



ENGINEERING



LABORATORY



PHASE II ENVIRONMENTAL
SITE ASSESSMENT



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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, Xylene
CALA:	Canadian Association for Laboratory Accreditation
COC:	Contaminants of Concern
CPC:	Contaminants of Potential Concern
CSA:	Canadian Standards Association
CSM:	Conceptual Site Model
EPA:	Environmental Protection Act
HRC	Hydrogen Release Compound
MNR:	Ministry of Natural Resources
MECP:	Ministry of the Environment, Conservation and Parks
MOE:	Ministry of the Environment
PCA:	Potentially Contaminating Activity
PCB:	Polychlorinated Biphenyl
Phase I ESA:	Phase One Environmental Site Assessment
Phase II ESA:	Phase Two Environmental Site Assessment
PAHs	Polycyclic Aromatic Hydrocarbons
PHC (F1-F4):	Petroleum Hydrocarbon in four fractions, F1 to F4
PID:	Photoionization Detector
PPB:	Parts per Billion
PPM:	Parts per Million
PVC:	Polyvinyl Chloride
QA/QC:	Quality Assurance/Quality Control
RSC:	Record of Site Condition
SCS:	Site Condition Standard
UST:	Underground Storage Tank
VOC:	Volatile Organic Compound



EXECUTIVE SUMMARY

Fisher Environmental Ltd. (Fisher) was retained by Mr. Mike Siskind of Decade Capital to conduct a Phase II ESA of the property located at 375 Kingston Road, Pickering, ON, hereinafter referred to as the “Site”. The subsurface soil and groundwater investigation was carried out on April 28, 2021.

The Site is located on the southeast corner of the Kingston Road and Rougemount Drive with an area of approximately 7,200 m². The south and east portions of the Site are occupied by a two-level multi-unit commercial building, the remaining portions are asphalt covered parking and driving areas, and landscaping along the perimeter of the Site.

A Phase I ESA conducted by Fisher Environmental Ltd. (Report: FE-P-21-11141) in March 2021 recommended a Phase II ESA based on the following observations which could result in potential subsurface impacts at the Site:

- **Presence of a former on-site fueling facility:** A former gas station and associated USTs and dispensing equipment were located on the north central portion of the site.
- **Presence of an on-site Dry Cleaning Facility:** A dry cleaning facility is present on site.
- **Presence of an Auto Scrap Yard:** An auto scrap yard is adjacent to the east property boundary.

In the present investigation, five (5) boreholes, three (3) of which were instrumented as monitoring wells to facilitate groundwater level monitoring and sampling, were advanced outside the building footprint of the investigated property, up to approximately 9.5m below ground surface (bgs).

Groundwater static level measurements were taken at the monitoring well locations on May 03, 2021, and they were noted at depths ranging from 4.32m bgs in BH2(MW) to 5.68m bgs in BH1(MW). The local groundwater flow direction was inferred to be south/southwest, towards The Rouge River. However, the localized groundwater flow direction may be influenced by the presence of underground utilities, building foundation, variations in vertical and horizontal stratigraphy, depth of wells’ screened intervals and/or well trauma. It should be noted that groundwater levels are subjected to seasonal fluctuations; consequently, definitive information on long-term groundwater levels were not obtained during the investigation.

According to the Quaternary Geology of Southern Ontario published by The Ministry of Natural Resources, the Site is situated in an area characterized as Till: Stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain.

On the basis of the boreholes completed, the soil stratigraphy across the Site can generally be described as mainly, brownish grey silt, sandy silt underlain by grey silty sand with trace gravel to borehole termination depths.



The applicable MECP SCS was identified as: Table 3, Full Depth Generic SCS in a Non-Potable Groundwater Condition – Industrial/Commercial/Community Property Use for soil samples and All Types of Property Use for groundwater samples in a medium to fine textured soil condition.

Six (6) soil samples were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs. Four (4) groundwater samples collected from the installed wells, including one duplicate, were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs.

FINDINGS – SOIL AND GROUNDWATER

The analytical results of the submitted soil and groundwater samples were found to be in compliance with the applicable MECP Table 3 SCS.

CONCLUSIONS

Based on the results of the current investigation, the encountered soil and groundwater conditions at the selected sampling locations of the Site were all within the applicable MECP standards. No further investigation is required at this time.



1. INTRODUCTION

Fisher Environmental Ltd. (Fisher) was retained by Mr. Mike Siskind of Decade Capital to conduct a Phase II ESA of the property located at 375 Kingston Road, Pickering, ON, hereinafter referred to as the “Site”. The subsurface soil and groundwater investigation was carried out on April 28, 2021.

2. PROPERTY DESCRIPTION

The Site is located on the southeast corner of the Kingston Road and Rougemount Drive with an area of approximately 7,200 m². The south and east portions of the Site are occupied by a two-level multi-unit commercial building, the remaining portions are asphalt covered parking and driving areas, and landscaping along the perimeter of the Site.

3. EXISTING REPORTS REVIEW

A Phase I ESA conducted by Fisher Environmental Ltd. (Report: FE-P-21-11141) in March 2021 recommended a Phase II ESA based on the following observations which could result in potential subsurface impacts at the Site:

- **Presence of a former on-site fueling facility:** A former gas station and associated USTs and dispensing equipment were located on the north central portion of the site.
- **Presence of an on-site Dry Cleaning Facility:** A dry cleaning facility is present on site.
- **Presence of an Auto Scrap Yard:** An auto scrap yard is adjacent to the east property boundary.

4. SCOPE OF WORK

The current Phase II ESA was conducted in accordance with the CAN/CSA-Z769-00 standards, as published in March 2000 and reaffirmed in 2018, by the CSA Group. A Phase II ESA involves sampling and testing of materials considered, usually by the outcome of a Phase I ESA or other investigation, to be possible instances of environmental contamination. Normal environmental assessment protocol reserves a detailed investigation for a subsequent phase if the reconnaissance survey indicates a requirement for further contaminant delineation.

The scope of this work generally consisted of the following:

- **Field Program** - Clearance of underground utilities and advancement of five (5) boreholes to a proposed depth of up to 6 m or resistance, or until sufficient depth is attained for the collection of soil and/or groundwater samples, installation of three (3) groundwater monitoring wells;
- **Laboratory Analytical Program** - Recovery and analysis of selected soil and groundwater samples for one or more of the following: Metals, PHCs (F1-F4), PAHs and VOCs;
- **Data Evaluation** - Comparison of results from laboratory analyses with the applicable MECP SCS; and



- **Reporting** - Provision of final report detailing the findings of performed works.

As conducted, the present investigation may lack information or analytical work that are specific requirements for filing a RSC under Part XV.1 of the EPA and amended Ontario Regulation 153/04, therefore, if a RSC is necessary, the property owner or its agent should undertake complementary investigations required under the RSC filing process.

5. FIELD PROGRAM

The subsurface soil and groundwater investigation were carried on April 28, 2021. The field work was conducted by Fisher personnel who directed drilling and sampling operations and assured proper chain of custody procedures for the recovered soil and groundwater samples.

In the current investigation, five (5) boreholes, three (3) of which were instrumented as monitoring wells to facilitate groundwater level monitoring and sampling, were advanced outside the building footprint of the investigated property, up to approximately 9.5m below ground surface (bgs).

5.1. Site Preparation

Site preparation included the clearance and/or marking of public underground services by the respective utilities listed with Ontario One Call, to avoid potential disruptions to the utilities during the drilling. Borehole drilling was scheduled following receipt of clearance from all utilities for the given borehole locations.

5.2. Boreholes, Soil and Groundwater Sampling

The borehole locations were selected by an initial rationale as being the most likely locations of contamination. Refer to the attached site plan with borehole and monitoring well locations in Appendix A and Table 1 below for descriptions of the borehole location rationale. Borehole drilling was carried out using a truck-mounted Diedrich D-50 drill rig.

TABLE 1: BOREHOLE LOCATION RATIONALE

Borehole I.D.	Borehole Location and Rationale
BH1(MW), BH2(MW)	Evaluate the sub-surface soil and groundwater conditions at the north central portion of the subject property in relation to potential impacts originating from, present and historical on-site operations, in the vicinity of the former tank nest and pump island, and off-site neighbouring properties.
BH3, BH4(MW)	Evaluate the sub-surface soil and groundwater conditions at the southwestern and south-central portions of the subject property in relation to potential impacts originating from, present and historical on-site operations, in the vicinity of the dry cleaning facility, and off-site neighbouring properties.
BH5(MW)	Evaluate the sub-surface soil and groundwater conditions at the southeastern portion of the subject property in relation to potential impacts originating from, historical on-site operations, and off-site neighbouring properties.



The drilling works was conducted by Terra Firma Environmental Services Limited (Terra Firma) of Toronto, Ontario and supervised by Fisher personnel. Terra Firma maintains licensure for drilling (Water Well Drillers, EPA, Well Contractor License No. 6946) as required by the MECP, and conducted drilling and soil sampling works in accordance with CSA Standard Z769-00 (published March 2000, reaffirmed in 2018) and MECP Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, and in compliance with Occupational Health and Safety regulations.

The drilling of the boreholes was carried out using a Diedrich D-50 drilling rig equipped with a 50 mm diameter spoon sampler driven 300 mm into the subsoil by a 65 kg hammer, falling 760 mm, and solid stem continuous flight augers. No external water was used to advance the boreholes.

Soil and groundwater samples were collected and handled in accordance with generally accepted sampling and handling procedures used by the environmental consulting industry. For guidance, these practices rely on the 1996 MOE publication “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.” To minimize the potential for cross-contamination between soil samples, the split spoon sampler and the stainless steel spatula used to collect soil samples from the boreholes was brushed clean of soil and washed in municipal water containing Alconox then rinsed with distilled water. As well, new disposable latex gloves were used during each sampling event when removing the soil cores from the split spoon sampler and when transferring the samples into laboratory supplied containers. New hermetic samplers were also used for sampling of soil to be tested for PHC (F1), and VOCs.

For each soil sample, the lithology and esthetic evidence of impacts (debris, staining and odours) were recorded as part of field QC procedures. Additionally, each sample was screened in the field for headspace vapour concentration (combustible soil vapour and total organic vapour) using the 10.6 eV lamp Mini Rae 2000 PID calibrated to 100 ppm isobutylene. The headspace monitoring was performed on the soil samples as a preliminary screening for VOCs analysis.

The selection of soil samples to be submitted for laboratory analysis was based on the headspace vapour concentration and/or physical evidence of odours/staining. If no vapour readings or odours/staining are observed in the soil samples, then the worst-case scenarios at the depths in which contaminants are likely to be present were selected. Soil samples collected were placed directly into laboratory supplied containers at the time of sampling and labelled.

Prior to groundwater sampling, three (3) well volumes of groundwater were purged from each groundwater monitoring well to ensure the sampling of “fresh” formation water if the natural recharge rate of the groundwater was sufficient. Groundwater was collected utilizing single-use disposable bailers and placed into laboratory supplied containers and labeled. Soil and groundwater samples were kept in coolers with ice and/or ice packs during field storage and transportation to Fisher Environmental Laboratories.



5.3. **Groundwater Monitoring Wells**

Three (3) groundwater monitoring wells were installed at the Site in accordance with O. Reg. 903. The groundwater wells were constructed of 52 mm inner diameter PVC pipes, which were pre-cleaned at the factory and delivered to the Site in sealed plastic bags. The portion below and/or intersecting the groundwater table was constructed of a similar diameter machine-slotted screen to permit future measurement of water levels and the collection of groundwater samples.

The three (3) installed groundwater monitoring wells were sampled to determine the presence/absence of free phase product within the groundwater monitoring wells. Further construction details of the groundwater monitoring wells are detailed in the log of boreholes attached in Appendix B. Static groundwater level measurements were conducted prior to sampling. The static groundwater level measurements are summarized in Table 2 below.

TABLE 2: STATIC GROUNDWATER LEVEL MEASUREMENTS

Location	Well Depth, m bgs	Groundwater Static Level, m bgs
BH1(MW)	7.54	5.68
BH2(MW)	6.12	4.32
BH4(MW)	8.42	4.70

Based on the regional topography, the local groundwater flow direction was inferred to be south/southwest, towards The Rouge River. The localized shallow groundwater flow direction may be influenced by the presence of underground utilities, building foundations, variations in vertical and horizontal stratigraphy, depth of wells' screened intervals and/or well trauma. It should be noted that groundwater levels are subjected to seasonal fluctuations; consequently, definitive information on long-term groundwater levels were not obtained during the investigation.

5.4. **Well Record Filed with the MECP**

The groundwater monitoring well installations for this project are regulated under Regulation 903 of the Ontario Water Resources Act. The regulation reveals certain responsibilities on Fisher Environmental and the property owner. As a condition to Fisher Environmental providing groundwater monitoring installation services, our client has accepted responsibility for ensuring that the property owner accepts the following conditions:

1. The name and address of the property owner have been provided to Fisher Environmental.
2. Fisher Environmental has permission to submit well records to the Ministry and to the owner and to report multiple installations on a single well record.



3. Unless otherwise agreed to by Fisher Environmental, installations will be decommissioned by the owner within 180 days of installation. Note that installations greater than 180 days require more costly seals.
4. Well tags on installations must not be removed or destroyed.
5. The owner is responsible for future decommissioning of all installations in accordance with the regulation.
6. The owner is responsible for any expenses associated with controlling and decommissioning installations that have, or may have in the future, artesian conditions.
7. Maintenance of well installations in accordance with the regulation will be by the owner. This includes ensuring that seals remain adequate for preventing water or gas migration between formations and to/from surface, seals do not deteriorate and wells are decommissioned.
8. The client and owner accept responsibility for the inherent risk associated with industry standard installations, and acknowledge that conditions and materials do not remain constant with time nor that they can be completely quantified or predicted in advance.

5.5. Site Topography and Geology

According to the Quaternary Geology of Southern Ontario published by The Ministry of Natural Resources, the Site is situated in an area characterized as Till: Stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain.

On the basis of the boreholes completed, the soil stratigraphy across the Site can generally be described as mainly, brownish grey silt, sandy silt underlain by grey silty sand with trace gravel to borehole termination depths.

5.6. Head Space Combustible Vapours

A 10.6 eV lamp MiniRae 2000 PID calibrated to 100 ppm isobutylene was used to measure combustible vapours in the soil samples. The soil sample with the highest reading from each borehole was selected for analysis.

5.7. Visual and Olfactory Soil / Groundwater Quality

During the on-site soil and groundwater sampling, no deleterious material was noted in the samples collected. However, hydrocarbon odours were noted in soil samples collected up to approximately 1.5m bgs in BH1.



5.8. Selection of Analytical Samples and Parameters

Selection of samples for laboratory analysis was based on appearance, headspace vapour concentrations, expectations of site conditions, and proximity of potential contaminant sources.

Six (6) soil samples were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs. Four (4) groundwater samples collected from the installed wells, including one duplicate, were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs. The rationale for the selected parameter is detailed in Table 3 below.

TABLE 3: RATIONALE FOR ANALYTICAL PARAMETER

Parameter	Description
Metals	<p>Various metallic elements can cause adverse environmental effects at relatively low concentrations. Such metals are associated with industrial/commercial activities, both historic and current, and it is common practice to include metals analysis in subsurface soil and/or groundwater investigations.</p> <p>Six (6) soil and four (4) groundwater samples collected at the Site were submitted for metals analysis.</p>
PHCs (F1-F4) and BTEX	<p>PHCs are components of gasoline, diesel and other petroleum products for which soil quality guidelines have been developed. These compounds are widely utilized and often included in the evaluation of a Site's overall subsurface condition. BTEX are compounds found in petroleum products and considered to be VOCs.</p> <p>Six (6) soil and four (4) groundwater samples collected at the Site were submitted for PHCs (F1-F4) and BTEX analysis.</p>
VOCs	<p>VOCs are any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. VOCs are included in gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvents, resin, monomer, and/or any other material containing VOCs.</p> <p>Six (6) soil and four (4) groundwater samples collected at the Site were submitted for VOCs analysis.</p>
PAHs	<p>PAHs are associated with coal and furnace ash, and/or the use of fill materials of unknown quality. Two (2) soil and two (2) groundwater samples collected at the Site was submitted for PAHs analysis.</p>
pH	<p>Soil pH is referred to as the "acidity" of the soil. When the soil pH is too "acid" (low pH) or too "alkaline" (high pH), nutrients present in the soil become locked-up or unavailable. The applicable MECF SCS were developed for soils with a specific range of pH 5-9 for surface soils and 5-11 for subsurface soils. Two (2) soil samples collected at the Site were submitted for pH analysis</p>
Grain Size	<p>As specified by Ontario Regulation 153/04, as amended, "coarse textured soil is defined as material having more than 50 percent (by mass) of particles that are 75 µm or larger in mean diameter". "Materials having more than 50 percent (by mass) of particles that are smaller than 75 µm in mean diameter are medium and fine textured soils". "When at least 1/3 of the soil at the property, measured by volume, consists of coarse textured soil, the standard for coarse textured soil shall apply. In any other case, the standard for medium and fine textured soil may be applied". One (1) soil sample collected at the Site was submitted for Grain Size distribution</p>



6. LABORATORY ANALYTICAL PROGRAM

6.1. General

Recovered soil and groundwater samples were submitted to Fisher Environmental Laboratories for analysis. As a CALA registered analytical facility, QA/QC procedures were maintained consistent with CALA requirements and standard laboratory practices. The laboratory ensured that analytical sub-samples were, by appearance, representative of the whole sample as collected in the field.

6.2. Data Evaluation

6.2.1. Soil and Groundwater Standards

The MECP presents Soil and Groundwater Standards, under the Publication “Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the EPA” April 15, 2011. These standards present soil, groundwater, and sediment criteria which have been developed with regard to toxicological data. They are levels at and below which no environmental or safety concerns, or adverse conditions, are anticipated for environments or persons with average sensitivity.

The Site has been utilized for industrial/commercial purposes and it is our understanding that the Site will maintain its industrial/commercial land use. For the purpose of assessing the soil and groundwater quality at the Site in accordance to the requirements for site assessment, under Part XV.1 of the EPA and Ontario Regulation 153/04, it is our intention to utilize a non-potable groundwater condition standard.

For the purposes of this Phase II ESA, the appropriate standards were identified as: Table 3, Full Depth Generic SCS in a Non-Potable Groundwater Condition – Industrial/Commercial/Community (I/C/C) Property Use for soil samples and All Types of Property Use for groundwater samples in a medium to fine textured soil condition. The criteria values are presented with the results of analysis in the last column of the certificates of analysis attached in Appendix C.

6.2.2. Soil and Groundwater Quality

Six (6) soil samples were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs. Four (4) groundwater samples collected from the installed wells, including one duplicate, were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs. A summary of the soil and groundwater quality is listed in Table 4 and Table 5 below.



Table 4: Summary of Soil Quality

Borehole Number	Sample Depth (m bgs)	Laboratory Number	Parameter(s) Analyzed	Exceedances of Table 3 SCS <i>Soil: I/C/C Property Use</i>
Soil Samples (µg/g, ppm)				
BH1	0.15-0.75m	21-6436-1	Metals, VOCs, PAHs PHCs (F1-F4)	None
BH1	0.75-1.20m	21-6436-2	Metals, VOCs, PHCs (F1-F4)	None
BH2	2.25-2.70m	21-6436-3	Metals, VOCs, PHCs (F1-F4)	None
BH3	1.50-1.95m	21-6436-4	Metals, VOCs, PAHs, PHCs (F1-F4)	None
BH4	1.50-1.95m	21-6436-5	Metals, VOCs, PHCs (F1-F4)	None
BH5	2.25-2.70m	21-6436-6	Metals, VOCs, PHCs (F1-F4)	None

Table 5: Summary of Groundwater Quality

Borehole Number	Water Level (m bgs)	Laboratory Number	Parameter(s) Analyzed	Exceedances of Table 3 SCS <i>Groundwater: All Types of Property Use</i>
Groundwater (µg/L, ppb)				
BH1(MW)	5.68	21-6436-7	Metals, VOCs, PAHs, PHCs (F1-F4)	None
BH1(MW) Duplicate	5.68	21-6436-8	Metals, VOCs, PHCs (F1-F4)	None
BH2(MW)	4.32	21-6436-9	Metals, VOCs, PAHs, PHCs (F1-F4)	None
BH4(MW)	4.70	21-6436-10	Metals, VOCs, PHCs (F1-F4)	None

NOTES: PHC (F1-F4)*: Petroleum Hydrocarbons fractions (F1-F4)

- F1 (C6-C10) Gasoline less BTEX
- F2 (C10-C16) Diesel
- F3 (C16-C34) Diesel
- F4 (C34-C50) Heavy Oil
- F4G (>C34) Heavy Oil

VOC: Volatile Organic Compounds, PAH: Polycyclic Aromatic Hydrocarbons

Bold: Exceeds the MOE Standards

*For a site to meet this standard, there must be no evidence of free product, including but not limited to, visible petroleum hydrocarbon film or sheen present on any groundwater samples.

6.2.3. Metals

Six (6) soil and four (4) groundwater samples were submitted for metals analysis. The results of the lab analyses of the submitted soil and groundwater samples were within the applicable MECP Table 3 SCS.



6.2.4. Petroleum Hydrocarbons and BTEX

Six (6) soil and four (4) groundwater samples were submitted for PHCs analysis. The results of the lab analyses of the submitted soil and groundwater samples were within the applicable MECP Table 3 SCS.

6.2.5. Volatile Organic Compounds

Six (6) soil and four (4) groundwater samples were submitted for VOCs analysis. The results of the lab analyses of the submitted soil and groundwater samples were within the applicable MECP Table 3 SCS..

6.2.6. Polycyclic Aromatic Hydrocarbons (PAHs)

Two (2) soil and two (2) groundwater samples were submitted for PAHs analysis. The result of the lab analysis of the submitted soil and groundwater samples were within the applicable MECP Table 3 SCS.

6.2.7. pH

Two (2) soil samples were submitted for pH analysis. The analytical results of the pH analysis of the submitted soil samples were within the range of 5 to 9 for the surface soil sample and within the range of 5 to 11 for the subsurface soil sample.

6.2.8. Grain Size

Three (3) soil samples were submitted for Grain Size distribution analysis; the submitted soil samples were determined to be medium to fine textured.

6.3. *Quality Assurance/Quality Control*

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.

The laboratory checks randomly selected samples for QA. Generally, one (1) sample for every twenty (20) samples submitted is selected for QA checks. For each parameter, there is an acceptable upper and lower limit for the measured concentration of the parameter. Measured concentrations of analyzed samples must fall within the upper and lower acceptable limits in order for the sample to be valid. If the result exceeds the upper or lower acceptable limits, the sample must be re-analyzed.

Based on QA reports provided by the laboratory, measured concentrations in the soil and groundwater samples were within the acceptable limits for QC. Copies of the QA/QC reports for the soil and groundwater are included with the certificates of analysis attached in Appendix C.



7. SUMMARY AND CONCLUSIONS

Fisher Environmental Ltd. (Fisher) was retained by Mr. Mike Siskind of Decade Capital to conduct a Phase II ESA of the property located at 375 Kingston Road, Pickering, ON, hereinafter referred to as the “Site”. The subsurface soil and groundwater investigation was carried out on April 28, 2021.

- Five (5) boreholes, three (3) of which were instrumented as monitoring wells to facilitate groundwater level monitoring and sampling, were advanced outside the building footprint of the investigated property, up to approximately 9.5m below ground surface (bgs);
- On the basis of the boreholes completed, the soil stratigraphy across the Site can generally be described as mainly, brownish grey silt, sandy silt underlain by grey silty sand with trace gravel to borehole termination depths;
- Groundwater static level measurements were taken at the monitoring well locations on May 03, 2021, and they were noted at depths ranging from 4.32m bgs in BH2(MW) to 5.68m bgs in BH1(MW);
- During the on-site soil and groundwater sampling, no deleterious material was noted in the samples collected. However, hydrocarbon odours were noted in soil samples collected up to approximately 1.5m bgs in BH1;
- Based on the regional topography, the local groundwater flow direction was inferred to be south/southwest, towards The Rouge River. The localized shallow groundwater flow direction may be influenced by the presence of underground utilities, building foundations, variations in vertical and horizontal stratigraphy, depth of wells’ screened intervals and/or well trauma. It should be noted that groundwater levels are subjected to seasonal fluctuations; consequently, definitive information on long-term groundwater levels were not obtained during the investigation;
- The applicable MECP SCS was identified as: Table 3, Full Depth Generic SCS in a Non-Potable Groundwater Condition – I/C/C Property Use for soil samples and All Types of Property Use for groundwater samples in a coarse textured soil condition;
- Six (6) soil samples were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs. Four (4) groundwater samples collected from the installed wells, including one duplicate, were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), VOCs and PAHs;
- The analytical results of the submitted soil and groundwater samples were found to be in compliance with the applicable MECP Table 3 SCS.



Based on the results of the current investigation, the encountered soil and groundwater conditions at the selected sampling locations of the Site were all within the applicable MECP standards. No further investigation is required at this time.

8. LIMITATIONS

This report was prepared for use by Mr. Mike Siskind of Decade Capital 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 completely 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. In instances where a Phase II ESA is conducted without the completion of a current Phase I ESA, it is noted that test locations are based on a limited evaluation of current site operations. In such instances, knowledge of current and historical use of the site and neighboring properties may be significantly limited. 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 prior to use by any other parties, or any future use of this document or its findings, conclusions, or recommendations represented herein. Any use which 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 accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Fisher notes that the work conducted at the Site may not fully satisfy the MECP requirements for the purpose of filling an RSC. Should an RSC be required, then additional investigations should be conducted at the Site.



9. QUALIFICATIONS OF ASSESSOR

As a Qualified Person who conducts and supervises Phase II ESAs, Mr. David Fisher, president of Fisher, is a senior Managerial and Environmental Engineering Specialist with over thirty (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 ESAs and remediation, geotechnical and hydrogeological investigations, tank removals, PCB waste treatment, land reclamation, recycling, hazardous waste disposal, and associated laboratory analytical practices.

Fisher 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.

10. REFERENCES

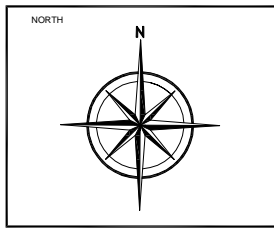
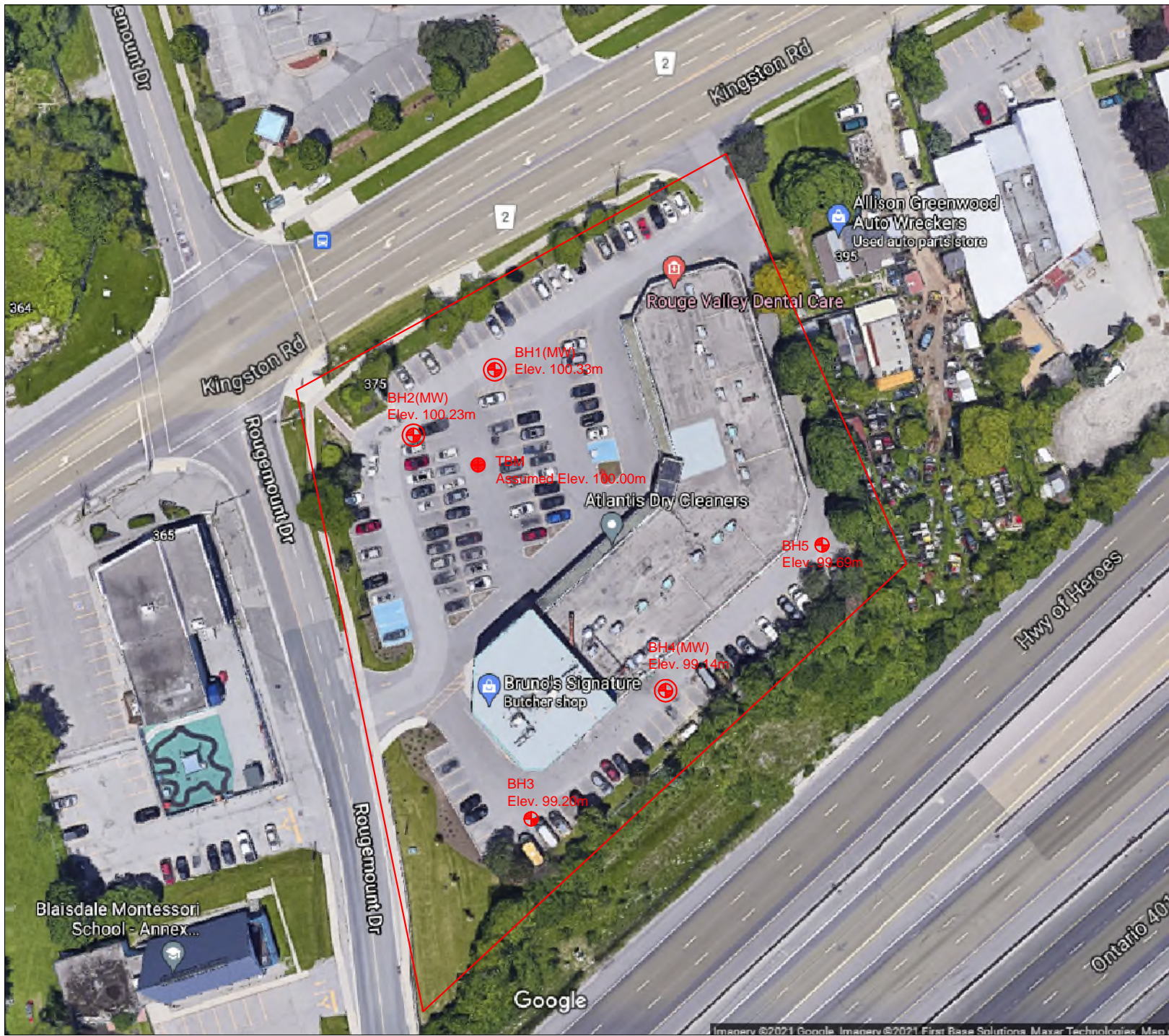
The Phase II ESA was conducted in accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives administrated by the Ontario MECP. Specific reference is made to the following:

- CAN/CSA Standard Z769-00 (published March 2000, reaffirmed 2018), Phase II ESA, A National Standard of Canada;
- “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario” Ministry of the Environment of Ontario, December 1996;
- EPA, RSO 1990, Charter E. 19, as amended, version date March 22, 2017;
- Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the EPA, dated April 15, 2011;
- The Ontario Water Resources Act – R.R.O. 1990, Ontario Regulation 903 – Amended to Ontario Regulation 128.03, August 2003;
- Surficial geology of southern Ontario, Northern Development and Mines;
- A Phase I ESA conducted by Fisher Environmental Ltd. (Report: FE-P-21-11141) in March 2021.



APPENDIX A – SITE PLAN





LEGEND

	Monitoring Well/Borehole
	Benchmark

PROJECT NAME AND ADDRESS
 PHASE TWO ESA & GEOTECHNICAL INVESTIGATION
 375 KINGSTON ROAD,
 PICKERING, ONTARIO

FIGURE 1:
 SITE PLAN WITH BOREHOLE LOCATIONS

PROJECT NO. FE-P 21-11144/45	1
DATE MAY 2021	
SCALE AS SHOWN	

APPENDIX B – LOG OF BOREHOLES

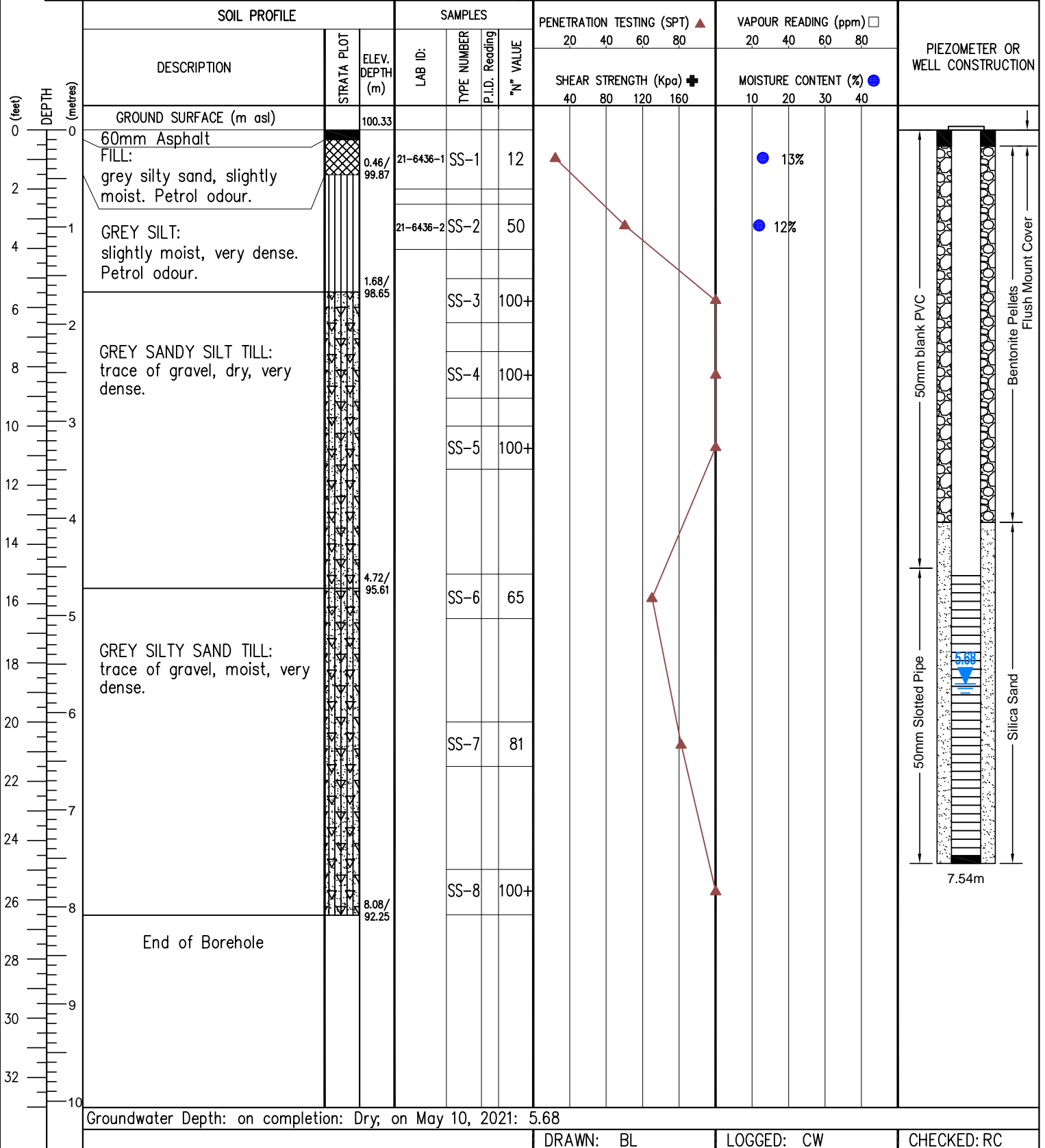


PROJECT NAME: Phase II ESA & Geotechnical Investigation

LOCATION: 375 Kingston Road, Pickering, Ontario

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: April 28, 2021



Groundwater Depth: on completion: Dry, on May 10, 2021: 5.68

DRAWN: BL

LOGGED: CW

CHECKED: RC



LOG OF BOREHOLE No. BH2(MW) SHEET. 1 of 1

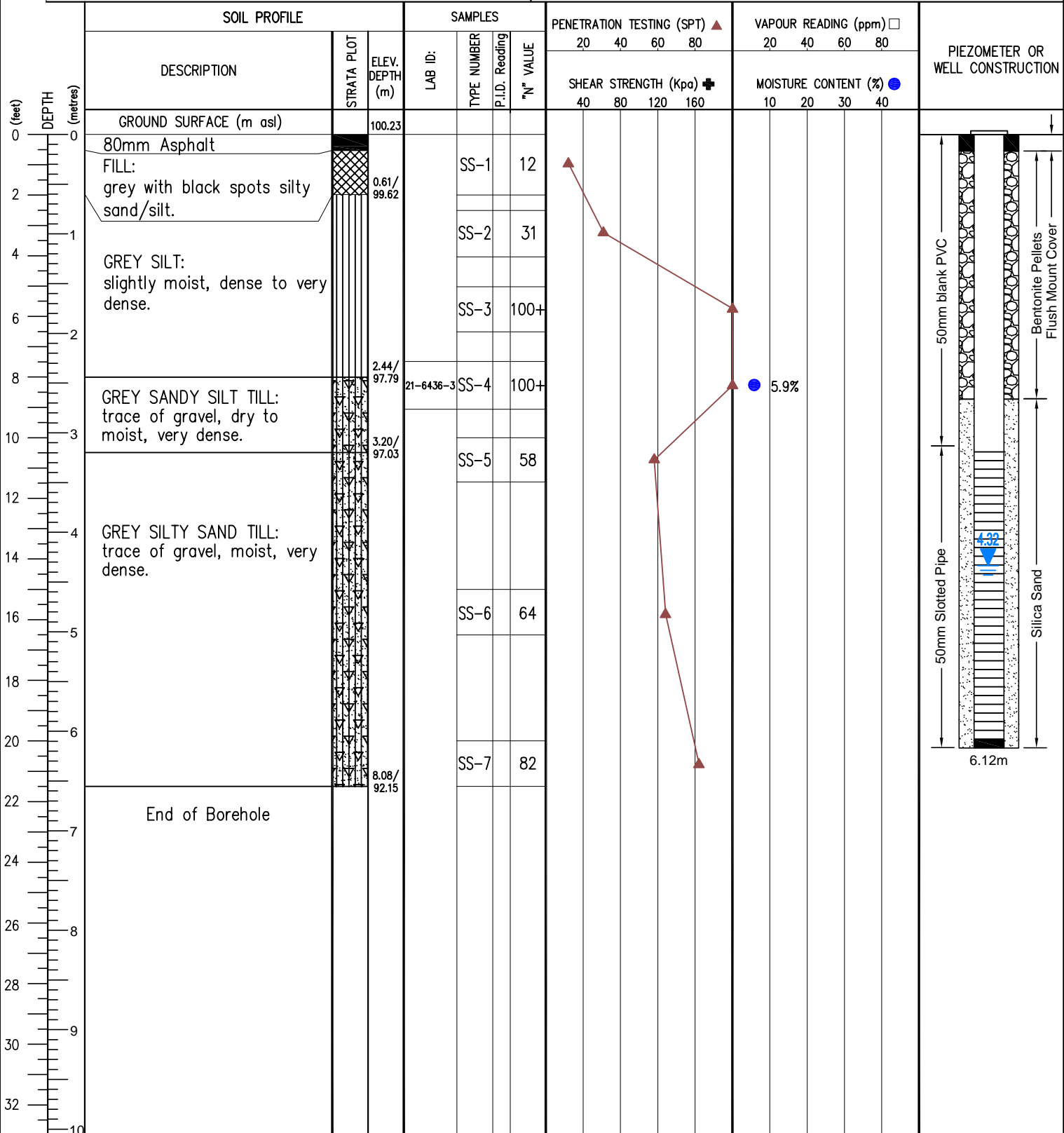
PROJECT NO.: FE-P 21-11144 & 21-11145

PROJECT NAME: Phase II ESA & Geotechnical Investigation

LOCATION: 375 Kingston Road, Pickering, Ontario

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: April 28, 2021



Groundwater Depth: on completion: Dry, on May 10, 2021: 4.32m

DRAWN: BL

LOGGED: CW

CHECKED: RC



LOG OF BOREHOLE No. BH3 SHEET. 1 of 1

PROJECT NO.: FE-P 21-11144 & 21-11145

PROJECT NAME: Phase II ESA & Geotechnical Investigation

LOCATION: 375 Kingston Road, Pickering, Ontario

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: April 28, 2021

DEPTH (feet) DEPTH (metres)	SOIL PROFILE		SAMPLES				PENETRATION TESTING (SPT) ▲				VAPOUR READING (ppm) □				PIEZOMETER OR WELL CONSTRUCTION	
	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID:	TYPE NUMBER	P.I.D. Reading	"N" VALUE	20 40 60 80				20 40 60 80				
								SHEAR STRENGTH (Kpa) +				MOISTURE CONTENT (%) ●				
							40	80	120	160	10	20	30	40		
0	GROUND SURFACE (m asl)		99.20													
0	60mm Asphalt															
0.46 / 98.74	FILL: grey silty sand, some gravel, dry.															
2																
1	BROWNISH GREY SILT: slightly moist, dense to very dense.															
4																
1.68 / 97.52																
6	BROWNISH GREY SANDY SILT TILL: trace of gravel, dry, very dense.			21-6436-4												
2																
8																
3.05 / 96.15																
10																
3																
12	GREY SILTY SAND TILL: trace of gravel, slightly moist to dry, very dense.															
4																
14																
16																
5																
18																
20																
6																
22																
7																
24																
26																
8																
8.08 / 91.12																
28	End of Borehole															
9																
30																
32																
10																

Groundwater Depth: on completion: Dry

DRAWN: BL

LOGGED: CW

CHECKED: RC

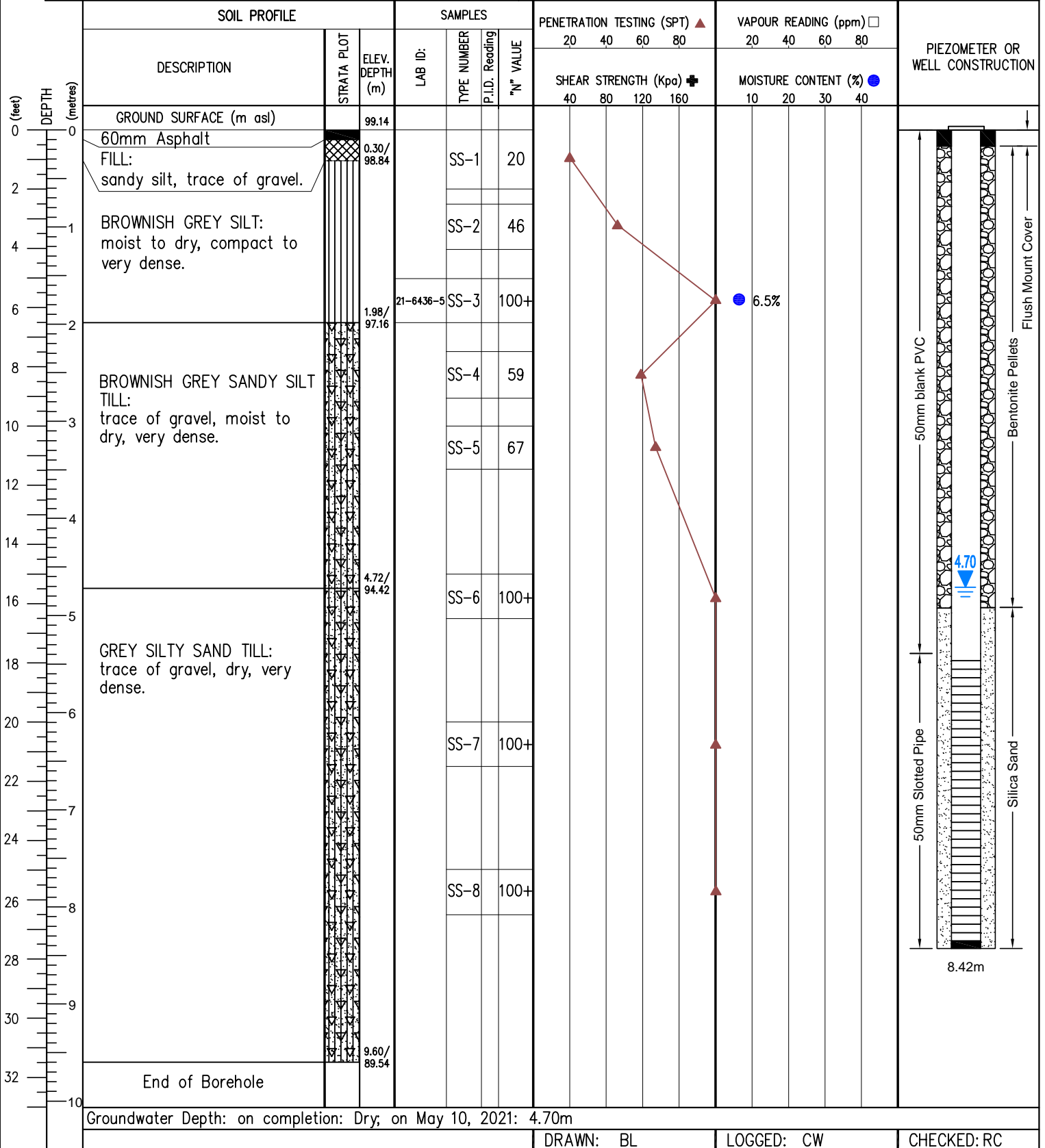


PROJECT NAME: Phase II ESA & Geotechnical Investigation

LOCATION: 375 Kingston Road, Pickering, Ontario

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: April 28, 2021



Groundwater Depth: on completion: Dry, on May 10, 2021: 4.70m

DRAWN: BL

LOGGED: CW

CHECKED: RC



LOG OF BOREHOLE No. BH5 SHEET. 1 of 1

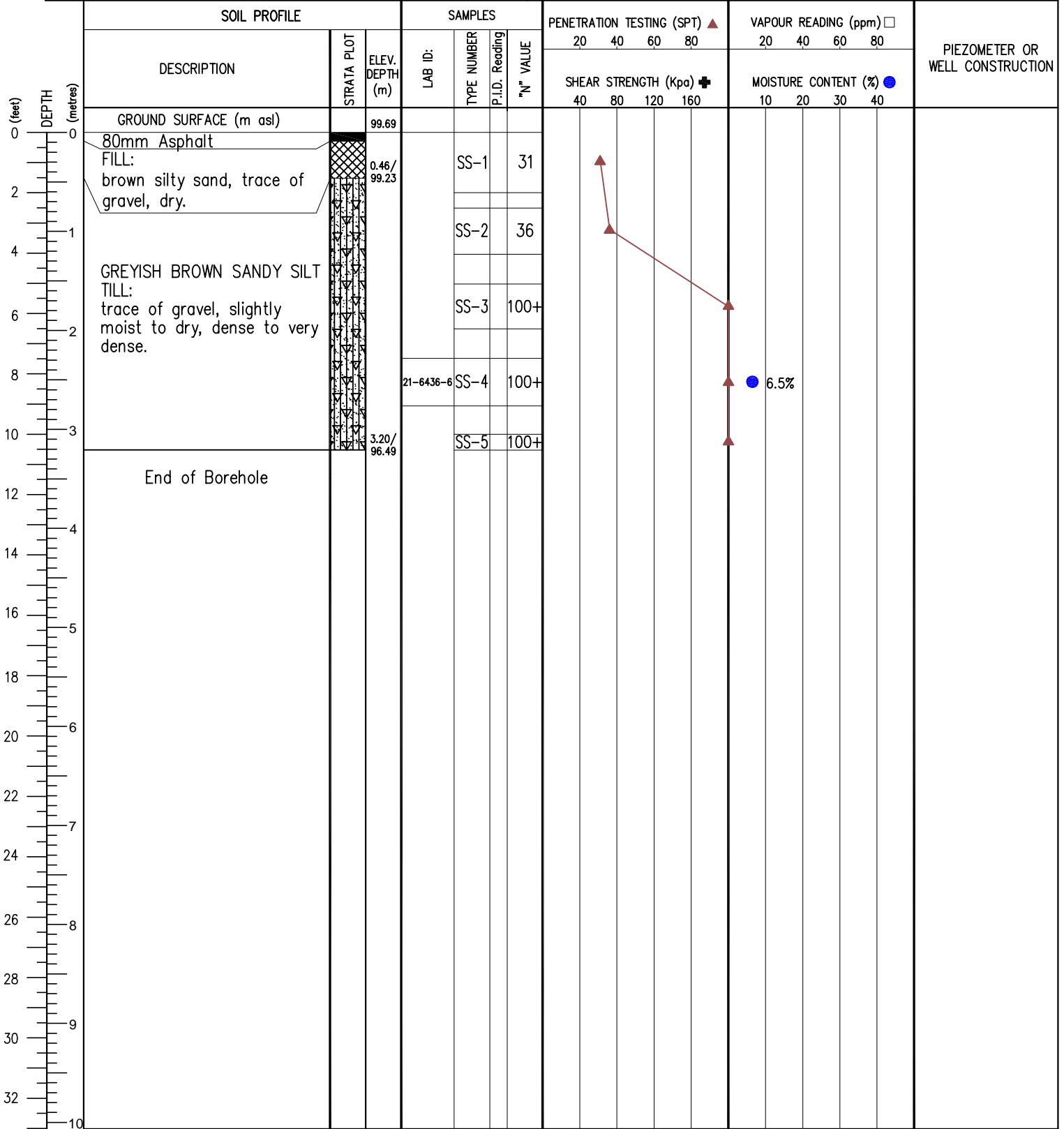
PROJECT NO.: FE-P 21-11144 & 21-11145

PROJECT NAME: Phase II ESA & Geotechnical Investigation

LOCATION: 375 Kingston Road, Pickering, Ontario

DRILLING METHOD: D-50, Solid Stem

DRILLING DATE: April 28, 2021



Groundwater Depth: on completion: Dry

DRAWN: BL

LOGGED: CW

CHECKED: RC

APPENDIX C – CERTIFICATES OF ANALYSIS





FISHER ENVIRONMENTAL LABORATORIES

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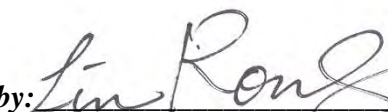
Client: Decade Capital
Address: 1806 Avenue Road, Unit 2
Toronto, ON
M5M 3Z1
Tel.: 416-858-0640
Email: mike@decadegroup.ca
Attn.: Idan Mizrahi / Mike Siskind

F.E. Job #: 21-6436
Project Name: 375 Kingston Road
Project ID: FE-P 21-11144
Date Sampled: 29-Apr & 3-May-2021
Date Received: 3-May-2021
Date Reported: 10-May-2021
Location: 375 Kingston Road
Pickering, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	6	4-May-21	4-May-21	Metals F-18	EPA 200.2/200.8
VOCs	Soil	6	3-May-21	5-May-21	VOCs F-14	SW-846, 8260C
PHCs (F1 & BTEX)	Soil	6	3-May-21	5-May-21	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	6	3-May-21	4-May-21	PHCs F-7	CCME CWS
PAHs	Soil	2	4-May-21	4-May-21	PAHs F-4	SM 6410-B
pH	Soil	2	4-May-21	4-May-21	pH-EC-SAR F-16	SW-846, 9045D
Grain Size	Soil	3	N/A	4-May-21	Grain Size F-28	ASTM D6913-04
Moisture Content	Soil	6	N/A	4-May-21	Support Procedures F-99	Carter (1993)
Metals	Water	4	N/A	7-May-21	Metals F-1	SM 3120-B
VOCs	Water	4	N/A	4-May-21	VOCs F-6	SM 6200-B
PHCs (F1 & BTEX)	Water	4	N/A	4-May-21	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Water	4	3-May-21	4-May-21	PHCs F-7	CCME CWS
PAHs	Water	2	5-May-21	5-May-21	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



Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-1 BH1 0.15-0.75m	21-6436-2 BH1 0.75-1.20m	21-6436-3 BH2 2.25-2.70m	21-6436-4 BH3 1.50-1.95m	21-6436-5 BH4 1.50-1.95m	Soil Standards ¹
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1	<1	<1	<1	(50) 40
Arsenic	1.4	<1	2.2	1.2	<1	18
Barium	80	45	41	37	28	670
Beryllium	<2	<2	<2	<2	<2	(10) 8
Boron	7.3	7.0	5.5	5.8	5.8	120
Cadmium	<1	<1	<1	<1	<1	1.9
Chromium	13	9.2	7.1	8.2	7.6	160
Cobalt	5.8	4.0	4.6	4.4	4.3	(100) 80
Copper	12	9.5	8.4	8.9	8.1	(300) 230
Lead	<10	<10	<10	<10	<10	120
Molybdenum	<2	<2	<2	<2	<2	40
Nickel	14	13	12	14	12	(340) 270
Selenium	<1	<1	<1	<1	<1	5.5
Silver	<0.5	<0.5	<0.5	<0.5	<0.5	(50) 40
Thallium	<1	<1	<1	<1	<1	3.3
Uranium	<1	<1	<1	<1	<1	33
Vanadium	19	15	12	13	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

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

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-6 BH5 2.25-2.70m					Soil Standards ¹
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1					(50) 40
Arsenic	2.1					18
Barium	42					670
Beryllium	<2					(10) 8
Boron	5.7					120
Cadmium	<1					1.9
Chromium	9.4					160
Cobalt	5.3					(100) 80
Copper	9.0					(300) 230
Lead	<10					120
Molybdenum	<2					40
Nickel	15					(340) 270
Selenium	<1					5.5
Silver	<0.5					(50) 40
Thallium	<1					3.3
Uranium	<1					33
Vanadium	15					86
Zinc	<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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

() 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 (%)	
<i>Metals in Soil</i>						
Antimony	<1	1	3.2	0-10	84	70-130
Arsenic	<1	1	79	25-125	102	70-130
Barium	<5	5	190	149-281	121	70-130
Beryllium	<2	2	0.6	0-5	100	70-130
Boron	<5	5	7.6	5-20	80	70-130
Cadmium	<1	1	1.9	0-5	111	70-130
Chromium	<5	5	20	14-54	84	70-130
Cobalt	<2	2	11	9-15	108	70-130
Copper	<5	5	163	139-243	115	70-130
Lead	<10	10	116	68-184	78	70-130
Molybdenum	<2	2	3.5	0-5	102	70-130
Nickel	<5	5	61	33-75	107	70-130
Selenium	<1	1	1.5	0-5	122	70-130
Silver	<0.5	0.5	1.0	0-5	76	70-130
Thallium	<1	1	0.0	0-5	109	70-130
Uranium	<1	1	1.3	0-5	120	70-130
Vanadium	<10	10	23	17-51	98	70-130
Zinc	<30	30	391	337-597	91	70-130

LEGEND:

- RL - Reporting Limit
- CRM = Certified Reference Material
- MS - Matrix Spike
- AR - Acceptable Range

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
<i>Metals in Soil</i>						
Antimony	5.7	0-30				
Arsenic	15	0-30				
Barium	0.5	0-30				
Beryllium	9.0	0-30				
Boron	15	0-30				
Cadmium	11	0-30				
Chromium	2.2	0-30				
Cobalt	14	0-30				
Copper	0.1	0-30				
Lead	5.3	0-30				
Molybdenum	8.4	0-30				
Nickel	4.3	0-30				
Selenium	0.0	0-30				
Silver	29	0-30				
Thallium	0.0	0-30				
Uranium	9.0	0-30				
Vanadium	4.7	0-30				
Zinc	2.1	0-30				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-1 BH1 0.15-0.75m	21-6436-2 BH1 0.75-1.20m	21-6436-3 BH2 2.25-2.70m	21-6436-4 BH3 1.50-1.95m	21-6436-5 BH4 1.50-1.95m	Soil Standards ¹
	Concentration (µg/g)					
VOCs in Soil						
Acetone	<0.5	<0.5	<0.5	<0.5	<0.5	(28) 16
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	(0.4) 0.32
Bromodichloromethane	<0.05	<0.05	<0.05	<0.05	<0.05	18
Bromoform	<0.05	<0.05	<0.05	<0.05	<0.05	(1.7) 0.61
Bromomethane	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Carbon Tetrachloride	<0.05	<0.05	<0.05	<0.05	<0.05	(1.5) 0.21
Chlorobenzene	<0.05	<0.05	<0.05	<0.05	<0.05	(2.7) 2.4
Chloroform	<0.05	<0.05	<0.05	<0.05	<0.05	(0.18) 0.47
Dibromochloromethane	<0.05	<0.05	<0.05	<0.05	<0.05	13
1,2-Dichlorobenzene	<0.05	<0.05	<0.05	<0.05	<0.05	(8.5) 6.8
1,3-Dichlorobenzene	<0.05	<0.05	<0.05	<0.05	<0.05	(12) 9.6
1,4-Dichlorobenzene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.84) 0.2
Dichlorodifluoromethane	<0.05	<0.05	<0.05	<0.05	<0.05	(25) 16
1,1-Dichloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	(21) 17
1,2-Dichloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
1,1-Dichloroethylene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.48) 0.064
c-1,2-Dichloroethylene	<0.05	<0.05	<0.05	<0.05	<0.05	(37) 55
t-1,2-Dichloroethylene	<0.05	<0.05	<0.05	<0.05	<0.05	(9.3) 1.3
1,2-Dichloropropane	<0.05	<0.05	<0.05	<0.05	<0.05	(0.68) 0.16
1,3-Dichloropropene (cis-+trans-)	<0.05	<0.05	<0.05	<0.05	<0.05	(0.21) 0.18
Ethylbenzene	0.63	<0.05	<0.05	<0.05	<0.05	(19) 9.5
Ethylene Dibromide	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Hexane (n)	<0.05	<0.05	<0.05	<0.05	<0.05	(88) 46
Methyl Ethyl Ketone	<0.5	<0.5	<0.5	<0.5	<0.5	(88) 70
Methyl Isobutyl Ketone	<0.5	<0.5	<0.5	<0.5	<0.5	(210) 31
Methyl tert-butyl Ether	<0.05	<0.05	<0.05	<0.05	<0.05	(3.2) 11
Methylene Chloride	<0.05	<0.05	<0.05	<0.05	<0.05	(2) 1.6
Styrene	<0.05	<0.05	<0.05	<0.05	<0.05	(43) 34
1,1,1,2-Tetrachloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	(0.11) 0.087
1,1,2,2-Tetrachloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	(0.094) 0.05
Tetrachloroethylene	<0.05	<0.05	<0.05	<0.05	<0.05	(21) 4.5
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	(78) 68
1,1,1-Trichloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	(12) 6.1
1,1,2-Trichloroethane	<0.05	<0.05	<0.05	<0.05	<0.05	(0.11) 0.05
Trichloroethylene	<0.05	<0.05	<0.05	<0.05	<0.05	(0.61) 0.91
Trichlorofluoromethane	<0.05	<0.05	<0.05	<0.05	<0.05	(5.8) 4
Vinyl Chloride	<0.02	<0.02	<0.02	<0.02	<0.02	(0.25) 0.032
Xylenes	0.95	<0.05	<0.05	<0.05	<0.05	(30) 26
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	110	104	101	103	100	50-140
Toluene-d8	97	109	99	97	99	50-140
4-Bromofluorobenzene	104	113	110	124	122	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

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

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-6					Soil Standards ¹
	BH5					
		Concentration (µg/g)				
VOCs in Soil						
Acetone	<0.5					(28) 16
Benzene	<0.02					(0.4) 0.32
Bromodichloromethane	<0.05					18
Bromoform	<0.05					(1.7) 0.61
Bromomethane	<0.05					0.05
Carbon Tetrachloride	<0.05					(1.5) 0.21
Chlorobenzene	<0.05					(2.7) 2.4
Chloroform	<0.05					(0.18) 0.47
Dibromochloromethane	<0.05					13
1,2-Dichlorobenzene	<0.05					(8.5) 6.8
1,3-Dichlorobenzene	<0.05					(12) 9.6
1,4-Dichlorobenzene	<0.05					(0.84) 0.2
Dichlorodifluoromethane	<0.05					(25) 16
1,1-Dichloroethane	<0.05					(21) 17
1,2-Dichloroethane	<0.05					0.05
1,1-Dichloroethylene	<0.05					(0.48) 0.064
c-1,2-Dichloroethylene	<0.05					(37) 55
t-1,2-Dichloroethylene	<0.05					(9.3) 1.3
1,2-Dichloropropane	<0.05					(0.68) 0.16
1,3-Dichloropropene (cis-+trans-)	<0.05					(0.21) 0.18
Ethylbenzene	<0.05					(19) 9.5
Ethylene Dibromide	<0.05					0.05
Hexane (n)	<0.05					(88) 46
Methyl Ethyl Ketone	<0.5					(88) 70
Methyl Isobutyl Ketone	<0.5					(210) 31
Methyl tert-butyl Ether	<0.05					(3.2) 11
Methylene Chloride	<0.05					(2) 1.6
Styrene	<0.05					(43) 34
1,1,1,2-Tetrachloroethane	<0.05					(0.11) 0.087
1,1,2,2-Tetrachloroethane	<0.05					(0.094) 0.05
Tetrachloroethylene	<0.05					(21) 4.5
Toluene	<0.2					(78) 68
1,1,1-Trichloroethane	<0.05					(12) 6.1
1,1,2-Trichloroethane	<0.05					(0.11) 0.05
Trichloroethylene	<0.05					(0.61) 0.91
Trichlorofluoromethane	<0.05					(5.8) 4
Vinyl Chloride	<0.02					(0.25) 0.032
Xylenes	<0.05					(30) 26
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	102					50-140
Toluene-d8	113					50-140
4-Bromofluorobenzene	135					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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

() 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 (%)	
VOCs in Soil						
Acetone	<0.5	0.5	71	50-140	84	50-140
Benzene	<0.02	0.02	85	60-130	90	50-140
Bromodichloromethane	<0.05	0.05	90	50-140	87	50-140
Bromoform	<0.05	0.05	108	60-130	81	50-140
Bromomethane	<0.05	0.05	92	50-140	82	50-140
Carbon Tetrachloride	<0.05	0.05	82	60-130	78	50-140
Chlorobenzene	<0.05	0.05	97	60-130	91	50-140
Chloroform	<0.05	0.05	91	60-130	89	50-140
Dibromochloromethane	<0.05	0.05	107	60-130	81	50-140
1,2-Dichlorobenzene	<0.05	0.05	106	60-130	85	50-140
1,3-Dichlorobenzene	<0.05	0.05	118	60-130	96	50-140
1,4-Dichlorobenzene	<0.05	0.05	120	60-130	87	50-140
Dichlorodifluoromethane	<0.05	0.05	75	50-140	81	50-140
1,1-Dichloroethane	<0.05	0.05	92	60-130	87	50-140
1,2-Dichloroethane	<0.05	0.05	96	60-130	91	50-140
1,1-Dichloroethylene	<0.05	0.05	90	60-130	98	50-140
c-1,2-Dichloroethylene	<0.05	0.05	94	60-130	90	50-140
t-1,2-Dichloroethylene	<0.05	0.05	96	60-130	88	50-140
1,2-Dichloropropane	<0.05	0.05	92	60-130	96	50-140
1,3-Dichloropropene (cis-+trans-)	<0.05	0.05	96	60-130	89	50-140
Ethylbenzene	<0.05	0.05	89	60-130	87	50-140
Ethylene Dibromide	<0.05	0.05	117	60-130	87	50-140
Hexane (n)	<0.05	0.05	73	60-130	83	50-140
Methyl Ethyl Ketone	<0.5	0.5	84	50-140	79	50-140
Methyl Isobutyl Ketone	<0.5	0.5	69	50-140	74	50-140
Methyl tert-butyl Ether	<0.05	0.05	83	60-130	79	50-140
Methylene Chloride	<0.05	0.05	103	60-130	89	50-140
Styrene	<0.05	0.05	90	60-130	89	50-140
1,1,1,2-Tetrachloroethane	<0.05	0.05	112	60-130	92	50-140
1,1,1,2,2-Tetrachloroethane	<0.05	0.05	109	60-130	74	50-140
Tetrachloroethylene	<0.05	0.05	90	60-130	90	50-140
Toluene	<0.2	0.2	107	60-130	89	50-140
1,1,1-Trichloroethane	<0.05	0.05	89	60-130	81	50-140
1,1,2-Trichloroethane	<0.05	0.05	102	60-130	91	50-140
Trichloroethylene	<0.05	0.05	86	60-130	95	50-140
Trichlorofluoromethane	<0.05	0.05	108	50-140	81	50-140
Vinyl Chloride	<0.02	0.02	90	50-140	80	50-140
Xylenes	<0.05	0.05	91	60-130	96	50-140
Surrogates						
Parameter	Recovery (%)	AR	Recovery (%)	AR	Recovery (%)	AR
1,2-Dichloroethane-d4	113	60-140	101	60-140	117	60-140
Toluene-d8	108	60-140	98	60-140	100	60-140
4-Bromofluorobenzene	121	60-140	115	60-140	125	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
VOCs in Soil						
Acetone	0.0	0-50				
Benzene	0.0	0-50				
Bromodichloromethane	0.0	0-50				
Bromoform	0.0	0-50				
Bromomethane	0.0	0-50				
Carbon Tetrachloride	0.0	0-50				
Chlorobenzene	0.0	0-50				
Chloroform	0.0	0-50				
Dibromochloromethane	0.0	0-50				
1,2-Dichlorobenzene	0.0	0-50				
1,3-Dichlorobenzene	0.0	0-50				
1,4-Dichlorobenzene	0.0	0-50				
Dichlorodifluoromethane	0.0	0-50				
1,1-Dichloroethane	0.0	0-50				
1,2-Dichloroethane	0.0	0-50				
1,1-Dichloroethylene	0.0	0-50				
c-1,2-Dichloroethylene	0.0	0-50				
t-1,2-Dichloroethylene	0.0	0-50				
1,2-Dichloropropane	0.0	0-50				
1,3-Dichloropropene (cis+trans-)	0.0	0-50				
Ethylbenzene	0.0	0-50				
Ethylene Dibromide	0.0	0-50				
Hexane (n)	0.0	0-50				
Methyl Ethyl Ketone	0.0	0-50				
Methyl Isobutyl Ketone	0.0	0-50				
Methyl tert-butyl Ether	0.0	0-50				
Methylene Chloride	0.0	0-50				
Styrene	0.0	0-50				
1,1,1,2-Tetrachloroethane	0.0	0-50				
1,1,2,2-Tetrachloroethane	0.0	0-50				
Tetrachloroethylene	0.0	0-50				
Toluene	3.9	0-50				
1,1,1-Trichloroethane	0.0	0-50				
1,1,2-Trichloroethane	0.0	0-50				
Trichloroethylene	0.0	0-50				
Trichlorofluoromethane	0.0	0-50				
Vinyl Chloride	0.0	0-50				
Xylenes	0.0	0-50				
Surrogates						
Parameter	Recovery (%)	AR				
1,2-Dichloroethane-d4	101	60-140				
Toluene-d8	107	60-140				
4-Bromofluorobenzene	106	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size					
Sample Description:	6 Soil and 4 Water Sample(s)					
Parameter	<i>21-6436-1</i>	<i>21-6436-2</i>	<i>21-6436-3</i>	<i>21-6436-4</i>	<i>21-6436-5</i>	Soil Standards ¹
	BH1 0.15-0.75m	BH1 0.75-1.20m	BH2 2.25-2.70m	BH3 1.50-1.95m	BH4 1.50-1.95m	
<i>Concentration (µg/g)</i>						
BTEX in Soil						
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	(0.4) 0.32
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	(78) 68
Ethylbenzene	0.63	<0.05	<0.05	<0.05	<0.05	(19) 9.5
Xylenes	0.95	<0.05	<0.05	<0.05	<0.05	(30) 26
PHCs (F₁-F₄) 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	(250) 230
F3 (C ₁₆ - C ₃₄)	<50	<50	<50	<50	112	(2,500) 1,700
F4 (C ₃₄ -C ₅₀)	<50	<50	<50	<50	138	(6,600) 3,300
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes	Yes	
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	110	104	101	103	100	60-140
Toluene-d8	97	109	99	97	99	60-140
4-Bromofluorobenzene	104	113	110	124	122	60-140

F_{4G} (gravimetric heavy hydrocarbons) cannot be added to the C₆ to C₅₀ 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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

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

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size					
Sample Description:	6 Soil and 4 Water Sample(s)					
Parameter	21-6436-6					Soil Standards ¹
	BH5 2.25-2.70m					
<i>Concentration (µg/g)</i>						
BTEX in Soil						
Benzene	<0.02					(0.4) 0.32
Toluene	<0.2					(78) 68
Ethylbenzene	<0.05					(19) 9.5
Xylenes	<0.05					(30) 26
PHCs (F₁-F₄) in Soil						
F1-BTEX (C ₆ - C ₁₀)	<10					(65) 55
F2 (C ₁₀ - C ₁₆)	<10					(250) 230
F3 (C ₁₆ - C ₃₄)	<50					(2,500) 1,700
F4 (C ₃₄ -C ₅₀)	<50					(6,600) 3,300
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes					
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	102					60-140
Toluene-d8	113					60-140
4-Bromofluorobenzene	135					60-140

F_{4G} (gravimetric heavy hydrocarbons) cannot be added to the C₆ to C₅₀ 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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

() 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 (%)	
<i>BTEX in Soil</i>						
Benzene	<0.02	0.02	85	60-130	90	50-140
Toluene	<0.2	0.2	107	60-130	89	50-140
Ethylbenzene	<0.05	0.05	89	60-130	87	50-140
Xylenes	<0.05	0.05	91	60-130	96	50-140
<i>PHCs (F₁-F₄) in Soil</i>						
F1-BTEX (C ₆ - C ₁₀)	<10	10	107	80-120	89	60-140
F2 (C ₁₀ - C ₁₆)	<10	10	108	80-120	80	60-140
F3 (C ₁₆ - C ₃₄)	<50	50	103	80-120	97	60-140
F4 (C ₃₄ -C ₅₀)	<50	50	102	80-120	96	60-140
<i>Surrogates</i>						
Parameter	Blank	AR	Recovery (%)	AR	Recovery (%)	AR
1,2-Dichloroethane-d4	113	60-140	101	60-140	117	60-140
Toluene-d8	108	60-140	98	60-140	100	60-140
4-Bromofluorobenzene	121	60-140	115	60-140	125	60-140

LEGEND:

RL - Reporting Limit

LCS - Laboratory Control Sample

MS - Matrix Spike

AR - Acceptable Range

BTEX should be subtracted from F₁, Naphthalene from F₂ and selected PAHs from F₃ if BTEX/PAHs are analyzed, then report F_{1-BTEX}, F_{2-Naph}, and F_{3-PAH}. nC₅₀ response factor was within 70% of nC₁₀+nC₁₆+nC₃₄ average.

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
<i>BTEX in Soil</i>						
Benzene	0.0	0-50				
Toluene	3.9	0-50				
Ethylbenzene	0.0	0-50				
Xylenes	0.0	0-50				
<i>PHCs (F₁-F₄) in Soil</i>						
F1-BTEX (C ₆ - C ₁₀)	2.7	0-30				
F2 (C ₁₀ - C ₁₆)	4.0	0-30				
F3 (C ₁₆ - C ₃₄)	9.0	0-30				
F4 (C ₃₄ -C ₅₀)	0.0	0-30				
<i>Surrogates</i>						
Parameter	Recovery (%)	AR				
1,2-Dichloroethane-d4	101	60-140				
Toluene-d8	107	60-140				
4-Bromofluorobenzene	106	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-1 BH1 0.15-0.75m	21-6436-4 BH3 1.50-1.95m				Soil Standards ¹
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	<0.05	<0.05				(28) 9.6
2-Methylnaphthalene	<0.05	<0.05				(85) 76
1-Methylnaphthalene	<0.05	<0.05				(0.17) 0.15
Acenaphthylene	<0.05	<0.05				96
Acenaphthene	<0.05	<0.05				(69) 62
Fluorene	<0.05	<0.05				(16) 12
Phenanthrene	<0.05	<0.05				(0.74) 0.67
Anthracene	<0.05	<0.05				9.6
Fluoranthene	<0.05	<0.05				96
Pyrene	<0.05	<0.05				0.96
Benzo [a] anthracene	<0.05	<0.05				9.6
Chrysene	<0.05	<0.05				0.96
Benzo [b] fluoranthene	<0.05	<0.05				0.96
Benzo [k] fluoranthene	<0.05	<0.05				0.3
Benzo [a] pyrene	<0.05	<0.05				(0.95) 0.76
Indeno [1,2,3-cd] pyrene	<0.1	<0.1				0.1
Dibenzo [a,h] anthracene	<0.1	<0.1				9.6
Benzo [g,h,i] perylene	<0.1	<0.1				
Surrogate Recovery (%)						
Naphthalene-d8	111	78				50-140
Phenanthrene-d10	98	103				50-140
Chrysene-d12	82	88				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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (I/C/C);

() 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	99	50-140	104	50-140
2-Methylnaphthalene	<0.05	0.05	99	50-140	106	50-140
1-Methylnaphthalene	<0.05	0.05	99	50-140	102	50-140
Acenaphthylene	<0.05	0.05	95	50-140	103	50-140
Acenaphthene	<0.05	0.05	92	50-140	93	50-140
Fluorene	<0.05	0.05	102	50-140	88	50-140
Phenanthrene	<0.05	0.05	109	50-140	90	50-140
Anthracene	<0.05	0.05	102	50-140	89	50-140
Fluoranthene	<0.05	0.05	109	50-140	96	50-140
Pyrene	<0.05	0.05	108	50-140	97	50-140
Benzo [a] anthracene	<0.05	0.05	94	50-140	101	50-140
Chrysene	<0.05	0.05	99	50-140	97	50-140
Benzo [b] fluoranthene	<0.05	0.05	75	50-140	113	50-140
Benzo [k] fluoranthene	<0.05	0.05	86	50-140	105	50-140
Benzo [a] pyrene	<0.05	0.05	87	50-140	113	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	78	50-140	113	50-140
Dibenzo [a,h] anthracene	<0.1	0.1	82	50-140	117	50-140
Benzo [g,h,i] perylene	<0.1	0.1	80	50-140	111	50-140
Surrogates						
Parameter	Recovery (%)	AR	Recovery (%)	AR	Recovery (%)	AR
Naphthalene-d8	94	50-140	91	50-140	108	50-140
Phenanthrene-d10	107	50-140	83	50-140	79	50-140
Chrysene-d12	81	50-140	87	50-140	89	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				
Benzo [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				
Dibenzo [a,h] anthracene	0.0	0-40				
Benzo [g,h,i] perylene	0.0	0-40				
Surrogates						
Parameter	Recovery (%)	AR				
Naphthalene-d8	95	50-140				
Phenanthrene-d10	90	50-140				
Chrysene-d12	82	50-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-1 BH1 0.15-0.75m	21-6436-5 BH4 1.50-1.95m				Soil Standards *
pH (pH unit)	8.84	9.39				(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)	7.05	6.90-7.20	0.05	<0.3		

LEGEND:

LCS - Laboratory Control Sample

AR - Acceptable Range

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-2 BH1 0.75-1.20m	21-6436-4 BH3 1.50-1.95m	21-6436-6 BH5 2.25-2.70m			
Grain Size in Soil						
Total Sample, g	44.2	47.2	46.8			
Coarse Fraction >75µm, g	2.5	15.5	18.7			
Fine Fraction <75µm, g	41.7	31.6	28.0			
Coarse Fraction >75µm, %	5.6	32.9	40.0			
Fine Fraction <75µm, %	94.4	67.1	60.0			
Comments	Medium to fine textured	Medium to fine textured	Medium to fine textured			

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-1 BH1 0.15-0.75m	21-6436-2 BH1 0.75-1.20m	21-6436-3 BH2 2.25-2.70m	21-6436-4 BH3 1.50-1.95m	21-6436-5 BH4 1.50-1.95m	21-6436-6 BH5 2.25-2.70m
Moisture Content (%)	13	12	5.9	5.7	6.5	6.5

QA/QC Report

Parameter	Blank	RL	LCS	AR	Duplicate	AR
	Recovery (%)			RPD (%)		
Moisture Content (%)	<0.1	0.1	100	70-130	2.8	0-20

LEGEND:

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

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-7 BH1 (MW)	21-6436-8 BH1 (MW) Duplicate	21-6436-9 BH2 (MW)	21-6436-10 BH4 (MW)		Ground Water Standards ¹
	Concentration (μ g/L)					
Metals in Water						
Antimony	<0.5	<0.5	<0.5	<0.5		20,000
Arsenic	1.9	<1	1.8	<1		1,900
Barium	79	82	39	48		29,000
Beryllium	<0.5	<0.5	<0.5	<0.5		67
Boron	160	160	90	343		45,000
Cadmium	<0.5	<0.5	<0.5	<0.5		2.7
Chromium	<10	<10	<10	<10		810
Cobalt	<1	<1	<1	<1		66
Copper	<5	<5	<5	<5		87
Lead	<1	<1	<1	<1		25
Molybdenum	41	41	28	40		9,200
Nickel	1.9	1.6	1.4	1.6		490
Selenium	<5	<5	<5	<5		63
Silver	<0.3	<0.3	<0.3	<0.3		1.5
Thallium	<0.5	<0.5	<0.5	<0.5		510
Uranium	<2	<2	<2	<2		420
Vanadium	3.7	3.2	3.7	3.0		250
Zinc	<5	<5	<5	<5		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 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 (%)	
<i>Metals in Water</i>						
Antimony	<0.5	0.5	108	80-120	103	70-130
Arsenic	<1	1	90	80-120	126	70-130
Barium	<2	2	104	80-120	116	70-130
Beryllium	<0.5	0.5	99	80-120	87	70-130
Boron	<10	10	102	80-120	82	70-130
Cadmium	<0.5	0.5	89	80-120	124	70-130
Chromium	<10	10	82	80-120	102	70-130
Cobalt	<1	1	91	80-120	99	70-130
Copper	<5	5	93	80-120	101	70-130
Lead	<1	1	105	80-120	117	70-130
Molybdenum	<0.5	0.5	105	80-120	92	70-130
Nickel	<1	1	91	80-120	98	70-130
Selenium	<5	5	89	80-120	78	70-130
Silver	<0.3	0.3	101	80-120	108	70-130
Thallium	<0.5	0.5	109	80-120	110	70-130
Uranium	<2	2	88	80-120	80	70-130
Vanadium	<0.5	0.5	112	80-120	102	70-130
Zinc	<5	5	97	80-120	89	70-130

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
<i>Metals in Water</i>						
Antimony	0.0	0-20				
Arsenic	0.0	0-20				
Barium	1.5	0-20				
Beryllium	0.0	0-20				
Boron	0.0	0-20				
Cadmium	0.0	0-20				
Chromium	0.0	0-20				
Cobalt	5.7	0-20				
Copper	2.8	0-20				
Lead	4.1	0-20				
Molybdenum	0.0	0-20				
Nickel	7.6	0-20				
Selenium	0.0	0-20				
Silver	0.0	0-20				
Thallium	0.0	0-20				
Uranium	0.0	0-20				
Vanadium	0.4	0-20				
Zinc	0.0	0-20				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-7 BH1 (MW)	21-6436-8 BH1 (MW) Duplicate	21-6436-9 BH2 (MW)	21-6436-10 BH4 (MW)		Ground Water Standards ¹
	Concentration (µg/L)					
VOCs in Water						
Acetone	<30	<30	<30	<30		130000
Benzene	<0.5	<0.5	<0.5	<0.5		(430) 44
Bromodichloromethane	<2	<2	<2	<2		85000
Bromoform	<5	<5	<5	<5		(770) 380
Bromomethane	<0.5	<0.5	<0.5	<0.5		(56) 5.6
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.2		(8.4) 0.79
Chlorobenzene	<0.5	<0.5	<0.5	<0.5		630
Chloroform	<1	<1	<1	<1		(22) 2.4
Dibromochloromethane	<2	<2	<2	<2		82000
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		(9600) 4600
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		9600
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		(67) 8
Dichlorodifluoromethane	<2	<2	<2	<2		4400
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5		(3100) 320
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5		(12) 1.6
1,1-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
c-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
t-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5		(140) 16
1,3-Dichloropropene (cis-+trans-)	<0.5	<0.5	<0.5	<0.5		(45) 5.2
Ethylbenzene	5.8	6.8	<0.5	<0.5		2300
Ethylene Dibromide	<0.2	<0.2	<0.2	<0.2		(0.83) 0.25
Hexane (n)	<5	<5	<5	<5		(520) 51
Methyl Ethyl Ketone	<20	<20	<20	<20		(1500000)470000
Methyl Isobutyl Ketone	<20	<20	<20	<20		(580000)140000
Methyl tert-butyl Ether	<2	<2	<2	<2		(1400) 190
Methylene Chloride	<5	<5	<5	<5		(5500) 610
Styrene	<0.5	<0.5	<0.5	<0.5		(9100) 1300
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5		(28) 3.3
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5		(15) 3.2
Tetrachloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
Toluene	1.7	1.6	2.3	2.3		18000
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5		(6700) 640
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5		(30) 4.7
Trichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
Trichlorofluoromethane	<5	<5	<5	<5		2500
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5		(1.7) 0.5
Xylenes	4.4	6.3	<0.5	<0.5		4200
Surrogate Recovery (%)						
Bromochloromethane	99	120	68	100		60-140
1,4-Difluorobenzene	98	122	74	89		60-140
1,4-Dichlorobutane	106	125	75	87		60-140

< 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 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 (%)	
VOCs in Water						
Acetone	<30	30	78	50-140	114	50-140
Benzene	<0.5	0.5	92	60-130	130	50-140
Bromodichloromethane	<2	2	91	50-140	114	50-140
Bromoform	<5	5	97	60-130	130	50-140
Bromomethane	<0.5	0.5	104	50-140	114	50-140
Carbon Tetrachloride	<0.2	0.2	117	60-130	111	50-140
Chlorobenzene	<0.5	0.5	81	60-130	114	50-140
Chloroform	<1	1	99	60-130	124	50-140
Dibromochloromethane	<2	2	93	60-130	109	50-140
1,2-Dichlorobenzene	<0.5	0.5	91	60-130	70	50-140
1,3-Dichlorobenzene	<0.5	0.5	104	60-130	68	50-140
1,4-Dichlorobenzene	<0.5	0.5	112	60-130	69	50-140
Dichlorodifluoromethane	<2	2	107	50-140	62	50-140
1,1-Dichloroethane	<0.5	0.5	106	60-130	93	50-140
1,2-Dichloroethane	<0.5	0.5	105	60-130	81	50-140
1,1-Dichloroethylene	<0.5	0.5	111	60-130	77	50-140
c-1,2-Dichloroethylene	<0.5	0.5	93	60-130	71	50-140
t-1,2-Dichloroethylene	<0.5	0.5	86	60-130	66	50-140
1,2-Dichloropropane	<0.5	0.5	87	60-130	104	50-140
1,3-Dichloropropene (cis-+trans-)	<0.5	0.5	109	60-130	102	50-140
Ethylbenzene	<0.5	0.5	94	60-130	109	50-140
Ethylene Dibromide	<0.2	0.2	81	60-130	67	50-140
Hexane (n)	<5	5	71	60-130	81	50-140
Methyl Ethyl Ketone	<20	20	104	50-140	107	50-140
Methyl Isobutyl Ketone	<20	20	107	50-140	115	50-140
Methyl tert-butyl Ether	<2	2	79	60-130	118	50-140
Methylene Chloride	<5	5	93	60-130	114	50-140
Styrene	<0.5	0.5	76	60-130	57	50-140
1,1,1,2-Tetrachloroethane	<0.5	0.5	105	60-130	87	50-140
1,1,2,2-Tetrachloroethane	<0.5	0.5	112	60-130	91	50-140
Tetrachloroethylene	<0.5	0.5	93	60-130	123	50-140
Toluene	<0.5	0.5	92	60-130	133	50-140
1,1,1-Trichloroethane	<0.5	0.5	95	60-130	126	50-140
1,1,2-Trichloroethane	<0.5	0.5	77	60-130	96	50-140
Trichloroethylene	<0.5	0.5	92	60-130	123	50-140
Trichlorofluoromethane	<5	5	78	50-140	63	50-140
Vinyl Chloride	<0.5	0.5	71	50-140	58	50-140
Xylenes	<0.5	0.5	94	60-130	78	50-140
Surrogates						
Parameter	Recovery (%)	AR	Recovery (%)	AR	Recovery (%)	AR
Bromochloromethane	111	60-140	79	60-140	128	60-140
1,4-Difluorobenzene	115	60-140	76	60-140	109	60-140
1,4-Dichlorobutane	110	60-140	72	60-140	139	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
VOCs in Water						
Acetone	0.0	0-30				
Benzene	7.0	0-30				
Bromodichloromethane	0.0	0-30				
Bromoform	0.0	0-30				
Bromomethane	0.0	0-30				
Carbon Tetrachloride	0.0	0-30				
Chlorobenzene	0.0	0-30				
Chloroform	0.0	0-30				
Dibromochloromethane	0.0	0-30				
1,2-Dichlorobenzene	0.0	0-30				
1,3-Dichlorobenzene	0.0	0-30				
1,4-Dichlorobenzene	0.0	0-30				
Dichlorodifluoromethane	0.0	0-30				
1,1-Dichloroethane	0.0	0-30				
1,2-Dichloroethane	0.0	0-30				
1,1-Dichloroethylene	0.0	0-30				
c-1,2-Dichloroethylene	0.0	0-30				
t-1,2-Dichloroethylene	0.0	0-30				
1,2-Dichloropropane	0.0	0-30				
1,3-Dichloropropene (cis+trans-)	0.0	0-30				
Ethylbenzene	4.0	0-30				
Ethylene Dibromide	0.0	0-30				
Hexane (n)	0.0	0-30				
Methyl Ethyl Ketone	0.0	0-30				
Methyl Isobutyl Ketone	0.0	0-30				
Methyl tert-butyl Ether	0.0	0-30				
Methylene Chloride	0.0	0-30				
Styrene	0.0	0-30				
1,1,1,2-Tetrachloroethane	0.0	0-30				
1,1,2,2-Tetrachloroethane	0.0	0-30				
Tetrachloroethylene	0.0	0-30				
Toluene	4.0	0-30				
1,1,1-Trichloroethane	0.0	0-30				
1,1,2-Trichloroethane	0.0	0-30				
Trichloroethylene	0.0	0-30				
Trichlorofluoromethane	0.0	0-30				
Vinyl Chloride	0.0	0-30				
Xylenes	3.0	0-30				
Surrogates						
Parameter	Recovery (%)	AR				
Bromo chloromethane	114	60-140				
1,4-Difluorobenzene	124	60-140				
1,4-Dichlorobutane	119	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-7 BH1 (MW)	21-6436-8 BH1 (MW) Duplicate	21-6436-9 BH2 (MW)	21-6436-10 BH4 (MW)		Ground Water Standards ¹
	Concentration (µg/L)					
BTEX in Water						
Benzene	<0.5	<0.5	<0.5	<0.5		(430) 44
Toluene	1.72	1.6	2.3	2.3		18000
Ethylbenzene	5.8	6.8	<0.5	<0.5		2300
Xylenes	4.4	6.3	<0.5	<0.5		4200
PHCs (F1-F4) in Water						
F1-BTEX (C ₆ - C ₁₀)	<25	<25	<25	<25		750
F2 (C ₁₀ - C ₁₆)	<100	<100	<100	<100		150
F3 (C ₁₆ - C ₃₄)	<100	<100	<100	<100		500
F4 (>C ₃₄)	<100	<100	<100	<100		500
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes		
Surrogate Recovery (%)						
Bromochloromethane	99	120	68	100		60-140
1,4-Difluorobenzene	98	122	74	89		60-140
1,4-Dichlorobutane	106	125	75	87		60-140

F_{4G} (gravimetric heavy hydrocarbons) cannot be added to the C₆ to C₅₀ 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 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 (%)	
<i>BTEX in Water</i>						
Benzene	<0.5	0.5	92	60-130	130	50-140
Toluene	<0.5	0.5	92	60-130	133	50-140
Ethylbenzene	<0.5	0.5	94	60-130	109	50-140
Xylenes	<0.5	0.5	94	60-130	78	50-140
<i>PHC (F1-F4) in Water</i>						
F1 _{BTEX} (C ₆ - C ₁₀)	<25	25	92	60-140	101	60-140
F2 (C ₁₀ - C ₁₆)	<100	100	108	60-140	119	60-140
F3 (C ₁₆ - C ₃₄)	<100	100	100	60-140	131	60-140
F4 (>C ₃₄)	<100	100	108	60-140	108	60-140
<i>Surrogates</i>						
Parameter	Recovery (%)	AR	Recovery (%)	AR	Recovery (%)	AR
Bromochloromethane	117	60-140	90	60-140	128	60-140
1,4-Difluorobenzene	114	60-140	88	60-140	109	60-140
1,4-Dichlorobutane	120	60-140	86	60-140	139	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
<i>BTEX in Water</i>						
Benzene	7.0	0-30				
Toluene	4.0	0-30				
Ethylbenzene	4.0	0-30				
Xylenes	3.0	0-30				
<i>PHC (F1-F4) in Water</i>						
F1 _{BTEX} (C ₆ - C ₁₀)	0.0	0-30				
F2 (C ₁₀ - C ₁₆)	4.0	0-30				
F3 (C ₁₆ - C ₃₄)	9.0	0-30				
F4 (>C ₃₄)	0.0	0-30				
<i>Surrogates</i>						
Parameter	Recovery (%)	AR				
Bromochloromethane	114	60-140				
1,4-Difluorobenzene	124	60-140				
1,4-Dichlorobutane	119	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, PHCs, VOCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 4 Water Sample(s)

Parameter	21-6436-7 BH1 (MW)	21-6436-9 BH2 (MW)				Ground Water Standards ¹
	Concentration (µ g/L)					
PAHs in Water						
Naphthalene	<2	<2				(6400) 1400
2-Methylnaphthalene	<1	<1				1800
1-Methylnaphthalene	<1	<1				1.8
Acenaphthylene	<1	<1				(1700) 600
Acenaphthene	<1	<1				400
Fluorene	<0.5	<0.5				580
Phenanthrene	<0.1	<0.1				2.4
Anthracene	<0.1	<0.1				130
Fluoranthene	<0.4	<0.4				68
Pyrene	<0.2	<0.2				4.7
Benzo [a] anthracene	<0.2	<0.2				1
Chrysene	<0.1	<0.1				0.75
Benzo [b] fluoranthene	<0.1	<0.1				0.4
Benzo [k] fluoranthene	<0.1	<0.1				0.81
Benzo [a] pyrene	<0.01	<0.01				0.2
Indeno [1,2,3-cd] pyrene	<0.2	<0.2				0.52
Dibenzo [a,h] anthracene	<0.2	<0.2				0.2
Benzo [g,h,i] perylene	<0.2	<0.2				
Surrogate Recovery (%)						
Naphthalene-d8	50	84				50-140
Phenanthrene-d10	56	50				50-140
Chrysene-d12	112	70				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 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 (%)	Recovery (%)
PAHs in Water						
Naphthalene	<2	2	56	50-140	56	50-140
2-Methylnaphthalene	<1	1	61	50-140	60	50-140
1-Methylnaphthalene	<1	1	69	50-140	50	50-140
Acenaphthylene	<1	1	66	50-140	66	50-140
Acenaphthene	<1	1	67	50-140	67	50-140
Fluorene	<0.5	0.5	64	50-140	66	50-140
Phenanthrene	<0.1	0.1	81	50-140	63	50-140
Anthracene	<0.1	0.1	89	50-140	71	50-140
Fluoranthene	<0.4	0.4	90	50-140	80	50-140
Pyrene	<0.2	0.2	90	50-140	80	50-140
Benzo [a] anthracene	<0.2	0.2	75	50-140	103	50-140
Chrysene	<0.1	0.1	88	50-140	113	50-140
Benzo [b] fluoranthene	<0.1	0.1	97	50-140	61	50-140
Benzo [k] fluoranthene	<0.1	0.1	99	50-140	78	50-140
Benzo [a] pyrene	<0.01	0.01	85	50-140	69	50-140
Indeno [1,2,3-cd] pyrene	<0.2	0.2	89	50-140	78	50-140
Dibenzo [a,h] anthracene	<0.2	0.2	76	50-140	63	50-140
Benzo [g,h,i] perylene	<0.2	0.2	99	50-140	82	50-140
Surrogates						
Parameter	Recovery (%)	AR	Recovery (%)	AR	Recovery (%)	AR
Naphthalene-d8	57	50-140	53	50-140	56	50-140
Phenanthrene-d10	69	50-140	84	50-140	80	50-140
Chrysene-d12	95	50-140	99	50-140	81	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	1.6	0-30				
2-Methylnaphthalene	0.0	0-30				
1-Methylnaphthalene	1.5	0-30				
Acenaphthylene	3.6	0-30				
Acenaphthene	0.4	0-30				
Fluorene	3.6	0-30				
Phenanthrene	3.7	0-30				
Anthracene	2.6	0-30				
Fluoranthene	0.9	0-30				
Pyrene	2.8	0-30				
Benzo [a] anthracene	2.9	0-30				
Chrysene	3.5	0-30				
Benzo [b] fluoranthene	9.7	0-30				
Benzo [k] fluoranthene	4.2	0-30				
Benzo [a] pyrene	1.1	0-30				
Indeno [1,2,3-cd] pyrene	1.7	0-30				
Dibenzo [a,h] anthracene	4.4	0-30				
Benzo [g,h,i] perylene	0.1	0-30				
Surrogates						
Parameter	Recovery (%)	AR				
Naphthalene-d8	59	50-140				
Phenanthrene-d10	75	50-140				
Chrysene-d12	75	50-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference