification

This report was prepared by EXP Services Inc. for the account of **Conseil des écoles catholiques du Centre-Est.**

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

Executive Summary

EXP Services Inc. (EXP) was retained by the Conseil des écoles catholiques du Centre-est (CECCE) to conduct a Phase Two Environmental Site Assessment (ESA) for the east part of the property located 2666 Tenth Line Road in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was occupied by a sales office for Mattamy Homes and a vacant residence and associated garage.

The objective of the Phase Two ESA investigation 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. The most recent use of the property was as a storage yard for recreational vehicles, which is a type of commercial land use. It is proposed that a secondary school be constructed on the Phase Two property. As the proposed land use is more sensitive than the previous land use, a Record of Site Condition (RSC) will be required.

The Phase Two property consists of the east part of the property located at 2666 Tenth Line Road, located approximately 500 m north of the intersection of Wall Road and Tenth Line Road in Ottawa, Ontario. McKinnon Creek crosses 2666 Tenth Line Road approximately 180 m from the Phase Two property. The Phase Two property consists of the property between Tenth Line Road and 30 m from McKinnon Creek to the west. The Phase Two property is irregular in shape with an area of approximately 2.3 hectares.

A single-storey residence with a full basement was present on the south side of the site. The residence was vacant and the basement contained approximately 1 metre of standing water. A garage building was located on the north side of the residence. The garage was used as a storage area and workshop for Bergeret Exteriors. A temporary building, on concrete blocks, was present on the north side of the site. The building was occupied by the Mattamy Homes sales offices. Gravel parking lots were associated with the garage and the sales offices. Groundcover on the west part of the Phase Two property consisted of tall grass.

The Phase Two property is part of a larger property with the legal description Part of Lot 5, Concession 11, Being Parts 1, 3, and 4 on Plan 50R-2029, City of Ottawa. And the property identification number (PIN) 145630547.

The inferred groundwater flow direction in the Phase Two study area is to the southeast towards Bear Brook Creek. Based on the local topography, the inferred groundwater flow on and adjacent to the Phase Two property is to the southwest towards

EXP completed a draft Phase One ESA for the property in December 2022 and the following potentially contaminating activities (PCAs) were identified on the Phase One property:

- PCA #28 – Gasoline and associated products storage in fixed tanks (fuel AST north of the garage and a heating oil AST in the basement of the residence)
- PCA #30 – Importation of fill material of unknown quality (entire Phase One property)

The following PCAs were identified in the Phase One study area:

- PCA #49 – Salvage yards, including auto wrecking (former salvage yard 40 m southeast of the Phase One property)

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

Table EX-1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. Fuel AST	Area northeast of the garage	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	Benzene, toluene, ethylbenzene, xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and groundwater
#2. Heating oil AST	Area near the southwest corner of the vacant residence	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	BTEX, PHC	Soil and groundwater
#3. Fill material of unknown quality	Entire Phase One property	PCA #30 – Importation of fill material of unknown quality	On-site	PHC, polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), metals	Soil
#4. Former salvage yard at 2727 Tenth Line Road	Area along the southeast property line	PCA #49 – Salvage yards, including auto wrecking	Off-site	PHC, PAH, VOC, metals	Groundwater

On December 8 and December 9, 2022, seventeen test pits (TP-1 to TP-17) were advanced at the Phase Two property. Test pits were excavated to termination depths of 1 to 2.6 m bgs. Grab soil samples from the excavator bucket were collected from the fill layer. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified.

Between December 14 and December 23, 2022, thirteen boreholes (BH-1 to BH-3, BH-5 to BH-8 and BH-10 to BH-15) were advanced at the Phase Two property by George Downing Estate Drilling Ltd (Downing). The boreholes were advanced in the overburden to termination depths ranging from 4.9 m to 8.5 m below existing grade, with the exception of BH-1 which was cored into the bedrock. Bedrock was encountered 33 metres below ground surface (m bgs).

Eight soil samples and one duplicate were collected from the fill material and submitted for analysis of PHC, PAH, VOC and metals. Two soil samples were collected from the native silty clay (BH-10 and BH-11) and submitted for analysis of PHC, PAH, VOC and metals. Three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of BTEX, PHC, PAH, VOC and/or metals parameters.

All of the fill samples had concentrations that were within the Table 2 site conditions standards (SCS) for all parameters that were analysed. The native soil samples had concentrations that were within the Table 2 SCS for all parameters that were analysed, with the exception of cobalt and vanadium. However, the measured concentrations of cobalt and vanadium in the native silty clay at the Phase Two property are within the typical range of concentrations in the Ottawa area and are not indicative of anthropogenic impact. There were no exceedances of the MECP 2 SCS for any of the parameters analysed in the groundwater samples.

It is EXP's opinion that none of the PCA that were identified in the Phase One ESA have adversely affected the property. No further environmental investigations are deemed to be warranted. The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

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

Table of Contents

List of Figures

List of Appendices

1.0 Introduction

EXP Services Inc. (EXP) was retained by the Conseil des écoles catholiques du Centre-est (CECCE) to conduct a Phase Two Environmental Site Assessment (ESA) for the east part of the property located 2666 Tenth Line Road in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was occupied by a sales office for Mattamy Homes and a vacant residence and associated garage.

The objective of the Phase Two ESA investigation 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. The most recent use of the property was as a storage yard for recreational vehicles, which is a type of commercial land use. It is proposed that a secondary school be constructed on the Phase Two property. As the proposed land use is more sensitive than the previous land use, a Record of Site Condition (RSC) will be required.

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

1.1 Site Description

The Phase Two property consists of the east part of the property located at 2666 Tenth Line Road, located approximately 500 m north of the intersection of Wall Road and Tenth Line Road in Ottawa, Ontario. McKinnon Creek crosses 2666 Tenth Line Road approximately 180 m from the Phase Two property. The Phase Two property consists of the property between Tenth Line Road and a 30 m setback from McKinnon Creek to the west. The Phase Two property is irregular in shape with an area of approximately 2.3 hectares.

A single-storey residence with a full basement was present on the south side of the site. The residence was vacant, and the basement contained approximately 1 metre of standing water. A garage building was located on the north side of the residence. The garage was used as a storage area and workshop for Bergeret Exteriors. A temporary building, on concrete blocks, was present on the north side of the site. The building was occupied by the Mattamy Homes sales offices. Gravel parking lots were associated with the garage and the sales offices. Groundcover on the west part of the Phase Two property consisted of tall grass.

The site layout is shown on Figure 2 in Appendix A.

The Phase Two property is part of a larger property with the legal description Part of Lot 5, Concession 11, Being Parts 1, 3, and 4 on Plan 50R-2029, City of Ottawa. And the property identification number (PIN) 145630547.

The inferred groundwater flow direction in the Phase Two study area is to the southeast towards Bear Brook Creek. Based on the local topography, the inferred groundwater flow on and adjacent to the Phase Two property is to the southwest towards McKinnon Creek.

Refer to Table 1.1 for the Site identification information.

Table 1.1: Site Identification Details

Civic Address	2666 Tenth Line Road, Ottawa, Ontario
Current Land Use	Commercial
Proposed Future Land Use	Institutional

Property Identification Number	145630547
UTM Coordinates	Zone 18, 462735 m E and 5031890 m N
Site Area	2.3 hectares
Property Owner	Claridge Homes (Mer Bleue Phase 4 Inc.)

A survey plan of the Phase Two property was completed by Annis & O'Sullivan Ltd. in 2022. A copy of the survey plan is provided in Appendix B.

1.2 Property Ownership

The registered owner of the Phase One property is Claridge Homes (Mer Bleue Phase 4 Inc.). Authorization to proceed with this investigation was provided by Mr. Denis Chabot on behalf of the Conseil des écoles catholiques du Centre-est (CECCE). Contact information for Mr. Chabot is 4000, rue Labelle, Ottawa, Ontario, K1J 1A1.

1.3 Current and Proposed Future Use

The most recent use of the property was commercial. The proposed future use of the property is institutional. It is proposed that a secondary school be developed on the Phase Two property. Since the past use of the property was commercial land use, an RSC must be filed, per Ontario Regulation 153/04.

1.4 Applicable Site Condition Standards

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

Table 1 to 9 SCS are summarized as follows:

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

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

For assessment purposes, EXP selected the 2011 Table 2 SCS for a potable groundwater condition and residential/parkland/ institutional property use.

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

- Bedrock is greater than 2 metres below grade across the subject property;
- The Phase Two property is not located within 30 metres of a waterbody;
- Based on laboratory testing conducted during the current investigation, more than 50 per cent of soil particles by mass were less than 75 micrometres in mean diameter, therefore the soil at the site is medium-fine textured;
- The soil at the Phase Two property has a pH value between 5 and 9 for surficial soils and between 5 and 11 for subsurface soils, as confirmed during the current investigation;
- 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;
- Although new developments in the Phase Two study area are provided potable water by the City of Ottawa through its water distribution system, select properties in the Phase Two study area are serviced by potable water wells;
- The Phase Two property is not located in an area designated in a municipal official plan as a well-head protection area;
- The proposed building is planned for institutional use; and,
- It is the opinion of the Qualified Person who oversaw this work that the Phase Two property is not a sensitive site.

2.0 Background Information

2.1 Physical Setting

The Phase Two property consists of the east part of the property located at 2666 Tenth Line Road, located approximately 500 m north of the intersection of Wall Road and Tenth Line Road in Ottawa, Ontario. The Phase Two property consists of the property between Tenth Line Road and a 30 m setback east of McKinnon Creek. The Phase Two property is irregular in shape with an area of approximately 2.3 hectares. A site plan showing the Phase Two property is presented as Figure 2 in Appendix A.

Although new developments in the Phase Two study area are provided potable water by the City of Ottawa through its water distribution system, select properties in the Phase Two study area are serviced by potable water wells. Thus, in accordance with Section 35 of Ontario Regulation 153/04, potable water standards apply to the Phase Two property.

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

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

Bedrock in the general area of the Phase Two property consists of limestone with shaley partings of the Ottawa Formation. Native surficial soil consists of Champlain Sea clay medium to fine textured glaciomarine deposits. The ground surface is approximately 87 metres above sea level (masl). Water well records indicate that the surficial geology in the area generally consists of clay overlying sand and gravel. Limestone bedrock was present approximately 45 metres below ground surface.

The inferred regional groundwater flow direction in the Phase Two study area is to the southeast towards Bear Brook Creek. Based on the local topography, the inferred groundwater flow on and adjacent to the Phase Two property is to the southwest towards McKinnon Creek.

2.2 Past Investigations

EXP prepared a report entitled *Phase One Environmental Site Assessment, Nouvelle École Élémentaire Catholique Avalon III, 2666 Tenth Line Road, Ottawa, Ontario,* dated December 16, 2022. The Phase One study area included the entire Phase Two property as well as properties within 250 m of the Phase Two property. Based on the results of the Phase One ESA, EXP identified four APECs on the Phase One property. A summary is provided in Table 2.1.

Table 2.1: Findings of Phase One ESA

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. Fuel above ground storage tank (AST)	Area northeast of the garage	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	Benzene, toluene, ethylbenzene, xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and groundwater
#2. Heating oil AST	Area near the southwest corner of the vacant residence	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	BTEX, PHC	Soil and groundwater

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. Fill material of unknown quality	Entire Phase One property	PCA #30 – Importation of fill material of unknown quality	On-site	PHC, polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), metals	Soil
#4. Former savage yard at 2727 Tenth Line Road	Area along the southeast property line	PCA #49 – Salvage yards, including auto wrecking	Off-site	PHC, PAH, VOC, metals	Groundwater

The locations of the APEC are shown on Figure 3 in Appendix A.

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

3.0 Scope of the Investigation

3.1 Overview of Site Investigation

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

The most recent use of the property was commercial. The proposed future use of the property is institutional. As the most proposed land use us more sensitive than the most recent land use, a Record of Site Condition (RSC) must be filed, per Ontario Regulation 153/04.

3.2 Scope of Work

The Phase ESA was conducted in conjunction with a geotechnical investigation. The scope of work for the Phase Two ESA was as follows:

- Drilling thirteen boreholes (BH-1 to BH-3, BH-5 to BH-8, BH-10 to BH-15) on the subject property and completing three of them as monitoring wells (BH-8, BH-10, BH-11), and three of them a piezometers (BH-5, BH-12, BH-14);
- Excavating 17 test pits on the subject property;
- Submitting select soil samples for laboratory analysis of benzene, toluene, ethylbenzene, xylenes (BTEX), petroleum hydrocarbon (PHC) fractions F1 to F4, volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), and/or metals;
- Collecting groundwater samples from the three monitoring wells and submitting them for analysis of PHC, PAH, VOC and/or metals;
- Comparing the results of the soil and groundwater chemical analyses to applicable criteria, as set out by the Ontario Ministry of the Environment, Conservation and Parks (MECP);
- Conducting an elevation survey of the boreholes and test pits;
- Monitoring groundwater levels in the new monitors to determine groundwater elevations; and,
- Preparing a report summarizing the results of the assessment activities.

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

3.3 Media Investigated

The Phase Two ESA included the investigation of soil and groundwater 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. The CSM showing the topography of the site, inferred groundwater flow, general site features, APEC, and PCA is shown in Figure 3 in Appendix A.

3.4.1 Buildings and Structures

A single-storey residence with a full basement was present on the south side of the site. The residence was vacant, and the basement contained approximately 1 m of standing water.

A garage building was located on the north side of the residence. The garage was used as a storage area and workshop for Bergeret Exteriors.

A temporary building, on concrete block foundations was present on the north side of the site. The building was occupied by the Mattamy Homes sales offices.

3.4.2 Water Bodies and Groundwater Flow Direction

McKinnon's Creek is 30 m from the west border the Phase Two property. McKinnon's Creek flows to the southeast towards Bear Brook Creek. The inferred regional groundwater flow direction in the Phase Two study area is to the southeast towards Bear Brook Creek. Based on the local topography, the inferred groundwater flow on and adjacent to the Phase Two property is to the southwest towards McKinnon Creek.

3.4.3 Areas of Natural Significance

There are no ANSI within the Phase Two study area.

3.4.4 Water Wells

A shallow dug well was present on the west side of the garage. There were three potable wells located in the study area. New developments in the Phase One study areas are serviced by municipal water. Older residences along Tenth Line Road are likely still supplied via private water wells.

3.4.5 Potentially Contaminating Activity

EXP completed a draft Phase One ESA for the property in December 2022 and the following potentially contaminating activities (PCAs) were identified on the Phase One property:

- PCA #28 – Gasoline and associated products storage in fixed tanks (fuel AST north of the garage, heating oil AST in the basement of the residence); and,
- PCA #30 – Importation of fill material of unknown quality (entire Phase One property).

The following PCAs were identified in the Phase One study area:

- PCA #49 – Salvage yards, including auto wrecking (former salvage yard 40 m southeast of the Phase One property).

3.4.6 Areas of Potential Environmental Concern

The APEC identified are summarized in Table 3.1.

Table 3.1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. Fuel AST	Area northeast of the garage	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	Benzene, toluene, ethylbenzene, xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and groundwater
#2. Heating oil AST	Area near the southwest corner of the vacant residence	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	BTEX, PHC	Soil and groundwater
#3. Fill material of unknown quality	Entire Phase One property	PCA #30 – Importation of fill material of unknown quality	On-site	PHC, polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), metals	Soil
#4. Former savage yard at 2727 Tenth Line Road	Area along the southeast property line	PCA #49 – Salvage yards, including auto wrecking	Off-site	PHC, PAH, VOC, metals	Groundwater

3.4.7 Underground Utilities

The vacant residence on the Phase One property is serviced by a well and septic. New developments in the Phase One study area are serviced by municipal water and sewer, and underground hydro.

3.4.8 Subsurface Stratigraphy

Bedrock in the general area of the Phase Two property consists of limestone with shaley partings of the Ottawa Formation. Native surficial soil consists of Champlain Sea clay medium to fine textured glaciomarine deposits. Ground surface is approximately 87 metres above sea level (masl).

Well records indicate that the surficial geology in the area generally consists of clay overlying sand and gravel. Limestone bedrock was present approximately 45 metres below ground surface.

3.4.9 Uncertainty Analysis

The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where potentially contaminating activity that occurred within the Phase Two study area may have adversely affected the Phase Two property. All information collected during this investigation, including records, interviews, and site reconnaissance, has contributed to the formulation of the CSM.

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

3.5 Deviations from Sampling and Analysis Plan

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

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

Two of the proposed fifteen geotechnical boreholes (BH-4 and BH-9) were not completed due to on-site constraints.

3.6 Impediments

No impediments were encountered during this investigation.

4.0 Investigation Method

4.1 General

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

The site investigative activities were conducted in conjunction with a geotechnical investigation and consisted of the excavating of test pits and the drilling of boreholes to facilitate the collection of soil samples for visual inspection and chemical analyses. Three boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

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

4.2 Test Pit Program

On December 8 and 9, 2022, seventeen test pits (TP-1 to TP-17) were advanced at the Phase Two property. The test pits were excavated to termination depths of 1 to 2.6 m bgs. Dedicated nitrile gloves (one pair per sample) were used during sample handling. No petroleum-based greases or solvents were used during excavation activities. EXP staff continuously monitored the excavating activities to log the stratigraphy observed from the pits, to record the depth of the samples, to record total depths of excavation, and to screen the samples by recording visual or olfactory observations of potential impacts and measuring petroleum vapours.

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

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

4.3 Drilling Program

Between December 14 and 23, 2022, thirteen boreholes (BH-1 to BH-3, BH-5 to BH-8 and BH-10 to BH-15) were advanced at the Phase Two property by George Downing Estate Drilling Ltd (Downing). The boreholes were advanced in the overburden to termination depths ranging from 4.9 m to 8.5 m below existing grade, with the exception of BH-1 which was cored in bedrock. Bedrock was encountered 33 metres below ground surface (m bgs).

The boreholes were drilled with a CME-55LC track-mounted drill rig equipped with continuous flight hollow-stem auger equipment. Auger samples were obtained in some of the boreholes from the ground surface to a 0.6 m depth. Standard penetration tests (SPTs) were performed in all the boreholes on 0.75 m intervals to 1.5 m depth interval with the soil samples retrieved by the split-barrel sampler. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified.

The bedrock was cored in BH-1 by conventional rock coring method using NQ core barrel. A careful record of any sudden drops of the core barrel, colour of the wash water and wash water return were recorded during the rock coring operations.

The locations and geodetic elevations of the boreholes were established by a survey crew from EXP and are shown in Figure 2.

4.4 Soil Sampling

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

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

Soil samples for geologic characterization were collected on a continuous basis in the overburden materials using 5 cm diameter, 61 cm long, split spoon samplers advanced into the subsurface using the drill rig. A split spoon sample was collected approximately every 80 cm as drilling progressed. The split spoon samplers were decontaminated between sampling intervals by EXP staff using a potable water/phosphate-free detergent solution followed by rinses with potable water. 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/excavation, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix D.

4.5 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 and organic vapour meter calibrated to hexane gas prior to use. The field screening measurements were made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These 'headspace' readings provide a real-time indication of the relative concentration of combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of potential impacts and the selection of soil samples for analysis.

Readings of combustible and organic 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 test pit logs provided in Appendix D.

4.6 Groundwater: Monitoring Well Installation

A 19 mm diameter standpipe with slotted section was installed in three boreholes (BH-5, BH-12, and BH-14) and a 51 mm diameter monitoring well with screen section was installed in three boreholes (BH-8, BH-10, BH-11).

The standpipes and monitoring wells were installed in accordance with EXP standard practice, and the installation configuration is documented on the respective borehole log. All boreholes were backfilled upon completion of drilling and the installation of the standpipes and monitoring wells.

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 38 mm or 52 mm diameter Schedule 40 PVC screen that was no more than 3.0 m long and a 51 mm diameter Schedule 40 PVC riser pipe that was at least 0.8 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 flushmount casings. Details of the monitoring well installations are shown on the borehole logs provided in Appendix D.

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.

4.7 Groundwater: Field Measurement and Water Quality Parameters

Field measurement of water quality parameters is described in Section 4.7.

All measurements of petroleum vapours in the monitor riser were made with an RKI Eagle 2 in methane elimination mode. Immediately after removing the well cap, the collection tube of the Eagle was inserted into the riser and the peak instrument reading was recorded. 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.

4.8 Groundwater: Sampling

All groundwater samples were collected via a low flow sampling technique using a Horiba U-52 multi probe water quality meter. The U-52 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 to ensure that the samples collected were representative of actual groundwater conditions. 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.

The groundwater sampling during the completion of this Phase Two ESA was undertaken in general accordance with the SAAP presented in Appendix C. 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 24 hours of collection with a chain of custody.

On January 10, 2023, groundwater samples were collected from the three monitoring wells (BH-8, BH-10, and BH-11) using the low flow sampling method described above. Three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of PHC, PAH, VOC and/or metals parameters.

4.9 Sediment: Sampling

There are no waterbodies present on the Phase Two property, therefore sediment sampling was not required.

4.10 Analytical Testing

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

4.11 Residue Management

The drill cuttings from drilling activities and purged water from groundwater development and sampling were disposed of on-site. Fluids from cleaning drilling equipment were disposed of by the driller at their facility.

4.12 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 reference. The Universal Transverse Mercator (UTM) coordinates of each monitoring well were also recorded so that their locations could be plotted accurately.

4.13 Quality Assurance and Quality Control Measures

All soil and groundwater samples were placed in coolers containing ice packs prior to and during transportation to the contract laboratory, BV Labs. BV Labs 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.

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

5.0 Review and Evaluation

5.1 Geology

A surficial topsoil layer was contacted in BH-10, BH-12, and BH-15 as well as TP-1, TP-2, TP-8, TP-9, TP-11, TP-13, and TP-14. The topsoil ranged in thickness from 100 mm to 300 mm. A buried topsoil layer was encountered in BH-1, BH-2, BH-3, BH-5, BH-11, BH-12, and BH-13, as well as TP-1, TP-4 through TP-10, and TP-13 through TP-16. It was encountered at depths of 0.8 m to 2.0 m and extended to depths of 1.1 m to 2.3 m.

Granular fill consisting of crushed limestone, sand and gravel, sometimes containing topsoil inclusions, was encountered at the surface of BH-2, BH-3, and BH-8, as well as TP-4 to TP-6, and TP-10. Granular fill was buried in TP-13 at a depth of 0.7 m and extending to a depth of 1.0 m. Reclaimed asphalt pavement was encountered at the surface of BH-11 and TP-7 with a thickness of 130 mm to 150 mm.

Native silty clay was encountered below the topsoil and fill materials in all boreholes and test pits. The grey silty clay extended to inferred and observed depths of approximately 31.5 m and 33.0 m in BH-3 and BH-1, respectively. The remaining boreholes were terminated within the grey silty clay at 4.9 m to 8.5 m depths. The silty clay to clay is underlain by glacial till contacted in BH-1 and inferred in BH-3 at 33.0 m and 31.5 m depths, respectively. The glacial till contains cobbles and boulders.

Bedrock core sampling was completed in BH-1, where grey Limestone bedrock was contacted at 33.8 m depth and cored to a termination depth of 37.7 m.

A plan view showing cross-sections is provided as Figure 5 in Appendix A, while the Phase Two property geology is depicted in cross-sections on Figure 6 in Appendix A.

5.2 Groundwater: Elevations and Flow Direction

On January 6 and January 10, 2023, the monitoring wells were inspected for general physical condition, groundwater depth, the presence of light non-aqueous phase liquid (LNAPL).

Overburden groundwater monitoring and elevation data are provided below.

Table 5.1: Monitoring and Elevation Data

Monitoring Well ID	Grade Elevation (masl)	Top of Casing Elevation (masl)	Screen Depth (mbgs)	Depth to LNAPL (mbgs)	January 6, 2023		January 10, 2023	
					Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)	Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)
BH-5	86.96	88.14	6.1 to 7.6	N/A	0.68	86.28	0.61	86.35
BH-8	87.39	87.31	1.5 to 4.6	N/A	0.57	86.82	0.83	86.56
BH-10	87.69	87.56	0.8 to 2.3	N/A	1.45	86.24	1.45	86.24
BH-11	86.95	86.76	2.4 to 5.5	N/A	0.75	86.20	0.93	86.02
BH-12	87.22	88.24	4.0 to 4.9	N/A	0.59	86.63	0.67	86.55
BH-14	86.67	87.64	4.0 to 4.9	N/A	0.41	86.26	0.47	86.20

Notes: Elevations were measured to a geodetic datum
mbgs – metres below ground surface
masl – metres above sea level
mbTOC – metres below top of monitor casing
N/A – not applicable

Based on the groundwater elevations, a groundwater contour plan was prepared. The overburden groundwater flow direction was determined to be to the east. The groundwater contour plan is provided as Figure 4 in Appendix A.

5.3 Groundwater: Hydraulic Gradients

Horizontal hydraulic gradients were estimated for the groundwater flow components identified in the overburden aquifer based on the January 2023 groundwater elevations.

The horizontal hydraulic gradient is calculated across the using the following equation:

$$i = \Delta h/\Delta s$$

Where,

i = horizontal hydraulic gradient;
Δh (m) = groundwater elevation difference; and,
Δs (m) = separation distance.

The horizontal hydraulic gradient was calculated to be 0.013 m/m.

5.4 Fine-Medium Soil Texture

Based on field observations and laboratory analysis of seven samples for grain size conducted in conjunction with the Phase Two ESA, the soil texture was determined to be fine-medium. Grain size results are shown below.

Table 5.2: Grain Size Analysis Results

Sample	Depth (m bgs)	Soil Type	Particles Smaller than 75 microns by Mean Diameter	Ontario Regulation 153/04 Classification
BH1-SS4	2.3 to 2.9	Clay	96%	Fine-Medium
BH2-SS8	7.8 to 8.2	Clay	100%	Fine-Medium
BH5-SS7	6.1 to 6.7	Clay	100%	Fine-Medium
BH8-SS3	2.3 to 2.9	Clay	100%	Fine-Medium
BH8-SS4	3.8 to 4.4	Clay	100%	Fine-Medium
BH13-SS2	0.8 to 1.4	Silty Sand with Gravel	39%	Coarse
BH14-SS3	1.5 to 2.1	Clay	98%	Fine-Medium

The clay unit is the dominant type of soil on the Phase Two property. Since more than 1/3 of the soil on the Phase Two property consisted of medium and fine textured soil, soil and groundwater results were compared to medium and fine textured SCS. The laboratory Certificates of Analysis are provided in Appendix F.

5.5 Soil: Field Screening

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

Petroleum vapours ranged from non-detectable to 20 ppm in samples collected from the test pits. Field screening data is presented in the test pit logs in Appendix D.

5.6 Soil: Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes and from the north wall of the utility trench excavation. The selection of representative "worst case" soil samples from each borehole was based on field visual or olfactory evidence of impacts and/or presence of potential water bearing zones.

The MECP Table 2 SCS are applicable if soil pH is in the range of 5 to 9 for surficial soil (less than 1.5 m below soil surface) and 5 to 11 for subsurface soil (greater than 1.5 m below soil surface). Three soil samples were collected at depths between 1.7 and 8.2 m bgs and submitted for analysis of pH. All samples were within the acceptable ranges for the application of MECP Table 2 SCS.

Eight soil samples and one duplicate were collected from the fill material and submitted for analysis of PHC, PAH, VOC and/metals. Two soil samples were collected from the native silty clay (BH-10 and BH-11) and submitted for analysis of PHC, PAH, VOC and metals.

All of the fill samples had concentrations that were within the Table 2 SCS for all parameters that were analysed. The native soil samples had concentrations that were within the Table 2 SCS for all parameters that were analysed, with the exception of cobalt and vanadium.

It is probable that the exceedances of cobalt and vanadium are due to naturally elevated concentrations in the native silty clays in the Ottawa area and are not due to anthropogenic impact. A technical paper entitled "*Elevated Background Metals Concentrations in Champlain Sea Clay – Ottawa Region*" written by two engineering firms and the City of Ottawa was presented at GEO Ottawa in 2017. The paper presented results from several studies in the Ottawa area that showed that the concentrations of several metals including cobalt and vanadium in the native silty clay are elevated above the MECP Table SCS. New background concentrations that are higher than the MECP Table 3 SCS were proposed for five metals for eastern Ontario. Based on the above technical paper, the range of concentrations of cobalt in 271 native soil samples in the Ottawa area ranged from 3.0 to 30.5 ug/g with a 98th percentile of 27.9 ug/g. The measured concentrations of cobalt in the silty clay at the Phase Two property ranged from 25 to 26 ug/g. Similarly, the range of concentrations of vanadium in 267 native soil samples in the Ottawa area ranged from 10.0 to 136 ug/g with a 98th percentile of 123 ug/g. The measured concentrations of vanadium in the silty clay at the subject site ranged from 87 to 90 ug/g. This indicates that the measured concentrations of cobalt and vanadium in the native silty clay at the Phase Two property are within the typical range of concentrations cited in the above technical paper and are not indicative of anthropogenic impact.

The soil results are provided in Tables 1 to 3 in Appendix E. They are shown in plan view on Figures 7 to 9 and on cross-sections on Figures 10 to 12 in Appendix A.

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

5.7 Groundwater: Quality

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.

Following their installation, the monitoring wells were developed by purging water with an inertial pump and foot valve until it became clear.

Three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of BTEX, PHC, PAH, VOC and/or metals parameters. There were no exceedances of the MECP 2 SCS for any of the parameters analyzed.

The analytical results are included in Tables 4 to 6 in Appendix E and are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18 in Appendix A.

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

5.7.1 Chemical Transformation and Contaminant Sources

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

All soil samples met the applicable Table 2 residential SCS for all parameters that were analyzed with the exception of the native samples from BH-10 and BH-11, which exceeded the Table 2 residential SCS for cobalt and vanadium. However, the measured concentrations of cobalt and vanadium in the native silty clay at the Phase Two property are within the typical range of concentrations in the Ottawa area and are not indicative of anthropogenic impact. No additional soil quality investigation is recommended. Chemical transformations of contaminants in soil are not a significant concern at the Phase Two property.

There were no groundwater exceedances of the Table 2 SCS for any of the parameters analyzed.

Cross-sections that depict the geological, hydrogeological, and groundwater chemical data for the Phase Two property are provided as Figure 6 in Appendix A.

5.7.2 Evidence of Non-Aqueous Phase Liquid

Inspection of the groundwater monitoring wells did not indicate the presence of non-aqueous phase liquid (NAPL).

5.7.3 Maximum Concentrations

Contaminants that exceeded the applicable Table 2 residential standards included:

Soil: Cobalt and vanadium.

Groundwater: none.

Maximum soil and groundwater concentrations are provided in Tables 7 and 8 in Appendix E.

5.8 Sediment: Quality

There are no water bodies on the Phase Two property, therefore sediment sampling was not required.

5.9 Quality Assurance and Quality Control Results

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

- Collection and analysis of blind duplicate soil and groundwater samples to ensure sample collection precision;
- Analysis of a groundwater field blank for all parameters that were analysed to assess potential impact during sampling;
- Using dedicated and/or disposable sampling equipment;

- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document on-site activities; and,
- Using only laboratory supplied sample containers and following prescribed sample protocols, including proper preservation, meeting sample hold times, proper chain of custody documentation, to ensure integrity of the samples.

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

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

Table 5.3: Laboratory QA/QC Results

Job#	Matrix	Test Affected	Deviation	Interpretation
C2AG432	Soil	PAH	RPD for benzo(b/j)fluoranthene (51%), fluoranthene (61%), phenanthrene (62%), and pyrene (56%) exceeded the acceptance criteria (40%).	Since all PAHs were well below the standards, the deviation should have no effect on the interpretation of results.

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

The results of the RPD calculations are provided in Appendix E in Tables 9 to 14. All of the RPD for soil and groundwater were either not calculable or within the applicable alert limits.

A field blank and trip blanks were prepared and submitted for laboratory analysis of BTEX, PHC, PAH, VOC and/or metals. The results of the trip blank and field blank analyses are provided in Tables 4 to 6 in Appendix E. The trip blank and field blank were below the detection limits for all parameters analysed, with the exception of chloroform and sodium in the field blank. As the concentrations were still below MECP 2 SCS, and there were no exceedances of the Table 2 SCS in the groundwater samples, the deviation should have no material effect on the conclusions presented in this report.

5.10 Phase Two Conceptual Site Model

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

5.10.1 Introduction

EXP Services Inc. (EXP) was retained by the Conseil des écoles catholiques du Centre-est (CECCE) to conduct a Phase Two Environmental Site Assessment (ESA) for the east part of the property located 2666 Tenth Line Road in Ottawa, Ontario (hereinafter referred to as the 'Phase Two property'). At the time of the investigation, the Phase Two property was occupied by a sales office for Mattamy Homes and a vacant residence and associated garage.

The objective of the Phase Two ESA investigation 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. The most recent use of the property was as a storage yard for recreational vehicles, which is a type of commercial land use. It is proposed that a secondary school be constructed on the Phase Two property. As the proposed land use is more sensitive than the previous land use, a Record of Site Condition (RSC) will be required.

5.10.2 Physical Site Description

The Phase Two property consists of the east part of the property located at 2666 Tenth Line Road, located approximately 500 m north of the intersection of Wall Road and Tenth Line Road in Ottawa, Ontario. McKinnon Creek crosses 2666 Tenth Line Road approximately 180 m from the Phase Two property. The Phase Two property consists of the property between Tenth Line Road and 30 m from McKinnon Creek to the west. The Phase Two property is irregular in shape with an area of approximately 2.3 hectares.

A single-storey residence with a full basement was present on the south side of the site. The residence was vacant, and the basement contained approximately 1 metre of standing water. A garage building was located on the north side of the residence. The garage was used as a storage area and workshop for Bergeret Exteriors. A temporary building, on concrete blocks, was present on the north side of the site. The building was occupied by the Mattamy Homes sales offices. Gravel parking lots were associated with the garage and the sales offices. Groundcover on the west part of the Phase Two property consisted of tall grass.

The Phase Two property is part of a larger property with the legal description Part of Lot 5, Concession 11, Being Parts 1, 3, and 4 on Plan 50R-2029, City of Ottawa. And the property identification number (PIN) 145630547.

Refer to Table 5.4 for the Site identification information.

Table 5.4: Site Identification Details

Civic Address	2666 Tenth Line Road, Ottawa, Ontario
Current Land Use	Commercial
Proposed Future Land Use	Institutional
Property Identification Number	145630547
UTM Coordinates	Zone 18, 462735 m E and 5031890 m N
Site Area	2.3 hectares
Property Owner	Claridge Homes (Mer Bleue Phase 4 Inc.)

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

Although new developments in the Phase Two study area are provided potable water by the City of Ottawa through its water distribution system, select properties in the Phase Two study area are serviced by potable water wells. Thus, in accordance with Section 35 of Ontario Regulation 153/04, potable water standards apply to the Phase Two property.

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

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

5.10.3 Geological and Hydrogeological

Bedrock in the general area of the Phase Two property consists of limestone with shaley partings of the Ottawa Formation. Native surficial soil consists of Champlain Sea clay to fine textured glaciomarine deposits. The ground surface is approximately 87 metres above sea level (masl). Water well records indicate that the surficial geology in the area generally consists of clay overlying sand and gravel. Limestone bedrock was present approximately 45 metres below ground surface.

The inferred groundwater flow direction in the Phase Two study area is to the southeast towards Bear Brook Creek. Based on the local topography, the inferred groundwater flow on and adjacent to the Phase Two property is to the southwest towards McKinnon Creek.

A plan view showing cross-sections is provided as Figure 6, while the Phase Two property geology is depicted in cross-sections on Figure 7.

A summary of factors that apply to the Phase Two property is provided in Table 5.5.

Table 5.5: Site Characteristics

Characteristic	Description
Minimum Depth to Bedrock	50.5 masl (36.3 m bgs)
Minimum Depth to Groundwater	0.41 m bgs
Shallow Soil Property	No, bedrock is greater than 2.0 mbgs
Proximity to water body or ANSI	30 m west – McKinnon Creek
Soil pH	Clay – 8.19 to 9.43
Soil Texture	Fine-Medium
Current Property Use	Commercial
Future Property Use	Institutional
Proposed Future Building	Elementary School
Areas Containing Suspected Fill	Entire Phase Two property

5.10.4 Utilities and Impediments

The vacant residence on the Phase One property is serviced by a well and septic. New developments in the Phase One study area are serviced by municipal water and sewer, and underground hydro.

5.10.5 Potentially Contaminating Activities

The following potentially contaminating activities (PCAs) were identified on the Phase One property:

- PCA #28 – Gasoline and associated products storage in fixed tanks (fuel AST north of the garage, heating oil AST in the basement of the residence); and,
- PCA #30 – Importation of fill material of unknown quality (entire Phase One property) .

The following PCAs were identified in the Phase One study area:

- PCA #49 – Salvage yards, including auto wrecking (former salvage yard 40 m southeast of the Phase One property).

5.10.6 Areas of Potential Environmental Concern/Potential Contaminates of Concern

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown on Figure 2 and Table 5.6 below:

Table 5.6: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. Fuel AST	Area northeast of the garage	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	Benzene, toluene, ethylbenzene, xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and groundwater
#2. Heating oil AST	Area near the southwest corner of the vacant residence	PCA #28 – Gasoline and associated products storage in fixed tanks	On-Site	BTEX, PHC	Soil and groundwater
#3. Fill material of unknown quality	Entire Phase One property	PCA #30 – Importation of fill material of unknown quality	On-site	PHC, polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), metals	Soil
#4. Former savage yard at 2727 Tenth Line Road	Area along the southeast property line	PCA #49 – Salvage yards, including auto wrecking	Off-site	PHC, PAH, VOC, metals	Groundwater

5.10.7 Investigation

The site investigative activities consisted of excavating test pits and drilling boreholes to facilitate the collection of soil samples for visual inspection and chemical analysis. The boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

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. A private utility locating contractor was also retained to clear the individual borehole locations.

On December 8 and 9, 2022, seventeen test pits (TP-1 to TP-17) were advanced at the Phase Two property. The test pits were excavated to termination depths of 1 m to 2.6 m bgs. Dedicated nitrile gloves (one pair per sample) were used during sample handling. No petroleum-based greases or solvents were used during excavation activities. EXP staff continuously monitored the excavating activities to log the stratigraphy observed from the pits, to record the depth of the samples, to record total depths of excavation, and to screen the samples by recording visual or olfactory observations of potential impacts and measuring petroleum vapours. Grab soil samples from the excavator bucket were collected from the fill layer. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified.

Between December 14 and 23, 2022, thirteen boreholes (BH-1 to BH-3, BH-5 to BH-8 and BH-10 to BH-15) were advanced at the Phase Two property by George Downing Estate Drilling Ltd (Downing). The boreholes were advanced in the overburden to termination depths ranging from 4.9 m to 8.5 m below existing grade, with the exception of BH-1 which was cored in bedrock. Bedrock was encountered 33 metres below ground surface (m bgs). The boreholes were drilled with a CME-55LC track-mounted drill rig equipped with continuous flight hollow-stem auger equipment. Auger samples were obtained in some

of the boreholes from the ground surface to a 0.6 m depth. Standard penetration tests (SPTs) were performed in all the boreholes on 0.75 m intervals to 1.5 m depth interval with the soil samples retrieved by the split-barrel sampler. All soil samples were visually examined in the field for textural classification, logged, preserved in plastic bags and identified.

The bedrock was cored in BH-1 by conventional rock coring method using NQ core barrel. A careful record of any sudden drops of the core barrel, colour of the wash water and wash water return were recorded during the rock coring operations.

5.10.8 Soil Sampling

Soil samples were selected for laboratory analysis based on combustible vapour measurements and visual and olfactory evidence of impacts, where observed. Soil samples identified for possible laboratory analysis were placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be 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.

Eight soil samples and one duplicate were collected from the fill material and submitted for analysis of PHC, PAH, VOC and/metals. Two soil samples were collected from the native silty clay (BH-10 and BH-11) and submitted for analysis of PHC, PAH, VOC and metals.

All of the fill samples had concentrations that were within the Table 2 SCS for all parameters that were analysed. The native soil samples had concentrations that were within the Table 2 SCS for all parameters that were analysed, with the exception of BH-10 and BH-11 which exceeded the Table 2 SCS for cobalt and vanadium.

It is probable that the exceedances of cobalt and vanadium are due to naturally elevated concentrations in the native silty clays in the Ottawa area and are not due to anthropogenic impact. A technical paper entitled “Elevated Background Metals Concentrations in Champlain Sea Clay – Ottawa Region” written by two engineering firms and the City of Ottawa was presented at GEO Ottawa in 2017. The paper presented results from several studies in the Ottawa area that showed that the concentrations of several metals including cobalt and vanadium in the native silty clay are elevated above the MECP Table SCS. New background concentrations that are higher than the MECP Table 3 SCS were proposed for five metals for eastern Ontario. Based on the above technical paper, the range of concentrations of cobalt in 271 native soil samples in the Ottawa area ranged from 3.0 to 30.5 ug/g with a 98th percentile of 27.9 ug/g. The measured concentrations of cobalt in the silty clay at the Phase Two property ranged from 25 to 26 ug/g. Similarly, the range of concentrations of vanadium in 267 native soil samples in the Ottawa area ranged from 10.0 to 136 ug/g with a 98th percentile of 123 ug/g. The measured concentrations of vanadium in the silty clay at the subject site ranged from 87 to 90 ug/g. This indicates that the measured concentrations of cobalt and vanadium in the native silty clay at the Phase Two property are within the typical range of concentrations cited in the above technical paper and are not indicative of anthropogenic impact.

The soil results are provided in Tables 1 to 3 in Appendix E. They are shown in plan view on Figures 7 to 9 and on cross-sections on Figures 10 to 12 in Appendix A.

5.10.9 Groundwater Sampling

All groundwater samples were collected via a low flow sampling technique using a U-52 Horiba multi probe water quality meter. The U-52 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 to ensure that the samples collected were representative of actual groundwater conditions.

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 24 hours of collection with a chain of custody.

Three groundwater samples, one field duplicate, one field blank, and one trip blank were submitted for chemical analysis of BTEX, PHC, PAH, VOC and/or metals parameters. There were no exceedances of the MECP 2 SCS for any of the parameters analyzed.

The analytical results are included in Tables 4 to 6 in Appendix E and are shown in plan view on Figures 13 to 15 and on cross-sections on Figures 16 to 18 in Appendix A.

5.10.10 Contaminants of Concern

Contaminants that exceeded the Table 2 residential standards included:

Soil: Cobalt and vanadium

Groundwater: none

5.10.11 Contaminant Fate and Transport

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

All soil samples met the applicable Table 2 residential SCS for all parameters that were analyzed with the exception of the native samples from BH-10 and BH-11, which exceeded the Table 2 residential SCS for cobalt and vanadium. However, the measured concentrations of cobalt and vanadium in the native silty clay at the Phase Two property are within the typical range of concentrations in the Ottawa area and are not indicative of anthropogenic impact. No additional soil quality investigation is recommended. Chemical transformations of contaminants in soil are not a significant concern at the Phase Two property.

There were no groundwater exceedances of the Table 2 SCS for any of the parameters analyzed.

Cross-sections that depict the geological, hydrogeological, and groundwater chemical data for the Phase Two property are provided as Figure 6 in Appendix A.

6.0 Conclusion

During the current investigation, the soil and groundwater quality at the Phase Two property were investigated. Results were compared to Regulation 153/04 Table 2 SCS for residential/parkland/institutional property use and coarse textured soils in a potable groundwater condition.

All soil samples met the applicable Table 2 residential SCS for all parameters that were analyzed with the exception of the native samples from BH-10 and BH-11, which exceeded the Table 2 residential SCS for cobalt and vanadium. However, the measured concentrations of cobalt and vanadium in the native silty clay at the Phase Two property are within the typical range of concentrations in the Ottawa area and are not indicative of anthropogenic impact. No additional soil quality investigation is recommended.

There were no exceedances of the MECP 2 SCS for any of the parameters analysed in the groundwater samples.

It is EXP's opinion that none of the PCA that were identified in the Phase One ESA have adversely affected the property. No further environmental investigations are deemed to be warranted.

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

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

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

7.0 References

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

- EXP Services Inc., *Phase One Environmental Site Assessment, 2666 Tenth Line Road, Ottawa, Ontario,* December 16, 2022.
- Ontario Ministry of the Environment, Conservation and Parks, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996.
- Ontario Ministry of the Environment, Conservation and Parks, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04,* June 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,* July 1, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Management of Excess Soil – A Guide for Best Management Practices,* January 2014.
- Ontario Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 347, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 903, made under the *Water Resources Act*, as amended.

8.0 General Limitations

Basis of Report

This report ("Report") is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of EXP may require re-evaluation. Where special concerns exist, or Conseil des écoles catholiques du Centre-est ("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.

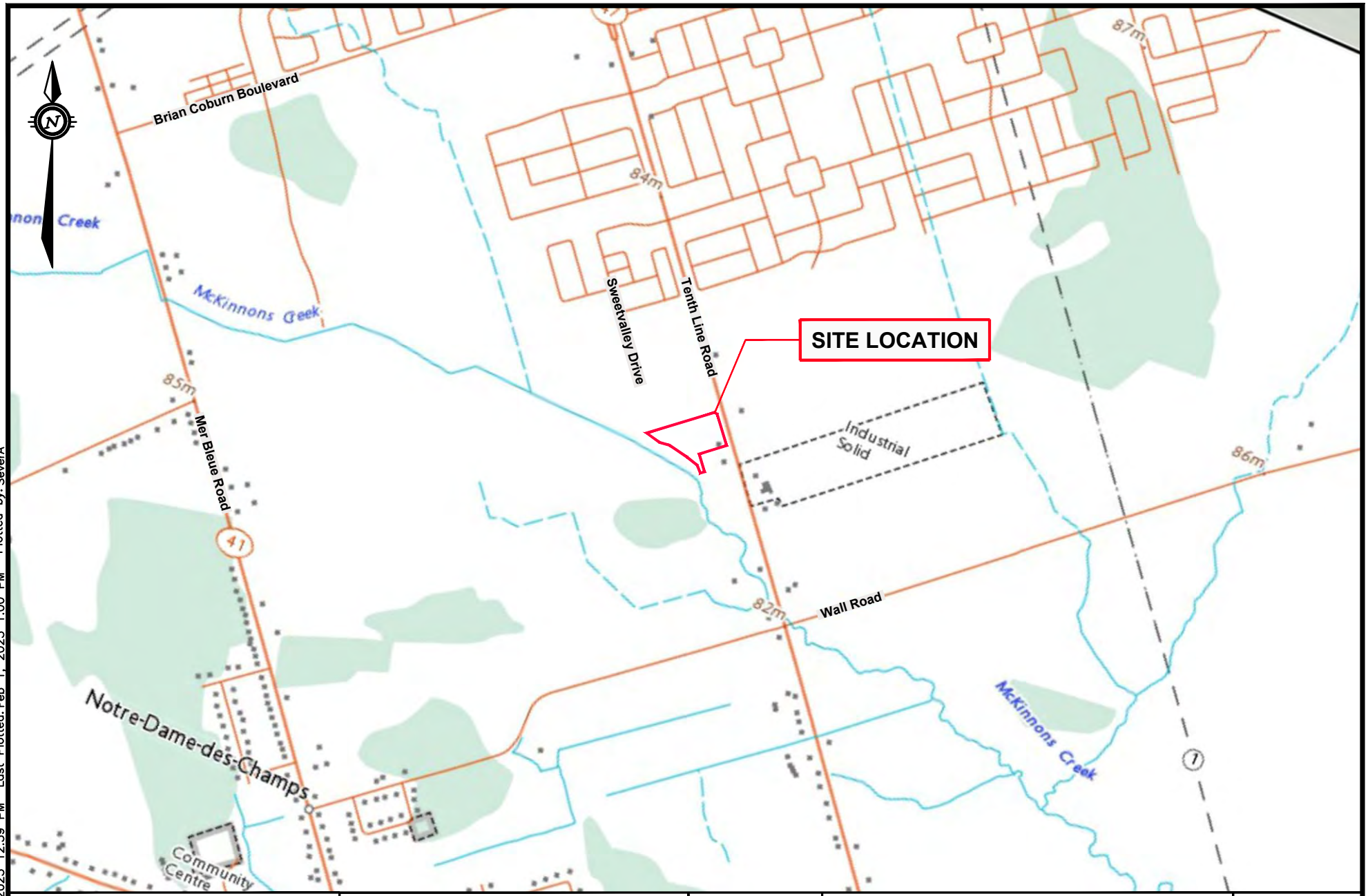
Use of Report

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



0 150m 300m 600m

HORIZONTAL 1:15,000

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

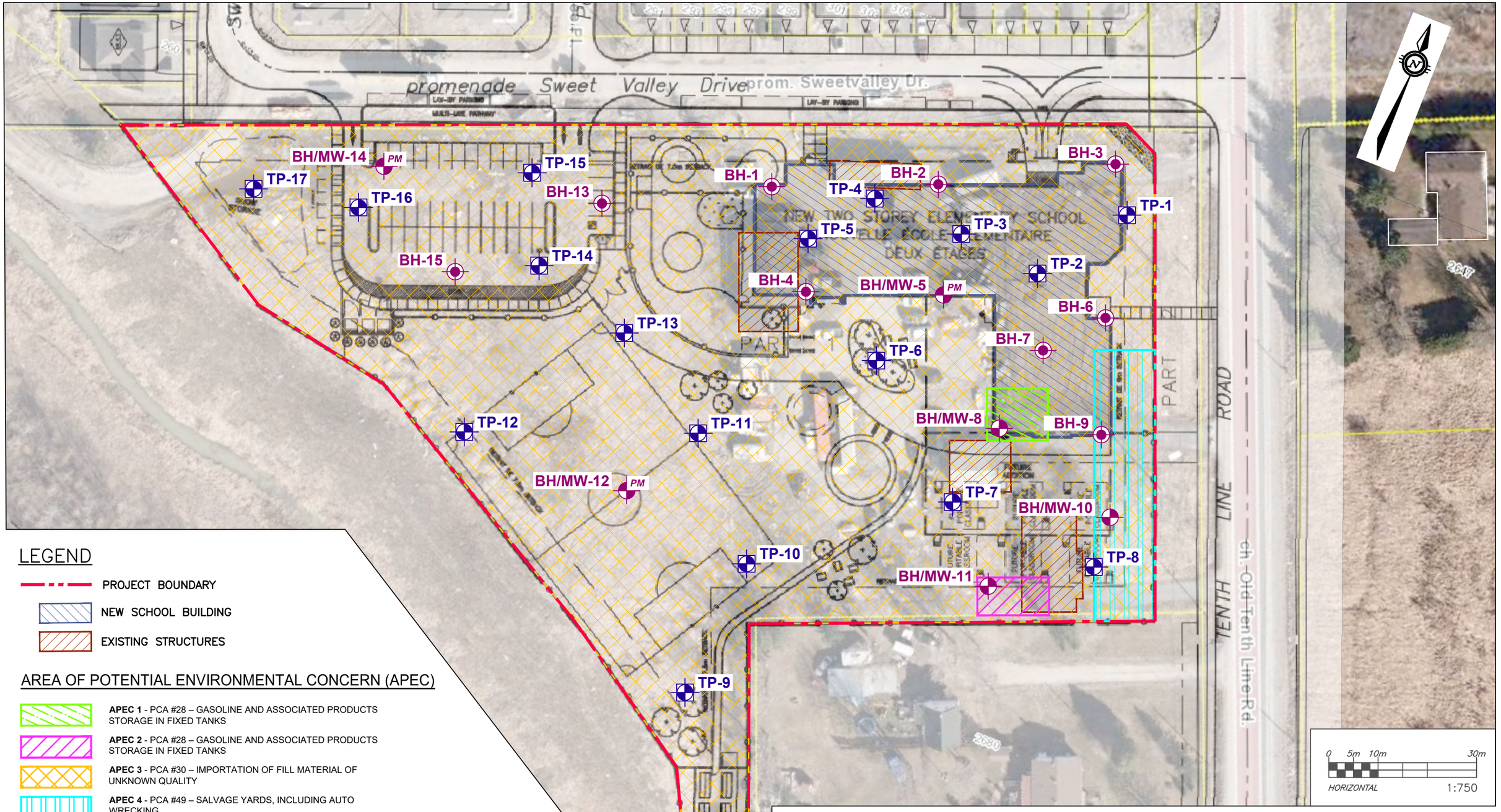
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

SITE LOCATION PLAN

SCALE 1:15,000

SKETCH NO FIG 1

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 1, 2023 12:59 PM Last Plotted: Feb 1, 2023 1:00 PM Plotted by: SeverA



LEGEND

- PROJECT BOUNDARY
- NEW SCHOOL BUILDING
- EXISTING STRUCTURES

AREA OF POTENTIAL ENVIRONMENTAL CONCERN (APEC)

- **APEC 1** - PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- **APEC 2** - PCA #28 – GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
- **APEC 3** - PCA #30 – IMPORTATION OF FILL MATERIAL OF UNKNOWN QUALITY
- **APEC 4** - PCA #49 – SALVAGE YARDS, INCLUDING AUTO WRECKING

BH-1 BOREHOLE NO. & LOCATION

TP-1 TEST PIT NO. & LOCATION

BH/MW-8 MONITORING WELL NO. & LOCATION

BH/MW-5 PM MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

BOREHOLE/TESTPIT LOCATION PLAN (WITH APECs)

SCALE 1:750

SKETCH NO FIG 2

Filename: E:\OT\OTT-22017859-A0\60 Execution\65 Drawings_Env\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 2:29 PM Last Plotted: Feb 3, 2023 2:30 PM Plotted by: SeverA

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	DECEMBER 2022
FILE NO	OTT-22017859-A0

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

PHASE ONE STUDY AREA

SCALE 1:3,000
SKETCH NO FIG 2

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Env.dwg
Last Saved: Dec 14, 2022 1:42 PM Last Plotted: Dec 14, 2022 1:44 PM Plotted by: SeverA

prom. Sweetvalley Dr.

ch. Old Tenth Line Rd.

BH/MW-14 PM (86.20)
TP-17
TP-16
TP-15
BH-13
BH-1
TP-4
BH-2
BH-3
TP-1
TP-5
TP-3
BH-15
TP-14
BH-4
BH/MW-5 PM (86.35)
TP-2
BH-6
TP-13
BH-7
TP-6
TP-12
TP-11
BH/MW-8 (86.56)
BH-9
BH/MW-12 PM (86.55)
TP-7
BH/MW-10 (86.24)
TP-10
TP-8
BH/MW-11 (86.02)
86.40
86.20
86.00
TP-9

LEGEND

- PROJECT BOUNDARY
- 86.20 GROUNDWATER CONTOURS
- (86.02) GROUNDWATER ELEVATIONS
- BH-1 BOREHOLE NO. & LOCATION
- BH/MW-8 MONITORING WELL NO. & LOCATION
- TP-1 TEST PIT NO. & LOCATION
- BH/MW-5 PM MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

0 5m 10m 30m
HORIZONTAL 1:750

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

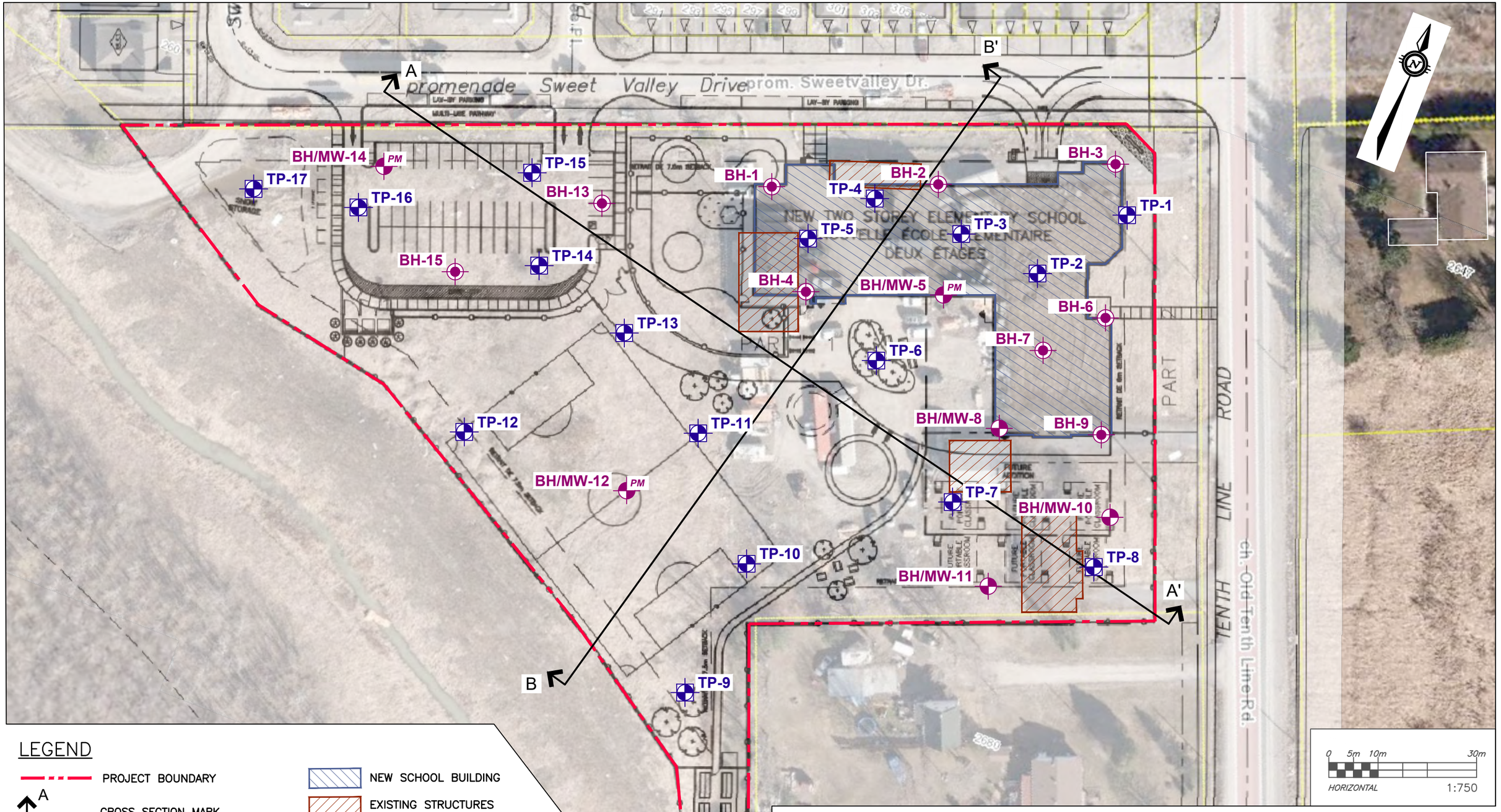
DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

GROUNDWATER CONTOUR PLAN

SCALE 1:750
SKETCH NO FIG 4

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Env\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 2:31 PM Last Plotted: Feb 3, 2023 2:31 PM Plotted by: SeverA



LEGEND

- PROJECT BOUNDARY
- A — CROSS SECTION MARK
- BH-1 — BOREHOLE NO. & LOCATION
- TP-1 — TEST PIT NO. & LOCATION
- NEW SCHOOL BUILDING
- EXISTING STRUCTURES
- BH/MW-8 — MONITORING WELL NO. & LOCATION
- BH/MW-5 PM — MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

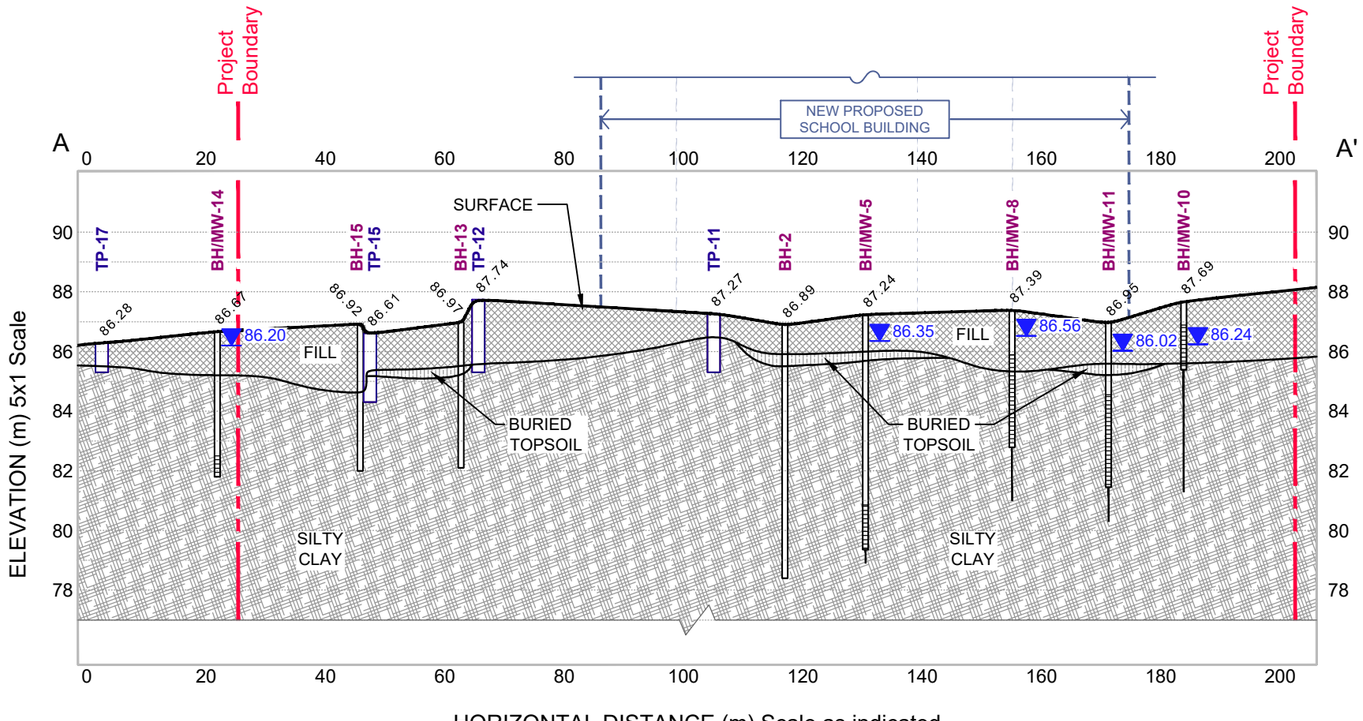
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTION PLAN

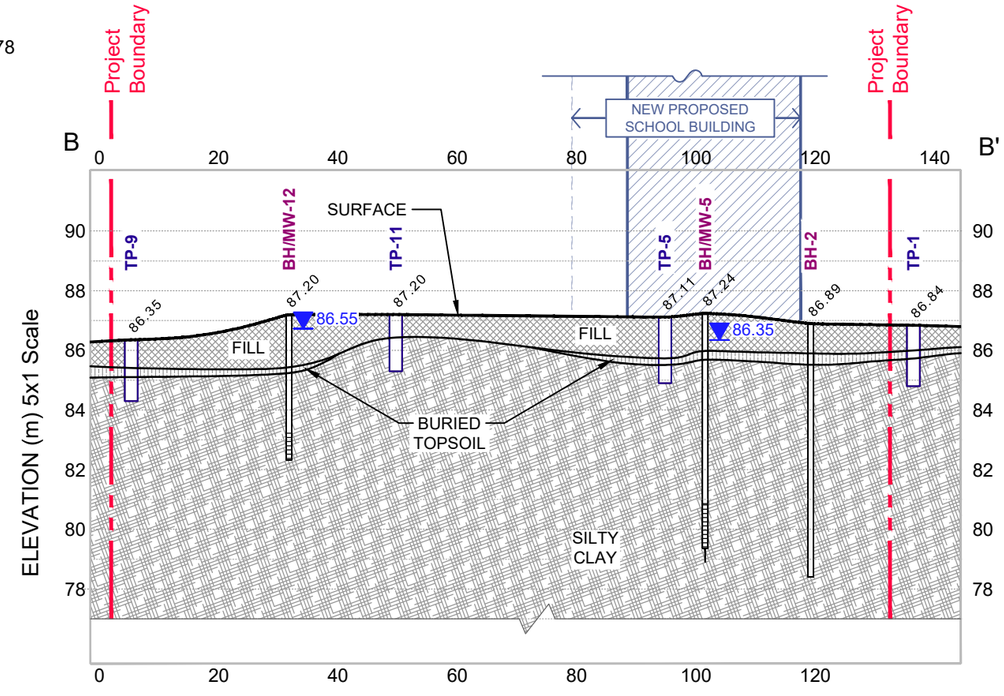
SCALE 1:750

SKETCH NO FIG 5

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Env\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 1, 2023 1:01 PM Last Plotted: Feb 1, 2023 1:27 PM Plotted by: SeverA



CROSS SECTION A-A'



CROSS SECTION B-B'

LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN
- 86.00 GROUNDWATER ELEVATION (FROM JANUARY 10, 2023)

- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

0 10m 20m 40m
HORIZONTAL 1:1000

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

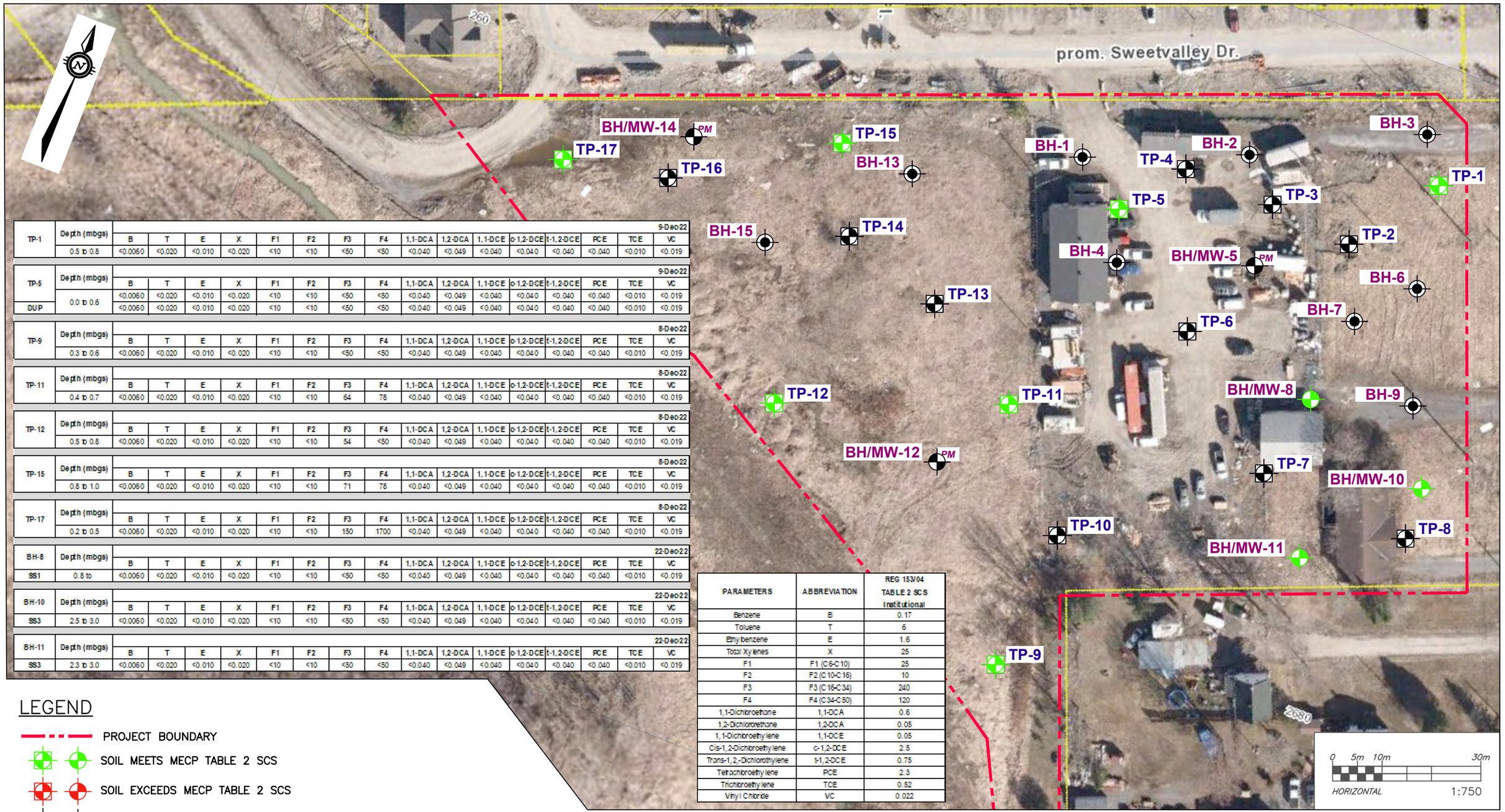
DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTIONS: A–A', B–B'

SCALE 1:1,000
SKETCH NO FIG 6

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 1, 2023 1:01 PM Last Plotted: Feb 1, 2023 1:28 PM Plotted by: SeverA



TP-1	Depth (mbgs)																9-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.5 to 0.8	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-5	Depth (mbgs)																9-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.0 to 0.6	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019
DUP		<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-9	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.3 to 0.6	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-11	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.4 to 0.7	<0.0060	<0.020	<0.010	<0.020	<10	<10	64	78	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-12	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.5 to 0.8	<0.0060	<0.020	<0.010	<0.020	<10	<10	54	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-15	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.8 to 1.0	<0.0060	<0.020	<0.010	<0.020	<10	<10	71	78	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-17	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.2 to 0.5	<0.0060	<0.020	<0.010	<0.020	<10	<10	150	1700	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

BH-8	Depth (mbgs)																22-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SS1	0.8 to	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

BH-10	Depth (mbgs)																22-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SS3	2.5 to 3.0	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

BH-11	Depth (mbgs)																22-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SS3	2.3 to 3.0	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Benzene	B	0.17
Toluene	T	6
Ethylbenzene	E	1.6
Total Xylenes	X	25
F1	F1 (C6-C10)	25
F2	F2 (C10-C16)	10
F3	F3 (C16-C34)	240
F4	F4 (C34-C50)	120
1,1-Dichloroethane	1,1-DCA	0.6
1,2-Dichloroethane	1,2-DCA	0.05
1,1-Dichloroethylene	1,1-DCE	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	2.5
Trans-1,2,-Dichlorothylene	t-1,2-DCE	0.75
Tetrachloroethylene	PCE	2.3
Trichloroethylene	TCE	0.52
Vinyl Chloride	VC	0.022

LEGEND

- PROJECT BOUNDARY
- SOIL MEETS MECP TABLE 2 SCS
- SOIL EXCEEDS MECP TABLE 2 SCS
- NOT SAMPLED
- BH-1 — BOREHOLE NO. & LOCATION
- BH/MW-8 — MONITORING WELL NO. & LOCATION
- TP-1 — TEST PIT NO. & LOCATION
- BH/MW-5 PM — MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

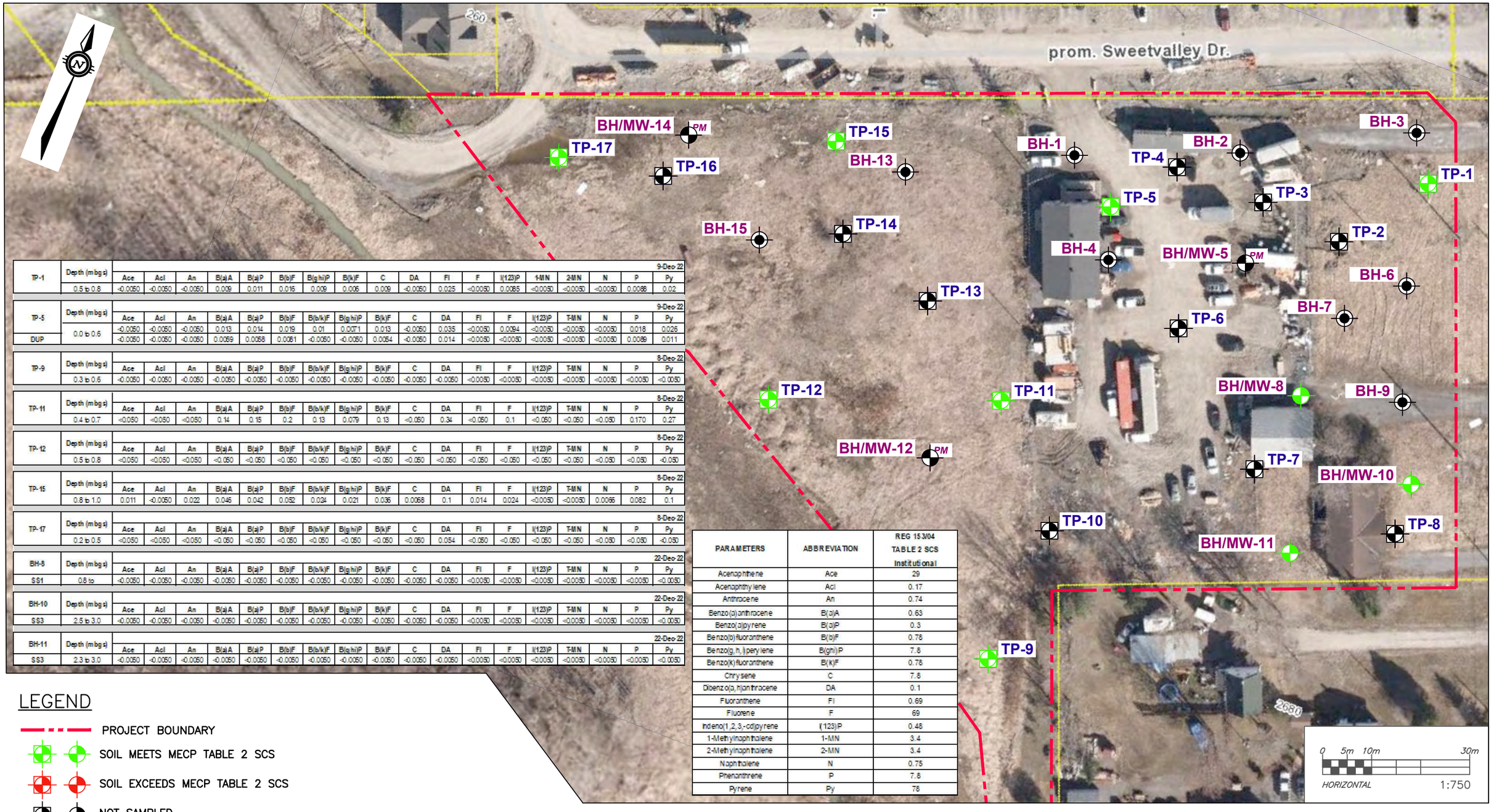
exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0
SCALE	1:750
SKETCH NO	FIG 7

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

SOIL ANALYTICAL RESULTS
PHC AND VOC

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:33 PM Last Plotted: Feb 3, 2023 3:38 PM Plotted by: SeverA



TP-1	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	1-MN	2-MN	N	P	Py
		9-Dec-22																	
	0.5 to 0.8	<0.0050	<0.0050	<0.0050	0.009	0.011	0.016	0.009	0.006	0.009	<0.0050	0.025	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	0.0086	0.02

TP-5	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		9-Dec-22																	
	0.0 to 0.6	<0.0050	<0.0050	<0.0050	0.013	0.014	0.019	0.01	0.0071	0.013	<0.0050	0.035	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	0.016	0.026
DUP		<0.0050	<0.0050	<0.0050	0.0059	0.0058	0.0081	<0.0050	<0.0050	0.0054	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0089	0.011

TP-9	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		8-Dec-22																	
	0.3 to 0.6	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

TP-11	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		8-Dec-22																	
	0.4 to 0.7	<0.050	<0.050	<0.050	0.14	0.15	0.2	0.13	0.079	0.13	<0.050	0.34	<0.050	0.1	<0.050	<0.050	<0.050	0.170	0.27

TP-12	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		8-Dec-22																	
	0.5 to 0.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

TP-15	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		8-Dec-22																	
	0.8 to 1.0	0.011	<0.0050	0.022	0.045	0.042	0.052	0.024	0.021	0.036	0.0068	0.1	0.014	0.024	<0.0050	<0.0050	0.0065	0.082	0.1

TP-17	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		8-Dec-22																	
	0.2 to 0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.054	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

BH-8	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		22-Dec-22																	
SS1	0.8 to	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

BH-10	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		22-Dec-22																	
SS3	2.5 to 3.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

BH-11	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(g,h,i)P	B(k)F	C	DA	Fl	F	I(1,2,3)P	T-MN	N	P	Py
		22-Dec-22																	
SS3	2.3 to 3.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Acenaphthene	Ace	29
Acenaphthylene	Acl	0.17
Anthracene	An	0.74
Benzo(a)anthracene	B(a)A	0.63
Benzo(a)pyrene	B(a)P	0.3
Benzo(b)fluoranthene	B(b)F	0.78
Benzo(g,h,i)perylene	B(ghi)P	7.8
Benzo(k)fluoranthene	B(k)F	0.78
Chrysene	C	7.8
Dibenzo(a,h)anthracene	DA	0.1
Fluoranthene	Fl	0.69
Fluorene	F	69
Indeno(1,2,3,-cd)pyrene	I(123)P	0.48
1-Methylnaphthalene	1-MN	3.4
2-Methylnaphthalene	2-MN	3.4
Naphthalene	N	0.75
Phenanthrene	P	7.8
Pyrene	Py	78

LEGEND

- PROJECT BOUNDARY
- SOIL MEETS MECP TABLE 2 SCS
- SOIL EXCEEDS MECP TABLE 2 SCS
- NOT SAMPLED
- BH-1 — BOREHOLE NO. & LOCATION
- BH/MW-8 — MONITORING WELL NO. & LOCATION
- TP-1 — TEST PIT NO. & LOCATION
- BH/MW-5 PM — MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

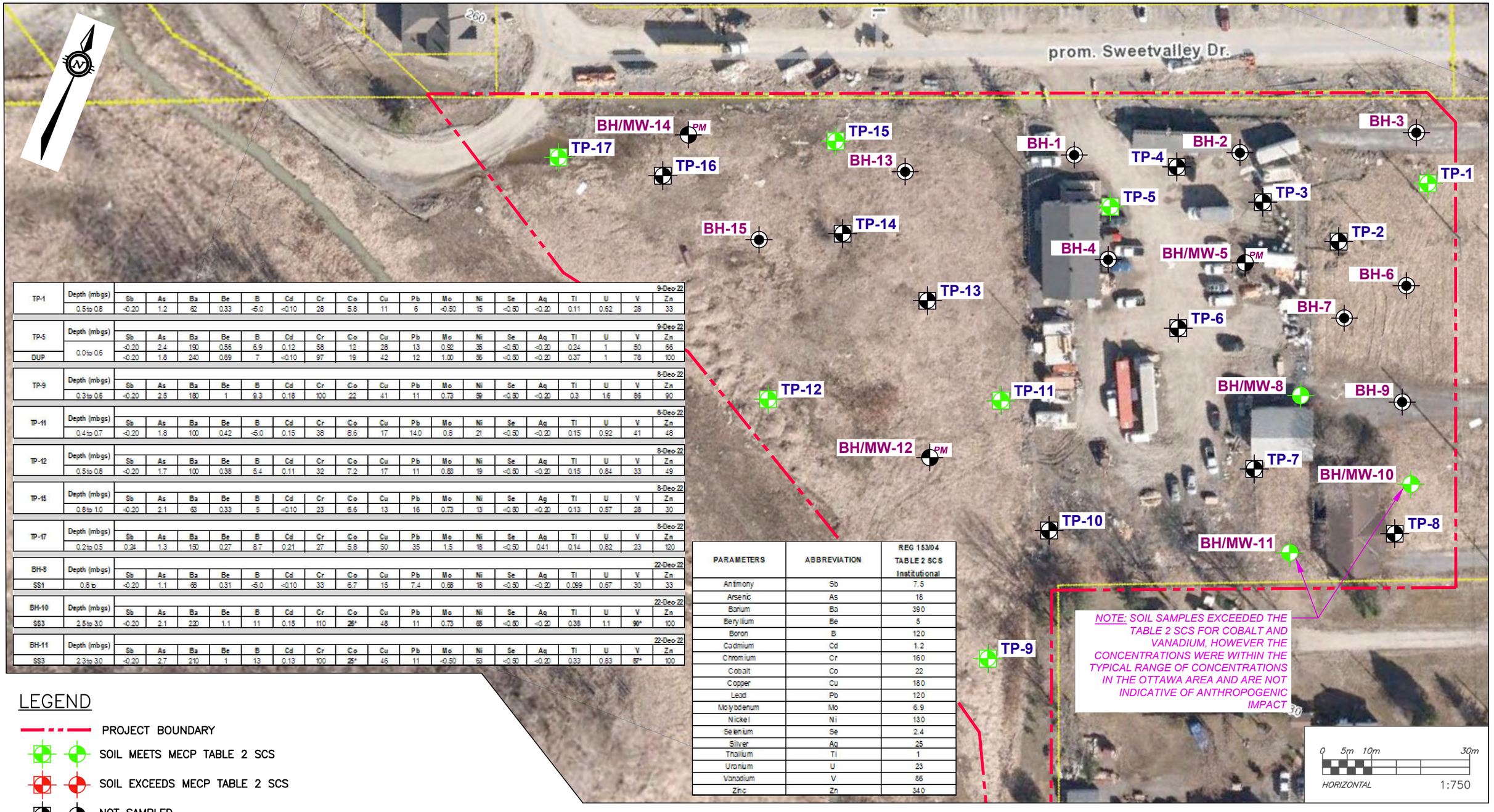
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

SOIL ANALYTICAL RESULTS
PAH

SCALE 1:750

SKETCH NO FIG 8

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:33 PM Last Plotted: Feb 3, 2023 3:39 PM Plotted by: SeverA



TP-1	Depth (mbgs)																		9-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.5 to 0.8	<0.20	1.2	62	0.33	<5.0	<0.10	28	5.8	11	6	<0.50	15	<0.50	<0.20	0.11	0.62	28	33
TP-5	Depth (mbgs)																		9-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.0 to 0.6	<0.20	2.4	190	0.56	6.9	0.12	58	12	28	13	0.92	35	<0.50	<0.20	0.24	1	50	66
DUP		<0.20	1.8	240	0.69	7	<0.10	97	19	42	12	1.00	55	<0.50	<0.20	0.37	1	78	100
TP-9	Depth (mbgs)																		8-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.3 to 0.6	<0.20	2.5	180	1	9.3	0.18	100	22	41	11	0.73	59	<0.50	<0.20	0.3	1.6	86	90
TP-11	Depth (mbgs)																		8-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.4 to 0.7	<0.20	1.8	100	0.42	<5.0	0.15	38	8.6	17	14.0	0.8	21	<0.50	<0.20	0.15	0.92	41	48
TP-12	Depth (mbgs)																		8-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.5 to 0.8	<0.20	1.7	100	0.38	5.4	0.11	32	7.2	17	11	0.63	19	<0.50	<0.20	0.15	0.84	33	49
TP-15	Depth (mbgs)																		8-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.6 to 1.0	<0.20	2.1	63	0.33	5	<0.10	23	5.6	13	16	0.73	13	<0.50	<0.20	0.13	0.57	28	30
TP-17	Depth (mbgs)																		8-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
	0.2 to 0.5	0.34	1.3	150	0.27	8.7	0.21	27	5.8	50	35	1.5	18	<0.50	0.41	0.14	0.82	23	120
BH-8	Depth (mbgs)																		22-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
SS1	0.8 to	<0.20	1.1	66	0.31	<5.0	<0.10	33	6.7	15	7.4	0.66	18	<0.50	<0.20	0.099	0.67	30	33
BH-10	Depth (mbgs)																		22-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
SS3	2.5 to 3.0	<0.20	2.1	220	1.1	11	0.15	110	25*	48	11	0.73	65	<0.50	<0.20	0.38	1.1	90*	100
BH-11	Depth (mbgs)																		22-Dec-22
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn
SS3	2.3 to 3.0	<0.20	2.7	210	1	13	0.13	100	25*	46	11	<0.50	63	<0.50	<0.20	0.33	0.83	87*	100

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Antimony	Sb	7.5
Arsenic	As	18
Barium	Ba	390
Beryllium	Be	5
Boron	B	120
Cadmium	Cd	1.2
Chromium	Cr	160
Cobalt	Co	22
Copper	Cu	180
Lead	Pb	120
Molybdenum	Mo	6.9
Nickel	Ni	130
Selenium	Se	2.4
Silver	Ag	25
Thallium	Tl	1
Uranium	U	23
Vanadium	V	86
Zinc	Zn	340

LEGEND

- PROJECT BOUNDARY
- SOIL MEETS MECP TABLE 2 SCS
- SOIL EXCEEDS MECP TABLE 2 SCS
- NOT SAMPLED
- BH-1 — BOREHOLE NO. & LOCATION
- BH/MW-8 — MONITORING WELL NO. & LOCATION
- TP-1 — TEST PIT NO. & LOCATION
- BH/MW-5 PM — MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

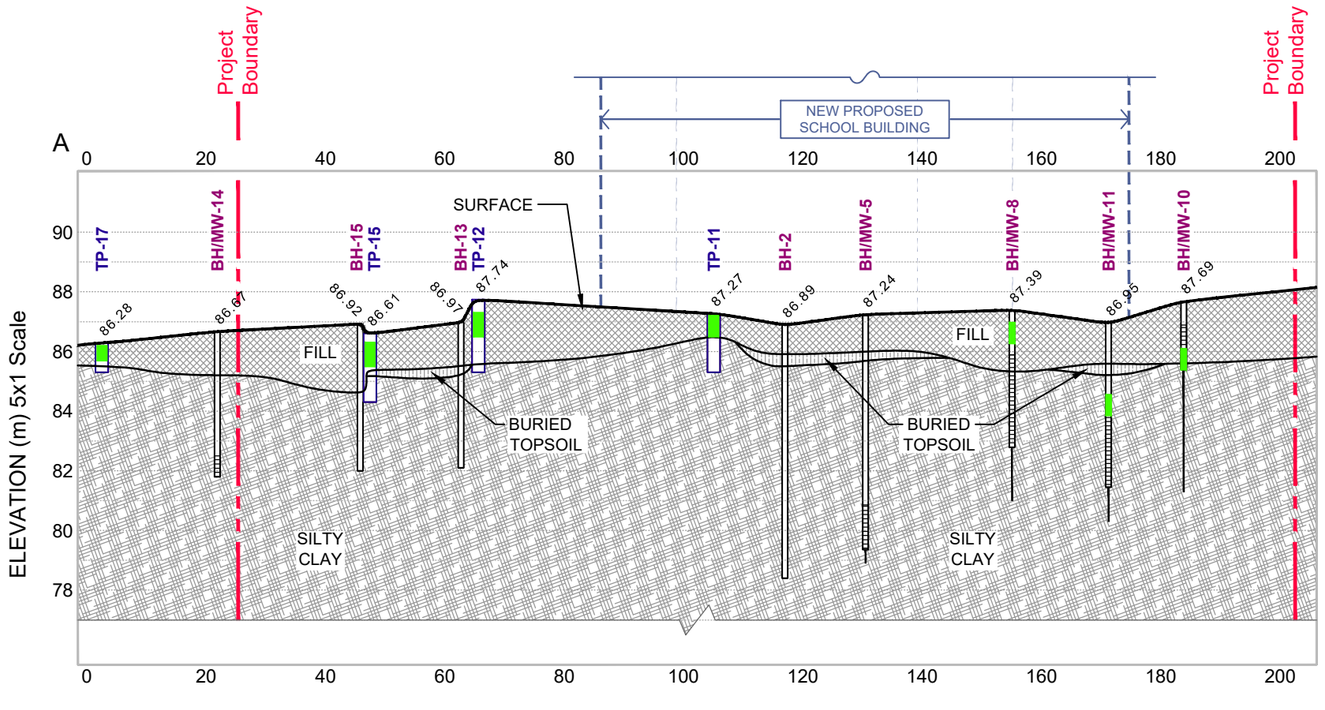
DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

SOIL ANALYTICAL RESULTS
METALS

SCALE 1:750
SKETCH NO FIG 9

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:40 PM Last Plotted: Feb 3, 2023 3:40 PM Plotted by: SeverA



CROSS SECTION A-A'

TP-1	Depth (mbgs)																9-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.5 to 0.8	<0.0060	<0.020	<0.010	<0.020	<10	<10	54	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-5	Depth (mbgs)																9-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.0 to 0.6	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019
DUP		<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-9	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.3 to 0.6	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-11	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.4 to 0.7	<0.0060	<0.020	<0.010	<0.020	<10	<10	64	78	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-12	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.5 to 0.8	<0.0060	<0.020	<0.010	<0.020	<10	<10	54	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

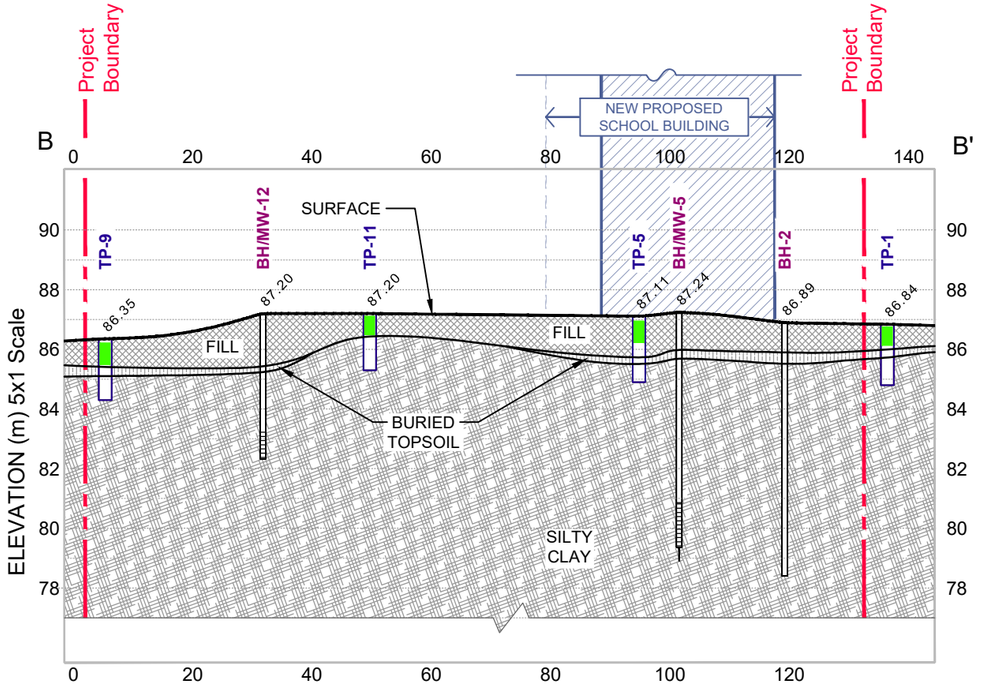
TP-15	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.8 to 1.0	<0.0060	<0.020	<0.010	<0.020	<10	<10	71	78	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

TP-17	Depth (mbgs)																8-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	0.2 to 0.5	<0.0060	<0.020	<0.010	<0.020	<10	<10	150	1700	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

BH-8	Depth (mbgs)																22-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SS1	0.8 to	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

BH-10	Depth (mbgs)																22-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SS3	2.5 to 3.0	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019

BH-11	Depth (mbgs)																22-Dec-22
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
SS3	2.3 to 3.0	<0.0060	<0.020	<0.010	<0.020	<10	<10	<50	<50	<0.040	<0.049	<0.040	<0.040	<0.040	<0.040	<0.010	<0.019



CROSS SECTION B-B'

LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN

- SOIL CONCENTRATION MEETS MECP TABLE 2 SCS
- SOIL CONCENTRATION EXCEEDS MECP TABLE 2 SCS

** SOIL SAMPLES COMPARED TO MECP TABLE 2 SCS FOR MEDIUM-FINE GRAINED SOIL, INSTITUTIONAL USE*

- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Benzene	B	0.17
Toluene	T	6
Ethylbenzene	E	1.6
Total Xylenes	X	25
F1	F1 (C6-C10)	25
F2	F2 (C10-C16)	10
F3	F3 (C16-C34)	240
F4	F4 (C34-C50)	120
1,1-Dichloroethane	1,1-DCA	0.6
1,2-Dichloroethane	1,2-DCA	0.05
1,1-Dichloroethylene	1,1-DCE	0.05
Cis-1,2-Dichloroethylene	c-1,2-DCE	2.5
Trans-1,2-Dichloroethylene	t-1,2-DCE	0.75
Tetrachloroethylene	PCE	2.3
Trichloroethylene	TCE	0.52
Vinyl Chloride	VC	0.022

0 10m 20m 40m

HORIZONTAL 1:1000

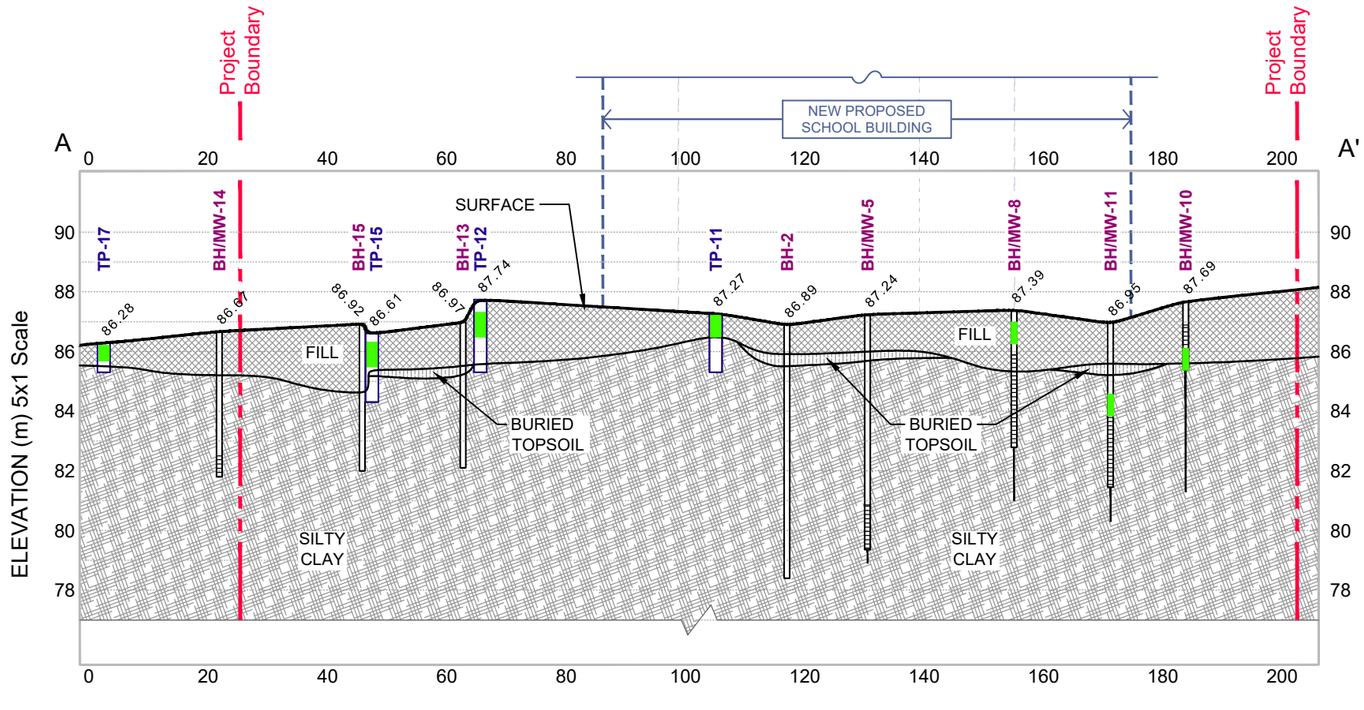
exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0
SCALE	1:1,000
SKETCH NO	FIG 10

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTIONS: A–A', B–B'
SOIL – PHC & VOC

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:40 PM Last Plotted: Feb 3, 2023 3:40 PM Plotted by: SeverA



HORIZONTAL DISTANCE (m) Scale as indicated

CROSS SECTION A-A'

	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	N	P	Py
																				8-Dec-22
TP-1	0.5 to 0.8	<0.0050	<0.0050	<0.0050	0.009	0.011	0.016	0.009	0.006	0.009	<0.0050	0.025	<0.0050	0.0085	<0.0050	<0.0050	<0.0050	<0.0050	0.0088	0.02
																				8-Dec-22
TP-5	0.0 to 0.5	<0.0050	<0.0050	<0.0050	0.013	0.014	0.019	0.01	0.0071	0.013	<0.0050	0.035	<0.0050	0.0044	<0.0050	<0.0050	<0.0050	<0.0050	0.018	0.025
DUP		<0.0050	<0.0050	<0.0050	0.0059	0.0058	0.0081	<0.0050	<0.0050	0.0054	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0089	0.011
																				8-Dec-22
TP-8	0.3 to 0.6	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
																				8-Dec-22
TP-11	0.4 to 0.7	<0.050	<0.050	<0.050	0.14	0.15	0.2	0.13	0.079	0.13	<0.050	0.34	<0.050	0.1	<0.050	<0.050	<0.050	<0.050	0.170	0.27

LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN

- SOIL CONCENTRATION MEETS MECP TABLE 2 SCS
- SOIL CONCENTRATION EXCEEDS MECP TABLE 2 SCS

** SOIL SAMPLES COMPARED TO MECP TABLE 2 SCS FOR MEDIUM-FINE GRAINED SOIL, INSTITUTIONAL USE*

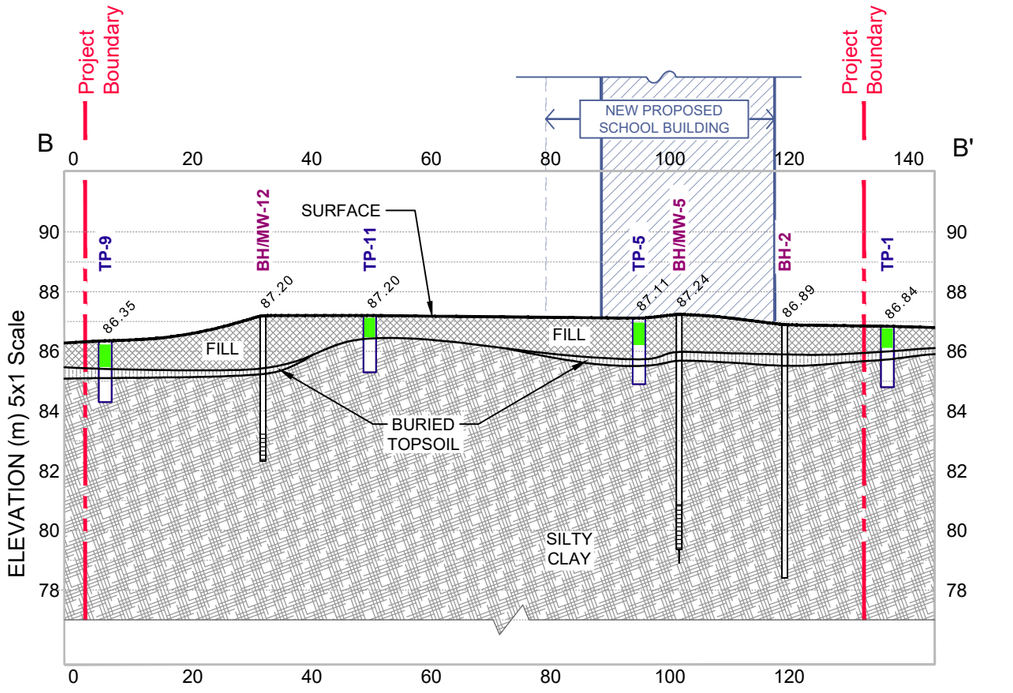
- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Acenaphthene	Ace	29
Acenaphthylene	Acl	0.17
Anthracene	An	0.74
Benz(a)anthracene	B(a)A	0.63
Benzo(a)pyrene	B(a)P	0.3
Benzo(b)fluoranthene	B(b)F	0.78
Benzo(g,h,i)perylene	B(ghi)P	7.8
Benzo(k)fluoranthene	B(k)F	0.78
Chrysene	C	7.8
Dibenz(a,h)anthracene	DA	0.1
Fluoranthene	Fl	0.69
Fluorene	F	69
Indeno(1,2,3,-cd)pyrene	I(123)P	0.48
1-Methylnaphthalene	1-MN	34
2-Methylnaphthalene	2-MN	34
Naphthalene	N	0.75
Phenanthrene	P	7.8
Pyrene	Py	78

0 10m 20m 40m

HORIZONTAL 1:1000

	Depth (mbgs)	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
																			8-Dec-22
TP-12	0.5 to 0.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
																			8-Dec-22
TP-15	0.8 to 1.0	0.011	<0.0050	0.022	0.046	0.042	0.052	0.024	0.021	0.036	0.068	0.1	0.014	0.024	<0.0050	<0.00150	0.0066	0.082	0.1
																			8-Dec-22
TP-17	0.2 to 0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.054	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
																			22-Dec-22
BH-8		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SS1	0.8 to	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150
																			22-Dec-22
BH-10		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SS8	2.5 to 3.0	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150
																			22-Dec-22
BH-11		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(b/k)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	T-MN	N	P	Py
SS8	2.3 to 3.0	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150	<0.0050	<0.0050	<0.00150



HORIZONTAL DISTANCE (m) Scale as indicated

CROSS SECTION B-B'

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

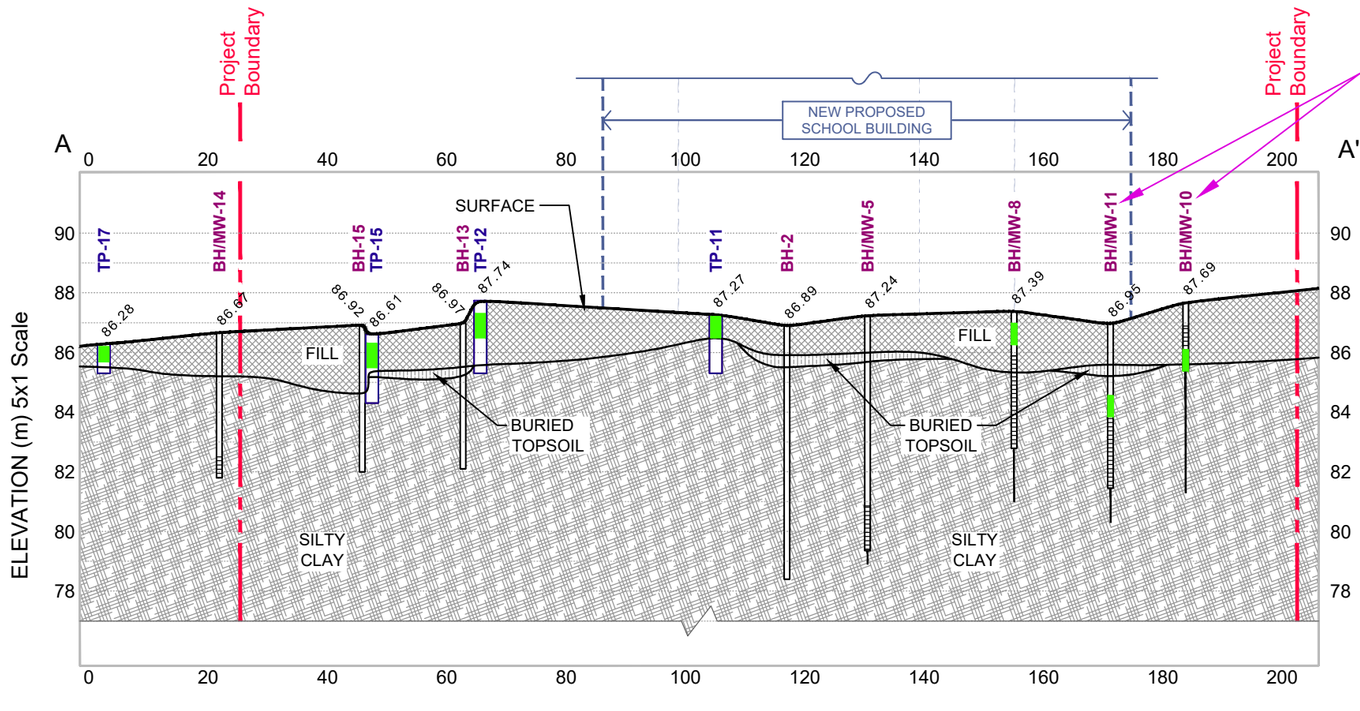
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTIONS: A–A', B–B'
SOIL – PAH

SCALE 1:1,000

SKETCH NO FIG 11

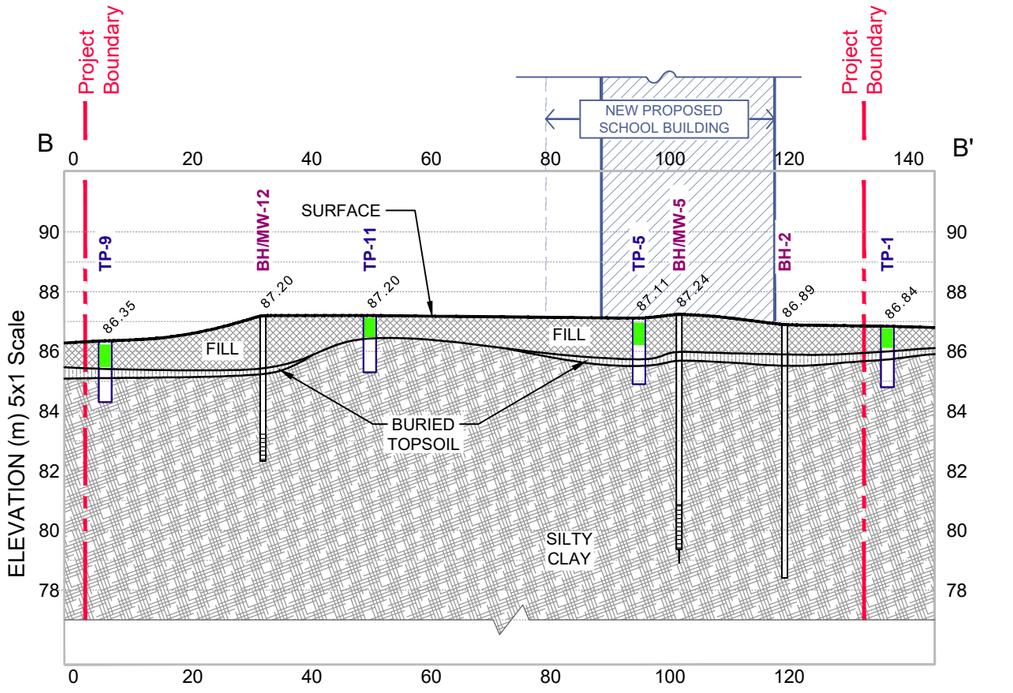
Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:41 PM Last Plotted: Feb 3, 2023 3:41 PM Plotted by: SeverA



CROSS SECTION A-A'

NOTE: SOIL SAMPLES EXCEEDED THE TABLE 2 SCS FOR COBALT AND VANADIUM, HOWEVER THE CONCENTRATIONS WERE WITHIN THE TYPICAL RANGE OF CONCENTRATIONS IN THE OTTAWA AREA AND ARE NOT INDICATIVE OF ANTHROPOGENIC IMPACT

	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn	
TP-12	0.5 to 0.8	<0.20	1.7	100	0.38	5.4	0.11	32	7.2	17	11	0.83	19	<0.50	<0.20	0.15	0.84	33	49	8-Dec-22
TP-16	0.8 to 1.0	<0.20	2.1	63	0.33	5	<0.10	23	6.6	13	16	0.73	13	<0.50	<0.20	0.13	0.57	28	30	8-Dec-22
TP-17	0.2 to 0.5	0.24	1.3	190	0.27	8.7	0.21	27	5.8	50	35	1.5	18	<0.50	0.41	0.14	0.82	23	120	8-Dec-22
BH-8	0.8 to	<0.20	1.1	68	0.31	<5.0	<0.10	33	6.7	15	7.4	0.68	18	<0.50	<0.20	0.099	0.67	30	33	22-Dec-22
SS1																				
BH-10	2.5 to 3.0	<0.20	2.1	220	1.1	11	0.15	110	28*	48	11	0.73	65	<0.50	<0.20	0.38	1.1	90*	100	22-Dec-22
SS8																				
BH-11	2.3 to 3.0	<0.20	2.7	210	1	13	0.13	100	26*	46	11	<0.50	63	<0.50	<0.20	0.33	0.83	87*	100	22-Dec-22
SS6																				



CROSS SECTION B-B'

	Depth (mbgs)	Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Ag	Tl	U	V	Zn	
TP-1	0.5 to 0.8	<0.20	1.2	62	0.33	<5.0	<0.10	28	5.8	11	6	<0.50	15	<0.50	<0.20	0.11	0.62	28	33	8-Dec-22
TP-6	0.0 to 0.6	<0.20	2.4	100	0.56	6.9	0.12	38	12	28	13	0.92	35	<0.50	<0.20	0.24	1	50	66	8-Dec-22
DUP		<0.20	1.8	240	0.69	7	<0.10	97	19	42	12	1.00	56	<0.50	<0.20	0.37	1	78	100	
TP-9	0.3 to 0.6	<0.20	2.3	180	1	9.3	0.18	100	22	41	11	0.73	59	<0.50	<0.20	0.3	1.6	86	90	8-Dec-22
TP-11	0.4 to 0.7	<0.20	1.8	100	0.42	<5.0	0.15	38	8.6	17	14.0	0.8	21	<0.50	<0.20	0.15	0.92	41	48	8-Dec-22

LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN

- SOIL CONCENTRATION MEETS MECP TABLE 2 SCS
- SOIL CONCENTRATION EXCEEDS MECP TABLE 2 SCS

** SOIL SAMPLES COMPARED TO MECP TABLE 2 SCS FOR MEDIUM-FINE GRAINED SOIL, INSTITUTIONAL USE*

- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Antimony	Sb	7.5
Arsenic	As	18
Barium	Ba	390
Beryllium	Be	5
Boron	B	120
Cadmium	Cd	1.2
Chromium	Cr	160
Cobalt	Co	22
Copper	Cu	180
Lead	Pb	120
Molybdenum	Mo	6.9
Nickel	Ni	130
Selenium	Se	2.4
Silver	Ag	25
Thallium	Tl	1
Uranium	U	23
Vanadium	V	86
Zinc	Zn	340

0 10m 20m 40m

HORIZONTAL 1:1000

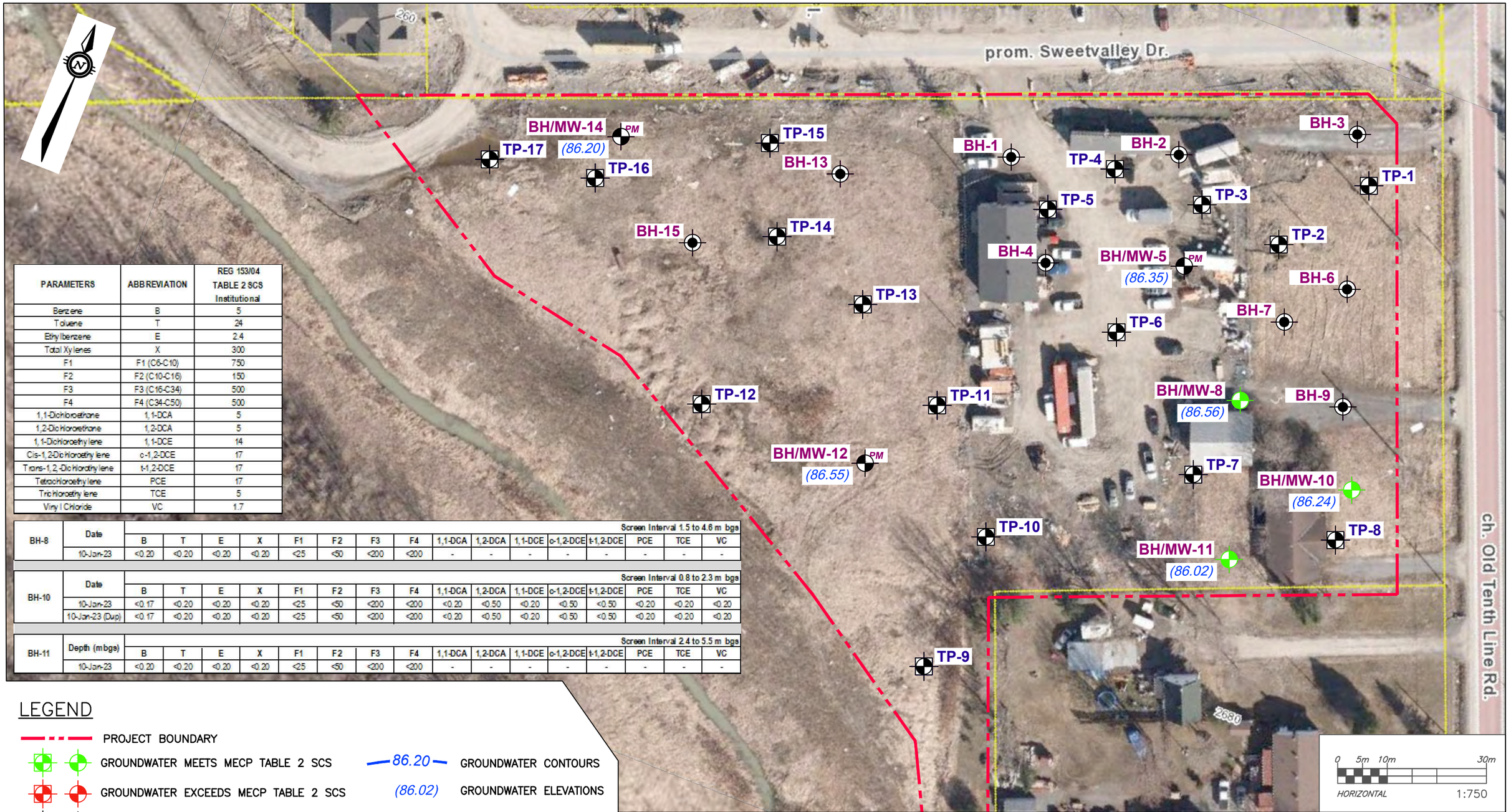
exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0
SCALE	1:1,000
SKETCH NO	FIG 12

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTIONS: A–A', B–B'
SOIL – METALS

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:41 PM Last Plotted: Feb 3, 2023 3:41 PM Plotted by: SeverA



PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Benzene	B	5
Toluene	T	24
Ethylbenzene	E	2.4
Total Xylenes	X	300
F1	F1 (C6-C10)	750
F2	F2 (C10-C16)	150
F3	F3 (C16-C34)	500
F4	F4 (C34-C50)	500
1,1-Dichloroethane	1,1-DCA	5
1,2-Dichloroethane	1,2-DCA	5
1,1-Dichloroethylene	1,1-DCE	14
Cis-1,2-Dichloroethylene	c-1,2-DCE	17
Trans-1,2-Dichloroethylene	t-1,2-DCE	17
Tetrachloroethylene	PCE	17
Trichloroethylene	TCE	5
Vinyl Chloride	VC	1.7

BH-8	Date	Screen Interval 1.5 to 4.6 m bgs															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	10-Jan-23	<0.20	<0.20	<0.20	<0.20	<25	<50	<200	<200	-	-	-	-	-	-	-	-

BH-10	Date	Screen Interval 0.8 to 2.3 m bgs															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	10-Jan-23	<0.17	<0.20	<0.20	<0.20	<25	<50	<200	<200	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
	10-Jan-23 (Dup)	<0.17	<0.20	<0.20	<0.20	<25	<50	<200	<200	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

BH-11	Depth (mbgs)	Screen Interval 2.4 to 5.5 m bgs															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	o-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	10-Jan-23	<0.20	<0.20	<0.20	<0.20	<25	<50	<200	<200	-	-	-	-	-	-	-	-

LEGEND

- PROJECT BOUNDARY
- GROUNDWATER MEETS MECP TABLE 2 SCS
- GROUNDWATER EXCEEDS MECP TABLE 2 SCS
- NOT SAMPLED
- 86.20 — GROUNDWATER CONTOURS
- (86.02) GROUNDWATER ELEVATIONS
- BH-1 BOREHOLE NO. & LOCATION
- BH/MW-8 MONITORING WELL NO. & LOCATION
- TP-1 TEST PIT NO. & LOCATION
- BH/MW-5 PM MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

GROUNDWATER ANALYTICAL RESULTS
PHC AND VOC

SCALE 1:750

SKETCH NO FIG 13

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:41 PM Last Plotted: Feb 3, 2023 3:42 PM Plotted by: SeverA

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Acenaphthene	Ace	4.1
Acenaphthylene	Acl	1
Anthracene	An	2.4
Benzo(a)anthracene	B(a)A	1
Benzo(a)pyrene	B(a)P	0.01
Benzo(b)fluoranthene	B(b)F	0.1
Benzo(ghi)perylene	B(ghi)P	0.2
Benzo(k)fluoranthene	B(k)F	0.1
Chrysene	C	0.1
Dibenzo(a,h)anthracene	DA	0.2
Fluoranthene	Fl	0.41
Fluorene	F	120
Indeno(1,2,3-cd)pyrene	I(123)P	0.2
1-Methylnaphthalene	1-MN	NV
2-Methylnaphthalene	2-MN	NV
Methylnaphthalene, 2-(1-)	T-MN	3.2
Naphthalene	N	11
Phenanthrene	P	1
Pyrene	Py	4.1

BH-10	Date	Screen Interval 0.8 to 2.3 m bgs																	
		Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C	DA	Fl	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py
	10-Jan-23	<0.050	<0.050	<0.050	<0.050	<0.0090	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.071	<0.050	0.05	0.073
	10-Jan-23 (Dup)	<0.050	<0.050	<0.050	<0.050	<0.0090	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.071	<0.050	0.047	0.071

LEGEND

- PROJECT BOUNDARY
- GROUNDWATER MEETS MECP TABLE 2 SCS
- GROUNDWATER EXCEEDS MECP TABLE 2 SCS
- NOT SAMPLED
- BH-1 — BOREHOLE NO. & LOCATION
- TP-1 — TEST PIT NO. & LOCATION
- 86.20 — GROUNDWATER CONTOURS
- (86.02) — GROUNDWATER ELEVATIONS
- BH/MW-8 — MONITORING WELL NO. & LOCATION
- BH/MW-5 PM — MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

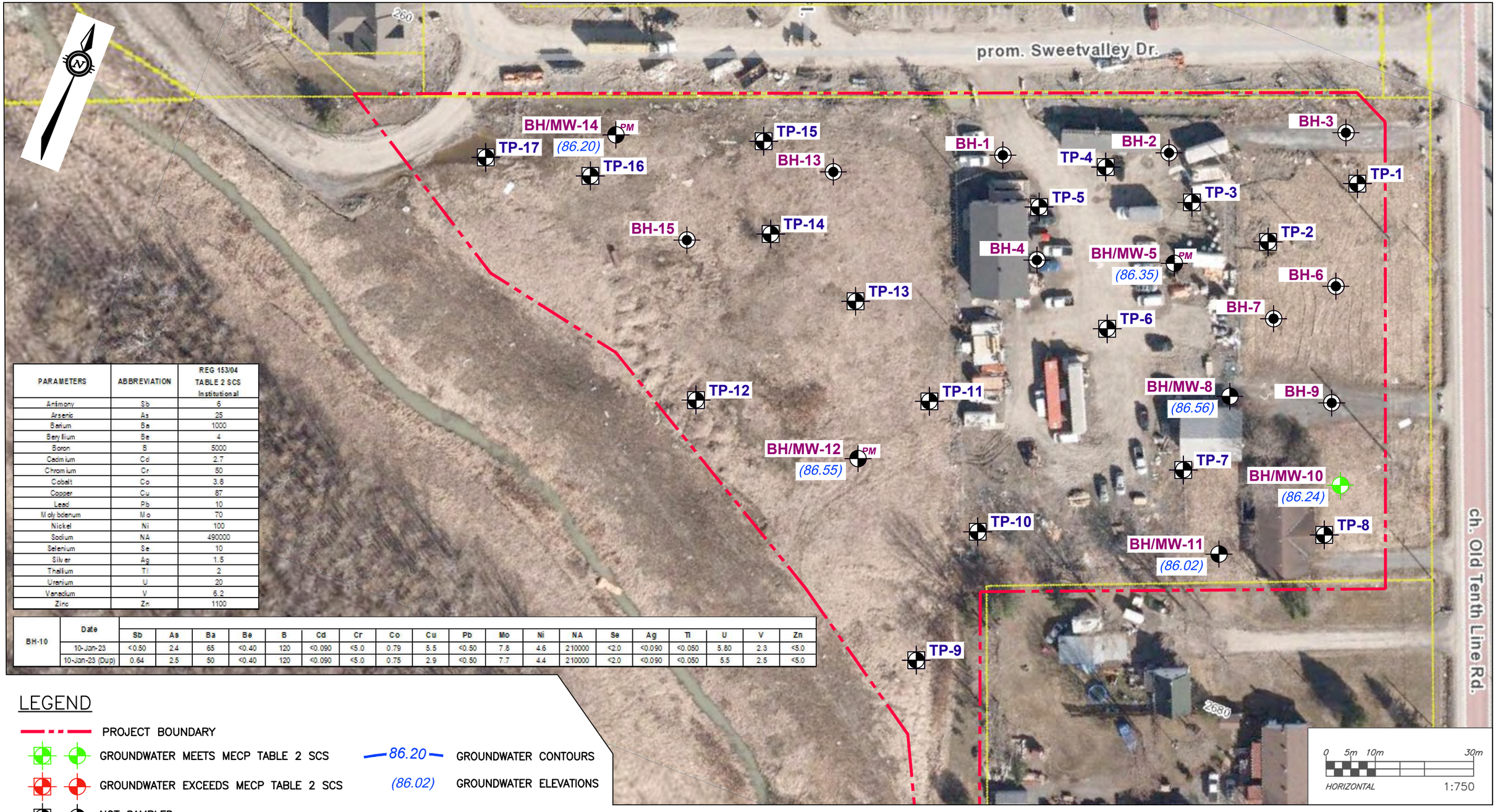
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

GROUNDWATER ANALYTICAL RESULTS
PAH

SCALE 1:750

SKETCH NO FIG 14

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:42 PM Last Plotted: Feb 3, 2023 3:43 PM Plotted by: SeverA



PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Antimony	Sb	6
Arsenic	As	25
Barium	Ba	1000
Beryllium	Be	4
Boron	B	5000
Cadmium	Cd	2.7
Chromium	Cr	50
Cobalt	Co	3.8
Copper	Cu	87
Lead	Pb	10
Molybdenum	Mo	70
Nickel	Ni	100
Sodium	NA	490000
Selenium	Se	10
Silver	Ag	1.5
Thallium	Tl	2
Uranium	U	20
Vanadium	V	6.2
Zinc	Zn	1100

	Date	Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mo	Ni	NA	Se	Ag	Tl	U	V	Zn
BH-10	10-Jan-23	<0.50	2.4	65	<0.40	120	<0.090	<5.0	0.79	5.5	<0.50	7.8	4.6	210000	<2.0	<0.090	<0.050	5.80	2.3	<5.0
	10-Jan-23 (Dup)	0.64	2.5	50	<0.40	120	<0.090	<5.0	0.75	2.9	<0.50	7.7	4.4	210000	<2.0	<0.090	<0.050	5.5	2.5	<5.0

LEGEND

- PROJECT BOUNDARY
- GROUNDWATER MEETS MECP TABLE 2 SCS
- GROUNDWATER EXCEEDS MECP TABLE 2 SCS
- NOT SAMPLED
- 86.20 — GROUNDWATER CONTOURS
- (86.02) GROUNDWATER ELEVATIONS
- BH-1 BOREHOLE NO. & LOCATION
- BH/MW-8 MONITORING WELL NO. & LOCATION
- TP-1 TEST PIT NO. & LOCATION
- BH/MW-5 PM MONITORING WELL (WITH PIEZOMETER) NO. & LOCATION

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

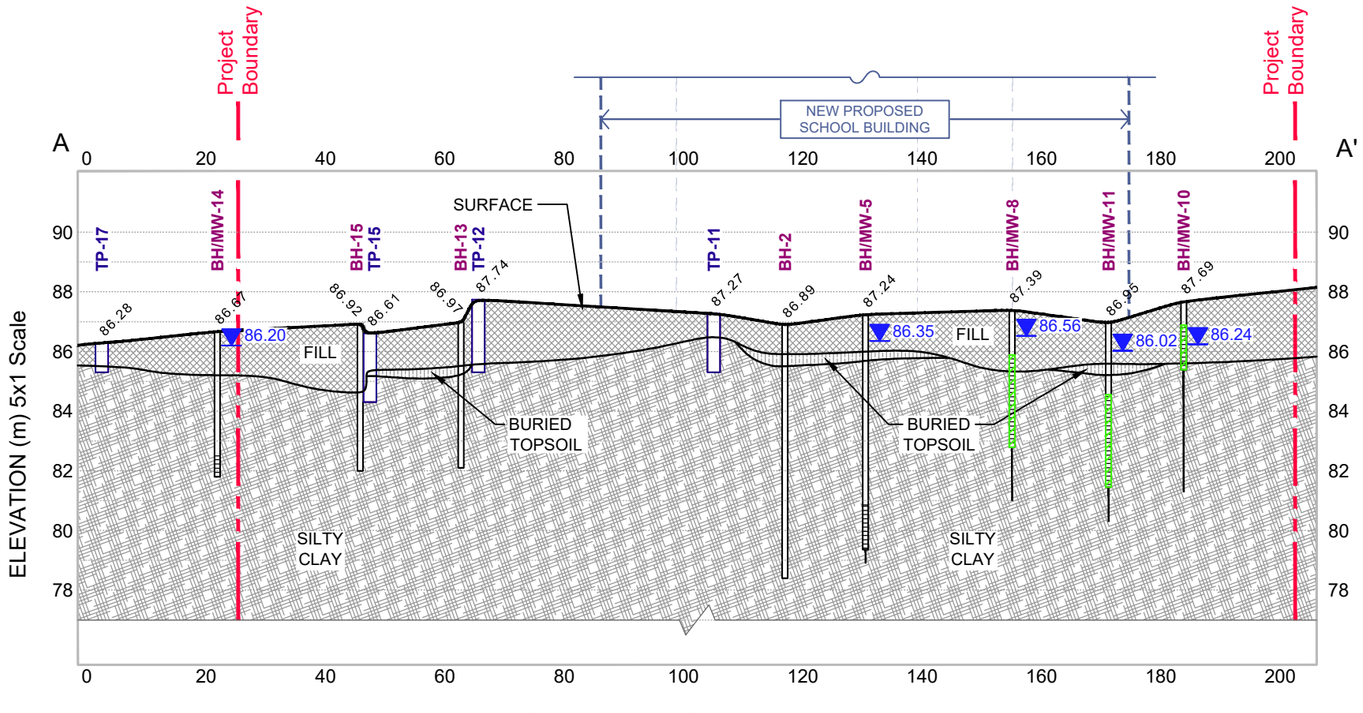
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

GROUNDWATER ANALYTICAL RESULTS METALS

SCALE 1:750

SKETCH NO FIG 14

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Env\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:44 PM Last Plotted: Feb 3, 2023 3:44 PM Plotted by: SeverA



CROSS SECTION A-A'

BH-8	Date	Screen Interval 1.5 to 4.6 m bgs															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	10-Jan-23	<0.20	<0.20	<0.20	<0.20	<25	<50	<200	<200	-	-	-	-	-	-	-	-

BH-10	Date	Screen Interval 0.8 to 2.3 m bgs															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	10-Jan-23	<0.17	<0.20	<0.20	<0.20	<25	<50	<200	<200	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20
	10-Jan-23 (Dup)	<0.17	<0.20	<0.20	<0.20	<25	<50	<200	<200	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.20	<0.20

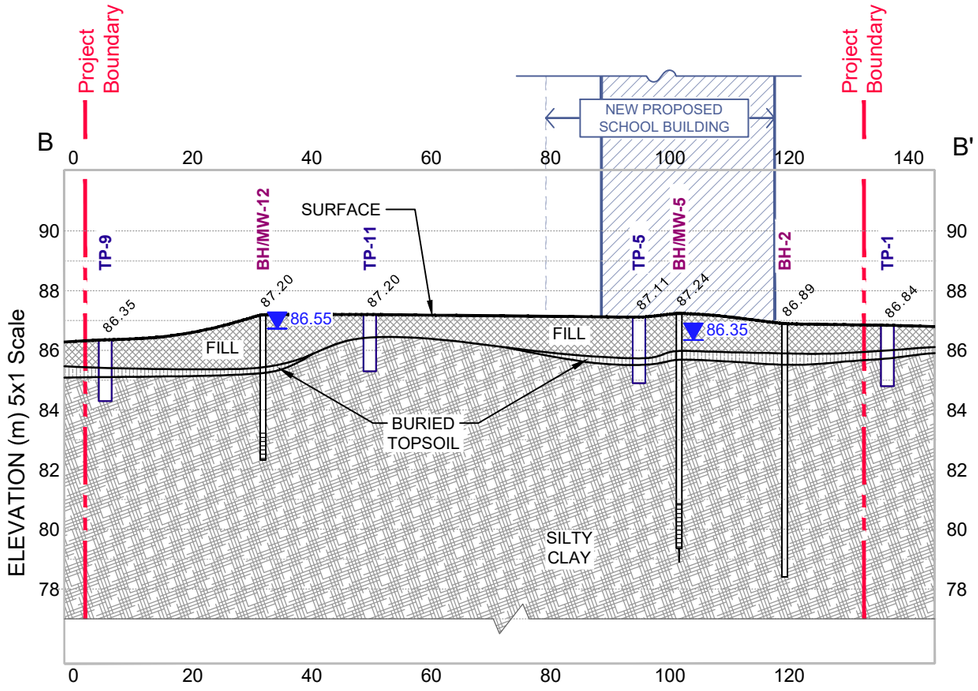
BH-11	Depth (mbgs)	Screen Interval 2.4 to 5.5 m bgs															
		B	T	E	X	F1	F2	F3	F4	1,1-DCA	1,2-DCA	1,1-DCE	c-1,2-DCE	t-1,2-DCE	PCE	TCE	VC
	10-Jan-23	<0.20	<0.20	<0.20	<0.20	<25	<50	<200	<200	-	-	-	-	-	-	-	-

LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN
- 86.00 ▼ GROUNDWATER ELEVATION (FROM JANUARY 10, 2023)
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 2 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 2 SCS
- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Benzene	B	5
Toluene	T	24
Ethylbenzene	E	2.4
Total Xylenes	X	300
F1	F1 (C6-C10)	750
F2	F2 (C10-C16)	150
F3	F3 (C16-C34)	500
F4	F4 (C34-C50)	500
1,1-Dichloroethane	1,1-DCA	5
1,2-Dichloroethane	1,2-DCA	5
1,1-Dichloroethylene	1,1-DCE	14
Cis-1,2-Dichloroethylene	c-1,2-DCE	17
Trans-1,2,-Dichlorothylene	t-1,2-DCE	17
Tetrachloroethylene	PCE	17
Trichloroethylene	TCE	5
Vinyl Chloride	VC	1.7

0 10m 20m 40m
HORIZONTAL 1:1000



CROSS SECTION B-B'

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

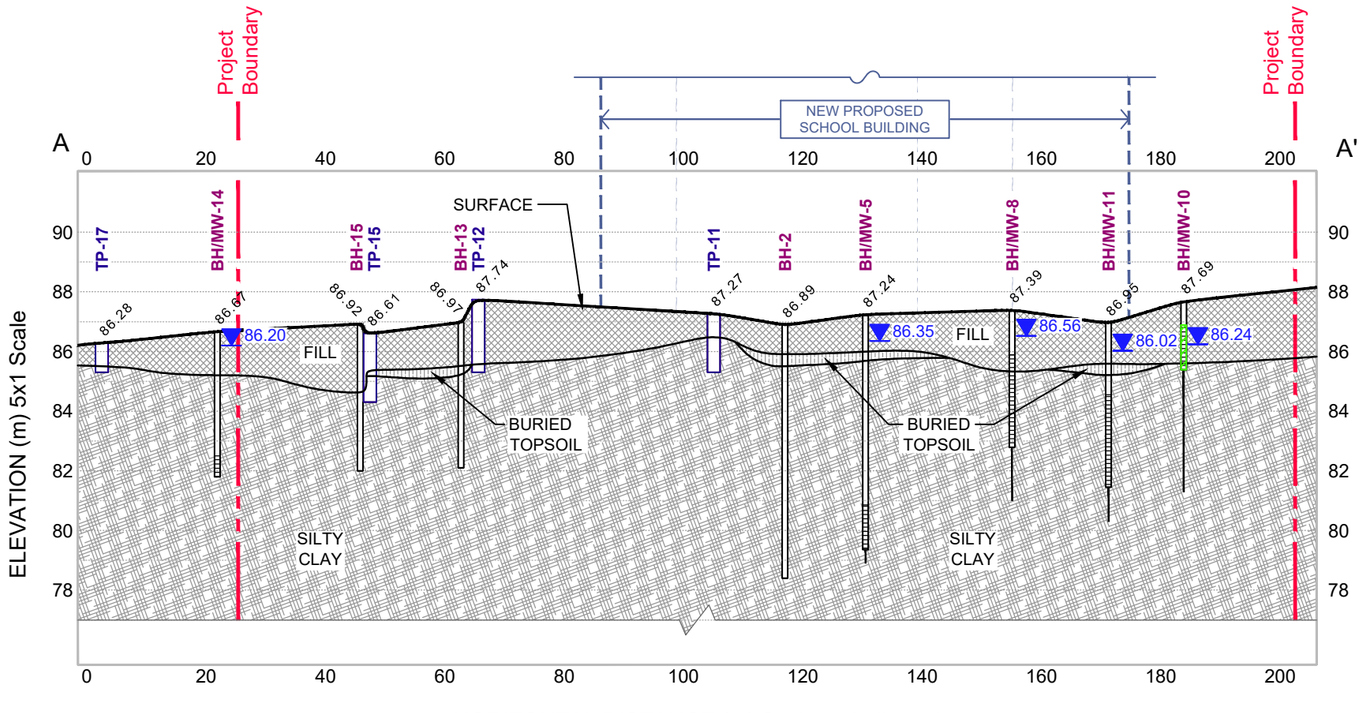
DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTIONS: A–A', B–B'
GROUNDWATER – PHC & VOC

SCALE 1:1,000
SKETCH NO FIG 16

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:44 PM Last Plotted: Feb 3, 2023 3:44 PM Plotted by: SeverA



HORIZONTAL DISTANCE (m) Scale as indicated

CROSS SECTION A-A'

BH-10	Date	Ace	Acl	An	B(a)A	B(a)P	B(b)F	B(ghi)P	B(k)F	C
	10-Jan-23	<0.050	<0.050	<0.050	<0.050	<0.0090	<0.050	<0.050	<0.050	<0.050
	10-Jan-23 (Dup)	<0.050	<0.050	<0.050	<0.050	<0.0090	<0.050	<0.050	<0.050	<0.050

Screen Interval 0.8 to 2.3 m bgs

DA	FI	F	I(123)P	1-MN	2-MN	T-MN	N	P	Py
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.071	<0.050	0.05	0.073
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.071	<0.050	0.047	0.071

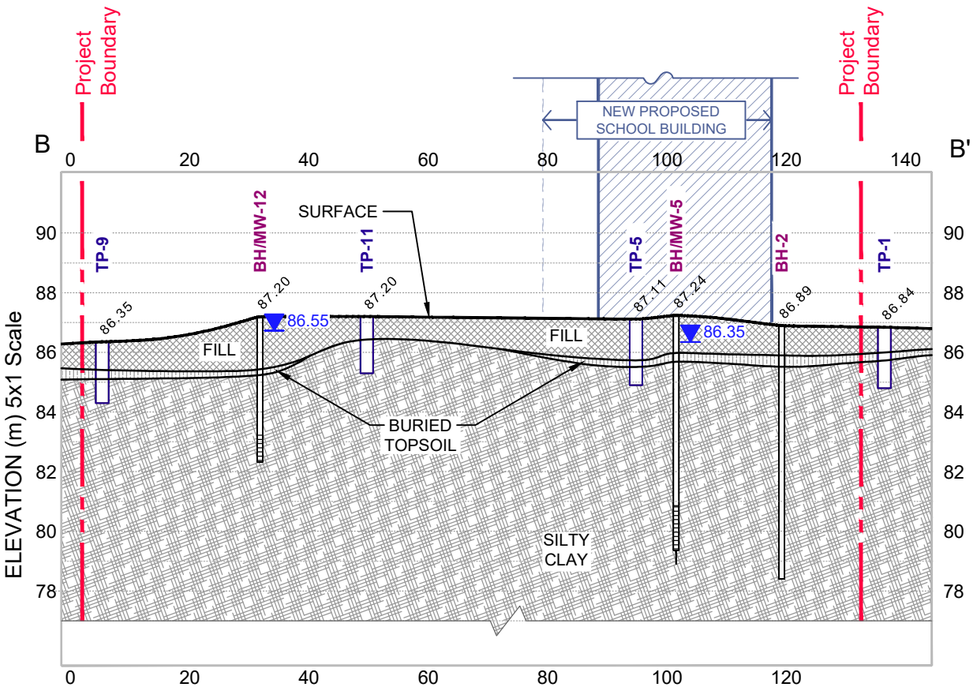
LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN
- 86.00 GROUNDWATER ELEVATION (FROM JANUARY 10, 2023)
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 2 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 2 SCS
- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Acenaphthene	Ace	4.1
Acenaphthylene	Acl	1
Anthracene	An	2.4
Benzo(a)anthracene	B(a)A	1
Benzo(a)pyrene	B(a)P	0.01
Benzo(b)fluoranthene	B(b)F	0.1
Benzo(ghi)perylene	B(ghi)P	0.2
Benzo(k)fluoranthene	B(k)F	0.1
Chrysene	C	0.1
Dibenzo(a,h)anthracene	DA	0.2
Fluoranthene	FI	0.41
Fluorene	F	120
Indeno(1,2,3-cd)pyrene	I(123)P	0.2
1-Methylnaphthalene	1-MN	NV
2-Methylnaphthalene	2-MN	NV
Methylnaphthalene, 2-(1-)	T-MN	3.2
Naphthalene	N	11
Phenanthrene	P	1
Pyrene	Py	4.1

0 10m 20m 40m

HORIZONTAL 1:1000



HORIZONTAL DISTANCE (m) Scale as indicated

CROSS SECTION B-B'

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

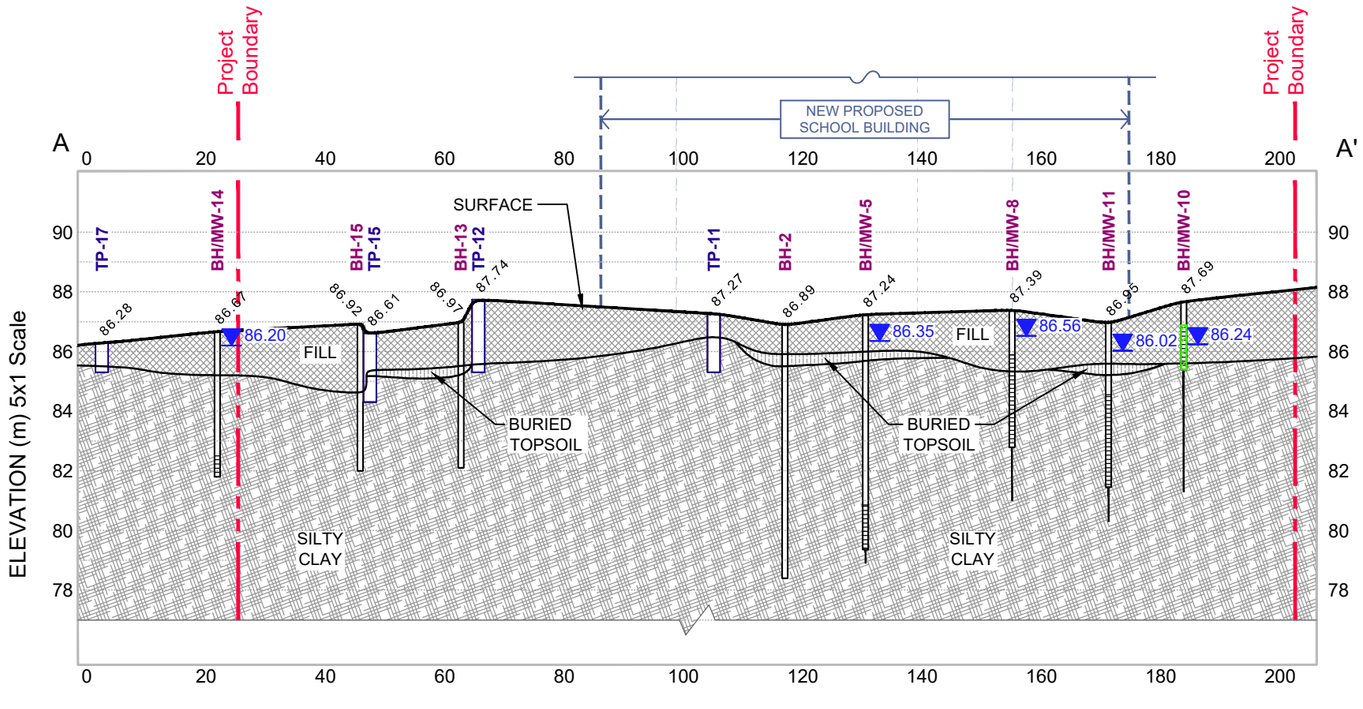
CROSS SECTIONS: A–A', B–B'
GROUNDWATER – PAH

SCALE 1:1,000

SKETCH NO

FIG 17

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:44 PM Last Plotted: Feb 3, 2023 3:45 PM Plotted by: SeverA



CROSS SECTION A-A'

BH-10	Date	Sb	As	Ba	Be	B	Cd	Cr	Co	Cu
	10-Jan-23	<0.50	2.4	65	<0.40	120	<0.090	<5.0	0.79	5.5
	10-Jan-23 (Dup)	0.64	2.5	50	<0.40	120	<0.090	<5.0	0.75	2.9

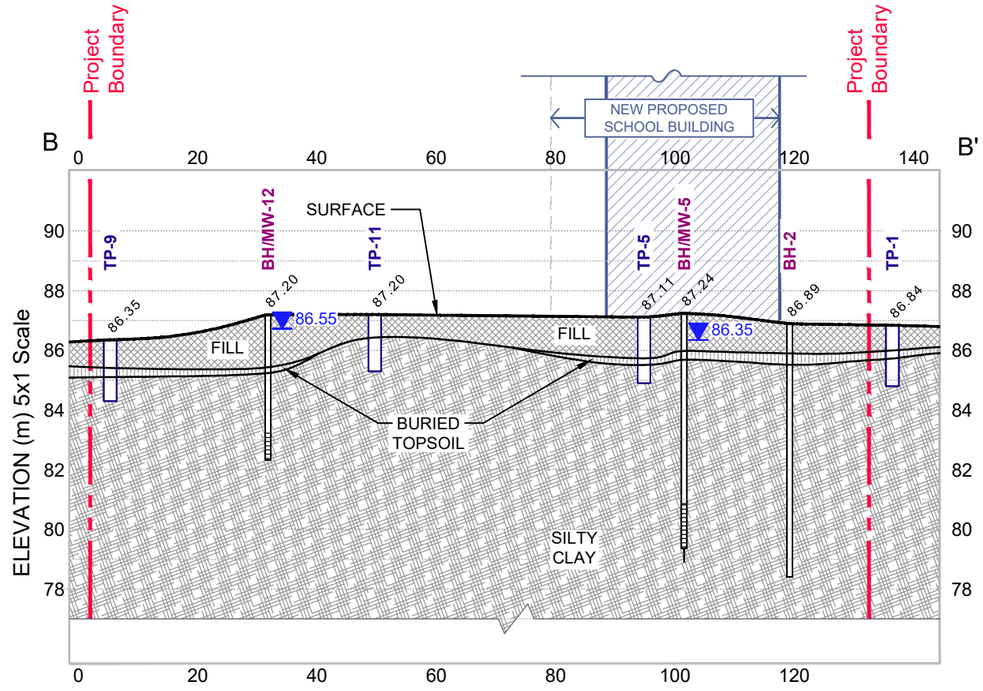
Pb	Mo	Ni	NA	Se	Ag	Tl	U	V	Zn
<0.50	7.8	4.6	210000	<2.0	<0.090	<0.050	5.80	2.3	<5.0
<0.50	7.7	4.4	210000	<2.0	<0.090	<0.050	5.5	2.5	<5.0

LEGEND

- FILL
- BURIED TOPSOIL
- SILTY CLAY
- SCREEN
- 86.00 ▼ GROUNDWATER ELEVATION (FROM JANUARY 10, 2023)
- GROUNDWATER CONCENTRATION MEETS MECP TABLE 2 SCS
- GROUNDWATER CONCENTRATION EXCEEDS MECP TABLE 2 SCS
- PROJECT BOUNDARY
- NEW SCHOOL BUILDING

PARAMETERS	ABBREVIATION	REG 153/04 TABLE 2 SCS Institutional
Antimony	Sb	6
Arsenic	As	25
Barium	Ba	1000
Beryllium	Be	4
Boron	B	5000
Cadmium	Cd	2.7
Chromium	Cr	50
Cobalt	Co	3.8
Copper	Cu	87
Lead	Pb	10
Molybdenum	Mo	70
Nickel	Ni	100
Sodium	NA	490000
Selenium	Se	10
Silver	Ag	1.5
Thallium	Tl	2
Uranium	U	20
Vanadium	V	6.2
Zinc	Zn	1100

0 10m 20m 40m
HORIZONTAL 1:1000



CROSS SECTION B-B'

exp Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6
www.exp.com

DESIGN	LW
DRAWN	AS
DATE	JANUARY 2023
FILE NO	OTT-22017859-A0
SCALE	1:1,000
SKETCH NO	FIG 18

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
NOUVELLE ÉCOLE ÉLÉMENTAIRE CATHOLIQUE AVALON III
SWEETVALLEY DR. AT OLD TENTH LINE RD., OTTAWA, ON

CROSS SECTIONS: A–A', B–B'
GROUNDWATER – METALS

Filename: E:\OTT\OTT-22017859-A0\60 Execution\65 Drawings_Envi\22017859-A0_Ph2-ESA.dwg
Last Saved: Feb 3, 2023 3:44 PM Last Plotted: Feb 3, 2023 3:45 PM Plotted by: SeverA

Appendix B: Survey Plan

SCHEDULE				
AREA (Sq.m.)	PART	LOT	CONCESSION	PIN
17 471	1	PART OF 5	11	PART OF 14563-0547
569	2			

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE:_____

_____
T. HARTWICK
ONTARIO LAND SURVEYOR

PLAN 4R-

RECEIVED AND DEPOSITED
DATE: _____

_____
REPRESENTATIVE FOR LAND REGISTRAR FOR THE LAND TITLES DIVISION OF OTTAWA-CARLETON NO. 4.

PLAN OF SURVEY OF

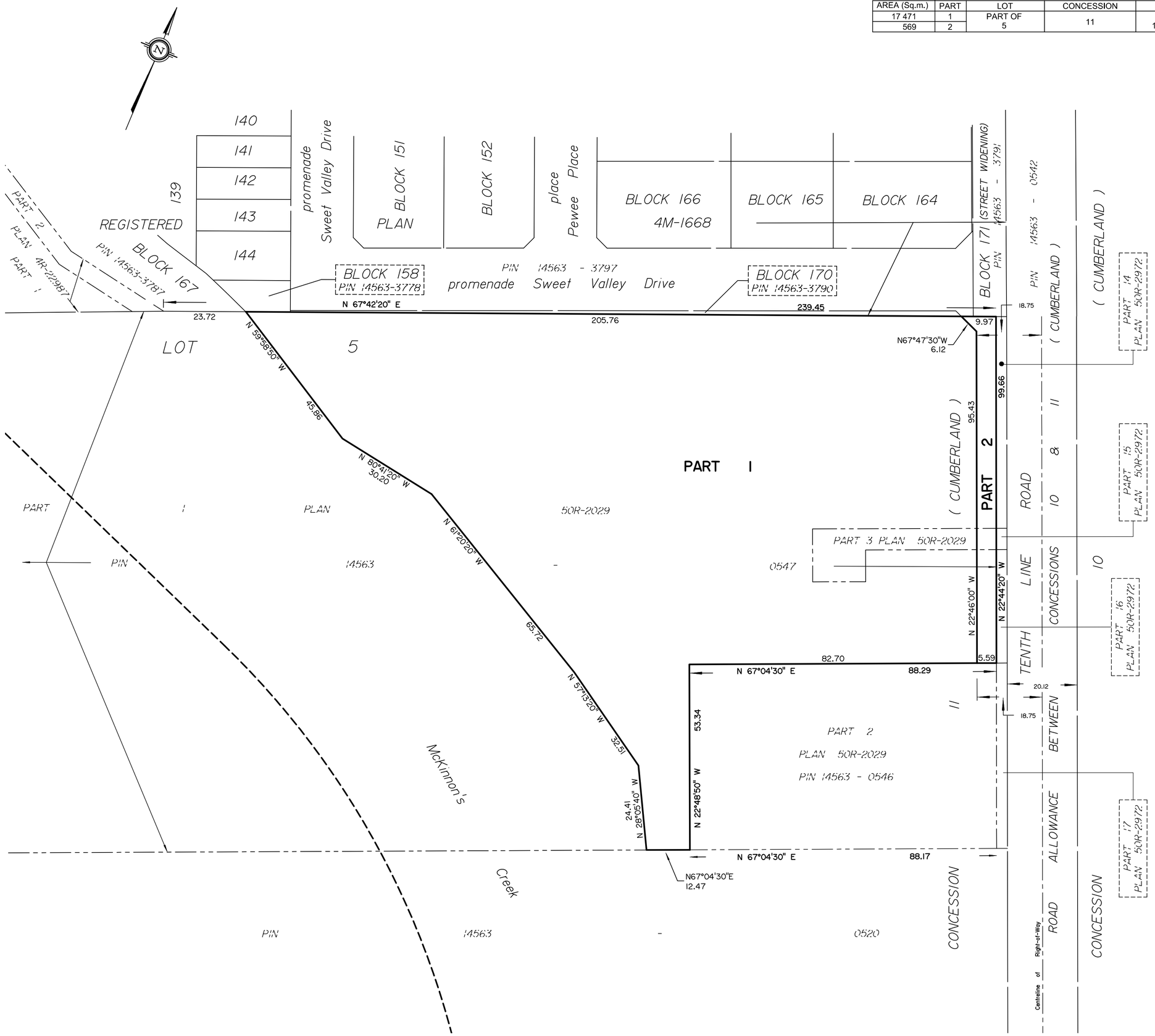
PART OF LOT 5
CONCESSION 11
Geographic Township of Cumberland
CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 750

30 22.5 15 7.5 0 15 30 Metres

Metric

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



Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the Land Titles Act and the regulations made under them.
2. The survey was completed on the __ day of _____, 2022.

_____ Date

_____
T. Hartwick
Ontario Land Surveyor

Notes & Legend

—□—	Denotes	Survey Monument Planted
—■—	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
IB	"	Iron Bar
(WIT)	"	Witness
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
Meas.	"	Measured
(P1)	"	Plan

Distances shown on this plan are ground distances and can be converted to grid distances by multiplying by the combined scale factor of 0.9999xx.

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations on reference points A and B, shown hereon, having a bearing of Nxx°xx'xx"W and are referenced to Specified Control Points 01919680184 and 019198434761, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

Coordinates are derived from Can-Net 2016 Real Time Network GPS observations referenced to Specified Control Points 01919680184 and 019198434761, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

Coordinate values are to urban accuracy in accordance with O. Reg. 216/10.

. 01919680184	Northing	5040610.16	Easting	384736.56
. 019198434761	Northing	5036178.12	Easting	372436.11
. Point A	Northing		Easting	
. Point B	Northing		Easting	

Caution: Coordinates cannot, in themselves, be used to re-establish corners or boundaries shown on this plan.

10

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 22169-22 Claridge Pl Lt 5 Cll CU R Dl | N

Y:\CLARIDGE\Mer Bleue\22169-22_Claridge_Mer Bleue School Site_Rpln_THD\drawings\22169-22 Claridge Pl Lt 5 C11 CU R D1.dwg

Appendix C: Sampling and Analysis Plan

OTT-22017859-A0
2666 Tenth Line Road, Ottawa Ontario

Objectives:

The objective of this project is to assess the soil and groundwater conditions on the site in the areas of potential environmental concern identified in the Phase One ESA completed by EXP to support a site plan application with the City of Ottawa.

Test Pits:

A total of 17 test pits will be excavated on the site.

- Log each sample, describing soil type, colour, staining, odour, petroleum vapour.
- Submit seven samples and one duplicate from the fill material. Sample locations selected with be based on field observations and to provide sit coverage.
- Soil samples to be submitted for analysis of PHC, PAH, VOC, and metals.
- Test pits to be backfilled upon completion.

Drilling:

A total of 15 boreholes will be drilled on the site, three of which will be completed at monitoring wells.

- All monitoring wells to be screened across water table.
- Make sure that no screens straddle bedrock-soil interface. In other words, MW must be installed completely within bedrock or completely within overburden (most, if not all, will be in bedrock).
- As drilling progresses, log each sample, describing soil type, colour, staining, odour, petroleum vapour.
- Submit one worst case soil samples from BH-8, BH-10, and BH-11 based on the following considerations: (1) presence of staining; (2) presence of odours; (3) petroleum vapour concentration. If the worst-case sample cannot be identified based on those factors, submit the sample at water table depth or the sample immediately above bedrock surface.
- Soil samples to be submitted for analysis of PHC, VOC, PAH and/or metals.

Monitor Development:

- Develop wells at least 3 x well volumes or until clear
- Do not purge if monitor contains LNAPL.
- Purged water to be stored in a drum to be collected by a third party

Low Flow Groundwater Sampling

- Monitor all monitoring wells and record petroleum vapours, depth to water, and depth to LNAPL, if any
- Be careful to sample from near top of water table and use low flow rate to avoid collecting any fine sediment
- Prior to sampling, ensure the following field parameters are stable (per the field measurement table): pH, conductivity, turbidity, DO, temperature and ORP
- The groundwater samples will be submitted for analysis of PHC, VOC, PAH and/or metals.
- EXP will survey ground elevations and top of pipe elevations, as well as UTM coordinates

Appendix D: Borehole Logs

Explanation of Terms Used on Borehole Records

SOIL DESCRIPTION

Terminology describing common soil genesis:

Topsoil: Mixture of soil and humus capable of supporting good vegetative growth.

Peat: Fibrous fragments of visible and invisible decayed organic matter.

Fill: Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc.; none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.

Till: The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

Terminology describing soil structure:

Desiccated: having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.

Stratified: alternating layers of varying material or color with the layers greater than 6 mm thick.

Laminated: alternating layers of varying material or color with the layers less than 6 mm thick.

Fissured: material breaks along plane of fracture.

Varved: composed of regular alternating layers of silt and clay.

Slickensided: fracture planes appear polished or glossy, sometimes striated.

Blocky: cohesive soil that can be broken down into small angular lumps which resist further breakdown.

Lensed: inclusion of small pockets of different soil, such as small lenses of sand scattered through a mass of clay; not thickness.

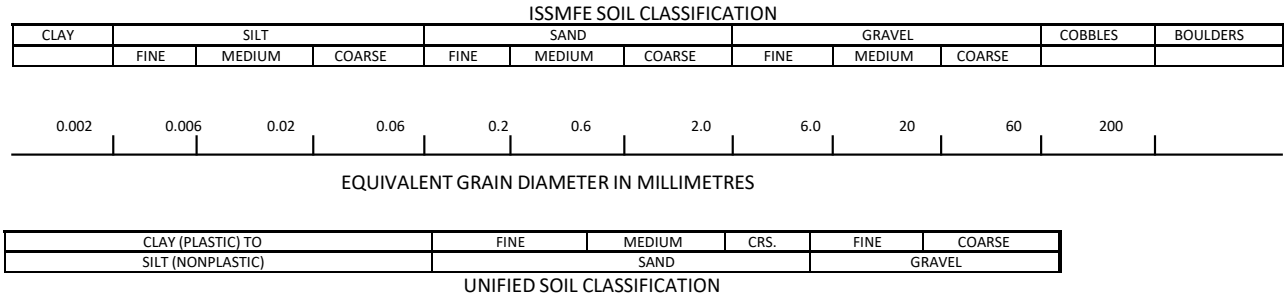
Seam: a thin, confined layer of soil having different particle size, texture, or color from materials above and below.

Homogeneous: same color and appearance throughout.

Well Graded: having wide range in grain sized and substantial amounts of all predominantly on grain size.

Uniformly Graded: predominantly on grain size.

All soil sample descriptions included in this report follow the ASTM D2487-11 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System). The system divides soils into three major categories: (1) coarse grained, (2) fine-grained, and (3) highly organic. The soil is then subdivided based on either gradation or plasticity characteristics. The system provides a group symbol (e.g., SM) and group name (e.g., silty sand) for identification. The classification excludes particles larger than 76 mm. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually in accordance with ASTM D2488-09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems. Others may use different classification systems; one such system is the ISSMFE Soil Classification.



Terminology describing materials outside the USCS, (e.g., particles larger than 76 mm, visible organic matter, construction debris) is based upon the proportion of these materials present and as described below in accordance with Note 16 in ASTM D2488-09a:

Table a: Percent or Proportion of Soil, Pp	
	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5≤Pp≤10%
Little	15≤Pp≤25%
Some	30≤Pp≤45%
Mostly	50≤Pp≤100%

The standard terminology to describe cohesionless soils includes the compactness as determined by the Standard Penetration Test 'N' value:

Table b: Apparent Density of Cohesionless Soil	
	'N' Value (blows/0.3 m)
Very Loose	N<5
Loose	5≤N<10
Compact	10≤N<30
Dense	30≤N<50
Very Dense	50≤N

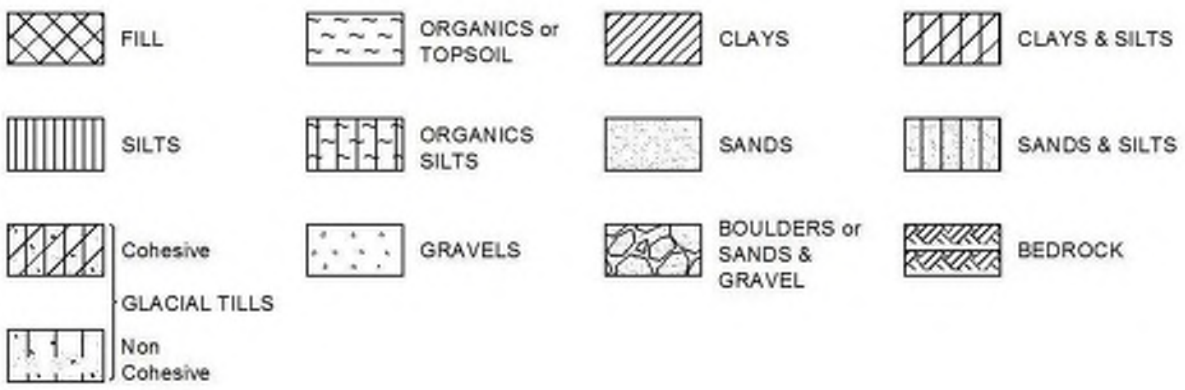
The standard terminology to describe cohesive soils includes consistency, which is based on undrained shear strength as measured by insitu vane tests, penetrometer tests, unconfined compression tests or similar field and laboratory analysis, Standard Penetration Test 'N' values can also be used to provide an approximate indication of the consistency and shear strength of fine grained, cohesive soils:

Table C: Consistency of Cohesive Soil		
Consistency	Vane Shear Measurement (kPa)	'N' Value
Very Soft	<12.5	<2
Soft	12.5-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very Stiff	100-200	15-30
Hard	>200	>30

Note: 'N' Value - The Standard Penetration Test records the number of blows of a 140 pound (64kg) hammer falling 30 inches (760mm), required to drive a 2 inch (50.8mm) O.D. split spoon sampler 1 foot (305mm). For split spoon samples where full penetration is not achieved, the number of blows is reported over the sampler penetration in meters (e.g. 50/0.15).

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols:



WATER LEVEL MEASUREMENT

Log of Test Pit BH-01

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 3

Page. 1 of 3

Date Drilled: 'Dec. 19, 2022

Drill Type: CME-45 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		FILL Sand and gravel, with topsoil inclusions, some clay, moist,	87.14	0			AS1	
				1	10		SS2	
		TOPSOIL Brown, wet (soft)	85.7					
		CLAY Brown, moist, high plasticity (very stiff to hard)	85.3	2	8; 215 kPa		SS3	19.8
					6; 161 kPa; 29 kPa		SS4	18.2
		SILTY CLAY Grey, wet (soft to firm)	84.3	3	4 s = 4		SS5	
				4	29 kPa; s = 3			
				5	Hammer Weight		SS6	
					19 kPa; s = 4			
				6	Hammer Weight	87	SS7	
				7	24 kPa; s - 5			
				8				
				9				
				10				
				11				
				12				

Continued Next Page

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.7	no cave

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	33 - 33.8	0	0
2	33.8 - 34.5	88	
3	34.5 - 36.2	97	
4	36.2 - 37.7	98	

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-01

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Figure No. 3

Page. 2 of 3

GWL	SYMBOL	SOIL DESCRIPTION	Depth Below Ground 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
		SILTY CLAY Grey, wet (soft to firm) *(continued)*	75.14	12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	20 40 60 80 50 100 150 200	250 500 750 20 40 60		

Continued Next Page

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.7	no cave

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	33 - 33.8	0	0
2	33.8 - 34.5	88	
3	34.5 - 36.2	97	
4	36.2 - 37.7	98	

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-01

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Figure No. 3

Page. 3 of 3

Depth Below Ground m	SOIL DESCRIPTION	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
60.74	**SILTY CLAY** Grey, wet (soft to firm) *(continued)*				
54.1	**GLACIAL TILL** Clayey, silty sand with gravel, cobbles and boulders			Run 1	
53.3	**LIMESTONE BEDROCK** Grey			Run 2 Run 3 Run 4	
49.4	**Borehole Terminated at 37.7 m Depth**				

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.7	no cave

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	33 - 33.8	0	0
2	33.8 - 34.5	88	
3	34.5 - 36.2	97	
4	36.2 - 37.7	98	

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-02

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 4

Page. 1 of 1

Date Drilled: 'Dec. 14, 2022

Drill Type: CME-45 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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 Sand and gravel, brown, moist	86.89 / 86.6	0			AS1	
		FILL Sand and gravel, with topsoil inclusions, some clay, moist,	85.9	1	10		SS2	19.6
		TOPSOIL Brown, wet (soft)	85.5					
		SILTY CLAY Brown, moist (very stiff to hard)	84.8	2	10 / 161 kPa		SS3	19.1
		CLAY Grey, wet, high plasticity (soft to firm)			47 kPa / 24 kPa		SS4	
				3	Hammer Weight		SS5	
					19 kPa, s = 2.7			
				4				
				5	14 kPa		SH6	
				6	Hammer Weight	90	SS7	
					26 kPa, s = 3.7			
				7				
					Hammer Weight		SS8	
				8	19 kPa, s = 2			
		Borehole Terminated at 8.5 m Depth	78.4					

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	4.6	no cave

CORE DRILLING RECORD

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-03

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 5

Page. 1 of 3

Date Drilled: 'Dec. 16, 2022

Drill Type: CME-45 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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 Sand and gravel, with topsoil inclusions, brown, moist	86.81	0			AS1	
			86.0					
		TOPSOIL Brown, wet (soft)	85.6	1	9 ○ 215 kPa ▲	×	SS2	
		SILTY CLAY Brown, moist (stiff to hard)		2	8 ○ 215 kPa ▲	×	SS3	17.8
			84.2		2 ○ 80 kPa ▲	×	SS4	
		SILTY CLAY Grey, wet (soft to firm)		3	24 kPa + 1s = 3.3 ○	×	SS5	
				4	19 kPa + s = 4			
				5	Hammer Weight ○ 14 kPa + s = 3	85 ×	SS6	
				6				
				7	34 kPa + s = 3.5		SH7	
				8	Hammer Weight ○ 29 kPa + s = 4	×	SS8	
			78.3	9				
		Dynamic Cone Penetration Test (DCPT) Conducted from 9 m depth to cone refusal at 36.1 m depth		10				
				11				
				12				

Continued Next Page

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.0	no cave

CORE DRILLING RECORD

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

Log of Test Pit BH-03

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Figure No. 5

GWL	SYMBOL	SOIL DESCRIPTION	Depth Below Ground 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
		Dynamic Cone Penetration Test (DCPT) Conducted from 9 m depth to cone refusal at 36.1 m depth *(continued)*	74.81		20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60		

Continued Next Page

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.0	no cave

CORE DRILLING RECORD

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

Log of Test Pit BH-03

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Figure No. 5

GWL	SYMBOL	SOIL DESCRIPTION	Depth Below Ground m	Depth
		Dynamic Cone Penetration Test (DCPT) Conducted from 9 m depth to cone refusal at 36.1 m depth *(continued)*	60.41	27 28 29 30 31 32 33 34 35 36
		Cone Refusal at 36.3 m Depth	50.5	

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/m^3

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.0	no cave

CORE DRILLING RECORD

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

Log of Test Pit BH-05

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 6

Page. 1 of 1

Date Drilled: 'Dec. 15, 2022

Drill Type: CME-45 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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 I—○
Undrained Triaxial at % Strain at Failure ⊕
Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Depth Below Ground 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
		FILL Sand and gravel, with topsoil inclusions, some clay, moist,	87.24	0			AS1	
			86.0	1	6		SS2	
		TOPSOIL Brown, wet (soft)	85.7					
		SILTY CLAY Brown, moist (very stiff to hard)		2	9; 215 kPa		SS3	19.2
			84.6		6; 80 kPa; 24 kPa; s = 5		SS4; SH5	17.3
		CLAY Grey, wet, high plasticity (soft to firm)		3				
				4	14 kPa; s = 3			
				5	Hammer Weight; 14 kPa; s = 3		SS6	
				6	Hammer Weight		SS7	
				7	19 kPa; s = 2.7			
				8	Hammer Weight; 24 kPa; s = 3.3		SS8	
			78.7					
		Borehole Terminated at 8.5 m Depth						

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. A 19 mm diameter standpipe was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	4.6	no cave

CORE DRILLING RECORD

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-06

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 7

Page. 1 of 1

Date Drilled: 'Dec. 14, 2022

Drill Type: CME-45 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		FILL Sand and gravel, with topsoil inclusions, some clay, moist,	86.94	0			AS1	
			85.7	1	9		SS2	19.8
		SILTY CLAY Brown, moist (very stiff to hard)		2	7; 188 kPa		SS3	19.0
			84.5		47 kPa		SS4	
		SILTY CLAY Grey, wet (very soft to firm)		3	29 kPa; 2; s = 4		SS5	
				4	19 kPa; s = 4			
				5	Hammer Weight; 14 kPa; s = 6	83	SS6	
				6	Hammer Weight	86	SS7	
				7	14 kPa; s = 3			
				8	Hammer Weight; 10 kPa; s = 2		SS8	
		Borehole Terminated at 8.5 m Depth	78.4					

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.0	no cave

CORE DRILLING RECORD

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-07

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 8

Page. 1 of 1

Date Drilled: 'Dec. 14, 2022

Drill Type: CME-45 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		FILL Sand and gravel, with topsoil inclusions, some clay, moist,	86.94	0			AS1	
				1	11		SS2	
				2	9		SS3	
			84.8					
		SILTY CLAY Brown, moist (firm to stiff)	84.3		4		SS4	
		SILTY CLAY Grey, wet (soft to firm)		3	29 kPa; 2 s = 4		SS5	
				4	24 kPa; s = 3.3			
				5	1; 19 kPa; s = 4		SS6	
				6	Hammer Weight	86	SS7	
				7	19 kPa; s = 4			
				8	Hammer Weight; 29 kPa; s = 1.5		SS8	
			78.4					
		Borehole Terminated at 8.5 m Depth						

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	3.0	no cave

CORE DRILLING RECORD

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-08

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 9

Page. 1 of 1

Date Drilled: 'Dec. 22, 2022

Drill Type: CME-75 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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 Sand and gravel, brown, moist	87.39	0			AS1	
		FILL Sand and gravel, with topsoil inclusions, some clay, moist,	87.1	1	48		SS1	
				2	8		SS2	
		CLAY Brown, moist, high plasticity (stiff to very stiff)	85.3	2	9	114 kPa	SS3	18.6
		CLAY Grey, wet, high plasticity (soft to firm)	84.5	3	50 kPa, s = 5			
					Hammer Weight		SS4	
				5	34 kPa, s = 7			
					Hammer Weight		SS5	
				6	24 kPa			
		Borehole Terminated at 6.4 m Depth	81.0					

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. A 50 mm diameter monitoring well was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)
Upon Completion	no water	no cave

CORE DRILLING RECORD

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-10

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 10

Page. 1 of 1

Date Drilled: 'Dec. 22, 2022

Drill Type: CME-75 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		TOPSOIL ~150 mm thick	87.69	0				
		FILL Sand, trace gravel, brown, damp to wet (loose)	87.5				AS1	
				1	11		SS1	
					6		SS2	
			85.6	2				
		SILTY CLAY Brown, moist (stiff)			8 94 kPa		SS3	21.2
				3	100 kPa s = 6.7			
			84.3					
		SILTY CLAY Grey, wet (soft to firm)			Hammer Weight		SS4	
				5	24 kPa			
					Hammer Weight	95	SS5	
				6	29 kPa			
			81.3					
		Borehole Terminated at 6.4 m Depth						

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. A 50 mm diameter monitoring well was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-11

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 11

Page. 1 of 1

Date Drilled: 'Dec. 22, 2022

Drill Type: CME-75 Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		RECYCLED ASPHALT PAVEMENT ~150 mm thick	86.95 86.8	0			AS1	
		FILL Silty clay with gravel and topsoil inclusions, dark brown, moist, no odours or stains		1	11		SS1	
			85.6					
		TOPSOIL Brown, wet (soft)	85.2	2	7		SS2	19.9
		SILTY CLAY Black to brown, moist (stiff to very stiff)			5 94 kPa		SS3	18.4
			84.0	3	60 kPa s = 12			
		SILTY CLAY Grey, wet (soft to firm)			Hammer Weight		SS4	
				5	24 kPa			
					Hammer Weight		SS5	
				6			SH1	
			80.3					
		Borehole Terminated at 6.7 m Depth						

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. A 50 mm diameter monitoring well was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH-12

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 12

Page. 1 of 1

Date Drilled: 'Dec. 21, 2022

Drill Type: CME-55LC Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		TOPSOIL ~300 mm thick With plastic and asphalt scrap	87.22 86.9	0	3	×	SS1	
		FILL Silty clay with topsoil inclusions, brown and grey, moist,		1	11	×	SS2	18.5
			85.4	2	8	161 kPa ▲ ×	SS3	
		TOPSOIL Dark brown, wet (soft)	85.2					
		SILTY CLAY Brown, moist (very stiff to hard)		3	7 94 kPa ▲ >120 kPa +	×	SS4	18.3
			83.8					
		SILTY CLAY Grey, wet (soft to firm)			Hammer Weight	×	SS5	
			82.3		24 kPa + s = 10			
		Borehole Terminated at 4.9 m Depth						

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. A 19 mm diameter standpipe was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH13

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 13

Page. 1 of 1

Date Drilled: 'Dec. 21, 2022

Drill Type: CME-55LC Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		FILL Silty sand with gravel, some clay, topsoil inclusions, brown and grey, moist,	86.97	0	13	×	SS1	
				1	15	×	SS2	
			85.5					
		TOPSOIL Dark brown, wet (soft)	85.2	2	9 — 107 kPa	×	SS3	19.7
		SILTY CLAY Brown, moist (very stiff)			6 — 107 kPa	×	SS4	18.2
				3	72 kPa, s = 7.5			
			83.6					
		SILTY CLAY Grey, wet (soft to firm)			Hammer Weight	×	SS5	
					24 kPa, s = 20			
			82.1					
		Borehole Terminated at 4.9 m Depth						

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH14

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 14

Page. 1 of 1

Date Drilled: 'Dec. 21, 2022

Drill Type: CME-55LC Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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 I—○
Undrained Triaxial at % Strain at Failure ⊕
Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Depth Below Ground 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
		FILL Silty clay with topsoil inclusions, asphalt scraps, brown, moist,	86.67	0	19		SS1	
				1	8		SS2	
		CLAY Brown, moist, high plasticity (very stiff)	85.2	2	9 80 kPa		SS3	19.3
					4 54 kPa		SS4	19.1
				3	53 kPa s = 8.8			
		SILTY CLAY Grey, wet (soft)	83.3		Hammer Weight		SS5	
					24 kPa			
		Borehole Terminated at 4.9 m Depth	81.8					

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. A 19 mm diameter standpipe was installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit BH15

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Orleans, ON

Figure No. 15

Page. 1 of 1

Date Drilled: 'Dec. 21, 2022

Drill Type: CME-55LC Track Mounted Drill Rig

Datum: Depth Below Ground

Logged by: M.Z. Checked by: I.T.

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	Depth Below Ground 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
		TOPSOIL ~300 mm thick Clayey, with wood scraps	86.92	0	21	×	SS1	
		FILL Silty clay with topsoil inclusions, brown and grey, moist,	86.6	1				
				2	7		SS2	
		SILTY CLAY Brown, moist (stiff)	84.6	3	5 54 kPa 56 kPa s = 7.8	×	SS3	18.4
		SILTY CLAY Grey, wet (soft to firm)	83.5		Hammer Weight	×	SS4	
					26 kPa			
		Borehole Terminated at 4.9 m Depth	82.0					

NOTES:
1. Borehole/Test Pit 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. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT OTT-22017859 - AVALON III - BH LOGS JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-01

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 16

Page. 1 of 1

Date Drilled: 'Dec 9, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		TOPSOIL ~200 mm thick	86.84	0
		FILL Clayey, silty sand with gravel, cobbles, boulders (measured up to 1 m diameter), topsoil inclusions, brown, moist	86.6	
		TOPSOIL	86.0	
		SILTY CLAY Red and brown, moist to wet	85.7	1
		Test Pit Terminated at 2.0 m Depth	84.8	2

Standard Penetration Test N Value: 20 40 60 80
Shear Strength: 50 100 150 200 kPa
Combustible Vapour Reading (ppm): 250 500 750
Natural Moisture Content % / Atterberg Limits (% Dry Weight): 20 40 60

10 ppm — GS1
0 ppm — GS2

Natural Unit Wt. kN/m³

Note:

1) Water seeping in from base of test pit at 2.0 m depth.

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-02

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 17

Page. 1 of 1

Date Drilled: 'Dec 9, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		TOPSOIL ~100 mm thick	87.03	0
		FILL Silty sand with gravel, clay clumps, cobbles and boulders, asphalt scrap, brown, moist	86.9	
		SILTY CLAY Brown, moist	86.0	1
		Test Pit Terminated at 2.2 m Depth	84.8	2

Standard Penetration Test N Value: 20 40 60 80
Shear Strength: 50 100 150 200 kPa
Combustible Vapour Reading (ppm): 250 500 750
Natural Moisture Content % / Atterberg Limits (% Dry Weight): 20 40 60

10 ppm
0 ppm

SAMPLES	Natural Unit Wt. kN/m³
GS1	
GS2	

Note:

1) Water seeping into test pit at 1.0 m depth.
2) cave-in of fill material above 1m depth

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-03

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 18

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		FILL Silty sand with gravel, cobbles, red brick fragments, brown, moist	86.68	0		20 ppm	GS1	
		SILTY CLAY Brown and red to grey, moist	85.9	1		0 ppm	GS2	
		Test Pit Terminated at 2.3 m Depth	84.4	2				

Note:

1) No water seepage or cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-04

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 19

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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 50 mm Crushed Limestone, sand and gravel, grey, moist over geotextile at 0.2 m depth	86.98	0				
			86.8					
		FILL Silty clay with gravel, red brick fragments, moist				0 ppm	GS1	
			85.9	1				
		TOPSOIL	85.7					
		CLAY Reddish brown, moist				0 ppm	GS2	
			85.0	2				
		Test Pit Terminated at 2.0 m Depth						

Note:

1) No water seepage or cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-05

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 20

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		GRANULAR FILL 50 mm Crushed Limestone, sand and gravel, grey, moist	87.11	0
			86.8	
		FILL Silty clay with gravel and sand, concrete boulders, moist		
			85.7	1
		TOPSOIL	85.5	
		CLAY Brown and red to grey, moist		
			84.9	2
		Test Pit Terminated at 2.2 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

5 ppm
0 ppm
0 ppm

SAMPLES	Natural Unit Wt. kN/m³
GS1	
GS2	
GS3	

Note:

1) No water seepage or cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-06

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 21

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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 50 mm Crushed Limestone, sand and gravel, grey, moist	87.04	0				
		FILL Sand and gravel, with boulders, shale fragments, steel reinforcing bar, wood, and brick scraps, moist	86.8			0 ppm	GS1	
		FILL Silty clay with gravel, moist	86.2	1		0 ppm	GS2	
		TOPSOIL	85.8			0 ppm	GS3	
		CLAY Grey, moist	85.5			0 ppm	GS4	
		Test Pit Terminated at 2.0 m Depth	85.0	2				

Note:

1) Test pit is wet at base
2) No cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-07

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 22

Page. 1 of 1

Date Drilled: 'Dec 9, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		RECYCLED ASPHALT PAVEMENT ~ 130 mm thick	86.89	0				
		FILL Silty sand with gravel, moist very thin organic layer less than 5 cm thick at 0.3 m depth	86.8			10 ppm	GS1	
		FILL Silty clay, with gravel, cobbles, asphalt scrap, moist	86.6			0 ppm	GS2	
		TOPSOIL	85.8	1				
		CLAY Brown, moist	85.5			0 ppm	GS3	19.8
		Test Pit Terminated at 2.3 m Depth	84.6	2				

Note:

1) Water seeping into test pit at 1.4 m depth.
2) No cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-08

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 23

Page. 1 of 1

Date Drilled: 'Dec 9, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		TOPSOIL ~ 130 mm thick	87.71	0				
		FILL Clean sand, brown, damp	87.6			0 ppm		GS1
		GEOTEXTILE	87.3					
		CLEAR STONE 19 mm size limestone	87.3					
		FILL Clean sand, brown, damp	87.1	1				
		FILL Silty clay, with cobbles, moist	86.0					
		TOPSOIL	85.7	2		0 ppm		GS2
		CLAY Brown, moist	85.4			0 ppm		GS3
		Test Pit Terminated at 2.6 m Depth	85.1					

Note:

1) No water seepage
2) Fighting cave-in of sand for entire excavation

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-09

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 24

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		TOPSOIL ~200 mm thick	86.35	0	20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60		
			86.2					
		FILL Silty clay with topsoil inclusions, brown, moist				0 ppm □ ×		GS1
			85.4	1				
		TOPSOIL						
			85.1					
		SILTY CLAY Brown, moist				0 ppm □ ×		GS2
			84.3	2				
		Test Pit Terminated at 2.1 m Depth						

Note:

1) No water seepage or cave-in.

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-10

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 25

Page. 1 of 1

Date Drilled: 'Dec 9, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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 50 mm Crushed Limestone, sand and gravel, grey, moist	86.62	0	20 40 60 80 / 50 100 150 200 kPa	250 500 750 / 20 40 60		
			86.4					
		FILL Silty clay with topsoil inclusions, cobbles, garden hose, moist				10 ppm	GS1	
			85.5	1				
		TOPSOIL						
			85.2					
		CLAY Brown, moist				10 ppm	GS2	19.9
			84.6	2				
		Test Pit Terminated at 2.0 m Depth						

Note:

1) No water seepage or cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-11

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 26

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		TOPSOIL ~200 mm thick	87.27	0
		FILL Silty sand with asphalt, concrete and red brick fragments, hub cap, topsoil inclusions, brown, moist	87.1	
		SILTY CLAY Grey, moist	86.5	1
			85.3	2
		Test Pit Terminated at 2.0 m Depth		

Standard Penetration Test N Value: 20 40 60 80
Shear Strength: 50 100 150 200 kPa

Combustible Vapour Reading (ppm): 250 500 750
Natural Moisture Content % Atterberg Limits (% Dry Weight): 20 40 60

10 ppm
5 ppm

SAMPLES	Natural Unit Wt. kN/m³
GS1	
GS2	

Note:

1) Water seepage from 0.4 m depth
2) Slight cave-in of fill layer

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-12

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 27

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		FILL Pile of silty sand with gravel and topsoil inclusions, dark brown	87.74	0	20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60		
						0 ppm	GS1	
			86.4	1				
		FILL Silty clay with gravel, bricks, vinyl siding, and other scrap materials				5 ppm	GS2	
			85.6	2				
		SILTY CLAY grey, moist	85.3			20 ppm	GS3	
		Test Pit Terminated at 2.4 m Depth						

Note:

1) No water seepage in test pit

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-13

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 28

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
					20 40 60 80 / 50 100 150 200 kPa	250 500 750 / 20 40 60		
		TOPSOIL ~ 100mm thick	87.26	0				
		FILL Silty sand with topsoil inclusions, asphalt chunks and brick fragments	87.2			5 ppm	GS1	
			86.6			0 ppm	GS2	
		GRANULAR FILL 50 mm Crushed Limestone, sand and gravel, grey, wet	86.3					
		FILL Silty clay, grey, moist		1		0 ppm	GS3	
			85.5					
		TOPSOIL dark brown, wet, soft	85.3			0 ppm	GS4	
		CLAY Grey, wet	85.1	2				
		Test Pit Terminated at 2.2 m Depth						

Note:

1) No water seepage or cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-14

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 29

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		TOPSOIL ~ 100 mm thick	87.01	0				
		FILL Silty sand, brown, moist	86.9			5 ppm	GS1	
		FILL Silty clay with cobbles, moist	86.3	1		0 ppm	GS2	19.8
		TOPSOIL	85.3			0 ppm	GS3	
		CLAY Grey, moist	85.1	2				
		Test Pit Terminated at 2.2 m Depth	84.8					

Note:

1) Water seeping in from 0.7 m depth
2) No cave-in

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-15

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 30

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		FILL Silty sand with boulder size asphalt and concrete scrap, wood and brick fragments, brown, wet	86.61	0	20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60		
						5 ppm	GS1	
			85.4	1				
		TOPSOIL	85.2					
		CLAY Brown, moist						
				2		5 ppm	GS2	
			84.3					
		Test Pit Terminated at 2.3 m Depth						

Note:

1) Water seeping in from 1.2 m depth
2) Slight cave-in from fill layer

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

WATER LEVEL RECORDS

Elapsed Time	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-16

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 31

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		FILL Silty clay with topsoil inclusions, cobbles and boulders measured up to 1 m diameter, brown, moist	86.73	0	20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60		
						0 ppm	GS1	
		TOPSOIL Saturdated	85.7	1		15 ppm	GS2	
		CLAY Brown, wet	85.4			10 ppm	GS3	19.5
		Test Pit Terminated at 1.5 m Depth	85.2					

Note:

1) Water gushing in from 1.0 m depth filling test pit to 1 m depth

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Log of Test Pit TP-17

Project No: OTT-22017859-A0

Project: Proposed Avalon III School

Location: 2666 Tenth Line Road, Ottawa, ON

Figure No. 32

Page. 1 of 1

Date Drilled: 'Dec 8, 2022

Drill Type: Case 580 Rubber Tire Backhoe

Datum: Geodetic Elevation

Logged by: MZ Checked by: SMP

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
		FILL Clayey silt sand with gravel, topsoil inclusions, household scrap, brown, saturated	86.28	0	20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60		
						5 ppm	GS1	
			85.4					
		CLAY Brown, wet	85.3	1		0 ppm	GS2	19.9
		Test Pit Terminated at 1.0 m Depth						

Note:

1) Water level above ground surface. Samples observed from excavator bucket

NOTES:
1. Borehole/Test Pit data requires Interpretation by exp. before use by others
2. Test pit backfilled upon completion of excavating operation.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. This Figure is to read with exp. Services Inc. report OTT-22017859-A0

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

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

LOG OF TEST PIT TP LOGS - 22017859 - JAN 5, 2023.GPJ TROW OTTAWA.GDT 1/23/23

Appendix E: Analytical Summary Tables

Table 1 - Analytical Results in Soil - PHC and VOC
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Sample ID	UNITS	Provincial		Samples										
		MECP Table 2 Institutional [1]	MECP Table 1 Institutional [2]	TP-1	TP-5	DUP 1 (Duplicate TP-5)	TP-9	TP-11	TP-12	TP-15	TP-17	BH-8 SS1	BH-10 SS3	BH-11 SS3
Sampling Date			**Bold**	**9-Dec-22**	**9-Dec-22**	**9-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**22-Dec-22**	**22-Dec-22**	**22-Dec-22**
Sample Depth (mbgs)				0.5 to 0.8	0.0 to 0.6	0.0 to 0.6	0.3 to 0.6	0.4 to 0.7	0.5 to 0.8	0.8 to 1.0	0.2 to 0.5	0.8 to 0.6	2.5 to 3.0	2.5 to 3.0
Petroleum Hydrocarbons														
F1 PHC (C6-C10)	µg/g	65	25	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 PHC (C10-C16)	µg/g	150	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 PHC (C16-C34)	µg/g	300	240	<50	<50	<50	<50	64	54	71	150	<50	<50	<50
F4 PHC (C34-C50)	µg/g	2800	120	<50	<50	<50	<50	78	<50	78	**1700**	<50	<50	<50
Volatile Organic Compounds														
Acetone	µg/g	28	0.5	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49
Benzene	µg/g	0.17	0.02	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Bromodichloromethane	µg/g	1.9	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Bromoform	µg/g	0.26	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Bromomethane	µg/g	0.05	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Carbon Tetrachloride	µg/g	0.12	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Chlorobenzene	µg/g	2.7	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Chloroform	µg/g	0.18	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Dibromochloromethane	µg/g	2.9	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichlorobenzene	µg/g	1.7	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,3-Dichlorobenzene	µg/g	6	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,4-Dichlorobenzene	µg/g	0.097	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorodifluoromethane	µg/g	25	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1-Dichloroethane	µg/g	0.6	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloroethane	µg/g	0.05	0.05	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049
1,1-Dichloroethylene	µg/g	0.05	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Cis-1,2-Dichloroethylene	µg/g	2.5	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trans-1,2-Dichloroethylene	µg/g	0.75	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloropropane	µg/g	0.085	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Cis-1,3-Dichloropropylene	µg/g	NV	NV	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Trans-1,3-Dichloropropylene	µg/g	NV	NV	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,3-Dichloropropylene, Total	µg/g	0.081	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	µg/g	1.6	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylene Dibromide	µg/g	0.05	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Hexane(n)	µg/g	34	0.05	<0.040	**0.064**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Methylene Chloride	µg/g	0.96	0.05	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049
Methyl Ethyl Ketone	µg/g	44	0.5	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl Isobutyl Ketone	µg/g	4.3	0.5	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl-t-Butyl Ether	µg/g	1.4	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	µg/g	2.2	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethylene	µg/g	2.3	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Toluene	µg/g	6	0.2	<0.020	0.023	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	µg/g	3.4	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2-Trichloroethane	µg/g	0.05	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethylene	µg/g	0.52	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	µg/g	5.8	0.25	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Vinyl Chloride	µg/g	0.022	0.02	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Total Xylenes	µg/g	25	0.05	<0.020	0.024	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

NOTES:

1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residential/Parkland/Institutional Use (fine-medium textured soils)

2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 1 Full Depth Background Site Condition Standards (SCS) for Parkland/Residential/Institutional/Industrial/Commercial/Community Property Use

<RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

Indicates soil exceedance of MECP Table 2 SCS

Bold Indicates soil exceedance of MECP Table 1 SCS

Table 2 - Analytical Results in Soil - PAH
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Sample ID	UNITS	Provincial		Samples										
		MECP Table 2 Institutional [1]	MECP Table 1 Commercial [2]	TP-1	TP-5	DUP 1 (Duplicate TP-5)	TP-9	TP-11	TP-12	TP-15	TP-17	BH-8 SS1	BH-10 SS3	BH-11 SS3
Sampling Date			**Bold**	**9-Dec-22**	**9-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**8-Dec-22**	**22-Dec-22**	**22-Dec-22**	**22-Dec-22**
Sample Depth (mbgs)				0.5 to 0.8	0.0 to 0.6	0.0 to 0.6	0.3 to 0.6	0.4 to 0.7	0.5 to 0.8	0.8 to 1.0	0.2 to 0.5	0.8 to 0.6	2.5 to 3.0	2.5 to 3.0
Polycyclic Aromatic Hydrocarbons														
Acenaphthene	µg/g	29	0.072	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	0.011	<0.050	<0.0050	<0.0050	<0.0050
Acenaphthylene	µg/g	0.17	0.093	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050
Anthracene	µg/g	0.74	0.16	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	0.022	<0.050	<0.0050	<0.0050	<0.0050
Benzo[a]anthracene	µg/g	0.63	0.36	0.009	0.013	0.0059	<0.0050	0.14	<0.050	0.046	<0.050	<0.0050	<0.0050	<0.0050
Benzo[a]pyrene	µg/g	0.3	0.3	0.011	0.014	0.0058	<0.0050	0.15	<0.050	0.042	<0.050	<0.0050	<0.0050	<0.0050
Benzo[b/j]fluoranthene	µg/g	0.78	0.47	0.016	0.019	0.0081	<0.0050	0.2	<0.050	0.052	<0.050	<0.0050	<0.0050	<0.0050
Benzo[g,h,i]perylene	µg/g	7.8	0.68	0.009	0.01	<0.0050	<0.0050	0.13	<0.050	0.024	<0.050	<0.0050	<0.0050	<0.0050
Benzo[k]fluoranthene	µg/g	0.78	0.48	0.006	0.0071	<0.0050	<0.0050	0.079	<0.050	0.021	<0.050	<0.0050	<0.0050	<0.0050
Chrysene	µg/g	7.8	2.8	0.009	0.013	0.0054	<0.0050	0.13	<0.050	0.036	<0.050	<0.0050	<0.0050	<0.0050
Dibenzo[a,h]anthracene	µg/g	0.1	0.1	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	0.0068	<0.050	<0.0050	<0.0050	<0.0050
Fluoranthene	µg/g	0.69	0.56	0.025	0.035	0.014	<0.0050	0.34	<0.050	0.1	0.054	<0.0050	<0.0050	<0.0050
Fluorene	µg/g	69	0.12	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	0.014	<0.050	<0.0050	<0.0050	<0.0050
Indeno[1,2,3-cd]pyrene	µg/g	0.48	0.23	0.0085	0.0094	<0.0050	<0.0050	0.1	<0.050	0.024	<0.050	<0.0050	<0.0050	<0.0050
1-Methylnaphthalene	µg/g	3.4	0.59	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050
2-Methylnaphthalene	µg/g	3.4	0.59	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050
Naphthalene	µg/g	0.75	0.09	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.050	0.0066	<0.050	<0.0050	<0.0050	<0.0050
Phenanthrene	µg/g	7.8	0.69	0.0088	0.018	0.0089	<0.0050	0.170	<0.050	0.082	<0.050	<0.0050	<0.0050	<0.0050
Pyrene	µg/g	78	1	0.02	0.026	0.011	<0.0050	0.27	<0.050	0.1	<0.050	<0.0050	<0.0050	<0.0050

NOTES:

1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (fine-medium textured soils)

2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 1 Full Depth Background Site Condition Standards (SCS) for Parkland/Residential/Institutional/Industrial/Commercial/Community Property Use

<RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

\- Parameter not analyzed

Indicates soil exceedance of MECP Table 2 SCS

Bold Indicates soil exceedance of MECP Table 1 SCS

Table 3 - Analytical Results in Soil - Inorganic Parameters
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Sample ID	UNITS	Provincial		Samples										
		MECP Table 2 Institutional [1]	MECP Table 1 Commercial [2]	TP-1	TP-5	DUP 1 (Duplicate TP-5)	TP-9	TP-11	TP-12	TP-15	TP-17	BH-8 SS1	BH-10 SS3	BH-11 SS3
Sampling Date			Bold	9-Dec-22	9-Dec-22	8-Dec-22	8-Dec-22	8-Dec-22	8-Dec-22	8-Dec-22	8-Dec-22	22-Dec-22	22-Dec-22	22-Dec-22
Sample Depth (mbgs)				0.5 to 0.8	0.0 to 0.6	0.0 to 0.6	0.3 to 0.6	0.4 to 0.7	0.5 to 0.8	0.8 to 1.0	0.2 to 0.5	0.8 to 0.6	2.5 to 3.0	2.5 to 3.0
Metals														
Antimony	µg/g	7.5	1.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.24	<0.20	<0.20	<0.20
Arsenic	µg/g	18	18	1.2	2.4	1.8	2.5	1.8	1.7	2.1	1.3	1.1	2.1	2.7
Barium	µg/g	390	220	62	190	**240**	180	100	100	63	150	68	220	210
Beryllium	µg/g	5	2.5	0.33	0.56	0.69	1	0.42	0.38	0.33	0.27	0.31	1.1	1
Boron (Total)	µg/g	120	36	<5.0	6.9	7	9.3	<5.0	5.4	5	8.7	<5.0	11	13
Cadmium	µg/g	1.2	1.2	<0.10	0.12	<0.10	0.18	0.15	0.11	<0.10	0.21	<0.10	0.15	0.13
Chromium (Total)	µg/g	160	70	28	58	**97**	**100**	38	32	23	27	33	**110**	**100**
Cobalt	µg/g	22	21	5.8	12	19	**22**	8.6	7.2	6.6	5.8	6.7	**26**	**25**
Copper	µg/g	180	92	11	28	42	41	17	17	13	50	15	48	46
Lead	µg/g	120	120	6	13	12	11	14.0	11	16	35	7.4	11	11
Molybdenum	µg/g	6.9	2	<0.50	0.92	1.00	0.73	0.8	0.83	0.73	1.5	0.68	0.73	<0.50
Nickel	µg/g	130	82	15	35	56	59	21	19	13	18	18	65	63
Selenium	µg/g	2.4	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	µg/g	25	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.41	<0.20	<0.20	<0.20
Thallium	µg/g	1	1	0.11	0.24	0.37	0.3	0.15	0.15	0.13	0.14	0.099	0.38	0.33
Uranium	µg/g	23	2.5	0.62	1	1	1.6	0.92	0.84	0.57	0.82	0.67	1.1	0.83
Vanadium	µg/g	86	86	28	50	78	86	41	33	28	23	30	**90**	**87**
Zinc	µg/g	340	290	33	66	100	90	48	49	30	120	33	100	100

NOTES:

1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (fine-medium textured soils)

2 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 1 Full Depth Background Site Condition Standards (SCS) for Parkland/Residential/Institutional/Industrial/Commercial/Community Property Use

<RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

Indicates soil exceedance of MECP Table 2 SCS

Bold Indicates soil exceedance of MECP Table 1 SCS

Table 4 - Analytical Results in Groundwater - PHC and VOC
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Sample ID	UNITS	Provincial	Samples					
		MECP Table 2 Institutional[1]	BH-8	BH-11	BH-10	DUP 1	Field Blank	Trip Blank
Sampling Date			**10-Jan-2023**	**10-Jan-2023**	**10-Jan-2023**	**20-Jan-2023**	**10-Jan-2023**	**10-Jan-2023**
Sceen Depth			1.5 to 4.6	2.4 to 5.5	0.8 to 2.3	0.8 to 2.3	N/A	N/A
Petroleum Hydrocarbons								
F1 PHC (C6-C10)*	µg/L	750	<25	<25	<25	<25	<25	<25
F2 PHC (C10-C16)	µg/L	150	<100	<100	<100	<100	<100	<100
F3 PHC (C16-C34)	µg/L	500	<200	<200	<200	<200	<200	<200
F4 PHC (C34-C50)	µg/L	500	<200	<200	<200	<200	<200	<200
Volatile Organic Compounds								
Acetone (2-Propanone)	µg/L	2700	-	-	<10	<10	<10	-
Benzene	µg/L	5	<0.20	<0.20	<0.17	<0.17	<0.17	<0.20
Bromodichloromethane	µg/L	16	-	-	<0.50	<0.50	<0.50	-
Bromoform	µg/L	25	-	-	<1.0	<1.0	<1.0	-
Bromomethane	µg/L	0.89	-	-	<0.50	<0.50	<0.50	-
Carbon Tetrachloride	µg/L	5	-	-	<0.20	<0.20	<0.20	-
Chlorobenzene	µg/L	30	-	-	<0.20	<0.20	<0.20	-
Chloroform	µg/L	22	-	-	<0.20	<0.20	2.1	-
Dibromochloromethane	µg/L	25	-	-	<0.50	<0.50	<0.50	-
1,2-Dichlorobenzene	µg/L	3	-	-	<0.50	<0.50	<0.50	-
1,3-Dichlorobenzene	µg/L	59	-	-	<0.50	<0.50	<0.50	-
1,4-Dichlorobenzene	µg/L	1	-	-	<0.50	<0.50	<0.50	-
Dichlorodifluoromethane (FREON 12)	µg/L	590	-	-	<1.0	<1.0	<1.0	-
1,1-Dichloroethane	µg/L	5	-	-	<0.20	<0.20	<0.20	-
1,2-Dichloroethane	µg/L	5	-	-	<0.50	<0.50	<0.50	-
1,1-Dichloroethylene	µg/L	14	-	-	<0.20	<0.20	<0.20	-
cis-1,2-Dichloroethylene	µg/L	17	-	-	<0.50	<0.50	<0.50	-
trans-1,2-Dichloroethylene	µg/L	17	-	-	<0.50	<0.50	<0.50	-
1,2-Dichloropropane	µg/L	5	-	-	<0.20	<0.20	<0.20	-
cis-1,3-Dichloropropene	µg/L	NV	-	-	<0.30	<0.30	<0.30	-
trans-1,3-Dichloropropene	µg/L	NV	-	-	<0.40	<0.40	<0.40	-
1,3-Dichloropropene (cis+trans)	µg/L	0.5	-	-	<0.50	<0.50	<0.50	-
Ethylbenzene	µg/L	2.4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylene Dibromide	µg/L	0.2	-	-	<0.20	<0.20	<0.20	-
Hexane	µg/L	520	-	-	<1.0	<1.0	<1.0	-
Methylene Chloride(Dichloromethane)	µg/L	50	-	-	<2.0	<2.0	<2.0	-
Methyl Ethyl Ketone (2-Butanone)	µg/L	1800	-	-	<10	<10	<10	-
Methyl Isobutyl Ketone	µg/L	640	-	-	<5.0	<5.0	<5.0	-
Methyl t-butyl ether (MTBE)	µg/L	15	-	-	<0.50	<0.50	<0.50	-
Styrene	µg/L	5.4	-	-	<0.50	<0.50	<0.50	-
1,1,1,2-Tetrachloroethane	µg/L	1.1	-	-	<0.50	<0.50	<0.50	-
1,1,2,2-Tetrachloroethane	µg/L	1	-	-	<0.50	<0.50	<0.50	-
Tetrachloroethylene	µg/L	17	-	-	<0.20	<0.20	<0.20	-
Toluene	µg/L	24	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	-	-	<0.20	<0.20	<0.20	-
1,1,2-Trichloroethane	µg/L	5	-	-	<0.50	<0.50	<0.50	-
Trichloroethylene	µg/L	5	-	-	<0.20	<0.20	<0.20	-
Trichlorofluoromethane (FREON 11)	µg/L	8.9	-	-	<0.50	<0.50	<0.50	-
Vinyl Chloride	µg/L	1.7	-	-	<0.20	<0.20	<0.20	-
p+m-Xylene	µg/L	NV	<0.40	<0.40	<0.20	<0.20	<0.20	<0.40
o-Xylene	µg/L	NV	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Total Xylenes	µg/L	300	<0.40	<0.40	<0.20	<0.20	<0.20	<0.40

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residenital/Parkland/Institutional Property Use (fine-medium textured soils)
*	F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result
<RDL	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
-	Parameter not analyzed
	Indicates groundwater exceedance of MECP Table 2 SCS

Table 5 - Analytical Results in Groundwater - PAH
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Sample ID	UNITS	Provincial MECP Table 2 Institutional[1]	BH-10	DUP 1	Field Blank
Sampling Date			**10-Jan-2023**	**20-Jan-2023**	**10-Jan-2023**
Sceen Depth			0.8 to 2.3	0.8 to 2.3	N/A
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	µg/L	4.1	<0.050	<0.050	<0.050
Acenaphthylene	µg/L	1	<0.050	<0.050	<0.050
Anthracene	µg/L	2.4	<0.050	<0.050	<0.050
Benzo(a)anthracene	µg/L	1	<0.050	<0.050	<0.050
Benzo(a)pyrene	µg/L	0.01	<0.0090	<0.0090	<0.0090
Benzo(b/j)fluoranthene	µg/L	0.1	<0.050	<0.050	<0.050
Benzo(ghi)perylene	µg/L	0.2	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	µg/L	0.1	<0.050	<0.050	<0.050
Chrysene	µg/L	0.1	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	µg/L	0.2	<0.050	<0.050	<0.050
Fluoranthene	µg/L	0.41	<0.050	<0.050	<0.050
Fluorene	µg/L	120	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	µg/L	0.2	<0.050	<0.050	<0.050
1-Methylnaphthalene	µg/L	NV	<0.050	<0.050	<0.050
2-Methylnaphthalene	µg/L	NV	<0.050	<0.050	<0.050
Methylnaphthalene, 2-(1-)	µg/L	3.2	<0.071	<0.071	<0.071
Naphthalene	µg/L	11	<0.050	<0.050	<0.050
Phenanthrene	µg/L	1	0.05	0.047	<0.030
Pyrene	µg/L	4.1	0.073	0.071	<0.050

NOTES:

1	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residenital/Parkland/Institutional Property Use (fine-medium textured soils)
<RDL	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
-	Parameter not analyzed
	Indicates groundwater exceedance of MECP Table 2 SCS

Table 6 - Analytical Results in Groundwater - Inorganic Parameters
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Sample ID	UNITS	Provincial	Sample		
		MECP Table 2 Instituional[1]	BH-10	DUP 1	Field Blank
Sampling Date			**10-Jan-2023**	**20-Jan-2023**	**10-Jan-2023**
Screen Depth			0.8 to 2.3	0.8 to 2.3	N/A
Metals					
Antimony	µg/L	6	<0.50	0.64	<0.50
Arsenic	µg/L	25	2.4	2.5	<1.0
Barium	µg/L	1000	65	50	<2.0
Beryllium	µg/L	4	<0.40	<0.40	<0.40
Boron	µg/L	5000	120	120	<10
Cadmium	µg/L	2.7	<0.090	<0.090	<0.090
Chromium	µg/L	50	<5.0	<5.0	<5.0
Cobalt	µg/L	3.8	0.79	0.75	<0.50
Copper	µg/L	87	5.5	2.9	<0.90
Lead	µg/L	10	<0.50	<0.50	<0.50
Molybdenum	µg/L	70	7.8	7.7	<0.50
Nickel	µg/L	100	4.6	4.4	<1.0
Sodium	µg/L	490000	210000	210000	360
Selenium	µg/L	10	<2.0	<2.0	<2.0
Silver	µg/L	1.5	<0.090	<0.090	<0.090
Thallium	µg/L	2	<0.050	<0.050	<0.050
Uranium	µg/L	20	5.80	5.5	<0.10
Vanadium	µg/L	6.2	2.3	2.5	<0.50
Zinc	µg/L	1100	<5.0	<5.0	<5.0

NOTES:

2	Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Property Use (fine-medium textured soils)
<RDL	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
-	Parameter not analyzed
	Indicates groundwater exceedance of MECP Table 2 SCS

Table 7 - Maximum Concentrations in Soil
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Sample Location	Sample Depth (m bgs)	Sampling Date	Maximum Concentration	MECP Table 2 Institutional
Petroleum Hydrocarbons					
F1 PHC (C6-C10)	All sample locations	0.0 to 3.0	All December 2022 dates	< 10	65
F2 PHC (C10-C16)	All sample locations	0.0 to 3.0	All December 2022 dates	< 6	150
F3 PHC (C16-C34)	TP-17	0.2 to 0.5	8-Dec-22	150	300
F4 PHC (C34-C50)	TP-17	0.2 to 0.5	8-Dec-22	1700	2800
Volatile Organic Compounds					
Acetone	All sample locations	0.0 to 3.0	All December 2022 dates	<0.49	28
Benzene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.0060	0.170
Bromodichloromethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	1.9
Bromoform	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.26
Bromomethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.05
Carbon Tetrachloride	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.12
Chlorobenzene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	2.7
Chloroform	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.18
Dibromochloromethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	2.9
1,2-Dichlorobenzene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	1.7
1,3-Dichlorobenzene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	6
1,4-Dichlorobenzene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.097
Dichlorodifluoromethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	25
1,1-Dichloroethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.6
1,2-Dichloroethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.049	0.05
1,1-Dichloroethylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.05
Cis-1,2-Dichloroethylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	2.5
Trans-1,2-Dichloroethylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.75
1,2-Dichloropropane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.085
Cis-1,3-Dichloropropylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.030	NV
Trans-1,3-Dichloropropylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	NV
1,3-Dichloropropylene, Total	All sample locations	0.0 to 3.0	All December 2022 dates	<0.050	0.081
Ethylbenzene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.010	1.6
Ethylene Dibromide	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.05
Hexane(n)	TP-5	0.0 to 0.6	9-Dec-22	0.064	34
Methylene Chloride	All sample locations	0.0 to 3.0	All December 2022 dates	<0.049	0.96
Methyl Ethyl Ketone	All sample locations	0.0 to 3.0	All December 2022 dates	<0.40	44
Methyl Isobutyl Ketone	All sample locations	0.0 to 3.0	All December 2022 dates	<0.40	4.3
Methyl-t-Butyl Ether	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	1.4
Styrene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	2.2
1,1,1,2-Tetrachloroethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.05
1,1,2,2-Tetrachloroethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.05
Tetrachloroethylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	2.3
Toluene	TP-5	0.0 to 0.6	9-Dec-22	0.023	6
1,1,1-Trichloroethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	3.4
1,1,2-Trichloroethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	0.05
Trichloroethylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.010	0.52
Trichlorofluoromethane	All sample locations	0.0 to 3.0	All December 2022 dates	<0.040	5.8
Vinyl Chloride	All sample locations	0.0 to 3.0	All December 2022 dates	<0.019	0.022
Total Xylenes	TP-5	0.0 to 0.6	9-Dec-22	0.024	25
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	TP-15	0.8 to 1.0	8-Dec-22	0.011	29
Acenaphthylene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.0050	0.17
Anthracene	TP-15	0.8 to 1.0	8-Dec-22	0.022	0.74
Benzo[a]anthracene	TP-11	0.4 to 0.7	8-Dec-22	0.14	0.63
Benzo[a]pyrene	TP-11	0.4 to 0.7	8-Dec-22	0.15	0.3
Benzo[b/j]fluoranthene	TP-11	0.4 to 0.7	8-Dec-22	0.2	0.78
Benzo[g,h,i]perylene	TP-11	0.4 to 0.7	8-Dec-22	0.13	7.8
Benzo[k]fluoranthene	TP-11	0.4 to 0.7	8-Dec-22	0.079	0.78
Chrysene	TP-11	0.4 to 0.7	8-Dec-22	0.13	7.8
Dibenzo[a,h]anthracene	TP-15	0.8 to 1.0	8-Dec-22	0.0068	0.1
Fluoranthene	TP-11	0.4 to 0.7	8-Dec-22	0.34	0.69
Fluorene	TP-15	0.8 to 1.0	8-Dec-22	0.014	69
Indeno[1,2,3-cd]pyrene	TP-11	0.4 to 0.7	8-Dec-22	0.1	0.48
1-Methylnaphthalene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.0050	3.4
2-Methylnaphthalene	All sample locations	0.0 to 3.0	All December 2022 dates	<0.0050	3.4
Naphthalene	TP-15	0.8 to 1.0	8-Dec-22	0.0066	0.75
Phenanthrene	TP-11	0.4 to 0.7	8-Dec-22	0.17	7.8
Pyrene	TP-11	0.4 to 0.7	8-Dec-22	0.27	78
Metals					
Antimony	TP-17	0.2 to 0.5	8-Dec-22	0.24	7.5
Arsenic	BH-11	2.5 to 3.0	22-Dec-22	2.7	18
Barium	TP-5 (DUP)	0.0 to 0.6	8-Dec-22	240	390
Beryllium	BH-10	2.5 to 3.0	22-Dec-22	1.1	5
Boron (Total)	BH-11	2.5 to 3.0	22-Dec-22	13	120
Cadmium	TP-17	0.2 to 0.5	8-Dec-22	0.21	1.2
Chromium (Total)	BH-10	2.5 to 3.0	22-Dec-22	110	160
Cobalt	BH-10	2.5 to 3.0	22-Dec-22	26	22
Copper	TP-17	0.2 to 0.5	8-Dec-22	50	180
Lead	TP-17	0.2 to 0.5	8-Dec-22	35	120
Molybdenum	TP-17	0.2 to 0.5	8-Dec-22	1.5	6.9
Nickel	BH-10	2.5 to 3.0	22-Dec-22	65	130
Selenium	All sample locations	0.0 to 3.0	All December 2022 dates	<0.50	2.4
Silver	TP-17	0.2 to 0.5	8-Dec-22	0.41	25
Thallium	BH-10	2.5 to 3.0	22-Dec-22	0.38	1
Uranium	TP-9	0.3 to 0.6	8-Dec-22	1.6	23
Vanadium	BH-10	2.5 to 3.0	22-Dec-22	90	86
Zinc	TP-17	0.2 to 0.5	8-Dec-22	120	340

NOTES:

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

Table 8 - Maximum Concentrations in Groundwater
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Sample Location	Sample Depth (m bgs)	Sampling Date	Maximum Concentration	MECP Table 2 Institutional
Petroleum Hydrocarbons					
F1 PHC (C6-C10)	All sample locations	0.8 to 5.5	19-Apr-22	<25	750
F2 PHC (C10-C16)	All sample locations	0.8 to 5.5	19-Apr-22	<100	150
F3 PHC (C16-C34)	All sample locations	0.8 to 5.5	19-Apr-22	<200	500
F4 PHC (C34-C50)	All sample locations	0.8 to 5.5	19-Apr-22	<200	500
Volatile Organic Compounds					
Acetone (2-Propanone)	BH-10	0.8 to 2.3	10-Jan-23	<10	2700
Benzene	BH-10	0.8 to 2.3	10-Jan-23	<0.17	5.000
Bromodichloromethane	All sample locations	0.8 to 5.5	10-Jan-23	<0.50	16
Bromoform	BH-10	0.8 to 2.3	10-Jan-23	<1.0	25
Bromomethane	BH-10	0.8 to 2.3	10-Jan-23	<0.50	0.89
Carbon Tetrachloride	BH-10	0.8 to 2.3	10-Jan-23	<0.20	5
Chlorobenzene	BH-10	0.8 to 2.3	10-Jan-23	<0.20	30
Chloroform	BH-10	0.8 to 2.3	10-Jan-23	<0.20	22
Dibromochloromethane	BH-10	0.8 to 2.3	10-Jan-23	<0.50	25
1,2-Dichlorobenzene	BH-10	0.8 to 2.3	10-Jan-23	<0.50	3
1,3-Dichlorobenzene	BH-10	0.8 to 2.3	10-Jan-23	<0.50	59
1,4-Dichlorobenzene	BH-10	0.8 to 2.3	10-Jan-23	<0.50	1
Dichlorodifluoromethane (FREON 12)	BH-10	0.8 to 2.3	10-Jan-23	<1.0	590
1,1-Dichloroethane	BH-10	0.8 to 2.3	10-Jan-23	<0.20	5
1,2-Dichloroethane	BH-10	0.8 to 2.3	10-Jan-23	<0.50	5
1,1-Dichloroethylene	BH-10	0.8 to 2.3	10-Jan-23	<0.20	14
cis-1,2-Dichloroethylene	BH-10	0.8 to 2.3	10-Jan-23	<0.50	17
trans-1,2-Dichloroethylene	BH-10	0.8 to 2.3	10-Jan-23	<0.50	17
1,2-Dichloropropane	BH-10	0.8 to 2.3	10-Jan-23	<0.20	5
cis-1,3-Dichloropropene	BH-10	0.8 to 2.3	10-Jan-23	<0.30	NV
trans-1,3-Dichloropropene	BH-10	0.8 to 2.3	10-Jan-23	<0.40	NV
1,3-Dichloropropene (cis+trans)	BH-10	0.8 to 2.3	10-Jan-23	<0.50	0.5
Ethylbenzene	All sample locations	0.8 to 5.5	10-Jan-23	<0.20	2.4
Ethylene Dibromide	BH-10	0.8 to 2.3	10-Jan-23	<0.20	0.2
Hexane	BH-10	0.8 to 2.3	10-Jan-23	<1.0	520
Methylene Chloride(Dichloromethane)	BH-10	0.8 to 2.3	10-Jan-23	<2.0	50
Methyl Ethyl Ketone (2-Butanone)	BH-10	0.8 to 2.3	10-Jan-23	<10	1800
Methyl Isobutyl Ketone	BH-10	0.8 to 2.3	10-Jan-23	<5.0	640
Methyl t-butyl ether (MTBE)	BH-10	0.8 to 2.3	10-Jan-23	<0.50	15
Styrene	BH-10	0.8 to 2.3	10-Jan-23	<0.50	5.4
1,1,1,2-Tetrachloroethane	BH-10	0.8 to 2.3	10-Jan-23	<0.50	1.1
1,1,2,2-Tetrachloroethane	BH-10	0.8 to 2.3	10-Jan-23	<0.50	1
Tetrachloroethylene	BH-10	0.8 to 2.3	10-Jan-23	<0.20	17
Toluene	All sample locations	0.8 to 5.5	10-Jan-23	<0.20	24
1,1,1-Trichloroethane	BH-10	0.8 to 2.3	10-Jan-23	<0.20	200
1,1,2-Trichloroethane	BH-10	0.8 to 2.3	10-Jan-23	<0.50	5
Trichloroethylene	BH-10	0.8 to 2.3	10-Jan-23	<0.20	5
Trichlorofluoromethane (FREON 11)	BH-10	0.8 to 2.3	10-Jan-23	<0.50	8.9
Vinyl Chloride	BH-10	0.8 to 2.3	10-Jan-23	<0.20	1.7
p+m-Xylene	All sample locations	0.8 to 5.5	10-Jan-23	<0.20	NV
o-Xylene	All sample locations	0.8 to 5.5	10-Jan-23	<0.20	NV
Total Xylenes	All sample locations	0.8 to 5.5	10-Jan-23	<0.20	300
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	4.1
Acenaphthylene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	1
Anthracene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	2.4
Benzo(a)anthracene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	1
Benzo(a)pyrene	BH-10	0.8 to 2.3	10-Jan-23	<0.0090	0.01
Benzo(b/j)fluoranthene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.1
Benzo(ghi)perylene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.2
Benzo(k)fluoranthene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.1
Chrysene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.1
Dibenzo(a,h)anthracene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.2
Fluoranthene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.41
Fluorene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	120
Indeno(1,2,3-cd)pyrene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	0.2
1-Methylnaphthalene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	NV
2-Methylnaphthalene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	NV
Methylnaphthalene, 2-(1-)	BH-10	0.8 to 2.3	10-Jan-23	<0.071	3.2
Naphthalene	BH-10	0.8 to 2.3	10-Jan-23	<0.050	11
Phenanthrene	BH-10	0.8 to 2.3	10-Jan-23	0.05	1
Pyrene	BH-10	0.8 to 2.3	10-Jan-23	0.073	4.1
Metals					
Antimony	BH-10	0.8 to 2.3	10-Jan-23	0.64	6
Arsenic	BH-10	0.8 to 2.3	10-Jan-23	2.5	25
Barium	BH-10	0.8 to 2.3	10-Jan-23	65	1000
Beryllium	BH-10	0.8 to 2.3	10-Jan-23	<0.40	4
Boron	BH-10	0.8 to 2.3	10-Jan-23	120	5000
Cadmium	BH-10	0.8 to 2.3	10-Jan-23	<0.090	2.7
Chromium	BH-10	0.8 to 2.3	10-Jan-23	<5.0	50
Cobalt	BH-10	0.8 to 2.3	10-Jan-23	0.79	3.8
Copper	BH-10	0.8 to 2.3	10-Jan-23	5.5	87
Lead	BH-10	0.8 to 2.3	10-Jan-23	<0.50	10
Molybdenum	BH-10	0.8 to 2.3	10-Jan-23	7.8	70
Nickel	BH-10	0.8 to 2.3	10-Jan-23	4.6	100
Sodium	BH-10	0.8 to 2.3	10-Jan-23	210000	490000
Selenium	BH-10	0.8 to 2.3	10-Jan-23	<2.0	10
Silver	BH-10	0.8 to 2.3	10-Jan-23	<0.090	1.5
Thallium	BH-10	0.8 to 2.3	10-Jan-23	<0.050	2
Uranium	BH-10	0.8 to 2.3	10-Jan-23	5.8	20
Vanadium	BH-10	0.8 to 2.3	10-Jan-23	2.5	6.2
Zinc	BH-10	0.8 to 2.3	10-Jan-23	<5.0	1100

NOTES:

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

Table 9 - Relative Percent Differences - PHC and VOC in Soil
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Units	RDL	TP-5	DUP 1	RPD (%)	Alert Limit (%)
			9-Dec-2022	9-Dec-2022		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/g dry	10	<10	<10	nc	60
F2 PHC (C10-C16)	ug/g dry	10	<10	<10	nc	60
F3 PHC (C16-C34)	ug/g dry	50	<50	<50	nc	60
F4 PHC (C34-C50)	ug/g dry	50	<50	<50	nc	60
Volatiles						
Acetone	ug/g dry	0.50	<0.49	<0.49	nc	100
Benzene	ug/g dry	0.0060	<0.0060	<0.0060	nc	100
Bromodichloromethane	ug/g dry	0.050	<0.040	<0.040	nc	100
Bromoform	ug/g dry	0.050	<0.040	<0.040	nc	100
Bromomethane	ug/g dry	0.050	<0.040	<0.040	nc	100
Carbon Tetrachloride	ug/g dry	0.050	<0.040	<0.040	nc	100
Chlorobenzene	ug/g dry	0.050	<0.040	<0.040	nc	100
Chloroform	ug/g dry	0.050	<0.040	<0.040	nc	100
Dibromochloromethane	ug/g dry	0.050	<0.040	<0.040	nc	100
Dichlorodifluoromethane	ug/g dry	0.050	<0.040	<0.040	nc	100
1,2-Dichlorobenzene	ug/g dry	0.050	<0.040	<0.040	nc	100
1,3-Dichlorobenzene	ug/g dry	0.050	<0.040	<0.040	nc	100
1,4-Dichlorobenzene	ug/g dry	0.050	<0.040	<0.040	nc	100
1,1-Dichloroethane	ug/g dry	0.050	<0.040	<0.040	nc	100
1,2-Dichloroethane	ug/g dry	0.050	<0.049	<0.049	nc	100
1,1-Dichloroethylene	ug/g dry	0.050	<0.040	<0.040	nc	100
cis-1,2-Dichloroethylene	ug/g dry	0.050	<0.040	<0.040	nc	100
trans-1,2-Dichloroethylene	ug/g dry	0.050	<0.040	<0.040	nc	100
1,2-Dichloropropane	ug/g dry	0.050	<0.040	<0.040	nc	100
cis-1,3-Dichloropropylene	ug/g dry	0.030	<0.030	<0.030	nc	100
trans-1,3-Dichloropropylene	ug/g dry	0.040	<0.040	<0.040	nc	100
1,3-Dichloropropene, total	ug/g dry	0.050	<0.050	<0.050	nc	100
Ethylbenzene	ug/g dry	0.010	<0.010	<0.010	nc	100
Ethylene dibromide (dibromoethane, 1,2-	ug/g dry	0.050	<0.040	<0.040	nc	100
Hexane	ug/g dry	0.050	0.064	<0.040	nc	100
Methyl Ethyl Ketone (2-Butanone)	ug/g dry	0.50	<0.049	<0.049	nc	100
Methyl Isobutyl Ketone	ug/g dry	0.50	<0.40	<0.40	nc	100
Methyl tert-butyl ether	ug/g dry	0.50	<0.40	<0.40	nc	100
Methylene Chloride	ug/g dry	0.050	<0.040	<0.040	nc	100
Styrene	ug/g dry	0.050	<0.040	<0.040	nc	100
1,1,1,2-Tetrachloroethane	ug/g dry	0.050	<0.040	<0.040	nc	100
1,1,2,2-Tetrachloroethane	ug/g dry	0.050	<0.040	<0.040	nc	100
Tetrachloroethylene	ug/g dry	0.050	<0.040	<0.040	nc	100
Toluene	ug/g dry	0.020	0.023	<0.020	nc	100
1,1,1-Trichloroethane	ug/g dry	0.050	<0.040	<0.040	nc	100
1,1,2-Trichloroethane	ug/g dry	0.050	<0.040	<0.040	nc	100
Trichloroethylene	ug/g dry	0.010	<0.010	<0.010	nc	100
Trichlorofluoromethane	ug/g dry	0.050	<0.040	<0.040	nc	100
Vinyl Chloride	ug/g dry	0.020	<0.019	<0.019	nc	100
Xylenes, total	ug/g dry	0.020	0.024	<0.020	nc	100

NOTES:

Analysis by Bureau Veritas Labratories

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 10 - Relative Percent Differences - PAH in Soil
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Units	RDL	TP-5	DUP 1	RPD (%)	Alert Limit (%)
			9-Dec-2022	9-Dec-2022		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
Acenaphthylene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
Anthracene	ug/g dry	0.010	<0.0050	<0.0050	nc	80
Benzo[a]anthracene	ug/g dry	0.0050	0.013	0.0059	nc	80
Benzo[a]pyrene	ug/g dry	0.0050	0.014	0.0058	nc	80
Benzo[b/j]fluoranthene	ug/g dry	0.0050	0.019	0.0081	nc	80
Benzo[g,h,i]perylene	ug/g dry	0.0050	0.01	<0.0050	nc	80
Benzo[k]fluoranthene	ug/g dry	0.0050	0.0071	<0.0050	nc	80
Chrysene	ug/g dry	0.0050	0.013	0.0054	nc	80
Dibenzo[a,h]anthracene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
Fluoranthene	ug/g dry	0.0050	0.035	0.014	nc	80
Fluorene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
Indeno[1,2,3-cd]pyrene	ug/g dry	0.0050	0.0094	<0.0050	nc	80
1-Methylnaphthalene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
2-Methylnaphthalene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
Naphthalene	ug/g dry	0.0050	<0.0050	<0.0050	nc	80
Phenanthrene	ug/g dry	0.0050	0.018	0.0089	nc	80
Pyrene	ug/g dry	0.0050	0.026	0.011	nc	80

NOTES:

Analysis by Bureau Veritas Labratories

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 11 - Relative Percent Differences - Inorganics in Soil
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Units	RDL	TP-5	DUP 1	RPD (%)	Alert Limit (%)
			9-Dec-2022	9-Dec-2022		
Inorganic Parameters						
Antimony	ug/g dry	0.20	<0.20	<0.20	nc	60
Arsenic	ug/g dry	1.0	2.4	1.8	nc	60
Barium	ug/g dry	0.50	190	240	23	60
Beryllium	ug/g dry	0.20	0.56	0.69	nc	60
Boron	ug/g dry	5.0	6.9	7	nc	60
Cadmium	ug/g dry	0.10	0.12	<0.10	nc	60
Chromium	ug/g dry	1.0	58	97	50	60
Cobalt	ug/g dry	0.10	12	19	45	60
Copper	ug/g dry	0.50	28	42	40	60
Lead	ug/g dry	1.0	13	12	8	60
Molybdenum	ug/g dry	0.50	0.92	1	nc	60
Nickel	ug/g dry	0.50	35	56	46	60
Selenium	ug/g dry	0.50	<0.50	<0.50	nc	60
Silver	ug/g dry	0.20	<0.20	<0.20	nc	60
Thallium	ug/g dry	0.050	0.24	0.37	nc	60
Uranium	ug/g dry	0.050	1	1	0	60
Vanadium	ug/g dry	5.0	50	78	44	60
Zinc	ug/g dry	5.0	66	100	41	60

NOTES:

Analysis by Bureau Veritas Labratories

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 - PHC and VOC in Groundwater
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Units	RDL	BH-10	DUP 1	RPD (%)	Alert Limit (%)
			10-Jan-2023	10-Jan-2023		
Petroleum Hydrocarbons						
F1 PHC (C6 - C10) - BTEX	ug/L	25	<25	<25	nc	60
F2 PHC (C10-C16)	ug/L	100	<100	<100	nc	60
F3 PHC (C16-C34)	ug/L	100	<200	<200	nc	60
F4 PHC (C34-C50)	ug/L	100	<200	<200	nc	60
Volatiles						
Acetone	ug/L	5.0	<10	<10	nc	60
Benzene	ug/L	0.5	<0.17	<0.17	nc	60
Bromodichloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Bromoform	ug/L	0.5	<1.0	<1.0	nc	60
Bromomethane	ug/L	0.5	<0.50	<0.50	nc	60
Carbon Tetrachloride	ug/L	0.2	<0.20	<0.20	nc	60
Chlorobenzene	ug/L	0.5	<0.20	<0.20	nc	60
Chloroform	ug/L	0.5	<0.20	<0.20	nc	60
Dibromochloromethane	ug/L	0.5	<0.50	<0.50	nc	60
Dichlorodifluoromethane	ug/L	1.0	<0.50	<0.50	nc	60
1,2-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,3-Dichlorobenzene	ug/L	0.5	<0.50	<0.50	nc	60
1,4-Dichlorobenzene	ug/L	0.5	<1.0	<1.0	nc	60
1,1-Dichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,2-Dichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1-Dichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
trans-1,2-Dichloroethylene	ug/L	0.5	<0.50	<0.50	nc	60
1,2-Dichloropropane	ug/L	0.5	<0.20	<0.20	nc	60
cis-1,3-Dichloropropylene	ug/L	0.5	<0.30	<0.30	nc	60
trans-1,3-Dichloropropylene	ug/L	0.5	<0.40	<0.40	nc	60
1,3-Dichloropropene, total	ug/L	0.5	<0.50	<0.50	nc	60
Ethylbenzene	ug/L	0.5	<0.20	<0.20	nc	60
Ethylene dibromide (dibromoethane, 1,2-)	ug/L	0.2	<0.20	<0.20	nc	60
Hexane	ug/L	1.0	<1.0	<1.0	nc	60
Methyl Ethyl Ketone (2-Butanone)	ug/L	5.0	<2.0	<2.0	nc	60
Methyl Isobutyl Ketone	ug/L	5.0	<10	<10	nc	60
Methyl tert-butyl ether	ug/L	2.0	<5.0	<5.0	nc	60
Methylene Chloride	ug/L	5.0	<0.50	<0.50	nc	60
Styrene	ug/L	0.5	<0.50	<0.50	nc	60
1,1,1,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Tetrachloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Toluene	ug/L	0.5	<0.20	<0.20	nc	60
1,1,1-Trichloroethane	ug/L	0.5	<0.20	<0.20	nc	60
1,1,2-Trichloroethane	ug/L	0.5	<0.50	<0.50	nc	60
Trichloroethylene	ug/L	0.5	<0.20	<0.20	nc	60
Trichlorofluoromethane	ug/L	1.0	<0.50	<0.50	nc	60
Vinyl Chloride	ug/L	0.5	<0.20	<0.20	nc	60
m/p-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
o-Xylene	ug/L	0.5	<0.20	<0.20	nc	60
Xylenes, total	ug/L	0.5	<0.20	<0.20	nc	60

NOTES:

Analysis by Bureau Veritas Labratories

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 Groundwater
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Units	RDL	BH-10	DUP 1	RPD (%)	Alert Limit (%)
			10-Jan-2023	10-Jan-2023		
Polycylic Aromatic Hydrocarbons						
Acenaphthene	ug/L	0.050	<0.050	<0.050	nc	60
Acenaphthylene	ug/L	0.050	<0.050	<0.050	nc	60
Anthracene	ug/L	0.050	<0.050	<0.050	nc	60
Benzo(a)anthracene	ug/L	0.050	<0.050	<0.050	nc	60
Benzo(a)pyrene	ug/L	0.050	<0.0090	<0.0090	nc	60
Benzo(b/j)fluoranthene	ug/L	0.050	<0.050	<0.050	nc	60
Benzo(ghi)perylene	ug/L	0.050	<0.050	<0.050	nc	60
Benzo(k)fluoranthene	ug/L	0.050	<0.050	<0.050	nc	60
Chrysene	ug/L	0.050	<0.050	<0.050	nc	60
Dibenzo(a,h)anthracene	ug/L	0.050	<0.050	<0.050	nc	60
Fluoranthene	ug/L	0.050	<0.050	<0.050	nc	60
Fluorene	ug/L	0.050	<0.050	<0.050	nc	60
Indeno(1,2,3-cd)pyrene	ug/L	0.050	<0.050	<0.050	nc	60
1-Methylnaphthalene	ug/L	0.050	<0.050	<0.050	nc	60
2-Methylnaphthalene	ug/L	0.050	<0.050	<0.050	nc	60
Methylnaphthalene, 2-(1-)	ug/L	0.050	<0.071	<0.071	nc	60
Naphthalene	ug/L	0.050	<0.050	<0.050	nc	60
Phenanthrene	ug/L	0.050	0.05	0.047	nc	60
Pyrene	ug/L	0.050	0.073	0.071	nc	60

NOTES:

Analysis by Bureau Veritas Labratories

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 14 - Relative Percent Differences - Metals in Groundwater
2666 Tenth Line Road, Ottawa, Ontario
OTT-22017859-A0

Parameter	Units	RDL	BH-10	DUP 1	RPD (%)	Alert Limit (%)
			10-Jan-2023	10-Jan-2023		
Inorganics						
Antimony	ug/L	0.50	<0.50	0.64	nc	40
Arsenic	ug/L	0.10	2.4	2.5	4	40
Barium	ug/L	1.0	65	50	26	40
Beryllium	ug/L	0.10	<0.40	<0.40	nc	40
Boron	ug/L	50	120	120	nc	40
Cadmium	ug/L	0.010	<0.090	<0.090	nc	40
Chromium	ug/L	1.0	<5.0	<5.0	nc	40
Cobalt	ug/L	0.20	0.79	0.75	nc	40
Copper	ug/L	0.20	5.5	2.9	62	40
Lead	ug/L	0.1	<0.50	<0.50	nc	40
Molybdenum	ug/L	1.0	7.8	7.7	1	40
Nickel	ug/L	1.0	4.6	4.4	nc	40
Sodium	ug/L	100.0	210000	210000	0	40
Selenium	ug/L	0.10	<2.0	<2.0	nc	40
Silver	ug/L	0.020	<0.090	<0.090	nc	40
Thallium	ug/L	0.010	<0.050	<0.050	nc	40
Uranium	ug/L	0.10	5.8	5.5	5	40
Vanadium	ug/L	5.0	2.3	2.5	nc	40
Zinc	ug/L	5.0	<5.0	<5.0	nc	40

NOTES:

Analysis by Bureau Veritas Labratories

Non-detectable results are shown as "ND (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**

Appendix F: Laboratory Certificates of Analysis

Your Project #: OTT-22017859-A0
Your C.O.C. #: 910457-03-01

Attention: Leah Wells

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2022/12/21
Report #: R7439426
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AG432
Received: 2022/12/13, 14:50

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum (1)	8	N/A	2022/12/20	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	8	N/A	2022/12/19		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Soil (1, 2)	8	2022/12/19	2022/12/20	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric) (1)	1	2022/12/21	2022/12/21	CAM SOP-00316	CCME PHC-CWS m
Acid Extractable Metals by ICPMS (1)	6	2022/12/16	2022/12/16	CAM SOP-00447	EPA 6020B m
Acid Extractable Metals by ICPMS (1)	2	2022/12/16	2022/12/19	CAM SOP-00447	EPA 6020B m
Moisture (1)	8	N/A	2022/12/15	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM) (1)	2	2022/12/19	2022/12/19	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM) (1)	6	2022/12/19	2022/12/20	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs (1)	8	N/A	2022/12/19	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8

Your Project #: OTT-22017859-A0
Your C.O.C. #: 910457-03-01

Attention: Leah Wells

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2022/12/21
Report #: R7439426
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AG432

Received: 2022/12/13, 14:50

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Bureau Veritas
21 Dec 2022 13:25:14

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID		UOT853	UOT854		UOT855		UOT856		
Sampling Date		2022/12/09 08:30	2022/12/08 13:30		2022/12/08 09:30		2022/12/08 10:00		
COC Number		910457-03-01	910457-03-01		910457-03-01		910457-03-01		
	UNITS	**TP-1**	**TP-5**	**QC Batch**	**TP-9**	**QC Batch**	**TP-11**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	8408509	<0.20	8409125	<0.20	0.20	8408509
Acid Extractable Arsenic (As)	ug/g	1.2	2.4	8408509	2.5	8409125	1.8	1.0	8408509
Acid Extractable Barium (Ba)	ug/g	62	190	8408509	180	8409125	100	0.50	8408509
Acid Extractable Beryllium (Be)	ug/g	0.33	0.56	8408509	1.0	8409125	0.42	0.20	8408509
Acid Extractable Boron (B)	ug/g	<5.0	6.9	8408509	9.3	8409125	<5.0	5.0	8408509
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.12	8408509	0.18	8409125	0.15	0.10	8408509
Acid Extractable Chromium (Cr)	ug/g	28	58	8408509	100	8409125	38	1.0	8408509
Acid Extractable Cobalt (Co)	ug/g	5.8	12	8408509	22	8409125	8.6	0.10	8408509
Acid Extractable Copper (Cu)	ug/g	11	28	8408509	41	8409125	17	0.50	8408509
Acid Extractable Lead (Pb)	ug/g	6.0	13	8408509	11	8409125	14	1.0	8408509
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.92	8408509	0.73	8409125	0.76	0.50	8408509
Acid Extractable Nickel (Ni)	ug/g	15	35	8408509	59	8409125	21	0.50	8408509
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	8408509	<0.50	8409125	<0.50	0.50	8408509
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	8408509	<0.20	8409125	<0.20	0.20	8408509
Acid Extractable Thallium (Tl)	ug/g	0.11	0.24	8408509	0.30	8409125	0.15	0.050	8408509
Acid Extractable Uranium (U)	ug/g	0.62	1.0	8408509	1.6	8409125	0.92	0.050	8408509
Acid Extractable Vanadium (V)	ug/g	28	50	8408509	86	8409125	41	5.0	8408509
Acid Extractable Zinc (Zn)	ug/g	33	66	8408509	90	8409125	48	5.0	8408509

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID		UOT857		UOT858	UOT859		UOT860		
Sampling Date		2022/12/08 09:10		2022/12/08 11:30	2022/12/08 09:00		2022/12/08		
COC Number		910457-03-01		910457-03-01	910457-03-01		910457-03-01		
	UNITS	**TP-12**	**QC Batch**	**TP-15**	**TP-17**	**QC Batch**	**DUP 1**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	8408515	<0.20	0.24	8408509	<0.20	0.20	8409125
Acid Extractable Arsenic (As)	ug/g	1.7	8408515	2.1	1.3	8408509	1.8	1.0	8409125
Acid Extractable Barium (Ba)	ug/g	100	8408515	63	150	8408509	240	0.50	8409125
Acid Extractable Beryllium (Be)	ug/g	0.38	8408515	0.33	0.27	8408509	0.69	0.20	8409125
Acid Extractable Boron (B)	ug/g	5.4	8408515	5.0	8.7	8408509	7.0	5.0	8409125
Acid Extractable Cadmium (Cd)	ug/g	0.11	8408515	<0.10	0.21	8408509	<0.10	0.10	8409125
Acid Extractable Chromium (Cr)	ug/g	32	8408515	23	27	8408509	97	1.0	8409125
Acid Extractable Cobalt (Co)	ug/g	7.2	8408515	6.6	5.8	8408509	19	0.10	8409125
Acid Extractable Copper (Cu)	ug/g	17	8408515	13	50	8408509	42	0.50	8409125
Acid Extractable Lead (Pb)	ug/g	11	8408515	16	35	8408509	12	1.0	8409125
Acid Extractable Molybdenum (Mo)	ug/g	0.83	8408515	0.73	1.5	8408509	1.0	0.50	8409125
Acid Extractable Nickel (Ni)	ug/g	19	8408515	13	18	8408509	56	0.50	8409125
Acid Extractable Selenium (Se)	ug/g	<0.50	8408515	<0.50	<0.50	8408509	<0.50	0.50	8409125
Acid Extractable Silver (Ag)	ug/g	<0.20	8408515	<0.20	0.41	8408509	<0.20	0.20	8409125
Acid Extractable Thallium (Tl)	ug/g	0.15	8408515	0.13	0.14	8408509	0.37	0.050	8409125
Acid Extractable Uranium (U)	ug/g	0.84	8408515	0.57	0.82	8408509	1.0	0.050	8409125
Acid Extractable Vanadium (V)	ug/g	33	8408515	28	23	8408509	78	5.0	8409125
Acid Extractable Zinc (Zn)	ug/g	49	8408515	30	120	8408509	100	5.0	8409125

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 PAHS (SOIL)

Bureau Veritas ID		UOT853	UOT854	UOT855		UOT856	UOT857		
Sampling Date		2022/12/09 08:30	2022/12/08 13:30	2022/12/08 09:30		2022/12/08 10:00	2022/12/08 09:10		
COC Number		910457-03-01	910457-03-01	910457-03-01		910457-03-01	910457-03-01		
	UNITS	**TP-1**	**TP-5**	**TP-9**	**RDL**	**TP-11**	**TP-12**	**RDL**	**QC Batch**
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	0.0071	<0.071	<0.071	0.071	8402929
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Benzo(a)anthracene	ug/g	0.0092	0.013	<0.0050	0.0050	0.14	<0.050	0.050	8411121
Benzo(a)pyrene	ug/g	0.011	0.014	<0.0050	0.0050	0.15	<0.050	0.050	8411121
Benzo(b/j)fluoranthene	ug/g	0.016	0.019	<0.0050	0.0050	0.20	<0.050	0.050	8411121
Benzo(g,h,i)perylene	ug/g	0.0094	0.010	<0.0050	0.0050	0.13	<0.050	0.050	8411121
Benzo(k)fluoranthene	ug/g	0.0061	0.0071	<0.0050	0.0050	0.079	<0.050	0.050	8411121
Chrysene	ug/g	0.0094	0.013	<0.0050	0.0050	0.13	<0.050	0.050	8411121
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Fluoranthene	ug/g	0.025	0.035	<0.0050	0.0050	0.34	<0.050	0.050	8411121
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Indeno(1,2,3-cd)pyrene	ug/g	0.0085	0.0094	<0.0050	0.0050	0.10	<0.050	0.050	8411121
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.050	<0.050	0.050	8411121
Phenanthrene	ug/g	0.0088	0.018	<0.0050	0.0050	0.17	<0.050	0.050	8411121
Pyrene	ug/g	0.020	0.026	<0.0050	0.0050	0.27	<0.050	0.050	8411121
Surrogate Recovery (%)									
D10-Anthracene	%	92	94	90		121	118		8411121
D14-Terphenyl (FS)	%	102	104	100		112	111		8411121
D8-Acenaphthylene	%	83	87	81		92	90		8411121

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 PAHS (SOIL)

Bureau Veritas ID		UOT858		UOT859		UOT860		
Sampling Date		2022/12/08 11:30		2022/12/08 09:00		2022/12/08		
COC Number		910457-03-01		910457-03-01		910457-03-01		
	UNITS	**TP-15**	**RDL**	**TP-17**	**RDL**	**DUP 1**	**RDL**	**QC Batch**
Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	<0.071	0.071	<0.0071	0.0071	8402929
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	0.011	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Acenaphthylene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Anthracene	ug/g	0.022	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Benzo(a)anthracene	ug/g	0.046	0.0050	<0.050	0.050	0.0059	0.0050	8411121
Benzo(a)pyrene	ug/g	0.042	0.0050	<0.050	0.050	0.0058	0.0050	8411121
Benzo(b/j)fluoranthene	ug/g	0.052	0.0050	<0.050	0.050	0.0081	0.0050	8411121
Benzo(g,h,i)perylene	ug/g	0.024	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Benzo(k)fluoranthene	ug/g	0.021	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Chrysene	ug/g	0.036	0.0050	<0.050	0.050	0.0054	0.0050	8411121
Dibenzo(a,h)anthracene	ug/g	0.0068	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Fluoranthene	ug/g	0.10	0.0050	0.054	0.050	0.014	0.0050	8411121
Fluorene	ug/g	0.014	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Indeno(1,2,3-cd)pyrene	ug/g	0.024	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
1-Methylnaphthalene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
2-Methylnaphthalene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Naphthalene	ug/g	0.0066	0.0050	<0.050	0.050	<0.0050	0.0050	8411121
Phenanthrene	ug/g	0.082	0.0050	<0.050	0.050	0.0089	0.0050	8411121
Pyrene	ug/g	0.075	0.0050	<0.050	0.050	0.011	0.0050	8411121
Surrogate Recovery (%)								
D10-Anthracene	%	88		104		94		8411121
D14-Terphenyl (FS)	%	95		113		103		8411121
D8-Acenaphthylene	%	72		92		80		8411121

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		UOT853			UOT853			UOT854		
Sampling Date		2022/12/09 08:30			2022/12/09 08:30			2022/12/08 13:30		
COC Number		910457-03-01			910457-03-01			910457-03-01		
	UNITS	**TP-1**	**RDL**	**QC Batch**	**TP-1 Lab-Dup**	**RDL**	**QC Batch**	**TP-5**	**RDL**	**QC Batch**
Inorganics										
Moisture	%	18	1.0	8406980	17	1.0	8406980	26	1.0	8406980
Calculated Parameters										
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	8402933				<0.050	0.050	8402933
Volatile Organics										
Acetone (2-Propanone)	ug/g	<0.49	0.49	8409042				<0.49	0.49	8409042
Benzene	ug/g	<0.0060	0.0060	8409042				<0.0060	0.0060	8409042
Bromodichloromethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Bromoform	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Bromomethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Carbon Tetrachloride	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Chlorobenzene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Chloroform	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Dibromochloromethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,2-Dichlorobenzene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,3-Dichlorobenzene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,4-Dichlorobenzene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,1-Dichloroethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,2-Dichloroethane	ug/g	<0.049	0.049	8409042				<0.049	0.049	8409042
1,1-Dichloroethylene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,2-Dichloropropane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	8409042				<0.030	0.030	8409042
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Ethylbenzene	ug/g	<0.010	0.010	8409042				<0.010	0.010	8409042
Ethylene Dibromide	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Hexane	ug/g	<0.040	0.040	8409042				0.064	0.040	8409042
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	8409042				<0.049	0.049	8409042
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	8409042				<0.40	0.40	8409042
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	8409042				<0.40	0.40	8409042
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Styrene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042

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

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		UOT853			UOT853			UOT854		
Sampling Date		2022/12/09 08:30			2022/12/09 08:30			2022/12/08 13:30		
COC Number		910457-03-01			910457-03-01			910457-03-01		
	UNITS	**TP-1**	**RDL**	**QC Batch**	**TP-1 Lab-Dup**	**RDL**	**QC Batch**	**TP-5**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Tetrachloroethylene	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Toluene	ug/g	<0.020	0.020	8409042				0.023	0.020	8409042
1,1,1-Trichloroethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
1,1,2-Trichloroethane	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Trichloroethylene	ug/g	<0.010	0.010	8409042				<0.010	0.010	8409042
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	8409042				<0.040	0.040	8409042
Vinyl Chloride	ug/g	<0.019	0.019	8409042				<0.019	0.019	8409042
p+m-Xylene	ug/g	<0.020	0.020	8409042				0.024	0.020	8409042
o-Xylene	ug/g	<0.020	0.020	8409042				<0.020	0.020	8409042
Total Xylenes	ug/g	<0.020	0.020	8409042				0.024	0.020	8409042
F1 (C6-C10)	ug/g	<10	10	8409042				<10	10	8409042
F1 (C6-C10) - BTEX	ug/g	<10	10	8409042				<10	10	8409042
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	8411098				<10	10	8411098
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	8411098				<50	50	8411098
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	8411098				<50	50	8411098
Reached Baseline at C50	ug/g	Yes		8411098				Yes		8411098
Surrogate Recovery (%)										
o-Terphenyl	%	94		8411098				96		8411098
4-Bromofluorobenzene	%	91		8409042				92		8409042
D10-o-Xylene	%	88		8409042				103		8409042
D4-1,2-Dichloroethane	%	96		8409042				95		8409042
D8-Toluene	%	93		8409042				93		8409042

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

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		UOT855	UOT856	UOT857	UOT858	UOT859		
Sampling Date		2022/12/08 09:30	2022/12/08 10:00	2022/12/08 09:10	2022/12/08 11:30	2022/12/08 09:00		
COC Number		910457-03-01	910457-03-01	910457-03-01	910457-03-01	910457-03-01		
	UNITS	**TP-9**	**TP-11**	**TP-12**	**TP-15**	**TP-17**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	23	19	14	19	24	1.0	8406980
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8402933
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.49	<0.49	<0.49	<0.49	<0.49	0.49	8409042
Benzene	ug/g	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.0060	8409042
Bromodichloromethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Bromoform	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Bromomethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Carbon Tetrachloride	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Chlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Chloroform	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Dibromochloromethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,1-Dichloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,2-Dichloroethane	ug/g	<0.049	<0.049	<0.049	<0.049	<0.049	0.049	8409042
1,1-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,2-Dichloropropane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	8409042
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Ethylbenzene	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8409042
Ethylene Dibromide	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Hexane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	<0.049	<0.049	<0.049	0.049	8409042
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8409042
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8409042
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Styrene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		UOT855	UOT856	UOT857	UOT858	UOT859		
Sampling Date		2022/12/08 09:30	2022/12/08 10:00	2022/12/08 09:10	2022/12/08 11:30	2022/12/08 09:00		
COC Number		910457-03-01	910457-03-01	910457-03-01	910457-03-01	910457-03-01		
	UNITS	**TP-9**	**TP-11**	**TP-12**	**TP-15**	**TP-17**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8409042
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Trichloroethylene	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8409042
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8409042
Vinyl Chloride	ug/g	<0.019	<0.019	<0.019	<0.019	<0.019	0.019	8409042
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8409042
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8409042
Total Xylenes	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8409042
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	10	8409042
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	10	8409042
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	10	8411098
F3 (C16-C34 Hydrocarbons)	ug/g	<50	64	54	71	150	50	8411098
F4 (C34-C50 Hydrocarbons)	ug/g	<50	78	<50	78	390	50	8411098
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	No		8411098
Surrogate Recovery (%)								
o-Terphenyl	%	96	96	100	96	100		8411098
4-Bromofluorobenzene	%	90	91	91	92	91		8409042
D10-o-Xylene	%	91	93	93	100	80		8409042
D4-1,2-Dichloroethane	%	96	94	98	96	96		8409042
D8-Toluene	%	93	93	92	93	93		8409042

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		UOT860		
Sampling Date		2022/12/08		
COC Number		910457-03-01		
	UNITS	**DUP 1**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	26	1.0	8406980
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	0.050	8402933
Volatile Organics				
Acetone (2-Propanone)	ug/g	<0.49	0.49	8409042
Benzene	ug/g	<0.0060	0.0060	8409042
Bromodichloromethane	ug/g	<0.040	0.040	8409042
Bromoform	ug/g	<0.040	0.040	8409042
Bromomethane	ug/g	<0.040	0.040	8409042
Carbon Tetrachloride	ug/g	<0.040	0.040	8409042
Chlorobenzene	ug/g	<0.040	0.040	8409042
Chloroform	ug/g	<0.040	0.040	8409042
Dibromochloromethane	ug/g	<0.040	0.040	8409042
1,2-Dichlorobenzene	ug/g	<0.040	0.040	8409042
1,3-Dichlorobenzene	ug/g	<0.040	0.040	8409042
1,4-Dichlorobenzene	ug/g	<0.040	0.040	8409042
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	0.040	8409042
1,1-Dichloroethane	ug/g	<0.040	0.040	8409042
1,2-Dichloroethane	ug/g	<0.049	0.049	8409042
1,1-Dichloroethylene	ug/g	<0.040	0.040	8409042
cis-1,2-Dichloroethylene	ug/g	<0.040	0.040	8409042
trans-1,2-Dichloroethylene	ug/g	<0.040	0.040	8409042
1,2-Dichloropropane	ug/g	<0.040	0.040	8409042
cis-1,3-Dichloropropene	ug/g	<0.030	0.030	8409042
trans-1,3-Dichloropropene	ug/g	<0.040	0.040	8409042
Ethylbenzene	ug/g	<0.010	0.010	8409042
Ethylene Dibromide	ug/g	<0.040	0.040	8409042
Hexane	ug/g	<0.040	0.040	8409042
Methylene Chloride(Dichloromethane)	ug/g	<0.049	0.049	8409042
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	0.40	8409042
Methyl Isobutyl Ketone	ug/g	<0.40	0.40	8409042
Methyl t-butyl ether (MTBE)	ug/g	<0.040	0.040	8409042
Styrene	ug/g	<0.040	0.040	8409042
1,1,1,2-Tetrachloroethane	ug/g	<0.040	0.040	8409042
1,1,2,2-Tetrachloroethane	ug/g	<0.040	0.040	8409042

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		UOT860		
Sampling Date		2022/12/08		
COC Number		910457-03-01		
	UNITS	**DUP 1**	**RDL**	**QC Batch**
Tetrachloroethylene	ug/g	<0.040	0.040	8409042
Toluene	ug/g	<0.020	0.020	8409042
1,1,1-Trichloroethane	ug/g	<0.040	0.040	8409042
1,1,2-Trichloroethane	ug/g	<0.040	0.040	8409042
Trichloroethylene	ug/g	<0.010	0.010	8409042
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	0.040	8409042
Vinyl Chloride	ug/g	<0.019	0.019	8409042
p+m-Xylene	ug/g	<0.020	0.020	8409042
o-Xylene	ug/g	<0.020	0.020	8409042
Total Xylenes	ug/g	<0.020	0.020	8409042
F1 (C6-C10)	ug/g	<10	10	8409042
F1 (C6-C10) - BTEX	ug/g	<10	10	8409042
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	8411098
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	8411098
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	8411098
Reached Baseline at C50	ug/g	Yes		8411098
Surrogate Recovery (%)				
o-Terphenyl	%	94		8411098
4-Bromofluorobenzene	%	92		8409042
D10-o-Xylene	%	98		8409042
D4-1,2-Dichloroethane	%	96		8409042
D8-Toluene	%	92		8409042

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		UOT859		
Sampling Date		2022/12/08 09:00		
COC Number		910457-03-01		
	UNITS	**TP-17**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons				
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	1700	100	8415487

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

TEST SUMMARY

Bureau Veritas ID: UOT853 **Collected:** 2022/12/09
Sample ID: TP-1 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8408509	2022/12/16	2022/12/16	Rupinder Gill
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/19	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

Bureau Veritas ID: UOT853 Dup **Collected:** 2022/12/09
Sample ID: TP-1 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal

Bureau Veritas ID: UOT854 **Collected:** 2022/12/08
Sample ID: TP-5 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8408509	2022/12/16	2022/12/16	Rupinder Gill
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/19	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

Bureau Veritas ID: UOT855 **Collected:** 2022/12/08
Sample ID: TP-9 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8409125	2022/12/16	2022/12/19	Viviana Canzonieri
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/20	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

Bureau Veritas ID: UOT856 **Collected:** 2022/12/08
Sample ID: TP-11 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk

TEST SUMMARY

Bureau Veritas ID: UOT856 **Collected:** 2022/12/08
Sample ID: TP-11 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8408509	2022/12/16	2022/12/16	Rupinder Gill
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/20	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

Bureau Veritas ID: UOT857 **Collected:** 2022/12/08
Sample ID: TP-12 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8408515	2022/12/16	2022/12/16	Daniel Teclu
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/20	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

Bureau Veritas ID: UOT858 **Collected:** 2022/12/08
Sample ID: TP-15 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8408509	2022/12/16	2022/12/16	Rupinder Gill
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/20	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

Bureau Veritas ID: UOT859 **Collected:** 2022/12/08
Sample ID: TP-17 **Shipped:**
Matrix: Soil **Received:** 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
F4G (CCME Hydrocarbons Gravimetric)	BAL	8415487	2022/12/21	2022/12/21	Alketa Vrapi
Acid Extractable Metals by ICPMS	ICP/MS	8408509	2022/12/16	2022/12/16	Rupinder Gill
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/20	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

TEST SUMMARY

Bureau Veritas ID: UOT860
Sample ID: DUP 1
Matrix: Soil

Collected: 2022/12/08
Shipped:
Received: 2022/12/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8402929	N/A	2022/12/20	Automated Statchk
1,3-Dichloropropene Sum	CALC	8402933	N/A	2022/12/19	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8411098	2022/12/19	2022/12/20	Jeevaraj Jeevaratrnam
Acid Extractable Metals by ICPMS	ICP/MS	8409125	2022/12/16	2022/12/19	Viviana Canzonieri
Moisture	BAL	8406980	N/A	2022/12/15	Simrat Bhathal
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8411121	2022/12/19	2022/12/20	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8409042	N/A	2022/12/19	Denis Reid

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

Sample UOT856 [TP-11] : PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample UOT857 [TP-12] : PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample UOT859 [TP-17] : PAH ANALYSIS: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8409042	4-Bromofluorobenzene	2022/12/19	102	60 - 140	102	60 - 140	92	%		
8409042	D10-o-Xylene	2022/12/19	109	60 - 130	94	60 - 130	89	%		
8409042	D4-1,2-Dichloroethane	2022/12/19	94	60 - 140	96	60 - 140	94	%		
8409042	D8-Toluene	2022/12/19	100	60 - 140	100	60 - 140	92	%		
8411098	o-Terphenyl	2022/12/20	85	60 - 130	91	60 - 130	93	%		
8411121	D10-Anthracene	2022/12/19	97	50 - 130	100	50 - 130	100	%		
8411121	D14-Terphenyl (FS)	2022/12/19	107	50 - 130	107	50 - 130	109	%		
8411121	D8-Acenaphthylene	2022/12/19	90	50 - 130	86	50 - 130	84	%		
8406980	Moisture	2022/12/15							6.5	20
8408509	Acid Extractable Antimony (Sb)	2022/12/16	103	75 - 125	106	80 - 120	<0.20	ug/g	NC	30
8408509	Acid Extractable Arsenic (As)	2022/12/16	99	75 - 125	102	80 - 120	<1.0	ug/g	NC	30
8408509	Acid Extractable Barium (Ba)	2022/12/16	101	75 - 125	106	80 - 120	<0.50	ug/g	3.0	30
8408509	Acid Extractable Beryllium (Be)	2022/12/16	93	75 - 125	98	80 - 120	<0.20	ug/g	NC	30
8408509	Acid Extractable Boron (B)	2022/12/16	93	75 - 125	99	80 - 120	<5.0	ug/g	NC	30
8408509	Acid Extractable Cadmium (Cd)	2022/12/16	98	75 - 125	102	80 - 120	<0.10	ug/g	NC	30
8408509	Acid Extractable Chromium (Cr)	2022/12/16	98	75 - 125	102	80 - 120	<1.0	ug/g	3.7	30
8408509	Acid Extractable Cobalt (Co)	2022/12/16	97	75 - 125	101	80 - 120	<0.10	ug/g	1.4	30
8408509	Acid Extractable Copper (Cu)	2022/12/16	98	75 - 125	104	80 - 120	<0.50	ug/g	0.23	30
8408509	Acid Extractable Lead (Pb)	2022/12/16	92	75 - 125	101	80 - 120	<1.0	ug/g	1.6	30
8408509	Acid Extractable Molybdenum (Mo)	2022/12/16	100	75 - 125	101	80 - 120	<0.50	ug/g	NC	30
8408509	Acid Extractable Nickel (Ni)	2022/12/16	93	75 - 125	102	80 - 120	<0.50	ug/g	1.2	30
8408509	Acid Extractable Selenium (Se)	2022/12/16	99	75 - 125	103	80 - 120	<0.50	ug/g	NC	30
8408509	Acid Extractable Silver (Ag)	2022/12/16	97	75 - 125	101	80 - 120	<0.20	ug/g	NC	30
8408509	Acid Extractable Thallium (Tl)	2022/12/16	94	75 - 125	103	80 - 120	<0.050	ug/g	NC	30
8408509	Acid Extractable Uranium (U)	2022/12/16	93	75 - 125	100	80 - 120	<0.050	ug/g	1.7	30
8408509	Acid Extractable Vanadium (V)	2022/12/16	96	75 - 125	100	80 - 120	<5.0	ug/g	4.0	30
8408509	Acid Extractable Zinc (Zn)	2022/12/16	NC	75 - 125	99	80 - 120	<5.0	ug/g	0.76	30
8408515	Acid Extractable Antimony (Sb)	2022/12/16	104	75 - 125	103	80 - 120	<0.20	ug/g	NC	30
8408515	Acid Extractable Arsenic (As)	2022/12/16	102	75 - 125	101	80 - 120	<1.0	ug/g	6.5	30
8408515	Acid Extractable Barium (Ba)	2022/12/16	NC	75 - 125	96	80 - 120	<0.50	ug/g	2.8	30
8408515	Acid Extractable Beryllium (Be)	2022/12/16	106	75 - 125	100	80 - 120	<0.20	ug/g	3.8	30
8408515	Acid Extractable Boron (B)	2022/12/16	101	75 - 125	102	80 - 120	<5.0	ug/g	2.4	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8408515	Acid Extractable Cadmium (Cd)	2022/12/16	105	75 - 125	99	80 - 120	<0.10	ug/g	NC	30
8408515	Acid Extractable Chromium (Cr)	2022/12/16	104	75 - 125	97	80 - 120	<1.0	ug/g	1.3	30
8408515	Acid Extractable Cobalt (Co)	2022/12/16	101	75 - 125	97	80 - 120	<0.10	ug/g	0.28	30
8408515	Acid Extractable Copper (Cu)	2022/12/16	101	75 - 125	102	80 - 120	<0.50	ug/g	4.3	30
8408515	Acid Extractable Lead (Pb)	2022/12/16	102	75 - 125	102	80 - 120	<1.0	ug/g	5.9	30
8408515	Acid Extractable Molybdenum (Mo)	2022/12/16	107	75 - 125	98	80 - 120	<0.50	ug/g	NC	30
8408515	Acid Extractable Nickel (Ni)	2022/12/16	101	75 - 125	97	80 - 120	<0.50	ug/g	0.50	30
8408515	Acid Extractable Selenium (Se)	2022/12/16	105	75 - 125	103	80 - 120	<0.50	ug/g	NC	30
8408515	Acid Extractable Silver (Ag)	2022/12/16	106	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
8408515	Acid Extractable Thallium (Tl)	2022/12/16	105	75 - 125	103	80 - 120	<0.050	ug/g	10	30
8408515	Acid Extractable Uranium (U)	2022/12/16	104	75 - 125	99	80 - 120	<0.050	ug/g	0.50	30
8408515	Acid Extractable Vanadium (V)	2022/12/16	NC	75 - 125	94	80 - 120	<5.0	ug/g	1.4	30
8408515	Acid Extractable Zinc (Zn)	2022/12/16	NC	75 - 125	95	80 - 120	<5.0	ug/g	0.31	30
8409042	1,1,1,2-Tetrachloroethane	2022/12/19	100	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
8409042	1,1,1-Trichloroethane	2022/12/19	96	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8409042	1,1,2,2-Tetrachloroethane	2022/12/19	103	60 - 140	108	60 - 130	<0.040	ug/g	NC	50
8409042	1,1,2-Trichloroethane	2022/12/19	93	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8409042	1,1-Dichloroethane	2022/12/19	93	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8409042	1,1-Dichloroethylene	2022/12/19	94	60 - 140	93	60 - 130	<0.040	ug/g	NC	50
8409042	1,2-Dichlorobenzene	2022/12/19	90	60 - 140	90	60 - 130	<0.040	ug/g	NC	50
8409042	1,2-Dichloroethane	2022/12/19	88	60 - 140	89	60 - 130	<0.049	ug/g	NC	50
8409042	1,2-Dichloropropane	2022/12/19	95	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8409042	1,3-Dichlorobenzene	2022/12/19	94	60 - 140	92	60 - 130	<0.040	ug/g	NC	50
8409042	1,4-Dichlorobenzene	2022/12/19	106	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
8409042	Acetone (2-Propanone)	2022/12/19	98	60 - 140	95	60 - 140	<0.49	ug/g	NC	50
8409042	Benzene	2022/12/19	92	60 - 140	92	60 - 130	<0.0060	ug/g	NC	50
8409042	Bromodichloromethane	2022/12/19	101	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
8409042	Bromoform	2022/12/19	109	60 - 140	112	60 - 130	<0.040	ug/g	NC	50
8409042	Bromomethane	2022/12/19	101	60 - 140	103	60 - 140	<0.040	ug/g	NC	50
8409042	Carbon Tetrachloride	2022/12/19	102	60 - 140	101	60 - 130	<0.040	ug/g	NC	50
8409042	Chlorobenzene	2022/12/19	94	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8409042	Chloroform	2022/12/19	99	60 - 140	99	60 - 130	<0.040	ug/g	NC	50

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8409042	cis-1,2-Dichloroethylene	2022/12/19	103	60 - 140	104	60 - 130	<0.040	ug/g	NC	50
8409042	cis-1,3-Dichloropropene	2022/12/19	87	60 - 140	87	60 - 130	<0.030	ug/g	NC	50
8409042	Dibromochloromethane	2022/12/19	103	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
8409042	Dichlorodifluoromethane (FREON 12)	2022/12/19	112	60 - 140	113	60 - 140	<0.040	ug/g	NC	50
8409042	Ethylbenzene	2022/12/19	82	60 - 140	80	60 - 130	<0.010	ug/g	NC	50
8409042	Ethylene Dibromide	2022/12/19	95	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8409042	F1 (C6-C10) - BTEX	2022/12/19					<10	ug/g	NC	30
8409042	F1 (C6-C10)	2022/12/19	109	60 - 140	99	80 - 120	<10	ug/g	NC	30
8409042	Hexane	2022/12/19	97	60 - 140	95	60 - 130	<0.040	ug/g	NC	50
8409042	Methyl Ethyl Ketone (2-Butanone)	2022/12/19	100	60 - 140	100	60 - 140	<0.40	ug/g	NC	50
8409042	Methyl Isobutyl Ketone	2022/12/19	88	60 - 140	91	60 - 130	<0.40	ug/g	NC	50
8409042	Methyl t-butyl ether (MTBE)	2022/12/19	81	60 - 140	79	60 - 130	<0.040	ug/g	NC	50
8409042	Methylene Chloride(Dichloromethane)	2022/12/19	105	60 - 140	106	60 - 130	<0.049	ug/g	NC	50
8409042	o-Xylene	2022/12/19	83	60 - 140	81	60 - 130	<0.020	ug/g	NC	50
8409042	p+m-Xylene	2022/12/19	83	60 - 140	81	60 - 130	<0.020	ug/g	NC	50
8409042	Styrene	2022/12/19	94	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8409042	Tetrachloroethylene	2022/12/19	96	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8409042	Toluene	2022/12/19	92	60 - 140	91	60 - 130	<0.020	ug/g	NC	50
8409042	Total Xylenes	2022/12/19					<0.020	ug/g	NC	50
8409042	trans-1,2-Dichloroethylene	2022/12/19	103	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
8409042	trans-1,3-Dichloropropene	2022/12/19	89	60 - 140	89	60 - 130	<0.040	ug/g	NC	50
8409042	Trichloroethylene	2022/12/19	107	60 - 140	106	60 - 130	<0.010	ug/g	NC	50
8409042	Trichlorofluoromethane (FREON 11)	2022/12/19	98	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
8409042	Vinyl Chloride	2022/12/19	93	60 - 140	93	60 - 130	<0.019	ug/g	NC	50
8409125	Acid Extractable Antimony (Sb)	2022/12/20	100	75 - 125	99	80 - 120	<0.20	ug/g	NC	30
8409125	Acid Extractable Arsenic (As)	2022/12/20	100	75 - 125	97	80 - 120	<1.0	ug/g	13	30
8409125	Acid Extractable Barium (Ba)	2022/12/20	NC	75 - 125	92	80 - 120	<0.50	ug/g	3.0	30
8409125	Acid Extractable Beryllium (Be)	2022/12/20	105	75 - 125	96	80 - 120	<0.20	ug/g	3.5	30
8409125	Acid Extractable Boron (B)	2022/12/20	104	75 - 125	100	80 - 120	<5.0	ug/g	1.3	30
8409125	Acid Extractable Cadmium (Cd)	2022/12/20	101	75 - 125	96	80 - 120	<0.10	ug/g	NC	30
8409125	Acid Extractable Chromium (Cr)	2022/12/20	107	75 - 125	102	80 - 120	<1.0	ug/g	3.6	30
8409125	Acid Extractable Cobalt (Co)	2022/12/20	104	75 - 125	100	80 - 120	<0.10	ug/g	2.9	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8409125	Acid Extractable Copper (Cu)	2022/12/20	99	75 - 125	98	80 - 120	<0.50	ug/g	26	30
8409125	Acid Extractable Lead (Pb)	2022/12/20	102	75 - 125	98	80 - 120	<1.0	ug/g	9.5	30
8409125	Acid Extractable Molybdenum (Mo)	2022/12/20	105	75 - 125	97	80 - 120	<0.50	ug/g	3.7	30
8409125	Acid Extractable Nickel (Ni)	2022/12/20	99	75 - 125	101	80 - 120	<0.50	ug/g	12	30
8409125	Acid Extractable Selenium (Se)	2022/12/20	105	75 - 125	99	80 - 120	<0.50	ug/g	NC	30
8409125	Acid Extractable Silver (Ag)	2022/12/20	104	75 - 125	102	80 - 120	<0.20	ug/g	NC	30
8409125	Acid Extractable Thallium (Tl)	2022/12/20	104	75 - 125	100	80 - 120	<0.050	ug/g	13	30
8409125	Acid Extractable Uranium (U)	2022/12/20	106	75 - 125	98	80 - 120	<0.050	ug/g	9.7	30
8409125	Acid Extractable Vanadium (V)	2022/12/20	105	75 - 125	98	80 - 120	<5.0	ug/g	5.5	30
8409125	Acid Extractable Zinc (Zn)	2022/12/20	NC	75 - 125	99	80 - 120	<5.0	ug/g	12	30
8411098	F2 (C10-C16 Hydrocarbons)	2022/12/20	89	60 - 130	94	80 - 120	<10	ug/g	NC	30
8411098	F3 (C16-C34 Hydrocarbons)	2022/12/20	89	60 - 130	94	80 - 120	<50	ug/g	NC	30
8411098	F4 (C34-C50 Hydrocarbons)	2022/12/20	94	60 - 130	100	80 - 120	<50	ug/g	NC	30
8411121	1-Methylnaphthalene	2022/12/19	107	50 - 130	110	50 - 130	<0.0050	ug/g	NC	40
8411121	2-Methylnaphthalene	2022/12/19	102	50 - 130	105	50 - 130	<0.0050	ug/g	NC	40
8411121	Acenaphthene	2022/12/19	98	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8411121	Acenaphthylene	2022/12/19	95	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8411121	Anthracene	2022/12/19	96	50 - 130	99	50 - 130	<0.0050	ug/g	12	40
8411121	Benzo(a)anthracene	2022/12/19	101	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
8411121	Benzo(a)pyrene	2022/12/19	94	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8411121	Benzo(b/j)fluoranthene	2022/12/19	90	50 - 130	96	50 - 130	<0.0050	ug/g	51 (1)	40
8411121	Benzo(g,h,i)perylene	2022/12/19	123	50 - 130	111	50 - 130	<0.0050	ug/g	NC	40
8411121	Benzo(k)fluoranthene	2022/12/19	100	50 - 130	110	50 - 130	<0.0050	ug/g	NC	40
8411121	Chrysene	2022/12/19	97	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8411121	Dibenzo(a,h)anthracene	2022/12/19	106	50 - 130	105	50 - 130	<0.0050	ug/g	NC	40
8411121	Fluoranthene	2022/12/19	104	50 - 130	105	50 - 130	<0.0050	ug/g	61 (1)	40
8411121	Fluorene	2022/12/19	98	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8411121	Indeno(1,2,3-cd)pyrene	2022/12/19	95	50 - 130	105	50 - 130	<0.0050	ug/g	NC	40
8411121	Naphthalene	2022/12/19	91	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8411121	Phenanthrene	2022/12/19	97	50 - 130	100	50 - 130	<0.0050	ug/g	62 (1)	40
8411121	Pyrene	2022/12/19	103	50 - 130	103	50 - 130	<0.0050	ug/g	56 (1)	40

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8415487	F4G-sg (Grav. Heavy Hydrocarbons)	2022/12/21	105	65 - 135	101	65 - 135	<100	ug/g	0	50

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

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

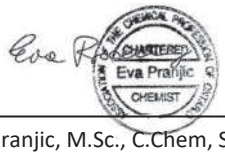
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

Bureau Veritas
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvna.com

Page of

13-Dec-22 14:50
Katherine Szozda
C2AG432
MUM ENV-1602

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Only:
Company Name:	#17498 exp Services Inc	Company Name:		Quotation #:	C20328	Bottle Order #: 910457
Attention:	Accounts Payable	Attention:	Leah Wells	P.O. #:		
Address:	100-2650 Queensview Drive Ottawa ON K2B 8H6	Address:		Project:	OTT-22017859-A0	Project Manager: Katherine Szozda
Tel:	(613) 688-1899 Fax: (613) 225-7337	Tel:	Fax:	Project Name:		
Email:	AP@exp.com; Karen.Burke@exp.com	Email:	leah.wells@exp.com	Site #:		
				Sampled By:	MZ	C#910457-03-01

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☑ Res/Park ☑ Medium/Fine ☑ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ☐ PWQO ☐ Reg 406 Table ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___

	Sample Barcode Label	Sample Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	O.Reg 153 VOCs by HS & F1-F4 (Soil)	O.Reg 153 PHCs (Soil)	O.Reg 153 ICPMS Metals (Soil)	# of Bottles	Comments
1		TP-1	22/12/09		S		X	X	X	4	
2		TP-5	22/12/08		S		X	X	X	4	
3		TP-9	"		S		X	X	X	4	
4		TP-11	"		S		X	X	X	4	
5		TP-12	"		S		X	X	X	4	
6		TP-15	"		S		X	X	X	4	
7		TP-17	"		S		X	X	X	4	
8		Dup 1	"		S		X	X	X	4	
9											
10											

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Mad McLellan	22/12/13	2:45	Angelica Santiago	2022/12/13	14:50	
				2022/12/13	08:00	

Laboratory Use Only
Time Sensitive ☐ Temperature (°C) on Rec: 2,1,2 Custody Seal Present ☐ Intact ☐ Yes ☐ No ☑

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL LABORATORIES/RESOURCES/CODE TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

* SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL LABORATORIES/RESOURCES/CHAIN-CUSTODY FORMS-COCS.

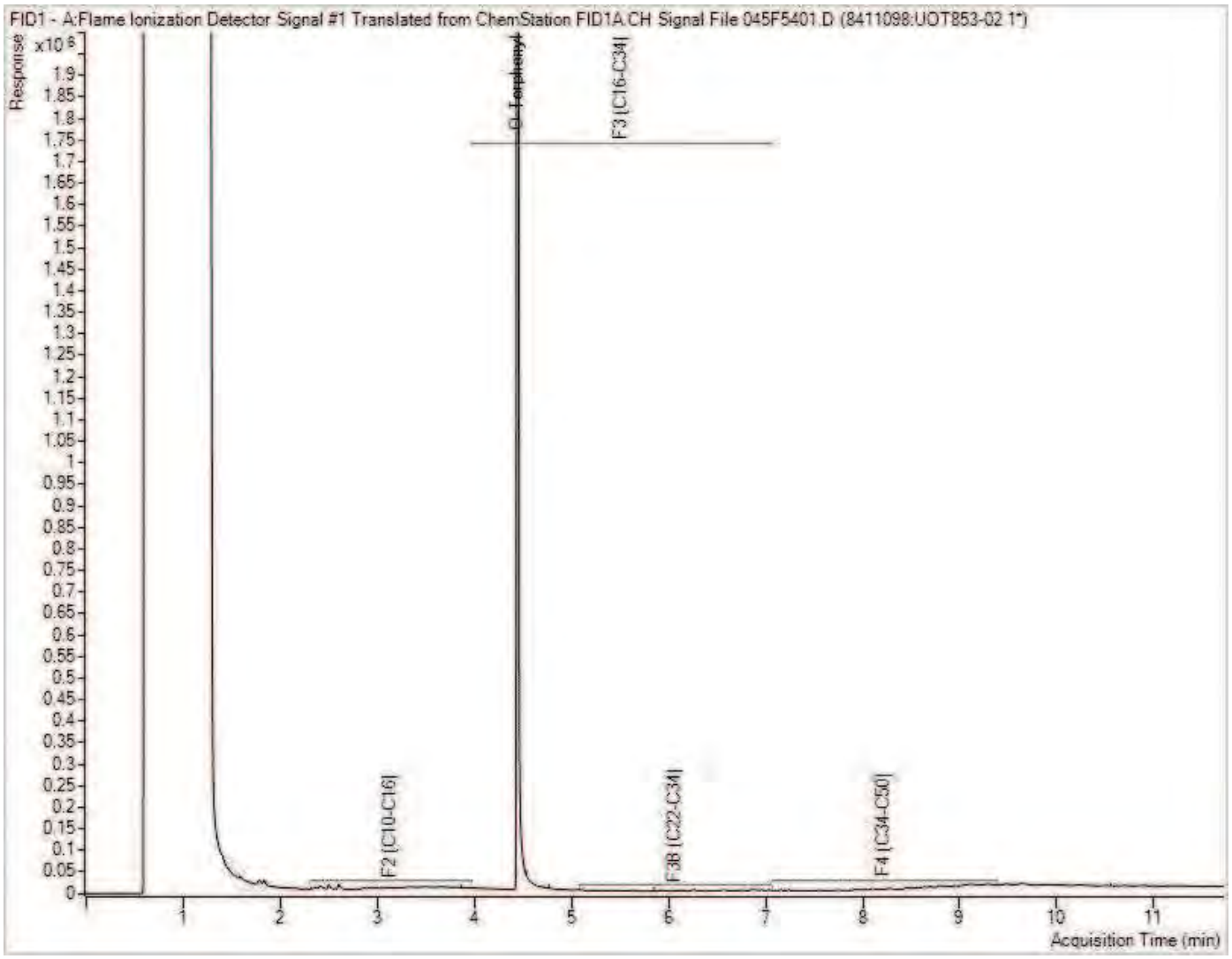
SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

1/2/2

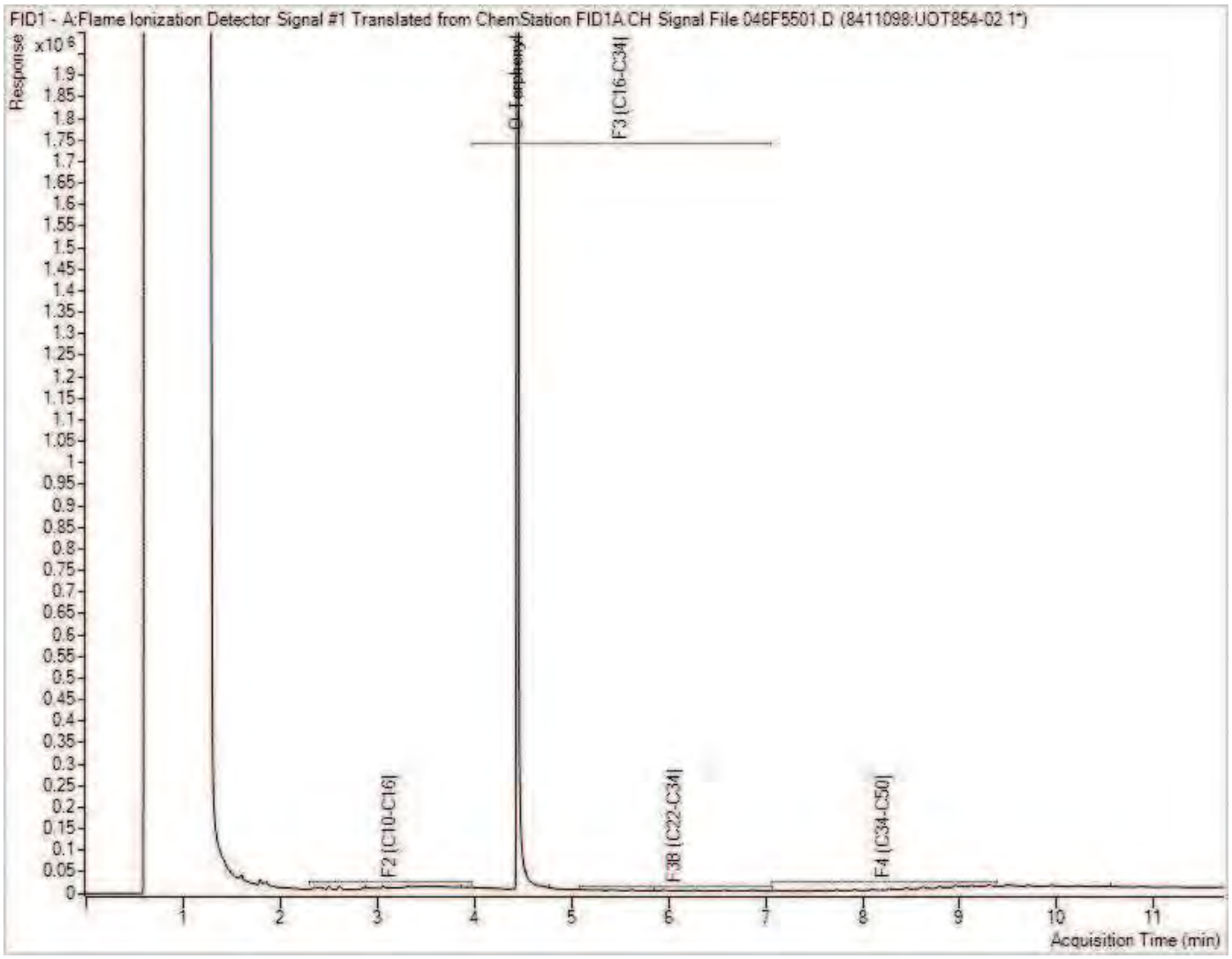
Bureau Veritas Canada (2019) Inc.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



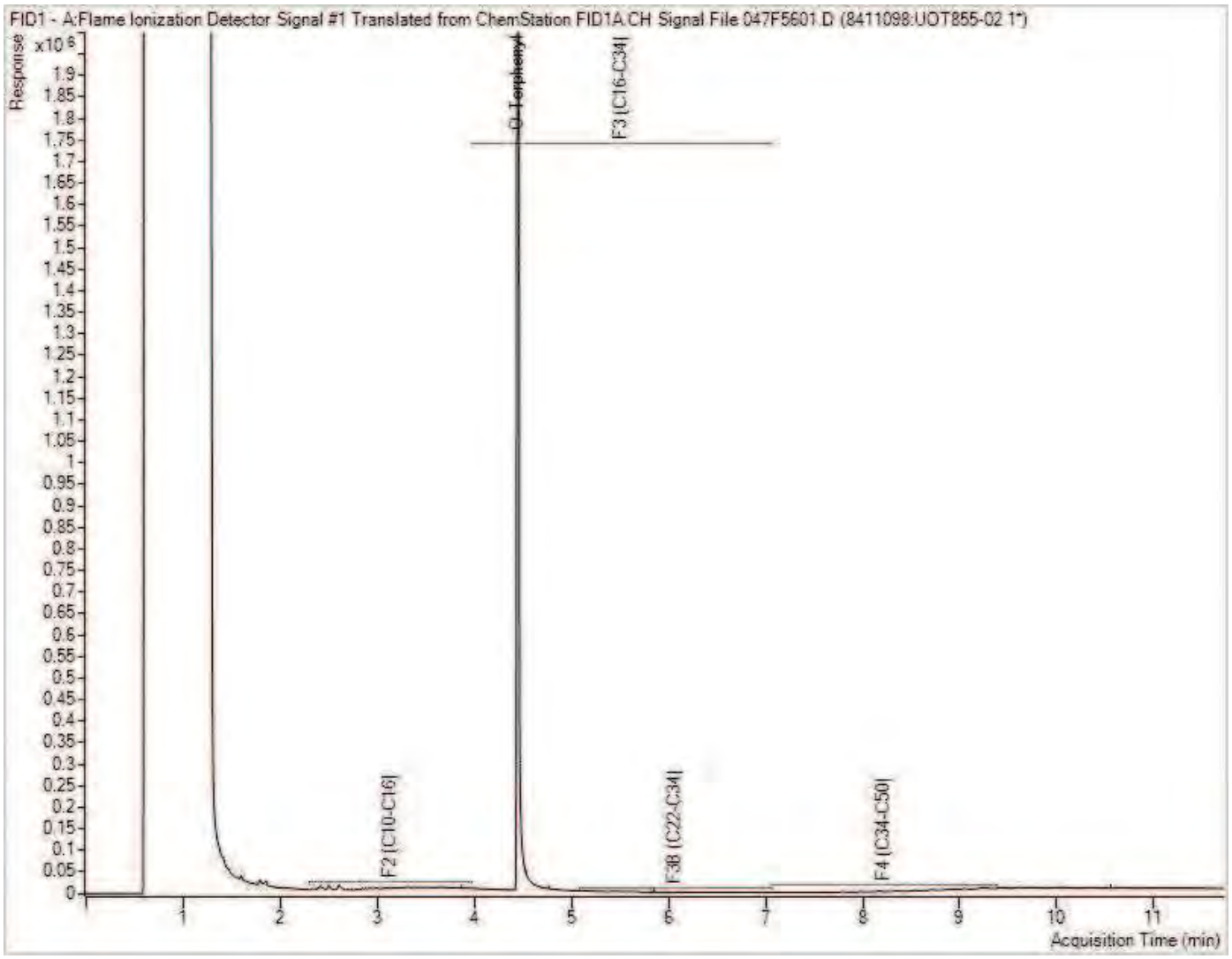
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



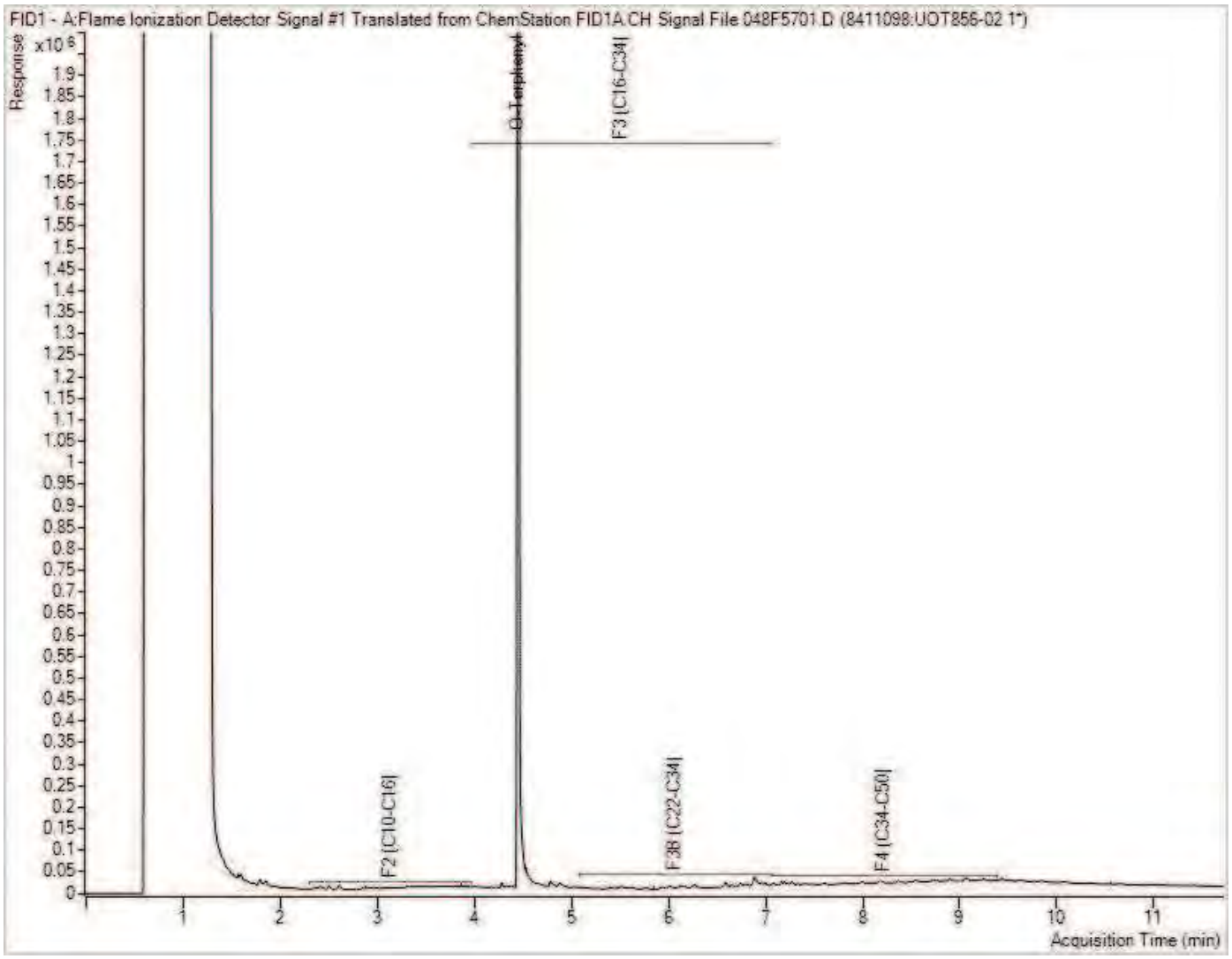
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



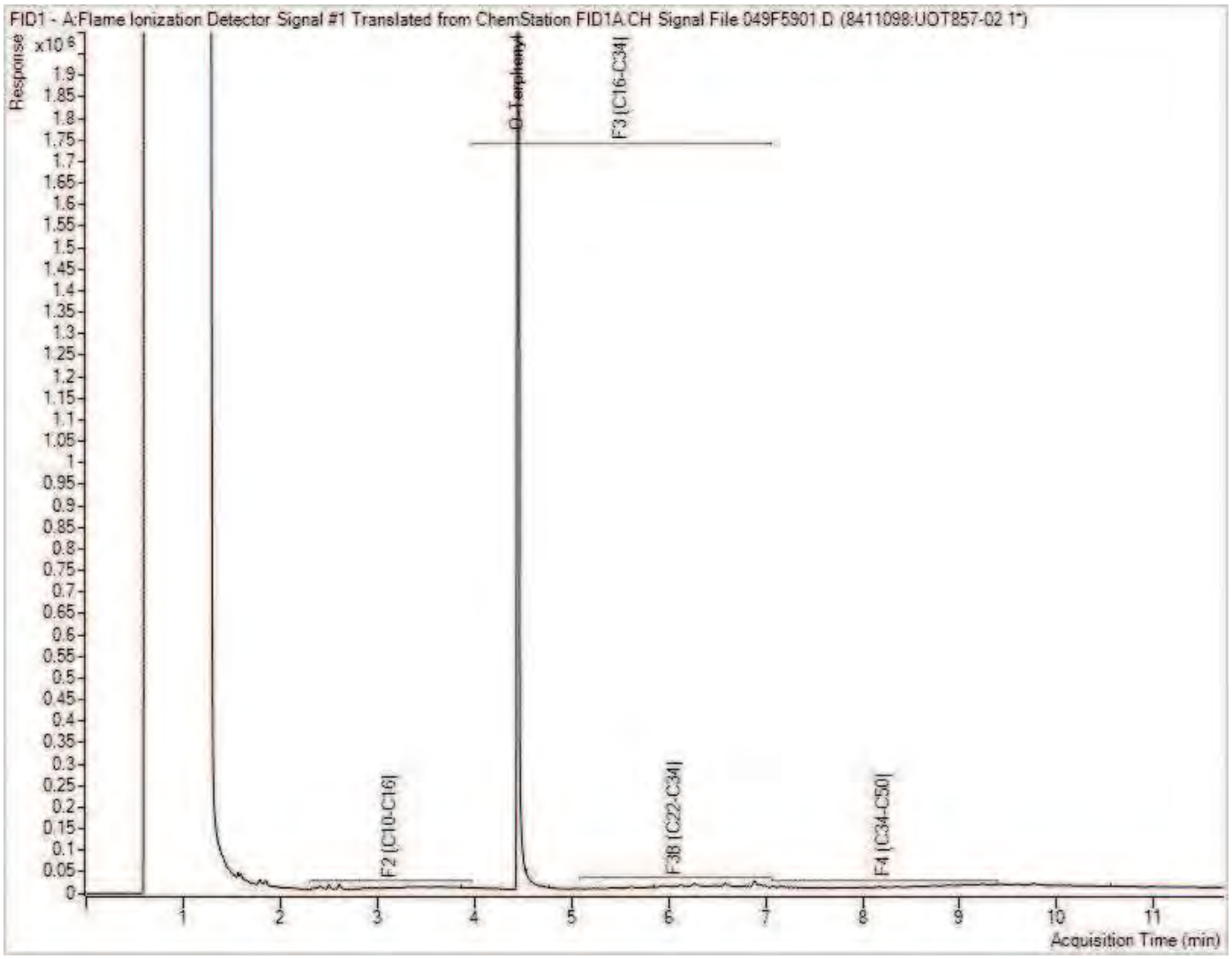
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



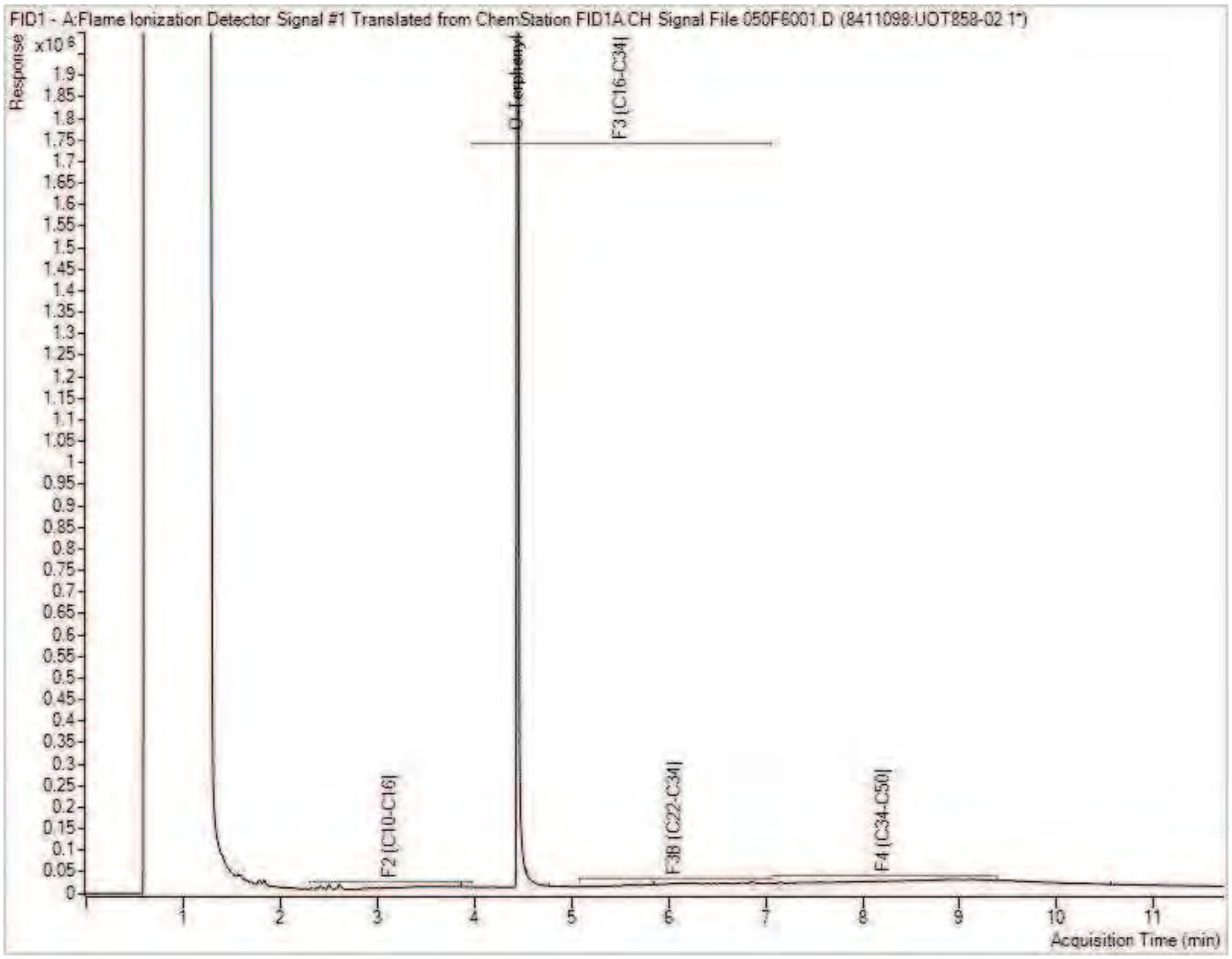
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram

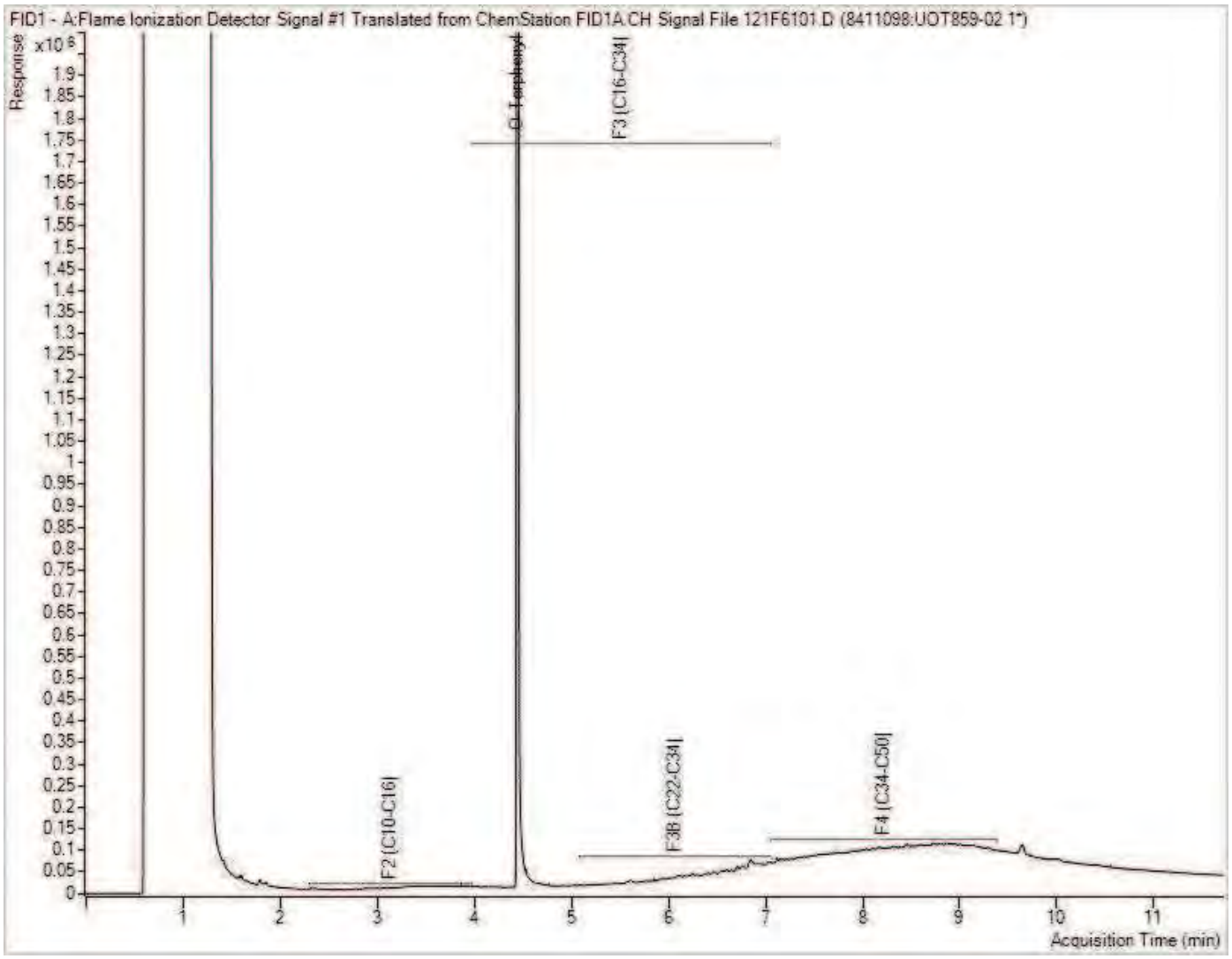


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C2AG432
Report Date: 2022/12/21
Bureau Veritas Sample: UOT859

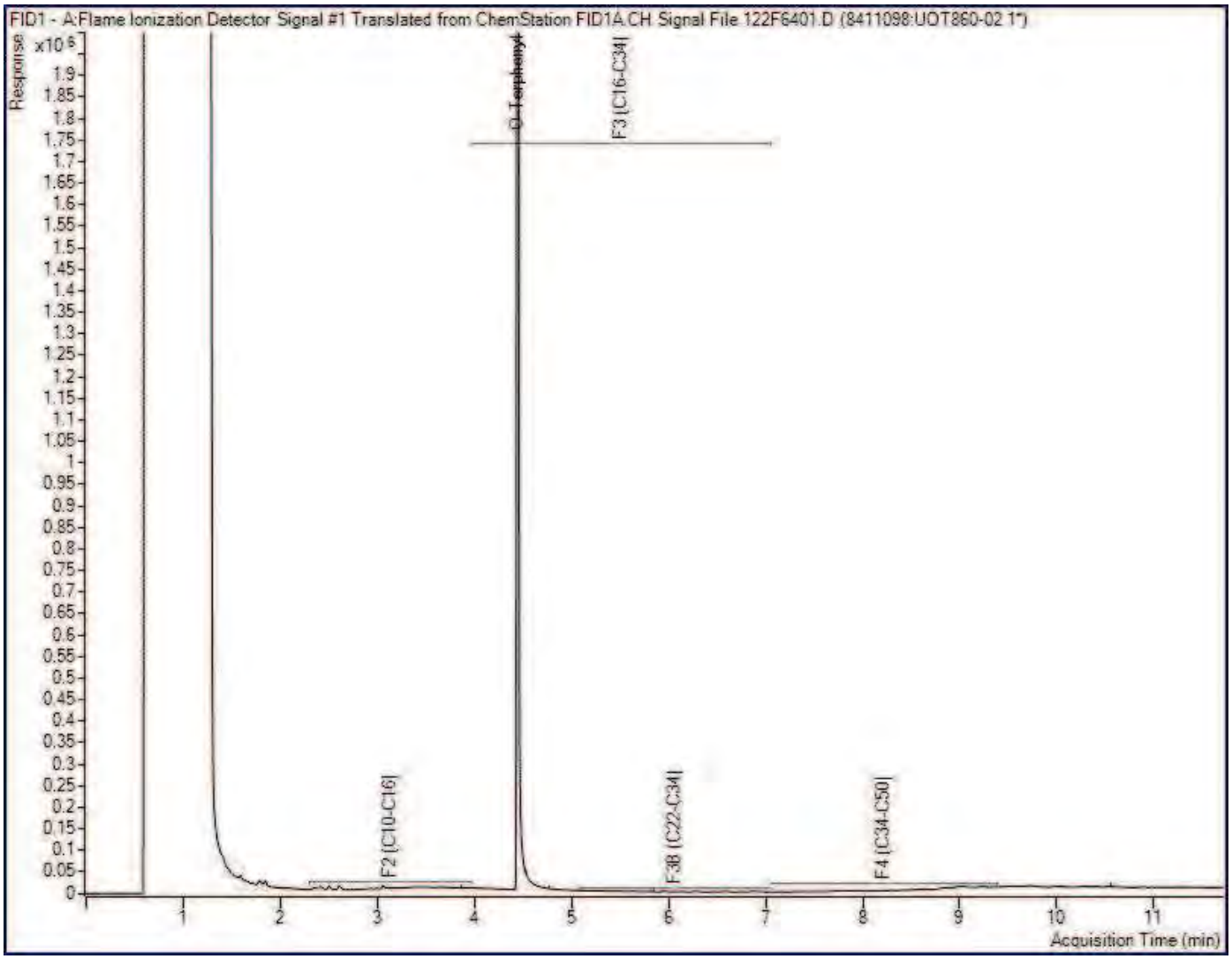
exp Services Inc
Client Project #: OTT-22017859-A0
Client ID: TP-17

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: OTT-22017859-A0
Your C.O.C. #: 910457-01-01

Attention: Leah Wells

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2023/01/05
Report #: R7455518
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AS120
Received: 2022/12/28, 08:54

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	3	N/A	2023/01/05	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	3	N/A	2023/01/04		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Soil (1)	3	2023/01/03	2023/01/04	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	3	2023/01/03	2023/01/03	CAM SOP-00447	EPA 6020B m
Moisture	3	N/A	2022/12/29	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	3	2023/01/03	2023/01/05	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs	3	N/A	2023/01/03	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”.

Your Project #: OTT-22017859-A0
Your C.O.C. #: 910457-01-01

Attention: Leah Wells

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2023/01/05
Report #: R7455518
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AS120

Received: 2022/12/28, 08:54

Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Bureau Veritas
05 Jan 2023 17:35:00

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

O.REG 153 ICPMS METALS (SOIL)

Bureau Veritas ID		URK168	URK169	URK170		
Sampling Date		2022/12/22	2022/12/22	2022/12/22		
COC Number		910457-01-01	910457-01-01	910457-01-01		
	UNITS	**BH8 SS1**	**BH10 SS3**	**BH11 SS3**	**RDL**	**QC Batch**
Metals						
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	0.20	8429983
Acid Extractable Arsenic (As)	ug/g	1.1	2.1	2.7	1.0	8429983
Acid Extractable Barium (Ba)	ug/g	68	220	210	0.50	8429983
Acid Extractable Beryllium (Be)	ug/g	0.31	1.1	1.0	0.20	8429983
Acid Extractable Boron (B)	ug/g	<5.0	11	13	5.0	8429983
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.15	0.13	0.10	8429983
Acid Extractable Chromium (Cr)	ug/g	33	110	100	1.0	8429983
Acid Extractable Cobalt (Co)	ug/g	6.7	26	25	0.10	8429983
Acid Extractable Copper (Cu)	ug/g	15	48	46	0.50	8429983
Acid Extractable Lead (Pb)	ug/g	7.4	11	11	1.0	8429983
Acid Extractable Molybdenum (Mo)	ug/g	0.68	0.73	<0.50	0.50	8429983
Acid Extractable Nickel (Ni)	ug/g	18	65	63	0.50	8429983
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	0.50	8429983
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	0.20	8429983
Acid Extractable Thallium (Tl)	ug/g	0.099	0.38	0.33	0.050	8429983
Acid Extractable Uranium (U)	ug/g	0.67	1.1	0.83	0.050	8429983
Acid Extractable Vanadium (V)	ug/g	30	90	87	5.0	8429983
Acid Extractable Zinc (Zn)	ug/g	33	100	100	5.0	8429983

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

O.REG 153 PAHS (SOIL)

Bureau Veritas ID		URK168	URK169	URK170		
Sampling Date		2022/12/22	2022/12/22	2022/12/22		
COC Number		910457-01-01	910457-01-01	910457-01-01		
	UNITS	**BH8 SS1**	**BH10 SS3**	**BH11 SS3**	**RDL**	**QC Batch**
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	<0.0071	0.0071	8423835
Polyaromatic Hydrocarbons						
Acenaphthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Acenaphthylene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Benzo(b/j)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Chrysene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Fluoranthene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Fluorene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Naphthalene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Phenanthrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Pyrene	ug/g	<0.0050	<0.0050	<0.0050	0.0050	8430721
Surrogate Recovery (%)						
D10-Anthracene	%	98	101	100		8430721
D14-Terphenyl (FS)	%	98	101	99		8430721
D8-Acenaphthylene	%	87	87	85		8430721

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		URK168	URK169	URK170			URK170		
Sampling Date		2022/12/22	2022/12/22	2022/12/22			2022/12/22		
COC Number		910457-01-01	910457-01-01	910457-01-01			910457-01-01		
	UNITS	**BH8 SS1**	**BH10 SS3**	**BH11 SS3**	**RDL**	**QC Batch**	**BH11 SS3 Lab-Dup**	**RDL**	**QC Batch**
Inorganics									
Moisture	%	18	25	30	1.0	8427332	29	1.0	8427332
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	0.050	8423907			
Volatile Organics									
Acetone (2-Propanone)	ug/g	<0.49	<0.49	<0.49	0.49	8427065			
Benzene	ug/g	<0.0060	<0.0060	<0.0060	0.0060	8427065			
Bromodichloromethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Bromoform	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Bromomethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Carbon Tetrachloride	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Chlorobenzene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Chloroform	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Dibromochloromethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,1-Dichloroethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,2-Dichloroethane	ug/g	<0.049	<0.049	<0.049	0.049	8427065			
1,1-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,2-Dichloropropane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	0.030	8427065			
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Ethylbenzene	ug/g	<0.010	<0.010	<0.010	0.010	8427065			
Ethylene Dibromide	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Hexane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	<0.049	0.049	8427065			
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	<0.40	0.40	8427065			
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	<0.40	0.40	8427065			
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Styrene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			

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

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID		URK168	URK169	URK170			URK170		
Sampling Date		2022/12/22	2022/12/22	2022/12/22			2022/12/22		
COC Number		910457-01-01	910457-01-01	910457-01-01			910457-01-01		
	UNITS	**BH8 SS1**	**BH10 SS3**	**BH11 SS3**	**RDL**	**QC Batch**	**BH11 SS3 Lab-Dup**	**RDL**	**QC Batch**
1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Tetrachloroethylene	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Toluene	ug/g	<0.020	<0.020	<0.020	0.020	8427065			
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Trichloroethylene	ug/g	<0.010	<0.010	<0.010	0.010	8427065			
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	<0.040	0.040	8427065			
Vinyl Chloride	ug/g	<0.019	<0.019	<0.019	0.019	8427065			
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	8427065			
o-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	8427065			
Total Xylenes	ug/g	<0.020	<0.020	<0.020	0.020	8427065			
F1 (C6-C10)	ug/g	<10	<10	<10	10	8427065			
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	8427065			
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	10	8430861			
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	50	8430861			
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	50	8430861			
Reached Baseline at C50	ug/g	Yes	Yes	Yes		8430861			
Surrogate Recovery (%)									
o-Terphenyl	%	95	95	95		8430861			
4-Bromofluorobenzene	%	95	94	93		8427065			
D10-o-Xylene	%	88	92	88		8427065			
D4-1,2-Dichloroethane	%	88	90	90		8427065			
D8-Toluene	%	94	93	93		8427065			

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

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

TEST SUMMARY

Bureau Veritas ID: URK168
Sample ID: BH8 SS1
Matrix: Soil

Collected: 2022/12/22
Shipped:
Received: 2022/12/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8423835	N/A	2023/01/05	Automated Statchk
1,3-Dichloropropene Sum	CALC	8423907	N/A	2023/01/04	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8430861	2023/01/03	2023/01/04	Emir Danisman
Acid Extractable Metals by ICPMS	ICP/MS	8429983	2023/01/03	2023/01/03	Daniel Teclu
Moisture	BAL	8427332	N/A	2022/12/29	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8430721	2023/01/03	2023/01/05	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8427065	N/A	2023/01/03	Juan Pangilinan

Bureau Veritas ID: URK169
Sample ID: BH10 SS3
Matrix: Soil

Collected: 2022/12/22
Shipped:
Received: 2022/12/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8423835	N/A	2023/01/05	Automated Statchk
1,3-Dichloropropene Sum	CALC	8423907	N/A	2023/01/04	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8430861	2023/01/03	2023/01/04	Emir Danisman
Acid Extractable Metals by ICPMS	ICP/MS	8429983	2023/01/03	2023/01/03	Daniel Teclu
Moisture	BAL	8427332	N/A	2022/12/29	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8430721	2023/01/03	2023/01/05	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8427065	N/A	2023/01/03	Juan Pangilinan

Bureau Veritas ID: URK170
Sample ID: BH11 SS3
Matrix: Soil

Collected: 2022/12/22
Shipped:
Received: 2022/12/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8423835	N/A	2023/01/05	Automated Statchk
1,3-Dichloropropene Sum	CALC	8423907	N/A	2023/01/04	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	8430861	2023/01/03	2023/01/04	Emir Danisman
Acid Extractable Metals by ICPMS	ICP/MS	8429983	2023/01/03	2023/01/03	Daniel Teclu
Moisture	BAL	8427332	N/A	2022/12/29	Shivani Desai
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	8430721	2023/01/03	2023/01/05	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8427065	N/A	2023/01/03	Juan Pangilinan

Bureau Veritas ID: URK170 Dup
Sample ID: BH11 SS3
Matrix: Soil

Collected: 2022/12/22
Shipped:
Received: 2022/12/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	8427332	N/A	2022/12/29	Shivani Desai

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8427065	4-Bromofluorobenzene	2023/01/03	104	60 - 140	104	60 - 140	95	%		
8427065	D10-o-Xylene	2023/01/03	103	60 - 130	101	60 - 130	86	%		
8427065	D4-1,2-Dichloroethane	2023/01/03	87	60 - 140	89	60 - 140	89	%		
8427065	D8-Toluene	2023/01/03	101	60 - 140	101	60 - 140	93	%		
8430721	D10-Anthracene	2023/01/04	99	50 - 130	103	50 - 130	101	%		
8430721	D14-Terphenyl (FS)	2023/01/04	102	50 - 130	103	50 - 130	101	%		
8430721	D8-Acenaphthylene	2023/01/04	98	50 - 130	100	50 - 130	96	%		
8430861	o-Terphenyl	2023/01/03	96	60 - 130	97	60 - 130	99	%		
8427065	1,1,1,2-Tetrachloroethane	2023/01/03	105	60 - 140	107	60 - 130	<0.040	ug/g	NC	50
8427065	1,1,1-Trichloroethane	2023/01/03	95	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
8427065	1,1,2,2-Tetrachloroethane	2023/01/03	103	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
8427065	1,1,2-Trichloroethane	2023/01/03	89	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8427065	1,1-Dichloroethane	2023/01/03	90	60 - 140	91	60 - 130	<0.040	ug/g	NC	50
8427065	1,1-Dichloroethylene	2023/01/03	90	60 - 140	91	60 - 130	<0.040	ug/g	NC	50
8427065	1,2-Dichlorobenzene	2023/01/03	93	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
8427065	1,2-Dichloroethane	2023/01/03	82	60 - 140	85	60 - 130	<0.049	ug/g	NC	50
8427065	1,2-Dichloropropane	2023/01/03	92	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8427065	1,3-Dichlorobenzene	2023/01/03	97	60 - 140	97	60 - 130	<0.040	ug/g	NC	50
8427065	1,4-Dichlorobenzene	2023/01/03	110	60 - 140	109	60 - 130	<0.040	ug/g	NC	50
8427065	Acetone (2-Propanone)	2023/01/03	81	60 - 140	92	60 - 140	<0.49	ug/g	NC	50
8427065	Benzene	2023/01/03	91	60 - 140	92	60 - 130	<0.0060	ug/g	NC	50
8427065	Bromodichloromethane	2023/01/03	99	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
8427065	Bromoform	2023/01/03	113	60 - 140	119	60 - 130	<0.040	ug/g	NC	50
8427065	Bromomethane	2023/01/03	99	60 - 140	101	60 - 140	<0.040	ug/g	NC	50
8427065	Carbon Tetrachloride	2023/01/03	102	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
8427065	Chlorobenzene	2023/01/03	97	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
8427065	Chloroform	2023/01/03	97	60 - 140	98	60 - 130	<0.040	ug/g	NC	50
8427065	cis-1,2-Dichloroethylene	2023/01/03	103	60 - 140	105	60 - 130	<0.040	ug/g	NC	50
8427065	cis-1,3-Dichloropropene	2023/01/03	80	60 - 140	83	60 - 130	<0.030	ug/g	NC	50
8427065	Dibromochloromethane	2023/01/03	107	60 - 140	111	60 - 130	<0.040	ug/g	NC	50
8427065	Dichlorodifluoromethane (FREON 12)	2023/01/03	98	60 - 140	99	60 - 140	<0.040	ug/g	NC	50

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8427065	Ethylbenzene	2023/01/03	83	60 - 140	85	60 - 130	<0.010	ug/g	NC	50
8427065	Ethylene Dibromide	2023/01/03	96	60 - 140	100	60 - 130	<0.040	ug/g	NC	50
8427065	F1 (C6-C10) - BTEX	2023/01/03					<10	ug/g	NC	30
8427065	F1 (C6-C10)	2023/01/03	89	60 - 140	85	80 - 120	<10	ug/g	NC	30
8427065	Hexane	2023/01/03	93	60 - 140	94	60 - 130	<0.040	ug/g	NC	50
8427065	Methyl Ethyl Ketone (2-Butanone)	2023/01/03	84	60 - 140	95	60 - 140	<0.40	ug/g	NC	50
8427065	Methyl Isobutyl Ketone	2023/01/03	78	60 - 140	84	60 - 130	<0.40	ug/g	NC	50
8427065	Methyl t-butyl ether (MTBE)	2023/01/03	78	60 - 140	80	60 - 130	<0.040	ug/g	NC	50
8427065	Methylene Chloride(Dichloromethane)	2023/01/03	103	60 - 140	105	60 - 130	<0.049	ug/g	NC	50
8427065	o-Xylene	2023/01/03	85	60 - 140	86	60 - 130	<0.020	ug/g	NC	50
8427065	p+m-Xylene	2023/01/03	85	60 - 140	86	60 - 130	<0.020	ug/g	NC	50
8427065	Styrene	2023/01/03	96	60 - 140	99	60 - 130	<0.040	ug/g	NC	50
8427065	Tetrachloroethylene	2023/01/03	102	60 - 140	102	60 - 130	<0.040	ug/g	NC	50
8427065	Toluene	2023/01/03	95	60 - 140	96	60 - 130	<0.020	ug/g	NC	50
8427065	Total Xylenes	2023/01/03					<0.020	ug/g	NC	50
8427065	trans-1,2-Dichloroethylene	2023/01/03	103	60 - 140	103	60 - 130	<0.040	ug/g	NC	50
8427065	trans-1,3-Dichloropropene	2023/01/03	85	60 - 140	89	60 - 130	<0.040	ug/g	NC	50
8427065	Trichloroethylene	2023/01/03	109	60 - 140	109	60 - 130	<0.010	ug/g	NC	50
8427065	Trichlorofluoromethane (FREON 11)	2023/01/03	96	60 - 140	96	60 - 130	<0.040	ug/g	NC	50
8427065	Vinyl Chloride	2023/01/03	88	60 - 140	88	60 - 130	<0.019	ug/g	NC	50
8427332	Moisture	2022/12/29							1.0	20
8429983	Acid Extractable Antimony (Sb)	2023/01/03	89	75 - 125	98	80 - 120	<0.20	ug/g	3.1	30
8429983	Acid Extractable Arsenic (As)	2023/01/03	109	75 - 125	99	80 - 120	<1.0	ug/g	0.21	30
8429983	Acid Extractable Barium (Ba)	2023/01/03	NC	75 - 125	97	80 - 120	<0.50	ug/g	2.8	30
8429983	Acid Extractable Beryllium (Be)	2023/01/03	108	75 - 125	99	80 - 120	<0.20	ug/g	1.1	30
8429983	Acid Extractable Boron (B)	2023/01/03	95	75 - 125	96	80 - 120	<5.0	ug/g	5.8	30
8429983	Acid Extractable Cadmium (Cd)	2023/01/03	108	75 - 125	98	80 - 120	<0.10	ug/g	1.6	30
8429983	Acid Extractable Chromium (Cr)	2023/01/03	NC	75 - 125	100	80 - 120	<1.0	ug/g	2.2	30
8429983	Acid Extractable Cobalt (Co)	2023/01/03	111	75 - 125	100	80 - 120	<0.10	ug/g	2.4	30
8429983	Acid Extractable Copper (Cu)	2023/01/03	110	75 - 125	99	80 - 120	<0.50	ug/g	2.6	30
8429983	Acid Extractable Lead (Pb)	2023/01/03	110	75 - 125	102	80 - 120	<1.0	ug/g	0.43	30

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8429983	Acid Extractable Molybdenum (Mo)	2023/01/03	105	75 - 125	97	80 - 120	<0.50	ug/g	0.48	30
8429983	Acid Extractable Nickel (Ni)	2023/01/03	NC	75 - 125	106	80 - 120	<0.50	ug/g	2.0	30
8429983	Acid Extractable Selenium (Se)	2023/01/03	107	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
8429983	Acid Extractable Silver (Ag)	2023/01/03	109	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
8429983	Acid Extractable Thallium (Tl)	2023/01/03	110	75 - 125	105	80 - 120	<0.050	ug/g	1.1	30
8429983	Acid Extractable Uranium (U)	2023/01/03	110	75 - 125	102	80 - 120	<0.050	ug/g	1.7	30
8429983	Acid Extractable Vanadium (V)	2023/01/03	NC	75 - 125	98	80 - 120	<5.0	ug/g	0.091	30
8429983	Acid Extractable Zinc (Zn)	2023/01/03	NC	75 - 125	100	80 - 120	<5.0	ug/g	3.5	30
8430721	1-Methylnaphthalene	2023/01/04	99	50 - 130	109	50 - 130	<0.0050	ug/g	NC	40
8430721	2-Methylnaphthalene	2023/01/04	89	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8430721	Acenaphthene	2023/01/04	95	50 - 130	101	50 - 130	<0.0050	ug/g	NC	40
8430721	Acenaphthylene	2023/01/04	95	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
8430721	Anthracene	2023/01/04	98	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
8430721	Benzo(a)anthracene	2023/01/04	105	50 - 130	108	50 - 130	<0.0050	ug/g	NC	40
8430721	Benzo(a)pyrene	2023/01/04	95	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40
8430721	Benzo(b/j)fluoranthene	2023/01/04	91	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40
8430721	Benzo(g,h,i)perylene	2023/01/04	99	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8430721	Benzo(k)fluoranthene	2023/01/04	96	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40
8430721	Chrysene	2023/01/04	99	50 - 130	103	50 - 130	<0.0050	ug/g	NC	40
8430721	Dibenzo(a,h)anthracene	2023/01/04	91	50 - 130	87	50 - 130	<0.0050	ug/g	NC	40
8430721	Fluoranthene	2023/01/04	106	50 - 130	110	50 - 130	<0.0050	ug/g	NC	40
8430721	Fluorene	2023/01/04	97	50 - 130	102	50 - 130	<0.0050	ug/g	NC	40
8430721	Indeno(1,2,3-cd)pyrene	2023/01/04	96	50 - 130	95	50 - 130	<0.0050	ug/g	NC	40
8430721	Naphthalene	2023/01/04	82	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40
8430721	Phenanthrene	2023/01/04	93	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40
8430721	Pyrene	2023/01/04	105	50 - 130	108	50 - 130	<0.0050	ug/g	NC	40
8430861	F2 (C10-C16 Hydrocarbons)	2023/01/03	97	60 - 130	98	80 - 120	<10	ug/g	NC	30
8430861	F3 (C16-C34 Hydrocarbons)	2023/01/03	97	60 - 130	99	80 - 120	<50	ug/g	NC	30

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8430861	F4 (C34-C50 Hydrocarbons)	2023/01/03	98	60 - 130	99	80 - 120	<50	ug/g	NC	30

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

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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

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

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

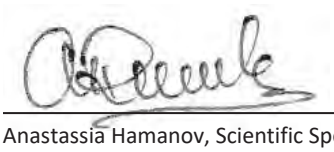
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvna.com

Page of

28-Dec-22 08:54
Katherine Szozda
C2AS120

MUM ENV-713

Bottle Order #: 910457

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		COC #:	Project Manager:
Company Name:	#17498 exp Services Inc	Company Name:		Quotation #:	C20328	C#910457-01-01	Katherine Szozda
Attention:	Accounts Payable	Attention:	Leah Wells	P.O. #:			
Address:	100-2650 Queensview Drive, Ottawa ON K2B 8H6	Address:		Project:	OTT-22017859-A0		
Tel:	(613) 688-1899 Fax: (613) 225-7337	Tel:	Fax:	Project Name:			
Email:	AP@exp.com; Karen.Burke@exp.com	Email:	leah.wells@exp.com	Site #:			
				Sampled By:			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☒ Res/Park ☒ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☒ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ____

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg.558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ____ ☐ PWQO ☐ Reg 406 Table ____ ☐ Other ____

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ____

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ____ Time Required: ____ ☐
Rush Confirmation Number: ____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	O.Reg 153 VOCs by HS & F1-F4 (Soil)	O.Reg 153 PAHs (Soil)	O.Reg 153 ICPMS Metals (Soil)	# of Bottles	Comments
1		BH8 SS1	Dec 22		S	X	X	X		
2		BH10 SS3	"		S	X	X	X		
3		BH11 SS3	"		S	X	X	X		
4										
5										
6										
7										
8										
9										
10										

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	22/12/23	11:30	[signature]	2022/12/28	0854	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Rec'd	Custody Seal	Yes	No
	3/4/5	Present		✓
		Intact		✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

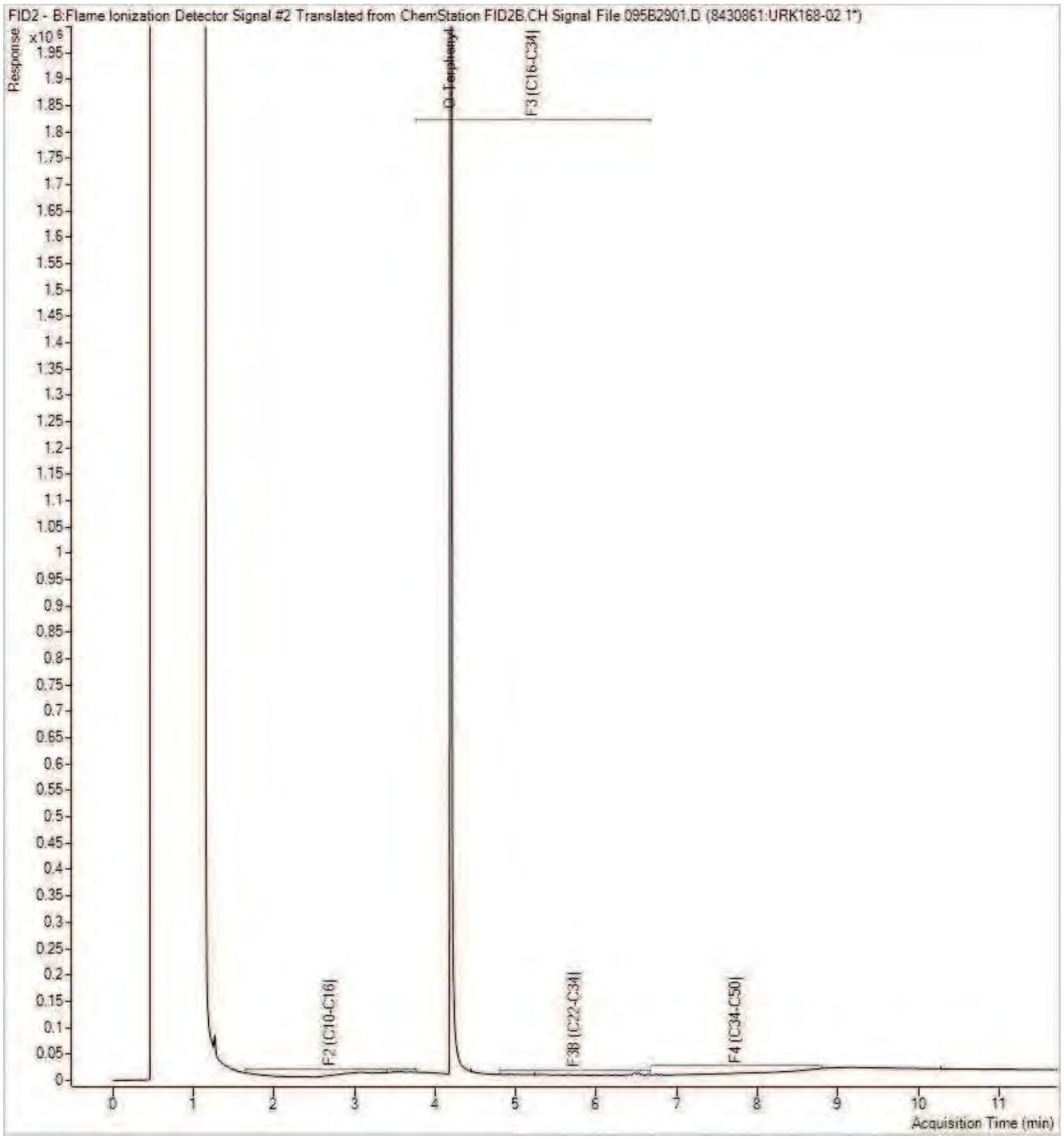
On ice packs

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

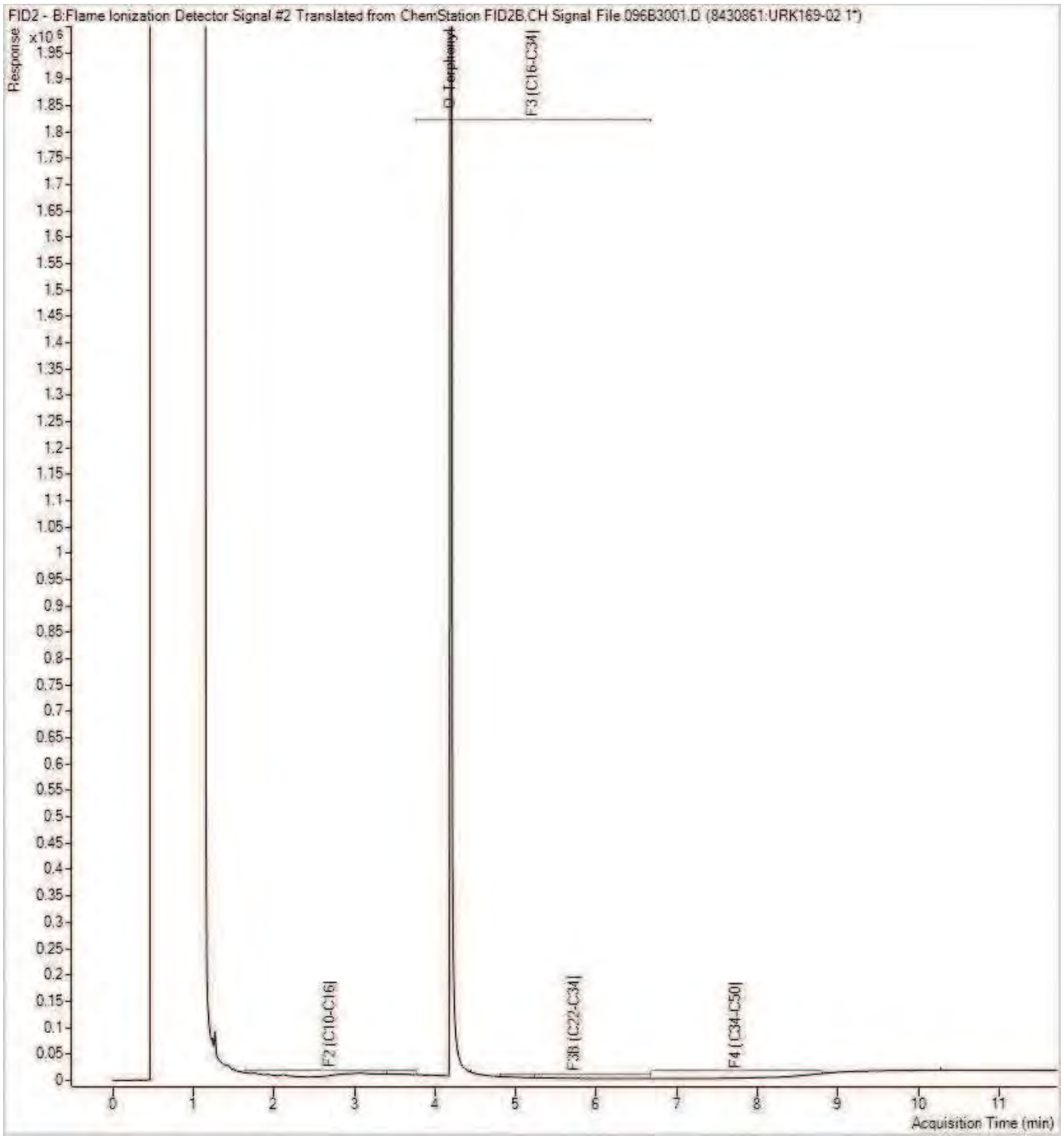
Bureau Veritas Canada (2019) Inc.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



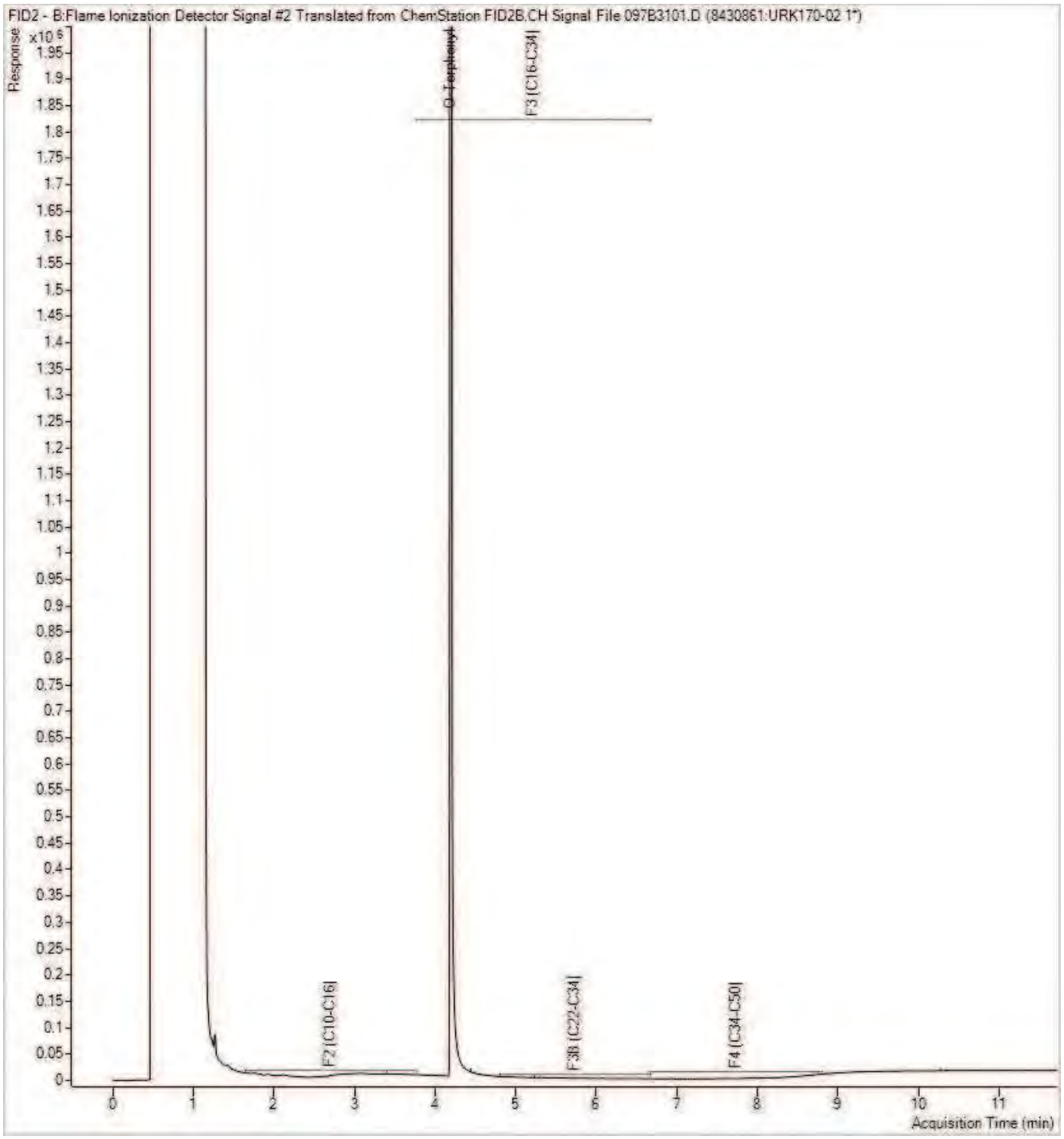
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: OTT-22017859-A0
Your C.O.C. #: 914241-01-01

Attention: Leah Wells

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2023/01/17
Report #: R7473948
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C308753
Received: 2023/01/10, 16:40

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum (1)	3	N/A	2023/01/17	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum (1)	3	N/A	2023/01/17		EPA 8260C m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2023/01/12	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	2	2023/01/13	2023/01/13	CAM SOP-00316	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	3	2023/01/13	2023/01/15	CAM SOP-00316	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 2)	1	2023/01/13	2023/01/16	CAM SOP-00316	CCME PHC-CWS m
Dissolved Metals by ICPMS (1)	3	N/A	2023/01/13	CAM SOP-00447	EPA 6020B m
PAH Compounds in Water by GC/MS (SIM) (1)	3	2023/01/16	2023/01/17	CAM SOP-00318	EPA 8270D m
Volatile Organic Compounds and F1 PHCs (1)	3	N/A	2023/01/14	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the

Your Project #: OTT-22017859-A0
Your C.O.C. #: 914241-01-01

Attention: Leah Wells

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2023/01/17
Report #: R7473948
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C308753

Received: 2023/01/10, 16:40

reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Bureau Veritas
17 Jan 2023 17:00:30

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C308753
Report Date: 2023/01/17

exp Services Inc
Client Project #: OTT-22017859-A0
Sampler Initials: PO

O.REG 153 METALS PACKAGE (WATER)

Bureau Veritas ID		UTU939	UTU940	UTU941		
Sampling Date		2023/01/10 14:15	2023/01/10 14:15	2023/01/10 14:15		
COC Number		914241-01-01	914241-01-01	914241-01-01		
	UNITS	**BH-10**	**DUP-1**	**FIELD BLANK**	**RDL**	**QC Batch**
Metals						
Dissolved Antimony (Sb)	ug/L	<0.50	0.64	<0.50	0.50	8447980
Dissolved Arsenic (As)	ug/L	2.4	2.5	<1.0	1.0	8447980
Dissolved Barium (Ba)	ug/L	65	50	<2.0	2.0	8447980
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	<0.40	0.40	8447980
Dissolved Boron (B)	ug/L	120	120	<10	10	8447980
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	<0.090	0.090	8447980
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	<5.0	5.0	8447980
Dissolved Cobalt (Co)	ug/L	0.79	0.75	<0.50	0.50	8447980
Dissolved Copper (Cu)	ug/L	5.5	2.9	<0.90	0.90	8447980
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	0.50	8447980
Dissolved Molybdenum (Mo)	ug/L	7.8	7.7	<0.50	0.50	8447980
Dissolved Nickel (Ni)	ug/L	4.6	4.4	<1.0	1.0	8447980
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	<2.0	2.0	8447980
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	<0.090	0.090	8447980
Dissolved Sodium (Na)	ug/L	210000	210000	360	100	8447980
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	0.050	8447980
Dissolved Uranium (U)	ug/L	5.8	5.5	<0.10	0.10	8447980
Dissolved Vanadium (V)	ug/L	2.3	2.5	<0.50	0.50	8447980
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	8447980

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 PAHS (WATER)

Bureau Veritas ID		UTU939	UTU940	UTU941		
Sampling Date		2023/01/10 14:15	2023/01/10 14:15	2023/01/10 14:15		
COC Number		914241-01-01	914241-01-01	914241-01-01		
	UNITS	**BH-10**	**DUP-1**	**FIELD BLANK**	**RDL**	**QC Batch**
Calculated Parameters						
Methylnaphthalene, 2-(1-)	ug/L	<0.071	<0.071	<0.071	0.071	8444073
Polyaromatic Hydrocarbons						
Acenaphthene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Anthracene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Benzo(a)anthracene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	0.0090	8451511
Benzo(b/j)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Chrysene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Dibenzo(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Naphthalene	ug/L	<0.050	<0.050	<0.050	0.050	8451511
Phenanthrene	ug/L	0.050	0.047	<0.030	0.030	8451511
Pyrene	ug/L	0.073	0.071	<0.050	0.050	8451511
Surrogate Recovery (%)						
D10-Anthracene	%	98	99	100		8451511
D14-Terphenyl (FS)	%	75	75	101		8451511
D8-Acenaphthylene	%	89	91	93		8451511

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID		UTU937	UTU938	UTU942		
Sampling Date		2023/01/10 12:00	2023/01/10 13:00	2023/01/10 14:15		
COC Number		914241-01-01	914241-01-01	914241-01-01		
	UNITS	**BH-8**	**BH-11**	**TRIP BLANK**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	8445860
Toluene	ug/L	<0.20	<0.20	<0.20	0.20	8445860
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	8445860
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	8445860
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8445860
Total Xylenes	ug/L	<0.40	<0.40	<0.40	0.40	8445860
F1 (C6-C10)	ug/L	<25	<25	<25	25	8445860
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	25	8445860
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	100	8448469
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	200	8448469
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	200	8448469
Reached Baseline at C50	ug/L	Yes	Yes	Yes		8448469
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	102	102		8445860
4-Bromofluorobenzene	%	98	97	97		8445860
D10-o-Xylene	%	86	86	85		8445860
D4-1,2-Dichloroethane	%	102	101	103		8445860
o-Terphenyl	%	102	99	103		8448469

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		UTU939			UTU939			UTU940		
Sampling Date		2023/01/10 14:15			2023/01/10 14:15			2023/01/10 14:15		
COC Number		914241-01-01			914241-01-01			914241-01-01		
	UNITS	**BH-10**	**RDL**	**QC Batch**	**BH-10 Lab-Dup**	**RDL**	**QC Batch**	**DUP-1**	**RDL**	**QC Batch**
Calculated Parameters										
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	8444074				<0.50	0.50	8444074
Volatile Organics										
Acetone (2-Propanone)	ug/L	<10	10	8445520	<10	10	8445520	<10	10	8445520
Benzene	ug/L	<0.17	0.17	8445520	<0.17	0.17	8445520	<0.17	0.17	8445520
Bromodichloromethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Bromoform	ug/L	<1.0	1.0	8445520	<1.0	1.0	8445520	<1.0	1.0	8445520
Bromomethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Carbon Tetrachloride	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Chlorobenzene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Chloroform	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Dibromochloromethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,2-Dichlorobenzene	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,3-Dichlorobenzene	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,4-Dichlorobenzene	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	8445520	<1.0	1.0	8445520	<1.0	1.0	8445520
1,1-Dichloroethane	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
1,2-Dichloroethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,1-Dichloroethylene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,2-Dichloropropane	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	8445520	<0.30	0.30	8445520	<0.30	0.30	8445520
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	8445520	<0.40	0.40	8445520	<0.40	0.40	8445520
Ethylbenzene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Ethylene Dibromide	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Hexane	ug/L	<1.0	1.0	8445520	<1.0	1.0	8445520	<1.0	1.0	8445520
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	8445520	<2.0	2.0	8445520	<2.0	2.0	8445520
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	8445520	<10	10	8445520	<10	10	8445520
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	8445520	<5.0	5.0	8445520	<5.0	5.0	8445520
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Styrene	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Tetrachloroethylene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520

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

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		UTU939			UTU939			UTU940		
Sampling Date		2023/01/10 14:15			2023/01/10 14:15			2023/01/10 14:15		
COC Number		914241-01-01			914241-01-01			914241-01-01		
	UNITS	**BH-10**	**RDL**	**QC Batch**	**BH-10 Lab-Dup**	**RDL**	**QC Batch**	**DUP-1**	**RDL**	**QC Batch**
Toluene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
1,1,1-Trichloroethane	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
1,1,2-Trichloroethane	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Trichloroethylene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	8445520	<0.50	0.50	8445520	<0.50	0.50	8445520
Vinyl Chloride	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
p+m-Xylene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
o-Xylene	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
Total Xylenes	ug/L	<0.20	0.20	8445520	<0.20	0.20	8445520	<0.20	0.20	8445520
F1 (C6-C10)	ug/L	<25	25	8445520	<25	25	8445520	<25	25	8445520
F1 (C6-C10) - BTEX	ug/L	<25	25	8445520	<25	25	8445520	<25	25	8445520
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	8447505				<100	100	8447505
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	8447505				<200	200	8447505
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	8447505				<200	200	8447505
Reached Baseline at C50	ug/L	Yes		8447505				Yes		8447505
Surrogate Recovery (%)										
o-Terphenyl	%	91		8447505				99		8447505
4-Bromofluorobenzene	%	96		8445520	96		8445520	96		8445520
D4-1,2-Dichloroethane	%	103		8445520	101		8445520	105		8445520
D8-Toluene	%	96		8445520	96		8445520	95		8445520

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

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		UTU941		
Sampling Date		2023/01/10 14:15		
COC Number		914241-01-01		
	UNITS	**FIELD BLANK**	**RDL**	**QC Batch**
Calculated Parameters				
1,3-Dichloropropene (cis+trans)	ug/L	<0.50	0.50	8444074
Volatile Organics				
Acetone (2-Propanone)	ug/L	<10	10	8445520
Benzene	ug/L	<0.17	0.17	8445520
Bromodichloromethane	ug/L	<0.50	0.50	8445520
Bromoform	ug/L	<1.0	1.0	8445520
Bromomethane	ug/L	<0.50	0.50	8445520
Carbon Tetrachloride	ug/L	<0.20	0.20	8445520
Chlorobenzene	ug/L	<0.20	0.20	8445520
Chloroform	ug/L	2.1	0.20	8445520
Dibromochloromethane	ug/L	<0.50	0.50	8445520
1,2-Dichlorobenzene	ug/L	<0.50	0.50	8445520
1,3-Dichlorobenzene	ug/L	<0.50	0.50	8445520
1,4-Dichlorobenzene	ug/L	<0.50	0.50	8445520
Dichlorodifluoromethane (FREON 12)	ug/L	<1.0	1.0	8445520
1,1-Dichloroethane	ug/L	<0.20	0.20	8445520
1,2-Dichloroethane	ug/L	<0.50	0.50	8445520
1,1-Dichloroethylene	ug/L	<0.20	0.20	8445520
cis-1,2-Dichloroethylene	ug/L	<0.50	0.50	8445520
trans-1,2-Dichloroethylene	ug/L	<0.50	0.50	8445520
1,2-Dichloropropane	ug/L	<0.20	0.20	8445520
cis-1,3-Dichloropropene	ug/L	<0.30	0.30	8445520
trans-1,3-Dichloropropene	ug/L	<0.40	0.40	8445520
Ethylbenzene	ug/L	<0.20	0.20	8445520
Ethylene Dibromide	ug/L	<0.20	0.20	8445520
Hexane	ug/L	<1.0	1.0	8445520
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	8445520
Methyl Ethyl Ketone (2-Butanone)	ug/L	<10	10	8445520
Methyl Isobutyl Ketone	ug/L	<5.0	5.0	8445520
Methyl t-butyl ether (MTBE)	ug/L	<0.50	0.50	8445520
Styrene	ug/L	<0.50	0.50	8445520
1,1,1,2-Tetrachloroethane	ug/L	<0.50	0.50	8445520
1,1,2,2-Tetrachloroethane	ug/L	<0.50	0.50	8445520
Tetrachloroethylene	ug/L	<0.20	0.20	8445520
Toluene	ug/L	<0.20	0.20	8445520

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		UTU941		
Sampling Date		2023/01/10 14:15		
COC Number		914241-01-01		
	UNITS	**FIELD BLANK**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/L	<0.20	0.20	8445520
1,1,2-Trichloroethane	ug/L	<0.50	0.50	8445520
Trichloroethylene	ug/L	<0.20	0.20	8445520
Trichlorofluoromethane (FREON 11)	ug/L	<0.50	0.50	8445520
Vinyl Chloride	ug/L	<0.20	0.20	8445520
p+m-Xylene	ug/L	<0.20	0.20	8445520
o-Xylene	ug/L	<0.20	0.20	8445520
Total Xylenes	ug/L	<0.20	0.20	8445520
F1 (C6-C10)	ug/L	<25	25	8445520
F1 (C6-C10) - BTEX	ug/L	<25	25	8445520
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	8447505
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	8447505
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	8447505
Reached Baseline at C50	ug/L	Yes		8447505
Surrogate Recovery (%)				
o-Terphenyl	%	95		8447505
4-Bromofluorobenzene	%	95		8445520
D4-1,2-Dichloroethane	%	102		8445520
D8-Toluene	%	95		8445520

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

TEST SUMMARY

Bureau Veritas ID: UTU937 **Collected:** 2023/01/10
Sample ID: BH-8 **Shipped:**
Matrix: Water **Received:** 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8445860	N/A	2023/01/12	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8448469	2023/01/13	2023/01/15	Emir Danisman

Bureau Veritas ID: UTU938 **Collected:** 2023/01/10
Sample ID: BH-11 **Shipped:**
Matrix: Water **Received:** 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8445860	N/A	2023/01/12	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8448469	2023/01/13	2023/01/15	Emir Danisman

Bureau Veritas ID: UTU939 **Collected:** 2023/01/10
Sample ID: BH-10 **Shipped:**
Matrix: Water **Received:** 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8444073	N/A	2023/01/17	Automated Statchk
1,3-Dichloropropene Sum	CALC	8444074	N/A	2023/01/17	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8447505	2023/01/13	2023/01/13	Ksenia Trofimova
Dissolved Metals by ICPMS	ICP/MS	8447980	N/A	2023/01/13	Azita Fazaeli
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8451511	2023/01/16	2023/01/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8445520	N/A	2023/01/14	Xueming Jiang

Bureau Veritas ID: UTU939 Dup **Collected:** 2023/01/10
Sample ID: BH-10 **Shipped:**
Matrix: Water **Received:** 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8445520	N/A	2023/01/14	Xueming Jiang

Bureau Veritas ID: UTU940 **Collected:** 2023/01/10
Sample ID: DUP-1 **Shipped:**
Matrix: Water **Received:** 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8444073	N/A	2023/01/17	Automated Statchk
1,3-Dichloropropene Sum	CALC	8444074	N/A	2023/01/17	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8447505	2023/01/13	2023/01/13	Ksenia Trofimova
Dissolved Metals by ICPMS	ICP/MS	8447980	N/A	2023/01/13	Azita Fazaeli
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8451511	2023/01/16	2023/01/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8445520	N/A	2023/01/14	Xueming Jiang

TEST SUMMARY

Bureau Veritas ID: UTU941
Sample ID: FIELD BLANK
Matrix: Water

Collected: 2023/01/10
Shipped:
Received: 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	8444073	N/A	2023/01/17	Automated Statchk
1,3-Dichloropropene Sum	CALC	8444074	N/A	2023/01/17	Automated Statchk
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8447505	2023/01/13	2023/01/16	Ksenia Trofimova
Dissolved Metals by ICPMS	ICP/MS	8447980	N/A	2023/01/13	Azita Fazaeli
PAH Compounds in Water by GC/MS (SIM)	GC/MS	8451511	2023/01/16	2023/01/17	Mitesh Raj
Volatile Organic Compounds and F1 PHCs	GC/MSFD	8445520	N/A	2023/01/14	Xueming Jiang

Bureau Veritas ID: UTU942
Sample ID: TRIP BLANK
Matrix: Water

Collected: 2023/01/10
Shipped:
Received: 2023/01/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8445860	N/A	2023/01/12	Anca Ganea
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8448469	2023/01/13	2023/01/15	Emir Danisman

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.3°C

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8445520	4-Bromofluorobenzene	2023/01/13	101	70 - 130	100	70 - 130	95	%		
8445520	D4-1,2-Dichloroethane	2023/01/13	103	70 - 130	101	70 - 130	103	%		
8445520	D8-Toluene	2023/01/13	100	70 - 130	102	70 - 130	95	%		
8445860	1,4-Difluorobenzene	2023/01/12	101	70 - 130	103	70 - 130	103	%		
8445860	4-Bromofluorobenzene	2023/01/12	98	70 - 130	98	70 - 130	97	%		
8445860	D10-o-Xylene	2023/01/12	92	70 - 130	92	70 - 130	86	%		
8445860	D4-1,2-Dichloroethane	2023/01/12	103	70 - 130	99	70 - 130	99	%		
8447505	o-Terphenyl	2023/01/16	102	60 - 130	110	60 - 130	94	%		
8448469	o-Terphenyl	2023/01/15	109	60 - 130	107	60 - 130	108	%		
8451511	D10-Anthracene	2023/01/17	102	50 - 130	102	50 - 130	105	%		
8451511	D14-Terphenyl (FS)	2023/01/17	104	50 - 130	104	50 - 130	103	%		
8451511	D8-Acenaphthylene	2023/01/17	95	50 - 130	95	50 - 130	96	%		
8445520	1,1,1,2-Tetrachloroethane	2023/01/14	90	70 - 130	99	70 - 130	<0.50	ug/L	NC	30
8445520	1,1,1-Trichloroethane	2023/01/14	95	70 - 130	107	70 - 130	<0.20	ug/L	NC	30
8445520	1,1,2,2-Tetrachloroethane	2023/01/14	91	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
8445520	1,1,2-Trichloroethane	2023/01/14	99	70 - 130	104	70 - 130	<0.50	ug/L	NC	30
8445520	1,1-Dichloroethane	2023/01/14	96	70 - 130	103	70 - 130	<0.20	ug/L	NC	30
8445520	1,1-Dichloroethylene	2023/01/14	98	70 - 130	109	70 - 130	<0.20	ug/L	NC	30
8445520	1,2-Dichlorobenzene	2023/01/14	87	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
8445520	1,2-Dichloroethane	2023/01/14	95	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8445520	1,2-Dichloropropane	2023/01/14	95	70 - 130	102	70 - 130	<0.20	ug/L	NC	30
8445520	1,3-Dichlorobenzene	2023/01/14	86	70 - 130	93	70 - 130	<0.50	ug/L	NC	30
8445520	1,4-Dichlorobenzene	2023/01/14	98	70 - 130	107	70 - 130	<0.50	ug/L	NC	30
8445520	Acetone (2-Propanone)	2023/01/14	102	60 - 140	102	60 - 140	<10	ug/L	NC	30
8445520	Benzene	2023/01/14	92	70 - 130	100	70 - 130	<0.17	ug/L	NC	30
8445520	Bromodichloromethane	2023/01/14	95	70 - 130	102	70 - 130	<0.50	ug/L	NC	30
8445520	Bromoform	2023/01/14	88	70 - 130	93	70 - 130	<1.0	ug/L	NC	30
8445520	Bromomethane	2023/01/14	103	60 - 140	112	60 - 140	<0.50	ug/L	NC	30
8445520	Carbon Tetrachloride	2023/01/14	94	70 - 130	105	70 - 130	<0.20	ug/L	NC	30
8445520	Chlorobenzene	2023/01/14	89	70 - 130	97	70 - 130	<0.20	ug/L	NC	30
8445520	Chloroform	2023/01/14	97	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
8445520	cis-1,2-Dichloroethylene	2023/01/14	101	70 - 130	110	70 - 130	<0.50	ug/L	NC	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8445520	cis-1,3-Dichloropropene	2023/01/14	77	70 - 130	79	70 - 130	<0.30	ug/L	NC	30
8445520	Dibromochloromethane	2023/01/14	89	70 - 130	95	70 - 130	<0.50	ug/L	NC	30
8445520	Dichlorodifluoromethane (FREON 12)	2023/01/14	117	60 - 140	136	60 - 140	<1.0	ug/L	NC	30
8445520	Ethylbenzene	2023/01/14	78	70 - 130	87	70 - 130	<0.20	ug/L	NC	30
8445520	Ethylene Dibromide	2023/01/14	92	70 - 130	96	70 - 130	<0.20	ug/L	NC	30
8445520	F1 (C6-C10) - BTEX	2023/01/14					<25	ug/L	NC	30
8445520	F1 (C6-C10)	2023/01/14	98	60 - 140	93	60 - 140	<25	ug/L	NC	30
8445520	Hexane	2023/01/14	94	70 - 130	109	70 - 130	<1.0	ug/L	NC	30
8445520	Methyl Ethyl Ketone (2-Butanone)	2023/01/14	99	60 - 140	100	60 - 140	<10	ug/L	NC	30
8445520	Methyl Isobutyl Ketone	2023/01/14	84	70 - 130	86	70 - 130	<5.0	ug/L	NC	30
8445520	Methyl t-butyl ether (MTBE)	2023/01/14	85	70 - 130	90	70 - 130	<0.50	ug/L	NC	30
8445520	Methylene Chloride(Dichloromethane)	2023/01/14	107	70 - 130	115	70 - 130	<2.0	ug/L	NC	30
8445520	o-Xylene	2023/01/14	78	70 - 130	86	70 - 130	<0.20	ug/L	NC	30
8445520	p+m-Xylene	2023/01/14	78	70 - 130	86	70 - 130	<0.20	ug/L	NC	30
8445520	Styrene	2023/01/14	84	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8445520	Tetrachloroethylene	2023/01/14	92	70 - 130	103	70 - 130	<0.20	ug/L	NC	30
8445520	Toluene	2023/01/14	86	70 - 130	95	70 - 130	<0.20	ug/L	NC	30
8445520	Total Xylenes	2023/01/14					<0.20	ug/L	NC	30
8445520	trans-1,2-Dichloroethylene	2023/01/14	98	70 - 130	107	70 - 130	<0.50	ug/L	NC	30
8445520	trans-1,3-Dichloropropene	2023/01/14	79	70 - 130	80	70 - 130	<0.40	ug/L	NC	30
8445520	Trichloroethylene	2023/01/14	101	70 - 130	111	70 - 130	<0.20	ug/L	NC	30
8445520	Trichlorofluoromethane (FREON 11)	2023/01/14	101	70 - 130	114	70 - 130	<0.50	ug/L	NC	30
8445520	Vinyl Chloride	2023/01/14	93	70 - 130	105	70 - 130	<0.20	ug/L	NC	30
8445860	Benzene	2023/01/12	95	50 - 140	96	50 - 140	<0.20	ug/L	NC	30
8445860	Ethylbenzene	2023/01/12	102	50 - 140	105	50 - 140	<0.20	ug/L	NC	30
8445860	F1 (C6-C10) - BTEX	2023/01/12					<25	ug/L	NC	30
8445860	F1 (C6-C10)	2023/01/12	105	60 - 140	105	60 - 140	<25	ug/L	NC	30
8445860	o-Xylene	2023/01/12	101	50 - 140	101	50 - 140	<0.20	ug/L	NC	30
8445860	p+m-Xylene	2023/01/12	98	50 - 140	100	50 - 140	<0.40	ug/L	NC	30
8445860	Toluene	2023/01/12	91	50 - 140	92	50 - 140	<0.20	ug/L	NC	30
8445860	Total Xylenes	2023/01/12					<0.40	ug/L	NC	30
8447505	F2 (C10-C16 Hydrocarbons)	2023/01/13	120	60 - 130	108	60 - 130	<100	ug/L	0	30

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8447505	F3 (C16-C34 Hydrocarbons)	2023/01/13	121	60 - 130	111	60 - 130	<200	ug/L	3.7	30
8447505	F4 (C34-C50 Hydrocarbons)	2023/01/13	123	60 - 130	114	60 - 130	<200	ug/L	NC	30
8447980	Dissolved Antimony (Sb)	2023/01/13	102	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
8447980	Dissolved Arsenic (As)	2023/01/13	101	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
8447980	Dissolved Barium (Ba)	2023/01/13	99	80 - 120	98	80 - 120	<2.0	ug/L	2.6	20
8447980	Dissolved Beryllium (Be)	2023/01/13	102	80 - 120	100	80 - 120	<0.40	ug/L	NC	20
8447980	Dissolved Boron (B)	2023/01/13	98	80 - 120	99	80 - 120	<10	ug/L	2.7	20
8447980	Dissolved Cadmium (Cd)	2023/01/13	98	80 - 120	97	80 - 120	<0.090	ug/L	NC	20
8447980	Dissolved Chromium (Cr)	2023/01/13	99	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
8447980	Dissolved Cobalt (Co)	2023/01/13	98	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
8447980	Dissolved Copper (Cu)	2023/01/13	99	80 - 120	98	80 - 120	<0.90	ug/L	NC	20
8447980	Dissolved Lead (Pb)	2023/01/13	95	80 - 120	94	80 - 120	<0.50	ug/L	NC	20
8447980	Dissolved Molybdenum (Mo)	2023/01/13	103	80 - 120	100	80 - 120	<0.50	ug/L	1.7	20
8447980	Dissolved Nickel (Ni)	2023/01/13	99	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
8447980	Dissolved Selenium (Se)	2023/01/13	102	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
8447980	Dissolved Silver (Ag)	2023/01/13	100	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
8447980	Dissolved Sodium (Na)	2023/01/13	96	80 - 120	100	80 - 120	<100	ug/L	0.25	20
8447980	Dissolved Thallium (Tl)	2023/01/13	97	80 - 120	96	80 - 120	<0.050	ug/L	NC	20
8447980	Dissolved Uranium (U)	2023/01/13	105	80 - 120	102	80 - 120	<0.10	ug/L	3.3	20
8447980	Dissolved Vanadium (V)	2023/01/13	100	80 - 120	99	80 - 120	<0.50	ug/L	19	20
8447980	Dissolved Zinc (Zn)	2023/01/13	99	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
8448469	F2 (C10-C16 Hydrocarbons)	2023/01/15	98	60 - 130	100	60 - 130	<100	ug/L	NC	30
8448469	F3 (C16-C34 Hydrocarbons)	2023/01/15	99	60 - 130	103	60 - 130	<200	ug/L	NC	30
8448469	F4 (C34-C50 Hydrocarbons)	2023/01/15	97	60 - 130	101	60 - 130	<200	ug/L	NC	30
8451511	1-Methylnaphthalene	2023/01/17	98	50 - 130	96	50 - 130	<0.050	ug/L	NC	30
8451511	2-Methylnaphthalene	2023/01/17	99	50 - 130	96	50 - 130	<0.050	ug/L	NC	30
8451511	Acenaphthene	2023/01/17	97	50 - 130	94	50 - 130	<0.050	ug/L	NC	30
8451511	Acenaphthylene	2023/01/17	97	50 - 130	95	50 - 130	<0.050	ug/L	NC	30
8451511	Anthracene	2023/01/17	95	50 - 130	93	50 - 130	<0.050	ug/L	NC	30
8451511	Benzo(a)anthracene	2023/01/17	97	50 - 130	94	50 - 130	<0.050	ug/L	NC	30
8451511	Benzo(a)pyrene	2023/01/17	93	50 - 130	92	50 - 130	<0.0090	ug/L	NC	30
8451511	Benzo(b/j)fluoranthene	2023/01/17	93	50 - 130	91	50 - 130	<0.050	ug/L		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8451511	Benzo(g,h,i)perylene	2023/01/17	92	50 - 130	90	50 - 130	<0.050	ug/L	NC	30
8451511	Benzo(k)fluoranthene	2023/01/17	93	50 - 130	91	50 - 130	<0.050	ug/L	NC	30
8451511	Chrysene	2023/01/17	93	50 - 130	92	50 - 130	<0.050	ug/L	NC	30
8451511	Dibenzo(a,h)anthracene	2023/01/17	97	50 - 130	93	50 - 130	<0.050	ug/L	NC	30
8451511	Fluoranthene	2023/01/17	95	50 - 130	95	50 - 130	<0.050	ug/L	NC	30
8451511	Fluorene	2023/01/17	96	50 - 130	94	50 - 130	<0.050	ug/L	NC	30
8451511	Indeno(1,2,3-cd)pyrene	2023/01/17	89	50 - 130	89	50 - 130	<0.050	ug/L	NC	30
8451511	Naphthalene	2023/01/17	101	50 - 130	98	50 - 130	<0.050	ug/L	NC	30
8451511	Phenanthrene	2023/01/17	95	50 - 130	92	50 - 130	<0.030	ug/L	NC	30
8451511	Pyrene	2023/01/17	95	50 - 130	94	50 - 130	<0.050	ug/L	NC	30

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

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

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

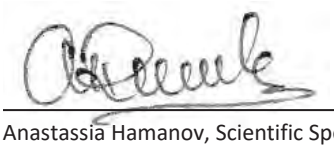
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

C3888753

Affix Job Label Here

Presence of Visible Particulate/Sediment

Maxxam Analytics
CAM FCD-01013/5

When there is >1cm of visible particulate/sediment, the amount will be recorded in the field below

Bottle Types

			Inorganics					Organics										Hydrocarbons							Volatiles				Other
	Sample ID	All	CrVI	CN	General	Hg	Metals (Diss.)	Organic 1 of 2	Organic 2 of 2	PCB 1 of 2	PCB 2 of 2	Pest/ Herb 1 of 2	Pest/ Herb 2 of 2	SVOC/ ABN 1 of 2	SVOC/ ABN 2 of 2	PAH 1 of 2	PAH 2 of 2	Dioxin /Furan	F1 Vial 1	F1 Vial 2	F1 Vial 3	F1 Vial 4	F2-F4 1 of 2	F2-F4 2 of 2	F4G	VOC Vial 1	VOC Vial 2	VOC Vial 3	VOC Vial 4	
1	BH-8	TS																											
2	BH-11	TS																											
3	BH-10	TS																											
4	Dup-1	TS																											
5																													
6																													
7																													
8																													
9																													
10																													

Comments:

Legend:	
P	Suspended Particulate
TS	Trace Settled Sediment (just covers bottom of container or less)
S	Sediment greater than (>) Trace, but less than (<) 1 cm

Recorded By: (signature/print) SUP Shweta Patel

Bureau Veritas
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5... www.bvna.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name:	#17498 exp Services Inc	Company Name:		Quotation #:	C20328
Attention:	Accounts Payable	Attention:	Leah Wells	P.O. #:	
Address:	100-2650 Queensview Drive Ottawa ON K2B 8H6	Address:		Project:	OTT-22017859-A0
				Project Name:	
Tel:	(613) 688-1899 Fax (613) 225-7337	Tel:	Fax:	Site #:	
Email:	AP@exp.com; Karen.Burke@exp.com	Email:	leah.wells@exp.com	Sampled By:	Philip Oliveira

10-Jan-23 16:40
Katherine Szozda
C308753

Order #:
Manager:
WP ENV-1622

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulations 153/2011
- [ ] Table 1 [ ] Res/Park [ ] Medium/Fine
- [x] Table 2 [ ] Ind/Comm [ ] Coarse
- [ ] Table 3 [ ] Agri/Other [ ] For RSC
- [ ] Table ___

Other Regulations
- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg 558 [ ] Storm Sewer Bylaw
- [ ] MISA Municipality ___
- [ ] PWQO [ ] Reg 406 Table ___
- [ ] Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Turnaround Time (TAT) Required
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Organics are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___
(call lab for #)

	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr VI	O.Reg 153 PHCs, BTEX/F1-F4	[illegible]	VOC's	PHC						# of Bottles	Comments
1	BH-8	2023-01-10	12h00	GW	F	X									2	
2	BH-11		13h00	GW		X									2	
3	BH-10		14h15	GW	X		X	X	X						5	
4	Dup 1		14h15	GW	X		X	X	X						5	
5	FIELD Blank		14h15	GW			X	X	X						5	
6	TRIP Blank		14h15	GW		X	X								3	
7																
8																
9																
10																

Received in Ottawa

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Philip Oliveira	2023-01-10	16h30	Angelica Santiago	2023/01/11	16:40	
			2 VITRINI	2023/01/11	0800	

Laboratory Use Only
Time Sensitive | Temperature (°C) on Recei: 6.6, 7 ice pack | Custody Seal Present / Intact: Yes / No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

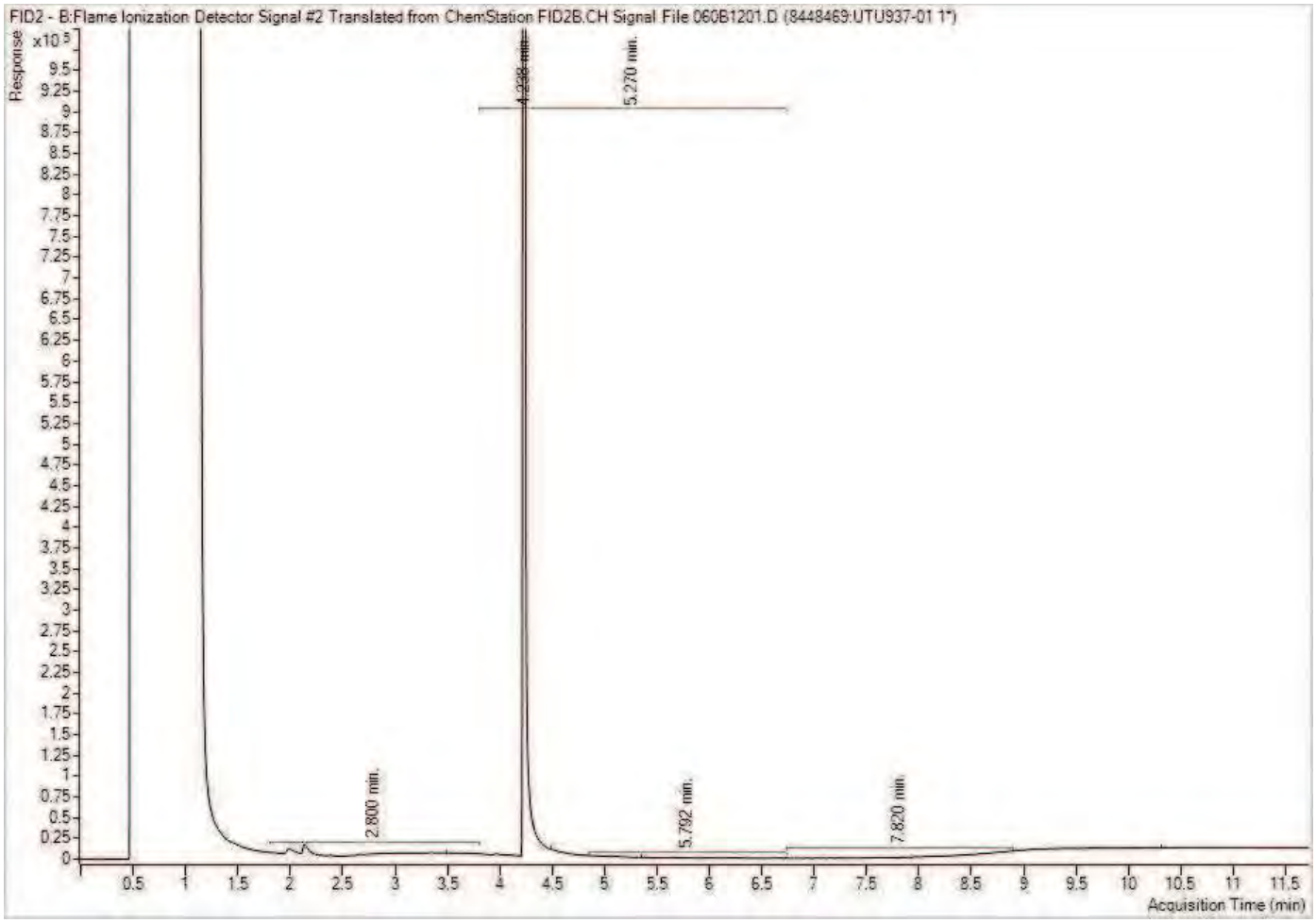
5213

Bureau Veritas Canada (2019) Inc.

Bureau Veritas Job #: C308753
Report Date: 2023/01/17
Bureau Veritas Sample: UTU937

exp Services Inc
Client Project #: OTT-22017859-A0
Client ID: BH-8

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

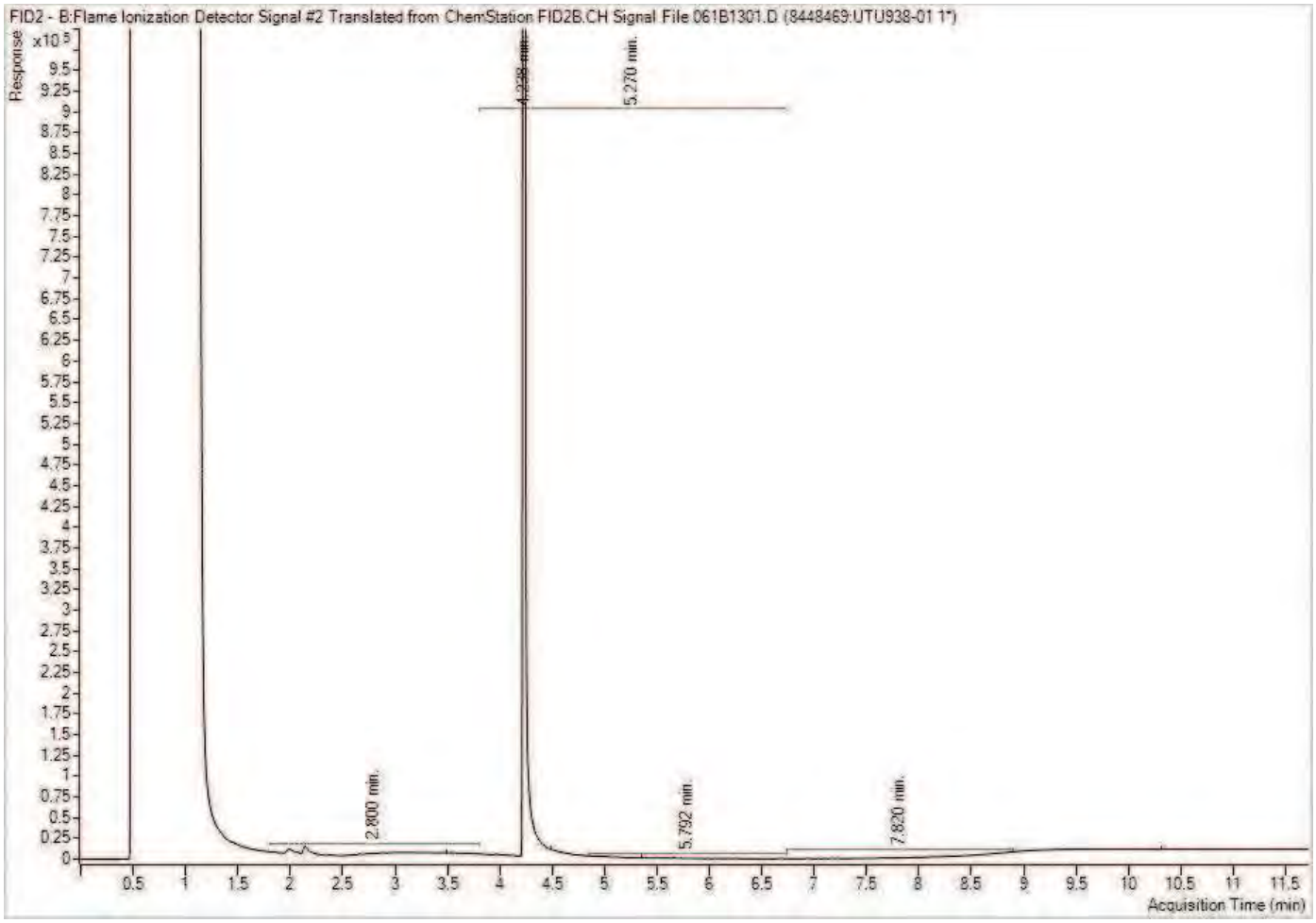


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C308753
Report Date: 2023/01/17
Bureau Veritas Sample: UTU938

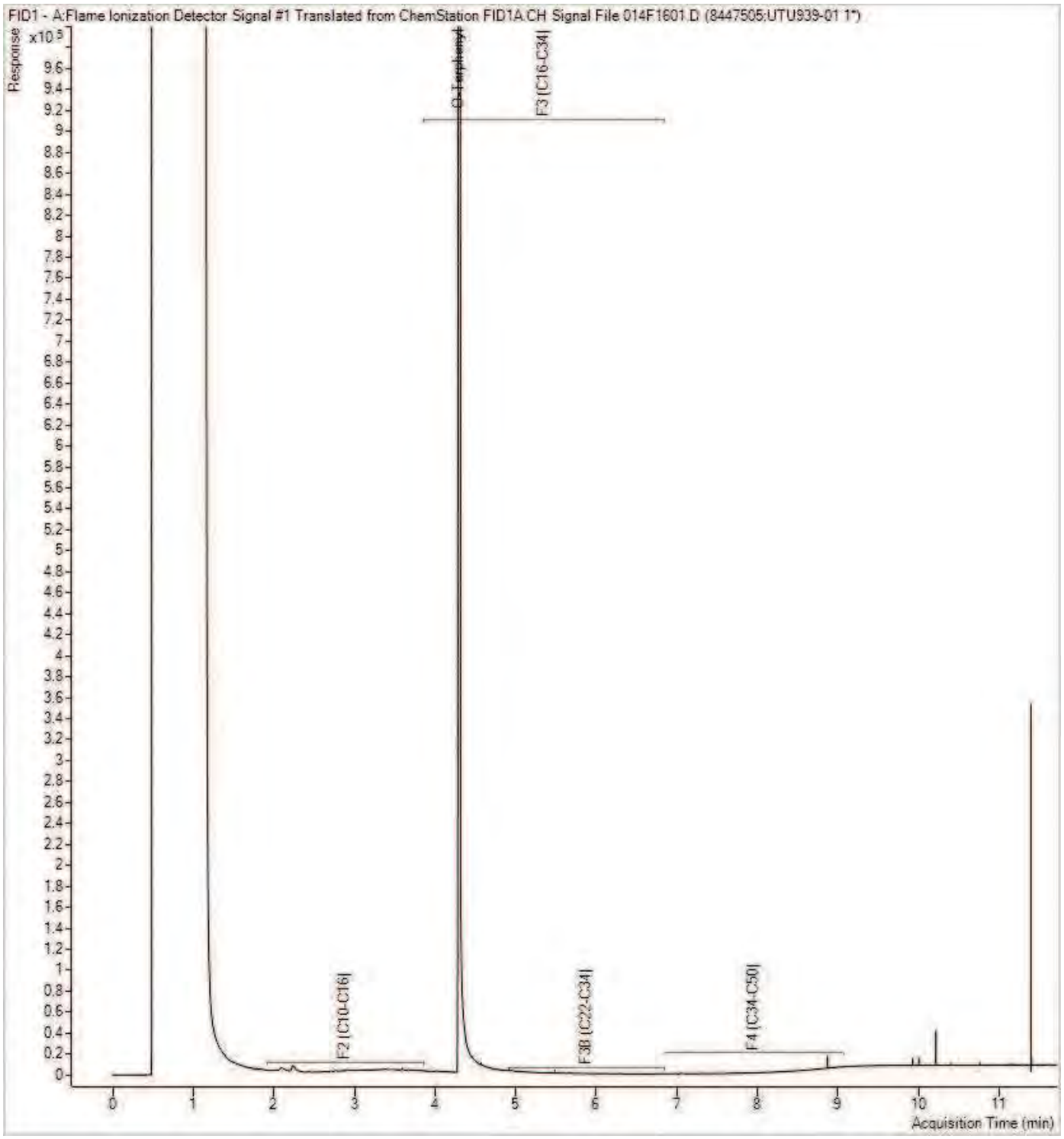
exp Services Inc
Client Project #: OTT-22017859-A0
Client ID: BH-11

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

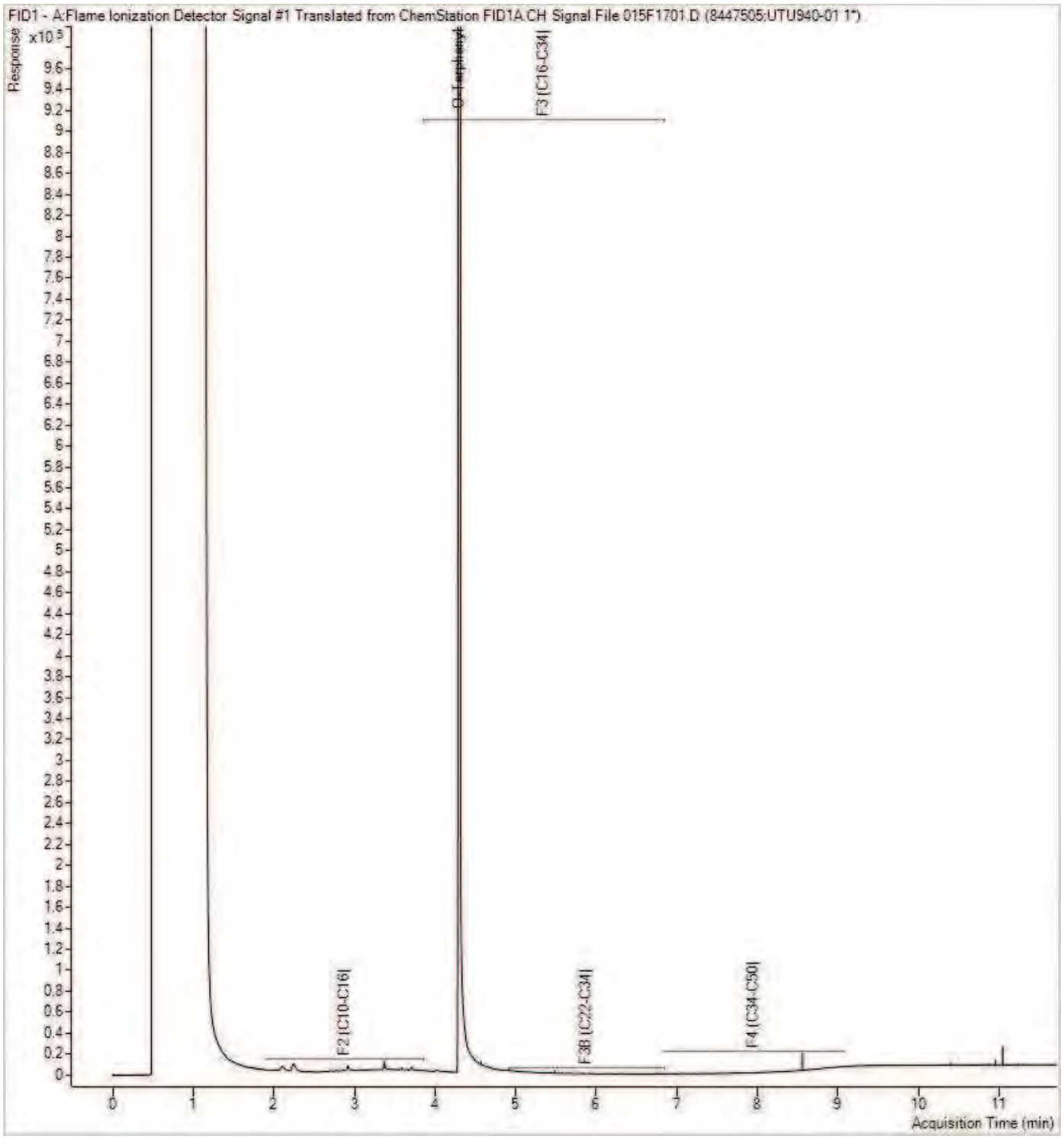


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C308753
Report Date: 2023/01/17
Bureau Veritas Sample: UTU940

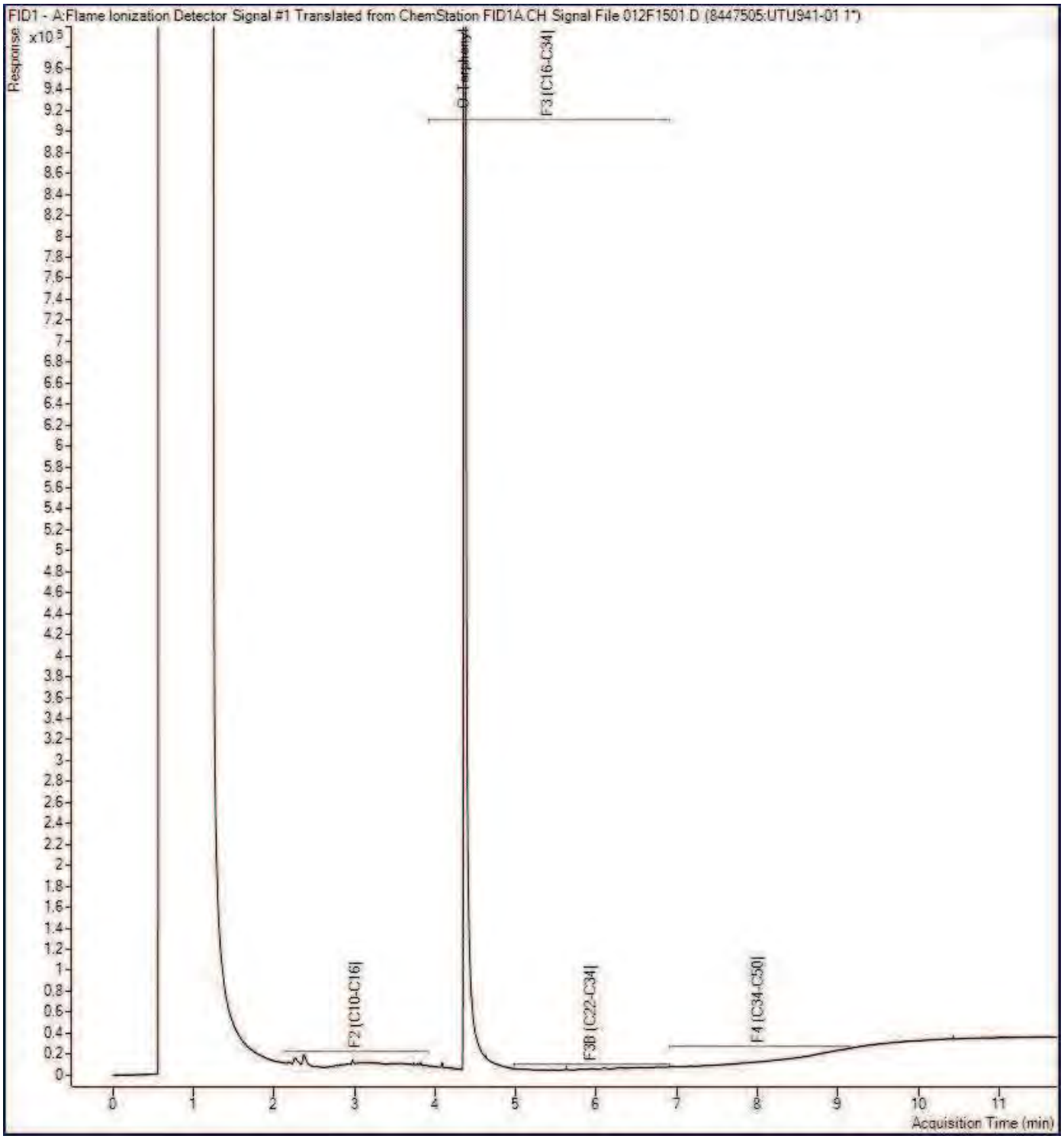
exp Services Inc
Client Project #: OTT-22017859-A0
Client ID: DUP-1

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

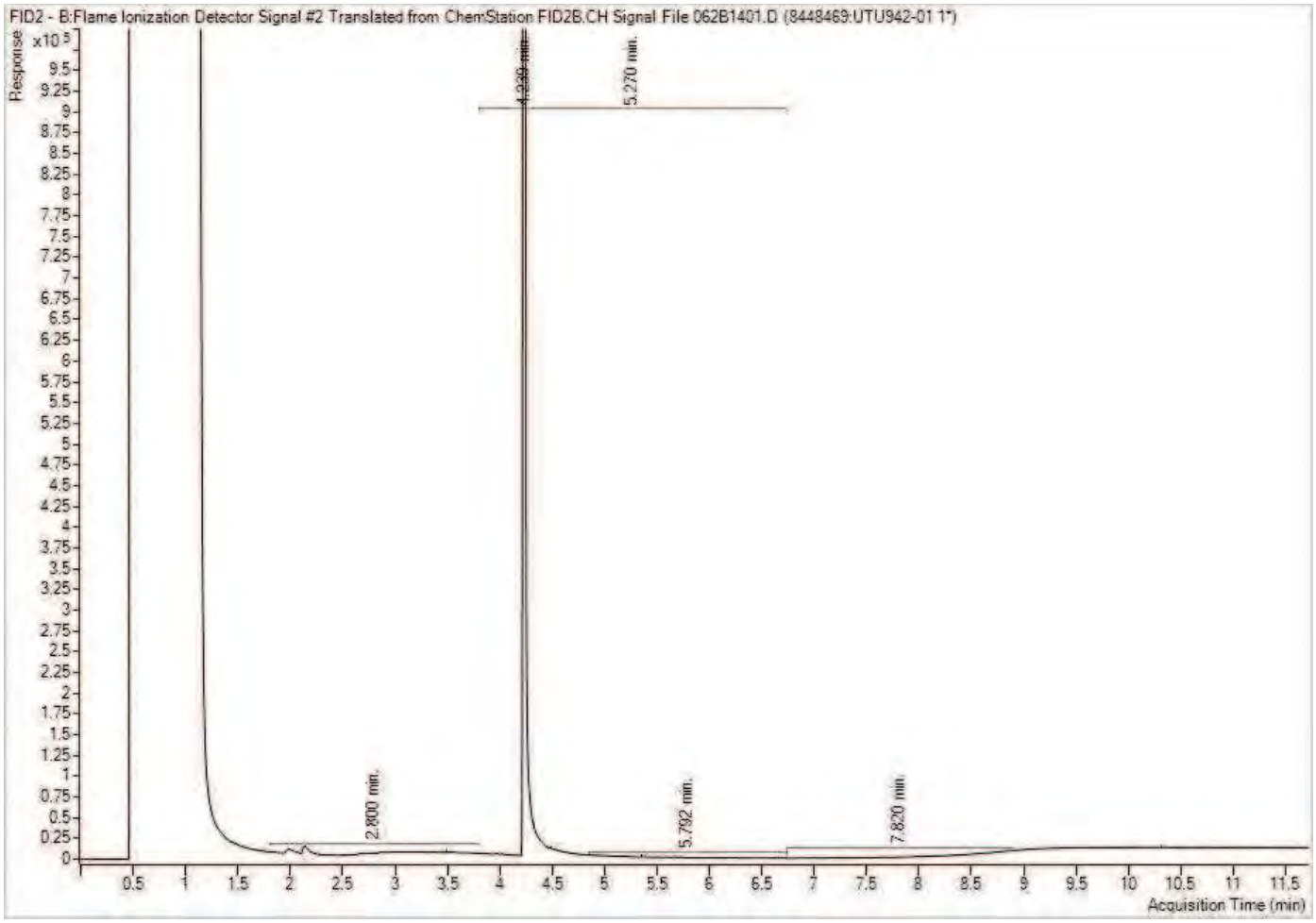


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C308753
Report Date: 2023/01/17
Bureau Veritas Sample: UTU942

exp Services Inc
Client Project #: OTT-22017859-A0
Client ID: TRIP BLANK

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: EXP SERVICES INC
2650 QUEENSVIEW DRIVE, UNIT 100
OTTAWA, ON K2B8H6
(613) 688-1899
ATTENTION TO: Matthew Zammit
PROJECT: OTT-22017859-AO
AGAT WORK ORDER: 23Z986235
SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
DATE REPORTED: Jan 13, 2023
PAGES (INCLUDING COVER): 5
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 23Z986235

PROJECT: OTT-22017859-AO

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Matthew Zammit

SAMPLING SITE:2666 Tenth Line Rd., Ottawa

SAMPLED BY:EXP

(Soil) Inorganic Chemistry

DATE RECEIVED: 2023-01-09 **DATE REPORTED: 2023-01-13**

		SAMPLE DESCRIPTION:		BH1 SS5 10'-12'	BH6 SS3 5'-7'	BH7 SS8 25'-27'
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2022-12-19	2022-12-14	2022-12-14
Parameter	Unit	G / S	RDL	4669537	4669539	4669540
Chloride (2:1)	µg/g		2	456	22	1500
Sulphate (2:1)	µg/g		2	108	89	84
pH (2:1)	pH Units		NA	9.24	8.19	9.43
Resistivity (2:1) (Calculated)	ohm.cm		1	1040	5050	256

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

4669537-4669540 pH, Chloride and Sulphate were determined on the extract obtained from the 2:1 leaching procedure (2 parts DI water: 1 part soil). Resistivity is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories
5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: EXP SERVICES INC
AGAT WORK ORDER: 23Z986235
PROJECT: OTT-22017859-AO
ATTENTION TO: Matthew Zammit
SAMPLING SITE:2666 Tenth Line Rd., Ottawa
SAMPLED BY:EXP

Soil Analysis

RPT Date: Jan 13, 2023			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
(Soil) Inorganic Chemistry															
Chloride (2:1)	4663797		35	35	0.0%	< 2	93%	70%	130%	97%	80%	120%	96%	70%	130%
Sulphate (2:1)	4663797		257	255	0.8%	< 2	97%	70%	130%	100%	80%	120%	NA	70%	130%
pH (2:1)	4671172		10.3	10.3	0.0%	NA	94%	80%	120%						

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Matrix spike NA: Spike level < native concentration. Matrix spike acceptance limits do not apply and are not calculated.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: EXP SERVICES INC

AGAT WORK ORDER: 23Z986235

PROJECT: OTT-22017859-AO

ATTENTION TO: Matthew Zammit

SAMPLING SITE:2666 Tenth Line Rd., Ottawa

SAMPLED BY:EXP

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Chloride (2:1)	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Sulphate (2:1)	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
pH (2:1)	INOR 93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER
Resistivity (2:1) (Calculated)	INOR-93-6036	McKeague 4.12, SM 2510 B,SSA #5 Part 3	CALCULATION

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: EXP
Contact: Matthew Zammit
Address: 2650 Queensview dr Suite 100
Ottawa, ON, K2B 8H6
Phone: 613-688-1899 Fax:
Reports to be sent to:
1. Email: Matthew.Zammit@exp.com
2. Email:

Project Information:

Project: OTT-22017859-A0
Site Location: 2666 Tenth Line Rd, Ottawa
Sampled By: Exp
AGAT ID #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐
Company:
Contact:
Address:
Email:

Regulatory Requirements:

(Please check all applicable boxes)

☐ Regulation 153/04
Table ____ *Indicate One*
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Excess Soils R406
Table ____ *Indicate One*
☐ Regulation 558
☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
____ *Region*
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 2329860235
Cooler Quantity: n/a - bag - no ice packs
Arrival Temperatures: 19.2 | 19.1 | 19.1
LT 6.0 | 6.2 | 6.3
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT (Most Analysis) ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: Total PCBs ☐ Aroclor	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	pH	Sulphates	Chlorides	Resistivity				Potentially Hazardous or High Concentration (Y/N)
BH 1 SS5 10'-12'	Dec 19	AM PM	1														✓	✓	✓	✓				
BH 6 SS3 5'-7'	Dec 14	AM PM	1														✓	✓	✓	✓				
BH 7 SS8 25'-27'	Dec 14	AM PM	1														✓	✓	✓	✓				
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						
		AM PM																						

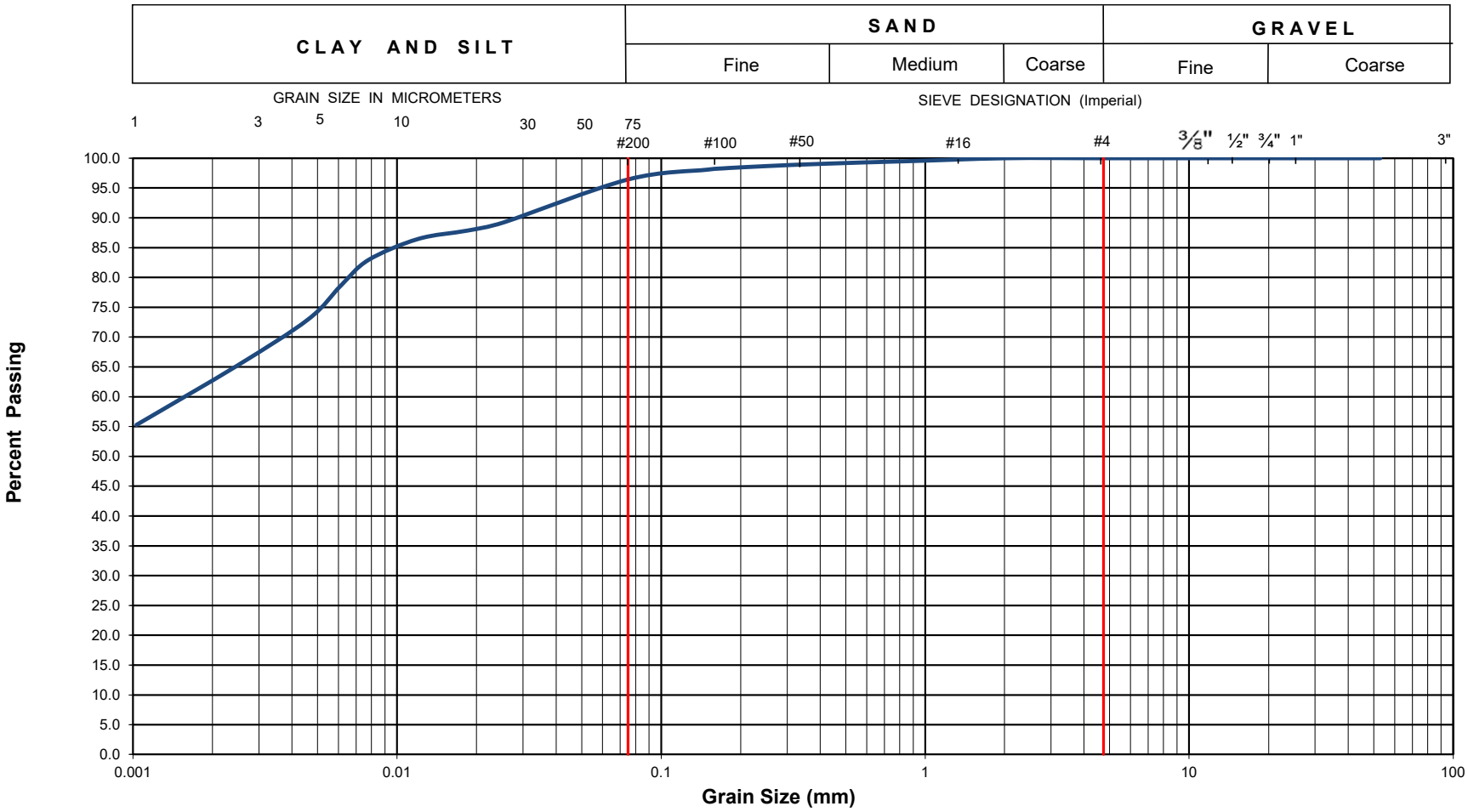
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign): C. Crutchley	Date JAN 09 2023	Time 10h25
Samples Relinquished By (Print Name and Sign): C. Crutchley	Date JAN 09 2023	Time 16h00	Samples Received By (Print Name and Sign): M. GRASIC	Date Jan 10	Time 9:10
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page ____ of ____
N°: T 122988

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422

Unified Soil Classification System

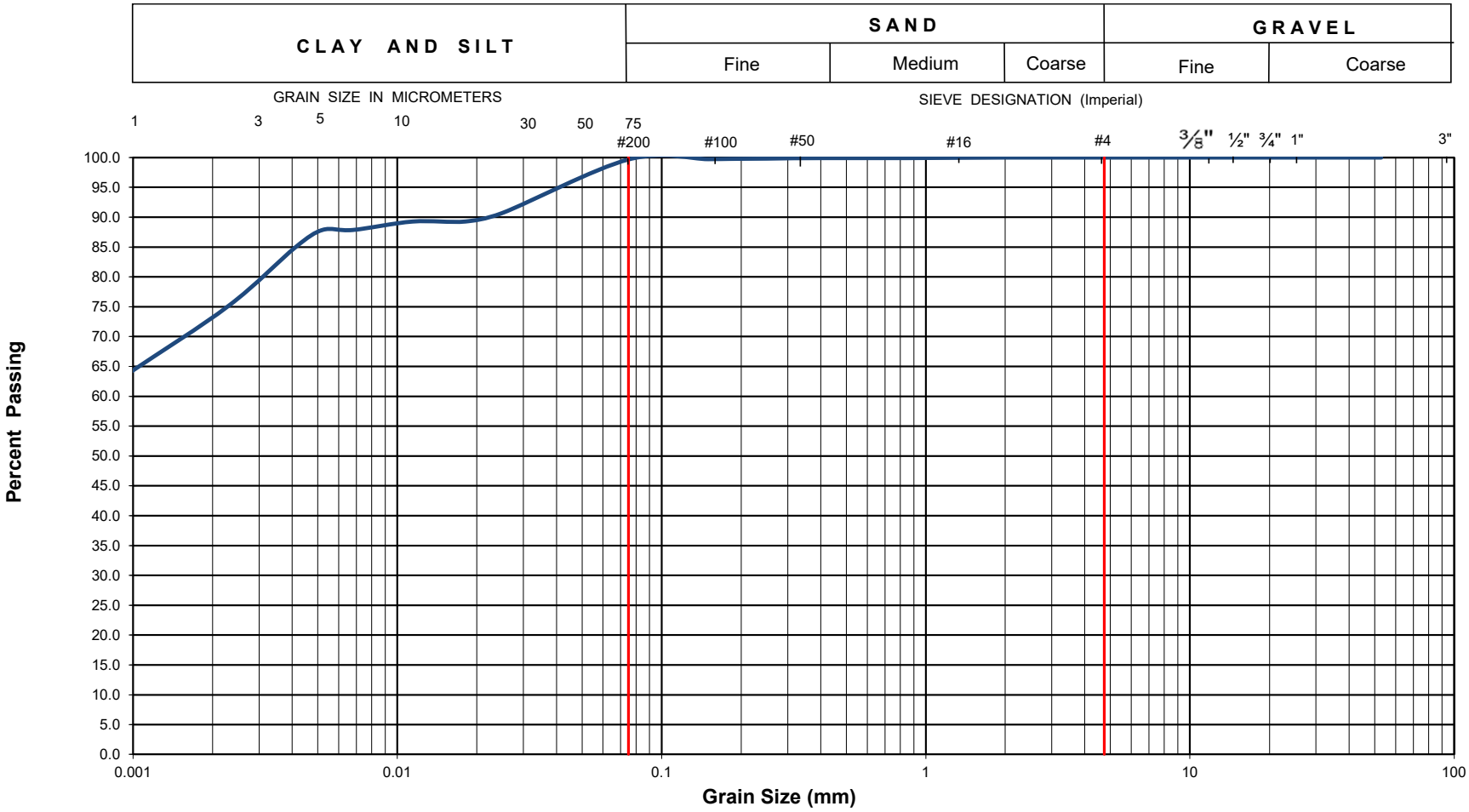


EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 19, 2023**	**Borehole No:**	**BH1**		**Sample No.:**	**SS4**		**Depth (m) :**	**2.3-2.9**
Sample Description :		**% Silt and Clay**	**96**	**% Sand**	**4**	**% Gravel**	**0**	**Figure :**	**xxxx**
Sample Description :		**Fat Clay (CH)**							

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422

Unified Soil Classification System

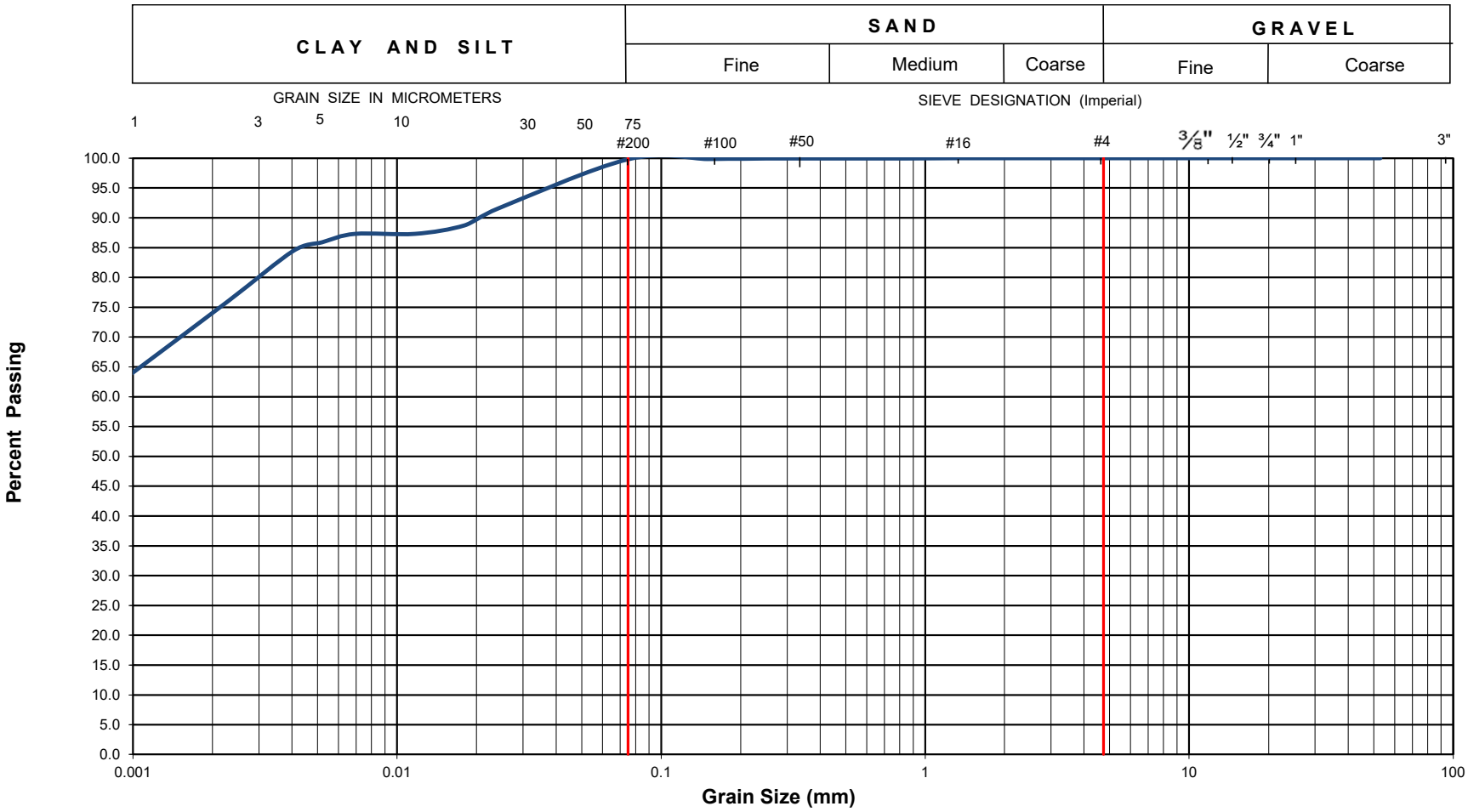


EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 15, 2023**	**Borehole No:**	**BH2**		**Sample No.:**	**SS8**		**Depth (m) :**	**7.6-8.2**
Sample Description :		**% Silt and Clay**	**100**	**% Sand**	**0**	**% Gravel**	**0**	**Figure :**	**xxxx**
Sample Description :		**Fat Clay (CH)**							

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422

Unified Soil Classification System

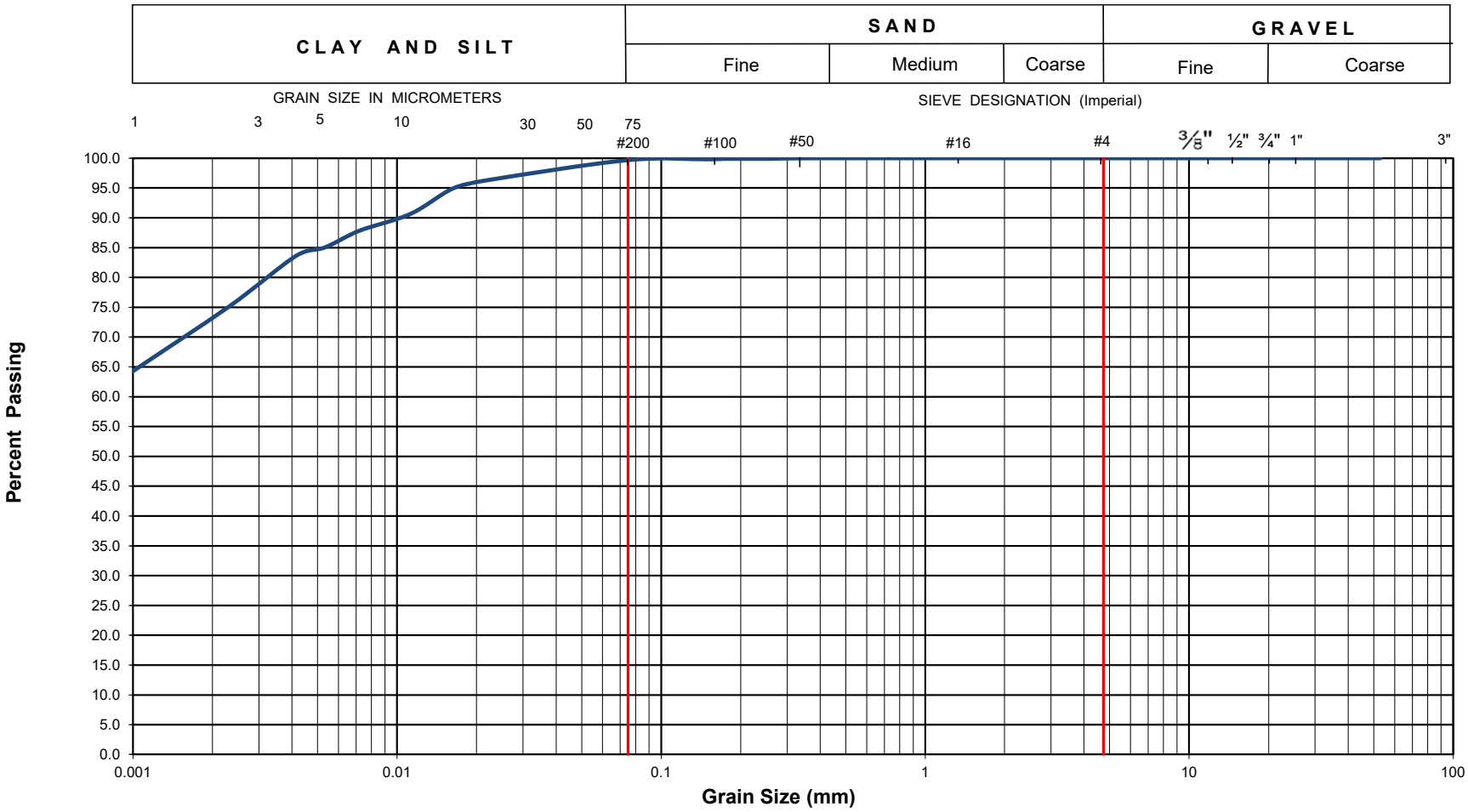


EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 15, 2023**	**Borehole No:**	**BH5**		**Sample No.:**	**SS7**		**Depth (m) :**	**6.1-6.7**
Sample Description :		**% Silt and Clay**	**100**	**% Sand**	**0**	**% Gravel**	**0**	**Figure :**	**xxxx**
Sample Description :		**Fat Clay (CH)**							

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422

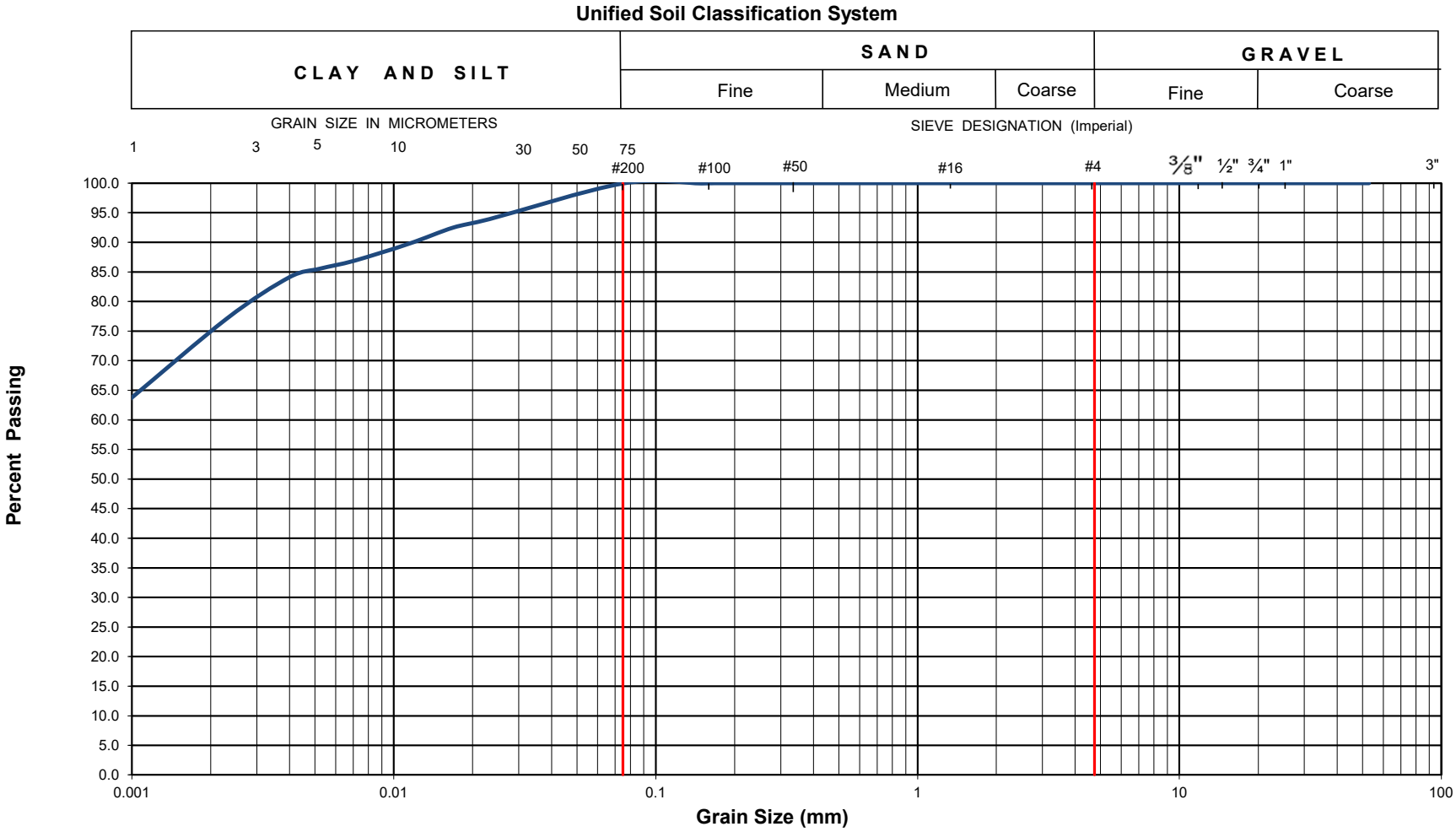
Unified Soil Classification System



EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 22, 2023**	**Borehole No:**	**BH8**		**Sample No.:**	**SS3**		**Depth (m) :**	**2.3-2.9**
Sample Description :		**% Silt and Clay**	**100**	**% Sand**	**0**	**% Gravel**	**0**	**Figure :**	**xxxx**
Sample Description :		**Fat Clay (CH)**							

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

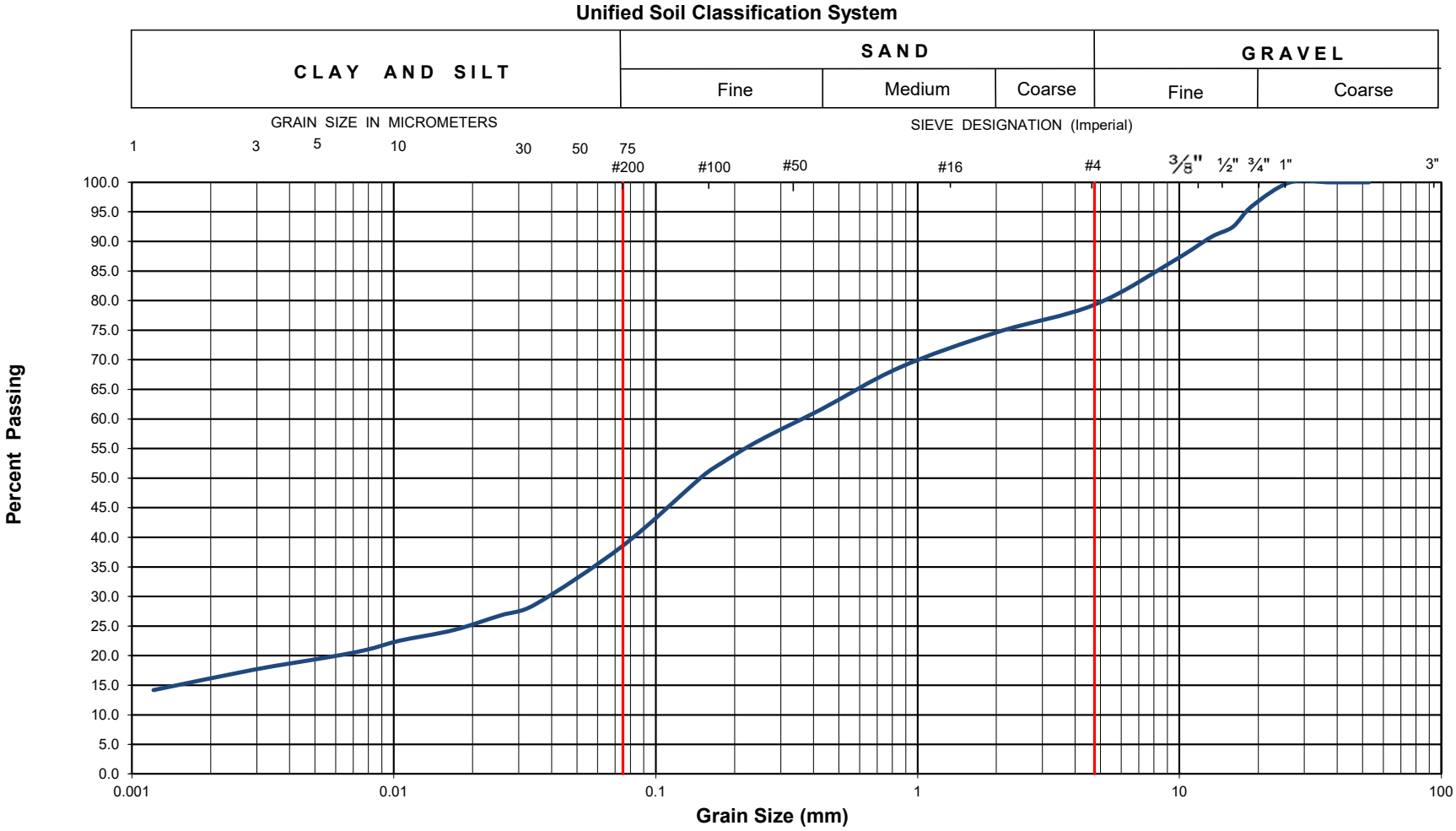
Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422



EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 22, 2023**	**Borehole No:**	**BH8**		**Sample No.:**	**SS4**		**Depth (m) :**	**3.8-4.4**
Sample Description :		**% Silt and Clay**	**100**	**% Sand**	**0**	**% Gravel**	**0**	**Figure :**	**xxxx**
Sample Description :		**Fat Clay (CH)**							

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422

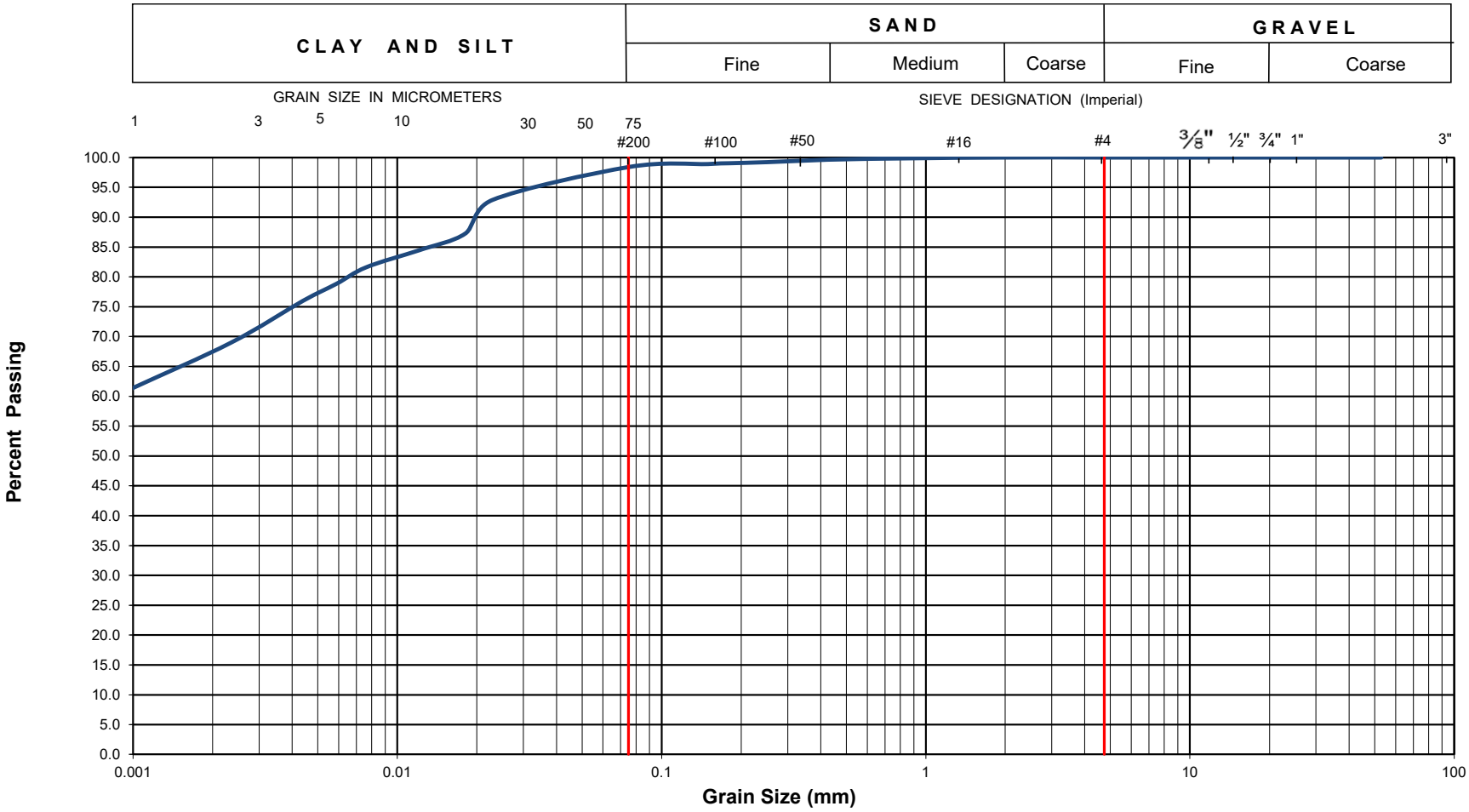


EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 21, 2023**	**Borehole No:**	**BH13**		**Sample No.:**	**SS2**		**Depth (m) :**	**0.8-1.4**
Sample Description :		**% Silt and Clay**	**39**	**% Sand**	**40**	**% Gravel**	**21**	**Figure :**	**xxxx**
Sample Description :		**Silty Sand with Gravel (SM)**							

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Grain-Size Distribution Curve
Method of Test For Particle Size Analysis of Soil
ASTM C-136/ASTM D422

Unified Soil Classification System



EXP Project No.:	**OTT-22017859-A0**	**Project Name :**	**Geotechnical Investigation - Proposed New Avalon III Elementary School**						
Client :	**CECCE**	**Project Location :**	**Sweet Valley Drive between Mer Bleu & Tenth Line Rd, Ottawa**						
Date Sampled :	**December 21, 2023**	**Borehole No:**	**BH14**		**Sample No.:**	**SS3**		**Depth (m) :**	**1.5-2.1**
Sample Description :		**% Silt and Clay**	**98**	**% Sand**	**2**	**% Gravel**	**0**	**Figure :**	**xxxx**
Sample Description :		**Fat Clay (CH)**							