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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
BOD:	Biological Oxygen Demand
bgs:	Below Ground Surface
BTEX:	Benzene, Toluene, Ethylbenzene and Xylenes
CALA:	Canadian Association for Laboratory Accreditation
COD:	Chemical Oxygen Demand
CPC:	Contaminant of Potential Concern
CSA:	Canadian Standards Association
EC:	Electrical Conductivity
EPA:	Environmental Protection Act
ESA:	Environmental Site Assessment
FIP:	Fire Insurance Plan
MECP:	Ministry of the Environment, Conservation and Parks
MOE:	Ministry of the Environment
NAPL:	Non-aqueous Phase Liquid
OCPs:	Organochlorine Pesticides
OHSA:	Occupational Health and Safety Act
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)
PVC:	Polyvinyl Chloride
ppb:	Parts per Billion
ppm:	Parts per Million
QA/QC:	Quality Assurance/Quality Control
RSC:	Record of Site Condition
SAR:	Sodium Adsorption Ratio
SCS:	Site Condition Standard
UST:	Underground Storage Tank
VOCs:	Volatile Organic Compounds

1. EXECUTIVE SUMMARY

Fisher Engineering Limited (Fisher) was retained by Dymon Group of Companies to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 5051 Harvester Road, Burlington, Ontario, hereinafter referred to as the "Site". The Phase II ESA was conducted as an environmental due diligence and liability assessment in support of property sale purposes and redevelopment. The subsurface soil and groundwater investigation was carried out between August 31, 2023 and September 8, 2023.

SITE DESCRIPTION

The Site is located on the northwest corner of the intersection of Harvester Road and South Service Road. It has an area of approximately 2.27 hectares (5.61 acres). The Site is bounded by Harvester Road followed by commercial developments to the south, South Service Road followed by commercial buildings to the east, an Esso gasoline service station adjacent to the southwest, and Appleby Line and commercial developments to the west, and a commercial building to the north.

The southern portion of the Site is occupied by a one-storey commercial building occupied by a "Tim Hortons" coffee shop and a "Wendy's" restaurant (the "subject building"). Areas surrounding the Site are asphalt paved for parking and driving with landscaping along the perimeter. The northern portion of the Site is undeveloped vegetated land.

PREVIOUS INVESTIGATION

In September 2023, Fisher conducted a Phase I ESA for the Site, as documented in the Phase I ESA report, dated September 13, 2023 (Fisher, 2023). Based on the information gathered and observations made during this investigation, the report revealed evidence of potential environmental contamination associated with current/previous off-site potentially contaminating activities, which are considered to have contributed to areas of potential environmental concern at the Site. It was recommended that a Phase II ESA be conducted at the identified areas of potential environmental concern at the Site to determine the location and concentration of potential contaminants in the soil or groundwater on, in or under the Site.

SUBSURFACE INVESTIGATION

The current Phase II ESA was conducted to address the potential environmental concerns identified at the Site from the previous Phase I ESA (Fisher, 2023). The current investigation was conducted concurrently with a geotechnical investigation, which included advancing a total of fourteen (14) boreholes at the Site. In the current Phase II ESA, five (5) boreholes (MW5, MW6, MW11, MW13 and MW14) were advanced at the Site to depths of up to 6.12 m below ground surface (bgs) on August 31, 2023 and September 1 and 6, 2023. Monitoring wells were installed in all five (5) boreholes to facilitate groundwater level monitoring and sampling.

On the basis of the boreholes completed, underneath up to approximately 300 mm of topsoil or 102 mm of asphalt pavement and/or 280 mm of granular fill, where present, the stratigraphy at the investigated areas of the Site generally consists of a layer of reddish-brown sandy silt/disturbed fill with topsoil, rootlets and gravel and trace shale and clayey silt fill, extending up to 1.62 m bgs, overlying clayey silt and shale.

Groundwater static level measurement was taken at the monitoring well locations on September 8, 2023, and it was noted at depths ranging from 2.83 m bgs in MW14 to 4.27 m bgs in MW6. Based on the regional topography and proximity to Appleby Creek, which is located approximately 360 m east of the Site and flows in a southerly direction, the inferred regional groundwater flow direction was inferred to be southeasterly.

A total of nine (9) soil and five (5) groundwater samples were submitted to the laboratory for Metal, Petroleum Hydrocarbon (PHC) Fraction 1 to 4 (F1-F4), Benzene, Toluene, Ethylbenzene, Xylenes (collectively “BTEX”), Volatile Organic Compound (VOC), Polycyclic Aromatic Hydrocarbon (PAH) and/or pH analysis.

For the purpose of this Phase II ESA, the appropriate standards were identified as: Table 7 (Generic Site Condition Standards (SCSs) for Shallow Soils in a Non-Potable Groundwater Condition – Industrial/Commercial/Community Property Use for soil samples and All Types of Property Use for groundwater samples, medium and fine textured soil) as contained in the Ministry of the Environment (MOE, currently Ministry of the Environment, Conservation and Parks, MECP) *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011, hereinafter referred to as the “MECP Standards”.

SOIL QUALITY

The results of chemical analysis indicated that all nine (9) soil samples were found to be in compliance with the applicable MECP Standards for concentrations of all tested parameters.

GROUNDWATER QUALITY

The results of chemical analysis indicated that all five (5) groundwater samples were found to be in compliance with the applicable MECP Standards for concentrations of all tested parameters.

CONCLUSIONS AND RECOMMENDATIONS

Based on the current subsurface investigation, it is concluded that no evidence of soil or groundwater contamination had occurred at the selected sampling locations. No further investigation is recommended at this time.

2. INTRODUCTION

Fisher Engineering Limited (Fisher) was retained by Dymon Group of Companies (the "Client") to conduct a Phase II Environmental Site Assessment (ESA) of the property located at 5051 Harvester Road, Burlington, Ontario, hereinafter referred to as the "Site". The Phase II ESA was conducted as an environmental due diligence and liability assessment in support of property sale purposes and redevelopment. The subsurface soil and groundwater investigation was carried out between August 31, 2023 and September 8, 2023.

3. BACKGROUND

3.1. Site Description

The Site is located on the northwest corner of the intersection of Harvester Road and South Service Road. It has an area of approximately 2.27 hectares (5.61 acres). The Site is bounded by Harvester Road followed by commercial developments to the south, South Service Road followed by commercial buildings to the east, an Esso gasoline service station adjacent to the southwest, and Appleby Line and commercial developments to the west, and a commercial building to the north. For purposes of discussion, Appleby Line is referenced to run north-south, and Harvester Road is referenced to run east-west. Please refer to Appendix A for the Site Location Map (Figure A1).

The southern portion of the Site is occupied by a one-storey commercial building occupied by a "Tim Hortons" coffee shop and a "Wendy's" restaurant (the "subject building"). Areas surrounding the Site are asphalt paved for parking and driving with landscaping along the perimeter. The northern portion of the Site is undeveloped vegetated land. Please refer to Appendix A for the Site Plan (Figure A2).

3.2. Existing Reports Review

The following previous report was reviewed and used as a source of background information:

TABLE 1: Previous Report	
Report Title:	Phase I Environmental Site Assessment, 5051 Harvester Road, Burlington, Ontario
Prepared By:	Fisher Engineering Limited
Date:	September 13, 2023

TABLE 1: Previous Report
Findings and Conclusions
Based on the information gathered and observations made during this investigation, the report revealed potential environmental concerns associated with current/previous off-site activities as follows: **1. Presence of an off-site fueling facility:** Various fueling facilities with underground storage tanks (USTs) were located at 875 Appleby Line, adjacent to the southwest of the Site. Phase II ESA works should be conducted at the Site along the southwestern property boundary. **2. Presence of an off-site automobile service garage:** During the Site Reconnaissance, an auto service facility with drums of oil was observed at 5105 Harvester Road, approximately 15 m east of the Site. Phase II ESA works should be conducted at the Site along the eastern property boundary. It was recommended that a Phase II ESA be conducted at the identified areas of potential environmental concern at the Site, to determine the location and concentration of potential contaminants in the soil or water on, in or under the Site.

4. SCOPE OF WORK

The current Phase II ESA was conducted in general accordance with the Canadian Standards Association (CSA) Standard CAN/CSA-Z769-00 (reaffirmed 2018), *Phase II Environmental Site Assessment*, and in part with Ontario Regulation (O. Reg.) 153/04 (Records of Site Condition – Part XV.1 of the Environmental Protection Act, EPA), as amended. 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. The project, as carried out, fulfills the scope of a "Reconnaissance" type investigation in which conditions are previously unknown, and the aim is to establish whether any environmental contamination is present. 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 depths of up to 6.12 m below ground surface (bgs) or resistance, and installation of monitoring wells in all boreholes.
- **Laboratory Testing Program -** Recovery and analysis of selected soil and groundwater samples for Metals, Petroleum Hydrocarbons (PHC) Fraction 1 to 4 (F1-F4), Benzene, Toluene, Ethylbenzene, Xylenes (collectively "BTEX"), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), pH, and/or Grain Size distribution.

- **Data Evaluation -** Comparison of results of chemical analyses with the applicable Ministry of the Environment, Conservation and Parks (MECP) Standards.
- **Reporting -** Provision of final engineering report detailing findings of performed works, and any further recommendations.

As conducted, the present investigation may lack information or analytical work that are specific requirements for filing a Record of Site Condition (RSC) under Part XV.1 of the EPA and O. Reg. 153/04, as amended. Therefore, if filing of a RSC is necessary, the property owner or its agent should undertake complementary investigations required under the RSC filing process.

5. INVESTIGATION METHODOLOGY

5.1. General

The subsurface soil and groundwater investigation (Phase II ESA) was carried out between August 31, 2023 and September 8, 2023 to address the potential environmental concerns identified at the Site from the previous Phase I ESA (Fisher, 2023). The field work was conducted by Mr. David Grimaldi of Fisher who directed drilling and sampling operations, and assured proper chain of custody procedures for the recovered soil and groundwater samples.

The current investigation was conducted concurrently with a geotechnical investigation, which included advancing a total of fourteen (14) boreholes at the Site. In the current Phase II ESA, five (5) boreholes (MW5, MW6, MW11, MW13 and MW14) were advanced at the Site to depths of up to 6.12 m bgs. Monitoring wells were installed in all five (5) boreholes to facilitate groundwater level monitoring and sampling.

5.2. Site Preparation

Site preparation included the location of public and private underground services by referring to the respective utilities: Burlington Hydro Inc., Enbridge Gas, Bell Canada, Public Works, water, sewer and light cables to avoid potential disruptions to the utilities during the drilling. The drilling work was conducted following receipt of clearance from all utilities for the given borehole locations.

5.3. Borehole Drilling

Five (5) boreholes (MW5, MW6, MW11, MW13 and MW14) were advanced at the Site on August 31, 2023 and September 1 and 6, 2023. Exterior borehole drilling was carried out using a Diedrich D-50 and CME-75 drilling rig. The boreholes were extended to depths of up to 6.12 m, at which point native material had been reached.

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 (Figure A2 in Appendix A) and the table below for description of borehole locations rationale.

TABLE 2: Borehole Location Rationale

Borehole No.	Borehole Location and Reason
MW5 and MW6	Evaluate sub-surface soil and groundwater conditions along the northern portion of the Site in relation to potential impacts that may have originated from on-site fill materials.
MW11 and MW13	Evaluate sub-surface soil and groundwater conditions along the southwestern boundary of the Site in relation to potential impacts that may have historically and/or currently originated from off-site service station operations.
MW14	Evaluate sub-surface soil and groundwater conditions along the eastern boundary of the Site in relation to potential impacts that may have historically and/or currently originated from off-site auto service operations.

Fisher had retained Terra Firma Environmental Services Ltd. (Terra Firma) as the drilling contractor. Terra Firma maintains licensure for drilling (Water Well Drillers, Environmental Protection Act, Well Contractor License No. 6946) as required by the MECP, and conducted drilling and soil sampling works in accordance with CAN/CSA Standard CAN/CSA-Z769-00 (reaffirmed 2018) and the Ontario Ministry of Environment and Energy (MOEE, currently MECP) *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996, and in compliance with Occupational Health and Safety regulations.

The intrusive subsurface investigation was conducted by means of solid stem auger boreholes advancement through the pavement, and a 50 mm diameter split spoon sampler driven 600 mm into subsoil by a 65 kg hammer, falling 760 mm, collecting soil samples at a maximum of 0.76 m interval and at stratigraphic boundaries.

5.3.1. Soil Sampling and Screening

Soil 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 MOEE 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 used to collect soil samples from the boreholes was brushed clean of soil and then washed in municipal water containing phosphate free detergent, rinsed in municipal water and then rinsed with distilled water. As well, new disposable nitrile gloves and stainless-steel spatula were 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.

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. 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 MiniRae 2000 Photoionization Detector (PID) calibrated to 100 ppm Isobutylene. The samples were kept out of direct sunlight during field storage and the headspace measurements were made after at least two hours had elapsed since the sample was bagged and the sample had reached a minimum temperature of 15ºC. The headspace monitoring was performed on the samples as a preliminary screening for analysis.

Selection of soil samples to be submitted for laboratory analysis are based on the headspace vapour concentration, physical evidence of odours/staining, apparent water table and/or proximity to potential contaminant sources. If no odours/staining are noted in the soil samples, the samples with the highest field screening measurement (i.e., highest headspace vapour concentration) are selected for laboratory analysis. Soil samples from the boreholes selected for potential chemical analysis of organic parameters were placed directly into laboratory supplied glass jars at the time of sampling, labeled and packed with minimal headspace. Samples were kept in coolers provided with cold packs during field storage and transportation to Fisher Environmental Laboratories for analysis.

One (1) field duplicate soil sample had been submitted to the laboratory for analysis for quality assurance/quality control (QA/QC) purposes.

5.4. Monitoring Well Installation

Five (5) monitoring wells were installed on the Site in accordance with O. Reg. 903. The wells were constructed of 52 mm inner diameter (ID) 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. Further construction details of the monitoring wells are provided on the “Log of Boreholes” attached in Appendix B.

5.4.1. Groundwater Monitoring and Sampling

Groundwater static level measurement in the newly installed monitoring wells was conducted on September 8, 2023.

Prior to sampling, the newly installed monitoring wells were developed by purging three (3) to five (5) well volumes of groundwater from each well to remove any water and/or drilling fluids added during drilling/installation and any fine-grained material from around the screened interval, to ensure that the sampling of “fresh” formation water was free of visible sediment. Development is also 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.

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 MOEE publication *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*.

Groundwater sampling in the installed monitoring wells was conducted on September 8, 2023 using bailers, where single-use (disposable) bailers are slowly lowered into the water column, allowed to fill, and removed.

Laboratory supplied sample containers were used to collect groundwater samples which were labeled, stored in coolers provided with cold packs during field storage and transportation to Fisher Environmental Laboratories for analysis.

One (1) field duplicate groundwater sample had been submitted to the laboratory for analysis for QA/QC purposes.

5.5. Residue Management Procedures

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

5.6. Selection of Analytical Samples and Parameters

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

Nine (9) soil samples collected from the boreholes were submitted to the laboratory for Metal, PHC (F1-F4), BTEX, VOC, PAH, pH and/or grain size analysis. Five (5) groundwater samples collected from the newly installed monitoring wells were submitted to the laboratory for Metal, PHC (F1-F4), BTEX, VOC and/or PAH analysis.

The analytical parameter selection and rationale are summarized below.

TABLE 3: Rationale for Analytical Parameter

Parameter	Description
Metals	Various metallic elements can cause adverse environmental effects at relatively low concentrations. Such metals are associated with industrial activities and/or the use of fill materials of unknown quality, both historic and current, and it is common practice to include Metals analysis in subsurface soil investigations. Five (5) soil and five (5) groundwater samples collected at the Site were submitted for Metal analysis.
PHC (F1-F4), BTEX	PHCs and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) 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. Five (5) soil and five (5) groundwater samples collected at the Site were submitted for PHC (F1-F4) and BTEX analysis.
VOCs	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

TABLE 3: Rationale for Analytical Parameter	
Parameter	Description
	containing VOCs. Note that VOC analysis includes Benzene, Toluene, Ethylbenzene, Xylene (BTEX) parameters. Four (4) soil and four (4) groundwater samples collected at the Site were submitted for VOC analysis.
PAHs	PAHs are associated with coal and furnace ash, and/or the use of fill materials of unknown quality. Four (4) soil samples and four (4) groundwater samples collected at the Site were submitted for PAH analysis.
pH	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. Three (3) soil samples collected at the Site were submitted for pH analysis.

6. RESULTS

6.1. Subsurface Conditions

6.1.1. Geology

The topographical map for the Site indicates that the ground surface elevation in the vicinity of the property is approximately 112 m above sea level (asl). The Site area is generally flat.

According to Surficial Geology of Southern Ontario, Ontario Geological Survey 2010, the Site is situated in an area characterized as paleozoic bedrock.

On the basis of the boreholes completed, underneath up to approximately 300 mm of topsoil or 102 mm of asphalt pavement and/or 280 mm of granular fill, where present, the stratigraphy at the investigated areas of the Site generally consists of a layer of reddish-brown sandy silt/disturbed fill with topsoil, rootlets and gravel and trace shale and clayey silt fill, extending up to 1.62 m bgs, overlying clayey silt and shale.

A description of the subsurface conditions encountered at the borehole locations is presented in Appendix B - Log of Boreholes.

6.1.2. Hydrogeology

On September 8, 2023, groundwater static levels were measured from the five (5) newly installed monitoring wells.

The groundwater static level measurements are summarized in the table below:

TABLE 4: Groundwater Static Level Measurements

Location	Well Depth, m bgs	Groundwater Static Level, m bgs (September 8, 2023)
MW5	4.60	3.87
MW6	6.12	4.27
MW11	4.16	3.83
MW13	4.35	3.39
MW14	4.14	2.83

Groundwater generally flows from areas of high hydraulic head towards areas of low hydraulic head.

Based on regional topography and proximity to Appleby Creek, which is located approximately 360 m east of the Site and flows in a southerly direction, the inferred regional groundwater flow direction was inferred to be southeasterly.

The localized shallow 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.

6.1.3. 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. Relatively low vapour concentrations were read during the soil sampling and all soil samples had concentrations of 1 ppm or less, indicating no evidence of impact from volatile organics.

6.1.4. Visual Olfactory Soil / Groundwater Quality

During the borehole-drilling program, the following visual/olfactory observations were made:

- Fill materials were encountered in the boreholes at depths of up to 1.62 m bgs.
- No odours were noted in any collected soil or groundwater samples.
- No free product, film or sheen was observed on the surface of groundwater collected from the monitoring wells.

6.2. 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 Environmental Protection Act*, April 15, 2011. These standards present soil and groundwater 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 used for commercial purposes, and it is our understanding that the property will maintain its current commercial land use.

With regard to the potability status of the groundwater, it is understood that the surrounding area relies on municipal water as a source of drinking water. For the purpose of assessing the soil and groundwater quality at the Site in accordance with the requirements for site assessment, under Part XV.1 of the EPA and O. Reg. 153/04, it is our intention to utilize a non-potable groundwater condition standard.

Based on the boreholes advanced on the Site during the current investigation, weathered shale bedrock was generally encountered at depths within 2 m bgs.

As specified by O. Reg. 153/04, "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”.

A grain size analysis was conducted on two (2) sub-surface soil sample collected from MW13 and MW14 which indicated a soil grading of approximately 26.1% and 4.2% coarse textured soil and 73.9% and 95.8% fine textured soil classification.

Three (3) soil samples were submitted to the laboratory for pH analysis (refer to Section 6.3). The result of pH for the submitted soil samples were found to be within the recommended range of 5 to 9 (for surface samples) or 5 to 11 (for subsurface samples).

Considering that bedrock was generally encountered within 2 m bgs throughout the Site from the current investigation, for the purpose of this Phase II ESA, the appropriate standards were identified as: Table 7 (Generic Site Condition Standards (SCSs) for Shallow Soils in a Non-Potable Groundwater Condition – Industrial/Commercial/Community Property Use for soil samples and All Types of Property Use for groundwater samples, medium and fine textured soil) as contained in the Ministry of the Environment, Conservation and Parks (MECP) *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011, hereinafter referred to as the "MECP Standards". The criteria values are presented with the results of analysis in the last column of the Certificates of Analysis (Appendix C).

6.3. ANALYTICAL RESULTS

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

A total of nine (9) soil and five (5) groundwater samples were submitted to the laboratory for Metal, PHC (including BTEX and PHC F1-F4), VOC, PAH, pH and/or grain size analysis. A copy of the Laboratory Certificates of Analysis is provided in Appendix C. Results of the chemical analyses are summarized in the following table:

TABLE 5: Overview of Laboratory Analytical Results				
Borehole/ Monitoring Well Number	Sample Depth / Screen Interval (m bgs)	Lab Sample ID	Parameters Analyzed	Compliant with MECP Standards
Soil (Lab No. 23-1773, 23-1782, 23-1789) – August 31, September 1 and September 6, 2023				
MW6	0.00-0.61	23-1773-1	Metals PHCs PAHs	Yes Yes Yes
MW5	0.00-0.61	23-1782-1	Metals PHCs PAHs pH	Yes Yes Yes Within Range for Surface Soil
MW11	1.52 - 2.13	23-1789-1	Metals PHCs PAHs	Yes Yes Yes
MW11	3.05 - 3.51	23-1789-2	VOCs	Yes
MW11 Duplicate	3.05 - 3.51	23-1789-3	VOCs	Yes
MW13	1.52 - 2.13	23-1789-4	Metals PHCs PAHs	Yes Yes Yes
MW13	3.05 - 3.51	23-1789-5	VOCs pH	Yes Within Range for Subsurface Soil
MW14	1.52 - 2.13	23-1789-6	Metals PHCs	Yes Yes
MW14	3.05 - 3.51	23-1789-7	VOCs pH	Yes Within Range for Subsurface Soil
Groundwater (Lab No. 23-1803) – September 8, 2023				
MW6	3.07 - 6.12	23-1803-1	Metals PHCs PAHs	Yes Yes Yes

TABLE 5: Overview of Laboratory Analytical Results				
Borehole/ Monitoring Well Number	Sample Depth / Screen Interval (m bgs)	Lab Sample ID	Parameters Analyzed	Compliant with MECP Standards
MW11	1.11 - 4.16	23-1803-2	Metals PHCs VOCs PAHs	Yes Yes Yes Yes
MW13	1.30 - 4.35	23-1803-3	Metals PHCs VOCs PAHs	Yes Yes Yes Yes
MW13 Duplicate	1.30 - 4.35	23-1803-4	Metals PHCs VOCs PAH	Yes Yes Yes Yes
MW14	1.09 - 4.14	23-1803-5	Metals PHCs VOCs	Yes Yes Yes

NOTES: PHCs: PHC (F1-F4)*: Petroleum Hydrocarbons fractions (F1-F4), including BTEX
F1 (C6-C10) Gasoline less BTEX
F2 (C10-C16) Diesel
F3 (C16-C34) Diesel
F4 (C34-C50) Heavy Oil
BTEX: Benzene, Toluene, Ethylbenzene, Xylenes
VOCs: Volatile Organic Compounds; PAHs: Polycyclic Aromatic Hydrocarbons;
pH: potential of Hydrogen.
Bold: Exceeds the MECP Standard

*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.

6.3.1. Soil Quality

The results of chemical analysis indicated that all nine (9) soil samples were found to be in compliance with the applicable MECP Standards for concentrations of all tested parameters.

6.3.2. Groundwater Quality

The results of chemical analysis indicated that all five (5) groundwater samples were found to be in compliance with the applicable MECP Standards for concentrations of all tested parameters.

6.4. 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 Quality Assurance. Generally, one sample for every twenty samples submitted is selected for Quality Assurance 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 Quality Assurance Reports provided by Fisher Environmental Laboratories, measured concentrations in soil and groundwater samples were within the acceptable limits for quality control. Copies of the QA/QC Reports for Metals, PHC (F1-F4), BTEX, PAHs, VOCs and pH in soil and/or groundwater are included with the Certificates of Analysis in Appendix C.

The QA/QC program also includes the collection of field duplicate samples for laboratory analysis as follows:

- One (1) field duplicate soil sample of MW11 (3.05-3.51 m bgs), analyzed VOCs; and
- One (1) field duplicate groundwater sample of MW13, analyzed for Metals, PHC (F1-F4), BTEX, PAHs and VOCs.

Relative percent differences (RPDs) were calculated for the field duplicate samples. Quantitative correlation was not calculable for the analytical results of the field duplicate samples and their corresponding sample pairs with reported concentrations equal to or less than five times the reportable detection limits.

Acceptable correlation was observed between all analytical results for the field duplicate soil and groundwater samples, and the field QA/QC is considered to be acceptable.

7. SUMMARY AND CONCLUSIONS

Fisher carried out a Phase II Environmental Site Assessment of the property located at 5051 Harvester Road, Burlington, Ontario. The subsurface soil and groundwater investigation was carried out between August 31, 2023 and September 8, 2023.

The current investigation was conducted concurrently with a geotechnical investigation, which included advancing a total of fourteen (14) boreholes at the Site. In the current Phase II ESA, five (5) boreholes (MW5, MW6, MW11, MW13 and MW14) were advanced at the Site to depths of up to 6.12 m below ground surface (bgs) on August 31, 2023 and September 1 and 6, 2023. Monitoring wells were installed in all five (5) boreholes to facilitate groundwater level monitoring and sampling.

On the basis of the boreholes completed, underneath up to approximately 300 mm of topsoil or 102 mm of asphalt pavement and/or 280 mm of granular fill, where present, the stratigraphy at the investigated areas of the Site generally consists of a layer of reddish-brown sandy silt/disturbed fill with topsoil, rootlets and gravel and trace shale and clayey silt fill, extending up to 1.62 m bgs, overlying clayey silt and shale.

Groundwater static level measurement was taken at the monitoring well locations on September 8, 2023, and it was noted at depths ranging from 2.83 m bgs in MW14 to 4.27 m bgs in MW6. Based on the regional topography and proximity to Appleby Creek, which is located approximately 360 m east of the Site and flows in a southerly direction, the inferred regional groundwater flow direction was inferred to be southeasterly.

A total of nine (9) soil and five (5) groundwater samples were submitted to the laboratory for Metal, Petroleum Hydrocarbon (PHC) Fraction 1 to 4 (F1-F4), Benzene, Toluene, Ethylbenzene, Xylenes (collectively “BTEX”), Volatile Organic Compound (VOC), Polycyclic Aromatic Hydrocarbon (PAH) and/or pH analysis.

For the purpose of this Phase II ESA, the appropriate standards were identified as: Table 7 (Generic Site Condition Standards (SCSs) for Shallow Soils in a Non-Potable Groundwater Condition – Industrial/Commercial/Community Property Use for soil samples and All Types of Property Use for groundwater samples, medium and fine textured soil) as contained in the Ministry of the Environment (MOE, currently Ministry of the Environment, Conservation and Parks, MECP) *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011, hereinafter referred to as the “MECP Standards”.

SOIL QUALITY

The results of chemical analysis indicated that all nine (9) soil samples were found to be in compliance with the applicable MECP Standards for concentrations of all tested parameters.

GROUNDWATER QUALITY

The results of chemical analysis indicated that all five (5) groundwater samples were found to be in compliance with the applicable MECP Standards for concentrations of all tested parameters.

CONCLUSIONS AND RECOMMENDATIONS

Based on the current subsurface investigation, it is concluded that no evidence of soil or groundwater contamination had occurred at the selected sampling locations. No further investigation is recommended at this time.

8. LIMITATIONS

This report was prepared for use by Dymon Group of Companies, 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. 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 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 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.

Fisher Engineering Limited notes that the work conducted at the Site may not fully satisfy the MECP requirements for the purpose of filling a Record of Site Condition (RSC). Should a RSC be required, then additional investigations should be conducted at the Site.

9. QUALIFICATIONS OF ASSESSOR

The field works for this assessment were conducted by Mr. David Grimaldi. The field work supervision and report preparation for this assessment were conducted by Mrs. Lena Johnston, C.E.T., who has been trained and has 9 years of experience in conducting Phase II ESAs in accordance with the CSA Standard. Mrs. Johnston has conducted more than 150 Phase II ESAs for commercial/industrial/residential clients and government agencies and is routinely engaged in this field.

This report was reviewed by Mr. Bernard Chan, C. Chem., P. Eng., who is a Professional Engineer with Professional Engineers Ontario and has over 20 years of experience in conducting, management and supervision of Phase II ESAs. Mr. Chan was also involved in providing oversight and technical support during the course of this assessment.

As a Qualified Person who conducts and supervises Phase II 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.

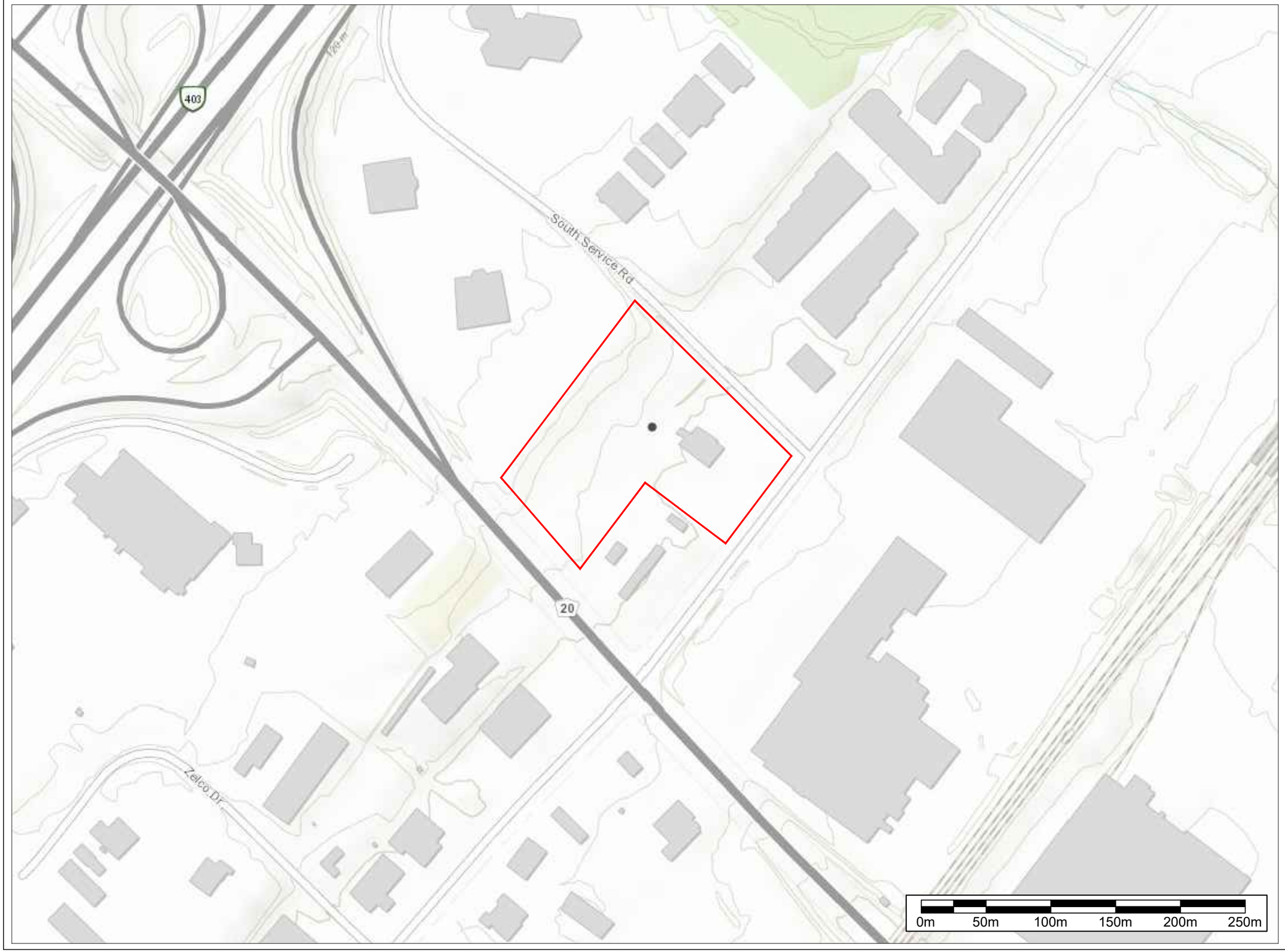
Fisher Engineering Limited has been established as a team of engineers and consultants since 1989, and continues to develop a strong, wide client base. The company is staffed with personnel holding graduate or postgraduate qualifications at the Markham headquarters, as well as specialist associates offering 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.

10. REFERENCES

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

- Canadian Standards Association (CSA) Standard CAN/CSA Z769-00 (reaffirmed 2018), *Phase II Environmental Site Assessment*;
- Environmental Protection Act (EPA), R.S.O. 1990, Chapter E. 19, as amended;
- *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, Ministry of the Environment and Energy, December 1996;
- Ontario Regulation 153/04 (Records of Site Condition – Part XV.1 of the EPA), as amended;
- *Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*, Ministry of the Environment, dated April 15, 2011;
- The Ontario Water Resources Act – R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128.03, August 2003;
- Natural Resources Canada – The Atlas of Canada online topography map;
- Google Earth;
- *Quaternary Geology of Toronto and Surrounding Area, Southern Ontario; Ontario Geological Survey Preliminary Map P 2204*, Geological Series, Sharpe, D.R., 1980; and
- *Phase I Environmental Site Assessment, 5051 Harvester Road, Burlington, Ontario*, dated September 13, 2023, prepared by Fisher Engineering Limited, Project No. FE-P 23-13262.

APPENDIX A – FIGURES



FISHER ENGINEERING

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

Tel: 905 475-7755

NORTH

N

LEGEND

SITE BOUNDARY

PROJECT NAME AND ADDRESS

Phase II ESA

5051 Harvester Road,
Burlington, Ontario

FIGURE A1:

SITE LOCATION MAP

PROJECT NO.	SHEET NO.
FE 23-13264/65	A1
DATE: 6 September, 2023	
SCALE: AS SHOWN	



FISHER ENGINEERING

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

Tel: 905 475-7755

NORTH

LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- BOREHOLE LOCATION
- BOREHOLE WITH MONITORING WELL LOCATION

PROJECT NAME AND ADDRESS

Phase II ESA

5051 Harvester Road,
Burlington, Ontario

FIGURE A2:

SITE PLAN WITH BOREHOLE LOCATIONS

PROJECT NO.	SHEET NO.
FE 23-13264/65	A2
DATE: 6 September, 2023	
SCALE: AS SHOWN	

APPENDIX B – LOG OF BOREHOLES

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH5(MW) SHEET. 1 of 1

PROJECT NO.: FE# 23-13264/65

PROJECT NAME: PHASE II ESA

LOCATION: 5051 Harvester Road, Burlington, ON

DRILLING METHOD: D-50 Truck, Solid Stem

DRILLING DATE: 1 September, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				113.08			
		~152mm TOPSOIL		0.15 / 112.93		SS-1	8
		FILL: Reddish brown sandy silt/disturbed fill, trace shale, some clay, trace gravel, trace topsoil, trace rootlets, moist		0.82 / 112.26		SS-2	27
		CLAYEY SILT: Reddish brown, some sand, trace some shale		1.55 / 111.53		SS-3	100+
		SHALE: Reddish brown to grey, dry, hard				SS-4	100+
						SS-5	100+
		End of borehole at 4.60m		4.60 / 108.48		SS-6	100+

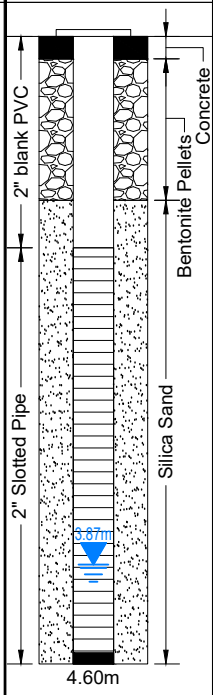
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 8 September 2023: 3.87m

DRAWN: T.L. LOGGED: D.G. CHECKED: C.W.

LOG OF BOREHOLE

NO. BH6(MW) SHEET. 1 of 1

PROJECT NO.: FE# 23-13264/65

PROJECT NAME: PHASE II ESA

LOCATION: 5051 Harvester Road, Burlington, ON

DRILLING METHOD: D-50 Truck, Solid Stem

DRILLING DATE: 31 August, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				113.42			
		TOPSOIL		0.30 / 113.12		SS-1	8
		FILL: Reddish brown clayey silt/disturbed fill, some sand, trace topsoil, trace rootlets, trace gravel, moist		0.79 / 112.63		SS-2	30
		CLAYEY SILT: Reddish brown to grey, some shale, trace some sand, dry, hard		1.58 / 111.84		SS-3	100+
		SHALE: Grey to reddish brown, dry, hard				SS-4	100+
						SS-5	100+
						SS-6	100+
		SHALE: Grey to reddish brown, wet, hard		5.18 / 108.24			
		End of borehole at 6.12m		6.12 / 107.30		SS-7	100+

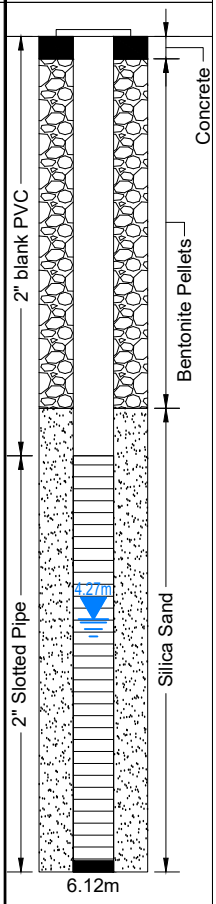
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: 3.96m; on 8 September 2023: 4.27m

DRAWN: T.L. LOGGED: D.G. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH11(MW) SHEET. 1 of 1

PROJECT NO.: FE# 23-13264/65

PROJECT NAME: PHASE II ESA

LOCATION: 5051 Harvester Road, Burlington, ON

DRILLING METHOD: CME-75 Truck, Solid Stem

DRILLING DATE: 6 September, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				110.96			
		TOPSOIL		0.30 / 110.66		SS-1	8
		GRANULAR MATERIAL		0.58 / 110.38			
		FILL: Dark brown clayey silt, some sand, trace gravel, trace organics, moist		0.91 / 110.05		SS-2	23
		FILL: Reddish brown sandy silt/disturbed fill, trace clay, trace gravel, trace topsoil, moist		1.62 / 109.34		SS-3	100+
		CLAYEY SILT: Reddish brown, trace some sand, some shale, dry, hard				SS-4	100+
						SS-5	100+
		SHALE: Reddish brown, dry, hard		3.44 / 107.52			
		End of borehole at 4.60m		4.60 / 106.36		SS-6	100+

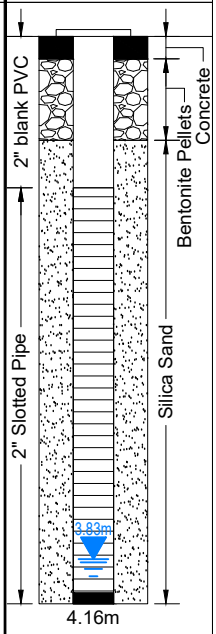
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 8 September 2023: 3.83m

DRAWN: T.L. LOGGED: D.G. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH13(MW) SHEET. 1 of 1

PROJECT NO.: FE# 23-13264/65

PROJECT NAME: PHASE II ESA

LOCATION: 5051 Harvester Road, Burlington, ON

DRILLING METHOD: CME-75 Truck, Solid Stem

DRILLING DATE: 6 September, 2023

DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				109.44			
		~102mm ASPHALT		0.25 / 109.19		SS-1	7
		GRANULAR MATERIAL					
		FILL: Reddish brown clayey silt/disturbed fill, some sand, trace gravel, trace topsoil, trace rootlets, moist		0.79 / 108.65		SS-2	100+
		CLAYEY SILT: Reddish brown, some shale, some sand, dry, hard		1.46 / 107.98		SS-3	100+
		SHALE: Reddish brown, dry, hard				SS-4	100+
						SS-5	100+
		End of borehole at 4.62m		4.62 / 104.82		SS-6	100+

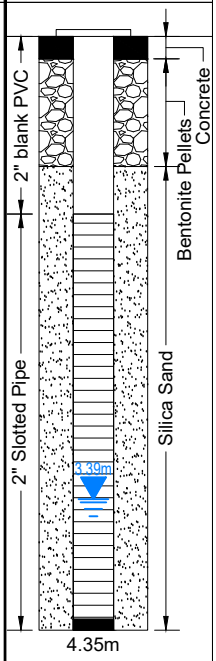
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ● 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



Groundwater Depth (m): on completion: Dry; on 8 September 2023: 3.39m

DRAWN: T.L. LOGGED: D.G. CHECKED: C.W.

FISHER ENGINEERING

LOG OF BOREHOLE

NO. BH14(MW) SHEET. 1 of 1

PROJECT NO.: FE# 23-13264/65

PROJECT NAME: PHASE II ESA

LOCATION: 5051 Harvester Road, Burlington, ON

DRILLING METHOD: CME-75 Truck, Solid Stem

DRILLING DATE: 6 September, 2023

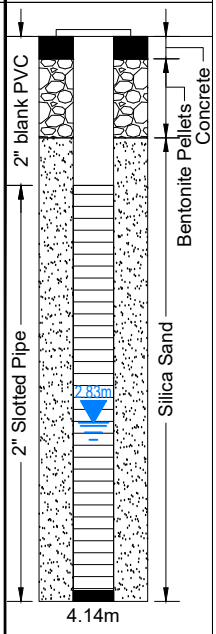
DEPTH (feet)	DEPTH (meters)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	LAB ID	Type NO.	"N" VALUE
				109.24			
0	0	~76mm ASPHALT		0.20 / 109.04		SS-1	5
		GRANULAR MATERIAL					
2		FILL: Reddish brown clayey silt/disturbed fill, trace topsoil, trace gravel, trace shale, trace rootlets, trace organics, moist		0.79 / 108.45		SS-2	34
4	1	CLAYEY SILT: Reddish brown to grey, some shale, dry, hard					
6	2					SS-3	100+
8		SHALE: Reddish brown, dry, hard		2.35 / 106.89		SS-4	62
10	3					SS-5	100+
12		Water encounter @3.81m					
14	4						
		End of borehole at 4.62m		4.62 / 104.62		SS-6	100+
16	5						
18							
20	6						
22	7						
24							
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



Groundwater Depth (m): on completion: 3.96m; on 8 September 2023: 2.83m

DRAWN: T.L. | LOGGED: D.G. | CHECKED: C.W.

APPENDIX C – CERTIFICATES OF ANALYSIS

FISHER ENVIRONMENTAL LABORATORIES

FULL RANGE ANALYTICAL SERVICES • SOIL/WATER/AIR TESTING • ENVIRONMENTAL COMPLIANCE PACKAGES • 24 HOUR EMERGENCY RESPONSE • CALA ACCREDITED

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Client: Dymon Group of Companies
Address: 1450 The Queensway
Etobicoke, ON
M8Z 1S4
Tel.:
Email:
Attn.:

F.E. Job #: 23-1773
Project Name: Phase II ESA
Project ID: FE-P 23-13263
Date Sampled: 31-Aug-2023
Date Received: 1-Sep-2023
Date Reported: 6-Sep-2023
Location: 5051 Harvester Road
Burlington, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	1	5-Sep-23	5-Sep-23	Metals F-18	EPA 200.2/200.8
PHCs (F1 & BTEX)	Soil	1	1-Sep-23	6-Sep-23	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	1	5-Sep-23	5-Sep-23	PHCs F-7	CCME CWS
PAHs	Soil	1	2-Sep-23	2-Sep-23	PAHs F-4	SM 6410-B
Moisture Content	Soil	1	N/A	5-Sep-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
Sample Description:	1 Soil Sample(s) (***Semi-Rush***)

Parameter	***23-1773-1*** BH6 0.00-0.61m					**Soil Standards** [1]
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1					(50) 40
Arsenic	5.2					18
Barium	49					670
Beryllium	<2					(10) 8
Boron	<5					120
Cadmium	<1					1.9
Chromium	18					160
Cobalt	9.6					(100) 80
Copper	8.9					(300) 230
Lead	14					120
Molybdenum	<2					40
Nickel	20					(340) 270
Selenium	2.6					5.5
Silver	<0.5					(50) 40
Thallium	<1					3.3
Uranium	<1					33
Vanadium	23					86
Zinc	56					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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	CRM	AR	MS	AR
	(µg/g)		(µg/g)		Recovery (%)	
Metals in Soil						
Antimony	<1	1	2.8	0-10	94	70-130
Arsenic	<1	1	81	25-125	92	70-130
Barium	<5	5	191	149-281	90	70-130
Beryllium	<2	2	0.8	0-5	98	70-130
Boron	<5	5	13	5-20	124	70-130
Cadmium	<1	1	2.4	0-5	98	70-130
Chromium	<5	5	33	14-54	73	70-130
Cobalt	<2	2	12	9-15	78	70-130
Copper	<5	5	191	139-243	107	70-130
Lead	<10	10	127	68-184	92	70-130
Molybdenum	<2	2	1.9	0-5	86	70-130
Nickel	<5	5	60	33-75	78	70-130
Selenium	<1	1	3.1	0-5	84	70-130
Silver	<0.5	0.5	1.0	0-5	98	70-130
Thallium	<1	1	0.5	0-5	102	70-130
Uranium	<1	1	1.4	0-5	97	70-130
Vanadium	<10	10	39	17-51	79	70-130
Zinc	<30	30	488	337-597	88	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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Soil						
Antimony	19.6	0-30				
Arsenic	21.2	0-30				
Barium	2.6	0-30				
Beryllium	7.0	0-30				
Boron	19.0	0-30				
Cadmium	0.0	0-30				
Chromium	3.2	0-30				
Cobalt	8.3	0-30				
Copper	1.0	0-30				
Lead	4.7	0-30				
Molybdenum	14.0	0-30				
Nickel	15.9	0-30				
Selenium	0.0	0-30				
Silver	0.0	0-30				
Thallium	0.0	0-30				
Uranium	2.2	0-30				
Vanadium	3.1	0-30				
Zinc	0	0-30				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1773-1*** BH6 0.00-0.61m					**Soil Standards** [1]
	Concentration (µg/g)					
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 (F_1-F_4) 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 (%)						
Dibromofluoromethane	83					60-140
Toluene-d8	93					60-140
4-Bromofluorobenzene	127					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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
BTEX in Soil						
Benzene	<0.02	0.02	122	60-130	103	50-140
Toluene	<0.2	0.2	117	60-130	101	50-140
Ethylbenzene	<0.05	0.05	116	60-130	95	50-140
Xylenes	<0.05	0.05	111	60-130	93	50-140
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	117	80-120	101	60-140
F2 (C_{10} - C_{16})	<10	10	98	80-120	96	60-140
F3 (C_{16} - C_{34})	<50	50	99	80-120	95	60-140
F4 (C_{34}-C_{50})	<50	50	100	80-120	88	60-140
Surrogates						
Parameter	**Blank**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	67	60-140	95	60-140	98	60-140
Toluene-d8	66	60-140	112	60-140	105	60-140
4-Bromofluorobenzene	128	60-140	121	60-140	123	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.

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Soil						
Benzene	0.0	0-50				
Toluene	0.0	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})	2.4	0-30				
F2 (C_{10} - C_{16})	4.3	0-30				
F3 (C_{16} - C_{34})	5.0	0-30				
F4 (C_{34}-C_{50})	0.4	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	83	60-140				
Toluene-d8	99	60-140				
4-Bromofluorobenzene	117	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1773-1*** BH6 0.00-0.61m					**Soil Standards** [1]
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	<0.05					(28) 9.6
2-Methylnaphthalene	<0.05					(85) 76
1-Methylnaphthalene	<0.05					
Acenaphthylene	<0.05					(0.17) 0.15
Acenaphthene	<0.05					96
Fluorene	<0.05					(69) 62
Phenanthrene	<0.05					(16) 12
Anthracene	<0.05					(0.74) 0.67
Fluoranthene	<0.05					9.6
Pyrene	<0.05					96
Benz [a] anthracene	<0.05					0.96
Chrysene	<0.05					9.6
Benzo [b] fluoranthene	<0.05					0.96
Benzo [k] fluoranthene	<0.05					0.96
Benzo [a] pyrene	<0.05					0.3
Indeno [1,2,3-cd] pyrene	<0.1					(0.95) 0.76
Dibenz [a,h] anthracene	<0.1					0.1
Benzo [g,h,i] perylene	<0.1					9.6
Surrogate Recovery (%)						
Naphthalene-d8	76					50-140
Phenanthrene-d10	82					50-140
Chrysene-d12	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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

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	81	50-140
2-Methylnaphthalene	<0.05	0.05	105	50-140	86	50-140
1-Methylnaphthalene	<0.05	0.05	111	50-140	108	50-140
Acenaphthylene	<0.05	0.05	80	50-140	130	50-140
Acenaphthene	<0.05	0.05	72	50-140	68	50-140
Fluorene	<0.05	0.05	110	50-140	88	50-140
Phenanthrene	<0.05	0.05	108	50-140	99	50-140
Anthracene	<0.05	0.05	108	50-140	99	50-140
Fluoranthene	<0.05	0.05	93	50-140	99	50-140
Pyrene	<0.05	0.05	105	50-140	102	50-140
Benz [a] anthracene	<0.05	0.05	104	50-140	108	50-140
Chrysene	<0.05	0.05	104	50-140	91	50-140
Benzo [b] fluoranthene	<0.05	0.05	131	50-140	111	50-140
Benzo [k] fluoranthene	<0.05	0.05	131	50-140	111	50-140
Benzo [a] pyrene	<0.05	0.05	110	50-140	100	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	101	50-140	112	50-140
Dibenz [a,h] anthracene	<0.1	0.1	60	50-140	107	50-140
Benzo [g,h,i] perylene	<0.1	0.1	117	50-140	107	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	71	50-140	103	50-140	86	50-140
Phenanthrene-d10	84	50-140	110	50-140	109	50-140
Chrysene-d12	107	50-140	94	50-140	92	50-140

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

Results related only to the items tested

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	73	50-140				
Phenanthrene-d10	87	50-140				
Chrysene-d12	96	50-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1773-1*** BH6 0.00-0.61m					
Moisture Content (%)	14.3					

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
Moisture Content (%)	<0.1	0.1	100	70-130	0.3	0-20

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

Results related only to the items tested

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F.E. Job #: 23-1782
Project Name: Phase II ESA
Project ID: FE-P 23-13263
Date Sampled: 1-Sep-2023
Date Received: 1-Sep-2023
Date Reported: 8-Sep-2023
Location: 5051 Harvester Road
Burlington, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	1	8-Sep-23	8-Sep-23	Metals F-18	EPA 200.2/200.8
PHCs (F1 & BTEX)	Soil	1	1-Sep-23	6-Sep-23	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	1	6-Sep-23	6-Sep-23	PHCs F-7	CCME CWS
PAHs	Soil	1	2-Sep-23	2-Sep-23	PAHs F-4	SM 6410-B
pH	Soil	1	5-Sep-23	5-Sep-23	pH-EC-SAR F-16	SW-846, 9045D
Moisture Content	Soil	1	N/A	5-Sep-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:	1 Soil Sample(s) (***Semi-Rush***)

Parameter	***23-1782-1*** BH5 0.00-0.61m					**Soil Standards** [1]
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1					(50) 40
Arsenic	5.9					18
Barium	69					670
Beryllium	<2					(10) 8
Boron	7.8					120
Cadmium	<1					1.9
Chromium	24					160
Cobalt	12					(100) 80
Copper	9.7					(300) 230
Lead	19					120
Molybdenum	<2					40
Nickel	24					(340) 270
Selenium	<1					5.5
Silver	<0.5					(50) 40
Thallium	<1					3.3
Uranium	<1					33
Vanadium	25					86
Zinc	56					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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	CRM	AR	MS	AR
	(µg/g)		(µg/g)		Recovery (%)	
Metals in Soil						
Antimony	<1	1	2.5	0-10	85	70-130
Arsenic	<1	1	83	25-125	83	70-130
Barium	<5	5	217	149-281	118	70-130
Beryllium	<2	2	0.7	0-5	89	70-130
Boron	<5	5	0	0-20	121	70-130
Cadmium	<1	1	2.0	0-5	85	70-130
Chromium	<5	5	37	14-54	70	70-130
Cobalt	<2	2	13	9-15	83	70-130
Copper	<5	5	174	139-243	77	70-130
Lead	<10	10	133	68-184	80	70-130
Molybdenum	<2	2	2.1	0-5	76	70-130
Nickel	<5	5	59	33-75	79	70-130
Selenium	<1	1	0.2	0-5	79	70-130
Silver	<0.5	0.5	1.0	0-5	85	70-130
Thallium	<1	1	0.7	0-5	93	70-130
Uranium	<1	1	1.2	0-5	84	70-130
Vanadium	<10	10	39	17-51	79	70-130
Zinc	<30	30	451	337-597	72	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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Soil						
Antimony	15.9	0-30				
Arsenic	6.9	0-30				
Barium	0.3	0-30				
Beryllium	8.3	0-30				
Boron	12.6	0-30				
Cadmium	0.0	0-30				
Chromium	3.8	0-30				
Cobalt	3.7	0-30				
Copper	6.1	0-30				
Lead	0.2	0-30				
Molybdenum	10.0	0-30				
Nickel	2.8	0-30				
Selenium	0.0	0-30				
Silver	28.6	0-30				
Thallium	0.0	0-30				
Uranium	2.8	0-30				
Vanadium	6.2	0-30				
Zinc	5	0-30				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1782-1*** BH5 0.00-0.61m					**Soil Standards** [1]
	Concentration (µg/g)					
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 (F_1-F_4) 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 (%)						
Dibromofluoromethane	79					60-140
Toluene-d8	89					60-140
4-Bromofluorobenzene	136					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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
BTEX in Soil						
Benzene	<0.02	0.02	122	60-130	103	50-140
Toluene	<0.2	0.2	117	60-130	101	50-140
Ethylbenzene	<0.05	0.05	116	60-130	95	50-140
Xylenes	<0.05	0.05	111	60-130	93	50-140
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	117	80-120	101	60-140
F2 (C_{10} - C_{16})	<10	10	101	80-120	87	60-140
F3 (C_{16} - C_{34})	<50	50	101	80-120	81	60-140
F4 (C_{34}-C_{50})	<50	50	102	80-120	88	60-140
Surrogates						
Parameter	**Blank**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	67	60-140	95	60-140	98	60-140
Toluene-d8	66	60-140	112	60-140	105	60-140
4-Bromofluorobenzene	128	60-140	121	60-140	123	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.

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Soil						
Benzene	0.0	0-50				
Toluene	0.0	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})	2.4	0-30				
F2 (C_{10} - C_{16})	1.2	0-30				
F3 (C_{16} - C_{34})	3.0	0-30				
F4 (C_{34}-C_{50})	5.1	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	83	60-140				
Toluene-d8	99	60-140				
4-Bromofluorobenzene	117	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1782-1*** BH5 0.00-0.61m					**Soil Standards** [1]
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	<0.05					(28) 9.6
2-Methylnaphthalene	<0.05					(85) 76
1-Methylnaphthalene	<0.05					
Acenaphthylene	<0.05					(0.17) 0.15
Acenaphthene	<0.05					96
Fluorene	<0.05					(69) 62
Phenanthrene	<0.05					(16) 12
Anthracene	<0.05					(0.74) 0.67
Fluoranthene	<0.05					9.6
Pyrene	<0.05					96
Benz [a] anthracene	<0.05					0.96
Chrysene	<0.05					9.6
Benzo [b] fluoranthene	<0.05					0.96
Benzo [k] fluoranthene	<0.05					0.96
Benzo [a] pyrene	<0.05					0.3
Indeno [1,2,3-cd] pyrene	<0.1					(0.95) 0.76
Dibenz [a,h] anthracene	<0.1					0.1
Benzo [g,h,i] perylene	<0.1					9.6
Surrogate Recovery (%)						
Naphthalene-d8	63					50-140
Phenanthrene-d10	58					50-140
Chrysene-d12	58					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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

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	81	50-140
2-Methylnaphthalene	<0.05	0.05	105	50-140	86	50-140
1-Methylnaphthalene	<0.05	0.05	111	50-140	108	50-140
Acenaphthylene	<0.05	0.05	80	50-140	130	50-140
Acenaphthene	<0.05	0.05	72	50-140	68	50-140
Fluorene	<0.05	0.05	110	50-140	88	50-140
Phenanthrene	<0.05	0.05	108	50-140	99	50-140
Anthracene	<0.05	0.05	108	50-140	99	50-140
Fluoranthene	<0.05	0.05	93	50-140	99	50-140
Pyrene	<0.05	0.05	105	50-140	102	50-140
Benz [a] anthracene	<0.05	0.05	104	50-140	108	50-140
Chrysene	<0.05	0.05	104	50-140	91	50-140
Benzo [b] fluoranthene	<0.05	0.05	131	50-140	111	50-140
Benzo [k] fluoranthene	<0.05	0.05	131	50-140	111	50-140
Benzo [a] pyrene	<0.05	0.05	110	50-140	100	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	101	50-140	112	50-140
Dibenz [a,h] anthracene	<0.1	0.1	60	50-140	107	50-140
Benzo [g,h,i] perylene	<0.1	0.1	117	50-140	107	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	71	50-140	103	50-140	86	50-140
Phenanthrene-d10	84	50-140	110	50-140	109	50-140
Chrysene-d12	107	50-140	94	50-140	92	50-140

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

Results related only to the items tested

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	73	50-140				
Phenanthrene-d10	87	50-140				
Chrysene-d12	96	50-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1782-1*** BH5 0.00-0.61m					**Soil Standards** *
pH *(pH unit)*	6.77					(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)*	7.03	6.90-7.20	0.09	<0.3		

LEGEND:
LCS - Laboratory Control Sample
AR - Acceptable Range

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, PHCs, PAHs, pH
Sample Description:	1 Soil Sample(s) (Semi-Rush)

Parameter	***23-1782-1*** BH5 0.00-0.61m					
Moisture Content (%)	16.8					

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
Moisture Content (%)	<0.1	0.1	100	70-130	0.3	0-20

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

Results related only to the items tested

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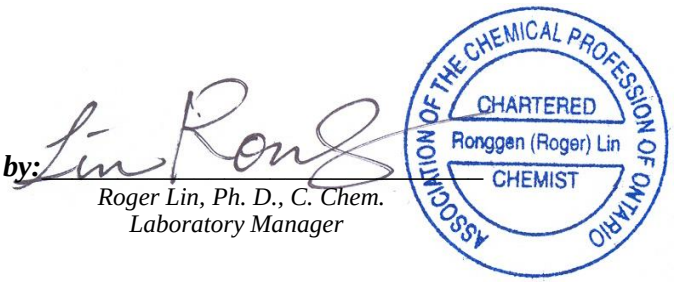
F.E. Job #: 23-1789
Project Name: Phase II ESA
Project ID: FE-P 23-13263
Date Sampled: 6-Sep-2023
Date Received: 6-Sep-2023
Date Reported: 14-Sep-2023
Location: 5051 Harvester Road
Burlington, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	3	8-Sep-23	8-Sep-23	Metals F-18	EPA 200.2/200.8
VOCs	Soil	4	6-Sep-23	7-Sep-23	VOCs F-14	SW-846, 8260C
PHCs (F1 & BTEX)	Soil	3	6-Sep-23	7-Sep-23	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	3	6-Sep-23	6-Sep-23	PHCs F-7	CCME CWS
PAHs	Soil	2	13-Sep-23	13-Sep-23	PAHs F-4	SM 6410-B
pH	Soil	2	7-Sep-23	8-Sep-23	pH-EC-SAR F-16	SW-846, 9045D
Grain Size	Soil	2	N/A	7-Sep-23	Grain Size F-28	ASTM D6913-04
Moisture Content	Soil	7	N/A	7-Sep-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

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (***Semi-Rush***)

Parameter	***23-1789-1*** BH11 1.52-2.13m	***23-1789-4*** BH13 1.52-2.13m	***23-1789-6*** BH14 1.52-2.13m			**Soil Standards** [1]
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1	<1			(50) 40
Arsenic	5.3	6.5	3.8			18
Barium	96	168	72			670
Beryllium	<2	<2	<2			(10) 8
Boron	<5	<5	<5			120
Cadmium	<1	<1	<1			1.9
Chromium	17	17	20			160
Cobalt	12	15	12			(100) 80
Copper	6.8	5.6	7.6			(300) 230
Lead	<10	14	12			120
Molybdenum	<2	<2	<2			40
Nickel	23	25	26			(340) 270
Selenium	<1	1.8	<1			5.5
Silver	<0.5	<0.5	<0.5			(50) 40
Thallium	<1	<1	<1			3.3
Uranium	<1	<1	<1			33
Vanadium	19	22	20			86
Zinc	47	49	52			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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	CRM	AR	MS	AR
	(µg/g)		(µg/g)		Recovery (%)	
Metals in Soil						
Antimony	<1	1	2.5	0-10	85	70-130
Arsenic	<1	1	83	25-125	83	70-130
Barium	<5	5	217	149-281	118	70-130
Beryllium	<2	2	0.7	0-5	89	70-130
Boron	<5	5	0	0-20	121	70-130
Cadmium	<1	1	2.0	0-5	85	70-130
Chromium	<5	5	37	14-54	70	70-130
Cobalt	<2	2	13	9-15	83	70-130
Copper	<5	5	174	139-243	77	70-130
Lead	<10	10	133	68-184	80	70-130
Molybdenum	<2	2	2.1	0-5	76	70-130
Nickel	<5	5	59	33-75	79	70-130
Selenium	<1	1	0.2	0-5	79	70-130
Silver	<0.5	0.5	1.0	0-5	85	70-130
Thallium	<1	1	0.7	0-5	93	70-130
Uranium	<1	1	1.2	0-5	84	70-130
Vanadium	<10	10	39	17-51	79	70-130
Zinc	<30	30	451	337-597	72	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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Soil						
Antimony	15.9	0-30				
Arsenic	6.9	0-30				
Barium	0.3	0-30				
Beryllium	8.3	0-30				
Boron	12.6	0-30				
Cadmium	0.0	0-30				
Chromium	3.8	0-30				
Cobalt	3.7	0-30				
Copper	6.1	0-30				
Lead	0.2	0-30				
Molybdenum	10.0	0-30				
Nickel	2.8	0-30				
Selenium	0.0	0-30				
Silver	28.6	0-30				
Thallium	0.0	0-30				
Uranium	2.8	0-30				
Vanadium	6.2	0-30				
Zinc	5	0-30				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (Semi-Rush)

Parameter	***23-1789-2*** BH11 3.05-3.51m	***23-1789-3*** BH11 (Dup) 3.05-3.51m	***23-1789-5*** BH13 3.05-3.51m	***23-1789-7*** BH14 3.05-3.51m		**Soil Standards** [1]
	Concentration (µg/g)					
VOCs in Soil						
Acetone	<0.5	<0.5	<0.5	<0.5		(28) 16
Benzene	<0.02	<0.02	<0.02	<0.02		(0.4) 0.32
Bromodichloromethane	<0.05	<0.05	<0.05	<0.05		18
Bromoform	<0.05	<0.05	<0.05	<0.05		(1.7) 0.61
Bromomethane	<0.05	<0.05	<0.05	<0.05		0.05
Carbon Tetrachloride	<0.05	<0.05	<0.05	<0.05		(1.5) 0.21
Chlorobenzene	<0.05	<0.05	<0.05	<0.05		(2.7) 2.4
Chloroform	<0.05	<0.05	<0.05	<0.05		(0.18) 0.47
Dibromochloromethane	<0.05	<0.05	<0.05	<0.05		13
1,2-Dichlorobenzene	<0.05	<0.05	<0.05	<0.05		(8.5) 6.8
1,3-Dichlorobenzene	<0.05	<0.05	<0.05	<0.05		(12) 9.6
1,4-Dichlorobenzene	<0.05	<0.05	<0.05	<0.05		(0.84) 0.2
Dichlorodifluoromethane	<0.05	<0.05	<0.05	<0.05		(25) 16
1,1-Dichloroethane	<0.05	<0.05	<0.05	<0.05		(21) 17
1,2-Dichloroethane	<0.05	<0.05	<0.05	<0.05		0.05
1,1-Dichloroethylene	<0.05	<0.05	<0.05	<0.05		(0.48) 0.064
c-1,2-Dichloroethylene	<0.05	<0.05	<0.05	<0.05		(37) 55
t-1,2-Dichloroethylene	<0.05	<0.05	<0.05	<0.05		(9.3) 1.3
1,2-Dichloropropane	<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		(0.21) 0.18
Ethylbenzene	<0.05	<0.05	<0.05	<0.05		(19) 9.5
Ethylene Dibromide	<0.05	<0.05	<0.05	<0.05		0.05
Hexane (n)	<0.05	<0.05	<0.05	<0.05		(88) 46
Methyl Ethyl Ketone	<0.5	<0.5	<0.5	<0.5		(88) 70
Methyl Isobutyl Ketone	<0.5	<0.5	<0.5	<0.5		(210) 31
Methyl tert-butyl Ether	<0.05	<0.05	<0.05	<0.05		(3.2) 11
Methylene Chloride	<0.05	<0.05	<0.05	<0.05		(2) 1.6
Styrene	<0.05	<0.05	<0.05	<0.05		(43) 34
1,1,1,2-Tetrachloroethane	<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		(0.094) 0.05
Tetrachloroethylene	<0.05	<0.05	<0.05	<0.05		(21) 4.5
Toluene	<0.2	<0.2	<0.2	<0.2		(78) 68
1,1,1-Trichloroethane	<0.05	<0.05	<0.05	<0.05		(12) 6.1
1,1,2-Trichloroethane	<0.05	<0.05	<0.05	<0.05		(0.11) 0.05
Trichloroethylene	<0.05	<0.05	<0.05	<0.05		(0.61) 0.91
Trichlorofluoromethane	<0.05	<0.05	<0.05	<0.05		(5.8) 4
Vinyl Chloride	<0.02	<0.02	<0.02	<0.02		(0.25) 0.032
Xylenes	<0.05	<0.05	<0.05	<0.05		(30) 26
Surrogate Recovery (%)						
Dibromofluoromethane	85	83	72	85		50-140
Toluene-d8	91	93	92	89		50-140
4-Bromofluorobenzene	126	125	115	121		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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
VOCs in Soil						
Acetone	<0.5	0.5	136	50-140	130	50-140
Benzene	<0.02	0.02	119	60-130	78	50-140
Bromodichloromethane	<0.05	0.05	112	50-140	74	50-140
Bromoform	<0.05	0.05	117	60-130	72	50-140
Bromomethane	<0.05	0.05	118	50-140	73	50-140
Carbon Tetrachloride	<0.05	0.05	118	60-130	76	50-140
Chlorobenzene	<0.05	0.05	114	60-130	87	50-140
Chloroform	<0.05	0.05	105	60-130	80	50-140
Dibromochloromethane	<0.05	0.05	127	60-130	69	50-140
1,2-Dichlorobenzene	<0.05	0.05	103	60-130	94	50-140
1,3-Dichlorobenzene	<0.05	0.05	105	60-130	94	50-140
1,4-Dichlorobenzene	<0.05	0.05	104	60-130	95	50-140
Dichlorodifluoromethane	<0.05	0.05	85	50-140	87	50-140
1,1-Dichloroethane	<0.05	0.05	105	60-130	79	50-140
1,2-Dichloroethane	<0.05	0.05	117	60-130	81	50-140
1,1-Dichloroethylene	<0.05	0.05	120	60-130	74	50-140
c-1,2-Dichloroethylene	<0.05	0.05	105	60-130	79	50-140
t-1,2-Dichloroethylene	<0.05	0.05	110	60-130	77	50-140
1,2-Dichloropropane	<0.05	0.05	116	60-130	77	50-140
1,3-Dichloropropene (cis-+trans-)	<0.05	0.05	110	60-130	76	50-140
Ethylbenzene	<0.05	0.05	115	60-130	84	50-140
Ethylene Dibromide	<0.05	0.05	123	60-130	79	50-140
Hexane (n)	<0.05	0.05	71	60-130	73	50-140
Methyl Ethyl Ketone	<0.5	0.5	108	50-140	83	50-140
Methyl Isobutyl Ketone	<0.5	0.5	105	50-140	80	50-140
Methyl tert-butyl Ether	<0.05	0.05	106	60-130	79	50-140
Methylene Chloride	<0.05	0.05	107	60-130	80	50-140
Styrene	<0.05	0.05	111	60-130	88	50-140
1,1,1,2-Tetrachloroethane	<0.05	0.05	125	60-130	77	50-140
1,1,2,2-Tetrachloroethane	<0.05	0.05	110	60-130	93	50-140
Tetrachloroethylene	<0.05	0.05	112	60-130	85	50-140
Toluene	<0.2	0.2	108	60-130	84	50-140
1,1,1-Trichloroethane	<0.05	0.05	107	60-130	76	50-140
1,1,2-Trichloroethane	<0.05	0.05	115	60-130	82	50-140
Trichloroethylene	<0.05	0.05	121	60-130	79	50-140
Trichlorofluoromethane	<0.05	0.05	76	50-140	71	50-140
Vinyl Chloride	<0.02	0.02	103	50-140	106	50-140
Xylenes	<0.05	0.05	112	60-130	85	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	69	60-140	103	60-140	61	60-140
Toluene-d8	66	60-140	102	60-140	91	60-140
4-Bromofluorobenzene	113	60-140	108	60-140	108	60-140

LEGEND:

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

Results related only to the items tested

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	0.0	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**				
Dibromofluoromethane	85	60-140				
Toluene-d8	89	60-140				
4-Bromofluorobenzene	119	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (Semi-Rush)

Parameter	***23-1789-1*** BH11 1.52-2.13m	***23-1789-4*** BH13 1.52-2.13m	***23-1789-6*** BH14 1.52-2.13m			**Soil Standards** [1]
	Concentration (µg/g)					
BTEX in Soil						
Benzene	<0.02	<0.02	<0.02			(0.4) 0.32
Toluene	<0.2	<0.2	<0.2			(78) 68
Ethylbenzene	<0.05	<0.05	<0.05			(19) 9.5
Xylenes	<0.05	<0.05	<0.05			(30) 26
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	<10	<10			(65) 55
F2 (C_{10} - C_{16})	<10	<10	<10			(250) 230
F3 (C_{16} - C_{34})	<50	<50	<50			(2,500) 1,700
F4 (C_{34}-C_{50})	<50	<50	<50			(6,600) 3,300
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes			
Surrogate Recovery (%)						
Dibromofluoromethane	92	78	85			60-140
Toluene-d8	95	90	90			60-140
4-Bromofluorobenzene	118	123	123			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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
BTEX in Soil						
Benzene	<0.02	0.02	119	60-130	78	50-140
Toluene	<0.2	0.2	108	60-130	84	50-140
Ethylbenzene	<0.05	0.05	115	60-130	84	50-140
Xylenes	<0.05	0.05	112	60-130	85	50-140
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	108	80-120	84	60-140
F2 (C_{10} - C_{16})	<10	10	101	80-120	87	60-140
F3 (C_{16} - C_{34})	<50	50	101	80-120	81	60-140
F4 (C_{34}-C_{50})	<50	50	102	80-120	88	60-140
Surrogates						
Parameter	**Blank**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	69	60-140	103	60-140	61	60-140
Toluene-d8	66	60-140	102	60-140	91	60-140
4-Bromofluorobenzene	113	60-140	108	60-140	108	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.

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Soil						
Benzene	0.0	0-50				
Toluene	0.0	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})	10	0-30				
F2 (C_{10} - C_{16})	1.2	0-30				
F3 (C_{16} - C_{34})	3.0	0-30				
F4 (C_{34}-C_{50})	5.1	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	85	60-140				
Toluene-d8	89	60-140				
4-Bromofluorobenzene	119	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (Semi-Rush)

Parameter	***23-1789-1*** BH11 1.52-2.13m	***23-1789-4*** BH13 1.52-2.13m				**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				
Acenaphthylene	<0.05	<0.05				(0.17) 0.15
Acenaphthene	<0.05	<0.05				96
Fluorene	<0.05	<0.05				(69) 62
Phenanthrene	<0.05	<0.05				(16) 12
Anthracene	<0.05	<0.05				(0.74) 0.67
Fluoranthene	<0.05	<0.05				9.6
Pyrene	<0.05	<0.05				96
Benz [a] anthracene	<0.05	<0.05				0.96
Chrysene	<0.05	<0.05				9.6
Benzo [b] fluoranthene	<0.05	<0.05				0.96
Benzo [k] fluoranthene	<0.05	<0.05				0.96
Benzo [a] pyrene	<0.05	<0.05				0.3
Indeno [1,2,3-cd] pyrene	<0.1	<0.1				(0.95) 0.76
Dibenz [a,h] anthracene	<0.1	<0.1				0.1
Benzo [g,h,i] perylene	<0.1	<0.1				9.6
Surrogate Recovery (%)						
Naphthalene-d8	93	108				50-140
Phenanthrene-d10	73	89				50-140
Chrysene-d12	75	96				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 7: Generic Sire Condition Standards for Shallow Soils 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.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
PAHs in Soil						
Naphthalene	<0.05	0.05	107	50-140	110	50-140
2-Methylnaphthalene	<0.05	0.05	110	50-140	115	50-140
1-Methylnaphthalene	<0.05	0.05	112	50-140	114	50-140
Acenaphthylene	<0.05	0.05	96	50-140	98	50-140
Acenaphthene	<0.05	0.05	110	50-140	113	50-140
Fluorene	<0.05	0.05	106	50-140	108	50-140
Phenanthrene	<0.05	0.05	89	50-140	92	50-140
Anthracene	<0.05	0.05	87	50-140	88	50-140
Fluoranthene	<0.05	0.05	90	50-140	88	50-140
Pyrene	<0.05	0.05	90	50-140	89	50-140
Benz [a] anthracene	<0.05	0.05	97	50-140	96	50-140
Chrysene	<0.05	0.05	99	50-140	101	50-140
Benzo [b] fluoranthene	<0.05	0.05	93	50-140	96	50-140
Benzo [k] fluoranthene	<0.05	0.05	100	50-140	102	50-140
Benzo [a] pyrene	<0.05	0.05	93	50-140	93	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	110	50-140	109	50-140
Dibenz [a,h] anthracene	<0.1	0.1	100	50-140	101	50-140
Benzo [g,h,i] perylene	<0.1	0.1	101	50-140	103	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	110	50-140	108	50-140	113	50-140
Phenanthrene-d10	84	50-140	83	50-140	87	50-140
Chrysene-d12	94	50-140	94	50-140	95	50-140

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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
PAHs in Soil						
Naphthalene	6.1	0-40				
2-Methylnaphthalene	1.4	0-40				
1-Methylnaphthalene	2.8	0-40				
Acenaphthylene	28.1	0-40				
Acenaphthene	10.3	0-40				
Fluorene	15.2	0-40				
Phenanthrene	0.4	0-40				
Anthracene	19.0	0-40				
Fluoranthene	0.0	0-40				
Pyrene	2.0	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	92	50-140				
Phenanthrene-d10	90	50-140				
Chrysene-d12	86	50-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (Semi-Rush)

Parameter	***23-1789-5*** BH13 3.05-3.51m	***23-1789-7*** BH14 3.05-3.51m				**Soil Standards** *
pH *(pH unit)*	7.63	8.39				(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)*	7.03	6.90-7.20	0.01	<0.3		

LEGEND:
LCS - Laboratory Control Sample
AR - Acceptable Range

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (Semi-Rush)

Parameter	***23-1789-5*** BH13 3.05-3.51m	***23-1789-7*** BH14 3.05-3.51m				
Grain Size in Soil						
Total Sample, g	53.1	39.2				
Coarse Fraction >75µm, g	13.9	1.7				
Fine Fraction <75µm, g	39.3	37.5				
Coarse Fraction >75µm, %	26.1	4.2				
Fine Fraction <75µm, %	73.9	95.8				
Comments	Medium to fine textured	Medium to fine textured				

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	7 Soil Sample(s) (Semi-Rush)

Parameter	***23-1789-1*** BH11 1.52-2.13m	***23-1789-2*** BH11 3.05-3.51m	***23-1789-3*** BH11 (Dup) 3.05-3.51m	***23-1789-4*** BH13 1.52-2.13m	***23-1789-5*** BH13 3.05-3.51m	***23-1789-6*** BH14 1.52-2.13m
Moisture Content (%)	7.8	6.0	5.5	5.4	4.9	7.7

Parameter	***23-1789-7*** BH14 3.05-3.51m					
Moisture Content (%)	5.5					

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
Moisture Content (%)	<0.1	0.1	100	70-130	1.9	0-20

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

Results related only to the items tested

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Client:	Dymon Group of Companies	***F.E. Job #:***	23-1803
Address:	1450 The Queensway	***Project Name:***	Phase II ESA
	Etobicoke, ON	***Project ID:***	FE-P 23-13263
	M8Z 1S4	***Date Sampled:***	8-Sep-2023
Tel.:		***Date Received:***	8-Sep-2023
Email:		***Date Reported:***	14-Sep-2023
Attn.:		***Location:***	5051 Harvester Road
			Burlington, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Water	5	N/A	12-Sep-23	Metals F-18	EPA 200.2/200.8
VOCs	Water	4	N/A	12-Sep-23	VOCs F-6	SM 6200-B
PHCs (F1 & BTEX)	Water	5	N/A	12-Sep-23	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Water	5	12-Sep-23	12-Sep-23	PHCs F-7	CCME CWS
PAHs	Water	4	12-Sep-23	12-Sep-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

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, VOCs, PHCs, PAHs
Sample Description:	5 Water Sample(s) (***Semi-Rush***)

Parameter	***23-1803-1*** MW6	***23-1803-2*** MW11	***23-1803-3*** MW13	***23-1803-4*** MW13 Duplicate	***23-1803-5*** MW14	**Ground Water Standards** [1]
	Concentration (µ g/L)					
Metals in Water						
Antimony	<0.5	<0.5	<0.5	<0.5	<0.5	16,000
Arsenic	<1	<1	2.2	3.9	11	1,500
Barium	87	112	117	120	144	23,000
Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	53
Boron	144	292	208	210	258	36,000
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	2.1
Chromium	<10	<10	<10	<10	<10	640
Cobalt	<1	<1	1.0	1.0	1.1	52
Copper	<5	<5	<5	<5	<5	69
Lead	<1	<1	<1	<1	<1	20
Molybdenum	2.8	3.9	3.5	3.5	11	7,300
Nickel	<1	<1	4.9	4.4	9.2	390
Selenium	<5	<5	<5	<5	<5	50
Silver	<0.3	<0.3	<0.3	<0.3	<0.3	1.2
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	400
Uranium	3.8	5.0	5.7	5.6	7.8	330
Vanadium	5.5	2.3	4.3	6.2	7.1	200
Zinc	6.8	44	10	11	25	890

< 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 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition.
All Types of Property Use.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/L)		Recovery (%)		Recovery (%)	
Metals in Water						
Antimony	<0.5	0.5	97	80-120	96	70-130
Arsenic	<1	1	101	80-120	101	70-130
Barium	<2	2	100	80-120	84	70-130
Beryllium	<0.5	0.5	102	80-120	92	70-130
Boron	<10	10	100	80-120	116	70-130
Cadmium	<0.5	0.5	101	80-120	94	70-130
Chromium	<10	10	99	80-120	75	70-130
Cobalt	<1	1	99	80-120	83	70-130
Copper	<5	5	103	80-120	85	70-130
Lead	<1	1	96	80-120	99	70-130
Molybdenum	<0.5	0.5	100	80-120	101	70-130
Nickel	<1	1	100	80-120	80	70-130
Selenium	<5	5	102	80-120	97	70-130
Silver	<0.3	0.3	100	80-120	83	70-130
Thallium	<0.5	0.5	100	80-120	100	70-130
Uranium	<2	2	100	80-120	111	70-130
Vanadium	<0.5	0.5	96	80-120	86	70-130
Zinc	<5	5	104	80-120	94	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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Water						
Antimony	3.6	0-20				
Arsenic	10.4	0-20				
Barium	1.6	0-20				
Beryllium	0.0	0-20				
Boron	1.5	0-20				
Cadmium	0.0	0-20				
Chromium	0.0	0-20				
Cobalt	1.0	0-20				
Copper	12.5	0-20				
Lead	0.0	0-20				
Molybdenum	0.6	0-20				
Nickel	5.7	0-20				
Selenium	0.0	0-20				
Silver	0.0	0-20				
Thallium	0.0	0-20				
Uranium	5.4	0-20				
Vanadium	6.2	0-20				
Zinc	3.4	0-20				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs
Sample Description:	5 Water Sample(s) (Semi-Rush)

Parameter	***23-1803-2*** MW11	***23-1803-3*** MW13	***23-1803-4*** MW13 Duplicate	***23-1803-5*** MW14		**Ground Water Standards [1]**
	Concentration (μ g/L)					
VOCs in Water						
Acetone	<30	<30	<30	<30		100000
Benzene	<0.5	<0.5	<0.5	<0.5		0.5
Bromodichloromethane	<2	<2	<2	<2		67000
Bromoform	<5	<5	<5	<5		5
Bromomethane	<0.5	<0.5	<0.5	<0.5		0.89
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.2		0.2
Chlorobenzene	<0.5	<0.5	<0.5	<0.5		140
Chloroform	<1	<1	<1	<1		2
Dibromochloromethane	<2	<2	<2	<2		65000
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		150
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		7600
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		0.5
Dichlorodifluoromethane	<2	<2	<2	<2		3500
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5		11
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5		0.5
1,1-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		0.5
c-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		1.6
t-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		1.6
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5		0.58
1,3-Dichloropropene (cis-+trans-)	<0.5	<0.5	<0.5	<0.5		0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5		54
Ethylene Dibromide	<0.2	<0.2	<0.2	<0.2		0.2
Hexane (n)	<5	<5	<5	<5		5
Methyl Ethyl Ketone	<20	<20	<20	<20		21000
Methyl Isobutyl Ketone	<20	<20	<20	<20		5200
Methyl tert-butyl Ether	<2	<2	<2	<2		15
Methylene Chloride	<5	<5	<5	<5		26
Styrene	<0.5	<0.5	<0.5	<0.5		43
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5		1.1
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5		0.5
Tetrachloroethylene	<0.5	<0.5	<0.5	<0.5		0.5
Toluene	<0.5	<0.5	<0.5	<0.5		320
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5		23
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5		0.5
Trichloroethylene	<0.5	<0.5	<0.5	<0.5		0.5
Trichlorofluoromethane	<5	<5	<5	<5		2000
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5		0.5
Xylenes	<0.5	<0.5	<0.5	<0.5		72
Surrogate Recovery (%)						
Dibromofluoromethane	113	108	114	114		50-140
Toluene-d8	95	89	86	80		50-140
4-Bromofluorobenzene	113	110	114	112		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 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition.
All Types of Property Use.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(ug/L)		Recovery (%)		Recovery (%)	
VOCs in Water						
Acetone	<30	30	108	50-140	117	50-140
Benzene	<0.5	0.5	107	60-130	100	50-140
Bromodichloromethane	<2	2	123	50-140	106	50-140
Bromoform	<5	5	111	60-130	109	50-140
Bromomethane	<0.5	0.5	118	50-140	100	50-140
Carbon Tetrachloride	<0.2	0.2	123	60-130	119	50-140
Chlorobenzene	<0.5	0.5	109	60-130	106	50-140
Chloroform	<1	1	123	60-130	109	50-140
Dibromochloromethane	<2	2	108	60-130	108	50-140
1,2-Dichlorobenzene	<0.5	0.5	120	60-130	105	50-140
1,3-Dichlorobenzene	<0.5	0.5	122	60-130	104	50-140
1,4-Dichlorobenzene	<0.5	0.5	121	60-130	103	50-140
Dichlorodifluoromethane	<2	2	120	50-140	100	50-140
1,1-Dichloroethane	<0.5	0.5	109	60-130	105	50-140
1,2-Dichloroethane	<0.5	0.5	118	60-130	108	50-140
1,1-Dichloroethylene	<0.5	0.5	121	60-130	100	50-140
c-1,2-Dichloroethylene	<0.5	0.5	122	60-130	122	50-140
t-1,2-Dichloroethylene	<0.5	0.5	106	60-130	107	50-140
1,2-Dichloropropane	<0.5	0.5	102	60-130	107	50-140
1,3-Dichloropropene (cis-+trans-)	<0.5	0.5	123	60-130	121	50-140
Ethylbenzene	<0.5	0.5	103	60-130	102	50-140
Ethylene Dibromide	<0.2	0.2	104	60-130	103	50-140
Hexane (n)	<5	5	71	60-130	73	50-140
Methyl Ethyl Ketone	<20	20	127	50-140	127	50-140
Methyl Isobutyl Ketone	<20	20	125	50-140	123	50-140
Methyl tert-butyl Ether	<2	2	129	60-130	106	50-140
Methylene Chloride	<5	5	129	60-130	106	50-140
Styrene	<0.5	0.5	101	60-130	102	50-140
1,1,1,2-Tetrachloroethane	<0.5	0.5	106	60-130	115	50-140
1,1,2,2-Tetrachloroethane	<0.5	0.5	109	60-130	108	50-140
Tetrachloroethylene	<0.5	0.5	121	60-130	113	50-140
Toluene	<0.5	0.5	109	60-130	103	50-140
1,1,1-Trichloroethane	<0.5	0.5	122	60-130	113	50-140
1,1,2-Trichloroethane	<0.5	0.5	113	60-130	108	50-140
Trichloroethylene	<0.5	0.5	108	60-130	100	50-140
Trichlorofluoromethane	<5	5	125	50-140	119	50-140
Vinyl Chloride	<0.5	0.5	104	50-140	107	50-140
Xylenes	<0.5	0.5	108	60-130	109	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	113	60-140	121	60-140	137	60-140
Toluene-d8	105	60-140	87	60-140	89	60-140
4-Bromofluorobenzene	102	60-140	103	60-140	125	60-140

LEGEND:

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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
VOCs in Water						
Acetone	0.0	0-30				
Benzene	0.0	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	3.4	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	0.0	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	0.0	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	2.3	0-30				
Xylenes	0.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	114	60-140				
Toluene-d8	86	60-140				
4-Bromofluorobenzene	114	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs
Sample Description:	5 Water Sample(s) (Semi-Rush)

Parameter	***23-1803-1*** MW6	***23-1803-2*** MW11	***23-1803-3*** MW13	***23-1803-4*** MW13 Duplicate	***23-1803-5*** MW14	**Ground Water Standards** [1]
	Concentration (µ g/L)					
BTEX in Water						
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	320
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	54
Xylenes	<0.5	<0.5	<0.5	<0.5	<0.5	72
PHCs (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	<25	<25	<25	<25	<25	420
F2 (C_{10} - C_{16})	<100	<100	<100	<100	<100	150
F3 (C_{16} - C_{34})	<100	<100	<100	<100	<100	500
F4 (>C_{34})	<100	<100	<100	<100	<100	500
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes	Yes	
Surrogate Recovery (%)						
Dibromofluoromethane	113	113	108	114	114	60-140
Toluene-d8	101	95	89	86	80	60-140
4-Bromofluorobenzene	110	113	110	114	112	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 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition.
All Types of Property Use.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(ug/L)		Recovery (%)		Recovery (%)	
BTEX in Water						
Benzene	<0.5	0.5	102	60-130	100	50-140
Toluene	<0.5	0.5	109	60-130	103	50-140
Ethylbenzene	<0.5	0.5	103	60-130	102	50-140
Xylenes	<0.5	0.5	108	60-130	109	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	108	60-140	103	60-140
F3 (C_{16} - C_{34})	<100	100	109	60-140	103	60-140
F4 (>C_{34})	<100	100	110	60-140	101	60-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Dibromofluoromethane	113	60-140	121	60-140	137	60-140
Toluene-d8	105	60-140	87	60-140	89	60-140
4-Bromofluorobenzene	102	60-140	103	60-140	125	60-140

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

Results related only to the items tested

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})	2.0	0-30				
F3 (C_{16} - C_{34})	2.4	0-30				
F4 (>C_{34})	0.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Dibromofluoromethane	114	60-140				
Toluene-d8	86	60-140				
4-Bromofluorobenzene	114	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs
Sample Description:	5 Water Sample(s) (Semi-Rush)

Parameter	***23-1803-1*** MW6	***23-1803-2*** MW11	***23-1803-3*** MW13	***23-1803-4*** MW13 Duplicate		**Ground Water Standards** [1]
	Concentration (µ g/L)					
PAHs in Water						
Naphthalene	<2	<2	<2	<2		7
2-Methylnaphthalene	<1	<1	<1	<1		1500
1-Methylnaphthalene	<1	<1	<1	<1		
Acenaphthylene	<1	<1	<1	<1		1
Acenaphthene	<1	<1	<1	<1		17
Fluorene	<0.5	<0.5	<0.5	<0.5		290
Phenanthrene	<0.1	<0.1	<0.1	<0.1		380
Anthracene	<0.1	<0.1	<0.1	<0.1		1
Fluoranthene	<0.4	<0.4	<0.4	<0.4		44
Pyrene	<0.2	<0.2	<0.2	<0.2		5.7
Benz [a] anthracene	<0.2	<0.2	<0.2	<0.2		1.8
Chrysene	<0.1	<0.1	<0.1	<0.1		0.7
Benzo [b] fluoranthene	<0.1	<0.1	<0.1	<0.1		0.75
Benzo [k] fluoranthene	<0.1	<0.1	<0.1	<0.1		0.4
Benzo [a] pyrene	<0.01	<0.01	<0.01	<0.01		0.81
Indeno [1,2,3-cd] pyrene	<0.2	<0.2	<0.2	<0.2		0.2
Dibenz [a,h] anthracene	<0.2	<0.2	<0.2	<0.2		0.4
Benzo [g,h,i] perylene	<0.2	<0.2	<0.2	<0.2		0.2
Surrogate Recovery (%)						
Naphthalene-d8	55	114	121	90		50-140
Phenanthrene-d10	53	88	116	93		50-140
Chrysene-d12	60	94	115	98		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 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition.
All Types of Property Use.

Results related only to the items tested

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/L)		Recovery (%)		Recovery (%)	
PAHs in Water						
Naphthalene	<2	2	97	50-140	104	50-140
2-Methylnaphthalene	<1	1	83	50-140	112	50-140
1-Methylnaphthalene	<1	1	87	50-140	125	50-140
Acenaphthylene	<1	1	92	50-140	100	50-140
Acenaphthene	<1	1	100	50-140	100	50-140
Fluorene	<0.5	0.5	90	50-140	99	50-140
Phenanthrene	<0.1	0.1	100	50-140	96	50-140
Anthracene	<0.1	0.1	84	50-140	85	50-140
Fluoranthene	<0.4	0.4	104	50-140	101	50-140
Pyrene	<0.2	0.2	103	50-140	95	50-140
Benz [a] anthracene	<0.2	0.2	102	50-140	101	50-140
Chrysene	<0.1	0.1	104	50-140	104	50-140
Benzo [b] fluoranthene	<0.1	0.1	90	50-140	105	50-140
Benzo [k] fluoranthene	<0.1	0.1	98	50-140	122	50-140
Benzo [a] pyrene	<0.01	0.01	86	50-140	100	50-140
Indeno [1,2,3-cd] pyrene	<0.2	0.2	120	50-140	83	50-140
Dibenz [a,h] anthracene	<0.2	0.2	77	50-140	105	50-140
Benzo [g,h,i] perylene	<0.2	0.2	107	50-140	98	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	100	50-140	96	50-140	91	50-140
Phenanthrene-d10	66	50-140	93	50-140	94	50-140
Chrysene-d12	71	50-140	78	50-140	83	50-140

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

Results related only to the items tested

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
PAHs in Water						
Naphthalene	9.5	0-30				
2-Methylnaphthalene	7.7	0-30				
1-Methylnaphthalene	2.8	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	115	50-140				
Phenanthrene-d10	89	50-140				
Chrysene-d12	113	50-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Results related only to the items tested