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PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

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Project No. FE 23-13483

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Issued to:	1000570027 Ontario Inc.
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Project Name:	Phase Two Environmental Site Assessment
Project Address:	900 Lakeshore Road West, Mississauga, Ontario
Project Number:	FE 23-13483
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GLOSSARY OF ACRONYMS

APEC:	Area of Potential Environmental Concern
asl:	Above Sea Level
AST:	Aboveground Storage Tank
bgs:	Below Ground Surface
BTEX:	Benzene, Toluene, Ethylbenzene and Xylenes
COC:	Contaminant of Concern
COPC:	Contaminant of Potential Concern
CSA:	Canadian Standards Association
DNAPL	Dense Non-Aqueous Phase Liquid
EPA:	Environmental Protection Act
ESA:	Environmental Site Assessment
FIP:	Fire Insurance Plan
LNAPL	Light Non-Aqueous Phase Liquid
MNRF:	Ministry of Natural Resources and Forestry
MECP:	Ministry of the Environment, Conservation and Parks
MOE:	Ministry of the Environment
NAD 83	North American Datum of 1983
OCPs:	Organochlorine Pesticides
OHSA:	Occupational Health and Safety Act
Phase One ESA:	Phase One Environmental Site Assessment
Phase Two ESA:	Phase Two Environmental Site Assessment
PAHs:	Polycyclic Aromatic (Polyaromatic) Hydrocarbons
PCA:	Potentially Contaminating Activity
PCBs:	Polychlorinated Biphenyls
pH:	potential of Hydrogen
PHC (F1-F4):	Petroleum Hydrocarbons (Fractions 1 to 4)
ppb:	Parts per Billion
ppm:	Parts Per Million
RSC:	Record of Site Condition
SCSs:	Site Condition Standards
TSSA:	Technical Standards and Safety Authority
UST:	Underground Storage Tank
VOCs:	Volatile Organic Compounds

1. EXECUTIVE SUMMARY

Fisher Engineering Limited (Fisher) was retained by 1000570027 Ontario Inc. to conduct a Phase Two Environmental Site Assessment (Phase Two ESA) at the property 900 Lakeshore Road West, Mississauga, Ontario, herein referred to as the "Site" or "phase two property".

As specified under section 168.3.1 of the EPA, filing of a RSC with the Environmental Site Registry is mandatory when there is a change (in all or in part of the property) from an industrial, commercial or community property use to residential, institutional, parkland or agricultural or other property use, with the exceptions prescribed by the amended Ontario Regulation 153/04. Filing of RSC could also be required for development approval purposes depending on requirements by municipalities. Considering the residential use, a RSC filing is not expected to be required for the Site.

A review of information and data collected to date as part of Fisher's Phase One ESA for the Site, has identified two (2) Areas of Potential Environmental Concern (APECs A and B). The purpose of this Phase Two ESA was to investigate potential soil and groundwater impacts on, in or under the Site as a result of historical on-site potentially contaminating activities (PCAs), conducted as a requirement of development application to the support the future residential condominium redevelopment.

The current Phase Two ESA investigation includes recovering soil samples from five (5) boreholes advanced at the Site from November 6 to 13, 2023, and recovering groundwater samples from one (1) of the five (5) monitoring wells at the Site. A total of seven (7) soil samples, including one (1) field duplicate, and two (2) groundwater samples, including one (1) field duplicate, recovered from the boreholes/monitoring wells were submitted to the laboratory for analysis of Contaminants of Potential Concern (COPCs), including Metals, BTEX, PHCs, PAHs, and/or pH. A trip blank water sample were also submitted to the laboratory for BTEX analysis.

For evaluation of the soil and groundwater quality, Fisher compared the analytical results to the MECP Table 2 SCSs in a Potable Groundwater Condition, Residential/Parkland/ Institutional (R/P/I) Property Use for soil samples, and All Types of Property Use for groundwater samples, in medium and fine textured soil. Based on the findings from the current Phase Two ESA, all soil and groundwater samples collected from the Site, representing the current soil and groundwater conditions at the investigated areas, were compliant with the applicable MECP Table 2 SCSs, and no COPCs are carried forward as Contaminants of Concern (COCs). No further investigation is required at this time.

2. INTRODUCTION

The Environmental Protection Act (EPA) defines the Phase Two Environmental Site Assessment (Phase Two ESA) as an assessment of property conducted in accordance with the regulations by or under the supervision of a Qualified Person to determine the location and concentration of one or more contaminants in the land or water on, in or under the property.

This definition applies only to Phase Two ESAs prepared in support of the filing of a Record of Site Condition (RSC). The process of filing a RSC in the Environmental Site Registry is regulated by Ontario Regulation (O. Reg.) 153/04 (Records of Site Condition – Part XV.1 of the Environmental Protection Act, EPA), as amended. The general rules for filing a RSC are found in Part V of the Regulation, while Phase Two ESA rules are mainly found in Parts VI and VIII (sections 22, 32 to 33.8) of the Regulation and Part XII, Schedule E of the Regulation.

Fisher Engineering Limited (Fisher) was retained by 1000570027 Ontario Inc. (the "Client") to conduct a Phase Two Environmental Site Assessment (Phase Two ESA) of the property located at 900 Lakeshore Road West, Mississauga, Ontario, herein referred to as the "Site" or "phase two property". The Phase Two ESA was conducted as a requirement of development application to the support the future residential condominium redevelopment.

2.1 Site Description

The phase two property information is provided as follows:

TABLE 1: Phase Two Property Information	
Municipal Address(es):	900 Lakeshore Road West, Mississauga, Ontario
Location Description:	The Site is located on the southeast side of Lakeshore Road West, in a primarily residential, commercial and parkland area. The Site is bounded by Richards Memorial Park to the northeast and east, and residential dwellings (965, 975 and 981 Whittier Cres.) to the southwest and south.
Property Identifier Number (PIN):	13488-0949 (LT)
Site Area:	0.4702 hectares or 4,702 m^2
Geographical Coordinates of the Centroid of the Site:	Universal Transverse Mercator (UTM) Grid Coordinates, based on North American Datum of 1983 (NAD83): 17T 612909 m Easting 4821210 m Northing
Legal Description:	PT LT 22 CON 3 SDS TORONTO; PT LT 1 PL C89 TORONTO AS IN RO1150130; CITY OF MISSISSAUGA

Please refer to Appendix A for the Site Location Map (Figure I) and Appendix D for a Topographical Plan of Survey of the phase two property.

2.2 Property Ownership

The Site Owner is also the Client, 1000570027 Ontario Inc., as of 2023, whose contact information has been provided on the signature page.

2.3 Current and Proposed Future Uses

At the time of the investigation, the Site was occupied by a one-and-a-half-storey residential dwelling with basement at the northeastern portion, with an aboveground parking garage and an inground pool, constructed by 1960. Additionally, a small one-storey dwelling was noted at the southwest portion. Vent and fill pipes from a disconnected heating oil AST in the basement, was located along the southeast corner of the residential house at northeast portion of Site. Exterior area was asphalt paved, and grass covered. The rear, southeast portion was noted with a slope.

It is proposed that a property is to be developed with a 10-storey, high-density residential condominium building, with three (3) underground parking levels, at all developable areas of the Site. As part of the new development, the Site will maintain residential use.

2.4 Applicable Site Condition Standard

For the purpose of filing a RSC with the MECP, the concentration of each Contaminant of Potential Concern (COPC) on, in or under the phase two property, must not exceed the applicable Site Condition Standard (SCS) for the contaminant, unless there are property specific standards developed through a Modified Generic Risk Assessment (MGRA) conducted for the phase two property.

The Ministry of the Environment (MOE, currently MECP) presents Soil, Groundwater and Sediment Standards in the document *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, dated April 15, 2011. These standards are soil, groundwater and sediment effect-based criteria which have been developed to protect against potential adverse effects or the likelihood of adverse effects to human health, ecosystem health and the natural environment resulting from contamination due to human activities. They are levels at and below which no further remedial response actions would be required based upon the potential risk of harm posed by these contaminants.

In order to comply with City if Mississauga's reporting requirements to obtain a non-objection for use of non-potable groundwater standards, additional works will be required. As those have not been completed, the potable groundwater SCSs apply for the Site.

In accordance with Section 41 of the Regulation,

- The Site is not within or adjacent to an area of natural significance, nor does it include land that is within 30 m of an area of natural significance or part of such an area; and
- Soil samples collected from the Site were found to have pH values within the acceptable range of 5 to 9 for surface soil and 5 to 11 for subsurface soil.

In accordance with Section 43.1 of the regulation, the Site is not a shallow soil property; nor does it include all or part of a water body or is adjacent to a water body or includes land that is within 30 m of a water body.

A grain size analysis conducted on seven (7) soil samples recovered from the boreholes during a Geotechnical Investigation performed in conjunction to the current investigation, at depths ranging from 1.53 m to 11.13 m below ground surface (bgs), which represent more than 2/3 of the soil currently present at the Site, indicated a medium and fine textured soil condition. These soil samples are considered representative of more than 2/3 of the soil at the property. Based on the above, the site condition standards for medium and fine textured soil have been applied. The Grain Size analysis result is included in Appendix C.

The proposed future land use is residential.

Based on the above, for the purpose of this Phase Two ESA, the applicable Site Condition Standards (SCSs) were identified as the MECP Table 2 SCSs in a Potable Groundwater Condition, Residential/Parkland/Institutional (R/P/I) Property Use for soil samples, and All Types of Property Use for groundwater samples, medium and fine textured soil, as contained in the MECP *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011 (herein referred to as the "MECP Table 2 SCSs"). The criteria values are presented with the results of analysis in the Certificates of Analysis (Appendix C).

3. BACKGROUND INFORMATION

The specific objectives of a background information review are to develop an understanding of the general physical setting of the phase two property and to verify the extent, validity and reliability of data gathered during previous investigations carried out at the site, if available.

3.1 Physical Setting

A description of the general physical setting of the phase two property within the phase one study area, including the phase two property, properties located, wholly or partly, within 250 m from the nearest point on a boundary of the Site, and other neighboring properties where activities considered being potential sources of environmental contamination, were apparent or anticipated, is provided below:

TABLE 2: General Physical Setting	
Water Bodies	
Source:	Ministry of Natural Resources and Forestry (MNRF) Make a Topographic Map; City of Mississauga Online Map; Google Earth.
Phase One Study Area Conditions:	Lornewood Creek, having a grade elevation of approximately 80 m asl and flowing in an east direction, is located approximately 125 m north of the phase one property; Lake Ontario, having a grade elevation of approximately 77 m asl, is located approximately 245 m southeast of the Site.
Phase Two Property Conditions:	No water bodies were present on-Site.
Areas of Natural Significance	
Source:	The Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Area Map; Land Information Ontario (LIO) GeoHub ANSI Map.
Phase One Study Area Conditions:	Part of the phase one study area is located within an ANSI, the Lorne Park Prairie.
Topography and Drainage	
Source:	Ministry of Natural Resources and Forestry (MNRF) Make a Topographic Map, Google Earth, Topographic Survey (November 2023).
Phase One Study Area Conditions:	Grade elevation to the north is maintained at 85 m above sea level (asl) at the intersection of Queen Street West and Sweetwater Crescent. Grade elevation along Lakeshore Road West at the phase one study area boundaries, from southwest to northeast, declines in grade elevation from 90 m asl to 80 m asl and inclines to 85 m asl. Grade elevation to the south inclines to 90 m asl at Longfellow Avenue.
Phase Two Property Conditions:	The northern / northwestern portion of the Site is built-up (89.19 m asl) and a general downward slope to the southeast corner (79.27 m asl).
Well Head Protection Areas (WHPAs)	
Source:	CTC (Credit Valley-Toronto and Region-Central Lake Ontario) Source Protection Plan.

TABLE 2: General Physical Setting	
Phase One Study Area Conditions:	According to the water supply information available from the Region of Peel website, the City of Mississauga obtain its drinking water from the Lake Ontario. As such, no WHPAs are located within the Site and the phase one study area. Additionally, based on the CTC (Credit Valley-Toronto and Region-Central Lake Ontario) Source Protection Plan, no part of the Site and phase one study area is located within or in the vicinity of a WHPA.
Municipal Drinking Water System	
Source:	Region of Peel Web Site – Public Works Services.
Phase One Study Area Conditions:	The City of Mississauga obtained its drinking water from Lake Ontario. Properties within the phase one study area rely on municipal water, obtained from surface water bodies, as a source of drinking water.
Water Wells	
Source:	Online MECP Water Well Records; and Site reconnaissance.
Phase One Study Area Conditions:	A review of MECP well records within the phase one study area indicated that seven (7) wells were constructed for monitoring and observation purposes, completed to depths of 4.57 m to 19.81 m bgs, in 2018. One (1) well was erroneously placed within the phase one study area, having a municipal address as 2524 Cawthra Road and being more than 6 km away from the Site. Three (3) wells were listed as decommissioned or abandoned from 1958 to 2019 with depths ranging from 1.52 m to 14.02 m bgs.
Phase Two Property Conditions:	No water wells were present at the Site.

3.2 Past Investigations

Information provided by previous reports may be relied on in planning, conducting or supervising the present Phase Two ESA if all of the following requirements are met:

(a) The date the last work (on all of planning the site investigation, conducting the site investigation and reviewing and evaluating the information gathered through the site investigation required for the Phase Two ESA that is the subject of this report was done) is no later than 18 months before the submission of the Record of Site Condition or the commencement of the Modified Generic Risk Assessment;

(b) The Phase One Conceptual Site Model (CSM) included in the previous investigation accurately reflects the environmental condition of the phase two property prior to any actions taken to reduce the concentration of contaminants;

(c) In the professional opinion of the Qualified Person conducting the present Phase Two ESA, there is no new or materially changed area of potential environmental concern (APEC) at the phase two property;

(d) The previous Phase One ESA meets all other requirements of Part VII and Schedule D of O. Reg. 153/04 for a Phase One ESA, including the requirements for a Phase One ESA report;

(e) The previous Phase Two ESA meets all other requirements of Part VIII and Schedule E of O. Reg. 153/04 for a Phase Two ESA, including the requirements for a Phase Two ESA report;

(f) The report is a single document; and

(g) The report is the most recent document that meets the requirements of Part VII and Schedule D of O. Reg. 153/04 for a Phase One ESA, including the requirements for a Phase One ESA report.

The following previous report was reviewed (and relied on) by Fisher prior to planning the site investigation for the present Phase Two ESA:

TABLE 3: Summary of Relevant Past Investigations

Report Title:	Phase One Environmental Site Assessment, 900 Lakeshore Road West, Mississauga
Prepared By/For:	Fisher Engineering Limited for the 1000570027 Ontario Inc.
Date:	January 26, 2024

Scope and Conclusions of the Reviewed Report

The reviewed Phase One ESA was conducted in accordance with Part VII and Schedule D of the Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA), as amended. The scope of work included records review, interviews, site reconnaissance, review and evaluation of information collected, preparation of tables with Current and Past Uses of the phase one property and Areas of Potential Environmental Concern (APECs), a Conceptual Site Model (CSM), preparation of a written report with conclusions and recommendations, and submission of the report to 1000570027 Ontario Inc.

The phase one property was undeveloped/agricultural land prior to at least 1960, and was first developed for residential use by 1960, during which a dwelling at the approximate location of the current residential house was established at the northeastern portion. During the Site visit on November 1, 2023, the phase one property was approximately triangular in shape and consists of a one-and-a-half-storey residential house with basement at the northeastern portion with an aboveground parking garage and an inground pool, and a one-storey residential house at the southwestern portion of the Site.

PCAs at the Site and other properties within the phase one study area were revealed after the records review and during the site reconnaissance, adnd the following two (2) APECs were identified:

TABLE 3: Summary of Relevant Past Investigations

APEC	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (on-site or off-site)	Contaminants of Potential Concern (COPCs)	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC A	Entire Site	PCA 30 – Importation of Fill Material of Unknown Quality Inferred utilization of fill materials during Site development.	On-Site	Metals, PHCs (F1-F4), BTEX, PAHs	Soil
APEC B	Northeastern portion of the Site, near southeast corner of residential building	PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks Presence of a disconnected furnace oil AST in the basement of the residential house at northeast portion of Site.	On-Site	Metals, PHCs (F1-F4), BTEX, PAHs	Soil and Groundwater

Considering the findings of the Phase One ESA, it was concluded that a Phase Two ESA is required for the entire phase one property. In order to verify the existence of COPCs in soil and/or groundwater at the phase one property, a number of boreholes, and monitoring wells should be advanced within the identified APECs to determine the location and concentrations of COPCs in the land or water on, in or under the phase one property.

An evaluation of the above previous reports to determine if the information or data can be relied upon for the current investigation is discussed below:

- All sections of the Phase One ESA report and the Phase One CSM met all requirements of Part VII and Schedule D of O. Reg. 153/04.

4. SCOPE OF INVESTIGATION

The specific objectives of the site investigation component of the Phase Two ESA are:

- To determine what applicable site condition standards apply to the phase two property;
- To confirm if contaminants are present on the phase two property, and if so, their type, location and concentration, by investigating and characterizing soil, groundwater and

sediment, and further investigating and characterizing applicable media following any remediation; and

- To determine if any contaminants on the phase two property are present at concentrations greater than the applicable site condition standards or standards specified in a Risk Assessment (RA) for the contaminants (where a RA has been accepted by the Director with respect to contaminants on the phase two property) by investigating and characterizing soil, groundwater and sediment, and further investigating and characterizing applicable media following any remediation.

The current Phase Two ESA consisted of the following general tasks:

- A ***Background Information Review*** of previous environmental work that has been conducted within the study area to assist in identifying Areas of Potential Environmental Concern (APECs) where possible contamination may exist;
- ***Development of a Sampling and Analysis Plan*** that focused on the design of the subsurface investigation on APECs identified in previous reports, including a quality assurance and quality control (QA/QC) program, data quality objectives, Standard Operating Procedures (SOPs), and a description of physical constraints that limit the ability to conduct sampling and analysis;
- An ***Intrusive Investigation Program*** that included soil and groundwater sampling in areas previously identified as having the greatest likelihood for contamination;
- ***Review and Evaluation*** of the Intrusive Investigation;
- An ***Analytical Program*** that targeted Contaminants of Potential Concern (COPCs), incorporated analyses from a Canadian Association for Laboratory Accreditation (CALA) Accredited Laboratory and comparison of analytical results to the applicable SCSs as presented in the MECP's "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011;
- Incorporating field, laboratory and overall project ***Quality Assurance and Quality Control*** policies and procedures; and
- ***Reporting*** which summarized the overall findings of the Phase Two ESA and provided conclusions and recommendations for future work to support filing of a RSC.

4.1 Overview of Site Investigation

Fisher conducted the current Phase Two ESA at the Site from November 6 to 13, 2023 to confirm if contaminants are present on the phase two property at concentrations greater than the applicable site condition standards and if so, their type, location and concentration, and to assess applicable remedial and risk management options for the Site, if required.

At the completion of the current Phase Two ESA, it was determined that soil and groundwater samples collected at the selected locations on, in and/or under the phase two property and tested for Metal, PHC, BTEX, and/or PAH parameters, met the applicable MECP Table 2 SCSs.

4.2 Media Investigated

Schedule E of the Regulation contains both generic requirements (applicable to all media: soil, groundwater or sediment, which may be investigated) and specific requirements (for example, those applicable when soil vapour investigations are being undertaken for the purposes of a Risk Assessment).

The rationale for determining the investigated media in the current Phase Two ESA has been based on information obtained from the Phase One ESA (Fisher, 2024) and the Phase One CSM.

4.2.1. Rationale for Groundwater and Sediment Investigation

The on-site and/or off-site PCAs, transport pathways and COPCs identified in the Phase One CSM have indicated the possibility for soil and/or groundwater impacts in, on or under the phase two property.

The environmental quality of sediment was not investigated, as sediment is not present at the Site.

4.2.2. Overview of Field Investigation of Each Medium

The current Phase Two ESA, completed in conjunction to Geotechnical Investigation also undertaken by Fisher, involved the drilling of five (5) boreholes; all of which were completed as monitoring wells. Soil samples were collected from each of the five (5) boreholes and submitted to the laboratory for Metal, PHC, BTEX, PAH and/or pH analysis. Selected samples were also analyzed for Grain Size distribution. Groundwater samples were collected from one (1) monitoring wells installed during this investigation, MW3, and submitted to the laboratory for Metal, PHC, BTEX, and PAH analysis.

4.3 Phase One Conceptual Site Model

The Phase One Conceptual Site Model (CSM) summarized below synthesizes relevant information gathered during phase one study area evaluation, co-relates the Site features and geological/ hydrogeological conditions in the area with on-site and/or off-site PCAs, and identifies release mechanisms, transport pathways, human and ecological receptors within the phase one study area, exposure points and routes of exposure that may contribute to APECs on, in or under the phase two property.

TABLE 4: Phase One CSM	
Areas where PCAs have occurred on-site and/or off-site, that may contribute to APECs at the Phase One Property, and associated COPCs	1. **PCA 30** (Importation of Fill Material of Unknown Quality) – Possible importation of fill material associated with Site development. COPCs: Metals, PHCs (F1-F4), BTEX, PAHs. 2. **PCA 28** (Gasoline and Associated Products Storage in Fixed Tanks) – Presence of a disconnected furnace oil AST in the basement of the residential house at the northeastern portion of the Site. COPCs: Metals, PHCs (F1-F4), BTEX, PAHs.
Surface and sub-surface structures that may affect contaminant distribution and transport on-Site and from neighbouring properties	**T-1** – The foundation of the residential house located at the northeastern portion of the Site. **T-2** – The foundation of the residential house located at the southwestern portion of the Site. **T-3** – Numerous utilities under Lakeshore Road West to the northwest.
Geological and hydrogeological interpretations	**Regional Conditions** Overburden Geology – Coarse textured glaciolacustrine deposits (sand, gravel, minor silt and clay, foreshore and basinal deposits) and modern alluvial deposits (clay, silt, sand, gravel, may contain organic remains). Bedrock Geology – Shale, limestone, dolostone, siltstone, Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member, Eastview Member. Soil description obtained from a review of MECP Well Records available for the phase one study area indicated that the local stratigraphy generally consists of sandy silt till and clayey silt till to about 12.19 m bgs, underlain by shale bedrock at about 12.19 m bgs, extending to the full depth of exploration at 19.81 m bgs. The typical range of hydraulic conductivity is as follows: sandy silt / sandy silt till: 10^{-3} – 10^{-5} cm/s; and clayey silt / clayey silt till: 10^{-5} – 10^{-7} cm/s. Grade elevation to the north is maintained at 85 m above sea level (asl) at the intersection of Queen Street West and Sweetwater Crescent. Grade elevation along Lakeshore Road West at the phase one study area boundaries, from southwest to northeast, declines in grade elevation from 90 m asl to 80 m asl and inclines to 85 m asl. Grade elevation to the south inclines to 90 m asl at Longfellow Avenue. Based on regional topography and proximity to Lake Ontario, it is likely that groundwater flow direction is to the southeast.
Uncertainty or absence of information	The maintenance and operation practices at the on-site and off-site PCAs are unknown. No actual site-specific information on soil and groundwater conditions was available for review. It is inferred that subsurface conditions at the phase one property approach the regional geological and hydrogeological conditions. Therefore, in the absence of readily identifiable contaminant transport pathways from properties within phase one study area to the phase one property, the actual contribution of natural (or anthropogenic) pathways to contaminant transport and

TABLE 4: Phase One CSM	
	distribution under the phase one property is uncertain and could affect the conclusions of this report. Location of subsurface fill materials across the Site is unknown at this time; therefore, distribution of contaminants within fill may be highly heterogeneous. Considering the sandy nature of the fill, distribution of contaminants within fill may be highly heterogeneous. No information regarding the quality of imported fill used during the historical earth works or general grading works was available. This Phase One Conceptual Site Model represents current understanding of the Site in terms of the relevant potentially contaminating sources, subsurface materials and processes, serves as the basis for further site characterization, and will ultimately support the evaluation of various remedial alternatives, if necessary. Because of the limited intrusive and/or non-intrusive investigations data on the phase one study area, the site conceptual model can only provide an approximation to the real world. At the early stages of site conceptual model development, it is possible that several realizations will be tenable. However, as more monitoring and other data become available, the subsequent site conceptual models should provide a more detailed picture of fluid flow and material transport, and transformation processes.

4.4 Deviations From Sampling and Analysis Plan

There were no deviations from the Sampling and Analysis Plan, as outlined in Appendix A of this report, for the current Phase Two ESA.

4.5 Impediments

There were neither any physical impediments nor any denial of access during the Phase Two ESA conducted in November 2023.

5. INVESTIGATION METHOD

The investigation methodology was completed in accordance to Parts VI and VIII (sections 22, 32 to 33.8) and Part XII, Schedule E, of the O. Reg. 153/04, as amended.

5.1 General

Prior to commencing any field activities, borehole locations were cleared of underground utilities through private and public utility locates service.

From November 6 to 8, 2023, borehole drilling was conducted utilizing drilling rigs equipped with hollow stem auger sampling equipment to assess the soil conditions. Monitoring wells were installed in all boreholes to assess the groundwater conditions.

All of the investigation methods associated with drilling, field logging of soil and groundwater conditions, and soil and groundwater sampling were conducted in accordance with the SOPs described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.2 Drilling and Excavating

5.2.1 Borehole Drilling

Borehole drilling was conducted by Terra Firma Environmental Services Ltd. (Terra Firma) of Toronto, Ontario. The five (5) boreholes advanced at the Site were completed using a Diedrich D-50 truck-mounted drilling rig with a split spoon sampler, all equipped with hollow stem augers, and were completed to depths of up to 17.53 m below grade.

The drilling procedure, measures taken to minimize the potential for cross-contamination and frequency of sample collection completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.2 “Borehole Drilling” and Section 6.4 “Soil Sampling Program”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.2.2 Test Pit Excavation

No test pits were excavated as part of the current investigation.

5.3 Soil Sampling

Soil sampling at the Site was conducted as outlined in the Sampling and Analysis Plan (included in Appendix A of this report) designed on the basis of the information obtained from the Phase One ESA (Fisher 2024) and the Phase One CSM.

A description of the soil sampling equipment used in the field during the current Phase Two ESA is provided in the SOPs (Section 6.4 “Soil Sampling Program”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.3.1 Geological Description of Soil and Sediment Samples

A geological description of soil samples encountered is provided in Section 6.1. Sediment is not present at the Site and no sediment samples were collected.

5.4 Field Screening Measurements

Soil samples were first screened in the field using a MiniRae 2000 Photo-Ionization Detector (PID), which is generally used for applications where high sensitivity is needed to monitor ppm

levels of VOCs. Soil vapour concentrations were taken during the soil sampling and the readings are included in the Log of Boreholes in Appendix B.

The depth to groundwater and the presence or absence of non-aqueous phase liquids (NAPLs) were measured in all newly installed monitoring wells using a Solinst Oil/Water Interface probe, Model 122 (interface meter). A transparent bailer with a bottom valve was also used to collect a fluid sample in order to observe the presence or absence of free-flowing product in the monitoring wells.

All field screening methods completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.5 “Field Screening Measurements”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.5 Groundwater Monitoring Well Installation

The five (5) boreholes advanced at the Site were completed by Terra Firma using a Diedrich D-50 truck-mounted drilling rig, all equipped with hollow stem augers, as described in Sub-section 5.2.1 of this report. A groundwater monitoring well comprising 52 mm inside diameter (ID) flush-threaded, Schedule 40 PVC was installed by Terra Firma in all boreholes drilled at the Site.

The well construction details for each monitoring well are presented in Table 1A (Monitoring Well Installation) included in Section 9.1 (Tables), and in the Log of Boreholes in Appendix B.

On November 13, 2023, the newly installed monitoring wells were developed to remove any water and/or drilling fluids added during drilling/installation, and any fine-grained material from around the screened interval. Groundwater recovered from each of the monitoring wells was observed to be free of visible particulates at the completion of the development process.

The monitoring well installation procedure, measures taken to minimize the potential for cross-contamination and well development procedure completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.6 “Monitoring Well Installation and Development”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.6 Groundwater Field Measurement of Water Quality Parameters

Groundwater sampling in the newly installed monitoring wells was conducted using the Low Flow Purging and Sampling procedure (USEPA EQASOP-GW 001), by means of a Mini-Monsoon submersible pump and a Horiba U-52 Flow-Through Cell equipped with sensors that simultaneously measure indicator field parameters such as Temperature, pH, Specific Conductance, Oxidation/Reduction Potential (ORP), Dissolved Oxygen (DO) and Turbidity.

The measurement of water quality parameters procedures completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.7 “Field Measurement of Water Quality Parameters”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.7 Groundwater Sampling

Groundwater sampling in the monitoring wells was conducted using the Low Flow sampling procedure (USEPA EQASOP-GW 001). The flow-through cell was connected through a dedicated 5/8 in. ID HDPE tubing to a stainless steel Mini-Monsoon submersible pump with the other end of the tubing placed at a depth corresponding to the middle of the screened interval of each monitoring well.

The groundwater sampling procedures completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.8 “Groundwater Sampling Program”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.8 Sediment Sampling

No sediment samples were collected or submitted for analysis.

5.9 Analytical Testing

Analytical testing during this investigation was carried out by Fisher Environmental Laboratories in Markham, Ontario is accredited by the Canadian Association for Laboratory Accreditation (CALA) in accordance to ISO/IEC 17025 - 2005 – *General Requirements for the Competence of Testing and Calibration Laboratories* for the analysis of specific parameters for all samples in the scope of work for which Site Condition Standards have been established under O. Reg. 153/04, as amended.

The laboratory ensured that analytical samples were, by appearance, representative of the whole sample as collected in the field.

5.10 Residue Management Procedures

Drilling-generated wastes of soil and water were handled in accordance with applicable laws. Soil cuttings remained following the sampling process and purged water from well development and groundwater sampling, as well as fluids from equipment cleaning, were collected in labeled 205-L metal drums and were stored on-site for future disposal by the Site owner.

The residue management procedures completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.11 “Residue Management”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

5.11 Elevation Surveying

Elevation surveying at all newly installed monitoring well locations was conducted on November 13, 2023. Elevation data is presented in Tables 1A and 1B (Monitoring Well Installation and Water Levels, respectively), included in Section 9.1 (Tables) of this report.

The ground geodetic elevations of the borehole/monitoring well locations were surveyed by Fisher using a SLR200H Horizontal Rotary Laser. The instrument has an accuracy reading of ±0.003 m. The temporary benchmark utilized was the top of a catch basin, located along Lakeshore Road West, of known elevation of 86.02 m asl from the available Plan of Survey with Topography (Fig. E).

5.12 Quality Assurance and Quality Control Measures

Soil samples were collected and handled in accordance with accepted industry standards. Sampling, transportation and storage procedures were conducted according to CCME *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites*, December 1993, and the Ministry of the Environment and Energy (MOEE, currently MECP) *Guidance on Sampling and Analytical Methods for use at Contaminated Sites in Ontario*, December 1996, and followed standard chain of custody procedures. All containers used for sampling were provided by the laboratory and were labeled prior to sampling, taking caution not to open the container.

The sample handling procedures completed in the field during the current Phase Two ESA were in accordance with the SOPs (Section 6.4 “Soil Sampling Program”, Section 6.8 “Groundwater Sampling Program” and Section 6.10 “Sample Handling and Custody”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

The equipment cleaning procedures followed during all sampling were in accordance with the SOPs (Section 6.2 “Borehole Drilling”, Section 6.4 “Soil Sampling Program” and Section 6.8 “Groundwater Sampling Program”) described in the Sampling and Analysis Plan, included in Appendix A of this report.

Through each soil sample, the lithology and esthetic evidence of impacts (debris, staining and odours) were recorded as part of field Quality Control (QC) procedures.

The field QC measurements included the collection of duplicate samples. A field duplicate soil samples and a field duplicate groundwater sample was included in the laboratory analysis. In addition to the field duplicates, a trip blank water sample was also submitted for BTEX analysis.

Calibration checks on field instruments were in accordance with the SOPs described in the Sampling and Analysis Plan, included in Appendix A of this report.

6. REVIEW AND EVALUATION

6.1 Geology

6.1.1 Geological Units

Description of the subsurface conditions, estimated thickness and elevations relative to a geodetic benchmark of the top and bottom of each geologic unit encountered at the borehole locations is presented in Appendix B – Log of Boreholes, and Geological Maps of the area (Figures III and IV) are attached in Section 9.2.1 (Site Settings Figures), and is summarized as follows:

Fill Materials

Layers of asphalt/granular materials were found at the surface of BH1 while topsoil was encountered at the surface of BH2 to BH5. Fill soils were encountered below the surficial layers. Fill composition varied from dark brown to brown sand/silty with trace of roots/topsoil. Depth of fill ranged between 1.17 m and 1.52 m bgs.

Brown Sand/Silty Sand

Layers of native, brown, moist, compact to very dense sand/silty sand were found underlying the fill soils extending to approximate depths between 2.6 m and 4.6 m bgs. The top of the groundwater aquifer was encountered within this layer.

Grey Silt/Sandy Silt

The brown silty sand layers were underlain by grey, moist to dry, dense to very dense silt to sandy silt extending to depths between 5.5 m to 9.7 m bgs. Layers of grey clayey silt, of variable thickness between 1 m to 2.6 m, were encountered within and below the grey silt to sandy silt. Part of the groundwater aquifer captured by MW3 was present in this layer.

Grey Sandy Silt Till

Deposits of grey, moist, dense to very dense sandy silt till were encountered beneath the grey clayey silt of BH2, BH3 and BH5 extending to approximate depths of 10.6 m to 13.7 m bgs.

Bedrock

Weathered shale bedrock was found underlying the grey clayey silt of BH1 and BH4 and grey sandy silt till of BH2 and BH5. The shale was encountered between depths of approximately 9.7 m and 13.7 m bgs.

6.1.2 Aquifers and Aquitards

The following descriptions of the investigated aquifer(s) and aquitard(s) are made using information obtained during the field program.

Investigated Aquifer

Based on the visual examination of the soil samples and groundwater level measurements, the groundwater is considered to exist in the moist layers within the native brown sand to silty sand, present underlying the fill materials, and partially in the grey silt layer. The local groundwater level appears to vary from 2.42 m and 4.41 m bgs, and the groundwater elevation varies from 80.78 m asl and 83.49 m asl, based on elevation measurements and calculations, which is approximately at the top elevation of the first encountered aquifer, indicating an unconfined condition. The groundwater monitoring data for the current Phase Two ESA are summarized in Table 1B (Water Levels) included in Section 9.1 (Tables) of this report.

The sand to silty sand matrix of the top portion of the aquifer indicates a range of hydraulic conductivity of 10^{-2} –10^{-4} cm/s.

In light of the above, investigation of this first encountered aquifer was deemed necessary due to the potential for direct discharge/migration of petroleum products from the on-Site heating oil AST.

Investigated Aquitard

The grey silt layer, underlying the native brown sand to silty sand which comprises the aquifer, was notably drier after the top layers which exhibited moist conditions, and therefore the deeper silt layer, overlying the sandy silt till and shale, represent the first encountered aquitard.

6.2 Groundwater Elevations and Flow Direction

The ground geodetic elevations of the borehole/monitoring well locations were surveyed by Fisher using a SLR200H Horizontal Rotary Laser. The instrument has an accuracy reading of ±0.003 m. The temporary benchmark utilized was the top of a catch basin, located along Lakeshore Road West, of known elevation of 86.02 m asl from the available Plan of Survey with Topography (Fig. E). The groundwater elevations were determined using geodetic elevations at each monitoring well location.

6.2.1 Locations and Screened Intervals of Monitoring Wells

Six (6) monitoring wells were installed on the Site. Locations of monitoring wells and depth of screened intervals used to determine groundwater flow direction were selected to:

- Represent upgradient, cross-gradient and downgradient groundwater levels and to investigate potential movement of COPCs within and between APECs;
- Capture groundwater level in the first encountered aquifer considering the effect of water table seasonal variability on the concentrations of COPCs;
- Characterize heterogeneous stratigraphic conditions in the first encountered aquifer and their influence on concentrations of COPCs; and
- Depict potential influence of underground structures and utilities on local groundwater flow direction and movement of COPCs.

The screen sections of the wells were maximum 3.05 m long. The construction of the groundwater monitoring wells is illustrated in the Appendix B, Log of Boreholes, and in Table 1A (Monitoring Well Installation) included in Section 9.1 (Tables) of this report.

6.2.2 Results of Measurements Taken Using an Interface Probe

After water level measurements were obtained using a Solinst Oil/Water Interface probe, model 122, a transparent bailer with a bottom valve was also used to collect a fluid sample in order to observe the presence or absence of free-flowing product in the monitoring wells. No free-flowing product was noted in any of the inspected monitoring wells. Measurements of groundwater levels for the current Phase Two ESA are summarized in Table 1B (Water Levels) included in Section 9.1 (Tables) of this report.

6.2.3 Method Used to Calculate Groundwater Elevations

Groundwater level measurements below ground surface were taken in each monitoring well. Where the collar was not flush with the grade, groundwater level measurements were taken from the top of the collar and the length of the collar above ground surface was subtracted to obtain groundwater level measurements below ground surface. Each monitoring well collar flush with the ground and each ground surface near an above ground collar were tied to a geodetic benchmark to determine their elevations.

Groundwater level elevation in each monitoring well was calculated by subtracting the groundwater level measurement below ground surface from the geodetic elevation of the well collar or of the grade near the above ground collar.

Date of measurements and calculated groundwater elevations in each monitoring well installed in the encountered aquifer are presented in Table 1B (Water Levels) included in Section 9.1 (Tables) of this report.

6.2.4 Interpretation of Groundwater Flow Direction

To assess the direction of groundwater movement, the hydraulic head was measured at each well location. Groundwater generally flows from areas of high hydraulic head towards areas of low hydraulic head. Water level measurements having higher elevations suggest greater hydraulic head. Conversely, lower elevations of the water table are indicative of a lesser hydraulic head.

Based on the field measurements conducted on November 13, 2023, the groundwater flow direction at the Site is calculated to be in a east direction towards Lake Ontario.

The localized groundwater flow direction may be influenced by variations in weather conditions, vertical and horizontal stratigraphy, and/or interaction with underground structures or utilities that may have contributed additional water into nearby monitoring wells screened at corresponding depths.

The groundwater elevation contours and inferred groundwater flow direction are illustrated in Figure B2, included in Section 9.2.2 (CSM Figures) of this report.

6.3 Groundwater Hydraulic Gradients

6.3.1 Horizontal Hydraulic Gradient

Horizontal hydraulic gradient is the slope of the water table or potentiometric surface. Distances between monitoring wells were measured on a scaled site plan with monitoring well locations and groundwater flow direction. To determine the horizontal hydraulic gradient, all selected wells were completed in the same aquifer. The horizontal hydraulic gradients (l) measured between wells MW1 and MW4 along the east-west groundwater flow direction, and MW2 and MW4 along the north-south groundwater flow direction were described as follows:

- Minimum horizontal hydraulic gradient was measured between wells MW2 and MW4 and it was determined to be 0.0454 m/m.
- Maximum horizontal hydraulic gradient was measured between wells MW1 and MW4 and it was determined to be 0.0648 m/m.
- Average horizontal hydraulic gradient was determined to be 0.0551 m/m.

6.3.2 Vertical Hydraulic Gradient

No contaminant was present in groundwater at a concentration greater than the applicable MECP Table 2 SCS, and vertical hydraulic gradient is not required to be determined at this time.

6.4 Soil Texture

Considering the soil types encountered at the borehole locations, as classified in the *Soil Survey Manual, USDA*, and the distribution of boreholes across the Site, the applicable SCSs have been applied as if the soil is medium and fine textured.

A grain size analysis conducted on seven (7) soil samples recovered from the boreholes during a Geotechnical Investigation performed in conjunction to the current investigation, at depths ranging from 1.53 m to 11.13 m below ground surface (bgs), which represent more than 2/3 of the soil currently present at the Site, indicated a medium and fine textured soil condition. These soil samples are considered representative of more than 2/3 of the soil at the property. Based on the above, the site condition standards for medium and fine textured soil have been applied. The Grain Size analysis result is included in Appendix C.

6.5 Soil Field Screening

All soil samples collected at the Site were field screened for the presence of petroleum/solvent-derived vapours using visual, olfactory and combustible vapour measurements considerations. The PID readings, in ppm isobutylene equivalent, and the findings of the field observations at each borehole location, are provided on the Log of Boreholes in Appendix B. No hydrocarbon or other odour was noted within the collected soil samples, while all soil samples had vapour concentrations of less than 5 ppm.

No cinders and/or ashes were observed in the soil samples collected in the boreholes. Most-apparent “worst case” fill material samples, based on the applied field screening methodologies, were submitted to the laboratory for Metal, PHC, BTEX, PAH, and/or pH analysis.

6.6 Soil Quality

The Laboratory Certificates of Analysis are provided in Appendix C. A summary of the locations and depths of soil samples submitted for chemical analysis and the tested COPCs are presented in Table 2, included in Section 9.1 (Tables) of this report. Soil analytical results are summarized in Tables 3 through 6 for the analyzed COPCs. All tables include comparison of the results against the applicable MECP Table 2 SCSs. Analytical results for COPCs in soil, are presented in Figure B3.

Following completion of the laboratory program. All soil samples submitted for Metal, PHC, BTEX, PAH, and/or pH analysis, were in compliance with applicable MECP Table 2 SCSs.

6.7 Groundwater Quality

A summary of the locations of groundwater samples submitted for chemical analysis and the tested COPCs are presented in Table 7, included in Section 9.1 (Tables) of this report. Groundwater analytical results are summarized in Tables 8 through 10 for the analyzed COPCs. All tables include comparison of the results against the applicable MECP Table 2 SCSs. Analytical results for COPCs in groundwater, are presented in Figure B4.

Following completion of the laboratory program. All groundwater samples submitted for Metal, PHC, BTEX, and/or PAH analysis, were in compliance with applicable MECP Table 2 SCSs.

6.8 Sediment Quality

No sediment samples were collected as no water bodies were presented on-site.

6.9 Quality Assurance and Quality Control Results

Quality assurance/quality control (QA/QC) samples were collected and analyzed during the field program as follows:

- In total, one soil field duplicate sample collected from BH5) were submitted for laboratory analysis of Metal, PHC, BTEX, PAH, and/or pH analysis, and one (1) field duplicate groundwater sample collected from MW3 submitted for laboratory analysis of Metal, PHC, BTEX, and/or PAH.
- Relative percent differences (RPDs) were calculated for the field duplicate samples. Quantitative correlation was not calculable for all analytical results of the field duplicate soil samples and their corresponding sample pairs, as well as for the analytical results of the field duplicate groundwater samples and their corresponding sample pairs, as their reported concentrations were less than five times the reportable detection limits.
- Where groundwater samples were analyzed for BTEX, one (1) trip blank sample was submitted for analysis with each laboratory submission. The BTEX analytical results for trip blank sample showed that all VOC concentrations were less than the laboratory method detection limits, indicating that there was little or no contamination introduced to the groundwater samples during transport to the laboratory.

All samples were handled in accordance with the analytical protocol. A chain of custody form was filled out for all samples prior to submitting to the laboratory. The chain of custody documented

movement from selection of the sample to receipt at the laboratory and provided sample identification, requested analysis, and condition of samples upon arrival at the laboratory.

QA/QC control of the laboratory analysis of soil and groundwater samples was carried out by Fisher Environmental Laboratories to evaluate the accuracy of the analytical data. The results of laboratory's soil and groundwater QA/QC program are reported in the Laboratory Certificates of Analysis in Appendix C.

The percent recoveries provided by Fisher Environmental Laboratories for the method blank spikes and matrix spikes were within QC limits, indicating satisfactory laboratory data quality with respect to extraction and analysis. The method blank concentrations were below laboratory method detection limits, indicating that little or no contamination was introduced to the samples during laboratory processing.

Fisher Environmental Laboratories completed replicate analysis for Metal, PHC, BTEX, PAH and/or pH parameters in soil and/or groundwater samples. For all samples where parameters were analyzed in replicate, if the concentration in the original sample was less that the laboratory method detection limit, the concentration in the replicate sample was also less than the method detection limit. The detected parameter concentrations in the laboratory replicate samples were consistent with the concentrations in the original sample, which indicates acceptable laboratory precision.

The laboratory certificates of analysis contain a complete record of the submission and analysis, including all correspondence between the laboratory and the Qualified Person or anyone under the supervision and control of the Qualified Person with respect to the sample collection, chain of custody, handling and analysis including:

(a) the laboratory name, address, contact and phone number;
(b) client name, client contact, address and phone number;
(c) sample identification number for tracking purposes;
(d) sample type and location;
(e) sampling date;
(f) date the sample was received;
(g) date the sample was analyzed;
(h) method identification and method reference as specified in the Analytical Protocol;
(i) chemical parameter measured;
(j) reporting limits, including adjustment for sample size, moisture content or dilution factor;
(k) method specific quality assurance and quality control requirements as specified in the Analytical Protocol;
(l) authorization to release the certificate including,
    (i) the name, function, and signature or equivalent of any person authorizing the release, and

(ii) a statement that the results relate only to the items tested and to all the items tested;

(m) certification that the data met all analytical requirements in the Analytical Protocol with, if applicable, a detailed description of and rationale for qualification for required exceptions; and

(n) all information recorded by the laboratory with respect to the condition of samples brought to the laboratory, including information recorded with respect to,

(i) sample quality, holding time, preservation and storage, and

(ii) sample containers.

Certificates of analysis have been received for each sample submitted for analysis.

All certificates of analysis received have been included in full in Appendix C of this report.

6.10 Phase Two Conceptual Site Model

6.10.1 Assessment of PCAs, APECs and Subsurface Structures

Historical use of fill materials as part of property development and regrading works, represents a PCA (PCA 30: Importation of Fill Material of Unknown Quality). Additionally, a fuel AST historically utilized for heating oil was noted in the basement of the on-Site residential building (PCA 28: Gasoline and Associated Products Storage in Fixed Tanks). No off-site PCAs that may contribute to APECs at the phase two property were identified.

Based on the locations of PCAs and transport pathways, two (2) were identified on the Site. A narrative description and assessment of areas where PCAs have occurred and associated APECs and COPCs are provided below:

APEC A – According to the site reconnaissance, the northwestern portion along the property boundary adjacent to the parking garage and residential house features a raised retaining wall. Additionally, the residential buildings at the northwestern and southwestern portions of the Site are on a higher elevation than the eastern/southeastern surrounding areas. Due to a lack of information about the Site development and soil quality data of any imported fill, the evaluation of soil condition for the entire Site is considered appropriate for this APEC. The COPCs that may be present in soil associated with imported fill materials include Metals, PHCs (F1-F4), BTEX and PAHs.

APEC B – According to our site reconnaissance, a disconnected furnace oil AST was identified in the basement near the southeast corner of the residential house at the northeastern portion of the Site. Due to a lack of information about the condition of the tank and its operating practices, an evaluation of soil and groundwater conditions for the northeastern portion of the Site is considered appropriate for this APEC. The COPCs that may be present in soil and groundwater

at the northeastern portion of the Site associated with the chemical composition of stored fuels include Metals, PHCs (F1-F4), BTEX and PAHs.

Refer to the table below and the attached Figure B1, Section 12.2 (Phase Two CSM Figures) for presentation of the APEC locations.

TABLE 5: APECs Identified at the Site

APEC	Location of APEC on Site	Potentially Contaminating Activity (PCA)	Location of PCA (on-site or off-site)	Contaminants of Potential Concern (COPCs)	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC A	Entire Site	**PCA 30** – Importation of Fill Material of Unknown Quality Inferred utilization of fill materials during Site development.	On-Site	Metals, PHCs (F1-F4), BTEX, PAHs	Soil
APEC B	Northeastern portion of the Site, near southeast corner of residential building	**PCA 28** – Gasoline and Associated Products Storage in Fixed Tanks Presence of a disconnected furnace oil AST in the basement of the residential house at northeast portion of Site.	On-Site	Metals, PHCs (F1-F4), BTEX, PAHs	Soil and Groundwater

Subsurface structures at the Site include an inground pool, approximately 1.5 m below ground surface (bgs), associated with the residential house located at the northeastern portion of the Site, constructed by 1966. And underground utility and service corridors, including water supply, sewer and natural gas, all supplied via sewer mains along Lakeshore Road West.

6.10.2 Physical Settings

Based on the regional topographical information, grade elevation to the north is maintained at 85 m above sea level (asl) at the intersection of Queen Street West and Sweetwater Crescent. Grade elevation along Lakeshore Road West at the phase one study area boundaries, from southwest to northeast, declines in grade elevation from 90 m asl to 80 m asl and inclines to 85 m asl. Grade elevation to the south inclines to 90 m asl at Longfellow Avenue. According to the 2023 Topographic Survey, the northern/northwestern portion of the Site is built-up (89.19 m asl) and a general downward slope to the southeast corner (79.27 m asl).

Geology and Hydrogeology

Based on the surficial geology map, the Site and phase one study area are classified as coarse textured glaciolacustrine deposits (sand, gravel, minor silt and clay, foreshore and basinal deposits) and modern alluvial deposits (clay, silt, sand, gravel, may contain organic remains).

Description of the subsurface conditions, estimated thickness and elevations relative to a geodetic benchmark of the top and bottom of each geologic unit encountered at the borehole locations is summarized as follows:

Fill Materials

Layers of asphalt/granular materials were found at the surface of BH1 while topsoil was encountered at the surface of BH2 to BH5. Fill soils were encountered below the surficial layers. Fill composition varied from dark brown to brown sand/silty with trace of roots/topsoil. Depth of fill ranged between 1.17 m and 1.52 m bgs.

Brown Sand/Silty Sand

Layers of native, brown, moist, compact to very dense sand/silty sand were found underlying the fill soils extending to approximate depths between 2.6 m and 4.6 m bgs. The top of the groundwater aquifer was encountered within this layer.

Grey Silt/Sandy Silt

The brown silty sand layers were underlain by grey, moist to dry, dense to very dense silt to sandy silt extending to depths between 5.5 m to 9.7 m bgs. Layers of grey clayey silt, of variable thickness between 1 m to 2.6 m, were encountered within and below the grey silt to sandy silt. Part of the groundwater aquifer captured by MW3 was present in this layer.

Grey Sandy Silt Till

Deposits of grey, moist, dense to very dense sandy silt till were encountered beneath the grey clayey silt of BH2, BH3 and BH5 extending to approximate depths of 10.6 m to 13.7 m bgs.

Bedrock

Weathered shale bedrock was found underlying the grey clayey silt of BH1 and BH4 and grey sandy silt till of BH2 and BH5. The shale was encountered between depths of approximately 9.7 m and 13.7 m bgs.

The following descriptions of the investigated aquifer(s) and aquitard(s) are made using information obtained during the field program.

Investigated Aquifer

Based on the visual examination of the soil samples and groundwater level measurements, the groundwater is considered to exist in the moist layers within the native brown sand to silty sand, present underlying the fill materials, and partially in the grey silt layer. The local groundwater level appears to vary from 2.42 m and 4.41 m bgs, and the groundwater elevation varies from 80.78 m asl and 83.49 m asl, based on elevation measurements and calculations, which is approximately at the top elevation of the first encountered aquifer, indicating an unconfined condition.

The sand to silty sand matrix of the top portion of the aquifer indicates a range of hydraulic conductivity of 10^{-2} –10^{-4} cm/s. Minimum horizontal hydraulic gradient was measured between wells MW2 and MW4 and it was determined to be 0.0454 m/m. while maximum horizontal hydraulic gradient was measured between wells MW1 and MW4 and it was determined to be 0.0648 m/m. Average horizontal hydraulic gradient was determined to be 0.0551 m/m. No contaminant was present in groundwater at a concentration greater than the applicable MECP Table 2 SCS, and vertical hydraulic gradient is not required to be determined at this time.

In light of the above, investigation of this first encountered aquifer was deemed necessary due to the potential for direct discharge/migration of petroleum products from the on-Site heating oil AST.

Investigated Aquitard

The grey silt layer, underlying the native brown sand to silty sand which comprises the aquifer, was notably drier after the top layers which exhibited moist conditions, and therefore the deeper silt layer, overlying the sandy silt till and shale, represent the first encountered aquitard.

Site Condition

In order to comply with City if Mississauga's reporting requirements to obtain a non-objection for use of non-potable groundwater standards, additional works will be required. As those have not been completed, the potable groundwater SCSs apply for the Site.

In accordance with Section 41 of the Regulation,

- The Site is not within or adjacent to an area of natural significance, nor does it include land that is within 30 m of an area of natural significance or part of such an area; and
- Soil samples collected from the Site were found to have pH values within the acceptable range of 5 to 9 for surface soil and 5 to 11 for subsurface soil.

In accordance with Section 43.1 of the regulation, the Site is not a shallow soil property; nor does it include all or part of a water body or is adjacent to a water body or includes land that is within 30 m of a water body.

A grain size analysis conducted on seven (7) soil samples recovered from the boreholes during a Geotechnical Investigation performed in conjunction to the current investigation, at depths ranging from 1.53 m to 11.13 m below ground surface (bgs), which represent more than 2/3 of the soil currently present at the Site, indicated a medium and fine textured soil condition. These soil samples are considered representative of more than 2/3 of the soil at the property. Based on the above, the site condition standards for medium and fine textured soil have been applied.

The proposed future land use is residential.

Based on the above, for the purpose of this Phase Two ESA, the applicable Site Condition Standards (SCSs) were identified as the MECP Table 2 SCSs in a Potable Groundwater Condition, Residential/Parkland/Institutional (R/P/I) Property Use for soil samples, and All Types of Property Use for groundwater samples, medium and fine textured soil, as contained in the MECP *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011 (herein referred to as the "MECP Table 2 SCSs").

Proposed Development

The phase two property will be redeveloped to maintain residential use. The proposed new building will be a ten (10) storey high-density residential condominium building, with four (4) underground parking levels.

6.10.3 Identification, Source, Distribution and Migration of COCs

The scope of work for the current Phase Two ESA was prepared in order to assess the environmental quality of soil and groundwater at the identified APECs, and to determine the extent of contamination across the Site, if encountered within the APECs.

The current Phase Two ESA investigation includes recovering soil samples from five (5) boreholes advanced at the Site from November 6 to 13, 2023, and recovering groundwater samples from one (1) of the five (5) monitoring wells at the Site.

A total of seven (7) soil samples, including one (1) field duplicate, and two (2) groundwater samples, including one (1) field duplicate, recovered from the boreholes/monitoring wells were submitted to the laboratory for analysis of Contaminants of Potential Concern (COPCs), including Metals, BTEX, PHCs, PAHs, and/or pH. A trip blank water sample were also submitted to the laboratory for BTEX analysis. The laboratory analytical results indicate that all of the soil and groundwater samples met the applicable MECP Table 2 SCSs for all tested parameters. No deficiencies were identified on the laboratory certificates of analysis.

As a result, no COPCs parameters are carried forward as COCs in soil and groundwater underneath the phase two property. Should COPCs be present in soil and groundwater at off-site PCA locations, it appears that the relevant transport mechanisms have not contributed to MECP

SCS-exceeding concentrations of COPCs in soil and groundwater at the phase two property, while it is unlikely that COPCs have been discharged into the natural environment at the phase two property.

Climatic or Meteorological Conditions which may Influence Contaminants Distribution

In general, climatic or meteorological conditions have the potential to affect contaminant distribution. Two ways by which climatic or meteorological conditions may affect contaminant distribution are the downward leaching of contaminants by means of the infiltration of precipitation, and the migration of contaminants via groundwater and/or flow due to seasonal groundwater level fluctuations.

Site soil and groundwater were in compliance with the applicable MECP Table 2 SCSs, and seasonal fluctuation of the groundwater table is not anticipated to have affected the concentration and distribution of contaminants at the Site.

Soil Vapour Intrusion into Surface and Subsurface Structures

No volatile COCs were encountered at the Site.

6.10.4 Cross-Section Drawings

Cross-Sections approximately parallel and perpendicular to the inferred groundwater flow direction, showing the samples tested for COPCs, approximate depth to water table, stratigraphy from ground surface to the borehole completion depths, subsurface structures and utilities that may affect contaminant distribution and transport, and a summary of tested COPCs are presented in in Section 12.2 (Phase Two CSM Figures).

6.10.5 Release Mechanisms, Transport Pathways and Receptors of Contaminants

Release Mechanisms and Transport Pathways

The characteristics of COPCs of soil matrix will greatly influence the migration pathways, extent of travel, and persistence of the released contaminants. For example, a considerable mass of a contaminant that is only slightly soluble in water could travel large distances in the subsurface as a constituent of an organic liquid. Complementary, the inflow of leaked contaminants into the groundwater and its soil matrix results in changes of the fluid phases flow regime. Water phase in the pores of the soil matrix will partially be displaced by liquid phases with different density and miscibility. These displacement processes are influenced by various parameters that characterize the aquifer's soil matrix, such as: wettability, permeability, relative permeability, capillary pressure and others.

Considering the depth to groundwater table and overburden hydrogeology, and the compliant soil and groundwater concentrations of COPCs in comparison with applicable MECP Table 2 SCSs, on-site and off-site anthropogenic transport pathways would not be expected to play a role in COPCs migration beyond the identified APECs.

Human and/or Ecological Receptors

Human receptors at the Site consist of tenants, property visitors (adult, child and toddler), outdoor workers (e.g., for landscaping or maintenance) and construction workers (adult). Ecological receptors that may be present comprise terrestrial vegetation, such as trees, shrubs, grass and weeds; and soil invertebrates such as earthworms, centipedes, millipedes, and nematodes. As no significant ecological habitat is present on-site, there is no expected risk to ecological receptors. Considering that no COCs were encountered at the Site, it is unlikely that human receptors are at risk with respect to exposure to the tested COPCs.

Diagrams of Human and Ecological Health Conceptual Site Models with no risk management measures are presented in in Section 12.2 (Phase Two CSM Figures).

Receptor Exposure Points and Routes of Exposure

Considering that no COCs were carried forward in investigated soil or groundwater, no exposure pathways for human or ecological receptors are anticipated.

Uncertainty or Absence of Information

Soil and groundwater quality underlying the entire Site was assumed to be consistent with that at the tested locations.

6.10.6 Non-Standard Delineation

A Risk Assessment was not performed for the Site, and non-standard delineation was not conducted.

6.10.7 Remedial Action

No Remedial Action was undertaken.

7. CONCLUSIONS

7.1 Location and Concentration of Contaminants at the Phase Two Property

Based on the sampling and analytical program conducted at the Site as part of the current Phase Two ESA, no Contaminants of Potential Concern (COPCs) were carried forward as Contaminants of Concern (COCs). All soil and groundwater samples tested for associated COPCs were compliant with the applicable MECP Table 2 Site Condition Standards.

7.2 Subsurface Environmental Conditions at Phase Two Property when a Risk Assessment is to be Undertaken

No Risk Assessment is to be undertaken for the Site.

7.3 Compliance with Site Condition or Site Specific Standards as of Certification Date

The laboratory analytical results for the associated COPC indicated that all submitted soil and groundwater samples were within the applicable MECP Table 2 Full Depth Generic Site Condition Standards in a Potable Groundwater Condition, Residential/Parkland/ Institutional Property Use for soil samples and All Types of property use for groundwater samples in a medium and fine textured soil condition as contained in the MECP *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.

7.4 Signatures

Fisher Engineering Limited carried out the present Phase Two Environmental Site Assessment at the request of 1000570027 Ontario Inc., and by signing below the Qualified Person confirms the findings and conclusions of this report.

Respectfully submitted,

FISHER ENGINEERING LIMITED

Per:

Arij Alam, MEnvSc, EP
Project Manager
arij@fishereng.com

Reviewed by:

David Fisher, B.A.Sc., C. Chem., P. Eng.
President
dave@fishereng.com

7.5 Limitations

This report was prepared for use by 1000570027 Ontario Inc.and is based on the work as described in the Scope of Work. The conclusions presented in this report reflect existing Site conditions within the scope of this assignment.

No investigation method can eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Professional judgment was exercised in gathering and analyzing the information obtained and the formulation of the conclusions and recommendations. Like all professional persons rendering advice, we do not act as absolute insurers of the conclusions reached, but commit ourselves to care and competence in reaching those conclusions. No warranty, whether expressed or implied, is included or intended in this report.

The scope of services performed may not be appropriate for the purposes of other users. This report should not be used in contexts other than pertaining to the evaluation of the property at the current time. Written authorization must be obtained from Fisher Engineering Limited prior to use by any other parties, or any future use of this document or its findings, conclusions, or recommendations represented herein. Any use that a third party makes of this report, or any reliance on or decisions made on the basis of it, are the responsibility of the third parties. Fisher Engineering Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

7.6 Qualifications of the Assessor

The current investigation was conducted and managed by Mr. Arij Alam, who has been trained and has 13 years of experience in conducting Phase Two ESAs in accordance with the CSA Standard and Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA). Mr. Alam has conducted more than 13 Phase Two ESAs for commercial/industrial/residential clients and government agencies and is routinely engaged in this field.

As a Qualified Person who conducts and supervises Phase Two ESAs, Mr. David Fisher, president of Fisher Engineering Limited, is a senior Managerial and Environmental Engineering Specialist with over 30 years of progressive, innovative experience in the Petrochemical and Environmental Engineering Industry. Mr. Fisher is responsible for the development and management of a progressive environmental consulting engineering company specializing in environmental site assessments and remediation, geotechnical and hydrogeological investigations, tank removals, PCB waste treatment, land reclamation, recycling, hazardous waste disposal, and associated laboratory analytical practices.

Fisher Engineering Limited has been established as a team of engineers and consultants since 1989, and continues to develop a strong, wide client base. The company is staffed with personnel holding graduate or postgraduate qualifications at the Markham headquarters, as well as specialist associates offering a broad range of expertise and knowledge in environmental consulting. With a background in the petroleum industry, extensive experience has been gained in the prevention and cleanup of contamination in air, water and soil.

8. REFERENCES

The Phase Two ESA was conducted in accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives administrated by the Ministry of the Environment, Conservation and Parks. Specific reference is made to the following:

- Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA), Part VII and Schedule D of the Amended Regulation;
- *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites*, Canadian Council of Ministers of the Environment (CCME), December 1993;
- *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, Ministry of the Environment and Energy (MOEE), December 1996;
- Environmental Protection Act, RSO 1990, Charter E. 19, as amended, September 2004;
- *Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*, Ministry of the Environment (MOE), April 15, 2011;
- The Ontario Water Resources Act – R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128.03, August 2003;
- *Soil Survey Manual, Soil Science Division Staff, United States Department of Agriculture (USDA), Handbook No. 18, dated March 2017;*
- *Plan of Topography of Part of Lot 1 Registered Plan C089 and Part of Lot 22 Concession 3 South of Dundas Street, City of Mississauga, Regional Municipality of Peel, November 8, 2023, Tarasick McMillan Kubicki Limited*;
- *Phase One ESA, 900 Lakeshore Rd. W., Mississauga*, Fisher Engineering Limited, January 26, 2024;
- CTC (Credit Valley-Toronto and Region-Central Lake Ontario) Source Protection Plan;
- The Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Area Map;
- Land Information Ontario (LIO) GeoHub ANSI Map;
- City of Mississauga Online Map;
- Region of Peel Web Site – Public Works Services;
- Online MECP Water Well Records;
- Google Earth;
- Google Maps;
- Ministry of Natural Resources and Forestry (MNRF) Make a Topographic Map;
- Ontario Geological Survey Surficial Geology Google Earth Layer;
- Ontario Geological Survey Bedrock Geology Google Earth Layer;
- Groundwater, Freeze and Cherry 1979; and
- *An Introduction to Geotechnical Engineering*, Holtz and Kovacs 1981.

9. FIGURES AND TABLES

9.1 Tables

Table 1A: Monitoring Well Installation

Table 1B: Water Levels

Table 2: Summary of Soil Samples Submitted for Chemical Analysis

Table 3: Soil Quality Data – Metals

Table 4: Soil Quality Data – Other Regulated Parameters

Table 5: Soil Quality Data – Petroleum Hydrocarbons

Table 6: Soil Quality Data – Polycyclic Aromatic Hydrocarbons

Table 7: Summary of Groundwater Samples Submitted for Analysis

Table 8: Groundwater Quality Data – Metals

Table 9: Groundwater Quality Data – Petroleum Hydrocarbons

Table 10: Groundwater Quality Data – Polycyclic Aromatic Hydrocarbons

Table 1A: Monitoring Well Installation
900 Lakeshore Road West, Mississauga

Monitoring Well ID	Ground Elevation (m asl)	Well Construction Depth (m bgs) and Elevation (m asl)					
		Well Bottom	Screen	Riser	Sandpack	Bentonite	Concrete
MW1	86.63	7.62 m bgs	4.57 - 7.62 m bgs	0.10 - 4.57 m bgs	3.96 - 7.62 m bgs	0.20 - 3.96 m bgs	0.00 - 0.20 m bgs
		79.01 m asl	*82.06 - 79.01 m asl*	*86.53 - 82.06 m asl*	*82.67 - 79.01 m asl*	*86.43 - 82.67 m asl*	*86.63 - 86.43 m asl*
MW2	85.68	7.62 m bgs	4.57 - 7.62 m bgs	0.10 - 4.57 m bgs	3.96 - 7.62 m bgs	0.20 - 3.96 m bgs	0.00 - 0.20 m bgs
		78.06 m asl	*81.11 - 78.06 m asl*	*85.58 - 81.11 m asl*	*81.72 - 78.06 m asl*	*85.48 - 81.72 m asl*	*85.68 - 85.48 m asl*
MW3	86.6	7.62 m bgs	4.57 - 7.62 m bgs	0.10 - 4.57 m bgs	3.96 - 7.62 m bgs	0.20 - 3.96 m bgs	0.00 - 0.20 m bgs
		78.98 m asl	*82.03 - 78.98 m asl*	*86.50 - 82.03 m asl*	*82.64 - 78.98 m asl*	*86.40 - 82.64 m asl*	*86.60 - 86.40 m asl*
MW4	83.2	6.10 m bgs	3.05 - 6.10 m bgs	0.10 - 3.05 m bgs	2.44 - 6.10 m bgs	0.20 - 2.44 m bgs	0.00 - 0.20 m bgs
		77.10 m asl	*80.15 - 77.10 m asl*	*83.10 - 80.15 m asl*	*80.76 - 77.10 m asl*	*83.00 - 80.76 m asl*	*83.20 - 83.00 m asl*
MW5	82.63	4.57 m bgs	1.52 - 4.57 m bgs	0.10 - 1.52 m bgs	0.91 - 4.57 m bgs	0.20 - 0.91 m bgs	0.00 - 0.20 m bgs
		78.06 m asl	*81.11 - 78.06 m asl*	*82.53 - 81.11 m asl*	*81.72 - 78.06 m asl*	*82.43 - 81.72 m asl*	*82.63 - 82.43 m asl*

Notes:

asl - above sea level
bgs - below ground surface
Riser/screen - 50 mm (2 inch) ID PVC; negative (-) number indicates stick-up well.
Sandpack - type 2 silica sand
Bentonite - 20 mm (3/4 inch) pellets.

Table 1B: Water Levels

900 Lakeshore Road West, Mississauga

Monitoring Well ID	Ground Elevation (m asl)	Groundwater Level (m bgs)	Groundwater Elevation (m asl)
		Wednesday, December 6, 2023	
MW1	86.63	86.63	83.67
MW2	85.68	85.68	81.79
MW3	86.60	86.60	82.42
MW4	83.20	83.20	81.04
MW5	82.63	82.63	79.52

Notes:

asl - above sea level

bgs - below ground surface

NM - not measured/not accessible

Table 2: Summary of Soil Samples Submitted for Chemical Analysis
900 Lakeshore Road West, Mississauga

NO.	BOREHOLE/ TEST PIT LOCATION	SAMPLE DEPTH (m bgs)	LAB ID	APEC	PARAMETER ANALYZED AND NUMBER OF SAMPLES				
					Metals	BTEX	PHCs	PAHs	pH
1	BH1	0.00-0.61	23-2124-1	A	1	1	1	1	1
2	BH2	0.00-0.61	23-2124-2	A	1	1	1	1	
3	BH3	0.00-0.61	23-2124-3	A	1	1	1	1	
4	BH3	3.05-3.51	23-2124-4	B	1	1	1	1	1
5	BH4	0.76-1.22	23-2124-5	A	1	1	1	1	1
6	BH5	0.00-0.61	23-2124-6	A	1	1	1	1	
7	BH5	0.00-0.61 (Dup)	23-2124-7	A	1	1	1	1	
				Total	**7**	**7**	**7**	**7**	**3**

Notes:
m bgs - metres below ground surface
DUP - Field duplicate sample
pH - Potential of Hydrogen
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
PHCs - Petroleum Hydrocarbon Carbons Fractions F1-F4, including Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
PAHs - Polycyclic Aromatic Hydrocarbons

Table 3: Soil Quality Data – Metals
900 Lakeshore Road West, Mississauga

Sample Location			BH1	BH2	BH3	BH3	BH4	BH4
Laboratory ID			23-2124-1	13-7124-2	13-7124-3	13-7124-4	13-7124-5	13-7124-6
Sample Depth (m)			0.76-1.22m	0.00-0.61m	0.00-0.61m	3.05-3.51m	0.76-1.22m	0.00-0.61m
Sampling Date			Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023
Parameters	**MECP Table 2 SCS**	**RL**						
Antimony	7.5	1	<1	<1	<1	<1	<1	<1
Arsenic	18	1	1.1	<1	3.1	<1	<1	<1
Barium	390	5	15	30	49	18	12	34
Beryllium	(5) 4	2	<2	<2	<2	<2	<2	<2
Boron	120	5	<5	<5	<5	<5	<5	<5
Cadmium	1.2	1	<1	<1	<1	<1	<1	<1
Chromium	160	5	6.4	12	11	9.3	5.8	12
Cobalt	22	2	9.4	<2	2.2	6.3	7	12
Copper	(180) 140	5	28	22	8	12	6.5	14
Lead	120	10	<10	<10	31	<10	<10	<10
Molybdenum	6.9	2	<2	<2	<2	<2	<2	<2
Nickel	(130) 100	5	11	13	<5	12	<5	14
Selenium	2.4	1	<1	<1	<1	<1	<1	<1
Silver	(25) 20	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	1	1	<1	<1	<1	<1	<1	<1
Uranium	23	1	<1	<1	<1	<1	<1	<1
Vanadium	86	10	11	21	15	19	12	15
Zinc	340	15	<30	<30	<30	<30	<30	<30

Notes:

Bold – exceedence of applicable MECP SCS.
All values reported in µg/g (ppm), unless otherwise noted.
ppm - parts per million.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 3: Soil Quality Data – Metals
900 Lakeshore Road West, Mississauga

Sample Location			**BH5**
Laboratory ID			**13-7124-7**
Sample Depth (m)			**0.00-0.61m**
Sampling Date			**Nov 6-8, 2023**
Parameters	**MECP Table 2 SCS**	**RL**	
Antimony	7.5	1	<1
Arsenic	18	1	<1
Barium	390	5	32
Beryllium	(5) 4	2	<2
Boron	120	5	<5
Cadmium	1.2	1	<1
Chromium	160	5	11
Cobalt	22	2	5.2
Copper	(180) 140	5	13
Lead	120	10	<10
Molybdenum	6.9	2	<2
Nickel	(130) 100	5	12
Selenium	2.4	1	<1
Silver	(25) 20	0.5	<0.5
Thallium	1	1	<1
Uranium	23	1	<1
Vanadium	86	10	19
Zinc	340	15	<30

Notes:

Bold – exceedence of applicable MECP SCS.
All values reported in µg/g (ppm), unless otherwise noted.
ppm - parts per million.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 4: Soil Quality Data – Other Regulated Parameters
900 Lakeshore Road West, Mississauga

Sample Location			BH1	BH3	BH4
Laboratory ID			23-2124-1	13-7124-4	13-7124-5
Sample Depth (m)			0.76-1.22m	3.05-3.51m	0.76-1.22m
Sampling Date			Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023
Parameters	**MECP Table 2 SCS**	**RL**			
pH *(no unit)*	(5-11) 5-9*	NA	8.50	7.99	7.83

Notes:

* Surface Soil pH value 5 – 9; Subsurface Soil pH value 5 – 11.

Bold – exceedence of applicable MECP SCS.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 5: Soil Quality Data – PHCs
900 Lakeshore Road West, Mississauga

Sample Location			BH1	BH2	BH3	BH3	BH4	BH4
Laboratory ID			23-2124-1	13-7124-2	13-7124-3	13-7124-4	13-7124-5	13-7124-6
Sample Depth (m)			0.76-1.22m	0.00-0.61m	0.00-0.61m	3.05-3.51m	0.76-1.22m	0.00-0.61m
Sampling Date			Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023
Parameters	**MECP Table 2 SCS**	**RL**						
Benzene	(0.17) 0.21	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	(6) 2.3	0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	(1.6) 1.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	(25) 3.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
$F1_{-BTEX}$ (C_6 - C_{10})	65	10	<10	<10	<10	<10	<10	<10
F2 (C_{10} - C_{16})	250	10	<10	<10	<10	<10	<10	<10
F3 (C_{16} - C_{34})	2500	50	<50	<50	<50	<50	<50	<50
F4 (C_{34}-C_{50})	6,600	50	<50	<50	<50	<50	<50	<50

Notes:

Bold – exceedence of applicable MECP SCS.
All values reported in µg/g (ppm), unless otherwise noted.
ppm - parts per million.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 5: Soil Quality Data – PHCs
900 Lakeshore Road West, Mississauga

Sample Location			**BH5**
Laboratory ID			**13-7124-7**
Sample Depth (m)			**0.00-0.61m**
Sampling Date			**Nov 6-8, 2023**
Parameters	**MECP Table 2 SCS**	**RL**	
Benzene	(0.17) 0.21	0.02	<0.02
Toluene	(6) 2.3	0.05	<0.2
Ethylbenzene	(1.6) 1.1	0.05	<0.05
Xylenes	(25) 3.1	0.05	<0.05
$F1_{-BTEX}$ (C_6 - C_{10})	65	10	<10
F2 (C_{10} - C_{16})	250	10	<10
F3 (C_{16} - C_{34})	2500	50	<50
F4 (C_{34}-C_{50})	6,600	50	<50

Notes:

Bold – exceedence of applicable MECP SCS.
All values reported in µg/g (ppm), unless otherwise noted.
ppm - parts per million.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 6: Soil Quality Data – PAHs
900 Lakeshore Road West, Mississauga

Sample Location			BH1	BH2	BH3	BH3	BH4	BH4
Laboratory ID			23-2124-1	13-7124-2	13-7124-3	13-7124-4	13-7124-5	13-7124-6
Sample Depth (m)			0.76-1.22m	0.00-0.61m	0.00-0.61m	3.05-3.51m	0.76-1.22m	0.00-0.61m
Sampling Date			Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023	Nov 6-8, 2023
Parameters	**MECP Table 2 SCS**	**RL**						
Naphthalene	(0.75) 0.6	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene	(3.4) 0.99	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1-Methylnaphthalene		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylnaphthalene, 2-(1-)*		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	(0.17) 0.15	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	(29) 7.9	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	(69) 62	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	(7.8) 6.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	(0.74) 0.67	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo [a] anthracene	(0.63) 0.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	(7.8) 7	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo [b] fluoranthene	0.78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo [k] fluoranthene	0.78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo [a] pyrene	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno [1,2,3-cd] pyrene	(0.48) 0.38	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo [a,h] anthracene	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo [g,h,i] perylene	(7.8) 6.6	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Notes:

*Parameter is the sum of 1- and 2- methylnaphthalene

Bold – exceedence of applicable MECP SCS.
All values reported in µg/g (ppm), unless otherwise noted.
ppm - parts per million.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 6: Soil Quality Data – PAHs
900 Lakeshore Road West, Mississauga

Sample Location			**BH5**
Laboratory ID			**13-7124-7**
Sample Depth (m)			**0.00-0.61m**
Sampling Date			**Nov 6-8, 2023**
Parameters	**MECP Table 2 SCS**	**RL**	
Naphthalene	(0.75) 0.6	0.05	<0.05
2-Methylnaphthalene	(3.4) 0.99	0.05	<0.05
1-Methylnaphthalene		0.05	<0.05
Methylnaphthalene, 2-(1-)*		0.05	<0.05
Acenaphthylene	(0.17) 0.15	0.05	<0.05
Acenaphthene	(29) 7.9	0.05	<0.05
Fluorene	(69) 62	0.05	<0.05
Phenanthrene	(7.8) 6.2	0.05	<0.05
Anthracene	(0.74) 0.67	0.05	<0.05
Fluoranthene	0.69	0.05	<0.05
Pyrene	78	0.05	<0.05
Benzo [a] anthracene	(0.63) 0.5	0.05	<0.05
Chrysene	(7.8) 7	0.05	<0.05
Benzo [b] fluoranthene	0.78	0.05	<0.05
Benzo [k] fluoranthene	0.78	0.05	<0.05
Benzo [a] pyrene	0.3	0.05	<0.05
Indeno [1,2,3-cd] pyrene	(0.48) 0.38	0.1	<0.1
Dibenzo [a,h] anthracene	0.1	0.1	<0.1
Benzo [g,h,i] perylene	(7.8) 6.6	0.1	<0.1

Notes:

*Parameter is the sum of 1- and 2- methylnaphthalene

Bold – exceedence of applicable MECP SCS**.**
All values reported in µg/g (ppm), unless otherwise noted.
ppm - parts per million.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

TABLE 7: Summary of Groundwater Samples Submitted for Chemical Analysis
900 Lakeshore Road West, Mississauga

NO.	MONITORING WELL LOCATION	MONITORING WELL SCREEN INTERVAL (m bgs)	LAB ID.	APEC	AMETER ANALYZED AND NUMBER OF SAMP			
					Metals	BTEX	PHCs	PAHs
1	MW3	4.57-7.62	23-2102-1	B	1	1	1	1
2	MW3 (Dup)	4.57-7.62	23-2102-2	B	1	1	1	1
3	-	-	23-2102-3	-		1		
				Total	**2**	**3**	**2**	**2**

Notes:
m bgs - metres below ground surface
DUP - Field duplicate sample
pH - Potential of Hydrogen
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
PHCs - Petroleum Hydrocarbon Carbons Fractions F1-F4, including Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
PAHs - Polycyclic Aromatic Hydrocarbons
PCBs - Polychlorinated Biphenyls

Table 8: Groundwater Quality Data – Metals
900 Lakeshore Road West, Mississauga

Sample Location			MW3	MW3 (Dup)
Laboratory ID			23-2102-1	23-2102-2
Screen Depth (m)			4.57-7.62	4.57-7.62
Sampling Date			Nov 13, 2023	Nov 13, 2023
Parameters	**MECP Table 2 SCS**	**RL**		
Antimony	6	2	<0.5	<0.5
Arsenic	25	2.5	2.2	2.2
Barium	1000	2	122	121
Beryllium	4	0.5	<0.5	<0.5
Boron	5000	10	93	91
Cadmium	2.7	1	<0.5	<0.5
Chromium	50	10	<10	<10
Cobalt	3.8	1	<1	<1
Copper	87	5	<5	<5
Lead	10	2.5	<1	<1
Molybdenum	70	0.5	23	22
Nickel	100	1	3.9	4
Selenium	10	5	<5	<5
Silver	1.5	1	<0.3	<0.3
Thallium	2	1	<0.5	<0.5
Uranium	20	2	2.6	2.5
Vanadium	6.2	0.5	1.5	1.6
Zinc	1100	5	14	15

Notes:

Bold – exceedence of applicable MECP SCS.
All values reported in µg/L (ppb), unless otherwise noted.
ppb - parts per billion.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 9: Groundwater Quality Data – PHCs
900 Lakeshore Road West, Mississauga

Sample Location			MW3	MW3 (Dup)	Trip Blank
Laboratory ID			**23-2102-1**	**23-2102-2**	**23-2102-3**
Screen Depth (m)			**4.57-7.62**	**4.57-7.62**	**NA**
Sampling Date			**Nov 13, 2023**	**Nov 13, 2023**	**Oct 17, 2013**
Parameters	**MECP Table 2 SCS**	**RL**			
Benzene	5	0.5	<0.5	<0.5	<0.5
Toluene	24	0.5	<0.5	<0.5	<0.5
Ethylbenzene	2.4	0.5	<0.5	<0.5	<0.5
Xylenes	300	0.5	<0.5	<0.5	<0.5
$F1_{-BTEX}$ (C_6 - C_{10})	750	25	<25	<25	-
F2 (C_{10} - C_{16})	150	100	<100	<100	-
F3 (C_{16} - C_{34})	500	100	<100	<100	-
F4 (C_{34}-C_{50})	500	100	<100	<100	-

Notes:

Bold – exceedence of applicable MECP SCS.
All values reported in µg/L (ppb), unless otherwise noted.
ppb - parts per billion.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

Table 10: Groundwater Quality Data – PAHs
900 Lakeshore Road West, Mississauga

Sample Location			**MW1**	**MW2**
Laboratory ID			**13-7124-1**	**13-7124-2**
Screen Depth (m)			**3.05-6.10**	**3.05-6.10**
Sampling Date			**Oct 15, 2013**	**Oct 16, 2013**
Parameters	**MECP Table 2 SCS**	**RL**		
Naphthalene	11	2	<2	<2
2-Methylnaphthalene	3.2	1	<1	<1
1-Methylnaphthalene		1	<1	<1
Methylnaphthalene, 2-(1-)*		1	<1	<1
Acenaphthylene	1	1	<1	<1
Acenaphthene	4.1	1	<1	<1
Fluorene	120	0.5	<0.5	<0.5
Phenanthrene	1	0.1	<0.1	<0.1
Anthracene	2.4	0.1	<0.1	<0.1
Fluoranthene	0.41	0.4	<0.4	<0.4
Pyrene	4.1	0.2	<0.2	<0.2
Benzo [a] anthracene	1	0.2	<0.2	<0.2
Chrysene	0.1	0.1	<0.1	<0.1
Benzo [b] fluoranthene	0.1	0.1	<0.1	<0.1
Benzo [k] fluoranthene	0.1	0.1	<0.1	<0.1
Benzo [a] pyrene	0.01	0.01	<0.01	<0.01
Indeno [1,2,3-cd] pyrene	0.2	0.2	<0.2	<0.2
Dibenzo [a,h] anthracene	0.2	0.2	<0.2	<0.2
Benzo [g,h,i] perylene	0.2	0.2	<0.2	<0.2

Notes:

*Parameter is the sum of 1- and 2- methylnaphthalene

Bold – exceedence of applicable MECP SCS.
All values reported in µg/L (ppb), unless otherwise noted.
ppb - parts per billion.
RL - reporting limit.
N/A - not applicable.

MECP SCS - The Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standard (SCS) is defined in *Soil, Ground Water and Sediment Standards for Use under Part XV.21 of the Environmental protection Act* , MECP (formerly Ministry of the Environment, MOE), April 15, 2011.

Table 2 SCS: Standard applies for full depth generic site condition standard in a potable ground water condition for R/P?i use and medium and fine textured soil.

9.2 Figures

9.2.1 Site Settings Figures

Figure I: Site Location Map

Figure II: Topographical Map

Figure III: Surficial Geological

Figure IV: Bedrock Geology

9.2.2 CSM Figures

Figure A: Phase One Study Area

Figure B1: Site Plan with APECs and Borehole/Monitoring Well Locations.

Figure B2: Site Plan Showing Groundwater Contours and Flow Direction

Figure B3: Site Plan Showing Analytical Program and COPCs Tested in Soil

Figure B4: Site Plan Showing Analytical Program and COPCs Tested in Groundwater

Figure C1.1: Cross-Section A – A' with COPCs Tested in Soil

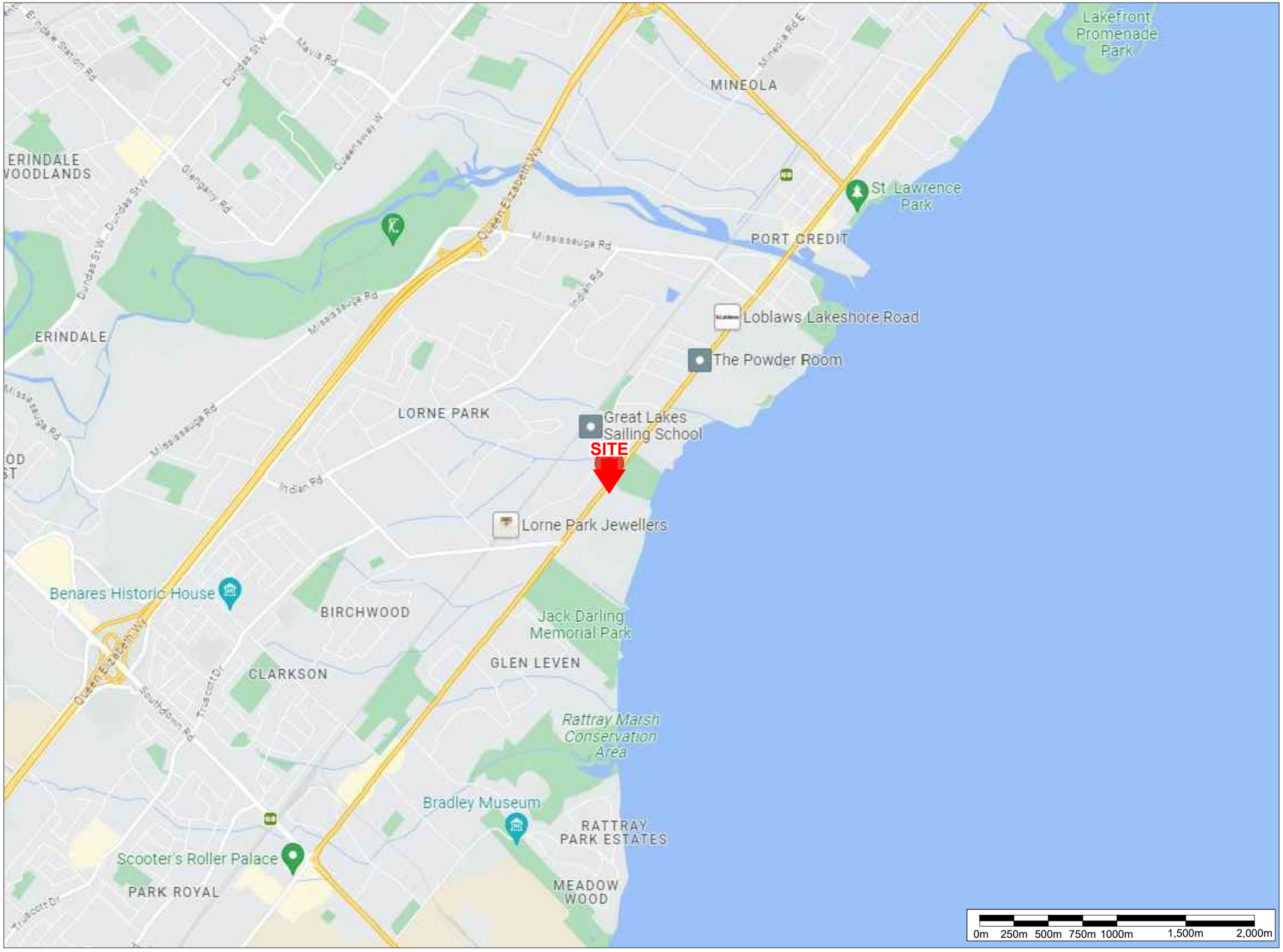
Figure C1.2: Cross-Section B – B' with COPCs Tested in Soil

Figure C2.1: Cross-Section A – A' with COPCs Tested in Groundwater

Figure C2.2: Cross-Section B – B' with COPCs Tested in Groundwater

Figure D1: Human Health Conceptual Site Model without Risk Management Measures

Figure D2: Ecological Health Conceptual Site Model without Risk Management Measures



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NORTH

N

LEGEND

PROJECT NAME AND ADDRESS

PHASE TWO ESA

900 Lakeshore Road West,
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FIGURE I:

SITE LOCATION MAP

PROJECT NO.	SHEET NO.
FE-23-13483	I
DATE: 24 October 2023	
SCALE: AS SHOWN	

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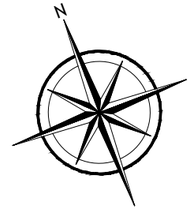

LEGEND

SITE BOUNDARY

PROJECT NAME AND ADDRESS

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900 Lakeshore Road West,
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FIGURE II:

TOPOGRAPHICAL MAP

PROJECT NO.	SHEET NO.
FE-23-13483	II
DATE: 24 October 2023	
SCALE: AS SHOWN	

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- **3 PALEOZOIC BEDROCK**
- **5D TILL**
  Clay to Silt-textured till (derived from glaciolacustrine deposits or shale)
- **9C COARSE-TEXTURED GLACIOLACUSTRINE DEPOSITS**
  sand, gravel, minor silt and clay Foreshore and basinal deposits
- **19 MODERN ALLUVIAL DEPOSITS**
  clay, silt, sand, gravel, may contain organic remains

PROJECT NAME AND ADDRESS

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FIGURE III:

SURFICIAL GEOLOGY

PROJECT NO.	SHEET NO.
FE-23-13483	III
DATE: 24 October 2023	
SCALE: AS SHOWN	

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55A:
Shale, limestone, dolostone, siltstone
Queenston Formation

55B:
Shale, limestone, dolostone, siltstone
Georgian Bay Formation; Blue Mountain Formation; Billings Formation; Collingwood Member; Eastview Member

56A:
Sandstone, shale, dolostone, siltstone
Guelph Formation

56B:
Sandstone, shale, dolostone, siltstone
Lockport Formation

56C:
Sandstone, shale, dolostone, siltstone
Armabel Formation

56D:
Sandstone, shale, dolostone, siltstone
Clinton Group; Cataract Group

PROJECT NAME AND ADDRESS

PHASE TWO ESA

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FIGURE VI:

BEDROCK GEOLOGY

PROJECT NO.	SHEET NO.
FE-23-13483	VI
DATE: 24 October 2023	
SCALE: AS SHOWN	

NUMBER	PCAs IDENTIFIED WITHIN THE STUDY AREA	PCA
1	900 Lakeshore Road (Site)	PCA 28, 30
2	858 Whittier Crescent	PCA Other

PCA	DESCRIPTION ACCORDING TO O. REG. 153/04, SCHEDULE D, TABLE 2
28	Gasoline and Associated Products Storage in Fixed Tanks
30	Importation of Fill Material of Unknown Quality
Other	Furnace Oil Spill from Truck

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LEGEND

- SITE BOUNDARY
- STUDY AREA
- ① LOCATION OF POTENTIALLY CONTAMINATING ACTIVITY (PCA)
- ABOVE GROUND HEATING OIL STORAGE TANK
- PARKLAND USE
- COMMUNITY USE
- ANTICIPATED GROUND WATER FLOW DIRECTION

PCA: POTENTIALLY CONTAMINATING ACTIVITY

PROJECT NAME AND ADDRESS

PHASE TWO ESA

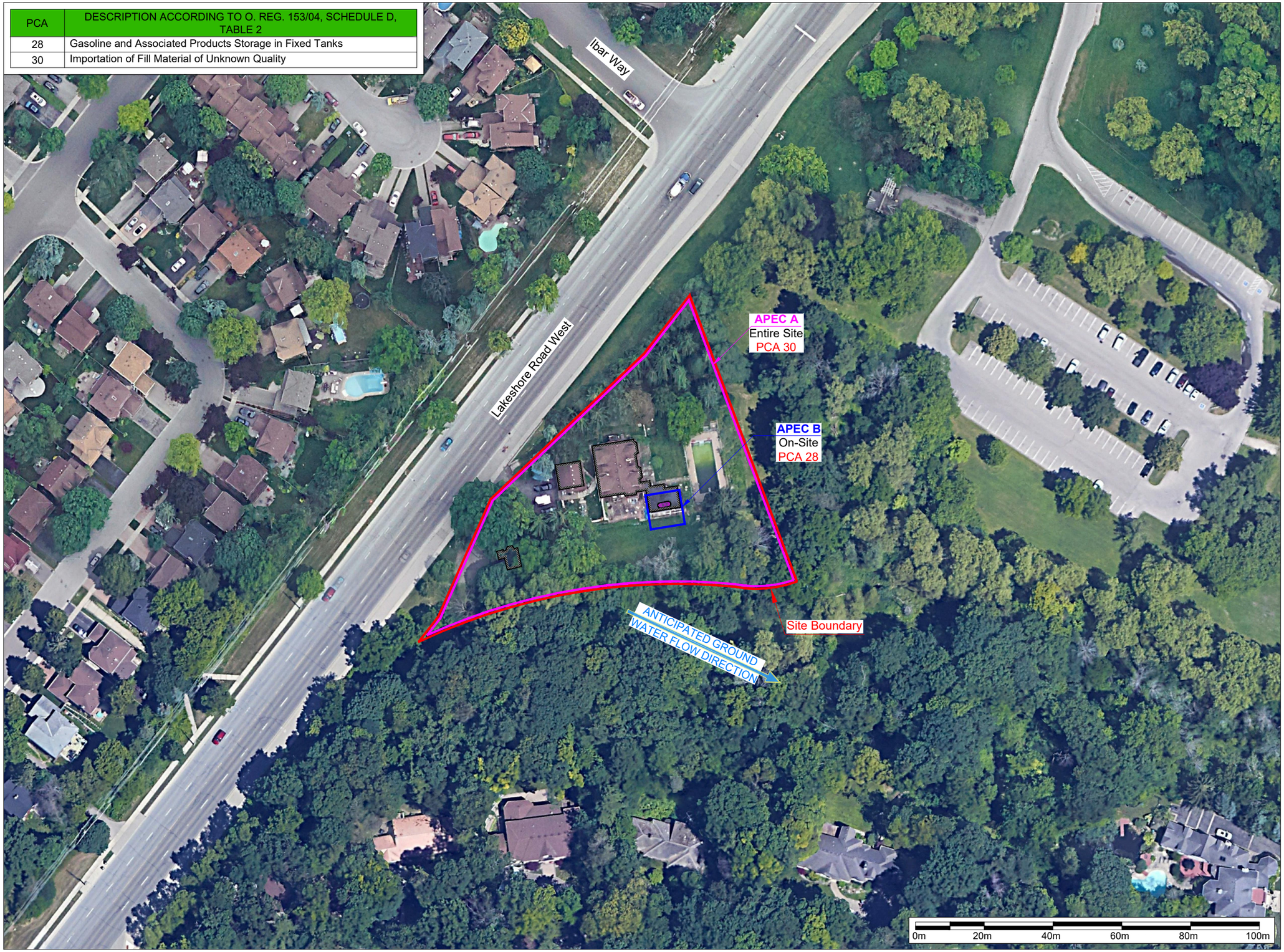
900 Lakeshore Road West,
Mississauga, Ontario

FIGURE A:

CONCEPTUAL SITE MODEL – PHASE ONE STUDY AREA WITH POTENTIALLY CONTAMINATING ACTIVITIES

PROJECT NO.	SHEET NO.
FE-23-13483	A
DATE: 29 November, 2023	
SCALE: AS SHOWN	

PCA	DESCRIPTION ACCORDING TO O. REG. 153/04, SCHEDULE D, TABLE 2
28	Gasoline and Associated Products Storage in Fixed Tanks
30	Importation of Fill Material of Unknown Quality



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LEGEND

- PHASE ONE PROPERTY
- EXISTING BUILDING BOUNDARY
- ABOVE GROUND HEATING OIL STORAGE TANK
- ANTICIPATED GROUNDWATER FLOW DIRECTION
- APEC A (Entire Site)
- APEC B

APEC: Area of Potential Environmental Concern
PCA 28 PCA: Potentially Contaminating Activity

PROJECT NAME AND ADDRESS

PHASE TWO ESA

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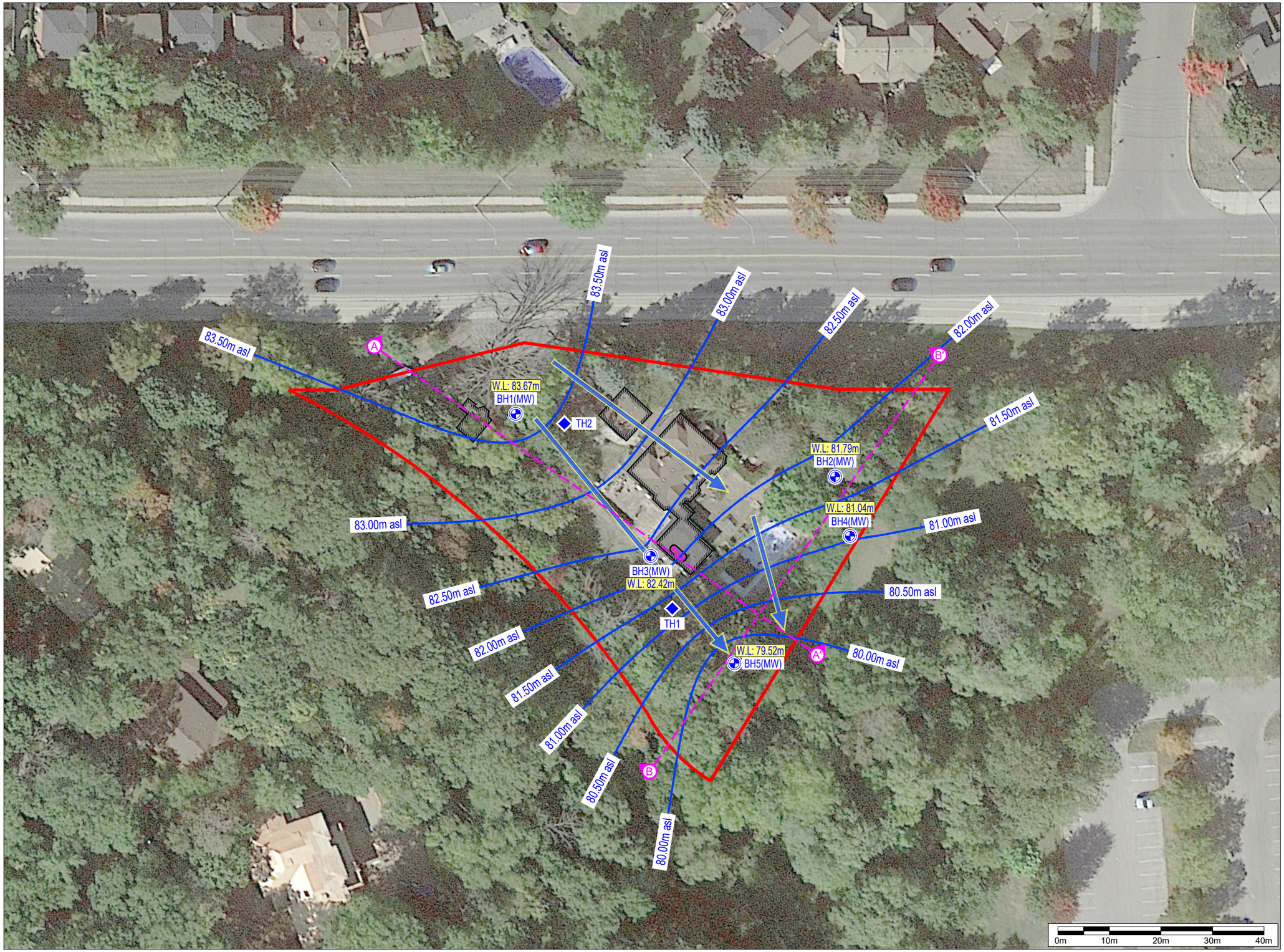
Mississauga, Ontario

FIGURE B1:

PCAs, APECs LOCATIONS AND TRANSPORT PATHWAYS.

PROJECT NO.	SHEET NO.
FE-23-13483	B1
DATE: 29 November, 2023	
SCALE: AS SHOWN	



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LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- BOREHOLE LOCATION
- TEST HOLE LOCATION
- GROUNDWATER FLOW DIRECTION BASED ON WATER LEVEL
- GROUNDWATER ELEVATION CONTOUR BASED ON WATER LEVEL
- 110.34m asl — GROUNDWATER ELEVATION
- A — A' CROSS SECTION MARK

PROJECT NAME AND ADDRESS

PHASE TWO ESA

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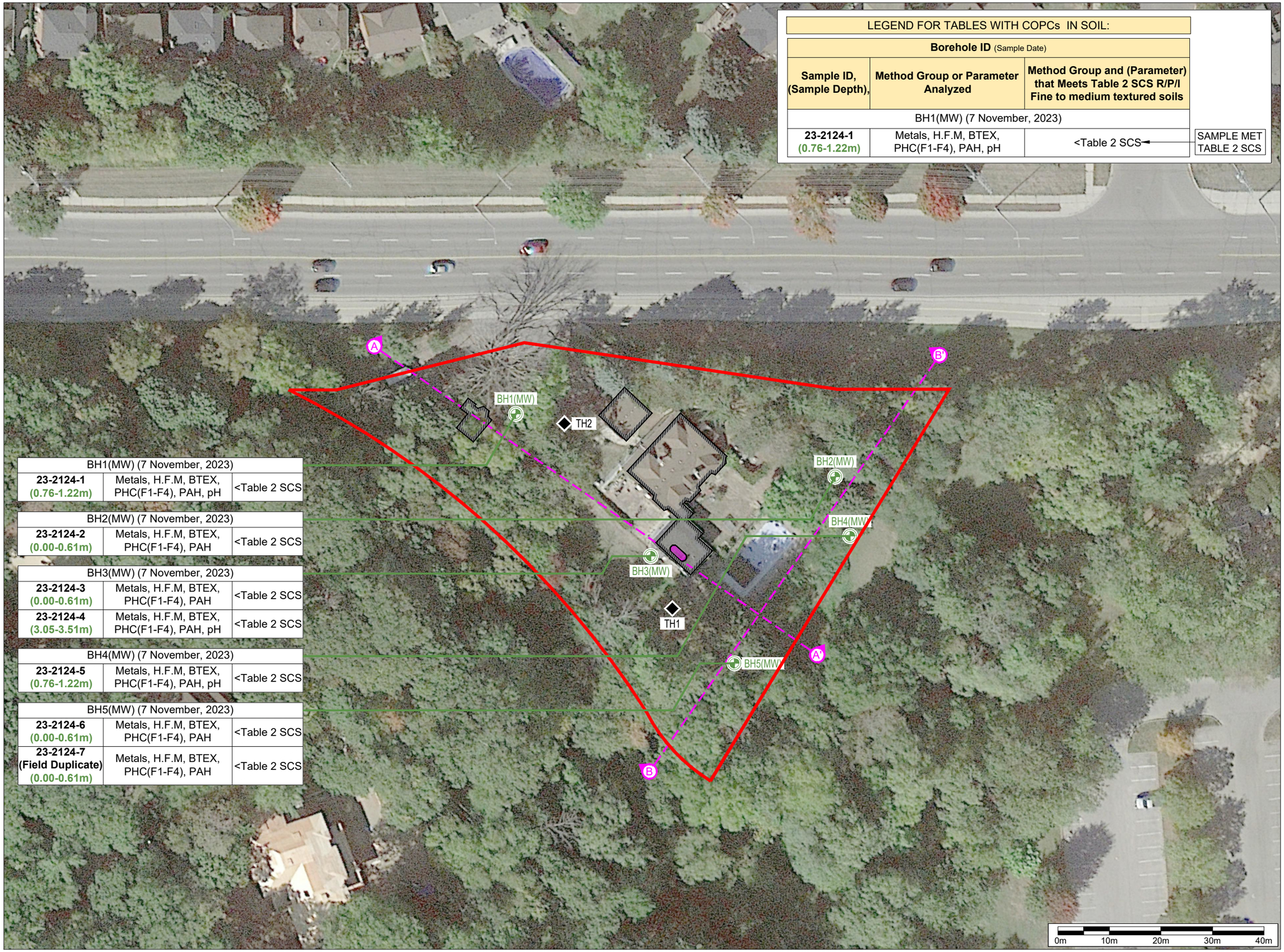
FIGURE B2:
SITE PLAN SHOWS GROUNDWATER FLOW DIRECTION AND CROSS-SECTION

PROJECT NO.	SHEET NO.
FE-23-13483	B2
DATE: 29 November, 2023	
SCALE: AS SHOWN	



LEGEND FOR TABLES WITH COPCs IN SOIL:			
Borehole ID (Sample Date)			
Sample ID, (Sample Depth),	**Method Group or Parameter Analyzed**	**Method Group and (Parameter) that Meets Table 2 SCS R/P/I Fine to medium textured soils**	
BH1(MW) (7 November, 2023)			
23-2124-1 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS	SAMPLE MET TABLE 2 SCS

BH1(MW) (7 November, 2023)		
23-2124-1 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS
BH2(MW) (7 November, 2023)		
23-2124-2 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
BH3(MW) (7 November, 2023)		
23-2124-3 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
23-2124-4 (3.05-3.51m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS
BH4(MW) (7 November, 2023)		
23-2124-5 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS
BH5(MW) (7 November, 2023)		
23-2124-6 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
23-2124-7 (Field Duplicate) (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS

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LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- BOREHOLE LOCATION THAT MEETS APPLICABLE TABLE 2 SCS
- TEST HOLE LOCATION
- CROSS SECTION CUT PLANE
- ABOVE GROUND HEATING OIL STORAGE TANK

PROJECT NAME AND ADDRESS

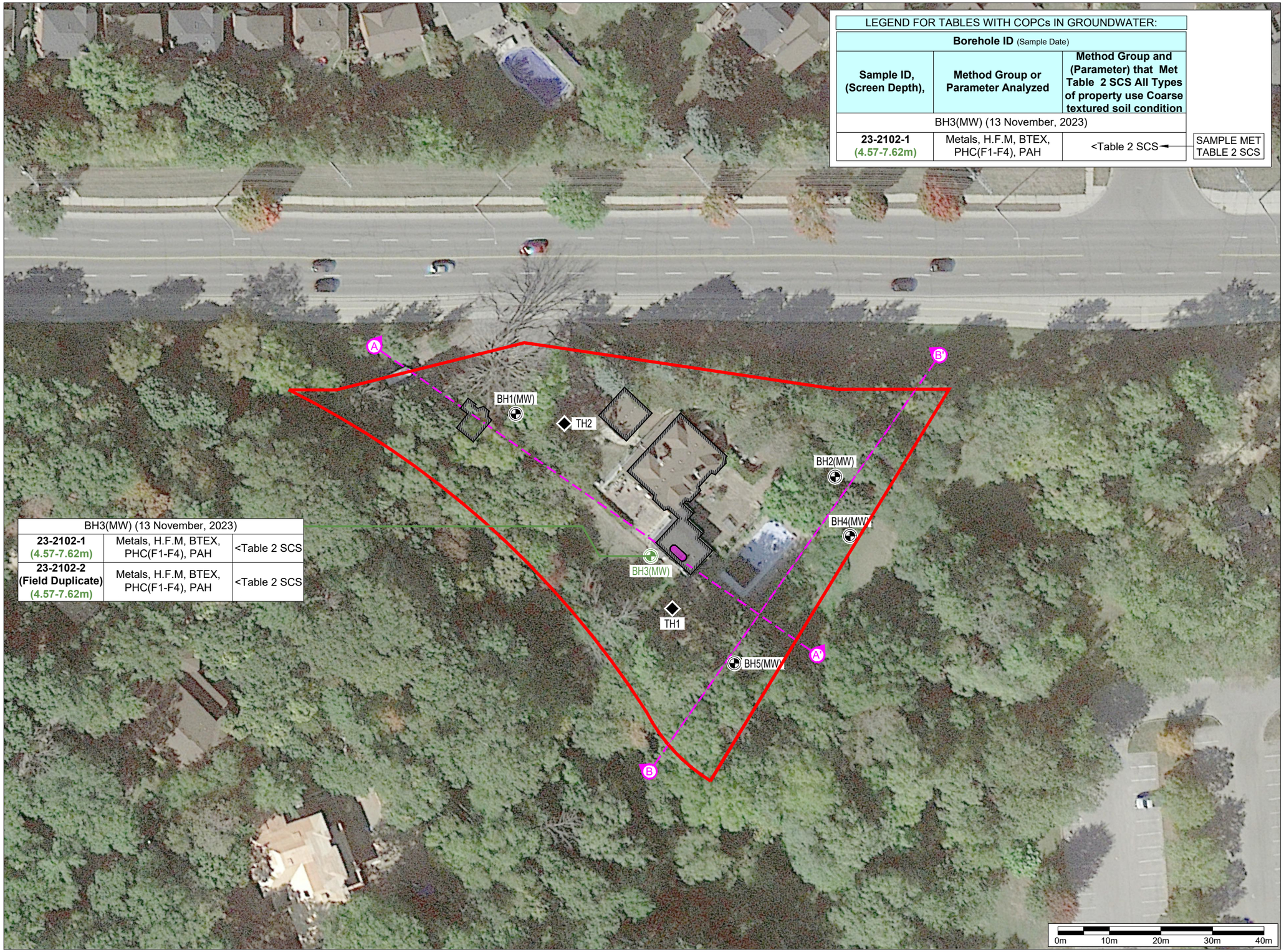
PHASE TWO ESA

900 Lakeshore Road West,
Mississauga, Ontario

FIGURE B3:

ANALYTICAL PROGRAM WITH ALL COPCs TESTED IN SOIL

PROJECT NO.	SHEET NO.
FE-23-13483	B3
DATE: 29 November, 2023	
SCALE: AS SHOWN	



LEGEND FOR TABLES WITH COPCs IN GROUNDWATER:

Borehole ID (Sample Date)			
Sample ID, (Screen Depth),	**Method Group or Parameter Analyzed**	**Method Group and (Parameter) that Met Table 2 SCS All Types of property use Coarse textured soil condition**	
BH3(MW) (13 November, 2023)			
23-2102-1 (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS	SAMPLE MET TABLE 2 SCS

BH3(MW) (13 November, 2023)		
23-2102-1 (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
23-2102-2 (Field Duplicate) (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS

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LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- MONITORING WELL LOCATION THAT MEETS APPLICABLE TABLE 2 SCS
- MONITORING WELL LOCATION THAT WAS NOT TEST FOR GROUNDWATER
- TEST HOLE LOCATION
- CROSS SECTION CUT PLANE
- ABOVE GROUND HEATING OIL STORAGE TANK

PROJECT NAME AND ADDRESS

PHASE TWO ESA

900 Lakeshore Road West,
Mississauga, Ontario

FIGURE B4:

ANALYTICAL PROGRAM WITH ALL COPCs TESTED IN GROUNDWATER

PROJECT NO.	SHEET NO.
FE-23-13483	B4
DATE: 29 November, 2023	
SCALE: AS SHOWN	

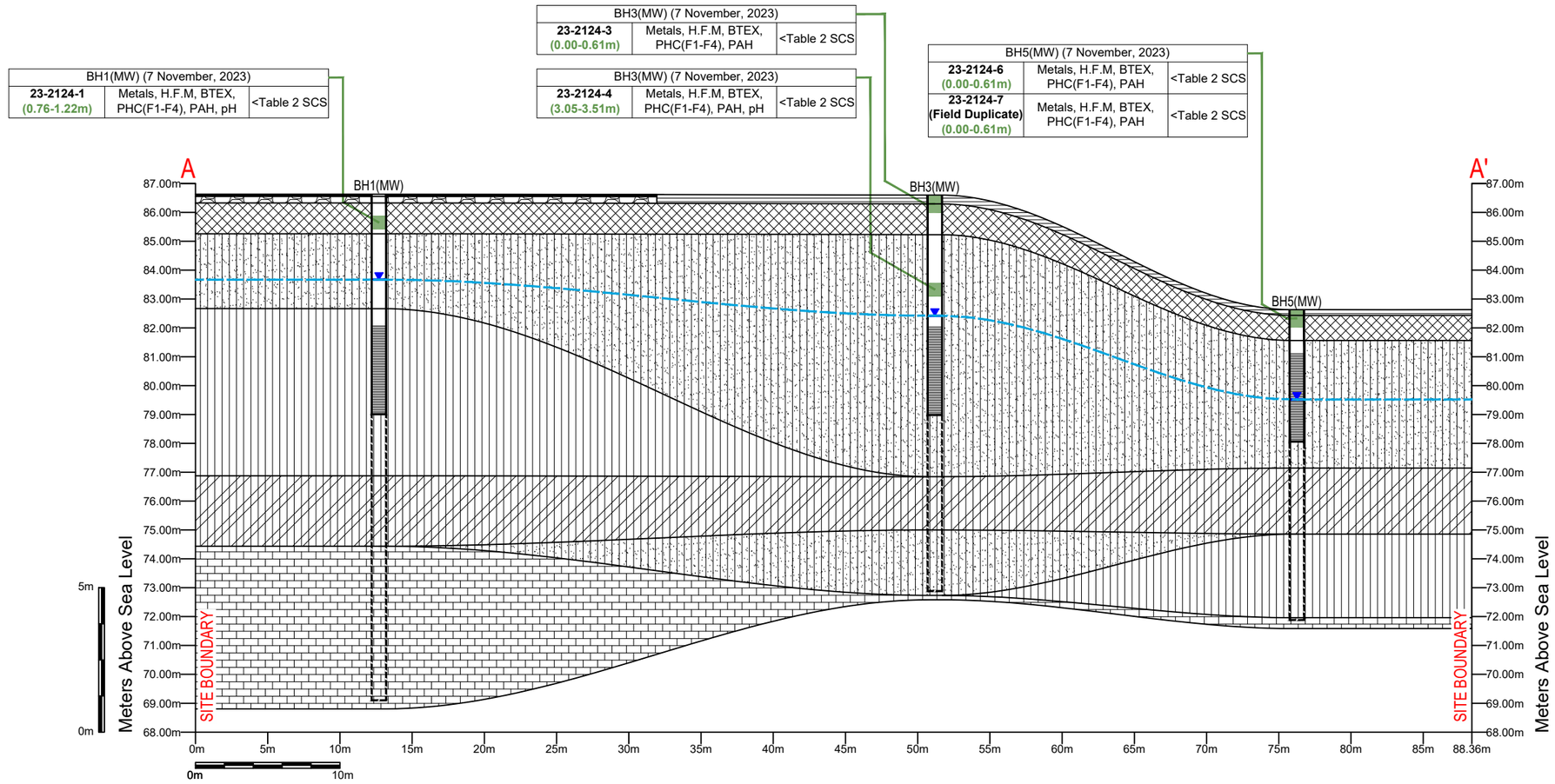
LEGEND FOR TABLES WITH COPCs IN SOIL:			
Borehole ID (Sample Date)			
Sample ID, (Sample Depth),	**Method Group or Parameter Analyzed**	**Method Group and (Parameter) that Meets Table 2 SCS R/P/I Fine to medium textured soils**	
BH1(MW) (7 November, 2023)			
23-2124-1 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS	SAMPLE MET TABLE 2 SCS

BH1(MW) (7 November, 2023)		
23-2124-1 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS

BH3(MW) (7 November, 2023)		
23-2124-3 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS

BH3(MW) (7 November, 2023)		
23-2124-4 (3.05-3.51m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS

BH5(MW) (7 November, 2023)		
23-2124-6 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
23-2124-7 (Field Duplicate) (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS



FISHER ENGINEERING

400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2

Tel: 905 475-7755

NORTH

LEGEND

- ASPHALT
- FILL
- TOPSOIL
- GRANULAR
- SAND
- SILT
- CLAY
- BEDROCK
- GROUNDWATER POTENTIOMETRIC LEVEL (December 6th 2023)
- INFERRED GROUNDWATER POTENTIOMETRIC SURFACE
- SOIL SAMPLE THAT MET APPLICABLE TABLE 2 SCS I/C/C

PROJECT NAME AND ADDRESS

PHASE TWO ESA

900 Lakeshore Road West,
Mississauga, Ontario

PROJECT NO.
FE-23-13483

DATE.
29 November 2023

SCALE.
AS SHOWN

FIGURE C1.1:
CROSS-SECTION A - A': SHOWING ANALYTICAL PROGRAM WITH ALL COPCs TESTED IN SOIL

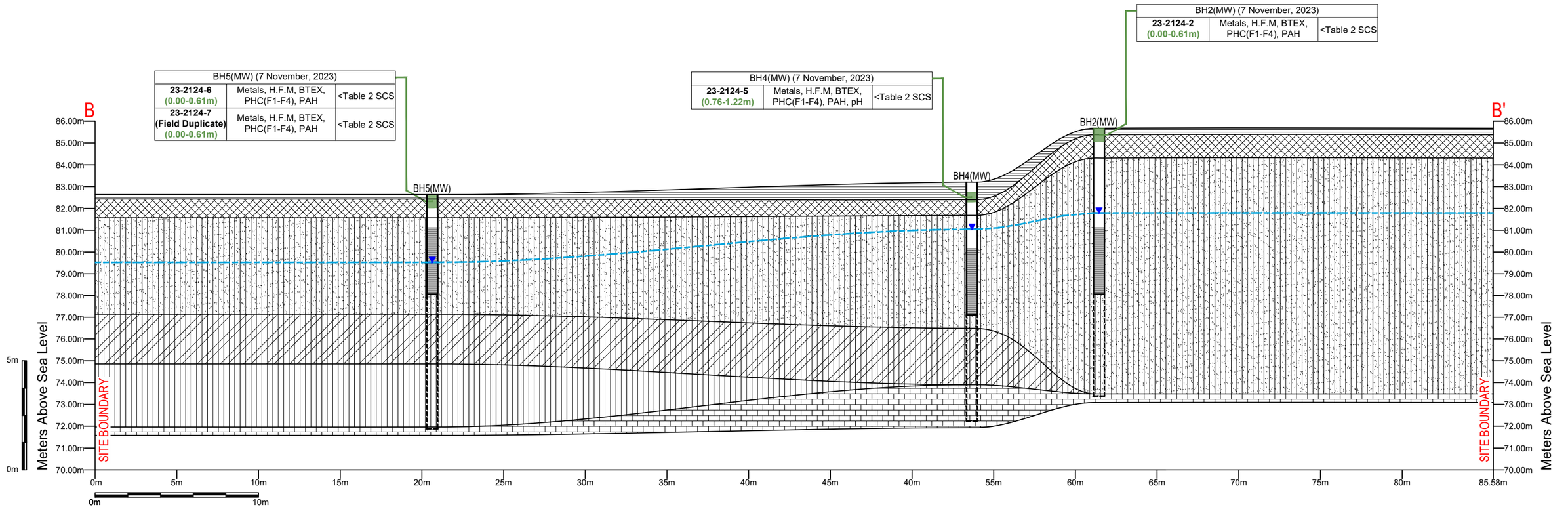
SHEET NO.
C1.1

LEGEND FOR TABLES WITH COPCs IN SOIL:			
Borehole ID (Sample Date)			
Sample ID, (Sample Depth),	**Method Group or Parameter Analyzed**	**Method Group and (Parameter) that Meets Table 2 SCS R/P/I Fine to medium textured soils**	
BH1(MW) (7 November, 2023)			
23-2124-1 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS	SAMPLE MET TABLE 2 SCS

BH5(MW) (7 November, 2023)		
23-2124-6 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
23-2124-7 (Field Duplicate) (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS

BH4(MW) (7 November, 2023)		
23-2124-5 (0.76-1.22m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH, pH	<Table 2 SCS

BH2(MW) (7 November, 2023)		
23-2124-2 (0.00-0.61m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS



FISHER ENGINEERING

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Tel: 905 475-7755

NORTH

LEGEND

- FILL
- TOPSOIL
- SAND
- SILT
- CLAY
- BEDROCK
- GROUNDWATER POTENTIOMETRIC LEVEL **(December 6th 2023)**
- INFERRED GROUNDWATER POTENTIOMETRIC SURFACE
- SOIL SAMPLE THAT MET APPLICABLE TABLE 2 SCS I/C/C

PROJECT NAME AND ADDRESS

PHASE TWO ESA

900 Lakeshore Road West,
Mississauga, Ontario

PROJECT NO.
FE-23-13483

DATE.
29 November 2023

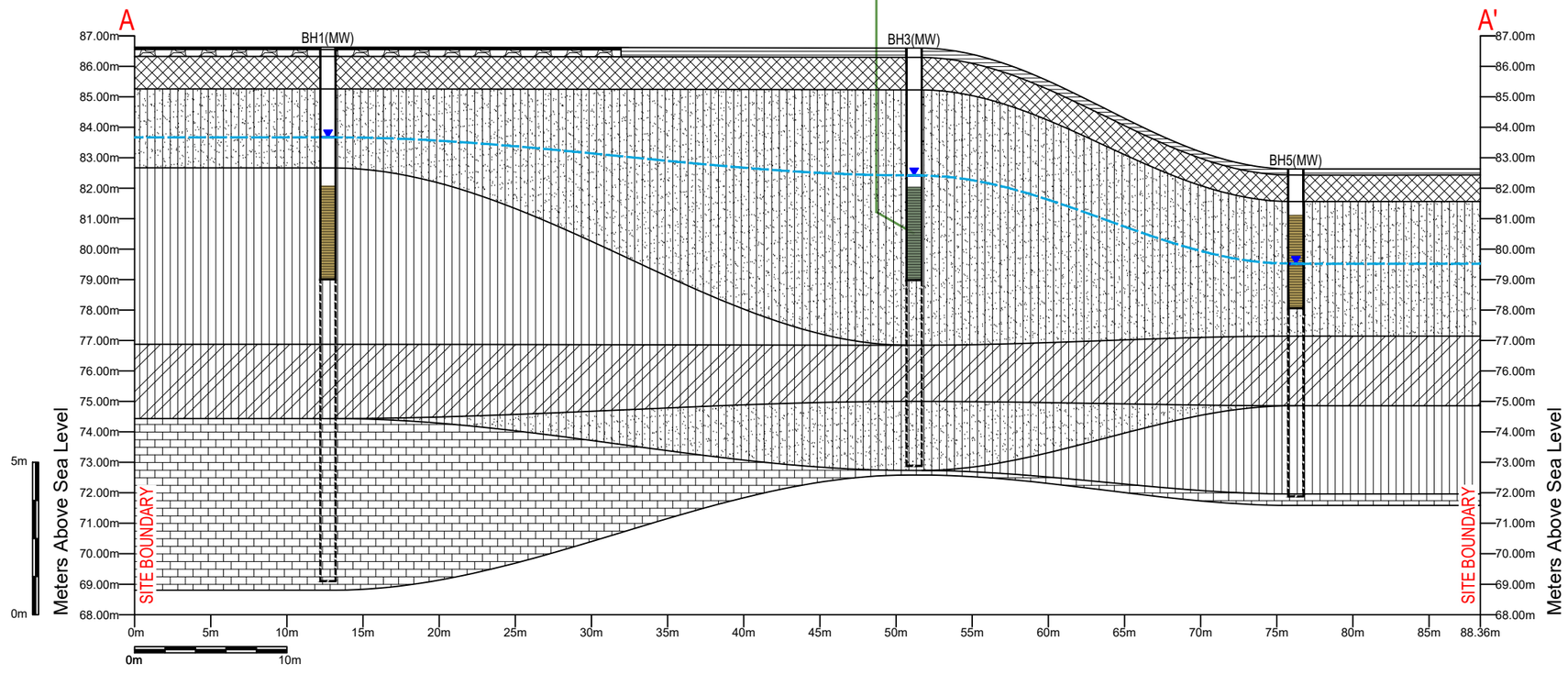
SCALE.
AS SHOWN

FIGURE C1.2:
CROSS-SECTION B - B':
SHOWING ANALYTICAL PROGRAM WITH ALL COPCs TESTED IN SOIL

SHEET NO.
C1.2

LEGEND FOR TABLES WITH COPCs IN GROUNDWATER:			
Borehole ID (Sample Date)			
Sample ID, (Screen Depth),	**Method Group or Parameter Analyzed**	**Method Group and (Parameter) that Met Table 2 SCS All Types of property use Coarse textured soil condition**	
BH3(MW) (13 November, 2023)			
23-2102-1 (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS	SAMPLE MET TABLE 2 SCS

BH3(MW) (13 November, 2023)		
23-2102-1 (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS
23-2102-2 (Field Duplicate) (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS



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NORTH

LEGEND

- ASPHALT
- FILL
- TOPSOIL
- GRANULAR
- SAND
- SILT
- CLAY
- BEDROCK
- GROUNDWATER POTENTIOMETRIC LEVEL (December 6th 2023)
- INFERRED GROUNDWATER POTENTIOMETRIC SURFACE
- GROUNDWATER SAMPLE THAT MET APPLICABLE TABLE 2 SCS I/C/C
- WELL LOCATION THAT WAS NOT TESTED FOR GROUNDWATER RESULTS

PROJECT NAME AND ADDRESS

PHASE TWO ESA

900 Lakeshore Road West,
Mississauga, Ontario

PROJECT NO.
FE-23-13483

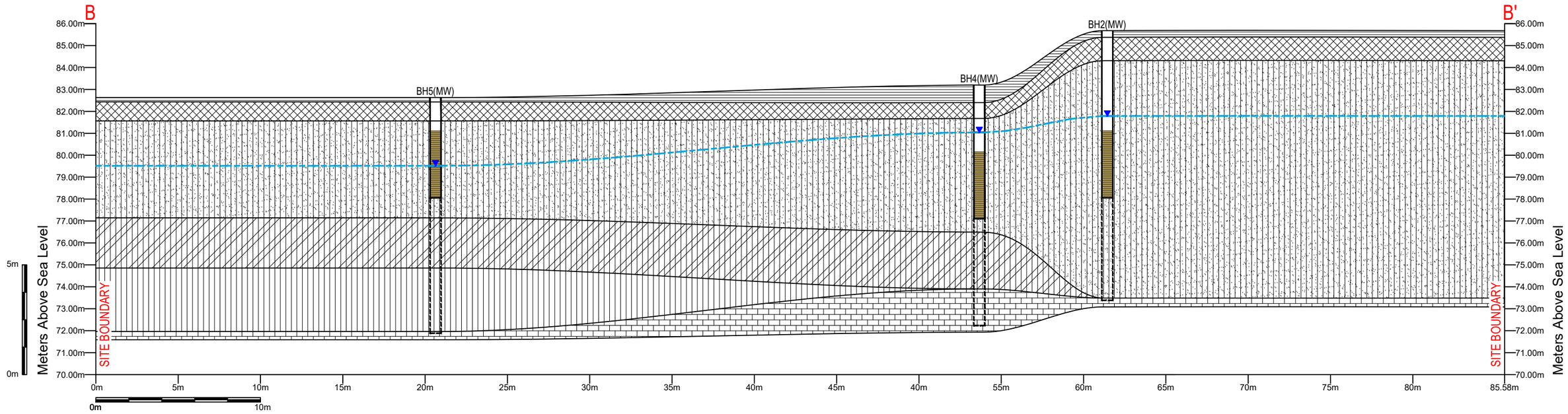
DATE.
29 November 2023

SCALE.
AS SHOWN

FIGURE C2.1:
CROSS-SECTION A - A': SHOWING ANALYTICAL PROGRAM WITH ALL COPCs TESTED IN GROUNSWATER

SHEET NO.
C2.1

LEGEND FOR TABLES WITH COPCs IN GROUNDWATER:			
Borehole ID (Sample Date)			
Sample ID, (Screen Depth),	**Method Group or Parameter Analyzed**	**Method Group and (Parameter) that Met Table 2 SCS All Types of property use Coarse textured soil condition**	
BH3(MW) (13 November, 2023)			
23-2102-1 (4.57-7.62m)	Metals, H.F.M, BTEX, PHC(F1-F4), PAH	<Table 2 SCS	SAMPLE MET TABLE 2 SCS



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NORTH

LEGEND

- FILL
- TOPSOIL
- SAND
- SILT
- CLAY
- BEDROCK
- GROUNDWATER POTENTIOMETRIC LEVEL **(December 6th 2023)**
- INFERRED GROUNDWATER POTENTIOMETRIC SURFACE
- WELL LOCATION THAT WAS NOT TESTED FOR GROUNDWATER RESULTS

PROJECT NAME AND ADDRESS

PHASE TWO ESA

900 Lakeshore Road West,
Mississauga, Ontario

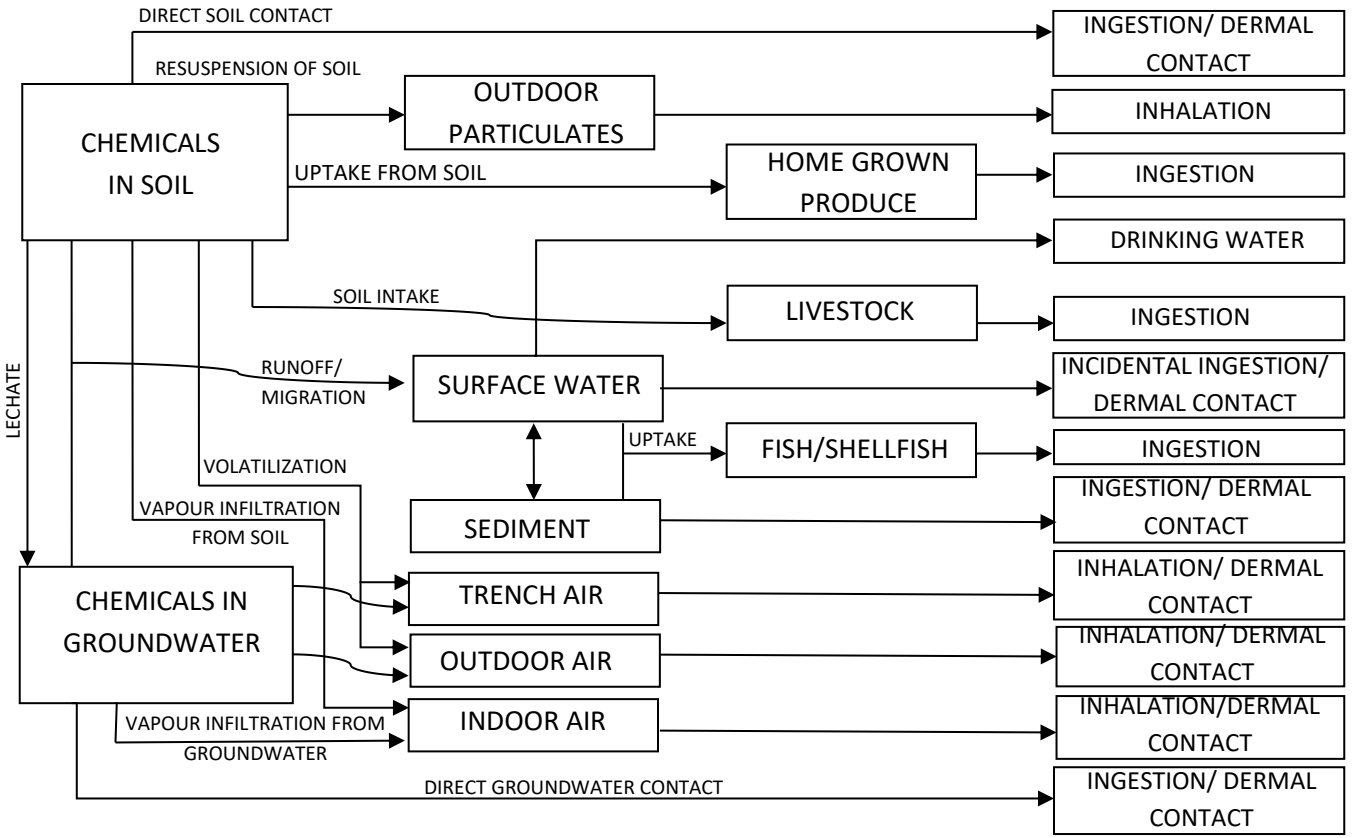
PROJECT NO.
FE-23-13483

DATE.
29 November 2023

SCALE.
AS SHOWN

FIGURE C2.2:
CROSS-SECTION B - B':
SHOWING ANALYTICAL PROGRAM WITH ALL COPCs TESTED IN GROUNDWATER

SHEET NO.
C2.2



RECEPTOR CHARACTERIZATION			
PATHWAYS OF POTENTIAL CONCERN			
On-Site		Off-Site	
Resident Adult/Resident Child	Construction/ Remediation/ Maintenance Worker	Resident Adult/Resident Child	Construction/ Remediation/ Maintenance Worker
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×
×	×	×	×

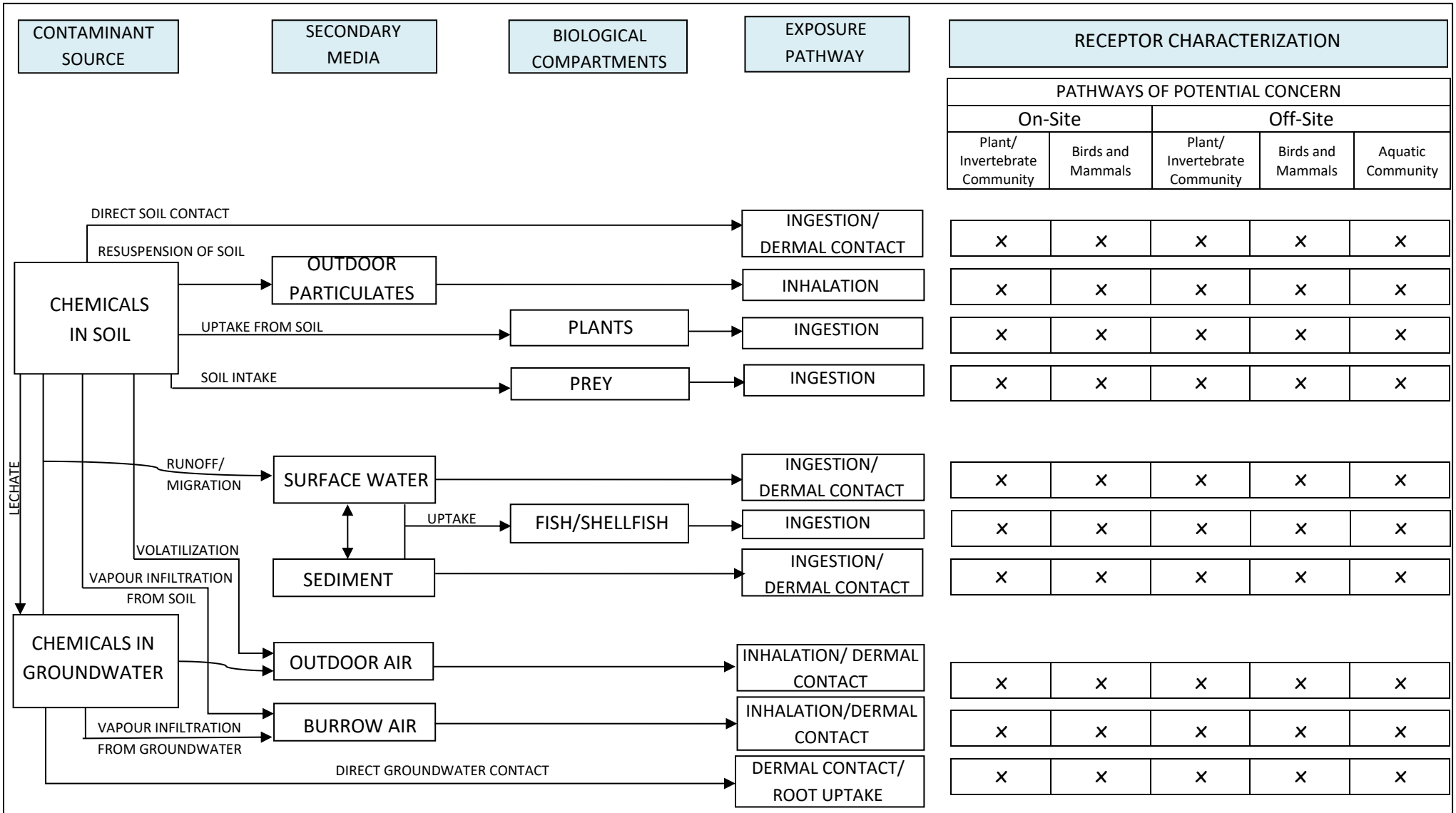
× = complete pathway (without risk management)

× = incomplete pathway

900 Lakeshore Road West, Mississauga, Ontario

Human Health Conceptual Site Model
No Risk Management

Project No. FE 23-13483	January 2023	Figure D1


CONTAMINANT SOURCE
SECONDARY MEDIA
BIOLOGICAL COMPARTMENTS
EXPOSURE PATHWAY
RECEPTOR CHARACTERIZATION
PATHWAYS OF POTENTIAL CONCERN
On-Site
Off-Site
Plant/ Invertebrate Community
Birds and Mammals
Plant/ Invertebrate Community
Birds and Mammals
Aquatic Community
DIRECT SOIL CONTACT
RESUSPENSION OF SOIL
CHEMICALS IN SOIL
OUTDOOR PARTICULATES
UPTAKE FROM SOIL
PLANTS
SOIL INTAKE
PREY
INGESTION/ DERMAL CONTACT
INHALATION
INGESTION
INGESTION
LECHATE
RUNOFF/ MIGRATION
SURFACE WATER
UPTAKE
FISH/SHELLFISH
SEDIMENT
INGESTION/ DERMAL CONTACT
INGESTION
INGESTION/ DERMAL CONTACT
VOLATILIZATION
VAPOUR INFILTRATION FROM SOIL
CHEMICALS IN GROUNDWATER
OUTDOOR AIR
BURROW AIR
VAPOUR INFILTRATION FROM GROUNDWATER
DIRECT GROUNDWATER CONTACT
INHALATION/ DERMAL CONTACT
INHALATION/DERMAL CONTACT
DERMAL CONTACT/ ROOT UPTAKE
× = complete pathway (without risk management)
O = pathway considered insignificant and /or lacks sufficient information for evaluation
× = incomplete pathway
900 Lakeshore Road West, Mississauga, Ontario
Ecological Conceptual Site Model
No Risk Management
Project No. FE 23-13483
January 2023
Figure D2

10. APPENDICES

The following appendices are intended to be read in conjunction with this report.

APPENDIX A – SAMPLING AND ANALYSIS PLAN

FISHER ENGINEERING

ENGINEERING

Professional Engineers Ontario

LABORATORY

CALA
Canadian Association for Laboratory Accreditation Inc.

SAMPLING AND ANALYSIS PLAN

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Project No. FE 23-13483

November 2023

TABLE OF CONTENTS

1. INTRODUCTION

Fisher Engineering Limited (Fisher) has prepared this Sampling and Analysis Plan for fieldwork proposed at 900 Lakeshore Road West, Mississauga, Ontario (the "Site") for 1000570027 Ontario Inc. This plan has been prepared in compliance with Ontario Regulation (O. Reg.) 153/04, as amended. This regulation requires a Sampling and Analysis Plan that includes a quality assurance and quality control (QA/QC) program, data quality objectives, standard operating procedures, and a description of physical constraints that limit the ability to conduct sampling and analysis.

This plan is presented in two main sections: our proposed work and our QA/QC program.

2. PROBLEM DEFINITION AND BACKGROUND

The Site is located on the southeast side of Lakeshore Road West, in a primarily residential, commercial and parkland area. The Site is bounded by Richards Memorial Park to the northeast and east, and residential dwellings (965, 975 and 981 Whittier Cres.) to the southwest and south.

As part of an on-going Phase One ESA, Fisher has determined at the preliminary stage that potential impacts associated with the following two (2) PCAs may be present at the Site:

- According to the site reconnaissance, the northwestern portion along the property boundary adjacent to the parking garage and residential house features a raised retaining wall. Additionally, the residential buildings at the northwestern and southwestern portions of the Site are on a higher elevation than the eastern/southeastern surrounding areas. Due to a lack of information about the Site development and soil quality data of any imported fill, the evaluation of soil condition for the entire Site is considered appropriate for this APEC. The COPCs that may be present in soil associated with imported fill materials include Metals, PHCs (F1-F4), BTEX and PAHs.
- According to our site reconnaissance, a disconnected furnace oil AST was identified in the basement near the southeast corner of the residential house at the northeastern portion of the Site. Due to a lack of information about the condition of the tank and its operating practices, an evaluation of soil and groundwater conditions for the northeastern portion of the Site is considered appropriate for this APEC. The COPCs that may be present in soil and groundwater at the northeastern portion of the Site associated with the chemical composition of stored fuels include Metals, PHCs (F1-F4), BTEX and PAHs.

The following two (2) APECs have been determined at the preliminary stage. Should new records indicate additional PCAs following Fisher's review with the potential to create an APEC at the Site, the SAP will be extended to include addition intrusive investigation requirements.

The APECs are defined as follows:

APEC	Location of APEC on Site	Potentially Contaminating Activity (PCA)	Location of PCA (on-site or off-site)	Contaminants of Potential Concern (COPCs)	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC A	Entire Site	**PCA 30** – Importation of Fill Material of Unknown Quality Inferred utilization of fill materials during Site development.	On-Site	Metals, PHCs (F1-F4), BTEX, PAHs	Soil
APEC B	Northeastern portion of the Site, near southeast corner of residential building	**PCA 28** – Gasoline and Associated Products Storage in Fixed Tanks Presence of a disconnected furnace oil AST in the basement of the residential house at northeast portion of Site.	On-Site	Metals, PHCs (F1-F4), BTEX, PAHs	Soil and Groundwater

The proposed Phase Two ESA will address the APECs, and the relevant COPCs, in the potentially impacted media.

3. OBJECTIVES

The specific objectives of the work are to assess COPCs at the Site, such as: Metals, PHCs (F1-F4), BTEX, and PAHs, in soil and/or groundwater samples. Selected surface and subsurface soil samples will also be analyzed for pH to determine if the generic Site Condition Standards are applicable to the Site. The overall objective for the work is conducted as a requirement of development application to the support the future residential condominium redevelopment

4. WORK PROPOSED

To meet the objectives noted above, the work should generally consists of the following:

1. Advance five (5) boreholes, to relevant depth in order to capture the first encountered aquifer, to collect soil and groundwater samples, to assess the fill material soil in all boreholes, and groundwater in proximity to the heating oil AST.
2. Specifically, boreholes/monitoring wells will be advanced within the APECs defined in Fisher's on-going Phase One ESA at the Site.
3. Collection of soil and groundwater samples from the boreholes/monitoring wells and submission to

the laboratory for analysis of Metals, PHCs (F1-F4), BTEX, PAHs and/or pH parameters.

4.1. RATIONALE

Proposed investigative locations will be chosen to address the identified APECs at the Site.

Fisher proposes to advance boreholes/monitoring wells within the two (2) APECs (APEC A to B) defined in Fisher's Phase One ESA. COPCs in soil and groundwater include Metals, PHCs (F1-F4), BTEX, and/or PAHs.

4.2. GENERAL CONSIDERATIONS

Considerations regarding the investigation's design (i.e., soil and groundwater sampling locations and the type and frequency of analysis) are based on the objectives and field observations. The following are the general parameters used in the design of the fieldwork:

1. The soil and groundwater sampling plan design is initially based on the information provided by the Phase One ESA and/or previous available reports, and it can be adjusted as the site investigation progressed and the subsurface conditions are revealed by boreholes drilling.
2. A combination of stratified random sampling and judgment sampling is used to identify the areas that are likely to be contaminated, or likely to have differences in contaminant concentrations or in variability.
3. Soil horizons displaying different properties are sampled separately, ensuring that samples from particular depth increments are not mixed with soil from other depths.
4. The media to be sampled includes soil and groundwater.
5. Soil sampling is conducted through the full depth of boreholes. A minimum of one sample is collected for screening from every 0.60 m of vertical borehole or every 0.30-0.60 m of vertical test pit. The number of samples analyzed is defined by the objectives of the Phase Two ESA and Fisher's budget agreed upon by our client. In general, one to two soil samples are analyzed per borehole, with sampling depth depending on the type of expected COPCs, transport pathways, stratigraphy and field screening indications.
6. Groundwater sampling is conducted at least once following well development. Additional sampling may be conducted as required based on results and objectives. Sample analysis will be selected based on the objectives of the investigation point.
7. Water levels will be obtained from each well before the sampling activities start.

5. QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

The quality assurance/quality control (QA/QC) program discussed below is based on sections recommended by the EPA.

5.1. PROJECT/TASK ORGANIZATION

The project is being implemented by Fisher. The final decision for any matter related to the project is with Fisher, also the principal data user.

The following people have been assigned roles within the QA/QC program:

- Project Supervisor — David Fisher, C. Chem., P. Eng.
- Project Manager/Coordinator – Arij Alam, MEnvSc.
- QA Manager — Marius Voinea, P. Geo., B. Sc.
- Field Team Leader — Nnamdi Ezelio
- Data Verification — Kit Ou, H.BSc

5.2. QUALITY OBJECTIVES AND CRITERIA

The data quality objectives are to: characterize the subsurface through logging and screening soils in the field and sampling; collect representative soil samples, collect samples that are representative of the groundwater and collect data that accurately represents hydrogeological conditions (i.e., water levels).

The criteria for assessing this will be:

- Compliance to this QA/QC program;
- Adherence to Fisher Standard Field Procedures;
- Reproducibility of water levels and laboratory analysis from samples over time; and
- Evaluation of QA/QC sample analysis against Fisher standards.

5.3. SPECIAL TRAINING/CERTIFICATIONS

The training and certifications required for the work includes:

- Supervision of the work by a qualified professional for Phase Two ESA work as defined by O. Reg. 153/04, as amended. In this case, work will be supervised by a Professional Engineer or Professional Geoscientist; and

- Fisher employee training for the various operations required.

Fisher training is documented in Fisher's internal training records. David Fisher, of Fisher Engineering Limited, will supervise the work and is a Professional Engineer in Ontario and a Qualified Person as defined by the regulation.

5.4. DOCUMENTATION AND RECORDS

The Sampling and Analysis Plan is to be distributed to project staff.

The raw data from the fieldwork will be filed for reference in paper and electronically. As required, data will be tabulated and/or transferred to logs and presented in appendices. Any work outside of the standard procedures, delays or findings outside of the norm (i.e., odours, staining and excess solids in groundwater samples) will be noted on the field notes.

The data obtained as part of this program includes:

1. Field notes and field forms;
2. Chain of Custody from samples submissions;
3. Laboratory confirmation of analysis requested;
4. Tabulated and verified field data;
5. Borehole logs and figures;
6. Wells sampling data log sheets;
7. Fisher data review forms; and
8. Certificates of analysis from the laboratory.

6. STANDARD OPERATING PROCEDURES

6.1. GENERAL

Prior to commencing any field activities, borehole and test pit locations should be cleared for underground utilities through public utility locates services, as well as the services of a private utility locates company. Utility locates information should be provided in the Site Settings Figures section.

Drilling and test pitting should be conducted utilizing equipment adequate to access borehole or test pit locations, suit soil conditions and Phase Two ESA objectives. Fisher personnel should log the subsurface conditions encountered within each of the boreholes or test pits at the time of the field work.

Soil samples from within the boreholes should be recovered at regular depth intervals by driving a split spoon sampler using standard sampling procedures in accordance with ASTM D1586, or by driving a dual tube sampler. Soil samples should be visually assessed and tested in the field for headspace vapour readings using a 10.6 eV lamp MiniRae 2000 Photo-Ionization Detector (PID) calibrated to 100 parts per million (ppm) Isobutylene.

A minimum of one (1) “worst case” soil sample recovered from each of the advanced boreholes or test pits should be submitted to a laboratory accredited to test the samples in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the EPA, published by the Ministry of the Environment (MOE, now Ministry of the Environment, Conservation and Parks, MECP), as amended.

“Worst case” soil samples should be selected on the basis of field evidence of impact (e.g., staining, odour and/or elevated PID readings), or if no impact is observed, from the surface fill material to assess for potential migration of contaminants from stained ground surface (if any), or from the apparent water table.

Where field observations suggest that impacts are present in a soil sample, a second deeper soil sample should be submitted from that borehole or test pit for laboratory analysis. Whenever the standard for medium and fine textured soil is to be applied, at least one (1) discrete soil sample representing at least 2/3 of the soil at the Site should be collected for determination of grain size distribution.

At least two (2) soil samples, representing surface soil (no more than 1.5 m bgs) and subsurface soil (more than 1.5 m bgs) conditions should be analyzed for pH to determine if the generic MECP Site Condition Standards are applicable.

The groundwater conditions, where encountered, should be recorded at the time of boreholes’ drilling and at completion of each borehole. Generally, if groundwater impacts are suspected, at least three (3) groundwater monitoring wells should be installed at the Site. If VOC impacts are suspected, the construction of the wells should be of 52 mm inside diameter polyvinyl chloride (PVC) pipe to allow for the use of submersible/peristaltic sampling pumps; otherwise, the casing/screen diameter should be selected based on the drilling method. The portion below and intersecting the groundwater table should be constructed of a similar diameter machine-slotted screen to permit future measurement of water levels and the collection of groundwater samples.

Each installed well should be monitored to determine the depth to the groundwater table, and presence/ absence of free phase product within the monitoring well. Prior to sampling, the installed monitoring wells should be developed to remove any water or fluids used during boreholes drilling, and any fine grained material from around the screened interval, by pumping out up to three (3) to five (5) well casing volumes of groundwater, or until water free of visible particulate is yield (whichever comes first), using dedicated low density polyethylene (LDPE) tubing and an inertial pump or a submersible pump. The development

and sampling methodology followed at each of the installed monitoring well locations should be in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", specifically using a Low Flow Purging and Sampling procedure (USEPA EQASOP-GW 001). The pumping rate may vary until the water level has stabilized to ensure the sampling of "fresh" formation water. Indicator field parameters such as Temperature, pH, Specific Conductance, Oxidation/Reduction Potential (ORP), Dissolved Oxygen (DO) and Turbidity should be measured during purging activities at each well. Once the indicator field parameters have stabilized, groundwater samples should be taken upstream of the flow-through cell (to prevent cross-contamination).

Groundwater samples should be collected at each installed monitoring well and submitted to a laboratory accredited to test the samples in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the EPA", published by the MOE (now MECP) on March 9, 2004, as amended. The groundwater samples should be analyzed for COPCs associated with the identified PCAs.

Quality assurance/quality control (QA/QC) samples should be collected and analyzed during the field program as follows:

- At least one (1) field duplicate sample shall be submitted for laboratory analysis for every ten (10) samples submitted for analysis; and
- Where groundwater samples are to be analyzed for VOCs, one (1) trip blank sample shall be submitted for analysis with each laboratory submission.

6.2. BOREHOLE DRILLING

Hollow stem or solid stem auger drilling procedure, and/or direct push technology, can be used when advancing boreholes into the surface and intermediate overburden depths. Diamond core or tricone drilling procedure can be used when advancing boreholes into the bedrock depths.

To minimize cross contamination, clean augers should be used at each borehole location. The used augers should be cleaned with a high-pressure washer containing Alconox® then rinsed with distilled water prior to moving to the next borehole location. During the drilling program, the split spoon samplers should be cleaned with warm water and Alconox® using a scrub brush, then rinsed with distilled water between samples. For direct push drilling, new PVC liners inside the dual tube sampler should be used between samples.

6.2.1. Hollow Stem Auger Drilling

The hollow stem auger drilling procedure provides a temporary casing in the overburden borehole through which sampling devices are advanced and installed. Each hollow stem auger section is typically 1.52 m (5 ft) in length and has an inside diameter (ID) opening of 108 mm (4.25 in) and an outside diameter (OD) of 184 mm (7.25 in). The augers are connected together with bolts and are generally not water-tight. When advancing the augers, a cylindrical steel center plug is attached to drill rods, lowered inside the augers, and positioned at the tip of the lead auger. The center plug is held in the same relative position as the lead auger by advancing the drill rods along with the augers. The center plug is removed from the borehole to permit soil sampling, and reinstalled after sampling is completed.

6.2.2. Solid Stem Auger Drilling

The solid stem auger drilling procedure is used when advancing boreholes into the surface and intermediate overburden depths, having prior knowledge of fairly consolidated dry soils and no significant cave-ins observed during the drilling investigation at the Site. Each solid stem auger section is typically 1.52 m (5 ft) in length and has an ID opening of 114 mm (4.5 in) and an OD of 152 mm (6 in). The augers are connected together with bolts and have no interior communication channels. The augers are advanced to the required sampling depth, and then removed to make room for the split spoon sampler.

6.2.3. Direct Push Drilling

The direct push drilling procedure is used when advancing boreholes into the surface and intermediate overburden depths, having prior knowledge of unconsolidated and displaceable soil conditions. Each sampling tube comes in 0.90 m (3 ft), 1.22 m (4 ft) or 1.52 m (5 ft) long sections and has an OD of 57 mm (2.25 in) equipped with a disposable PVC liner for sample recovery. The sampling tube and rods are pushed by hydraulic down pressure and rapid hydraulic hammering/vibration into the ground, and soil samples are recovered continuously in 0.90 m (3 ft) to 1.52 m (5 ft) sections.

6.2.4. Diamond Core Drilling

The diamond core drilling procedure is used when advancing boreholes into bedrock depths. Bedrock core samples can be obtained using a 2.75 in ID N core with rotary diamond core drilling and water circulation. Rock core samples are recovered continuously in 1.52 m (5 ft) sections and placed in wooden boxes.

6.2.5. Tricone Drilling

The tricone drilling procedure is used when advancing boreholes into bedrock depths and primarily for the purpose of installing monitoring well in the bedrock. The borehole is advanced to the desired depth by grinding and cutting away the surface of the rock surface with the teeth of the tricone drill bit through rotation and

mechanical friction and compressed air. No intact rock samples can be recovered with this procedure, and the pulverized rock will be containerized on-site with other wastes generated from drilling for future off-site removal.

6.3. TEST PIT EXCAVATION

Excavation of test pits can be conducted with an excavator or hand shovel to provide detailed visual examination of near surface soil conditions, and allow for collection of representative soil samples. At the direction of the Fisher staff on-site, the excavator operator is to remove the paved surface and excavate the test pit in depth increments to allow for recording soil types and collection of representative soil samples. Test pit excavation will cease when distinct changes in stratigraphy or materials (or, volatile organics odors, groundwater and/or fluid phase contaminants) have occurred, allowing for collection of separate samples from soil horizons displaying different properties.

Upon achieving the sampling objectives, the test pits will be backfilled on the day of the excavation with previously excavated soils in approximately the same order as they are removed. Following discussion and agreement with the Client, any impacted soil encountered from the test pit will be temporarily stockpiled on polypropylene for future off-site removal, if required, and will not be used to backfill the test pit.

6.4. SOIL SAMPLING PROGRAM

Soil sampling at the Site should be conducted as outlined in the Sampling and Analysis Plan designed on the basis of the information obtained from the Phase One ESA and the Phase One CSM.

6.4.1. Discrete Soil Sampling Equipment

Soil samples should be collected during the boreholes drilling program by means of:

- A 50 mm diameter split spoon sampler driven 610 mm into subsoil by a standard size, 65 kg hammer, falling 760 mm, collecting soil samples at a maximum of 0.76 m (2.5 ft) intervals and at stratigraphic boundaries to a depth of approximately 3.51 m, and continues at 1.52 m (or 0.76 m) intervals to completion depths suitable to achieve the Phase Two ESA objectives. Samples are to be collected at 0.76 m (2.5 ft) intervals using a 0.61 m (2.0 ft) split-barrel sampler, hence 0.15 m (0.5 ft) of soil from each interval will remain un-sampled.

  At the time of sampling, the split spoon sampler is fitted to the sampling rods and lowered into the borehole. The dead weight of the sampler, rods, anvil, and drive weight are left to rest on the bottom of the borehole. The spoon sampler is driven in the soil by imparting recurring blows with the standard size hammer. Once the entire length of the sampler has been advanced, or once

sampler refusal is encountered, the sampler is returned to the surface and opened to retrieve the soil sample.

- A direct push machine that applies static weight and hammer percussion to a rod string in order to advance the probing and sampling rods into the subsurface. Soil samples are collected at 0.90 m (3 ft) to 1.52 m (5 ft) intervals. Once the entire length of the sampler had been advanced, or once sampler refusal is encountered, the sampler is returned to the surface. The disposable PVC liner containing the soil sample is then removed from the sampler cut opened to retrieve the soil sample.

6.4.2. Grab Soil Sampling Equipment

Grab soil samples should be collected from the walls and/or floor of the excavated test pits with the excavator bucket or hand shovel during the progression of excavation from the ground or soil stockpile. Soil samples will be retrieved from the soil in the excavator bucket or hand shovel using a stainless steel trowel. Collection of grab soil samples is conducted using the following equipment and procedures:

- A clean stainless steel trowel should be used to collect sufficient material to fill the sample containers.
- Soil samples collected from a soil stockpile are to be collected at a depth of at least 0.30 m below the surface of the pile.
- Sample containers should be filled directly from the sampling device, removing stones, twigs, grass, etc., from the sample.
- The caps on the sample containers should be secured immediately.
- Sample containers should be labeled with the appropriate information (sample ID, location, depth, method, date and time of sampling, chemical parameters to be analyzed).
- Decontaminated sampling equipment should be used at each sample location to minimize cross-contamination.

Subsurface conditions encountered in the boreholes and test pits, including soil type, moisture content, soil colour and visual indications of environmental impacts, if applicable, should be logged at the time of the field program.

A representative portion of each recovered soil sample should immediately be placed in laboratory supplied sample containers. Glass vials containing methanol are used for sampling of soil to be tested for volatile organic parameters. The caps on the sample containers are secured immediately, and the sample containers are labeled with the appropriate information (sample ID, location, depth, date and time of sampling, and chemical parameters to be analyzed). The remaining portion of the soil sample should be placed into a re-sealable bag to be used for field screening of combustible soil vapour concentrations. New disposable nitrile gloves and a cleaned stainless steel spatula should be used during each sampling

event to remove the soil cores from the sampler and to transfer the samples into plastic bags and/or glass jars. Hermetic samplers are an acceptable alternative for sampling of soil to be tested for VOCs, BTEX, and PHC (F1).

Samples requiring cooling should be placed into a cooler with ice or cold pack for delivery to the laboratory.

6.5. FIELD SCREENING MEASUREMENTS

Soil samples should be screened in the field using a MiniRae 2000 PID, which is generally used for applications where high sensitivity is needed to monitor ppm levels of VOCs. The MiniRae 2000 PID has a measurement accuracy range of ±2 ppm or 10% of reading between 0 ppm and 2000 ppm, and ±20% of reading for >2000 ppm. It has an internally integrated pump with a flow rate of 450-550 cc/min. Work humidity conditions are from 0% to 95% relative humidity (non-condensing). The MiniRae 2000 is equipped with a 10-inch hydrophobic probe. The probe includes a replaceable water trap filter disk that prevents particulates and water from entering the instruments flow system.

Calibration consists of exposing the instrument to gas samples of known concentration. The combustible and toxic gas samples should have concentrations in approximately the middle of the detection range. The PID is calibrated to an isobutylene standard.

The MiniRae 2000 should be calibrated in the field at the beginning of work each day. The calibration records should be recorded each time the MiniRae 2000 is calibrated. This information is useful for establishing a calibration interval and keeping track of individual instrument performance. Each of the recovered soil samples should be visually classified and screened in the field for headspace vapour concentration (combustible soil vapour and total organic vapour) using the MiniRae 2000. Selection of samples to be submitted for laboratory analysis should be based on the headspace vapour concentration and/or physical evidence of odours/staining. If no odours/staining are noted in the soil samples, the samples with the highest field screening measurement (i.e., highest headspace vapour concentration) should be selected for laboratory analysis. In addition, if odours/staining are noted in the soil sample or soil headspace vapour concentrations are elevated, additional soil samples should be selected from below the anticipated impacted zone for laboratory analysis, for vertical delineation purposes. Soil vapour concentrations readings taken during the soil sampling should be included in the Log of Boreholes and Test Pits.

The depth to groundwater and the presence or absence of non-aqueous phase liquids (NAPL) should be measured in all monitoring wells using a Solinst Oil/Water Interface probe, model 122, or Heron Oil/Water Interface Meter, Model H01L/SM01L (interface meter). The sensor accuracy is 1.0 mm. The manufacturer recommends annual calibration of the interface probe. A transparent bailer with a bottom

valve should also be used to collect a fluid sample in order to observe the presence or absence of free-flowing product in the monitoring wells

6.6. MONITORING WELL INSTALLATION AND DEVELOPMENT

Groundwater monitoring wells installed at the Site should comprise flush-threaded, Schedule 40, PVC riser. The portion below and intersecting the groundwater table should be constructed of a similar diameter machine-slotted 0.25 mm (10 slot) screen.

Monitoring wells should be constructed using the following procedure:

- The end cap is threaded onto the bottom of the well screen and the well screen is lowered to the bottom of the open borehole by threading together the necessary number of well screen and riser lengths;
- The monitoring well materials are lowered into the open borehole after the bottom of the borehole has been cleaned, and all the soil/bedrock cuttings and solid stem augers or rock coring rods are removed; or through the hollow stem augers or push-probe casings, which are left in place to prevent the borehole from collapsing;
- The primary filter pack material consists of Type 2 silica sand. The size of the filter pack material should be selected based on the texture of the formation in which the well is screened and the slot size of the well screen. The filter pack is installed in the annulus between the borehole and the well screen by hand-pouring from the surface;
- The hollow stem augers or push-probe casings are removed as the filter pack is placed. The annular space is backfilled with Type 2 silica sand from the bottom of the well to approximately 0.61 m above the top of the screen;
- A bentonite or hydrated grout seal is installed from the top of the filter pack to approximately 0.30 m below grade in each of the boreholes. Unprocessed 9.5 mm (3/8 in) diameter granular bentonite (HolePlug®) or hydrated Quick Grout is installed in lifts of 0.15 m to 0.30 m, or is pumped downhole through a tremie pipe from the bottom up; and
- All of the monitoring wells are finished at approximately 0.10 m below grade or as stick-up wells, are fitted with steel flush-mount or aboveground protectors, and should be locked to prevent tampering. The construction details for each monitoring well should be presented in the Log of Boreholes.

To minimize the potential for cross contamination during monitoring well installation, the following actions should be completed:

- The wells are designed and assembled following the completion of the drilling activities. The project manager and field personnel should review the soil stratigraphy observed in each borehole to ensure that the proposed monitoring well screen does not present a significant pathway for the vertical migration of chemicals (i.e., does not cross any underlying confining layers);
- The presence of the bentonite seal (or hydrated grout) reduces the likelihood of any water impacts from the surface reaching the monitoring well annulus;
- Only new well materials should be used; these materials are factory-cleaned and are to be delivered to the site wrapped in plastic;
- New nitrile gloves should be worn when handling well screen and riser materials;
- No PVC cements, solvents or lubricants should be used in the construction of wells; and
- The top of the well casing should be covered using a PVC slip cap or a J-Plug to prevent filter pack sand or bentonite (or hydrated grout) backfill material from entering the well pipe during the well installation activities.

Development is intended to establish good hydraulic connection between the well screen and the surrounding aquifer material, so that any future samples collected at the monitoring well can be considered representative of the subsurface conditions.

Prior to sampling, the installed monitoring wells should be developed to remove any water and/or drilling fluids added during drilling/installation, and any fine grained material from around the screened interval, by purging up to three (3) to five (5) well casing volumes of groundwater, or until water free of visible particulate is yield (whichever comes first), using a dedicated LDPE tubing and an inertial pump or a submersible pump. The volume of fluid evacuated from each well is measured using a calibrated bucket and the volumes are recorded on standard field forms. Groundwater recovered from each of the monitoring wells should be inspected at the completion of the development process and the observed groundwater conditions are to be recorded on standard field forms.

6.7. FIELD MEASUREMENT OF WATER QUALITY PARAMETERS

Groundwater sampling in the installed monitoring wells should be conducted using the Low Flow Purging and Sampling procedure (USEPA EQASOP-GW 001), by means of a Horiba U-52 Flow-Through Cell equipped with sensors that simultaneously measure indicator field parameters such as Temperature, pH, Specific Conductance, Oxidation/Reduction Potential (ORP), Dissolved Oxygen (DO) and Turbidity.

Measurement principle, range, resolution, repeatability and accuracy for each of the sensors incorporated in the Horiba U-52 Flow-Through Cell are presented in the following table:

Table 1: Horiba U-52 Flow –Through Cell Parameters

Sensor	Measurement Principle	Range	Resolution	Repeatability	Accuracy
pH	Glass electrode method	pH 0 to 14	0.01pH	±0.05pH	±0.1pH
Dissolved Oxygen	Polarographic method	0 to 50.0 mg/L	0.01 mg/L	±0.1 mg/L	0 to 20 mg/L: ±0.2 mg/L, 20 to 50 mg/L: ±0.5 mg/L
Conductivity	4 AC electrode method	0 to 10 S/m (0 to 100 mS/cm)	0.000 to 0.999 mS/cm: 0.001 1.00 to 9.99 mD/cm: 0.01 10.0 to 99.9 mS/cm: 0.1 0.0 to 99.9 mS/m: 0.1 0.100 to 0.999 S/m: 0.001 1.00 to 9.99 S/m: 0.01	±0.05% F.S.	±1% F.S. (Median of two-point calibration)
Temperature	Thermistor method	-10 to 55°C	0.01°C	±0.10°C (at calibration point)	JIS class B platinum thermometer sensor (±0.3 + 0.005 / 1°C)
Turbidity	LED transmitting light source, 30° forward scattering method	0 to 800 NTU	0.1 NTU	±5% (reading) or ±0.5 NTU whichever is greater	±5% (reading) or ±1 NTU whichever is greater
Oxidation Reduction Potential	Platinum electrode method	-2000 mV to +2000 mV	1 mV	±5 mV	±15 mV

The measurement of Indicator Field Parameters is to be conducted in accordance with the following procedure:

- Dedicated 5/8 inch ID LDPE tubing is attached to a stainless steel Mini-Monsoon submersible pump (or dedicated 1/4 inch OD LDPE tubing, connected to flexible 3/16 inch ID silicone tubing fed through a peristaltic pump) placed at a depth corresponding to the middle of the screened interval of each monitoring well, and groundwater is pumped at variable flow rates.
- After the water level has stabilized, the flow-through-cell is connected to the LDPE tubing through a "T" connector to monitor the indicator field parameters. When excessive turbidity is encountered with the pump startup, the well is purged for a while without connecting up the flow-through-cell, in order to minimize particulate buildup in the cell. Water level drawdown measurements are made using a Solinst Oil/Water Interface probe.

- During well purging, indicator field parameters (turbidity, temperature, specific conductance, pH, ORP, DO) are monitored at a frequency of five (5) minute intervals or greater, if the pump's flow rate is able to "turn over" at least one flow-through-cell volume between measurements. For a 250 mL flow-through-cell with a flow rate of 50 mL/min, the monitoring frequency is every five (5) minutes. For a 500 mL flow-through cell with a flow rate of 50 mL/min., the monitoring frequency is every ten (10) minutes. If the cell volume cannot be replaced in the five (5) minute interval, then the time between measurements should be increased accordingly. Note that during the early phase of purging, emphasis should be put on minimizing and stabilizing pumping stress, and recording those adjustments followed by stabilization of indicator parameters.
- Purging is considered complete and sampling should begin when all the above indicator field parameters have stabilized. Stabilization is considered to be achieved when three (3) consecutive readings are within the following limits:
    - Turbidity (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
    - Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
    - Specific Conductance (3%),
    - Temperature (3%),
    - pH (± 0.1 unit),
    - Oxidation/Reduction Potential (± 10 milliVolts).
- A transparent flow-through-cell should be used, allowing field personnel to watch for particulate build-up within the cell. This build-up may affect indicator field parameter values measured within the cell.

The water pump and the Horiba U-52 unit should be calibrated prior to arriving on the Site for the first time. The calibration records should be recorded each time the Horiba U-52 is calibrated, and are provided by the equipment rental supplier.

6.8. GROUNDWATER SAMPLING PROGRAM

6.8.1. Low Flow Sampling Procedure

Groundwater sampling in the installed monitoring wells should be conducted using the Low Flow sampling procedure (USEPA EQASOP-GW 001). The Flow-Through Cell is connected through a dedicated 5/8 inch ID HDPE tubing to a stainless steel Mini-Monsoon submersible pump (or dedicated

1/4 inch OD LDPE tubing, connected to flexible 3/16 inch ID silicone tubing fed through a peristaltic pump) placed at a depth corresponding to the middle of the screened interval of each monitoring well.

The sampling of groundwater in the wells should be conducted in accordance with the following procedure:

- The static groundwater level in the well is measured before installing the pump (or inserting the tubing). The initial water level is recorded on the purge data log sheet.
- The submersible pump, electrical lines (if applicable) and tubing are lowered slowly (to minimize disturbance) into the well to the appropriate depth.
- The sampling depth is selected as specified in the Sampling and Analysis Plan. The pump intake is kept near the mid-section of the screened portion of the well, to minimize mobilization of particulates present in the bottom of the well.
- Pump tubing lengths above the top of well casing are kept as short as possible to minimize heating the groundwater in the tubing by exposure to sun light and ambient air temperatures. Heating may cause the groundwater to degas, which is unacceptable for the collection of samples for VOC and dissolved gases analysis.
- Before starting the pump, water level in the well is measured.
- From the time the pump starts, purging continues until the time the samples are collected. The purged water is discharged into a graduated bucket to determine the total volume of groundwater purged. This information is recorded on the purging data log sheet.
- The pump is started at low speed and the speed is slowly increased until discharge occurs. Water level is checked. Pumping rate will be adjusted to match the pumping rate used during previous sampling events, if applicable.
- Pump speed is adjusted until there is little or no water level drawdown. If the minimal drawdown that has been achieved exceeds 0.3 m, but remains stable, purging can continue. The water level and pumping rate are monitored and recorded every five (5) minutes during purging. Pumping rate adjustments are recorded (both time and flow rate). Pumping rates are, as needed, reduced to the minimum capabilities of the pump to ensure stabilization of the water level. Adjustments should be made in the first fifteen (15) minutes of pumping in order to help minimize purging time. During pump start-up, drawdown may exceed the 0.3 m target and then "recovers" somewhat as pump flow adjustments are made. The volume of water between the initial water level and the stabilized water level is calculated and added to the volume of the water which occupied the pump's tubing. This combined volume of water should be purged from the well after the water level has stabilized before samples are collected.
- The flow rate used to achieve a stable pumping level should remain fairly constant while monitoring the indicator parameters for stabilization and while collecting the samples.

6.8.2. Collection of Groundwater Samples

When samples are collected for laboratory analysis, the pump's tubing should be disconnected from the "T" connector with a valve and the flow-through-cell. The samples should be collected directly from the pump's tubing.

Groundwater samples to be analyzed for VOCs should be collected first and directly into pre-preserved sample containers. The VOC sample vials are filled so the water formed a convex meniscus at the top of the vial, thus when capped no air space exists in the vial. The vial will be turned over and tapped to check for bubbles in the vial. If air bubbles are observed in the sample vial, the procedure is repeated until no air bubbles appear.

All sample containers are filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence. During purging and sampling, the pump tubing should remain filled with water to avoid aeration of the groundwater. Pre-preserved sample containers should be used, as required by analytical methods.

As determination of filtered metal concentrations may be a sampling objective, filtered water samples are collected using the same low flow procedures. An in-line filter (transparent housing) should be used, and the filter size should be 0.45 µm. The filter should be pre-rinsed with groundwater prior to sample collection. The filter should be free of air bubbles before samples are collected.

Each collected sample should be labeled. Samples requiring cooling should be placed into a cooler with ice or cold pack for delivery to the laboratory.

Sampling should progress at the Site from the well that is expected to be least contaminated to the well that is expected to be most contaminated to minimize the potential for cross-contamination.

The monitoring equipment should be decontaminated between each well. Dedicated sampling LDPE tubing should be used for each monitoring well. Water sampling is conducted using a new pair of disposable nitrile gloves for each sample location.

6.9. SEDIMENT SAMPLING PROGRAM

For the purposes of this procedure, sediments are mineral and organic materials situated at a maximum depth of 0.15 m beneath an aqueous layer. The aqueous layer may be either static, as in lakes, ponds and impoundments; or flowing, as in rivers and creeks.

The purpose of sediment sampling is to evaluate the possibility that the on-site or adjacent water body acts as a contaminant migration pathway and/or source of contamination on, in or underneath the Site, by assessing potential presence of COPCs within the water body’s bed.

Sediment is to be collected from beneath the aqueous layer directly using a shovel, trowel, or auger.

Following collection, sediment is to be transferred directly from the sampling device to a sample container of appropriate size and construction for the analyses requested.

Selection of the sampling device is contingent upon the depth of water at the sampling location, and the physical characteristics of the sediment to be sampled.

6.9.1 Sampling with a Trowel or Scoop

For the purpose of this method, surface sediment is considered to range from 0 to 0.15 m in depth. Collection of surface sediment from beneath the shallow aqueous layer is accomplished with a shovel, trowel or scoop. Representative samples are to be collected with the following procedure:

- Using a decontaminated sampling tool, the desired thickness and volume of sediment is to be removed from the sampling area.
- The sample will be transferred into a dedicated sample container.
- Surface water is to be decanted from the sample container prior to sealing; the fine sediment fraction is retained during this procedure.

6.9.2 Sampling with a Bucket Auger or Tube Auger

For the purpose of this method, surface sediment is considered to range from 0 to 0.15 m in depth. Collection of surface sediment from beneath a shallow aqueous layer is accomplished with a system consisting of a bucket auger or tube auger, a series of extensions, if required, and a "T" handle.

The bucket auger or tube auger is to be driven into the sediment and used to extract a core. The various depths represented by the core are anticipated to be homogenized; or, a subsample of the core will be taken from the appropriate depth. Representative samples are to be collected with the following procedure:

- The auger head is attached to the required length of extensions, and then the "T" handle is attached to the upper extension.
- The area to be sampled is to be cleared of any surface debris.
- The bucket auger or tube auger will be inserted into the sediment at a 0 to 20° angle from vertical. This orientation minimizes spillage of the sample from the sampler upon extraction from the sediment and water.
- The auger will be rotated to cut a core of sediment, then it is to be slowly withdrawn;

- The sample (or a specified aliquot of sample) will be transferred into a dedicated sample container.

All data are to be documented on field data sheets.

6.10. SAMPLE HANDLING AND CUSTODY

Sample handling will be conducted according to Fisher's Sample Handling, Collection and Storage Standard Field Procedure. In general, Fisher will collect the samples in laboratory-supplied sample containers, containing preservatives as required by the Analytical Protocol. Samples will be stored on ice or in a refrigerator until transported to the laboratory.

Samples will be labeled with the sample number, sample date and Fisher project number. Fisher will complete the laboratory-specific Chain of Custody as per Fisher's Chain of Custody Completion Standard Field Procedure and laboratory requirements.

Sample shipment to the laboratory will be arranged by Fisher, as required. Fisher will keep a copy of the Chain of Custody for verification of sample receipt by the laboratory.

6.11. RESIDUE MANAGEMENT

Soil residues generated from drilling and sampling, water from well development and purging and fluids from equipment cleaning should initially be containerized on-site until their quality is assessed against the applicable MECP site condition standards. Should exceedances of these standards be determined, a composite soil residue sample must be analyzed for leachate quality criteria prior to removal from the Site to determine whether the soils are hazardous or non-hazardous with respect to disposal procedures/locations. Transportation and disposal of impacted soil residues must be conducted by/to an MECP-licensed carrier/receiving facility. If soil analyses indicate compliance with the applicable MECP site condition standards, soil residues shall be removed from the Site and stored in containers labeled for specific property uses, prior to disposal to a landfill that accepts clean fill.

7. ANALYTICAL METHODS

Analysis will be conducted in accordance with the MOE analytical protocols by an analytical laboratory accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) or Standards Council of Canada (SCC), as conforming to ISO Standard 17025.

Fisher will review sample submission documentation received electronically from the laboratory and verify that all samples have been accounted for and that requested analysis is being conducted. Errors or omissions will be brought to the laboratory's attention. The laboratory will complete additional quality control testing (i.e., duplicates and method spikes) as required by its certification. Additionally, Fisher will

evaluate laboratories' quality report for issues with the data. If unacceptable variance in the data is found, Fisher will resample if possible, and if required.

8. INSTRUMENT/EQUIPMENT TESTING, INSPECTION AND MAINTENANCE

Instruments used include inter-phase probe/water-level meter and PID equipped for hydrocarbon and chlorinated solvent detection. The PID equipped with a 10.6 eV lamp will be calibrated to 100 ppm isobutylene prior to commencing on the day of fieldwork. Instruments used for the monitoring of groundwater will be inspected and maintained according to Fisher's Equipment Maintenance and Calibration Standard Field Procedure. In general, the equipment will be examined for defects and cleaned daily prior to use. Defects will be recorded on Fisher's Equipment Calibration/ Maintenance Form and addressed before the start of fieldwork. The inter-phase probe/water-level meter will be cleaned with soapy water after each use to prevent cross-contamination between wells.

9. INSTRUMENT/EQUIPMENT CALIBRATION AND FREQUENCY

For this work program, inter-phase probe/water-level meter is calibrated annually, as required by manufacturer's instructions. The PID will be calibrated in the field at the beginning of work each day. The calibration activity will be recorded on Fisher's Equipment Calibration/Maintenance Form. Works for this task will occur in accordance with Fisher's Equipment Maintenance and Calibration Standard Field Procedure. Calibration records/certificates for the water pump and Horiba U-52 unit are provided by the equipment rental supplier.

10. INSPECTION/ACCEPTANCE OF SUPPLIES AND CONSUMABLES

Supplies to be used during the sampling include detergents, gloves and sampling equipment (bottles and bags). Detergents, gloves and bottles will be provided directly by suppliers and will be used from new, unopened containers/bags at the Site.

11. DATA MANAGEMENT

Fisher will record all field data in Fisher forms and field books, as required. Field data will be tabulated into a database and verified by Fisher.

Data obtained from the boreholes and monitoring wells investigation and laboratory will be managed in Fisher's database.

12. ASSESSMENTS AND RESPONSE ACTIONS

Adherence to the Sampling and Analysis Plan will be assessed primarily by the Fisher Project Manager and overseen by the Fisher QA Manager.

To ensure adherence to the Sampling and Analysis Plan, the Fisher Project Manager will discuss Site activities with field staff to verify work completed. Omissions will be identified and field staff will be requested to verify data when next onsite.

13. REPORTS

Reports to our client will consist of:

- Memos including tabulated data, figures, QA/QC discussion, as required;
- Reports including tabulated data, figures, QA/QC discussion, as required; and
- Electronic version of field data.

The data generated will be used in a report provided to the MECP, if required. The report will include a discussion of the QA/QC findings and implications of the findings.

14. DATA REVIEW, VERIFICATION AND VALIDATION

As identified in the sections above, Fisher will:

- Verify the recording and integrity of written field data;
- Verify the soil and groundwater sample receipt and analysis requested by the laboratory;
- Tabulate and review the laboratory-supplied analytical results; and
- Verify the electronic data input by Fisher.

15. VERIFICATION AND VALIDATION METHODS

The data handled by Fisher will be verified by a manual check of data received and lab request. Verification and validation of laboratory analysis will be completed by determining the relative percent difference (RPD) for duplicate samples by Fisher. Fisher will also review the analysis of blanks, laboratory-completed duplicates, and matrix spikes and verify that these are within the laboratory-specified range.

To calculate RPDs, Fisher will use the following formula:

$\Delta\% = \left| S - D \right|_x 100\% / ½ (S + D)$

Where: $\Delta\%$ = relative percent difference (RPD)

S = sample value

D = duplicate or replicate value

Notes:

- RPD is calculated only for result pairs with concentrations greater than 5x the method detection limit in both samples.
- RPDs are not calculated where results are below the laboratory detection limits for sample pair.

The acceptable guideline limits for various analysis groups are noted below:

Parameter Category	Recommended RPD at Concentrations Exceeding 5 times the Method Detection Limit
Organics in solids • PAH • Volatile organics • PHC • Most others*	 50% 40% 40% 40%
Organics in water*	30%
Metals in solids	30%
Metals in water	20%
General inorganics in solids	30%
General inorganics in water	20%

"Derivatized acid extractables, like chlorophenol, and pesticides, will tend to be higher

Source: RPD screening values from the October 24, 2005 letter to BC Environment from the BC Environmental Laboratory Quality Assurance Advisory Committee

Where the target RPD is exceeded, we will investigate to assess whether the cause can be determined. We will also assess whether the RPD exceedance is material to the use of the data and if it impacts all data in that category.

Where detectable concentrations are found in a trip blank or field blank, Fisher will evaluate the possible causes of the finding and impacts on data.

Where laboratory QA/QC results indicate issues with data quality, Fisher will also evaluate the impacts of this information and report on our findings.

FISHER ENGINEERING LIMITED

Per:

David Fisher, P. Eng., C. Chem., QP_{ESA}
Principal

APPENDIX B – LOG OF BOREHOLES

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH1(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Track & D-100 Track

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				86.63			
0	0	76mm ASPHALT GRANULAR MATERIAL		0.30 / 86.33		SS-1	12
2		FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist					
4	1				23-2124-1	SS-2	8
				1.37 / 85.26			
6	2	SILTY SAND: Brown, trace of clay/gravel, moist, dense				SS-3	41
8						SS-4	34
10	3					SS-5	40
12				3.96 / 82.67			
14	4	SILT: Grey, pockets of sandy silt, trace to some sand, trace to some clay, moist, dense to very dense				SS-6	36
16	5						
18							
20	6					SS-7	65
22							
24	7						
26	8					SS-8	63
28							
30	9					SS-9	55
32				9.75 / 76.88			
	10	CLAYEY SILT: Grey, trace to some sand, very moist, stiff					
34							

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

SS-2: 8.9%, 10.0%

SS-3: 13.8%

SS-4: 17.7%

SS-5: 17.7%

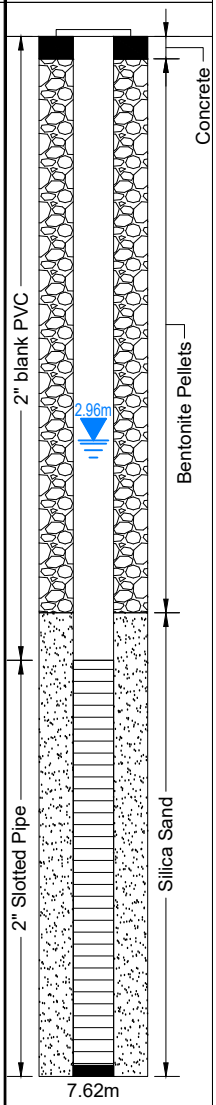
SS-6: 11.7%

SS-7: 11.1%

SS-8: 18.4%

SS-9: 13.1%

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: 9.14m; 6 December 2023: 2.96m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH1(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Track

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
36	11	CLAYEY SILT: Grey, trace to some sand, very moist, stiff				SS-10	13
38	12						
40				12.19/ 74.44			
		WEATHERED SHALE: Grey, dry, hard				SS-11	100+
42	13						
44							
						SS-12	100+
46	14					RC-1	Run=0.72m Rec=0.63m, 87.5% RQD=42%
				14.48/ 72.15			
48		SHALE: Grey, dry, hard				RC-2	Run=1.30m Rec=1.30m, 100.0% RQD=100.0%
50	15						
52	16						
54						RC-3	Run=1.55m Rec=1.55m, 100.0% RQD=85.2%
56	17						
				17.53/ 69.10			
58		End of borehole at 17.53m					
	18						
60							
62	19						
64							
66	20						
68							
	21						
70							

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

14.7%

4.0%

6.9%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: 9.14m; 6 December 2023: 2.96m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH2(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Track

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				85.68			
0	0	TOPSOIL		0.30 / 85.38	23-2124-2	SS-1	14
2		FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist				SS-2	15
4	1			1.37 / 84.31			
6	2	SILTY SAND: Brown, moist, very dense				SS-3	54
8						SS-4	100+
10	3			3.05 / 82.63			
		SILT TO FINE SANDY SILT: Grey, moist, dense to very dense				SS-5	49
12	4						
14							
16	5					SS-6	40
18							
20	6					SS-7	67
22	7						
24							
26	8					SS-8	59
28							
30	9					SS-9	63
32		SANDY SILT TILL: Grey, pieces of shale, trace of gravel, thin layer of clayey silt around 10m, moist to dry, dense		9.60 / 76.08			
34	10						

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

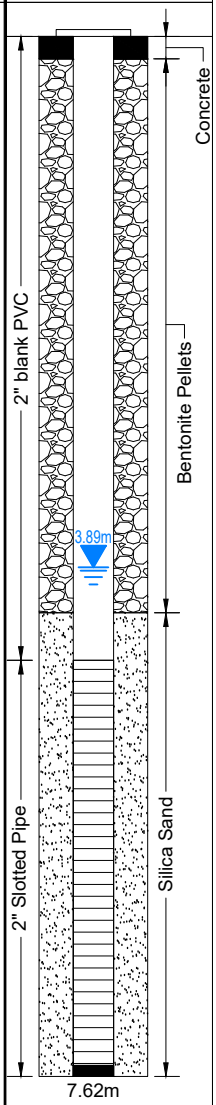
MOISTURE CONTENT (%) ● 10 20 30 40

14.1%

12.3%

12.3%

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; 6 December 2023: 3.89m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH2(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Track

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	SAMPLES Type NO.	"N" VALUE
36	11	SANDY SILT TILL: Grey, pieces of shale, trace of gravel, moist to dry, dense				SS-10	33
38							
40	12	WEATHERED: Grey, dry, hard		12.19/73.49		SS-11	100+
		End of borehole at 12.29m		12.29/73.39			
42	13						
44							
46	14						
48							
50	15						
52	16						
54							
56	17						
58							
60	18						
62	19						
64							
66	20						
68							
70	21						

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

● 12.3%

● 8.5%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: Dry; 6 December 2023: 3.89m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH3(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-100 Track Solid Stem

DRILLING DATE: 8 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				86.60			
		TOPSOIL		0.30 / 86.30	23-2124-3	SS-1	4
4	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist				SS-2	6
				1.37 / 85.23			
6	2	SILTY SAND to SANDY SILT: Brown, moist to very moist, compact to dense				SS-3	17
8						SS-4	39
10	3				23-2124-4	SS-5	33
12							
14	4			4.57 / 82.03			
16	5	SILT TO FINE SANDY SILT: Grey, trace of clay, moist, very dense				SS-6	68
18							
20	6					SS-7	56
22							
24	7						
26	8					SS-8	60
28							
30	9					SS-9	76
32				9.76 / 76.84			
	10	CLAYEY SILT: Grey, trace to some sand, very moist, stiff					
34							

PENETRATION TESTING (SPT) ▲ 20 40 60 80

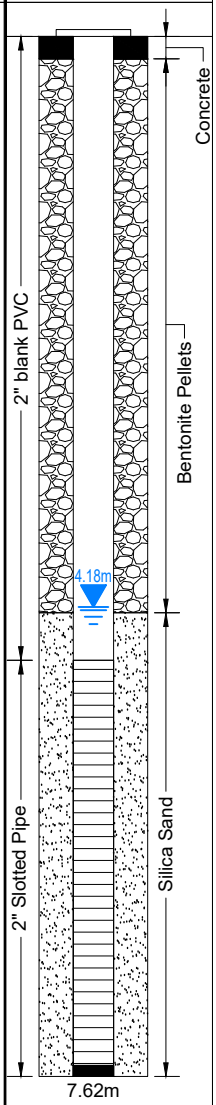
SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

SS-2	9.6%
SS-3	9.0%
SS-4	16.0%
SS-5	18.2%
SS-6	11.3%
SS-7	12.5%
SS-8	12.2%
SS-9	16.2%

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: 10.67m; 6 December 2023: 4.18m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH3(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-100 Track Solid Stem

DRILLING DATE: 8 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
36	11	CLAYEY SILT: Grey, trace to some sand, very moist, stiff				SS-10	11
38				11.60/ 75.00			
	12	SANDY SILT TILL: Grey, trace to some gravel, moist, dense				SS-11	38
42	13						
44		Refusal to spoon @13.72m Possibly due to bedrock				SS-12	100+
		End of borehole at 13.72m		13.72/ 72.88			
46	14						
48							
	15						
50							
52	16						
54							
56	17						
58							
	18						
60							
62	19						
64							
66	20						
68							
	21						
70							

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

11.5%

8.6%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: 10.67m; 6 December 2023: 4.18m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH4(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Track Solid Stem

DRILLING DATE: 6 November, 2023

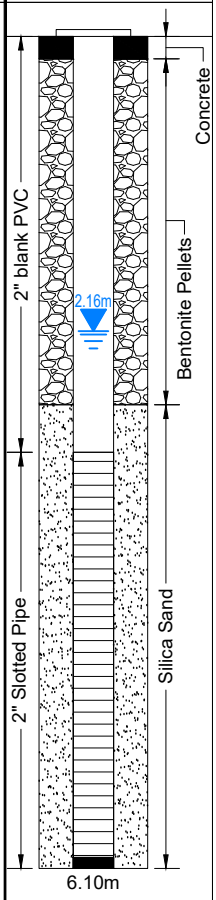
DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				83.20			
0	0	TOPSOIL		0.30 / 82.90		SS-1	5
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist			23-2124-5	SS-2	7
4				1.52 / 81.68			
6	2	SILTY SAND: Brown, trace of clay, moist to very moist, compact to dense				SS-3	17
8						SS-4	41
10	3	SILT TO SANDY SILT: Grey, trace to some clay, moist, dense to very dense		2.79 / 80.41		SS-5	53
12							
14	4					SS-6	58
16						SS-7	44
18	5						
20	6					SS-8	92
22		CLAYEY SILT: Grey, some sand, trace of gravel, very moist, stiff to very stiff		6.71 / 76.49			
24	7						
26	8					SS-9	15
28							
30	9			9.30 / 73.90		SS-10	100+
32		WEATHERED SHALE: Grey, seam/layers of limestone/ cemented shale, dry, hard					
34	10					SS-11	100+

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40



Groundwater Depth (m): on completion: Dry; 6 December 2023: 2.16m

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH4(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-50 Track Solid Stem

DRILLING DATE: 6 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: LAB ID	SAMPLES: Type NO.	SAMPLES: "N" VALUE	PENETRATION TESTING (SPT) ▲ 20 40 60 80 / SHEAR STRENGTH (Kpa) ✚ 40 80 120 160	VAPOUR READING (ppm) □ 20 40 60 80 / MOISTURE CONTENT (%) ● 10 20 30 40	PIEZOMETER OR WELL CONSTRUCTION
36	11	WEATHERED SHALE: Grey, seam/layers of limestone/ cemented shale, dry, hard		10.97/ 72.23		SS-11	100+			
		End of borehole at 10.97m								
38	12									
40										
42	13									
44										
46	14									
48										
50	15									
52	16									
54										
56	17									
58										
60	18									
62	19									
64										
66	20									
68										
70	21									

Groundwater Depth (m): on completion: Dry; 6 December 2023: 2.16m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH5(MW) SHEET. 1 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-100 Track Solid Stem

DRILLING DATE: 6 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				82.63			
0	0	TOPSOIL		0.20 / 82.43	23-2124-6 23-2124-7 (DUP)	SS-1	1
2	1	FILL: Dark brown to brown sand/silty sand, trace of gravel/roots/topsoil, moist				SS-2	9
4				1.17 / 81.46			
6	2	SILT & SAND: Brown, moist, compact to dense				SS-3	31
8				2.59 / 80.04		SS-4	41
10	3	SILT TO FINE SANDY SILT: Grey, trace to some clay, moist to very moist, dense to very dense				SS-5	37
12	4						
14							
16	5					SS-6	60
18				5.49 / 77.14			
20	6	CLAYEY SILT: Grey, some sand, occ. trace of gravel, very moist, firm				SS-7	7
22	7						
24							
26	8	SANDY SILT TILL: Grey, some clay, trace of gravel, moist, dense to very dense		7.77 / 74.86		SS-8	31
28							
30	9					SS-9	100+
32	10						
34		WEATHERED SHALE: Grey, dry, hard		10.67 / 71.96		SS-10	100+
				10.74			

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

SS-1: 13.9%, 17.1%

SS-3: 13.6%

SS-4: 12.5%, 12.5%

SS-5: 13.1%

SS-6: 12.2%

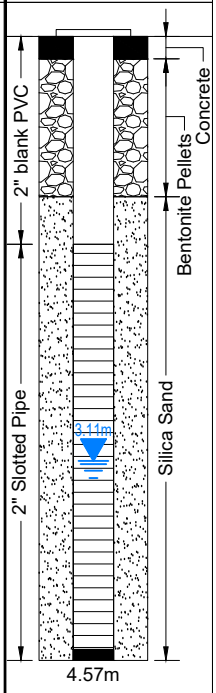
SS-7: 23.1%

SS-8: 13.7%, 8.0%

SS-9: 8.9%

SS-10: 2.5%

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: 10.51m; 6 December 2023: 3.11m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH5(MW) SHEET. 2 of 2

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-100 Track Solid Stem

DRILLING DATE: 6 November, 2023

DEPTH (feet)	DEPTH (meters)	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: LAB ID	SAMPLES: Type NO.	SAMPLES: "N" VALUE	PENETRATION TESTING (SPT) ▲ 20 40 60 80 / SHEAR STRENGTH (Kpa) ✚ 40 80 120 160	VAPOUR READING (ppm) □ 20 40 60 80 / MOISTURE CONTENT (%) ● 10 20 30 40	PIEZOMETER OR WELL CONSTRUCTION
36	11	WEATHERED SHALE: Grey, dry, hard		10.67 / 71.96		SS-10	100+		2.5%	
		End of borehole at 10.74m		10.74 / 71.89						
38	12									
40										
42	13									
44										
46	14									
48										
50	15									
52	16									
54										
56	17									
58										
60	18									
62	19									
64										
66	20									
68										
70	21									

Groundwater Depth (m): on completion: 10.51m; 6 December 2023: 3.11m

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. TH1 SHEET. 1 of 1

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-100 Track Solid Stem

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				85.98			
0	0	TOPSOIL: Dark brown sand and grass, trace rootlets		0.30 / 85.68			
2	1	FILL: Brown sand		1.52 / 84.46			
6	2	SAND: Brown, dry, dense		1.98 / 84.00		SS-1	43
		End of borehole at 1.98m					
8							
10	3						
12							
14	4						
16	5						
18							
20	6						
22							
24	7						
26	8						
28							
30	9						
32							
34	10						

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

8.9%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: N/A

DRAWN: A.M LOGGED: K.W. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. TH2 SHEET. 1 of 1

PROJECT NO.: FE-P# 23-13329/30

PROJECT NAME: HYDROGEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS

LOCATION: 900 Lakeshore Road W., Mississauga ON

DRILLING METHOD: D-100 Track Solid Stem

DRILLING DATE: 7 November, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				86.81			
0	0	TOPSOIL: Dark brown		0.15 / 86.66			
2	1	FILL: Brown to grey sandy silt					
4				1.52 / 85.29			
6	2	CLAYEY SILT TILL: Grey, moist, loose, some sand, trace gravel				SS-1	8
		End of borehole at 1.98m		1.98 / 84.83			
8							
10	3						
12							
14	4						
16	5						
18							
20	6						
22							
24	7						
26	8						
28							
30	9						
32							
34	10						

PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

● 14.6%

PIEZOMETER OR WELL CONSTRUCTION

Groundwater Depth (m): on completion: N/A

DRAWN: A.M | LOGGED: K.W. | CHECKED: C.W.

APPENDIX C – CERTIFICATES OF ANALYSIS

FISHER ENVIRONMENTAL LABORATORIES

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Attn.:

F.E. Job #: 23-2124
Project Name: Phase II ESA
Project ID: FE-P 23-13483
Date Sampled:
Date Received: 16-Nov-2023
Date Reported: 23-Nov-2023
Location: 900 Lakeshore Road West
Mississauga, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	7	23-Nov-23	23-Nov-23	Metals F-18	EPA 200.2/200.8
PHCs (F1 & BTEX)	Soil	7	17-Nov-23	21-Nov-23	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	7	17-Nov-23	17-Nov-23	PHCs F-7	CCME CWS
PAHs	Soil	7	21-Nov-23	23-Nov-23	PAHs F-4	SM 6410-B
pH	Soil	3	20-Nov-23	20-Nov-23	pH-EC-SAR F-16	SW-846, 9045D
Moisture Content	Soil	7	N/A	17-Nov-23	Support Procedures F-99	Carter (1993)

Fisher Environmental Laboratories is accredited by CALA (the Canadian Association for Laboratory Accreditation Inc.) for specific parameters as required by Ontario Regulation 153/04. All analytical testing has been performed in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act published by Ontario Ministry of the Environment.

Authorized by:

Roger Lin, Ph. D., C. Chem.
Laboratory Manager

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
Ronggen (Roger) Lin
CHEMIST

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-1*** BH1 0.76-1.22m	***23-2124-2*** BH2 0.00-0.61m	***23-2124-3*** BH3 0.00-0.61m	***23-2124-4*** BH3 3.05-3.51m	***23-2124-5*** BH4 0.76-1.22m	**Soil Standards [1]**
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1	<1	<1	<1	7.5
Arsenic	1.1	<1	3.1	<1	<1	18
Barium	15	30	49	18	12	390
Beryllium	<2	<2	<2	<2	<2	(5) 4
Boron	<5	<5	<5	<5	<5	120
Cadmium	<1	<1	<1	<1	<1	1.2
Chromium	6.4	12	11	9.3	5.8	160
Cobalt	9.4	<2	2.2	6.3	7.0	22
Copper	28	22	8.0	12	6.5	(180) 140
Lead	<10	<10	31	<10	<10	120
Molybdenum	<2	<2	<2	<2	<2	6.9
Nickel	11	13	<5	12	<5	(130) 100
Selenium	<1	<1	<1	<1	<1	2.4
Silver	<0.5	<0.5	<0.5	<0.5	<0.5	(25) 20
Thallium	<1	<1	<1	<1	<1	1
Uranium	<1	<1	<1	<1	<1	23
Vanadium	11	21	15	19	12	86
Zinc	<30	<30	<30	<30	<30	340

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.
Residential/Parkland/Institutional Property Use (**R/P/I**);
( ) Standard value in brackets applies to medium and fine textured soils.

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-6*** BH5 0.00-0.61m	***23-2124-7*** BH5 (Dup) 0.00-0.61m				**Soil Standards** [1]
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1				7.5
Arsenic	<1	<1				18
Barium	34	32				390
Beryllium	<2	<2				(5) 4
Boron	<5	<5				120
Cadmium	<1	<1				1.2
Chromium	12	11				160
Cobalt	12	5.2				22
Copper	14	13				(180) 140
Lead	<10	<10				120
Molybdenum	<2	<2				6.9
Nickel	14	12				(130) 100
Selenium	<1	<1				2.4
Silver	<0.5	<0.5				(25) 20
Thallium	<1	<1				1
Uranium	<1	<1				23
Vanadium	15	19				86
Zinc	<30	<30				340

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.
Residential/Parkland/Institutional Property Use (**R/P/I**);
( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	CRM	AR	MS	AR
	(µg/g)		(µg/g)		Recovery (%)	
Metals in Soil						
Antimony	<1	1	1.4	0-10	98	70-130
Arsenic	<1	1	92	25-125	90	70-130
Barium	<5	5	228	149-281	97	70-130
Beryllium	<2	2	0.7	0-5	77	70-130
Boron	<5	5	10	5-20	92	70-130
Cadmium	<1	1	1.8	0-5	94	70-130
Chromium	<5	5	33	14-54	88	70-130
Cobalt	<2	2	16	9-20	99	70-130
Copper	<5	5	160	139-243	79	70-130
Lead	<10	10	130	68-184	91	70-130
Molybdenum	<2	2	2.3	0-5	84	70-130
Nickel	<5	5	56	33-75	98	70-130
Selenium	<1	1	0.0	0-5	75	70-130
Silver	<0.5	0.5	1.0	0-5	88	70-130
Thallium	<1	1	0.4	0-5	95	70-130
Uranium	<1	1	1.2	0-5	91	70-130
Vanadium	<10	10	37	17-51	83	70-130
Zinc	<30	30	427	337-597	77	70-130

LEGEND:

RL - Reporting Limit

CRM = Certified Reference Material

MS - Matrix Spike (in case the original sample contains >30ppm, the matrix spike is no longer reliable, the data of reagent spike are entered instead)

AR - Acceptable Range

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Soil						
Antimony	0.0	0-30				
Arsenic	0.0	0-30				
Barium	11.1	0-30				
Beryllium	19.4	0-30				
Boron	16.2	0-30				
Cadmium	0.0	0-30				
Chromium	1.6	0-30				
Cobalt	14.9	0-30				
Copper	1.6	0-30				
Lead	1.8	0-30				
Molybdenum	4.1	0-30				
Nickel	0.0	0-30				
Selenium	0.0	0-30				
Silver	0.0	0-30				
Thallium	25.0	0-30				
Uranium	0.0	0-30				
Vanadium	5.1	0-30				
Zinc	8	0-30				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-1*** BH1 0.76-1.22m	***23-2124-2*** BH2 0.00-0.61m	***23-2124-3*** BH3 0.00-0.61m	***23-2124-4*** BH3 3.05-3.51m	***23-2124-5*** BH4 0.76-1.22m	**Soil Standards [1]**
	Concentration (µg/g)					
BTEX in Soil						
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	(0.17) 0.21
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	(6) 2.3
Ethylbenzene	<0.05	<0.05	<0.05	<0.05	<0.05	(1.6) 1.1
Xylenes	<0.05	<0.05	<0.05	<0.05	<0.05	(25) 3.1
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	<10	<10	<10	<10	(65) 55
F2 (C_{10} - C_{16})	<10	<10	<10	<10	<10	(150) 98
F3 (C_{16} - C_{34})	<50	<50	<50	<50	<50	(1300) 300
F4 (C_{34}-C_{50})	<50	<50	<50	<50	<50	(5600) 2800
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes	Yes	
Surrogate Recovery (%)						
Dibromofluoromethane	99	98	99	99	98	60-140
Toluene-d8	93	89	89	90	90	60-140
4-Bromofluorobenzene	126	125	125	123	110	60-140

F_{4G} (gravimetric heavy hydrocarbons) cannot be added to the C_6 to C_{50} hydrocarbons.

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Residential/Parkland/Institutional Property Use (**R/P/I**);

( ) Standard value in brackets applies to medium and fine textured soils.

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-6*** BH5 0.00-0.61m	***23-2124-7*** BH5 (Dup) 0.00-0.61m				**Soil Standards** [1]
	Concentration (µg/g)					
BTEX in Soil						
Benzene	<0.02	<0.02				(0.17) 0.21
Toluene	<0.2	<0.2				(6) 2.3
Ethylbenzene	<0.05	<0.05				(1.6) 1.1
Xylenes	<0.05	<0.05				(25) 3.1
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	<10				(65) 55
F2 (C_{10} - C_{16})	<10	<10				(150) 98
F3 (C_{16} - C_{34})	<50	<50				(1300) 300
F4 (C_{34}-C_{50})	<50	<50				(5600) 2800
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes				
Surrogate Recovery (%)						
Dibromofluoromethane	97	102				60-140
Toluene-d8	85	93				60-140
4-Bromofluorobenzene	122	125				60-140

F_{4G} (gravimetric heavy hydrocarbons) cannot be added to the C_6 to C_{50} hydrocarbons.

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Residential/Parkland/Institutional Property Use (**R/P/I**);

( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
BTEX in Soil						
Benzene	<0.02	0.02	97	60-130	128	50-140
Toluene	<0.2	0.2	95	60-130	121	50-140
Ethylbenzene	<0.05	0.05	104	60-130	89	50-140
Xylenes	<0.05	0.05	102	60-130	83	50-140
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	95	80-120	121	60-140
F2 (C_{10} - C_{16})	<10	10	94	80-120	92	60-140
F3 (C_{16} - C_{34})	<50	50	92	80-120	90	60-140
F4 (C_{34}-C_{50})	<50	50	92	80-120	91	60-140
Surrogates						
Parameter	**Blank**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	79	60-140	89	60-140	81	60-140
Toluene-d8	86	60-140	90	60-140	92	60-140
4-Bromofluorobenzene	109	60-140	110	60-140	76	60-140

LEGEND:

RL - Reporting Limit
LCS - Laboratory Control Sample
MS - Matrix Spike
AR - Acceptable Range

BTEX should be subtracted from F_1, Naphthalene from F_2 and selected PAHs from F_3 if BTEX/PAHs are analyzed, then report $F_{1\text{-BTEX}}$, $F_{2\text{-Naph.}}$ and $F_{3\text{-PAH}}$. nC_{50} response factor was within 70% of nC_{10}+nC_{16}+nC_{34} average.

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Soil						
Benzene	0.0	0-50				
Toluene	14	0-50				
Ethylbenzene	0.0	0-50				
Xylenes	0.0	0-50				
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	8.8	0-30				
F2 (C_{10} - C_{16})	16	0-30				
F3 (C_{16} - C_{34})	15	0-30				
F4 (C_{34}-C_{50})	1.2	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	98	60-140				
Toluene-d8	88	60-140				
4-Bromofluorobenzene	120	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-1*** BH1 0.76-1.22m	***23-2124-2*** BH2 0.00-0.61m	***23-2124-3*** BH3 0.00-0.61m	***23-2124-4*** BH3 3.05-3.51m	***23-2124-5*** BH4 0.76-1.22m	**Soil Standards [1]**
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.75) 0.6
2-Methylnaphthalene	<0.05	<0.05	<0.05	<0.05	<0.05	(3.4) 0.99
1-Methylnaphthalene	<0.05	<0.05	<0.05	<0.05	<0.05	
Acenaphthylene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.17) 0.15
Acenaphthene	<0.05	<0.05	<0.05	<0.05	<0.05	(29) 7.9
Fluorene	<0.05	<0.05	<0.05	<0.05	<0.05	(69) 62
Phenanthrene	<0.05	<0.05	<0.05	<0.05	<0.05	(7.8) 6.2
Anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.74) 0.67
Fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	0.69
Pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	78
Benz [a] anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.63) 0.5
Chrysene	<0.05	<0.05	<0.05	<0.05	<0.05	(7.8) 7
Benzo [b] fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	0.78
Benzo [k] fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	0.78
Benzo [a] pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Indeno [1,2,3-cd] pyrene	<0.1	<0.1	<0.1	<0.1	<0.1	(0.48) 0.38
Dibenz [a,h] anthracene	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Benzo [g,h,i] perylene	<0.1	<0.1	<0.1	<0.1	<0.1	(7.8) 6.6
Surrogate Recovery (%)						
Naphthalene-d8	102	110	111	109	116	50-140
Phenanthrene-d10	112	98	113	113	118	50-140
Chrysene-d12	52	58	56	63	63	50-140

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Residential/Parkland/Institutional Property Use (**R/P/I**);

( ) Standard value in brackets applies to medium and fine textured soils.

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-6*** BH5 0.00-0.61m	***23-2124-7*** BH5 (Dup) 0.00-0.61m				**Soil Standards** [1]
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	<0.05	<0.05				(0.75) 0.6
2-Methylnaphthalene	<0.05	<0.05				(3.4) 0.99
1-Methylnaphthalene	<0.05	<0.05				
Acenaphthylene	<0.05	<0.05				(0.17) 0.15
Acenaphthene	<0.05	<0.05				(29) 7.9
Fluorene	<0.05	<0.05				(69) 62
Phenanthrene	<0.05	<0.05				(7.8) 6.2
Anthracene	<0.05	<0.05				(0.74) 0.67
Fluoranthene	<0.05	<0.05				0.69
Pyrene	<0.05	<0.05				78
Benz [a] anthracene	<0.05	<0.05				(0.63) 0.5
Chrysene	<0.05	<0.05				(7.8) 7
Benzo [b] fluoranthene	<0.05	<0.05				0.78
Benzo [k] fluoranthene	<0.05	<0.05				0.78
Benzo [a] pyrene	<0.05	<0.05				0.3
Indeno [1,2,3-cd] pyrene	<0.1	<0.1				(0.48) 0.38
Dibenz [a,h] anthracene	<0.1	<0.1				0.1
Benzo [g,h,i] perylene	<0.1	<0.1				(7.8) 6.6
Surrogate Recovery (%)						
Naphthalene-d8	122	120				50-140
Phenanthrene-d10	108	131				50-140
Chrysene-d12	78	71				50-140

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Residential/Parkland/Institutional Property Use (**R/P/I**);

( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
PAHs in Soil						
Naphthalene	<0.05	0.05	109	50-140	109	50-140
2-Methylnaphthalene	<0.05	0.05	104	50-140	99	50-140
1-Methylnaphthalene	<0.05	0.05	125	50-140	119	50-140
Acenaphthylene	<0.05	0.05	91	50-140	91	50-140
Acenaphthene	<0.05	0.05	108	50-140	105	50-140
Fluorene	<0.05	0.05	103	50-140	100	50-140
Phenanthrene	<0.05	0.05	94	50-140	83	50-140
Anthracene	<0.05	0.05	91	50-140	108	50-140
Fluoranthene	<0.05	0.05	98	50-140	98	50-140
Pyrene	<0.05	0.05	98	50-140	91	50-140
Benz [a] anthracene	<0.05	0.05	93	50-140	78	50-140
Chrysene	<0.05	0.05	95	50-140	80	50-140
Benzo [b] fluoranthene	<0.05	0.05	108	50-140	99	50-140
Benzo [k] fluoranthene	<0.05	0.05	105	50-140	96	50-140
Benzo [a] pyrene	<0.05	0.05	72	50-140	63	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	69	50-140	78	50-140
Dibenz [a,h] anthracene	<0.1	0.1	57	50-140	51	50-140
Benzo [g,h,i] perylene	<0.1	0.1	76	50-140	61	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	111	50-140	113	50-140	103	50-140
Phenanthrene-d10	117	50-140	96	50-140	91	50-140
Chrysene-d12	60	50-140	137	50-140	137	50-140

LEGEND:
RL - Reporting Limit
LCS - Laboratory Control Sample
MS - Matrix Spike
AR - Acceptable Range

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
PAHs in Soil						
Naphthalene	0.0	0-40				
2-Methylnaphthalene	0.0	0-40				
1-Methylnaphthalene	0.0	0-40				
Acenaphthylene	0.0	0-40				
Acenaphthene	0.0	0-40				
Fluorene	0.0	0-40				
Phenanthrene	0.0	0-40				
Anthracene	0.0	0-40				
Fluoranthene	0.0	0-40				
Pyrene	0.0	0-40				
Benz [a] anthracene	0.0	0-40				
Chrysene	0.0	0-40				
Benzo [b] fluoranthene	0.0	0-40				
Benzo [k] fluoranthene	0.0	0-40				
Benzo [a] pyrene	0.0	0-40				
Indeno [1,2,3-cd] pyrene	0.0	0-40				
Dibenz [a,h] anthracene	0.0	0-40				
Benzo [g,h,i] perylene	0.0	0-40				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Naphthalene-d8	110	50-140				
Phenanthrene-d10	121	50-140				
Chrysene-d12	78	50-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-1*** BH1 0.76-1.22m	***23-2124-4*** BH3 3.05-3.51m	***23-2124-5*** BH4 0.76-1.22m			**Soil Standards** *
pH *(pH unit)*	8.50	7.99	7.83			(5-11) 5-9

* Surface soil pH value from 5 - 9, Sub-surface soil pH value from 5-11.

QA/QC Report

Parameter	**LCS**	**AR**	**Duplicate**	**AR**		
	Absolute Difference *(pH Unit)*					
pH *(pH unit)*	7.00	6.90-7.20	0.16	<0.3		

LEGEND:
LCS - Laboratory Control Sample
AR - Acceptable Range

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	7 Soil Sample(s)

Parameter	***23-2124-1*** BH1 0.76-1.22m	***23-2124-2*** BH2 0.00-0.61m	***23-2124-3*** BH3 0.00-0.61m	***23-2124-4*** BH3 3.05-3.51m	***23-2124-5*** BH4 0.76-1.22m	***23-2124-6*** BH5 0.00-0.61m
Moisture Content (%)	7.0	9.1	9.3	16.1	6.5	15.3

Parameter	***23-2124-7*** BH5 (Dup) 0.00-0.61m					
Moisture Content (%)	16.4					

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
Moisture Content (%)	<0.1	0.1	100	70-130	2.7	0-20

LEGEND:
RL - Reporting Limit
LCS - Laboratory Control Sample
AR - Acceptable Range
RPD - Relative Percent Difference

FISHER ENGINEERING

CERTIFIED BY CCIL

Project Name: Geotechnical Investigation
Client: 1000570027 Ontario Inc.
Project ID: 23-13330
Location: 900 Lakeshore Road West, Mississauga, Ontario

F.E. Lab #: 23-971
Date Sampled: 7-Nov-2023
Date Received: 10-Nov-2023
Date Reported: 29-Nov-2023

Certificate of Analysis

Analyses	Matrix	Quantity	Testing Date	Method Reference
Moisture Content	Soil	40	14-Nov-23	ASTM D2216
Grain Size (Sieve Analysis)	Soil	7	21-Nov-23	LS-602
Grain Size (Hydrometer)	Soil	7	27-Nov-23	LS-702
Atterberg test	Soil	0	N.A.	LS-703/704

Authorized by: Behnam Sayad-Pour

Behnam Sayad Pour Zanjani
Geo-Lab Supervisor

400 Esna Park Drive, Unit 15, Markham, ON L3R 3K2
Tel:(905) 475-7755 www.fishereng.com

Certificate of Analysis

Analysis Requested:	Moisture Content	***Sample Description:***	40 Soil Sample(s)

Sample Info	BH1 SS2 A	BH1 SS2 B	BH1 SS3	BH1 SS4	BH1 SS5	BH1 SS6
Sample Depth (m)	0.76-1.07	1.07-1.22	1.53-1.98	2.29-2.75	3.05-3.51	4.58-5.03
Moisture Content (%)	8.9	10.0	13.8	17.7	17.7	11.7

Sample Info	BH1 SS7	BH1 SS8	BH1 SS9	BH1 SS10	BH1 SS11	BH1 SS12
Sample Depth (m)	6.1-6.56	7.63-8.08	9.15-9.61	10.68-11.13	12.2-12.35	13.73-13.82
Moisture Content (%)	11.1	18.4	13.1	14.7	4.0	6.9

Sample Info	BH2 SS3	BH2 SS6	BH2 SS10 A	BH2 SS10 B	BH3 SS2	BH3 SS3
Sample Depth (m)	1.53-1.98	4.58-5.03	10.68-10.82	10.82-11.13	0.76-1.22	1.53-1.98
Moisture Content (%)	14.1	12.3	12.3	8.5	9.6	9.0

Sample Info	BH3 SS4	BH3 SS5	BH3 SS6	BH3 SS7	BH3 SS8	BH3 SS9
Sample Depth (m)	2.29-2.75	3.05-3.51	4.58-5.03	6.1-6.56	7.63-8.08	9.15-9.61
Moisture Content (%)	16.0	18.2	11.3	12.5	12.2	16.2

Sample Info	BH3 SS10	BH3 SS11	BH5 SS2 A	BH5 SS2 B	BH5 SS3	BH5 SS4 A
Sample Depth (m)	10.68-11.13	12.2-12.66	0.76-1.07	1.07-1.22	1.53-1.98	2.29-2.59
Moisture Content (%)	11.5	8.6	13.9	17.1	13.6	12.5

Sample Info	BH5 SS4 B	BH5 SS5	BH5 SS6	BH5 SS7	BH5 SS8 A	BH5 SS8 B
Sample Depth (m)	2.59-2.75	3.05-3.51	4.58-5.03	6.1-6.56	7.63-7.78	7.78-8.08
Moisture Content (%)	12.5	13.1	12.2	23.1	13.7	8.0

Sample Info	BH5 SS9	BH5 SS10	TH1	TH2		
Sample Depth (m)	9.15-9.46	10.68-11.13	1.53-1.98	1.53-1.98		
Moisture Content (%)	8.9	2.5	8.9	14.6		

Certificate of Analysis

Analysis Requested:	Grain Size (Sieve Analysis)	***Sample Quantity:***	7	Soil Sample(s)

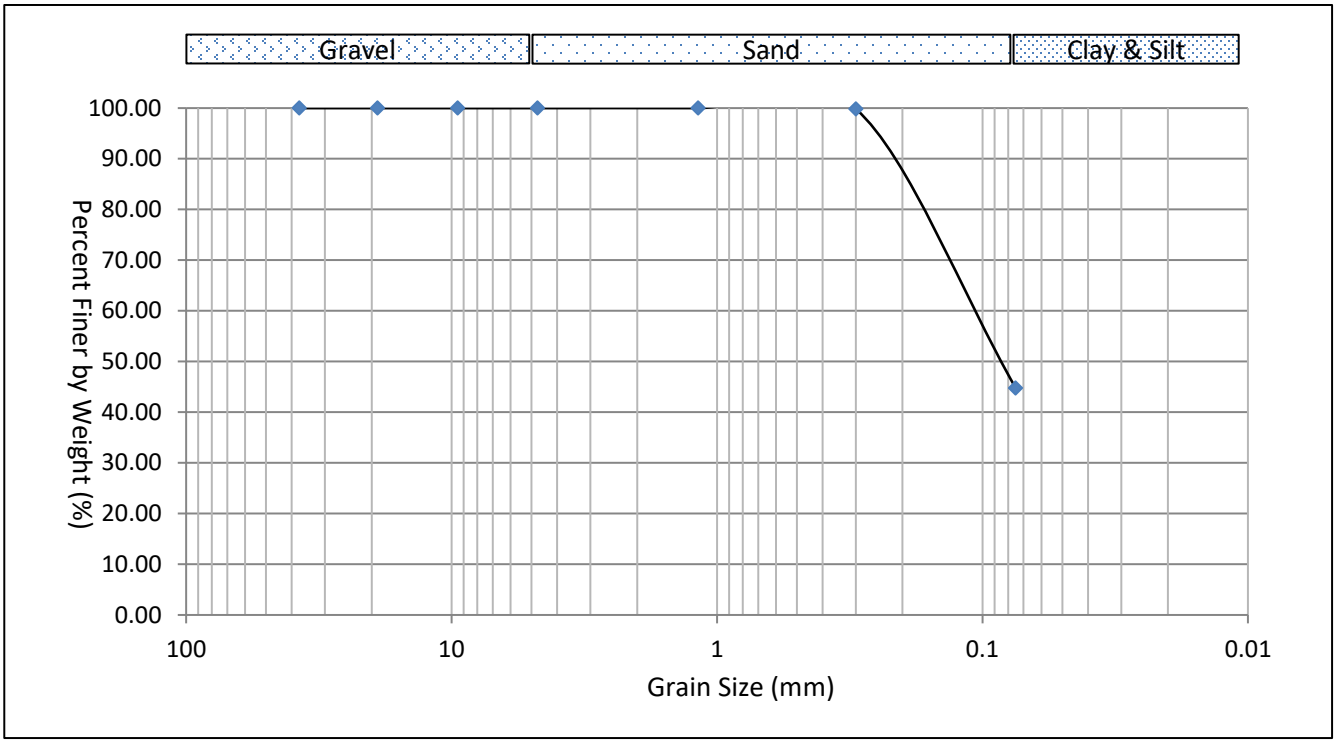
Sample Info	***23-972 BH1 SS3***	***23-973 BH1 SS6***	***23-975 BH2 SS3***	***23-976 BH2 SS6***	***23-978 BH2 SS10 B***	***23-979 BH5 SS3***
Sample Depth (m)	***1.53-1.98***	***4.58-5.03***	***1.53-1.98***	***4.58-5.03***	***10.82-11.13***	***1.53-1.98***
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	0.0
9.5mm-19mm	0.0	0.0	0.0	0.0	3.0	0.0
4.75mm-9.5mm	0.0	0.0	0.0	0.0	4.8	0.0
1.18mm-4.75mm	0.0	0.1	0.0	0.2	10.5	0.3
300um-1.18mm	0.2	0.2	0.0	0.1	11.5	0.3
75um-300um	55.0	11.4	31.8	6.5	12.0	9.2
<75um	44.8	88.4	68.2	93.2	58.2	90.3
Clay and Silt	**44.8**	**88.4**	**68.2**	**93.2**	**58.2**	**90.3**
Sand	**55.2**	**11.6**	**31.8**	**6.8**	**34.0**	**9.7**
Gravel	**0.0**	**0.0**	**0.0**	**0.0**	**7.8**	**0.0**

Sample Info	***23-981 BH5 SS10***					
Sample Depth (m)	***10.68-11.13***					
Grain Size (%)						
>19mm	0.0					
9.5mm-19mm	6.7					
4.75mm-9.5mm	20.1					
1.18mm-4.75mm	24.7					
300um-1.18mm	14.2					
75um-300um	7.1					
<75um	27.2					
Clay and Silt	**27.2**					
Sand	**46.0**					
Gravel	**26.8**					

Grain Size Distribution

Sample ID: 23-972 BH1 SS3 (1.53-1.98m)

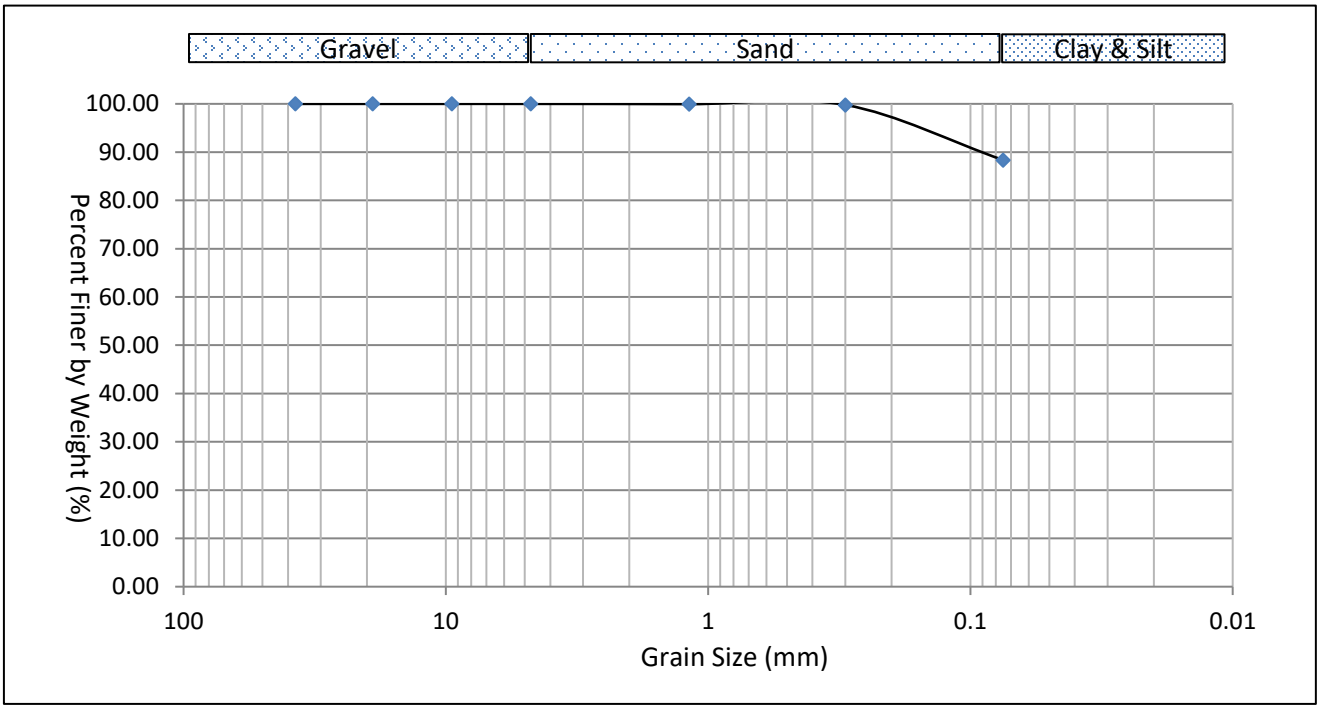
Gravel: 0% Sand: 55.2% Clay and Silt 44.8%



Grain Size Distribution

Sample ID: 23-973 BH1 SS6 (4.58-5.03m)

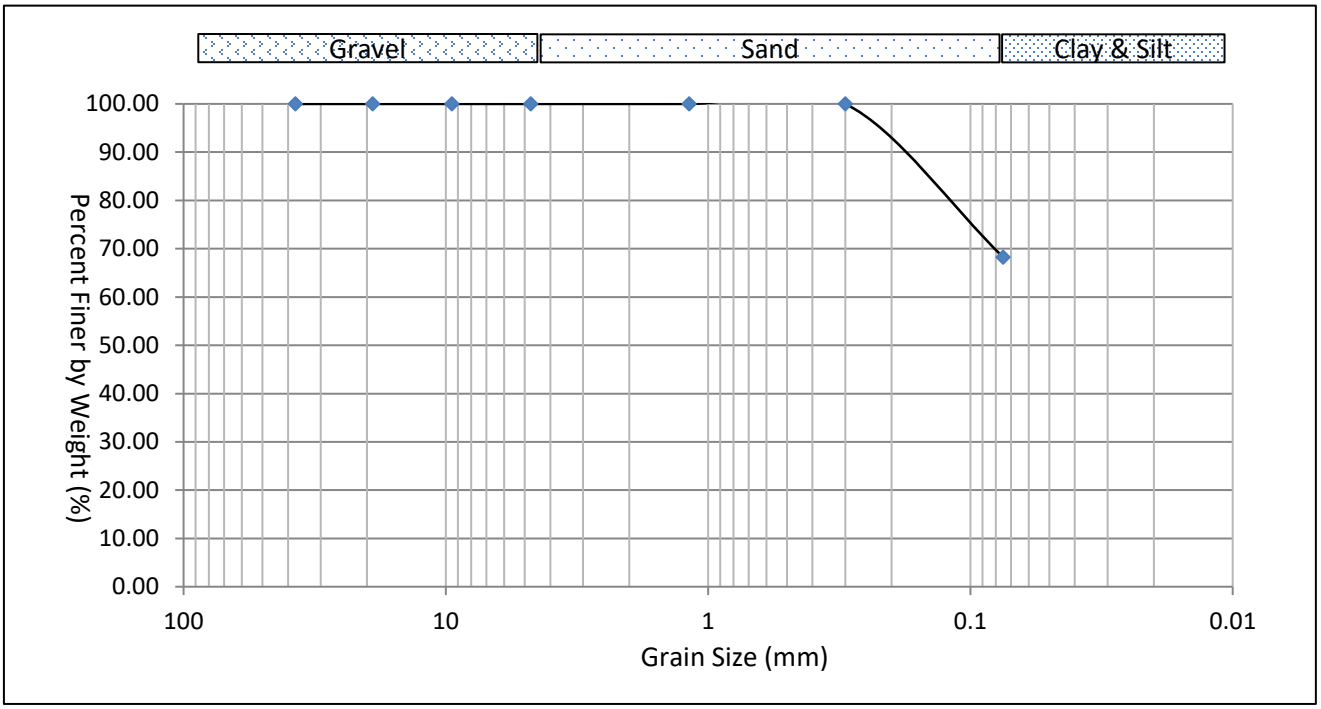
Gravel: 0% Sand: 11.6% Clay and Silt 88.4%



Grain Size Distribution

Sample ID: 23-975 BH2 SS3 (1.53-1.98m)

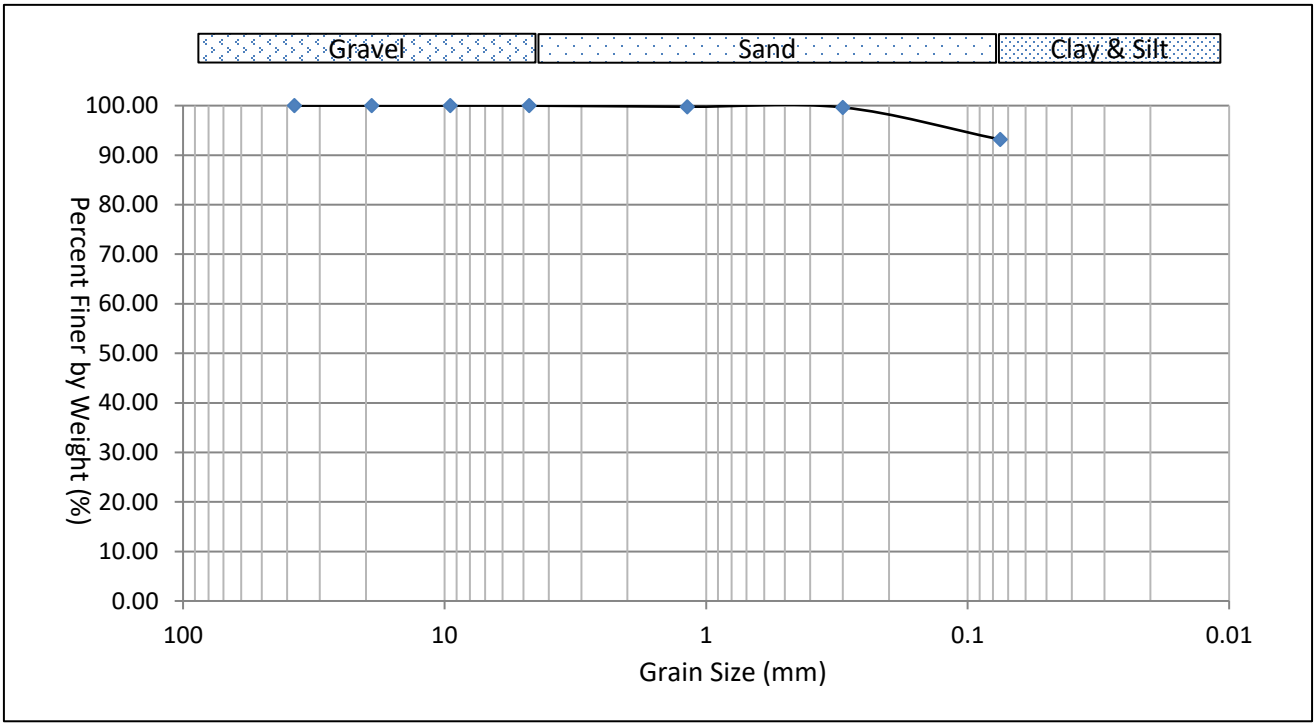
Gravel: 0% Sand: 31.8% Clay and Silt 68.2%



Grain Size Distribution

Sample ID: 23-976 BH2 SS6 (4.58-5.03m)

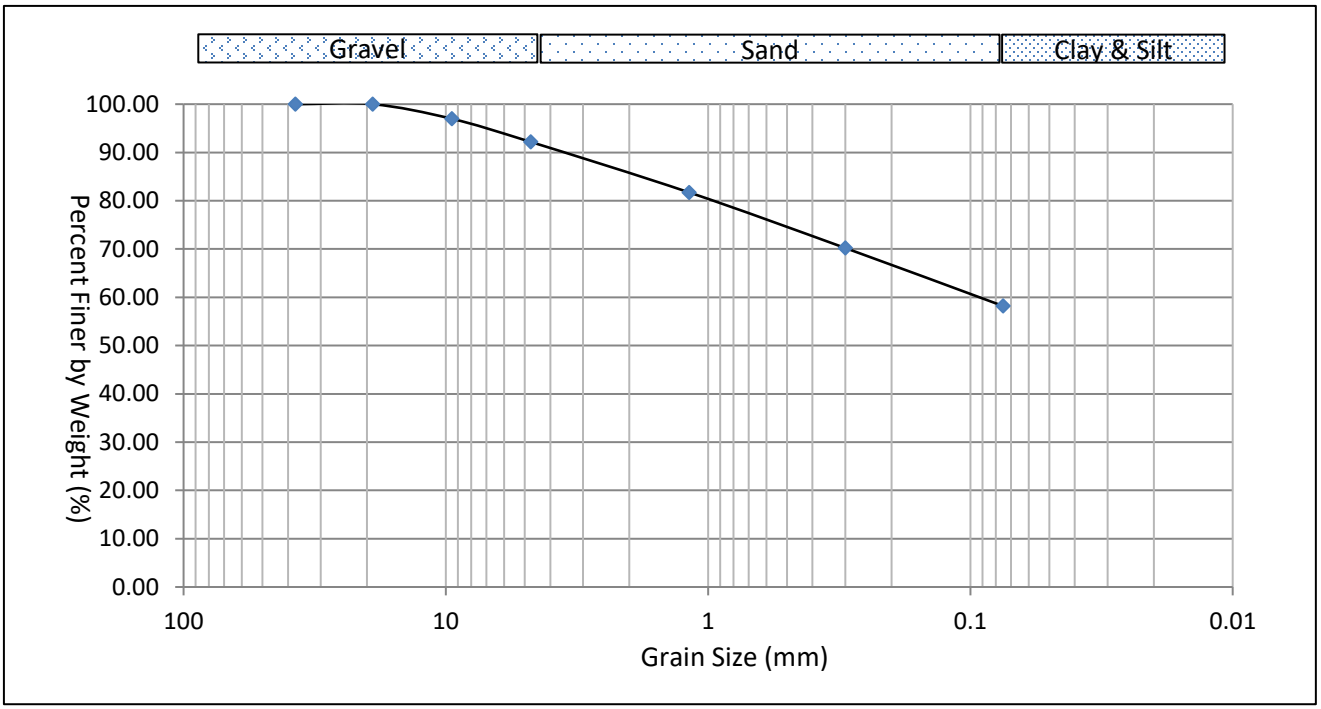
Gravel: 0% Sand: 6.8% Clay and Silt 93.2%



Grain Size Distribution

Sample ID: 23-978 BH2 SS10 B (10.82-11.13m)

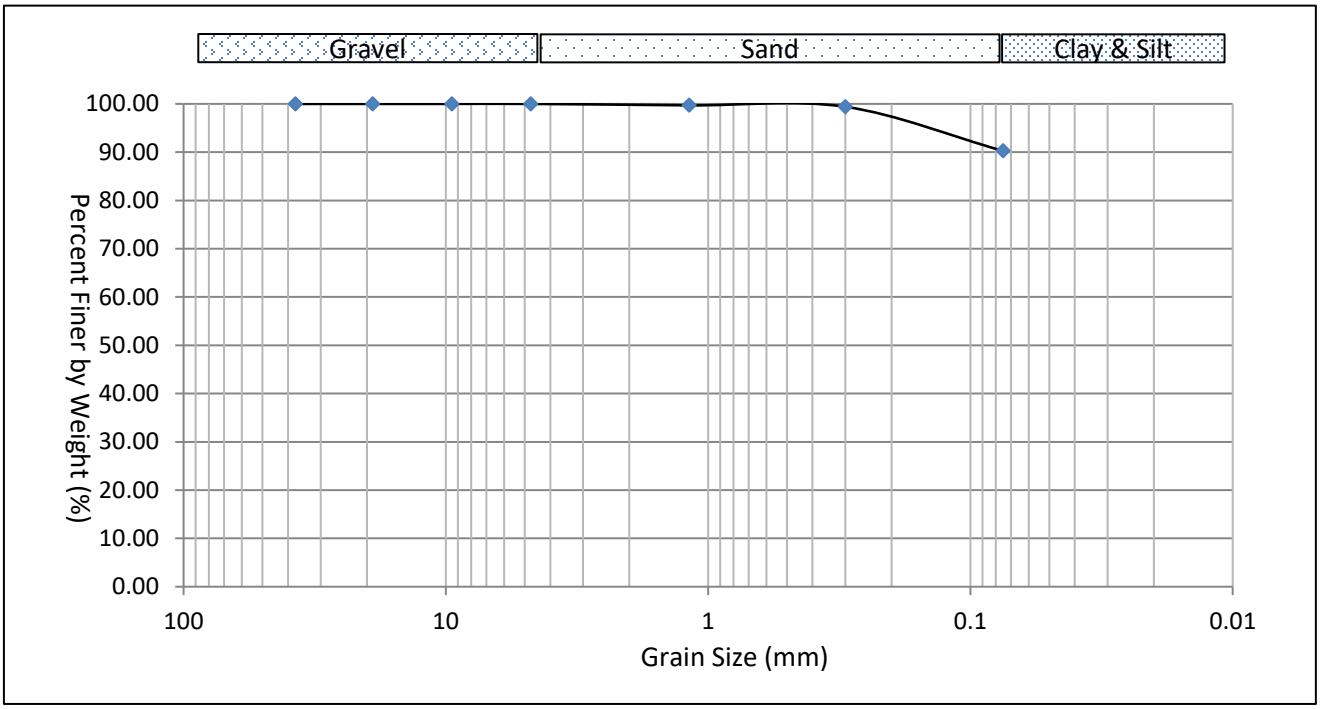
Gravel: 7.8% Sand: 34% Clay and Silt 58.2%



Grain Size Distribution

Sample ID: 23-979 BH5 SS3 (1.53-1.98m)

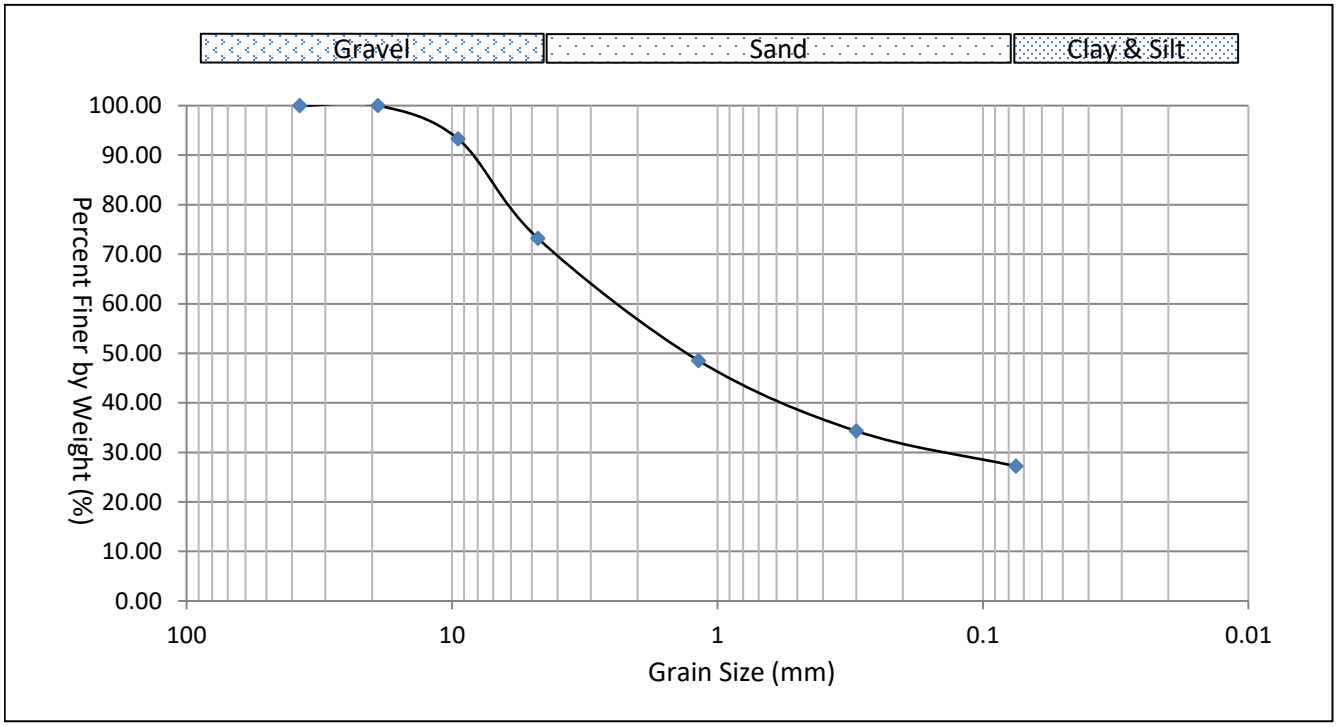
Gravel: 0% Sand: 9.7% Clay and Silt 90.3%



Grain Size Distribution

Sample ID: 23-981 BH5 SS10 (10.68-11.13m)

Gravel: 26.8% Sand: 46% Clay and Silt 27.2%



F.E. Job #: 23-971

Certificate of Analysis

Analysis Requested:	Grain Size (Hydrometer)
Sample Description:	7 Soil Sample(s)

Sample Info	***23-1053 BH1 SS9***	***23-974 BH1 SS10***	***23-977 BH2 SS10 A***	***23-1055 BH3 SS10***	***23-980 BH5 SS6***	***23-982 TH1***
Sample Depth (m)	***9.15-9.61***	***10.68-11.13***	***10.68-10.82***	***10.68-11.13***	***4.58-5.03***	***1.53-1.98***
Grain Size (%)						
>19mm	0.0	0.0	0.0	0.0	0.0	0.0
9.5mm-19mm	0.0	3.8	1.8	2.3	0.0	0.5
4.75mm-9.5mm	0.0	6.8	2.6	1.3	0.0	1.4
1.18mm-4.75mm	0.0	8.0	11.0	1.8	0.2	0.8
300um-1.18mm	0.0	8.8	14.1	1.9	0.2	0.9
75um-300um	8.8	7.9	11.7	2.1	3.8	53.9
5um-75um	77.6	36.3	27.5	52.7	79.3	34.5
2um-5um	4.8	9.9	11.0	14.3	5.9	2.0
<2um	8.9	18.7	20.3	23.6	10.7	5.8
Clay	**8.9**	**18.7**	**20.3**	**23.6**	**10.7**	**5.8**
Silt	**82.3**	**46.2**	**38.5**	**67.0**	**85.2**	**36.5**
Sand	**8.8**	**24.6**	**36.8**	**5.9**	**4.1**	**55.7**
Gravel	**0.0**	**10.6**	**4.4**	**3.6**	**0.0**	**1.9**

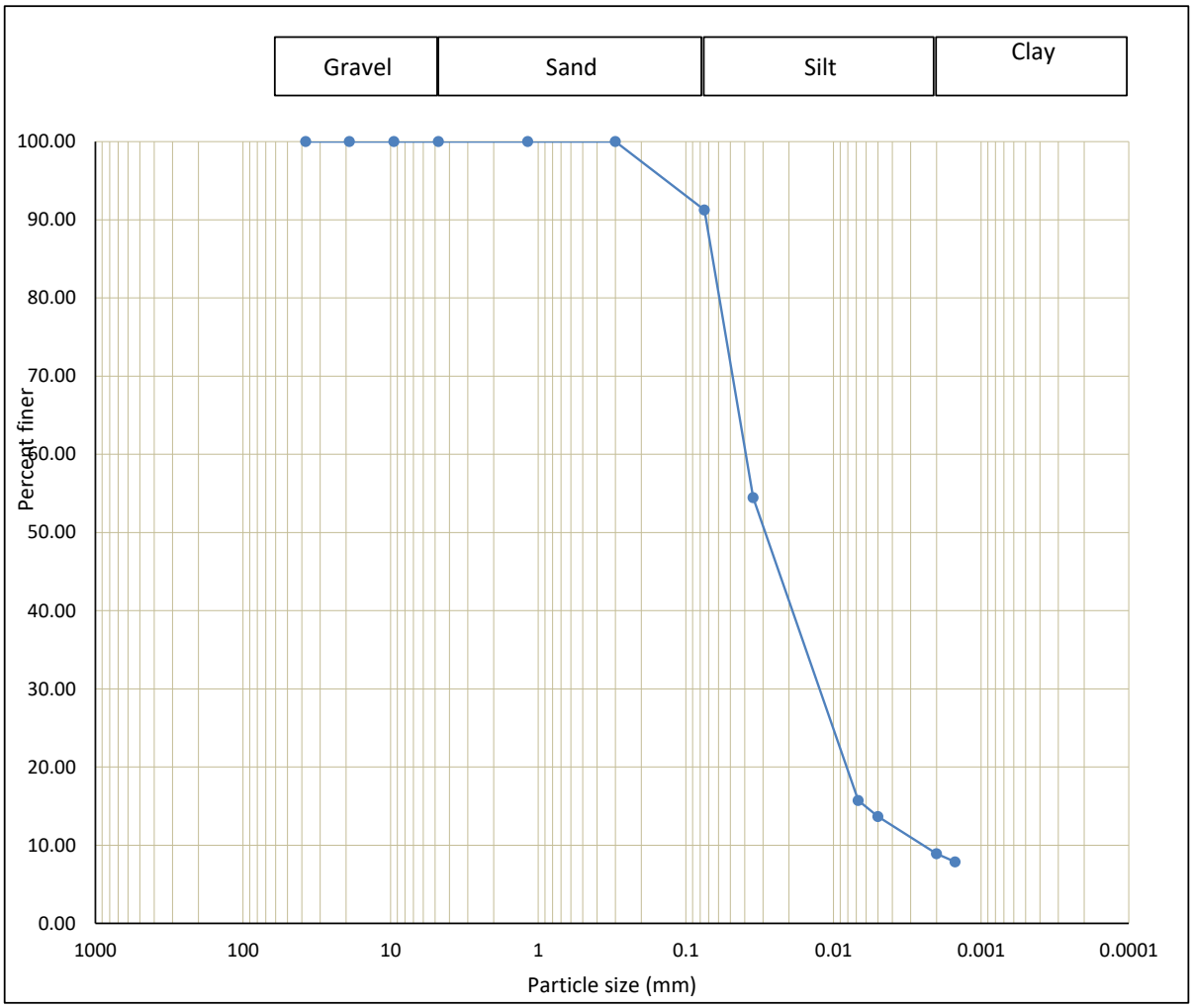
Sample Info	***23-983 TH2***					
Sample Depth (m)	***1.53-1.98***					
Grain Size (%)						
>19mm	0.0					
9.5mm-19mm	13.1					
4.75mm-9.5mm	5.5					
1.18mm-4.75mm	6.7					
300um-1.18mm	7.8					
75um-300um	12.2					
5um-75um	25.7					
2um-5um	6.3					
<2um	22.7					
Clay	**22.7**					
Silt	**31.9**					
Sand	**26.7**					
Gravel	**18.6**					

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-1053 BH1 SS9 (9.15-9.61m)

Gravel: 0% Sand: 8.8% Silt: 82.3% Clay: 8.9%

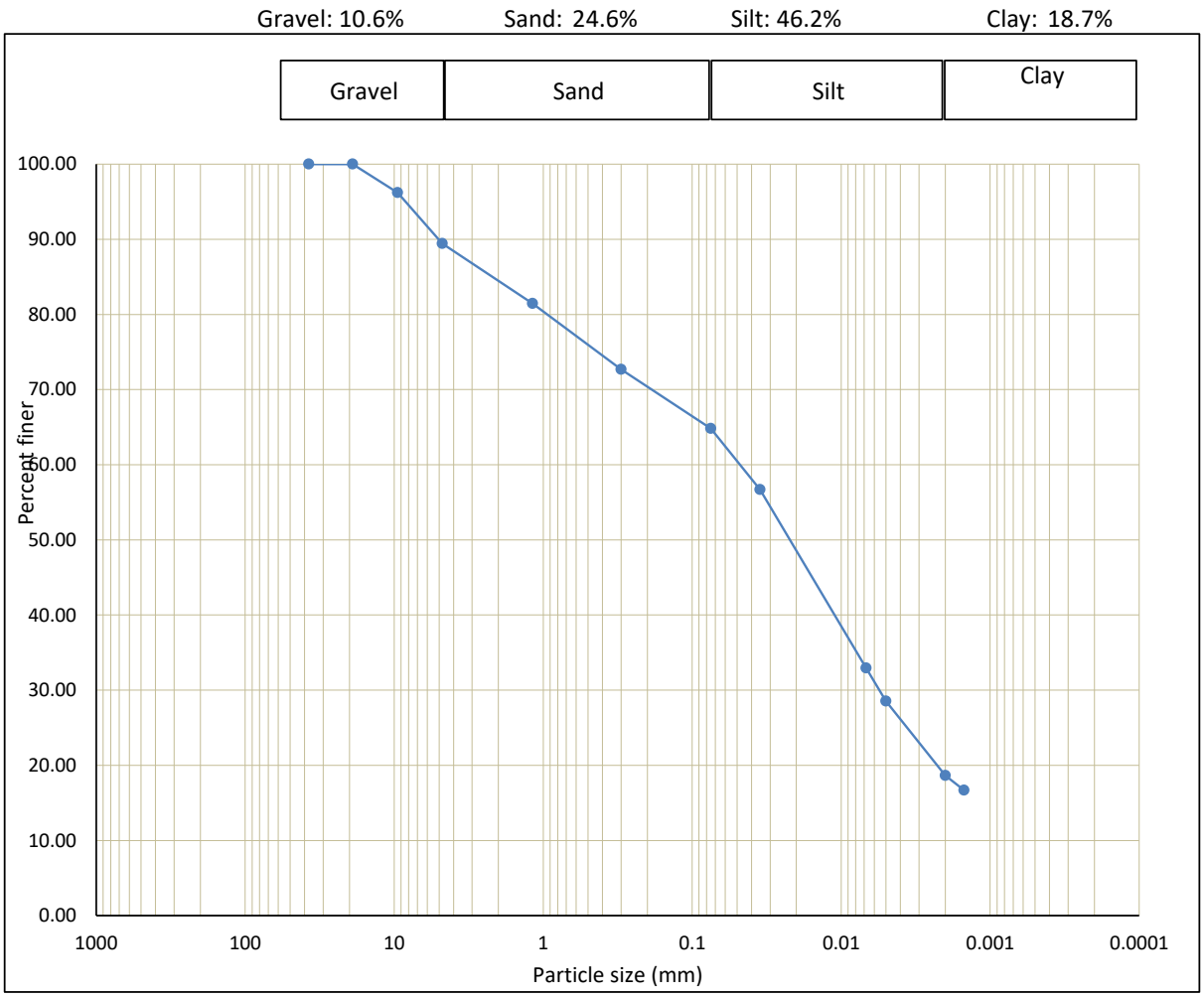


Sample ID: 23-1053 BH1 SS9 (9.15-9.61m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.0	Coarse Sand
300um-1.18mm	0.0	Medium Sand
75um-300um	8.8	Fine Sand
5um-75um	77.6	Silt
2um-5um	4.8	
<2um	8.9	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-974 BH1 SS10 (10.68-11.13m)



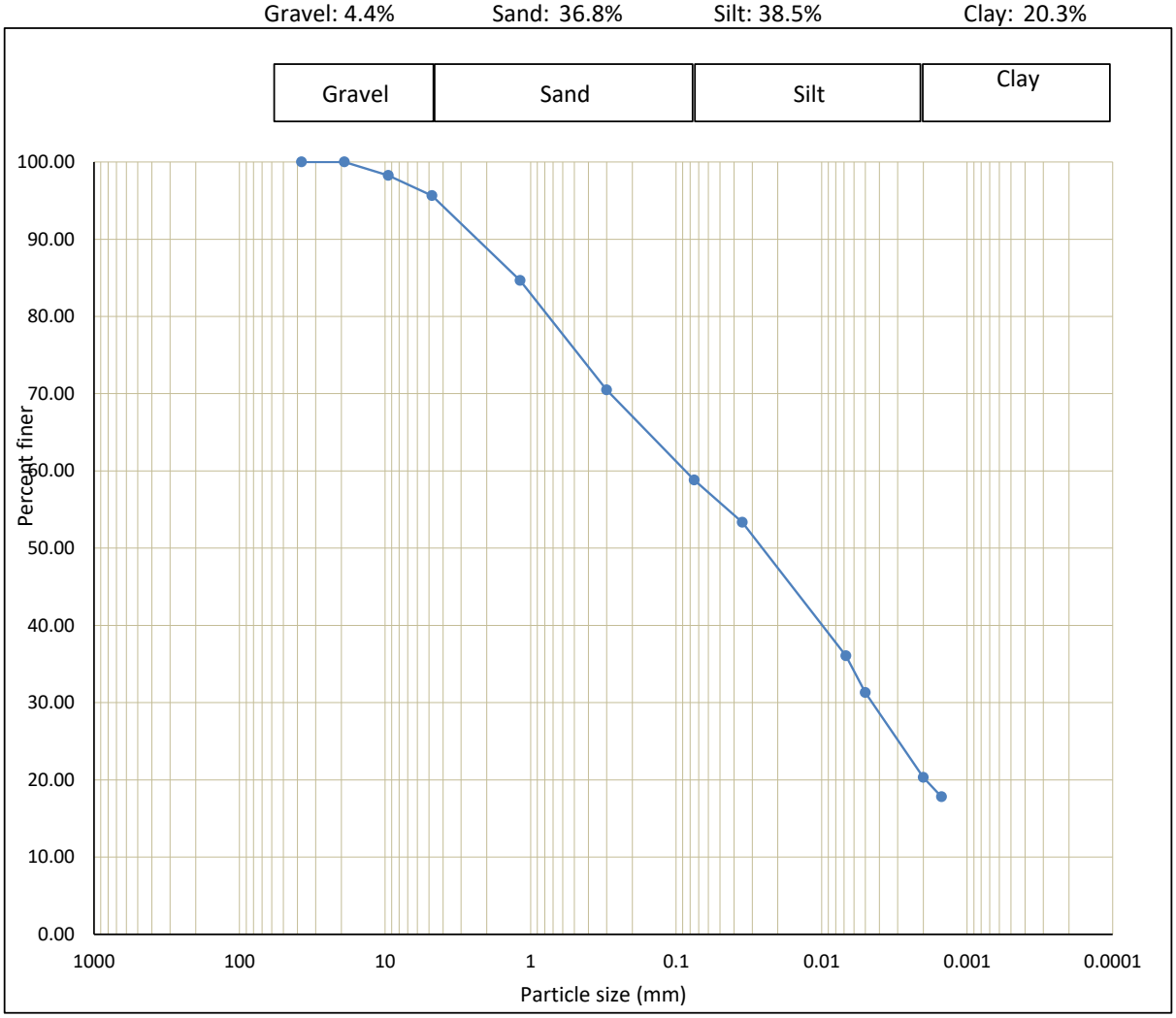
Sample ID: 23-974 BH1 SS10 (10.68-11.13m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	10.6	Gravel
1.18mm-4.75mm	8.0	Coarse Sand
300um-1.18mm	8.8	Medium Sand
75um-300um	7.9	Fine Sand
5um-75um	36.3	Silt
2um-5um	9.9	
<2um	18.7	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-977 BH2 SS10 A (10.68-10.82m)

Gravel: 4.4% Sand: 36.8% Silt: 38.5% Clay: 20.3%



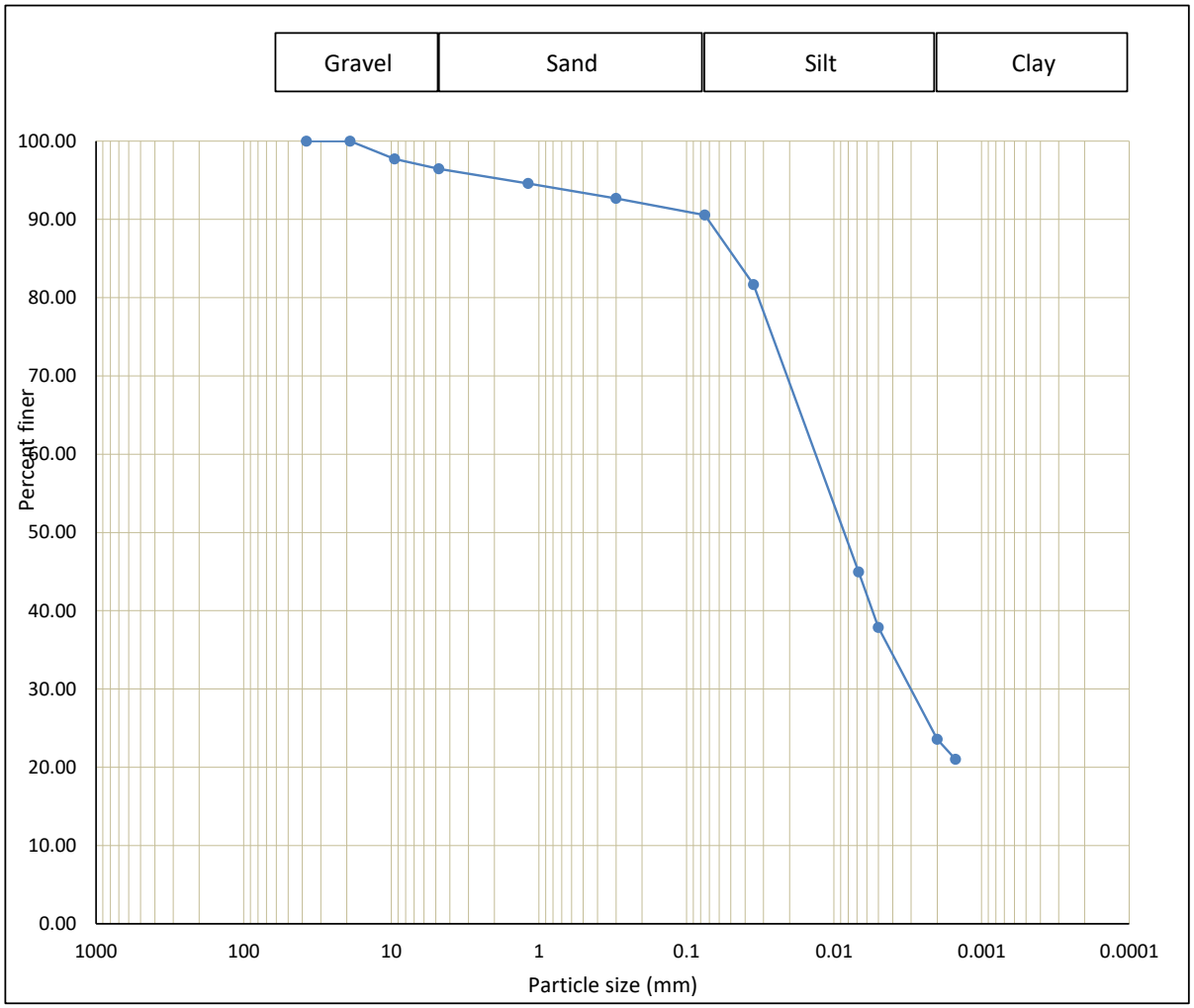
Sample ID: 23-977 BH2 SS10 A (10.68-10.82m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	4.4	Gravel
1.18mm-4.75mm	11.0	Coarse Sand
300um-1.18mm	14.1	Medium Sand
75um-300um	11.7	Fine Sand
5um-75um	27.5	Silt
2um-5um	11.0	
<2um	20.3	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-1055 BH3 SS10 (10.68-11.13m)

Gravel: 3.6% Sand: 5.9% Silt: 67% Clay: 23.6%

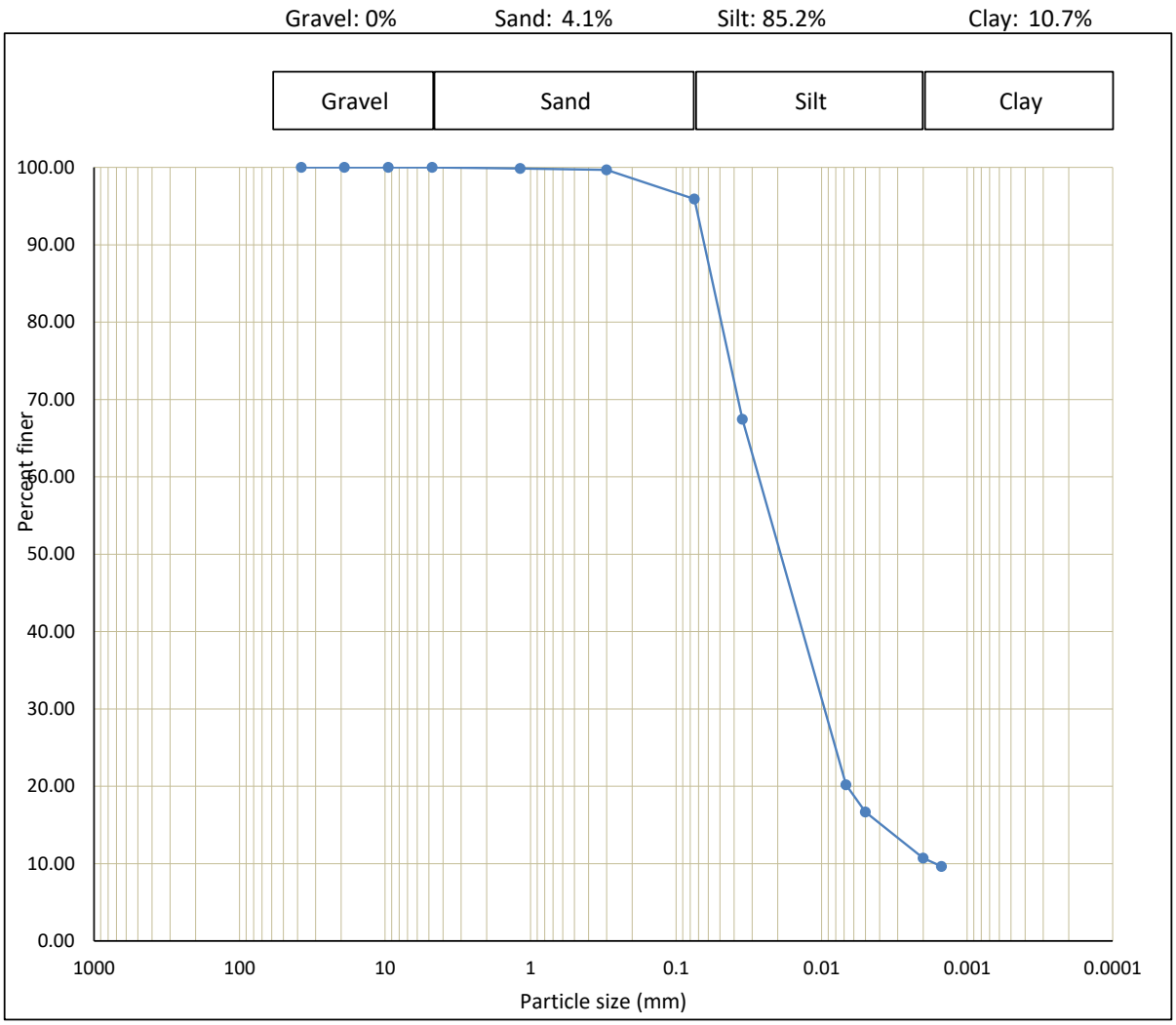


Sample ID: 23-1055 BH3 SS10 (10.68-11.13m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	3.6	Gravel
1.18mm-4.75mm	1.8	Coarse Sand
300um-1.18mm	1.9	Medium Sand
75um-300um	2.1	Fine Sand
5um-75um	52.7	Silt
2um-5um	14.3	
<2um	23.6	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-980 BH5 SS6 (4.58-5.03m)

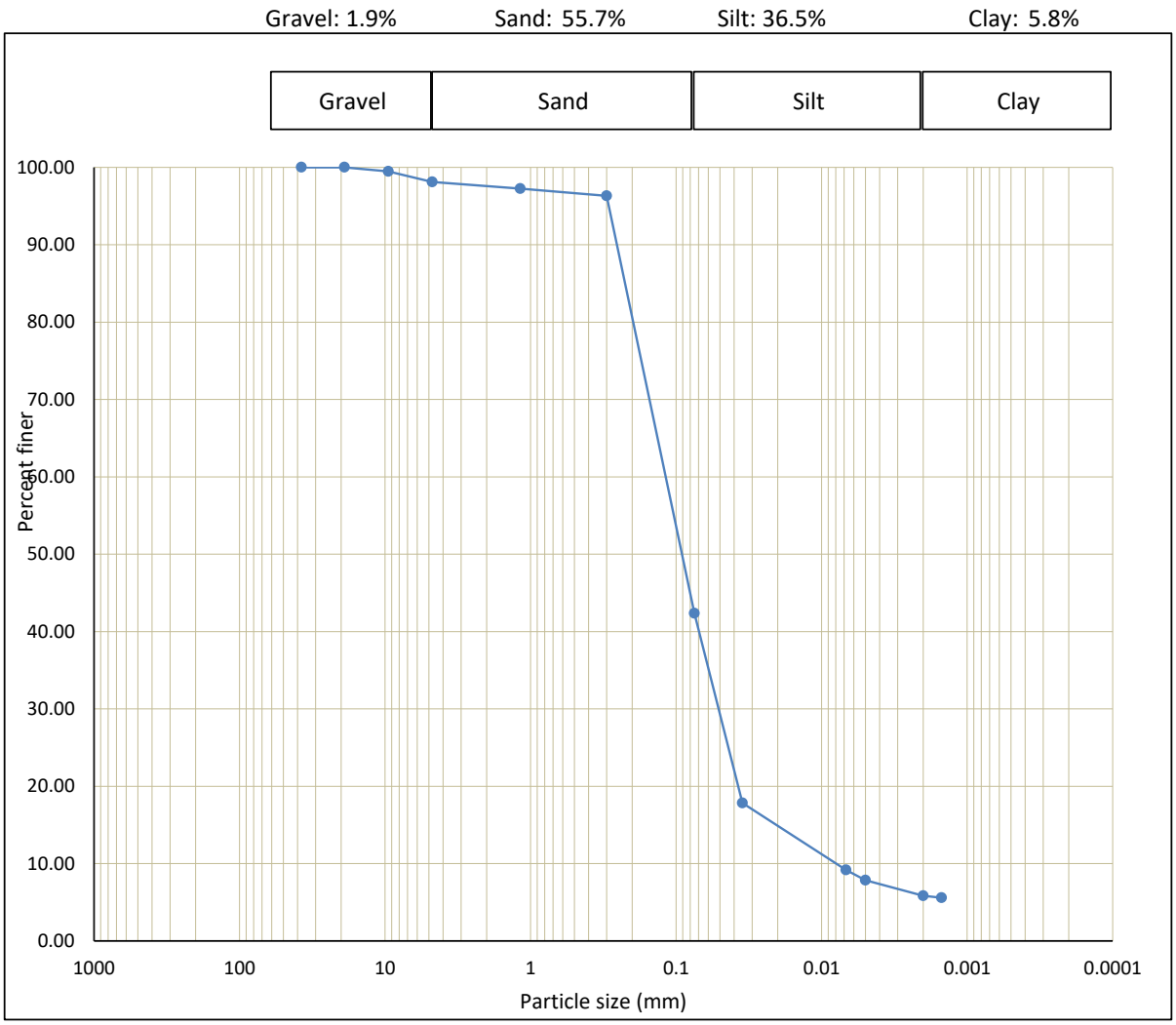


Sample ID: 23-980 BH5 SS6 (4.58-5.03m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	0.0	Gravel
1.18mm-4.75mm	0.2	Coarse Sand
300um-1.18mm	0.2	Medium Sand
75um-300um	3.8	Fine Sand
5um-75um	79.3	Silt
2um-5um	5.9	
<2um	10.7	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-982 TH1 (1.53-1.98m)

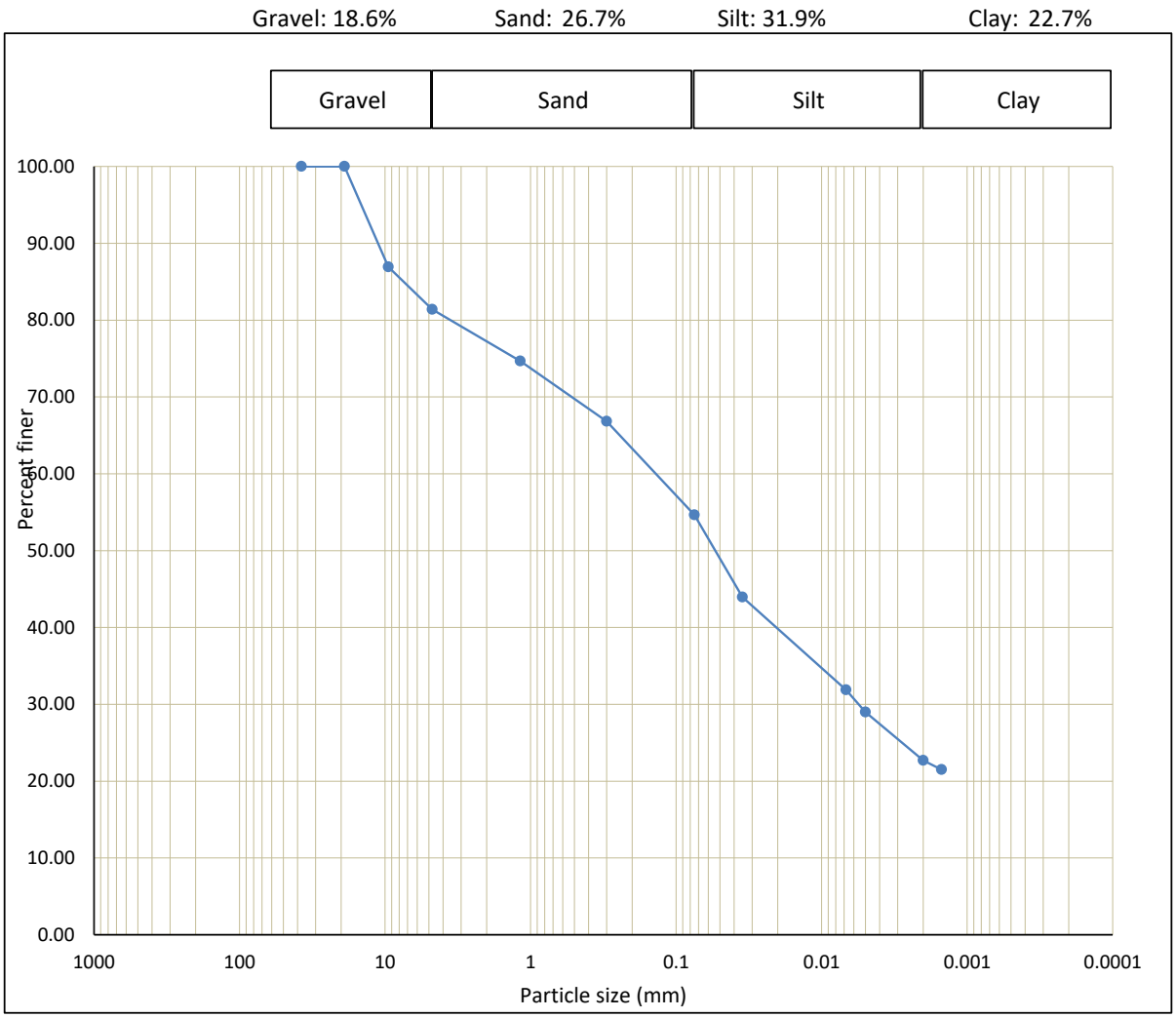


Sample ID: 23-982 TH1 (1.53-1.98m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	1.9	Gravel
1.18mm-4.75mm	0.8	Coarse Sand
300um-1.18mm	0.9	Medium Sand
75um-300um	53.9	Fine Sand
5um-75um	34.5	Silt
2um-5um	2.0	
<2um	5.8	Clay

F.E. Job #: 23-971

Grain Size Distribution

Sample ID: 23-983 TH2 (1.53-1.98m)



Sample ID: 23-983 TH2 (1.53-1.98m)		
Diameter	***Weight (%)***	***Grain Size***
>4.75mm	18.6	Gravel
1.18mm-4.75mm	6.7	Coarse Sand
300um-1.18mm	7.8	Medium Sand
75um-300um	12.2	Fine Sand
5um-75um	25.7	Silt
2um-5um	6.3	
<2um	22.7	Clay

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F.E. Job #: 23-2102
Project Name: Phase II ESA
Project ID: FE-P 23-13483
Date Sampled: 13-Nov-2023
Date Received: 14-Nov-2023
Date Reported: 21-Nov-2023
Location: 900 Lakeshore Road West
Mississauga, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Water	2	N/A	21-Nov-23	Metals F-18	EPA 200.2/200.8
PHCs (F1 & BTEX)	Water	3	N/A	16-Nov-23	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Water	2	20-Nov-23	20-Nov-23	PHCs F-7	CCME CWS
PAHs	Water	2	20-Nov-23	20-Nov-23	PAHs F-4	SM 6410B

Fisher Environmental Laboratories is accredited by CALA (the Canadian Association for Laboratory Accreditation Inc.) for specific parameters as required by Ontario Regulation 153/04. All analytical testing has been performed in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act published by Ontario Ministry of the Environment.

Authorized by:

Roger Lin, Ph. D., C. Chem.
Laboratory Manager

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs
Sample Description:	3 Water Sample(s)

Parameter	***23-2102-1*** MW3	***23-2102-2*** MW3 Field Duplicate			**Ground Water Standards** [1]	
					Table 2	**Table 3**
	Concentration (µ g/L)					
Metals in Water						
Antimony	<0.5	<0.5			6	20,000
Arsenic	2.2	2.2			25	1,900
Barium	122	121			1,000	29,000
Beryllium	<0.5	<0.5			4	67
Boron	93	91			5,000	45,000
Cadmium	<0.5	<0.5			2.7	2.7
Chromium	<10	<10			50	810
Cobalt	<1	<1			3.8	66
Copper	<5	<5			87	87
Lead	<1	<1			10	25
Molybdenum	23	22			70	9,200
Nickel	3.9	4.0			100	490
Selenium	<5	<5			10	63
Silver	<0.3	<0.3			1.5	1.5
Thallium	<0.5	<0.5			2	510
Uranium	2.6	2.5			20	420
Vanadium	1.5	1.6			6.2	250
Zinc	14	15			1,100	1,100

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

All Types of Property Use.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/L)		Recovery (%)		Recovery (%)	
Metals in Water						
Antimony	<0.5	0.5	107	80-120	102	70-130
Arsenic	<1	1	99	80-120	99	70-130
Barium	<2	2	102	80-120	85	70-130
Beryllium	<0.5	0.5	100	80-120	95	70-130
Boron	<10	10	101	80-120	109	70-130
Cadmium	<0.5	0.5	100	80-120	94	70-130
Chromium	<10	10	101	80-120	89	70-130
Cobalt	<1	1	102	80-120	88	70-130
Copper	<5	5	102	80-120	82	70-130
Lead	<1	1	104	80-120	99	70-130
Molybdenum	<0.5	0.5	103	80-120	98	70-130
Nickel	<1	1	102	80-120	86	70-130
Selenium	<5	5	99	80-120	101	70-130
Silver	<0.3	0.3	98	80-120	87	70-130
Thallium	<0.5	0.5	100	80-120	97	70-130
Uranium	<2	2	101	80-120	102	70-130
Vanadium	<0.5	0.5	103	80-120	90	70-130
Zinc	<5	5	98	80-120	91	70-130

LEGEND:

RL - Reporting Limit

LCS - Laboratory Control Sample

MS - Matrix Spike (in case the original sample contains >100ppb, the matrix spike is no longer reliable, the data of reagent spike are entered instead)

AR - Acceptable Range

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Water						
Antimony	1.0	0-20				
Arsenic	5.3	0-20				
Barium	0.3	0-20				
Beryllium	0.0	0-20				
Boron	1.2	0-20				
Cadmium	5.4	0-20				
Chromium	10.4	0-20				
Cobalt	7.1	0-20				
Copper	0.0	0-20				
Lead	13.3	0-20				
Molybdenum	1.0	0-20				
Nickel	3.2	0-20				
Selenium	0.0	0-20				
Silver	0.0	0-20				
Thallium	0.0	0-20				
Uranium	2.4	0-20				
Vanadium	12.1	0-20				
Zinc	1.8	0-20				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs
Sample Description:	3 Water Sample(s)

Parameter	***23-2102-1*** MW3	***23-2102-2*** MW3 Field Duplicate	***23-2102-3*** VOC Blank		**Ground Water Standards [1]**	
					Table 2	**Table 3**
	Concentration (µ g/L)					
BTEX in Water						
Benzene	<0.5	<0.5	<0.5		5	(430) 44
Toluene	<0.5	<0.5	<0.5		24	18000
Ethylbenzene	<0.5	<0.5	<0.5		2.4	2300
Xylenes	<0.5	<0.5	<0.5		300	4200
PHCs (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	<25	<25	-		750	750
F2 (C_{10} - C_{16})	<100	<100	-		150	150
F3 (C_{16} - C_{34})	<100	<100	-		500	500
F4 (>C_{34})	<100	<100	-		500	500
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes			
Surrogate Recovery (%)						
Dibromofluoromethane	81	77	100		60-140	
Toluene-d8	93	78	75		60-140	
4-Bromofluorobenzene	108	96	88		60-140	

F_{4G} (gravimetric heavy hydrocarbons) cannot be added to the C_6 to C_{50} hydrocarbons.

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

All Types of Property Use. ( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(ug/L)		Recovery (%)		Recovery (%)	
BTEX in Water						
Benzene	<0.5	0.5	88	60-130	110	50-140
Toluene	<0.5	0.5	113	60-130	82	50-140
Ethylbenzene	<0.5	0.5	112	60-130	103	50-140
Xylenes	<0.5	0.5	114	60-130	108	50-140
PHC (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	<25	25	85	60-140	114	60-140
F2 (C_{10} - C_{16})	<100	100	109	60-140	121	60-140
F3 (C_{16} - C_{34})	<100	100	112	60-140	120	60-140
F4 (>C_{34})	<100	100	107	60-140	121	60-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	99	60-140	121	60-140	98	60-140
Toluene-d8	75	60-140	94	60-140	95	60-140
4-Bromofluorobenzene	108	60-140	112	60-140	79	60-140

LEGEND:
RL - Reporting Limit
LCS - Laboratory Control Sample
MS - Matrix Spike
AR - Acceptable Range

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Water						
Benzene	0.0	0-30				
Toluene	0.0	0-30				
Ethylbenzene	0.0	0-30				
Xylenes	0.0	0-30				
PHC (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	0.0	0-30				
F2 (C_{10} - C_{16})	0.7	0-30				
F3 (C_{16} - C_{34})	8.0	0-30				
F4 (>C_{34})	0.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	124	60-140				
Toluene-d8	72	60-140				
4-Bromofluorobenzene	113	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs
Sample Description:	3 Water Sample(s)

Parameter	***23-2102-1*** MW3	***23-2102-2*** MW3 Field Duplicate			**Ground Water Standards [1]**	
					Table 2	**Table 3**
	Concentration (µ g/L)					
PAHs in Water						
Naphthalene	<2	<2			11	(6400) 1400
2-Methylnaphthalene	<1	<1			3.2	1800
1-Methylnaphthalene	<1	<1				
Acenaphthylene	<1	<1			1	1.8
Acenaphthene	<1	<1			4.1	(1700) 600
Fluorene	<0.5	<0.5			120	400
Phenanthrene	<0.1	<0.1			1	580
Anthracene	<0.1	<0.1			2.4	2.4
Fluoranthene	<0.4	<0.4			0.41	130
Pyrene	<0.2	<0.2			4.1	68
Benz [a] anthracene	<0.2	<0.2			1	4.7
Chrysene	<0.1	<0.1			0.1	1
Benzo [b] fluoranthene	<0.1	<0.1			0.1	0.75
Benzo [k] fluoranthene	<0.1	<0.1			0.1	0.4
Benzo [a] pyrene	<0.01	<0.01			0.01	0.81
Indeno [1,2,3-cd] pyrene	<0.2	<0.2			0.2	0.2
Dibenz [a,h] anthracene	<0.2	<0.2			0.2	0.52
Benzo [g,h,i] perylene	<0.2	<0.2			0.2	0.2
Surrogate Recovery (%)						
Naphthalene-d8	104	96			50-140	
Phenanthrene-d10	88	84			50-140	
Chrysene-d12	70	71			50-140	

< result obtained was below RL (Reporting Limit).

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.

Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition.

Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

All Types of Property Use. ( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/L)		Recovery (%)		Recovery (%)	
PAHs in Water						
Naphthalene	<2	2	89	50-140	57	50-140
2-Methylnaphthalene	<1	1	79	50-140	51	50-140
1-Methylnaphthalene	<1	1	86	50-140	55	50-140
Acenaphthylene	<1	1	64	50-140	50	50-140
Acenaphthene	<1	1	73	50-140	50	50-140
Fluorene	<0.5	0.5	95	50-140	52	50-140
Phenanthrene	<0.1	0.1	117	50-140	85	50-140
Anthracene	<0.1	0.1	66	50-140	69	50-140
Fluoranthene	<0.4	0.4	81	50-140	58	50-140
Pyrene	<0.2	0.2	81	50-140	58	50-140
Benz [a] anthracene	<0.2	0.2	89	50-140	64	50-140
Chrysene	<0.1	0.1	92	50-140	66	50-140
Benzo [b] fluoranthene	<0.1	0.1	86	50-140	63	50-140
Benzo [k] fluoranthene	<0.1	0.1	86	50-140	67	50-140
Benzo [a] pyrene	<0.01	0.01	85	50-140	64	50-140
Indeno [1,2,3-cd] pyrene	<0.2	0.2	132	50-140	94	50-140
Dibenz [a,h] anthracene	<0.2	0.2	105	50-140	73	50-140
Benzo [g,h,i] perylene	<0.2	0.2	97	50-140	72	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	76	50-140	68	50-140	90	50-140
Phenanthrene-d10	111	50-140	81	50-140	89	50-140
Chrysene-d12	96	50-140	62	50-140	99	50-140

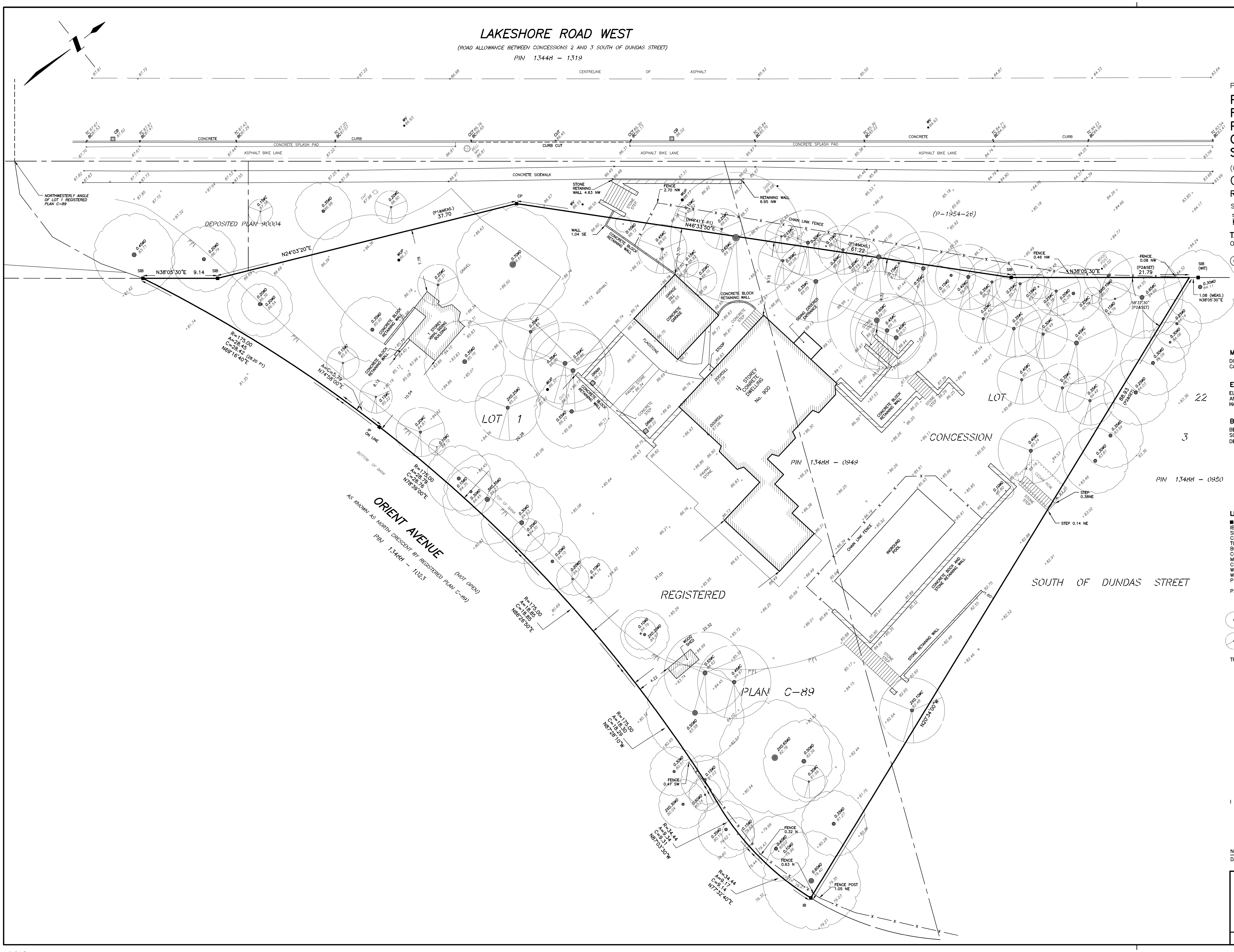
LEGEND:
RL - Reporting Limit
LCS - Laboratory Control Sample
MS - Matrix Spike
AR - Acceptable Range

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
PAHs in Water						
Naphthalene	0.0	0-30				
2-Methylnaphthalene	0.0	0-30				
1-Methylnaphthalene	0.0	0-30				
Acenaphthylene	0.0	0-30				
Acenaphthene	0.0	0-30				
Fluorene	0.0	0-30				
Phenanthrene	0.0	0-30				
Anthracene	0.0	0-30				
Fluoranthene	0.0	0-30				
Pyrene	0.0	0-30				
Benz [a] anthracene	0.0	0-30				
Chrysene	0.0	0-30				
Benzo [b] fluoranthene	0.0	0-30				
Benzo [k] fluoranthene	0.0	0-30				
Benzo [a] pyrene	0.0	0-30				
Indeno [1,2,3-cd] pyrene	0.0	0-30				
Dibenz [a,h] anthracene	0.0	0-30				
Benzo [g,h,i] perylene	0.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Naphthalene-d8	69	50-140				
Phenanthrene-d10	68	50-140				
Chrysene-d12	100	50-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

APPENDIX D – TOPOGRAPHICAL PLAN OF SURVEY



PLAN OF TOPOGRAPHY OF

PART OF LOT 1 REGISTERED PLAN C–89 AND PART OF LOT 22 CONCESSION 3 SOUTH OF DUNDAS STREET

(ORIGINALLY IN TOWNSHIP OF TORONTO)

CITY OF MISSISSAUGA

REGIONAL MUNICIPALITY OF PEEL

SCALE 1 : 200

5 0 5 10 metres

TARASICK McMILLAN KUBICKI LIMITED
ONTARIO LAND SURVEYORS

METRIC

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

ELEVATION NOTE

ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM–1928, AND WERE DERIVED FROM CITY OF MISSISSAUGA BENCHMARK No. 132, HAVING A PUBLISHED ELEVATION OF 93.630 metres.

BEARING NOTE

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHEASTERLY LIMIT OF LAKESHORE ROAD WEST AS SHOWN ON DEPOSITED PLAN 43470, HAVING A BEARING OF N38°05'30"E.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
IB	DENOTES	IRON BAR
SIB	DENOTES	STANDARD IRON BAR
CP	DENOTES	CONCRETE PIN
TC	DENOTES	TOP OF CURB
BC	DENOTES	BOTTOM OF CURB
CCT	DENOTES	CURB CUT
MH	DENOTES	MANHOLE
CB	DENOTES	CATCH BASIN
WUP	DENOTES	WOOD UTILITY POLE
WV	DENOTES	WATER VALVE
P1	DENOTES	PLAN BY DEPARTMENT OF HIGHWAYS, ONTARIO (P–1954–26)
P2	DENOTES	TARASICK McMILLAN KUBICKI LTD., O.L.S., DATED MAY 22, 2019

0.20⌀D DENOTES DECIDUOUS TREE WITH TRUNK DIAMETER

0.20⌀C DENOTES CONIFEROUS TREE WITH TRUNK DIAMETER

TREE CANOPIES ARE DRAWN TO SCALE.

I CERTIFY THAT THE SURVEY WAS COMPLETED ON OCTOBER 13, 2023.

NOVEMBER 8, 2023
DATE

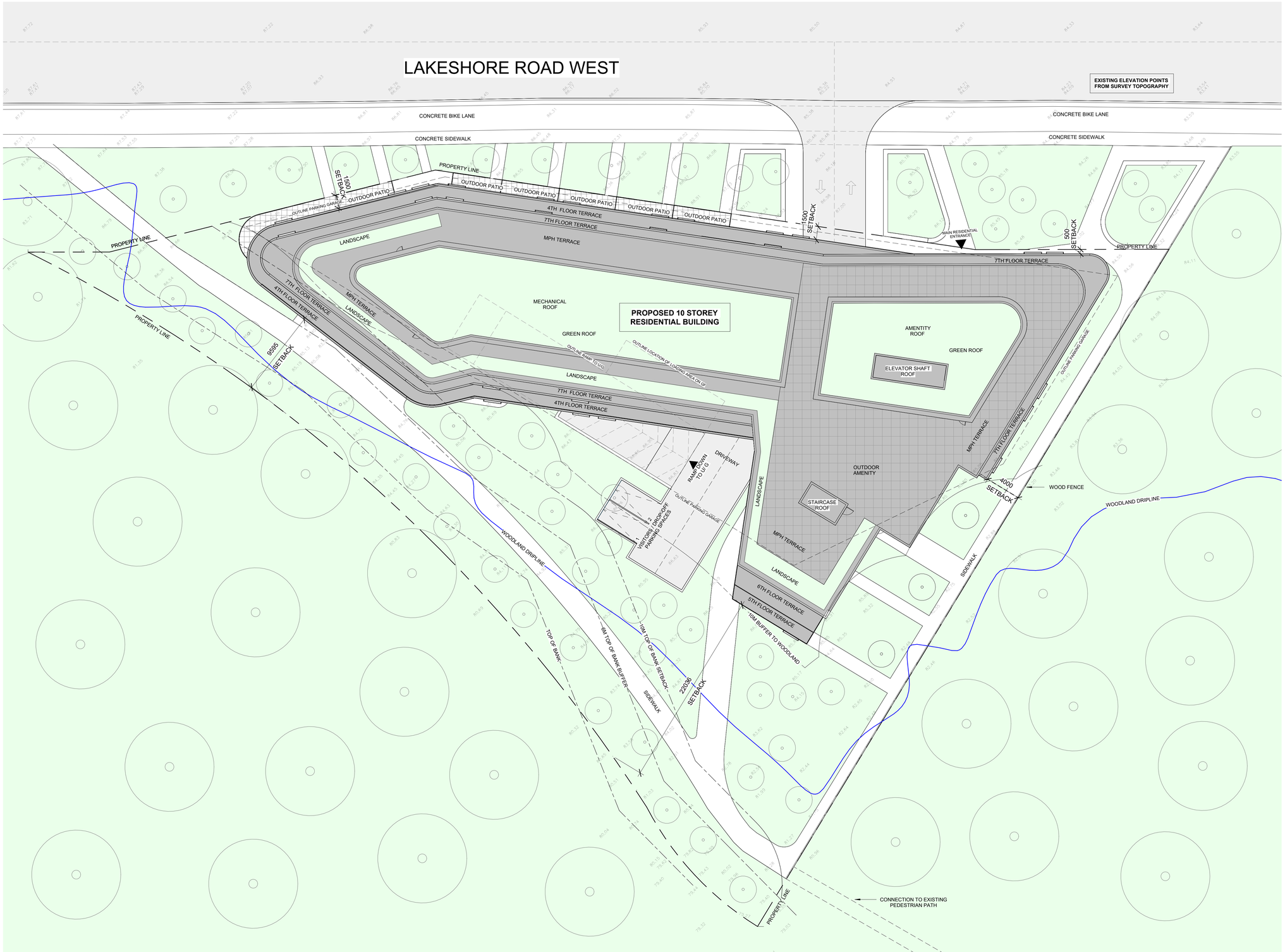
JACKIE HANG
ONTARIO LAND SURVEYOR

TARASICK McMILLAN KUBICKI LIMITED
ONTARIO LAND SURVEYORS
4181 SLADEVIEW CRESCENT, UNIT 42, MISSISSAUGA, ONTARIO L5L 5R2
TEL: (905) 569–8849 FAX: (905) 569–3160
E–MAIL: office@tmksurveyors.com

DRAWN BY: R.E. FILE No. 8139–TOPO

D (24"x36")

APPENDIX E – PROPOSED DEVELOPMENT PLAN



1 Site Plan
1 : 200

900
LAKESHORE

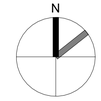
900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

DRAFT

CONTEXT KEY PLAN

PROJECT NORTH



STAMP

CLIENT

KFA architects + planners inc.

PROJECT NO:	23016
SCALE:	1 : 200
DATE:	09.01.2024
DRAWN BY:	FC

DRAWING TITLE

SITE PLAN

DRAWING NO

A002

1 Site Plan GF
1 : 200

900
LAKESHORE

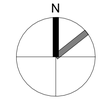
900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

DRAFT

CONTEXT KEY PLAN

PROJECT NORTH



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CLIENT

KFA architects + planners inc.

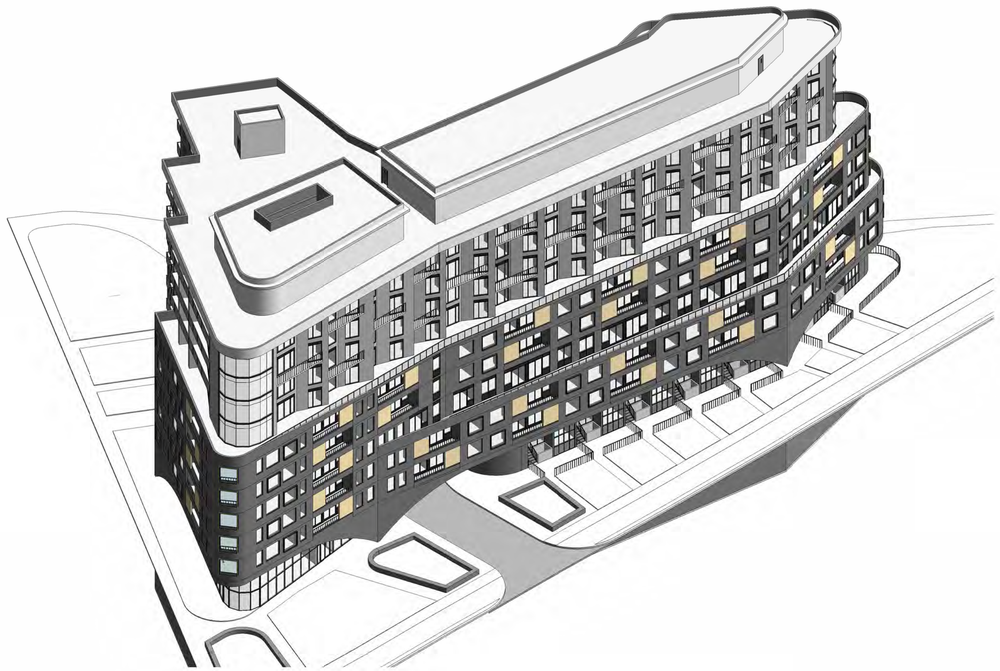
PROJECT NO:	23016
SCALE:	1 : 200
DATE:	09.01.2024
DRAWN BY:	FC

DRAWING TITLE

SITE PLAN (GF)

DRAWING NO

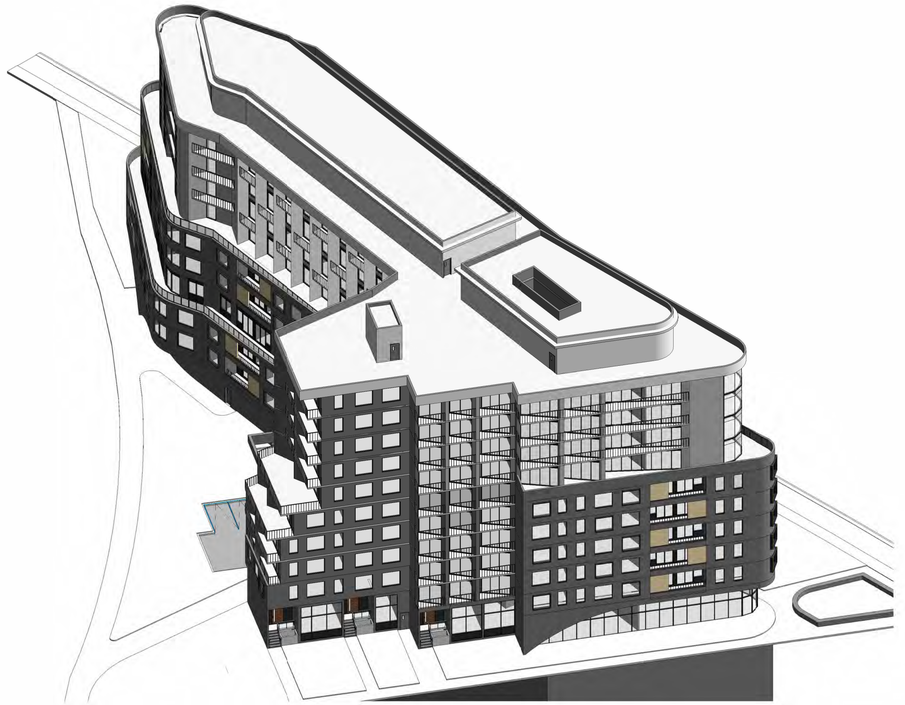
A003



1 NORTH EAST

2 SOUTH WEST

3 NORTH WEST



4 SOUTH EAST

900
LAKESHORE

900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

DRAFT

CONTEXT KEY PLAN

PROJECT NORTH

STAMP

CLIENT

KFA architects + planners inc.

PROJECT NO:	23016
SCALE:	
DATE:	09.01.2024
DRAWN BY:	FC

DRAWING TITLE

3D VIEWS

DRAWING NO

A004

1 P4 Level
1 : 150

900
LAKESHORE

900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

DRAFT

CONTEXT KEY PLAN

PROJECT NORTH

STAMP

CLIENT

KFA architects + planners inc.

PROJECT NO:	23016
SCALE:	1 : 150
DATE:	09.01.2024
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DRAWING TITLE

P4 PLAN

DRAWING NO

A101

1 P3 Level
1 : 150

900
LAKESHORE

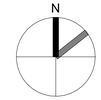
900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

DRAFT

CONTEXT KEY PLAN

PROJECT NORTH



STAMP

CLIENT

KFA architects + planners inc.

PROJECT NO:	23016
SCALE:	1 : 150
DATE:	09.01.2024
DRAWN BY:	FC

DRAWING TITLE

P3 PLAN

DRAWING NO

A102

1 P2 Level
1 : 150

900
LAKESHORE

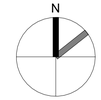
900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

DRAFT

CONTEXT KEY PLAN

PROJECT NORTH



STAMP

CLIENT

KFA architects + planners inc.

PROJECT NO:	23016
SCALE:	1 : 150
DATE:	09.01.2024
DRAWN BY:	FC

DRAWING TITLE

P2 PLAN

DRAWING NO

A103

1 P1 Level
1 : 150

900
LAKESHORE

900 LAKESHORE ROAD WEST
MISSISSAUGA, ON

No.	Description	Date
	Issued for Coordination	17.01.2024

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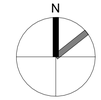
CONTEXT KEY PLAN

PROJECT NORTH



STAMP

CLIENT

KFA architects + planners inc.

PROJECT NO:	23016
SCALE:	1 : 150
DATE:	09.01.2024
DRAWN BY:	FC

DRAWING TITLE

P1 PLAN

DRAWING NO

A104