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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
COD:	Chemical Oxygen Demand
CPC:	Contaminants of Potential Concern
CSA:	Canadian Standards Association
EC:	Electrical Conductivity
ESA:	Environmental Site Assessment
FIP:	Fire Insurance Plan
MECP:	Ministry of the Environment, Conservation and Parks
MOE:	Ministry of the Environment
OHSA:	Occupational Health and Safety Act
PAH:	Polycyclic Aromatic (Polyaromatic) Hydrocarbons
PCA:	Potentially Contaminating Activity
PCB:	Polychlorinated Biphenyls
pH:	potential of Hydrogen
PHC (F1-F4):	Petroleum Hydrocarbons (Fractions 1 to 4)
ppb:	Parts per Billion
ppm:	Parts per Million
RSC:	Record of Site Condition
SAR:	Sodium Adsorption Ratio
UST:	Underground Storage Tank
VOC:	Volatile Organic Compounds

1. EXECUTIVE SUMMARY

Fisher Environmental Ltd. (Fisher) was commissioned by Dymon Group of Companies to carry out a Phase II Environmental Site Assessment (ESA) of the property located at 6333 Hurontario Street, Mississauga, ON, hereinafter referred to as the "Site". The field works associated with the subsurface soil and groundwater investigation was carried out on June 26 and June 27, 2019.

The Site is located on the northeast side of Hurontario Street, south of World Drive. The Site is bounded by commercial/ industrial buildings to the north, east and south, and Hurontario Street to the west. For purposes of discussion, Hurontario Street is referenced to run north-south.

The northeastern portion of the Site is occupied by a commercial building. The south portion of the Site is gravel covered parking area. The remaining portions of the Site are grass-covered. At the time of the investigation the Site was generally utilized for truck parking and service / repair.

In the current investigation, five (5) boreholes were advanced in the investigated property to depths of up to 6.10 m bgs, and in three (3) of them, monitoring wells were installed to facilitate groundwater level monitoring and sampling.

On the basis of the boreholes completed, the stratigraphy at the investigated areas of the Site generally consists of a layer of fill, extending up to 1.52 m bgs. The fill generally consisted of dark brown and greyish brown silt to sandy silt, trace gravel, with some hydrocarbon staining. Underlying the fill is brown and greyish brown sandy silt till to grey sand and silt, trace gravel.

A total of seven (7) soil and four (4) groundwater samples were submitted to the laboratory for Metals, PHC(F1-F4), VOC, PAH, pH, EC and/or SAR analysis.

For the purpose of this Phase II ESA, the appropriate standards were identified as: Table 3 (Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition – Industrial/ Commercial/Community Property Use for soil samples and All Types of Property Use for groundwater samples, coarse textured soil) as contained in the MOE Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, hereinafter referred to as the "MOE Standards".

Findings - Soil

The results of chemical analysis for four (4) of the seven (7) submitted soil samples were found to exceed the applicable MOE Standards. The following exceedances were found:

- **BH1 (0.00-0.60 m bgs) - Lab ID #19-2789-1**

  Dibenzo [a,h] anthracene: 0.12 ppm vs. 0.1 ppm.

- **BH3 (0.75-1.20 m bgs) - Lab ID #19-2789-5**

  Benzo [a] pyrene: 0.4 ppm vs. 0.3 ppm;
  Dibenzo [a,h] anthracene: 0.13 ppm vs. 0.1 ppm.

- **BH5 (0.15-0.75 m bgs) - Lab ID #19-2789-7**

  Dibenzo [a,h] anthracene: 0.14 ppm vs. 0.1 ppm.

- **BH2 (0.75-1.20 m bgs) - Lab ID #19-2789-3** – EC: 1.51 vs. 1.4

Findings - Groundwater

The results of chemical analysis for all submitted groundwater samples were found to be in compliance with the applicable MOE standards.

Recommendations

Based on the results of the current investigation, it is expected that the historical activities at the Site have impacted the property's near surface soil condition. The identified impacts included polynuclear aromatic hydrocarbons (PAHs) and electrical conductivity (EC). The PAH and EC impacts were generally limited to the eastern half of the Site and contained to near surface soils / fill that exhibited signs of visible oil staining and some heavy petroleum hydrocarbon impacts. In association with proposed development of the Site it would be recommended that impacted soil / fill, preliminarily estimated in the order of 2,000m^3 or 3,600 tonnes, be removed and disposed of off Site at a licensed MECP soil disposal facility.

2. INTRODUCTION

Fisher Environmental Ltd. (Fisher) was commissioned by Dymon Group of Companies to carry out a Phase II Environmental Site Assessment (ESA) of the property located at 6333 Hurontario Street, Mississauga, ON, hereinafter referred to as the "Site". The subsurface soil and groundwater investigation were carried out on June 26, and June 27, 2019.

3. PROPERTY DESCRIPTION

The Site is located on the northeast side of Hurontario Street, south of World Drive. The Site is bounded by commercial/ industrial buildings to the north, east and south, and Hurontario Street to the west. For purposes of discussion, Hurontario Street is referenced to run north-south.

The northeastern portion of the Site is occupied by a commercial building. The south portion of the Site is gravel covered parking area. The remaining portions of the Site is grass-covered.

4. EXISTING REPORTS REVIEW

No existing reports were available for review.

5. SCOPE OF WORK

The current Phase II ESA was conducted in accordance with the CAN/CSA-Z769-00 standards, as published in March 2000 and reaffirmed in 2018, by the CSA Group.

A Phase II ESA involves sampling and testing of materials considered, usually by the outcome of a Phase I ESA or other investigation, to be possible instances of environmental contamination. 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 6.10 m or resistance, and installation of three (3) groundwater monitoring wells.

- **Laboratory Testing Program -** Recovery and analysis of selected soil and groundwater samples for Metals, PHC (F1-F4), VOC, PAH, EC, SAR and/or pH.

- **Data Evaluation -** Comparison of results of chemical analyses with the applicable MOE (currently 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 Amended O. Reg. 153/04, therefore, if a RSC is necessary, the property owner or its agent should undertake complementary investigations required under the RSC filing process.

6. FIELD PROGRAM

The subsurface soil and groundwater investigation (Phase II ESA) was carried out on June 26, and June 27, 2019. The field work was conducted by Rajinder Chahal, P.Eng. and Sean Fisher, M.Sc. Eng. of Fisher Environmental Ltd. whom directed drilling and sampling operations, and assured proper chain of custody procedures for the recovered soil and groundwater samples.

Five (5) boreholes were advanced in the investigated property to depths of up to 6.10 m bgs, and in three (3) of them, monitoring wells were installed to facilitate groundwater level monitoring and sampling.

6.1. Site Preparation

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

6.2. Boreholes, Soil and Groundwater Sampling

Five (5) boreholes were advanced in the investigated property on June 26, 2019. Borehole drilling was carried out using a Diedrich D-50 drilling rig. The boreholes were extended to depths of up to 6.10 m, at which point native material had been reached. Refer to the attached Site Plan with Borehole and Monitoring Well Locations (Figure 1 in Appendix A)

Fisher retains Terra Firma Environmental Services Ltd. (Terra Firma) as our drilling contractor. Terra Firma maintains licensure for drilling (Water Well Drillers, Environmental Protection Act, Well Contractor License No. 6946) as required by the MOE, and conducted drilling and soil sampling works in accordance with CSA Standard Z769-00 (reaffirmed in 2013) 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/or subsoil, and a 50 mm diameter 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.

Soil and groundwater samples were collected and handled in accordance with generally accepted sampling and handling procedures used by the environmental consulting industry. For guidance, these practices rely on the 1996 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 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 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. Following sampling, monitoring wells were installed in three (3) boreholes, in accordance to O. Reg. 903.

6.3. Monitoring Wells Program

Three (3) monitoring wells were installed on the subject property. The wells were constructed of 52 mm ID diameter PVC pipes, which were pre-cleaned at the factory and delivered to the Site in sealed plastic bags. Further construction details of the monitoring wells are provided on the "Log of Boreholes" attached in Appendix B.

Groundwater sampling in the installed monitoring wells was conducted using bailers, where single-use (disposable) bailers are slowly lowered into the water column, allowed to fill, and removed. Installed monitoring wells were sampled on June 27, 2019. Prior to sampling, three well volumes of groundwater were purged from each well to ensure the sampling of "fresh" formation water.

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

Groundwater static level measurement was conducted prior to sampling. The groundwater static level measurements are summarized in Table 1 below.

TABLE 1: GROUNDWATER STATIC LEVEL MEASUREMENTS

Location	Well Depth, m bgs	Groundwater Static Level, m bgs (June 27, 2019)	Relative Groundwater Elevation[1], m
BH1(MW)	6.10	1.69	97.66
BH2(MW)	6.10	0.64	97.39
BH3(MW)	6.10	1.07	98.20

1. Relative elevations referenced to an assumed finished floor elevation (FFE) of entrance to Site building of 100m.

Groundwater generally flows from areas of high hydraulic head towards areas of low hydraulic head. To assess the direction of groundwater movement, the hydraulic head is measured at each well location. This is accomplished by taking water level measurements and referencing them to a known benchmark to determine their elevation. Water level measurements having higher elevations suggest greater hydraulic head. Conversely, lower elevations of the water table are indicative of a lesser hydraulic head.

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.

Based on noted soil stratigraphy, depths to groundwater and localized topography, general groundwater flow direction was estimated to be in a southerly, southeasterly direction.

6.4. Well Record Filed with the MECP

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

1. The name and address of the property owner have been provided.
2. Terra Firma has permission to submit well records to the Ministry and to the property owner and to report multiple installations on a single well record.
3. Well tags on installations must not be removed or destroyed.
4. Unless otherwise agreed, installations will be decommissioned by the property owner within 180 days of installation.
5. The property owner is responsible for future decommissioning of all installations in accordance with the regulation.
6. The property owner is responsible for any expenses associated with controlling and decommissioning installations that have, or may have in the future, artesian conditions.

7. Maintenance of well installations in accordance with the regulation will be by the property owner. This includes ensuring that seals remain adequate for preventing water or gas migration between formations and to/from surface, that seals do not deteriorate and that wells are decommissioned.
8. The client and property owner accept responsibility for the inherent risk associated with industry standard installations, and acknowledge that conditions and materials do not remain constant with time nor that they can be completely quantified or predicted in advance.

6.5. Site Geology

On the basis of the boreholes completed, the stratigraphy at the investigated areas of the Site generally consists of a layer of fill, extending up to 1.52 m bgs. The fill generally consisted of dark brown and greyish brown silt to sandy silt, trace gravel, with some hydrocarbon staining. Underlying the fill is brown and greyish brown sandy silt till to grey sand and silt, trace gravel. A description of the subsurface conditions encountered at the boreholes locations is presented in Appendix B - Log of Boreholes.

6.6. Head Space Combustible Vapours

A 10.6 eV lamp MiniRae 2000 PID calibrated to 100 ppm Isobutylene was used to measure combustible vapours in the soil samples. Vapour concentrations were read during the soil sampling and all soil samples had concentrations of 5 ppm or less.

6.7. Visual Olfactory Soil / Groundwater Quality

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

- Fill materials were encountered in all boreholes at depths of up to 1.52 m bgs.
- Hydrocarbon odours were noted in surface soil collected at BH1 and BH3.
- (No) free product, film or sheen was observed on the surface of groundwater collected from any of the installed monitoring wells.

6.8. Selection of Analytical Samples and Parameters

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

Seven (7) soil samples were submitted to the laboratory for Metals, PHC (F1-F4), VOC, PAH, EC, SAR and/or pH analysis. Four (4) groundwater samples were collected from the three (3) installed groundwater monitoring wells, and were submitted to the laboratory for PHC (F1-F4) and VOC analysis.

TABLE 2: 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. Seven (7) soil samples collected at the Site were submitted for Metals analysis.
PHC(F1-F4)	PHC 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. Four (4) soil and four (4) groundwater samples collected at the Site were submitted for PHC (F1-F4) analysis.
VOC	VOC are any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. VOC are included in gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvents, resin, monomer, and/or any other material containing VOC. Note that VOC analysis includes Benzene, Toluene, Ethylbenzene, Xylene (BTEX) parameters. Three (3) soil and four (4) groundwater samples collected at the Site were submitted for VOC analysis.
PAH	PAH are associated with coal and furnace ash, and/or the use of fill materials of unknown quality. Three (3) soil samples collected at the Site were submitted for PAH analysis.
EC	Soil EC is indirectly correlated with various chemical and physical properties of soil and is the ability of any material to conduct an electrical current. Sand has a lower conductivity while clay has a higher conductivity, which is correlated with particle size, soil texture, and water-holding capacity. Seven (7) soil samples collected at the Site were submitted for EC analysis.
SAR	Soil SAR is the ratio of the concentration of sodium in relation to calcium and magnesium, which can be used to assess the potential to cause dispersion in soil. Seven (7) soil samples collected at the Site were submitted for SAR 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. Two (2) soil samples collected at the Site were submitted for pH analysis.

7. LABORATORY PROGRAM

7.1. General

Recovered soil and groundwater samples were submitted to Fisher Environmental Laboratories 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.

7.2. Data Evaluation

7.2.1. Soil and Groundwater Standards

The MOE 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 subject property has been used for industrial purposes, and it is our understanding that the property will maintain its current industrial land use.

With regards 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 subject site in accordance to the requirements for site assessment, under Part XV.1 of the EPA and Ontario Regulation 153/04, it is our intention to utilize a non-potable groundwater condition standard.

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 not completed at the time of the investigation, however, considering the visually identified soil types encountered at the borehole locations, and the distribution of boreholes across the Site, the generally more conservative site condition standards for coarse textured soil have been applied.

For the purpose of this Phase II ESA, the appropriate standards were identified as: Table 3 (Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition – Industrial/ Commercial/Community Property Use for soil samples and All Types of Property Use for groundwater samples, coarse textured soil) as contained in the MOE Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, hereinafter referred to as the "MOE Standards". The criteria values are presented with the results of analysis in the last column of the Certificates of Analysis (Appendix C).

7.2.2. Soil and Groundwater Quality

Seven (7) soil and four (4) groundwater samples were submitted to the laboratory for Metals, PHC (F1-F4), VOC, PAH, EC, SAR and/or pH analysis. A copy of the Laboratory Certificates of Analysis is provided in Appendix C. Results of the chemical analyses are summarized in Table 3.

TABLE 3: EXCEEDANCES OF APPLICABLE SITE CONDITION STANDARDS

Borehole	Sample Depth	Sample #	Parameters Analyzed	Exceedances of April 15, 2011 Table 3 MOE Standards, Industrial/Commercial/ Community Property Use Non-Potable Groundwater condition
Soil (19-2789) – June 26, 2019				
BH1(MW)	0.00-0.60 m	19-2789-1	Metals EC/SAR PHC (F1-F4) VOC PAH	No Exceedances No Exceedances No Exceedances No Exceedances **Dibenzo [a,h] anthracene: 0.12 vs. 0.1 ppm**
BH1(MW)	0.75-1.20 m	19-2789-2	Metals EC/SAR	No Exceedances No Exceedances
BH2(MW)	0.75-1.20 m	19-2789-3	Metals EC/SAR PHC (F1-F4)	No Exceedances **EC: 1.51 mS/cm vs. 1.4 mS/cm** No Exceedances

Borehole	Sample Depth	Sample #	Parameters Analyzed	Exceedances of April 15, 2011 Table 3 MOE Standards, Industrial/Commercial/ Community Property Use Non-Potable Groundwater condition
BH3(MW)	0.00-0.15 m	19-2789-4	Metals EC/SAR PHC (F1-F4) VOC	No Exceedances No Exceedances No Exceedances No Exceedances
BH3(MW)	0.75-1.20 m	19-2789-5	Metals EC/SAR PHC (F1-F4) VOC PAH	No Exceedances No Exceedances No Exceedances No Exceedances **Benzo [a] pyrene: 0.4 ppm vs. 0.3 ppm** **Dibenzo [a,h] anthracene: 0.13 vs. 0.1 ppm**
BH4(MW)	0.00-0.60 m	19-2789-6	Metals EC/SAR	No Exceedances No Exceedances
BH5(MW)	0.15-0.75 m	19-2789-7	Metals EC/SAR PAH	No Exceedances No Exceedances **Dibenzo [a,h] anthracene: 0.14 vs. 0.1 ppm**
Groundwater (19-2790) – June 27, 2019				
BH1(MW)	Groundwater	19-2790-1	PHC (F1-F4) VOC	No Exceedances No Exceedances
BH2(MW)	Groundwater	19-2790-2	PHC (F1-F4) VOC	No Exceedances No Exceedances
BH3(MW)	Groundwater	19-2790-3	PHC (F1-F4) VOC	No Exceedances No Exceedances
BH14(MW) Duplicate	Groundwater	19-2790-4	PHC (F1-F4) VOC	No Exceedances No Exceedances

NOTES: PHC (F1-F4)*: Petroleum Hydrocarbons fractions (F1-F4)
F1 (C6-C10) Gasoline less BTEX
F2 (C10-C16) Diesel
F3 (C16-C34) Diesel
F4 (C34-C50) Heavy Oil
VOC: Volatile Organic Compounds, PAH: Polycyclic Aromatic Hydrocarbons,
pH: potential of Hydrogen, SAR: Sodium Adsorption Ratio, EC: Electrical Conductivity
Bold: Exceeds the MOE Standards
*For a site to meet this standard there must be no evidence of free product, including but not limited to, visible petroleum hydrocarbon film or sheen present on any groundwater samples.

7.2.3. Metals

Seven (7) soil samples were submitted for Metals analysis. The results of chemical analysis for Metals parameters in the submitted soil samples were found to be in compliance with the applicable MOE Standards.

7.2.4. Petroleum Hydrocarbons (PHC)

Four (4) soil and four (4) groundwater samples were submitted for PHC (F1-F4) analysis. The results of chemical analysis for PHC (F1-F4) parameters in the submitted soil and groundwater samples were found to be in compliance with the applicable MOE Standards.

7.2.5. Volatile Organic Compounds (VOC)

Three (3) soil and four (4) groundwater samples were submitted for VOC analysis. The results of chemical analysis for VOC parameters in the submitted soil and groundwater samples were found to be in compliance with the applicable MOE Standards.

7.2.6. Polycyclic Aromatic Hydrocarbons (PAH)

Three (3) soil samples were submitted for PAH analysis. The result of chemical analysis for PAH parameters for all the submitted soil samples were found to exceed the applicable MOE Standards. The following exceedance was found:

- **BH1 (0.00-0.60 m bgs) - Lab ID #19-2789-1**

  Dibenzo [a,h] anthracene: 0.12 ppm vs. 0.1 ppm.

- **BH3 (0.75-1.20 m bgs) - Lab ID #19-2789-5**

  Benzo [a] pyrene: 0.4 ppm vs. 0.3 ppm;
  Dibenzo [a,h] anthracene: 0.13 ppm vs. 0.1 ppm.

- **BH5 (0.15-0.75 m bgs) - Lab ID #19-2789-7**

  Dibenzo [a,h] anthracene: 0.14 ppm vs. 0.1 ppm.

7.2.7. pH

Two (2) soil samples were submitted to the laboratory for pH analysis. The result of pH for the submitted soil samples were found to be within the recommended range of 5 to 9.

7.2.8. Electrical Conductivity (EC)

Seven (7) soil samples were submitted to the laboratory for EC analysis. The results of chemical analysis for EC parameters in the submitted soil samples were found to exceed the applicable MOE Standards. The following exceedance was found:

- **BH2 (0.75-1.20 m bgs) - Lab ID #19-2789-3** – 1.51 mS/cm vs. 1.4 mS/cm.

7.2.9. Sodium Adsorption Ratio (SAR)

Seven (7) soil samples were submitted to the laboratory for SAR analysis. The results of chemical analysis for SAR parameters in the submitted soil samples were found to be in compliance with the applicable MOE Standards.

7.3. Quality Assurance/Quality Control

A chain of custody form was filled out for all samples prior to submitting to the laboratory. The chain of custody documented movement from selection of the sample to receipt at the laboratory and provided sample identification, requested analysis, and condition of samples upon arrival at the laboratory.

The laboratory checks randomly selected samples for 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 samples were within the acceptable limits for quality control. Copies of the QA/QC Reports for Metals, PHC (F1-F4), PAH, VOC, pH, EC and/or SAR in soil and 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 groundwater sample MW1, analyzed for PHC (F1-F4) and VOC.

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.

8. SUMMARY AND CONCLUSIONS

- Fisher carried out a Phase II Environmental Site Assessment of the property located at 6333 Hurontario Street, Mississauga, ON. The subsurface soil and groundwater investigation were carried out on June 26, and June 27, 2019.

- Five (5) boreholes were advanced in the investigated property to depths of up to 6.10m bgs, and in three (3) of them, monitoring wells were installed to facilitate groundwater level monitoring and sampling.

- On the basis of the boreholes completed, the stratigraphy at the investigated areas of the Site generally consists of a layer of fill, extending up to 1.52 m bgs. The fill generally consisted of dark brown and greyish brown silt to sandy silt, trace gravel, with some hydrocarbon staining. Underlying the fill is brown and greyish brown sandy silt till to grey sand and silt.

- Seven (7) soil and four (4) groundwater samples were submitted to the laboratory for Metals, PHC (F1-F4), VOC, PAH, pH, EC and/or SAR analysis.

- The results of chemical analysis for four (4) of the seven (7) soil samples were found to exceed the applicable MOE Standards. The following exceedances were found:

  - **BH1 (0.00-0.60 m bgs) - Lab ID #19-2789-1**

    Dibenzo [a,h] anthracene: 0.12 ppm vs. 0.1 ppm.

  - **BH3 (0.75-1.20 m bgs) - Lab ID #19-2789-5**

    Benzo [a] pyrene: 0.4 ppm vs. 0.3 ppm;
    Dibenzo [a,h] anthracene: 0.13 ppm vs. 0.1 ppm.

  - **BH5 (0.15-0.75 m bgs) - Lab ID #19-2789-7**

    Dibenzo [a,h] anthracene: 0.14 ppm vs. 0.1 ppm.

  - **BH2 (0.75-1.20 m bgs) - Lab ID #19-2789-3** – EC: 1.51 vs. 1.4

- The results of chemical analysis for all submitted groundwater samples were found to be in compliance with the applicable MOE standards.

- Based on the results of the current investigation, it is expected that the historical activities at the Site have impacted the property's near surface soil condition. The identified impacts included polynuclear aromatic hydrocarbons (PAHs) and electrical conductivity (EC). The PAH and EC impacts were generally limited to the eastern half of the Site and contained to near surface soils / fill that exhibited signs of visible oil staining and some heavy petroleum hydrocarbon impacts. In association with proposed development of the Site it would be recommended that impacted soil / fill, preliminarily estimated in the order of 2,000m3 or 3,600 tonnes, be removed and disposed of off Site at a licensed MECP soil disposal facility.

9. 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. Where a Phase II ESA is conducted without the completion or review of a current Phase I ESA, it is noted that the selected test locations are based on information made readily available to Fisher and/or a cursory review of current site operations. In such instances, knowledge of historical and/or neighboring property use data may be significantly limited. No warranty, whether expressed or implied, is included or intended in this report.

The scope of services performed may not be appropriate for the purposes of other users. This report should not be used in contexts other than pertaining to the evaluation of the property at the current time. Written authorization must be obtained from Fisher Environmental Ltd. 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 Environmental Ltd. 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 Environmental Ltd. notes that the work conducted at the Site may not fully satisfy the MOE (currently 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.

10. QUALIFICATIONS OF ASSESSOR

The field works and report preparation for this assessment were conducted by Mr. Sean Fisher, who has been trained and has 20 years of experience in conducting Phase II ESAs in accordance with the CSA Standard. Mr. Fisher has conducted more than 250 Phase II ESAs for commercial/industrial/residential clients and government agencies and is routinely engaged in this field.

As a Qualified Person who conducts and supervises Phase II ESAs, Mr. David Fisher, president of Fisher Environmental Ltd., 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 Environmental Ltd. 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.

11. 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. Specific reference is made to the following:

- CAN/CSA Standard Z769-00 (reaffirmed in 2013), Phase II Environmental Site Assessment, A National Standard of Canada;
- "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" Ministry of the Environment and Energy, December 1996;
- Environmental Protection Act, RSO 1990, Charter E. 19, as amended, September 2004;
- "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;
- Google Earth.

APPENDIX A – SITE PLAN

FISHER ENVIRONMENTAL LTD.
400 Esna Park Dr., #15
Markham, Ontario
L3R 3K2
Tel: 905 475-7755
Fax: 905 475-7718

NORTH

LEGEND

- MONITORING WELL
- BOREHOLE
- SITE BOUNDARY
- BENCHMARK

PROJECT NAME AND ADDRESS

GEOTECHNICAL INVESTIGATION AND PHASE II ESA

6333 HURONTARIO STREET, MISSISSAUGA, ONTARIO

FIGURE 1:

SITE PLAN WITH BOREHOLE AND MONITORING WELL LOCATIONS

PROJECT NO.	SHEET NO.
FE-P 19-9580	1
DATE: JULY 2019	
SCALE: AS SHOWN	

APPENDIX B – LOG OF BOREHOLES

FISHER ENVIRONMENTAL LTD.

LOG OF BOREHOLE NO. BH1(MW) SHEET. 1 of 1

PROJECT NO.: FE-P 19-9580

PROJECT NAME: Geotechnical Investigation

LOCATION: 6333 Hurontario St., Mississauga, ON.

DRILLING METHOD: Diedrich D-50

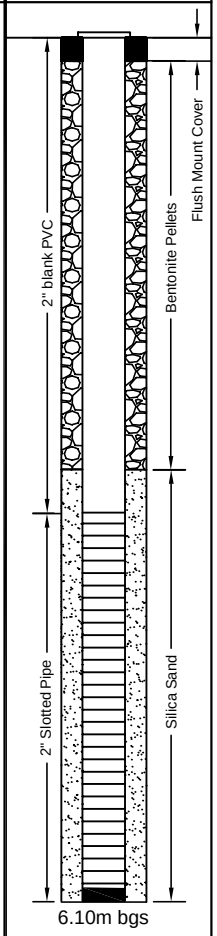
DRILLING DATE: 26 June 2019

DEPTH (feet)	DEPTH (metres)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES P.I.D. Reading	SAMPLES "N" VALUE
		GROUND SURFACE (m asl)		99.35			
		GRANULAR MATERIAL: stains, trace to some silt, occasional pieces of wood/asphalt, moist. (Hydrocarbon odor)		98.97	1	SS	29
0.38m		FILL: dark brown to greyish brown silt to sandy silt, trace of topsoil, roots & gravel, moist.		98.59			
0.76m		BROWN TO GREYISH BROWN SANDY SILT TILL: some to trace of clay, trace of gravel, occasional cobbles, wet seam/layer around 4.57m, moist, compact to dense.			2	SS	10
					3	SS	15
					4	SS	15
					5	SS	23
4.72m		GREY SAND & SILT TO SANDY SILT: trace of gravel, wet seams/layers, moist, dense.		94.63	6	SS	43
					7	SS	46
6.55m		End of Borehole Monitoring well installed at 6.10m.		92.80			

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



FISHER ENVIRONMENTAL LTD.

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

PROJECT NO.: FE-P 19-9580

PROJECT NAME: Geotechnical Investigation

LOCATION: 6333 Hurontario St., Mississauga, ON.

DRILLING METHOD: Diedrich D-50

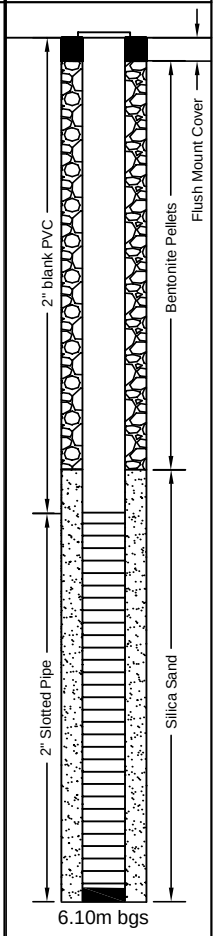
DRILLING DATE: 26 June 2019

DEPTH (feet)	DEPTH (metres)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES P.I.D. Reading	SAMPLES "N" VALUE
		GROUND SURFACE (m asl)		98.03			
0	0	FILL: crushed asphalt mixed with granular material, some sandy silt, occcasional pieces of concrete/asphalt/wood, moist.			1	SS	14
2		0.61m		97.42			
	1	FILL: grey sandy silt, layer of topsoil at 1.11m, trace of roots/topsoil, very moist.			2	SS	5
4		1.37m		96.66			
6	2	GREYISH BROWN TO BROWN SANDY SILT TILL: some to trace of clay, trace of gravel, moist, compact.			3	SS	17
8					4	SS	22
10	3				5	SS	26
12							
	4						
14		4.42m		93.61			
16	5	GREY SANDY SILT TO TILL: trace of clay & gravel, wet layer of silty sand at 6.10m, moist, compact to dense.			6	SS	22
18							
20	6				7	SS	37
		6.55m		91.48			
22	7	End of Borehole					
24		Monitoring well installed at 6.10m.					
26	8						
28							
30	9						
32	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

PIEZOMETER OR WELL CONSTRUCTION



FISHER ENVIRONMENTAL LTD.

LOG OF BOREHOLE NO. BH3(MW) SHEET. 1 of 1

PROJECT NO.: FE-P 19-9580

PROJECT NAME: Geotechnical Investigation

LOCATION: 6333 Hurontario St., Mississauga, ON.

DRILLING METHOD: Diedrich D-50

DRILLING DATE: 26 June 2019

DEPTH (feet)	DEPTH (metres)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES P.I.D. Reading	SAMPLES "N" VALUE
		GROUND SURFACE (m asl)		99.27			
0	0	FILL: granular material mixed with sandy silt, occ. pieces of concrete, asphalt, occ. cobbles, moist.			1	SS	41
		0.53m (Hydrocarbon odor)		98.74			
2		FILL: dark brown to greyish brown silt to sandy silt, layer of topsoil at 0.91m, some to trace of			2	SS	7
4	1	1.52m topsoil/roots, moist.		97.75			
6		GREYISH BROWN TO BROWN SANDY SILT TILL: some to trace of clay, trace of gravel, occasional wet seams, moist, compact to dense.			3	SS	14
8	2				4	SS	28
10					5	SS	34
12	3						
14		4.72m		95.00			
16	4	GREY SANDY SILT TO TILL: trace of gravel, wet layer at 4.88m, moist, very dense to dense.			6	SS	61
18	5						
20		6.55m		92.72	7	SS	35
22	6	End of Borehole					
24	7	Monitoring well installed at 6.10m.					
26	8						
28							
30	9						
32	10						

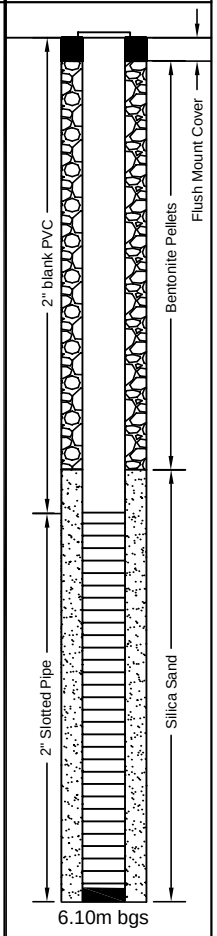
PENETRATION TESTING (SPT) ▲ 20 40 60 80

SHEAR STRENGTH (Kpa) ✚ 40 80 120 160

VAPOUR READING (ppm) □ 20 40 60 80

MOISTURE CONTENT (%) ○ 10 20 30 40

PIEZOMETER OR WELL CONSTRUCTION



FISHER ENVIRONMENTAL LTD.

LOG OF BOREHOLE NO. BH4 SHEET. 1 of 1

PROJECT NO.: FE-P 19-9580

PROJECT NAME: Geotechnical Investigation

LOCATION: 6333 Hurontario St., Mississauga, ON.

DRILLING METHOD: Diedrich D-50

DRILLING DATE: 26 June 2019

DEPTH (feet)	DEPTH (metres)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES P.I.D. Reading	SAMPLES "N" VALUE
		GROUND SURFACE (m asl)		98.57			
0	0	TOPSOIL					
		0.30m		98.27	1	SS	6
2		FILL: dark brown to brown silt to sandy silt, some clay, some to trace of topsoil/ roots, moist.					
		0.69m		97.88			
4	1				2	SS	21
		BROWN SANDY SILT TILL: some clay, trace of gravel, moist, compact to dense.					
6					3	SS	20
	2						
8					4	SS	31
10	3						
					5	SS	36
12							
	4	4.11m		94.46			
14		GREY SANDY SILT TO TILL: trace of gravel, wet seams/pockets, moist, compact.		4.72			
16					6	SS	16
	5	5.03m		93.54			
18		End of Borehole					
		W.L. at 4.72m on completion.					
20	6						
22							
24	7						
26	8						
28							
30	9						
32							
	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

PIEZOMETER OR WELL CONSTRUCTION

FISHER ENVIRONMENTAL LTD.

LOG OF BOREHOLE NO. BH5 SHEET. 1 of 1

PROJECT NO.: FE-P 19-9580

PROJECT NAME: Geotechnical Investigation

LOCATION: 6333 Hurontario St., Mississauga, ON.

DRILLING METHOD: Diedrich D-50

DRILLING DATE: 26 June 2019

DEPTH (feet)	DEPTH (metres)	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES P.I.D. Reading	SAMPLES "N" VALUE
		GROUND SURFACE (m asl)		98.64			
0	0	FILL: dark brown to brown silt to sandy silt, layer of topsoil at 0.23m, occasional pieces of wood, some asphalt/gravel at surface, moist.			1	SS	9
0.76m				97.88			
4	1	BROWN SANDY SILT TILL: some to trace of clay, trace of gravel, moist, compact to dense.			2	SS	15
6	2				3	SS	19
8					4	SS	30
10	3						
3.05m				95.59			
12	4	GREY SANDY SILT TO TILL: trace of gravel, moist, compact to dense.			5	SS	27
14							
16	5				6	SS	36
5.03m				93.61			
18		End of Borehole					
		BH dry on completion.					
20	6						
22							
24	7						
26	8						
28							
30	9						
32							
	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

PIEZOMETER OR WELL CONSTRUCTION

APPENDIX C – CERTIFICATES OF ANALYSIS

FISHER ENVIRONMENTAL LABORATORIES

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FAX: 905 475-7718
www.fisherenvironmental.com

Client: Dymon Capital Corp
Address: 2-1830 Walkley Rd.
Ottawa, Ontario
K1H 8K3
Tel.:
Fax:
Email: gluckman@dymon.ca
Attn.: Mr. Glen Luckman

F.E. Job #: 19-2789
Project Name: N/A
Project ID: N/A
Date Sampled: 26-Jun-2019
Date Received: 27-Jun-2019
Date Reported: 28-Jun-2019
Location: 6333 Hurontario

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	7	28-Jun-19	28-Jun-19	Metals F-18	SM 3125-B
VOCs	Soil	3	27-Jun-19	27-Jun-19	VOCs F-14	SW-846, 8260C
PHCs (F1 & BTEX)	Soil	4	27-Jun-19	27-Jun-19	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	4	27-Jun-19	28-Jun-19	PHCs F-7	CCME CWS
PAHs	Soil	3	27-Jun-19	27-Jun-19	PAHs F-4	SM 6410-B
pH	Soil	2	28-Jun-19	28-Jun-19	pH-EC-SAR F-16	SW-846, 9045D
EC	Soil	7	28-Jun-19	28-Jun-19	pH-EC-SAR F-16	EPA 9050A
SAR	Soil	7	28-Jun-19	28-Jun-19	pH-EC-SAR F-16	EPA 6010C
Moisture Content	Soil	7	N/A	28-Jun-19	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, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-2*** BH1-SS2 0.75-1.20m	***19-2789-3*** BH2-SS2 0.75-1.20m	***19-2789-4*** BH3-SS1 0.00-0.15m	***19-2789-5*** BH3-SS2 0.75-1.20m	**Soil Standards [1]**
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1	<1	<1	<1	(50) 40
Arsenic	1.9	3	1.9	2.3	5.8	18
Barium	53	52	37	93	73	670
Beryllium	<2	<2	<2	<2	<2	(10) 8
Boron	<5	<5	<5	16	9.4	120
Cadmium	1.4	<1	<1	1.8	<1	1.9
Chromium	9.2	27	15	24	27	160
Cobalt	4.2	17	7.6	10	16	(100) 80
Copper	42	46	21	102	35	(300) 230
Lead	19	10	<10	24	18	120
Molybdenum	5.1	<2	<2	<2	<2	40
Nickel	18	31	17	23	30	(340) 270
Selenium	<1	<1	<1	<1	1.3	5.5
Silver	<0.5	<0.5	<0.5	<0.5	<0.5	(50) 40
Thallium	<1	<1	<1	<1	<1	3.3
Uranium	<1	<1	<1	<1	1.1	33
Vanadium	11	44	26	18	42	86
Zinc	85	41	<30	108	45	340

< result obtained was below RL (Reporting Limit).

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

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

Industrial/Commercial/Community Property use (**I/C/C**); ( ) Standard value in brackets applies to medium and fine textured soils.

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-6*** BH4-SS1 0.00-0.60m	***19-2789-7*** BH5-SS1 0.15-0.75m				**Soil Standards [1]**
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1				(50) 40
Arsenic	2.8	3.4				18
Barium	57	47				670
Beryllium	<2	<2				(10) 8
Boron	9.8	7				120
Cadmium	<1	<1				1.9
Chromium	27	27				160
Cobalt	18	18				(100) 80
Copper	29	63				(300) 230
Lead	12	10				120
Molybdenum	<2	<2				40
Nickel	27	32				(340) 270
Selenium	<1	<1				5.5
Silver	<0.5	<0.5				(50) 40
Thallium	<1	<1				3.3
Uranium	<1	<1				33
Vanadium	43	42				86
Zinc	37	38				340

< result obtained was below RL (Reporting Limit).

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

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

Industrial/Commercial/Community Property use (**I/C/C**); ( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
Metals in Soil						
Antimony	<1	1	102	80-120	103	70-130
Arsenic	<1	1	116	80-120	81	70-130
Barium	<5	5	100	80-120	92	70-130
Beryllium	<2	2	96	80-120	97	70-130
Boron	<5	5	98	80-120	113	70-130
Cadmium	<1	1	94	80-120	115	70-130
Chromium	<5	5	106	80-120	90	70-130
Cobalt	<2	2	116	80-120	101	70-130
Copper	<5	5	110	80-120	98	70-130
Lead	<10	10	102	80-120	108	70-130
Molybdenum	<2	2	84	80-120	117	70-130
Nickel	<5	5	86	80-120	109	70-130
Selenium	<1	1	89	80-120	115	70-130
Silver	<0.5	0.5	88	80-120	103	70-130
Thallium	<1	1	100	80-120	116	70-130
Uranium	<1	1	111	80-120	113	70-130
Vanadium	<10	10	109	80-120	96	70-130
Zinc	<30	30	96	80-120	86	70-130

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
Metals in Soil						
Antimony	10.7	0-30				
Arsenic	0.4	0-30				
Barium	5.4	0-30				
Beryllium	9.1	0-30				
Boron	1.3	0-30				
Cadmium	9.7	0-30				
Chromium	6.5	0-30				
Cobalt	2.5	0-30				
Copper	9.8	0-30				
Lead	1.8	0-30				
Molybdenum	0.0	0-30				
Nickel	3.4	0-30				
Selenium	0.0	0-30				
Silver	0.0	0-30				
Thallium	0.0	0-30				
Uranium	15.5	0-30				
Vanadium	0.2	0-30				
Zinc	0.8	0-30				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-4*** BH3-SS1 0.00-0.15m	***19-2789-5*** BH3-SS2 0.75-1.20m			**Soil Standards [1]**
	Concentration (µg/g)					
VOCs in Soil						
Acetone	<0.5	<0.5	<0.5			(28) 16
Benzene	<0.02	<0.02	<0.02			(0.4) 0.32
Bromodichloromethane	<0.05	<0.05	<0.05			18
Bromoform	<0.05	<0.05	<0.05			(1.7) 0.61
Bromomethane	<0.05	<0.05	<0.05			0.05
Carbon Tetrachloride	<0.05	<0.05	<0.05			(1.5) 0.21
Chlorobenzene	<0.05	<0.05	<0.05			(2.7) 2.4
Chloroform	<0.05	<0.05	<0.05			(0.18) 0.47
Dibromochloromethane	<0.05	<0.05	<0.05			13
1,2-Dichlorobenzene	<0.05	<0.05	<0.05			(8.5) 6.8
1,3-Dichlorobenzene	<0.05	<0.05	<0.05			(12) 9.6
1,4-Dichlorobenzene	<0.05	<0.05	<0.05			(0.84) 0.2
Dichlorodifluoromethane	<0.05	<0.05	<0.05			(25) 16
1,1-Dichloroethane	<0.05	<0.05	<0.05			(21) 17
1,2-Dichloroethane	<0.05	<0.05	<0.05			0.05
1,1-Dichloroethylene	<0.05	<0.05	<0.05			(0.48) 0.064
c-1,2-Dichloroethylene	<0.05	<0.05	<0.05			(37) 55
t-1,2-Dichloroethylene	<0.05	<0.05	<0.05			(9.3) 1.3
1,2-Dichloropropane	<0.05	<0.05	<0.05			(0.68) 0.16
1,3-Dichloropropene (cis-+trans-)	<0.05	<0.05	<0.05			(0.21) 0.18
Ethylbenzene	<0.05	<0.05	<0.05			(19) 9.5
Ethylene Dibromide	<0.05	<0.05	<0.05			0.05
Hexane (n)	<0.05	<0.05	<0.05			(88) 46
Methyl Ethyl Ketone	<0.5	<0.5	<0.5			(88) 70
Methyl Isobutyl Ketone	<0.5	<0.5	<0.5			(210) 31
Methyl tert-butyl Ether	<0.05	<0.05	<0.05			(3.2) 11
Methylene Chloride	<0.05	<0.05	<0.05			(2) 1.6
Styrene	<0.05	<0.05	<0.05			(43) 34
1,1,1,2-Tetrachloroethane	<0.05	<0.05	<0.05			(0.11) 0.087
1,1,2,2-Tetrachloroethane	<0.05	<0.05	<0.05			(0.094) 0.05
Tetrachloroethylene	<0.05	<0.05	<0.05			(21) 4.5
Toluene	<0.2	<0.2	<0.2			(78) 68
1,1,1-Trichloroethane	<0.05	<0.05	<0.05			(12) 6.1
1,1,2-Trichloroethane	<0.05	<0.05	<0.05			(0.11) 0.05
Trichloroethylene	<0.05	<0.05	<0.05			(0.61) 0.91
Trichlorofluoromethane	<0.05	<0.05	<0.05			(5.8) 4
Vinyl Chloride	<0.02	<0.02	<0.02			(0.25) 0.032
Xylenes	<0.05	<0.05	<0.05			(30) 26
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	130	108	127			50-140
Toluene-d8	136	124	132			50-140
4-Bromofluorobenzene	113	95	123			50-140

< result obtained was below RL (Reporting Limit).

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

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

Industrial/Commercial/Community Property use (**I/C/C**); ( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
VOCs in Soil						
Acetone	<0.5	0.5	134	50-140	76	50-140
Benzene	<0.02	0.02	104	60-130	114	50-140
Bromodichloromethane	<0.05	0.05	109	50-140	107	50-140
Bromoform	<0.05	0.05	117	60-130	84	50-140
Bromomethane	<0.05	0.05	119	50-140	79	50-140
Carbon Tetrachloride	<0.05	0.05	103	60-130	110	50-140
Chlorobenzene	<0.05	0.05	95	60-130	95	50-140
Chloroform	<0.05	0.05	106	60-130	126	50-140
Dibromochloromethane	<0.05	0.05	114	60-130	94	50-140
1,2-Dichlorobenzene	<0.05	0.05	119	60-130	127	50-140
1,3-Dichlorobenzene	<0.05	0.05	123	60-130	103	50-140
1,4-Dichlorobenzene	<0.05	0.05	108	60-130	130	50-140
Dichlorodifluoromethane	<0.05	0.05	119	50-140	127	50-140
1,1-Dichloroethane	<0.05	0.05	109	60-130	124	50-140
1,2-Dichloroethane	<0.05	0.05	109	60-130	111	50-140
1,1-Dichloroethylene	<0.05	0.05	99	60-130	105	50-140
c-1,2-Dichloroethylene	<0.05	0.05	104	60-130	125	50-140
t-1,2-Dichloroethylene	<0.05	0.05	107	60-130	128	50-140
1,2-Dichloropropane	<0.05	0.05	108	60-130	104	50-140
1,3-Dichloropropene (cis-+trans-)	<0.05	0.05	105	60-130	116	50-140
Ethylbenzene	<0.05	0.05	103	60-130	103	50-140
Ethylene Dibromide	<0.05	0.05	121	60-130	94	50-140
Hexane (n)	<0.05	0.05	126	60-130	69	50-140
Methyl Ethyl Ketone	<0.5	0.5	115	50-140	71	50-140
Methyl Isobutyl Ketone	<0.5	0.5	76	50-140	108	50-140
Methyl tert-butyl Ether	<0.05	0.05	74	60-130	81	50-140
Methylene Chloride	<0.05	0.05	103	60-130	108	50-140
Styrene	<0.05	0.05	109	60-130	94	50-140
1,1,1,2-Tetrachloroethane	<0.05	0.05	104	60-130	104	50-140
1,1,2,2-Tetrachloroethane	<0.05	0.05	111	60-130	112	50-140
Tetrachloroethylene	<0.05	0.05	105	60-130	97	50-140
Toluene	<0.2	0.2	119	60-130	107	50-140
1,1,1-Trichloroethane	<0.05	0.05	106	60-130	115	50-140
1,1,2-Trichloroethane	<0.05	0.05	105	60-130	96	50-140
Trichloroethylene	<0.05	0.05	111	60-130	108	50-140
Trichlorofluoromethane	<0.05	0.05	108	50-140	86	50-140
Vinyl Chloride	<0.02	0.02	103	50-140	117	50-140
Xylenes	<0.05	0.05	110	60-130	101	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
1,2-Dichloroethane-d4	95	60-140	65	60-140	85	60-140
Toluene-d8	113	60-140	108	60-140	76	60-140
4-Bromofluorobenzene	93	60-140	116	60-140	94	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
VOCs in Soil						
Acetone	0.0	0-50				
Benzene	10	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-)	11	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	11	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	12	0-50				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
1,2-Dichloroethane-d4	95	60-140				
Toluene-d8	102	60-140				
4-Bromofluorobenzene	102	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-3*** BH2-SS2 0.75-1.20m	***19-2789-4*** BH3-SS1 0.00-0.15m	***19-2789-5*** BH3-SS2 0.75-1.20m		**Soil Standards** [1]
	Concentration (µg/g)					
BTEX in Soil						
Benzene	<0.02	<0.02	<0.02	<0.02		(0.4) 0.32
Toluene	<0.2	<0.2	<0.2	<0.2		(78) 68
Ethylbenzene	<0.05	<0.05	<0.05	<0.05		(19) 9.5
Xylenes	<0.05	<0.05	<0.05	<0.05		(30) 26
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	<10	<10	<10		(65) 55
F2 (C_{10} - C_{16})	35	51	71	65		(250) 230
F3 (C_{16} - C_{34})	<50	78	1660	63		(2,500) 1,700
F4 (C_{34}-C_{50})	<50	<50	253	<50		(6,600) 3,300
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes		
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	130	106	108	127		60-140
Toluene-d8	136	114	124	132		60-140
4-Bromofluorobenzene	113	88	95	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

Industrial/Commercial/Community Property use (**I/C/C**); ( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
BTEX in Soil						
Benzene	<0.02	0.02	104	60-130	114	50-140
Toluene	<0.2	0.2	119	60-130	107	50-140
Ethylbenzene	<0.05	0.05	103	60-130	103	50-140
Xylenes	<0.05	0.05	110	60-130	101	50-140
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	119	80-120	107	60-140
F2 (C_{10} - C_{16})	<10	10	91	80-120	76	60-140
F3 (C_{16} - C_{34})	<50	50	94	80-120	79	60-140
F4 (C_{34}-C_{50})	<50	50	92	80-120	61	60-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
1,2-Dichloroethane-d4	95	60-140	65	60-140	85	60-140
Toluene-d8	113	60-140	108	60-140	76	60-140
4-Bromofluorobenzene	93	60-140	116	60-140	94	60-140

LEGEND:

RL - Reporting Limit

LCS - Laboratory Control Sample

MS - Matrix Spike

AR - Acceptable Range

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Soil						
Benzene	10	0-50				
Toluene	11	0-50				
Ethylbenzene	11	0-50				
Xylenes	12	0-50				
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	16	0-30				
F2 (C_{10} - C_{16})	14	0-30				
F3 (C_{16} - C_{34})	12	0-30				
F4 (C_{34}-C_{50})	28	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
1,2-Dichloroethane-d4	95	60-140				
Toluene-d8	102	60-140				
4-Bromofluorobenzene	102	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-5*** BH3-SS2 0.75-1.20m	***19-2789-7*** BH5-SS1 0.15-0.75m			**Soil Standards** [1]
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	<0.05	<0.05	<0.05			(28) 9.6
2-Methylnaphthalene	<0.05	<0.05	<0.05			(85) 76
1-Methylnaphthalene	<0.05	<0.05	<0.05			
Acenaphthylene	<0.05	<0.05	<0.05			(0.17) 0.15
Acenaphthene	<0.05	<0.05	<0.05			96
Fluorene	<0.05	<0.05	<0.05			(69) 62
Phenanthrene	0.12	0.29	0.26			(16) 12
Anthracene	0.09	0.1	0.08			(0.74) 0.67
Fluoranthene	0.08	0.49	0.27			9.6
Pyrene	0.07	0.4	0.22			96
Benzo [a] anthracene	0.07	0.3	0.17			0.96
Chrysene	0.09	0.23	0.19			9.6
Benzo [b] fluoranthene	0.08	0.21	0.15			0.96
Benzo [k] fluoranthene	0.06	0.16	0.11			0.96
Benzo [a] pyrene	0.06	**0.4**	0.11			0.3
Indeno [1,2,3-cd] pyrene	0.15	0.26	0.21			(0.95) 0.76
Dibenzo [a,h] anthracene	**0.12**	**0.13**	**0.14**			0.1
Benzo [g,h,i] perylene	0.19	0.21	0.14			9.6
Surrogate Recovery (%)						
Naphthalene-d8	106	93	91			50-140
Phenanthrene-d10	58	64	66			50-140
Chrysene-d12	58	60	59			50-140

< result obtained was below RL (Reporting Limit).

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

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

Industrial/Commercial/Community Property use (**I/C/C**); ( ) Standard value in brackets applies to medium and fine textured soils.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
PAHs in Soil						
Naphthalene	<0.05	0.05	116	50-140	105	50-140
2-Methylnaphthalene	<0.05	0.05	102	50-140	83	50-140
1-Methylnaphthalene	<0.05	0.05	93	50-140	103	50-140
Acenaphthylene	<0.05	0.05	104	50-140	83	50-140
Acenaphthene	<0.05	0.05	108	50-140	85	50-140
Fluorene	<0.05	0.05	95	50-140	113	50-140
Phenanthrene	<0.05	0.05	107	50-140	102	50-140
Anthracene	<0.05	0.05	100	50-140	91	50-140
Fluoranthene	<0.05	0.05	95	50-140	95	50-140
Pyrene	<0.05	0.05	93	50-140	91	50-140
Benzo [a] anthracene	<0.05	0.05	109	50-140	109	50-140
Chrysene	<0.05	0.05	98	50-140	99	50-140
Benzo [b] fluoranthene	<0.05	0.05	103	50-140	87	50-140
Benzo [k] fluoranthene	<0.05	0.05	102	50-140	93	50-140
Benzo [a] pyrene	<0.05	0.05	112	50-140	97	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	119	50-140	109	50-140
Dibenzo [a,h] anthracene	<0.1	0.1	114	50-140	102	50-140
Benzo [g,h,i] perylene	<0.1	0.1	111	50-140	105	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	107	50-140	133	50-140	103	50-140
Phenanthrene-d10	82	50-140	70	50-140	68	50-140
Chrysene-d12	115	50-140	87	50-140	83	50-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
PAHs in Soil						
Naphthalene	0.0	0-40				
2-Methylnaphthalene	0.0	0-40				
1-Methylnaphthalene	0.0	0-40				
Acenaphthylene	0.0	0-40				
Acenaphthene	0.0	0-40				
Fluorene	0.0	0-40				
Phenanthrene	0.0	0-40				
Anthracene	0.0	0-40				
Fluoranthene	0.0	0-40				
Pyrene	0.0	0-40				
Benzo [a] anthracene	0.0	0-40				
Chrysene	0.0	0-40				
Benzo [b] fluoranthene	0.0	0-40				
Benzo [k] fluoranthene	0.0	0-40				
Benzo [a] pyrene	0.0	0-40				
Indeno [1,2,3-cd] pyrene	0.0	0-40				
Dibenzo [a,h] anthracene	0.0	0-40				
Benzo [g,h,i] perylene	0.0	0-40				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Naphthalene-d8	97	50-140				
Phenanthrene-d10	77	50-140				
Chrysene-d12	86	50-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-2*** BH1-SS2 0.75-1.20m	***19-2789-6*** BH4-SS1 0.00-0.60m				**Soil Standards** *
pH *(pH unit)*	7.49	7.84				(5-11) 5-9

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

QA/QC Report

Parameter	**LCS**	**AR**	**Duplicate**	**AR**		
			Absolute Difference *(pH Unit)*			
pH *(pH unit)*	7.00	6.90-7.20	0.05	<0.3		

LEGEND:
LCS - Laboratory Control Sample
AR - Acceptable Range

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-2*** BH1-SS2 0.75-1.20m	***19-2789-3*** BH2-SS2 0.75-1.20m	***19-2789-4*** BH3-SS1 0.00-0.15m	***19-2789-5*** BH3-SS2 0.75-1.20m	**Soil Standards [1]**
***EC** (mS/cm)*	0.25	0.84	**1.51**	0.34	0.33	1.4

Parameter	***19-2789-6*** BH4-SS1 0.00-0.60m	***19-2789-7*** BH5-SS1 0.15-0.75m				**Soil Standards [1]**
***EC** (mS/cm)*	0.40	0.76				1.4

[1] MOE - Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011.
Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.
Industrial/Commercial/Community Property use (**I/C/C**).

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
***EC** (mS/cm)*	<0.01	0.01	104	90-110	2.3	0-10

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

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-2*** BH1-SS2 0.75-1.20m	***19-2789-3*** BH2-SS2 0.75-1.20m	***19-2789-4*** BH3-SS1 0.00-0.15m	***19-2789-5*** BH3-SS2 0.75-1.20m	**Soil Standards [1]**
SAR *(no unit)*	0.90	2.7	5.3	2.6	1	12

Parameter	***19-2789-6*** BH4-SS1 0.00-0.60m	***19-2789-7*** BH5-SS1 0.15-0.75m				**Soil Standards [1]**
SAR *(no unit)*	1.7	2.6				12

Bold: Result exceeds limit noted in Soil Standards (Table 3, I/C/C).

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

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

Industrial/Commercial/Community Property use (**I/C/C**).

QA/QC Report

Parameter	**LCS**	**AR**	**Duplicate**	**AR**		
			RPD (%)			
SAR *(no unit)*	0.39	0.30-0.50	1.2	0-30		

LEGEND:

LCS - Laboratory Control Sample

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, EC, SAR
Sample Description:	7 Soil Samples

Parameter	***19-2789-1*** BH1-SS1 0.00-0.60m	***19-2789-2*** BH1-SS2 0.75-1.20m	***19-2789-3*** BH2-SS2 0.75-1.20m	***19-2789-4*** BH3-SS1 0.00-0.15m	***19-2789-5*** BH3-SS2 0.75-1.20m	***19-2789-6*** BH4-SS1 0.00-0.60m
Moisture Content (%)	13	18	16	4	26	16

Parameter	***19-2789-7*** BH5-SS1 0.15-0.75m					
Moisture Content (%)	16					

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
Moisture Content (%)	<0.1	0.1	99	70-130	1.2	0-20

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

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Attn.: Mr. Glen Luckman

F.E. Job #: 19-2790
Project Name: N/A
Project ID: N/A
Date Sampled: 27-Jun-2019
Date Received: 27-Jun-2019
Date Reported: 28-Jun-2019
Location: 6333 Hurontario

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
VOCs	Water	4	N/A	27-Jun-19	VOCs F-6	SM 6200-B
PHCs (F1 & BTEX)	Water	4	N/A	27-Jun-19	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Water	4	27-Jun-19	28-Jun-19	PHCs F-7	CCME CWS

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:	VOCs, PHCs
Sample Description:	4 Water Samples

Parameter	***19-2790-1*** MW1	***19-2790-2*** MW2	***19-2790-3*** MW3	***19-2790-4*** MW1 Duplicate		**Ground Water Standards [1]**
	Concentration (µ g/L)					
VOCs in Water						
Acetone	<30	<30	<30	<30		130000
Benzene	<0.5	<0.5	<0.5	<0.5		(430) 44
Bromodichloromethane	<2	<2	<2	<2		85000
Bromoform	<5	<5	<5	<5		(770) 380
Bromomethane	<0.5	<0.5	<0.5	<0.5		(56) 5.6
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.2		(8.4) 0.79
Chlorobenzene	<0.5	<0.5	<0.5	<0.5		630
Chloroform	<1	<1	<1	<1		(22) 2.4
Dibromochloromethane	<2	<2	<2	<2		82000
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		(9600) 4600
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		9600
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5		(67) 8
Dichlorodifluoromethane	<2	<2	<2	<2		4400
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5		(3100) 320
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5		(12) 1.6
1,1-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
c-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
t-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5		(140) 16
1,3-Dichloropropene (cis-+trans-)	<0.5	<0.5	<0.5	<0.5		(45) 5.2
Ethylbenzene	<0.5	<0.5	<0.5	<0.5		2300
Ethylene Dibromide	<0.2	<0.2	<0.2	<0.2		(0.83) 0.25
Hexane (n)	<5	<5	<5	<5		(520) 51
Methyl Ethyl Ketone	<20	<20	<20	<20		(1500000)470000
Methyl Isobutyl Ketone	<20	<20	<20	<20		(580000)140000
Methyl tert-butyl Ether	<2	<2	<2	<2		(1400) 190
Methylene Chloride	<5	<5	<5	<5		(5500) 610
Styrene	<0.5	<0.5	<0.5	<0.5		(9100) 1300
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5		(28) 3.3
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5		(15) 3.2
Tetrachloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
Toluene	<0.5	<0.5	<0.5	<0.5		18000
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5		(6700) 640
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5		(30) 4.7
Trichloroethylene	<0.5	<0.5	<0.5	<0.5		(17) 1.6
Trichlorofluoromethane	<5	<5	<5	<5		2500
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5		(1.7) 0.5
Xylenes	<0.5	<0.5	<0.5	<0.5		4200
Surrogate Recovery (%)						
Bromochloromethane	128	71	95	121		60-140
1,4-Difluorobenzene	123	70	92	114		60-140
1,4-Dichlorobutane	123	81	97	123		60-140

< result obtained was below RL (Reporting Limit).

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

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

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

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(ug/L)		Recovery (%)		Recovery (%)	
VOCs in Water						
Acetone	<30	30	71	50-140	91	50-140
Benzene	<0.5	0.5	109	60-130	100	50-140
Bromodichloromethane	<2	2	98	50-140	108	50-140
Bromoform	<5	5	96	60-130	97	50-140
Bromomethane	<0.5	0.5	87	50-140	114	50-140
Carbon Tetrachloride	<0.2	0.2	110	60-130	91	50-140
Chlorobenzene	<0.5	0.5	110	60-130	84	50-140
Chloroform	<1	1	97	60-130	116	50-140
Dibromochloromethane	<2	2	96	60-130	107	50-140
1,2-Dichlorobenzene	<0.5	0.5	107	60-130	88	50-140
1,3-Dichlorobenzene	<0.5	0.5	105	60-130	117	50-140
1,4-Dichlorobenzene	<0.5	0.5	106	60-130	115	50-140
Dichlorodifluoromethane	<2	2	106	50-140	95	50-140
1,1-Dichloroethane	<0.5	0.5	100	60-130	121	50-140
1,2-Dichloroethane	<0.5	0.5	103	60-130	82	50-140
1,1-Dichloroethylene	<0.5	0.5	108	60-130	73	50-140
c-1,2-Dichloroethylene	<0.5	0.5	107	60-130	125	50-140
t-1,2-Dichloroethylene	<0.5	0.5	104	60-130	87	50-140
1,2-Dichloropropane	<0.5	0.5	105	60-130	109	50-140
1,3-Dichloropropene (cis-+trans-)	<0.5	0.5	116	60-130	118	50-140
Ethylbenzene	<0.5	0.5	95	60-130	89	50-140
Ethylene Dibromide	<0.2	0.2	113	60-130	118	50-140
Hexane (n)	<5	5	111	60-130	87	50-140
Methyl Ethyl Ketone	<20	20	102	50-140	71	50-140
Methyl Isobutyl Ketone	<20	20	110	50-140	118	50-140
Methyl tert-butyl Ether	<2	2	117	60-130	83	50-140
Methylene Chloride	<5	5	96	60-130	131	50-140
Styrene	<0.5	0.5	105	60-130	82	50-140
1,1,1,2-Tetrachloroethane	<0.5	0.5	118	60-130	79	50-140
1,1,2,2-Tetrachloroethane	<0.5	0.5	105	60-130	108	50-140
Tetrachloroethylene	<0.5	0.5	84	60-130	92	50-140
Toluene	<0.5	0.5	103	60-130	101	50-140
1,1,1-Trichloroethane	<0.5	0.5	102	60-130	100	50-140
1,1,2-Trichloroethane	<0.5	0.5	89	60-130	117	50-140
Trichloroethylene	<0.5	0.5	108	60-130	117	50-140
Trichlorofluoromethane	<5	5	104	50-140	74	50-140
Vinyl Chloride	<0.5	0.5	107	50-140	78	50-140
Xylenes	<0.5	0.5	106	60-130	106	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Bromocholoromethane	94	60-140	90	60-140	115	60-140
1,4-Difluorobenzene	85	60-140	82	60-140	109	60-140
1,4-Dichlorobutane	96	60-140	98	60-140	122	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
VOCs in Water						
Acetone	0.0	0-30				
Benzene	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	1	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	7	0-30				
Trichlorofluoromethane	0.0	0-30				
Vinyl Chloride	0.0	0-30				
Xylenes	0.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Bromocholoromethane	126	60-140				
1,4-Difluorobenzene	109	60-140				
1,4-Dichlorobutane	139	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	VOCs, PHCs
Sample Description:	4 Water Samples

Parameter	***19-2790-1*** MW1	***19-2790-2*** MW2	***19-2790-3*** MW3	***19-2790-4*** MW1 Duplicate		**Ground Water Standards [1]**
	Concentration (µ g/L)					
BTEX in Water						
Benzene	<0.5	<0.5	<0.5	<0.5		(430) 44
Toluene	<0.5	<0.5	<0.5	<0.5		18000
Ethylbenzene	<0.5	<0.5	<0.5	<0.5		2300
Xylenes	<0.5	<0.5	<0.5	<0.5		4200
PHCs (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	<25	<25	<25	<25		750
F2 (C_{10} - C_{16})	<100	<100	<100	<100		150
F3 (C_{16} - C_{34})	<100	<100	130	<100		500
F4 (>C_{34})	<100	<100	<100	<100		500
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes		
Surrogate Recovery (%)						
Bromochloromethane	128	71	95	121		60-140
1,4-Difluorobenzene	123	70	92	114		60-140
1,4-Dichlorobutane	123	81	97	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 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition.

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

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(ug/L)		Recovery (%)		Recovery (%)	
BTEX in Water						
Benzene	<0.02	0.02	112	60-130	74	50-140
Toluene	<0.2	0.2	83	60-130	105	50-140
Ethylbenzene	<0.05	0.05	98	60-130	96	50-140
Xylenes	<0.05	0.05	103	60-130	133	50-140
PHC (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	83	80-120	105	60-140
F2 (C_{10} - C_{16})	<10	10	107	80-120	76	60-140
F3 (C_{16} - C_{34})	<50	50	101	80-120	74	60-140
F4 (>C_{34})	<50	50	117	80-120	61	60-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Bromochloromethane	89	60-140	114	60-140	122	60-140
1,4-Difluorobenzene	91	60-140	119	60-140	114	60-140
1,4-Dichlorobutane	87	60-140	103	60-140	119	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Water						
Benzene	3	0-30				
Toluene	2	0-30				
Ethylbenzene	2	0-30				
Xylenes	3	0-30				
PHC (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	9	0-30				
F2 (C_{10} - C_{16})	25	0-30				
F3 (C_{16} - C_{34})	29	0-30				
F4 (>C_{34})	0.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Bromochloromethane	118	60-140				
1,4-Difluorobenzene	122	60-140				
1,4-Dichlorobutane	124	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference