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PHASE II ENVIRONMENTAL SITE ASSESSMENT

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PROJECT NAME:	PHASE II ENVIRONMENTAL SITE ASSESSMENT
PROJECT ADDRESS:	473, 505 HENSALL CIRCLE MISSISSAUGA, ONTARIO
PROJECT NUMBER:	FE-P-19-9266
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GLOSSARY OF ACRONYMS

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

EXECUTIVE SUMMARY

Fisher Environmental Ltd. (Fisher) was retained by Mr. Peter DeMan, of DeMan Construction Corp. to conduct a Phase II ESA of the property located at 473 and 505 Hensall Circle, Mississauga, ON, herein referred to as the "Site". The subsurface soil and groundwater investigation was carried out on February 14, 2019, with groundwater sampling conducted on February 15, 2019.

The Site is located on the north side of Hensall Circle, and is approximately 240m east of the intersection of Hensall Circle and Dundas Street East. The site has 2 single storey buildings - a smaller aluminum clad building and a larger brick and concrete block building, located on an approximately 4,400 m^2 parcel of land.

No previous environmental report was made available to Fisher.

In the present investigation, six (6) boreholes were advanced outside the buildings' footprints of the investigated property, up to approximately 6m below ground surface (bgs); three (3) of the boreholes were instrumented as monitoring wells to facilitate groundwater level monitoring and sampling. Based on the regional topography, the local groundwater flow direction was inferred to be south, towards Lake Ontario.

According to the Quaternary Geology of Toronto and Surrounding Areas published by The Ministry of Natural Resources, the Site is situated in an area characterized as coarse textured glaciolacustrine deposits: sand, gravel, minor silt and clay - Foreshore and basinal deposits.

On the basis of the boreholes completed, the soil stratigraphy across the Site can generally be described as mainly, black to brown sand and gravel, brown silt, underlain by brown to grey very fine sand/silt, gravel and weathered shale to borehole termination depth. Spoon and/or auger refusal was encountered in some of the boreholes.

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

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

FINDINGS – SOIL

The analytical results of the submitted soil samples were found to be in compliance with the applicable MECP Table 3 SCS, except for **Metals and PAHs** parameters **exceedances in BH4 and BH 5 as follows:**

1) **Metals**

- **BH4 (0.15-0.75m): Cadmium: 3.4 vs1.9 ppm, Lead: 205 vs 120 ppm, Zinc: 5,531 vs 340 ppm**
- **BH5 (0.00-0.60m): Barium: 672 vs 670 ppm, Cadmium: 9.1 vs1.9 ppm, Lead: 424 vs 120 ppm, Zinc: 7,172 vs 340 ppm**

2) **PAHs**

- **BH4 (0.15-0.75m): Phenanthrene: 27 vs 16ppm, Anthracene: 5.5 vs 0.74ppm, Fluoranthene: 33 vs 9.6ppm, Benzo[a]anthracene: 6.3 vs 0.96ppm, Benzo[b]fluoranthene: 9.9 vs 0.96ppm, Benzo[k]fluoranthene: 7.6 vs 0.96ppm, Benzo[a]pyrene: 8.8 vs 0.3ppm, Ideno[1,2,3-cd]pyrene: 6.9 vs 0.95ppm, Dibenzo[a,h]anthracene: 1.6 vs 0.1ppm**
- **BH5 (0.00-0.60m): Anthracene: 0.87vs0.74ppm, Benzo[a]anthracene: 1.6 vs 0.96ppm, Benzo[b]fluoranthene: 2.8 vs 0.96ppm, Benzo[k]fluoranthene: 2.1 vs 0.96ppm, Benzo[a]pyrene: 2.6 vs 0.3ppm, Ideno[1,2,3-cd]pyrene: 1.6 vs 0.95ppm, Dibenzo[a,h]anthracene: 0.75 vs 0.1ppm**

FINDINGS – GROUNDWATER

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

CONCLUSIONS

Based on the results of the current investigation, Metals and PAHs impact to the soil was identified on the subject property. The Metals and PAH impacts in the soil are expected to be associated with historic use of fill materials of unknown quality during the property development. The Metals and PAHs impacted surface soil is considered a low environmental risk; therefore, it is recommended that the impacted soil be removed during any future development of the property.

In the future, in order to bring the soil conditions at the property in compliance with the applicable MECP Table 3 Standards, it is proposed that the following works should be conducted:

- Advance additional boreholes on the property to delineate the Metals and PAHs contaminants ;
- Excavate and dispose the contaminated soil to an MECP-licensed treatment facility;
- Backfilling of the excavation and compaction.

1. INTRODUCTION

Fisher Environmental Ltd. (Fisher) was retained by Mr. Peter DeMan, of DeMan Construction Corp. to conduct a Phase II ESA of the property located at 473 and 505 Hensall Circle, Mississauga, ON, herein referred to as the "Site". The subsurface soil and groundwater investigation was carried out on February 14, 2019, with groundwater sampling conducted on February 15, 2019.

2. PROPERTY DESCRIPTION

The Site is located on the north side of Hensall Circle, and is approximately 240m east of the intersection of Hensall Circle and Dundas Street East. The site has 2 single storey buildings - a smaller aluminum clad building and a larger brick and concrete block building, located on an approximately 4,400 m^2 parcel of land.

3. EXISTING REPORTS REVIEW

No previous environmental report was made available to Fisher.

4. SCOPE OF WORK

The current Phase II ESA was conducted in accordance with the CAN/CSA-Z769-00 standards, as published in March 2000 and reaffirmed in 2013, by the CSA Group. A Phase II ESA involves sampling and testing of materials considered, usually by the outcome of a Phase I ESA or other investigation, to be possible instances of environmental contamination. Normal environmental assessment protocol reserves a detailed investigation for a subsequent phase if the reconnaissance survey indicates a requirement for further contaminant delineation.

The scope of this work generally consisted of the following:

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

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

5. FIELD PROGRAM

The subsurface soil and groundwater investigation was carried out on February 14, 2019, with groundwater sampling conducted on February 15, 2019. The field work was conducted by Fisher who directed drilling and sampling operations and assured proper chain of custody procedures for the recovered soil and groundwater samples.

Six (6) boreholes, three (3) of which were instrumented as monitoring wells to facilitate groundwater level monitoring and sampling, were advanced outside the building footprint of the investigated property.

5.1. Site Preparation

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

5.2. Boreholes, Soil and Groundwater Sampling

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

TABLE 1: BOREHOLE LOCATION RATIONALE

Borehole I.D.	Borehole Location and Rationale
BH1, BH2(MW)	Evaluate the sub-surface soil and groundwater conditions at the eastern portion of the subject property in relation to potential impacts originating from present and historical on-site operations, and off-site neighbouring properties.
BH3, BH4(MW)	Evaluate the sub-surface soil and groundwater conditions at the south central portion of the property in relation to potential impacts associated with present and historical on-site operations, and off-site neighbouring properties.
BH5, BH6(MW)	Evaluate the sub-surface soil and groundwater conditions at the western portion of the property in relation to potential impacts associated with present and historical on-site operations, and off-site neighbouring properties.

The drilling works was conducted by Terra Firma Environmental Services Limited (Terra Firma) of Toronto, Ontario and supervised by Fisher personnel. Terra Firma maintains licensure for drilling (Water Well Drillers, EPA, Well Contractor License No. 6946) as required by the MECP, and conducted drilling and soil sampling works in accordance with CSA Standard Z769-00 (published March 2000, reaffirmed in 2013) and MOE Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, and in compliance with Occupational Health and Safety regulations.

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

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

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

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

Prior to groundwater sampling, three (3) well volumes of groundwater were purged from each groundwater monitoring well to ensure the sampling of “fresh” formation water if the natural recharge rate of the groundwater was sufficient. Groundwater was collected utilizing single-use disposable bailers and placed into laboratory supplied containers and labeled. Soil and

groundwater samples were kept in coolers with ice and/or ice packs during field storage and transportation to Fisher Environmental Laboratories.

5.3. Groundwater Monitoring Wells

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

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

Table 2: Static Groundwater Level Measurements

Location	Static Groundwater Level (m bgs)	Well Depth (m bgs)
BH2(MW)	2.25	4.48
BH4(MW)	1.42	3.60
BH6(MW)	1.20	3.64

Based on the regional topography, the local groundwater flow direction was inferred to be south/southwest, towards Lake Ontario. The localized shallow groundwater flow direction may be influenced by the presence of underground utilities, building foundations, variations in vertical and horizontal stratigraphy, depth of wells' screened intervals and/or well trauma.

5.4. Well Record Filed with the MECP

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

1. The name and address of the property owner have been provided to Fisher Environmental.

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

5.5. Site Topography and Geology

According to the Quaternary Geology of Toronto and Surrounding Areas published by The Ministry of Natural Resources, the Site is situated in an area characterized as coarse textured glaciolacustrine deposits: sand, gravel, minor silt and clay - Foreshore and basinal deposits.

On the basis of the boreholes completed, the soil stratigraphy across the Site can generally be described as mainly, black to brown sand and gravel, brown silt, underlain by brown to grey very fine sand/silt, gravel and weathered shale to termination depth. Spoon and/or auger refusal was encountered in some of the boreholes.

5.6. Head Space Combustible Vapours

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

5.7. Visual and Olfactory Soil / Groundwater Quality

During the field investigation, the near surface soil samples were noted to be dark brown to black in colour.

5.8. Selection of Analytical Samples and Parameters

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

Six (6) soil samples were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4) and BTEX, PAHs and VOCs. Four (4) groundwater samples, including one duplicate, were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4) and BTEX, PAHs and VOCs. The rationale for the selected parameter is detailed in Table 3 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/commercial activities, both historic and current, and it is common practice to include metals analysis in subsurface soil and/or groundwater investigations. Six (6) soil and four (4) groundwater samples collected at the Site were submitted for metals analysis.
PHCs (F1-F4) and BTEX	PHCs are components of gasoline, diesel and other petroleum products for which soil quality guidelines have been developed. These compounds are widely utilized and often included in the evaluation of a Site's overall subsurface condition. BTEX are compounds found in petroleum products and considered to be VOCs. Six (6) soil and four (4) groundwater samples collected at the Site were submitted for PHCs (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 containing VOCs. Two (2) soil and four (4) groundwater samples collected at the Site were submitted for VOCs analysis.
PAHs	PAHs are associated with coal and furnace ash, and/or the use of fill materials of unknown quality. Two (2) soil and one (1) groundwater samples collected at the Site were submitted for PAHs 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. The applicable MECP SCS were developed for soils with a specific range of pH 5-9 for surface soils and 5-11 for subsurface soils. Two (2) soil samples collected

Parameter	Description
	at the Site were submitted for pH analysis
Grain Size	As specified by Ontario Regulation 153/04, as amended, "coarse textured soil is defined as material having more than 50 percent (by mass) of particles that are 75 μm or larger in mean diameter". "Materials having more than 50 percent (by mass) of particles that are smaller than 75 μm in mean diameter are medium and fine textured soils". "When at least 1/3 of the soil at the property, measured by volume, consists of coarse textured soil, the standard for coarse textured soil shall apply. In any other case, the standard for medium and fine textured soil may be applied". One (1) soil sample collected at the Site was submitted for Grain Size distribution

6. LABORATORY ANALYTICAL PROGRAM

6.1. General

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

6.2. Data Evaluation

6.2.1. Soil and Groundwater Standards

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

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

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

6.2.2. Soil and Groundwater Quality

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

Table 4: Summary of Soil Quality

Borehole Number	Sample Depth (m bgs)	Laboratory Number	Parameter(s) Analyzed	Exceedances of Table 3 SCS *Soil:* I/C/C Property Use
Soil Samples (µg/g, ppm)				
BH1	1.50 – 2.10m	19-1957-1	PHCs (F1-F4), Metals, VOCs	None
BH2	0.90 – 1.50m	19-1957-2	PHCs (F1-F4), Metals,	None
BH3	2.40 – 3.00	19-1957-3	Metals, VOCs, PHCs (F1-F4)	None
BH4	0.15 – 0.75m	19-1957-4	Metals, PAHs, PHCs (F1-F4)	**Cadmium: 3.4 vs1.9 ppm, Lead: 205 vs 120 ppm, Zinc: 5531 vs 340 ppm, Phenanthrene: 27 vs 16ppm, Anthracene: 5.5 vs 0.74ppm, Fluoranthene: 33 vs 9.6 ppm, Benzo[a]anthracene: 6.3 vs 0.96ppm, Benzo[b]fluoranthene:9.9 vs 0.96ppm, Benzo[k]fluoranthene:7.6 vs 0.96ppm, Benzo[a]pyrene:8.8 vs 0.3ppm, Ideno[1,2,3-cd]pyrene:6.9 vs 0.95ppm Dibenzo[a,h]anthracene:1.6 vs 0.1ppm**
BH5	0.00 – 0.60m	19-1957-5	PHCs (F1-F4), Metals, PAHs	**Barium: 672 vs 670 ppm, Cadmium: 9.1 vs1.9 ppm, Lead: 424 vs 120 ppm, Zinc: 7172 vs 340 ppm, Anthracene:0.87vs0.74ppm, Benzo[a]anthracene: 1.6 vs 0.96ppm, Benzo[b]fluoranthene:2.8 vs 0.96ppm, Benzo[k]fluoranthene:2.1 vs 0.96ppm, Benzo[a]pyrene:2.6 vs 0.3ppm, Ideno[1,2,3-cd]pyrene:1.6 vs 0.95ppm, Dibenzo[a,h]anthracene:0.75 vs 0.1ppm**
BH6	1.50 – 2.10m	19-1957-6	PHCs (F1-F4), Metals	None

Table 5: Summary of Groundwater Quality

Borehole Number	Water Level (m bgs)	Laboratory Number	Parameter(s) Analyzed	Exceedances of Table 3 SCS *Groundwater:* All Types of Property Use
Groundwater (µg/L, ppb)				
BH2(MW)	2.25	19-1957-7	Metals, VOCs, PHCs (F1-F4), PAHs	None

BH2(MW) Duplicate	2.25	19-1957-8	Metals, VOCs, PHCs (F1-F4)	None
BH4(MW)	1.42	19-1957-9	Metals, VOCs, PHCs (F1-F4)	None
BH6(MW)	1.20	19-1957-10	Metals, VOCs, PHCs (F1-F4)	None

NOTES: PHC (F1-F4): Petroleum Hydrocarbons fractions (F1-F4)
- F1 (C6-C10) Gasoline less BTEX
- F2 (C10-C16) Diesel
- F3 (C16-C34) Diesel
- F4 (C34-C50) Heavy Oil
- F4G(>C34) Heavy Oil

BTEX: Benzene, Toluene, Ethylbenzene, Xylene
Bold: Exceeds the MECP Standards

6.2.3. Metals

Six (6) soil and four (4) groundwater samples were submitted for metals analysis.

SOIL

The results of the metals analyses for the submitted soil samples were within the applicable MECP Table 3 SCS, except for the following:

- **BH4 (0.15-0.75m): Cadmium: 3.4 vs1.9 ppm, Lead: 205 vs 120 ppm, Zinc: 5,531 vs 340 ppm**
- **BH5 (0.00-0.60m): Barium: 672 vs 670 ppm, Cadmium: 9.1 vs1.9 ppm, Lead: 424 vs 120 ppm, Zinc: 7,172 vs 340 ppm**

Groundwater

The results of the metals analyses for the submitted groundwater samples were within the applicable MECP Table 3 SCS.

6.2.4. Petroleum Hydrocarbons and BTEX

Six (6) soil and four (4) groundwater samples were submitted for PHCs (F1-F4) and BTEX analysis.

SOIL AND GROUNDWATER

The results of analyses of the submitted soil and groundwater samples were within the applicable MECP Table 3 SCS.

6.2.5. Volatile Organic Compounds

Two (2) soil and four (4) groundwater samples were submitted for VOCs analysis.

SOIL AND GROUNDWATER

The analytical results from the VOCs analyses for the submitted soil and groundwater samples were within the applicable MECP Table 3 SCS.

6.2.6. Polycyclic Aromatic Hydrocarbons (PAHs)

Two (2) soil and one (1) groundwater samples collected at the Site were submitted for PAHs analysis.

SOIL

The analytical results from the PAHs analyses of the submitted soil samples exceeded the applicable MECP Table 3 SCS as follows:

- **BH4 (0.15-0.75m): Phenanthrene: 27 vs 16ppm, Anthracene: 5.5 vs 0.74ppm, Fluoranthene: 33 vs 9.6ppm, Benzo[a]anthracene: 6.3 vs 0.96ppm, Benzo[b]fluoranthene: 9.9 vs 0.96ppm, Benzo[k]fluoranthene: 7.6 vs 0.96ppm, Benzo[a]pyrene: 8.8 vs 0.3ppm, Ideno[1,2,3-cd]pyrene: 6.9 vs 0.95ppm, Dibenzo[a,h]anthracene: 1.6 vs 0.1ppm**

- **BH5 (0.00-0.60m): Anthracene: 0.87vs0.74ppm, Benzo[a]anthracene: 1.6 vs 0.96ppm, Benzo[b]fluoranthene: 2.8 vs 0.96ppm, Benzo[k]fluoranthene: 2.1 vs 0.96ppm, Benzo[a]pyrene: 2.6 vs 0.3ppm, Ideno[1,2,3-cd]pyrene: 1.6 vs 0.95ppm, Dibenzo[a,h]anthracene: 0.75 vs 0.1ppm**

GROUNDWATER

The analytical result from the PAHs analyses for the submitted sample was within the applicable MECP Table 3 SCS.

6.2.7. pH

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

6.2.8. Grain Size

One (1) soil sample was submitted for Grain Size distribution analysis; the submitted soil sample was determined to be medium-to-fine textured.

6.3. Quality Assurance/Quality Control

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

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

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

7. SUMMARY AND CONCLUSIONS

- Fisher carried out a Phase II ESA at the property municipally addressed as 473, 505 Hensall Circle, Mississauga, Ontario. The subsurface soil and groundwater investigation was carried out on February 14, 2019;
- Six (6) boreholes were advanced outside the building footprint of the investigated property; three (3) of the boreholes were instrumented as monitoring wells to facilitate groundwater level monitoring and sampling;
- On the basis of the boreholes completed, the soil stratigraphy across the Site can generally be described as mainly, black to brown sand and gravel, brown silt, underlain by brown to grey very fine sand/silt, gravel and weathered shale to termination depth. Spoon and/or auger refusal was encountered in some of the boreholes;
- During the field investigation, the near surface soil samples were noted to be dark brown to black in colour;
- Based on the regional topography, the local groundwater flow direction was inferred to be south, towards Lake Ontario;
- The applicable MECP SCS was identified as: Table 3, Full Depth Generic SCS in a Non-Potable Groundwater Condition – I/C/C Property Use for soil samples and All Types of Property Use for groundwater samples in a medium-to-fine textured soil condition;
- Six (6) soil samples were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), PAHs and VOCs. Four (4) groundwater samples, including one duplicate, were submitted to the laboratory for analysis of one or more of the following parameters: Metals, PHCs (F1-F4), PAHs and VOCs;
- The analytical results of the submitted soil samples were found to be in compliance with the applicable MECP Table 3 SCS, except for **Metals and PAHs** parameters **exceedances in BH4 and BH 5**;
- The analytical results for the submitted groundwater samples were within the applicable MOE Table 3 SCS.

Based on the results of the current investigation, Metals and PAHs impact to the soil was identified on the subject property. The Metals and PAH impacts in the soil are expected to be associated with historic use of fill materials of unknown quality during the property development. The Metals and PAHs impacted surface soil is considered a low environmental risk; therefore, it is recommended that the impacted soil be removed during any future development of the property.

In the future, in order to bring the soil conditions at the property in compliance with the applicable MECP Table 3 Standards, it is proposed that the following works should be conducted:

- Advance additional boreholes on the property to delineate the Metals and PAHs contaminants ;
- Excavate and dispose the contaminated soil to an MECP-licensed treatment facility;
- Backfilling of the excavation and compaction.

8. LIMITATIONS

This report was prepared for use by DeMan Construction Corp. 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 prior to use by any other parties, or any future use of this document or its findings, conclusions, or recommendations represented herein. Any use which a third party makes of this report, or any reliance on or decisions made on the basis of it, are the responsibility of the third parties. Fisher accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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

9. QUALIFICATIONS OF ASSESSOR

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

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

10. REFERENCES

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

- CAN/CSA Standard Z769-00 (published March 2000, reaffirmed 2013), Phase II ESA, A National Standard of Canada;
- "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" Ministry of the Environment of Ontario, December 1996;
- EPA, RSO 1990, Charter E. 19, as amended, version date March 22, 2017;
- Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the EPA, dated April 15, 2011;
- The Ontario Water Resources Act – R.R.O. 1990, Ontario Regulation 903 – Amended to Ontario Regulation 128.03, August 2003;
- Surficial geology of southern Ontario, Northern Development and Mines, published October 10, 2012;

APPENDIX A – SITE PLAN

SCALE
0m 5m 10m 15m 20m

BH6(MW)
BH5
BH4(MW)
BH3
BH2(MW)
BH1

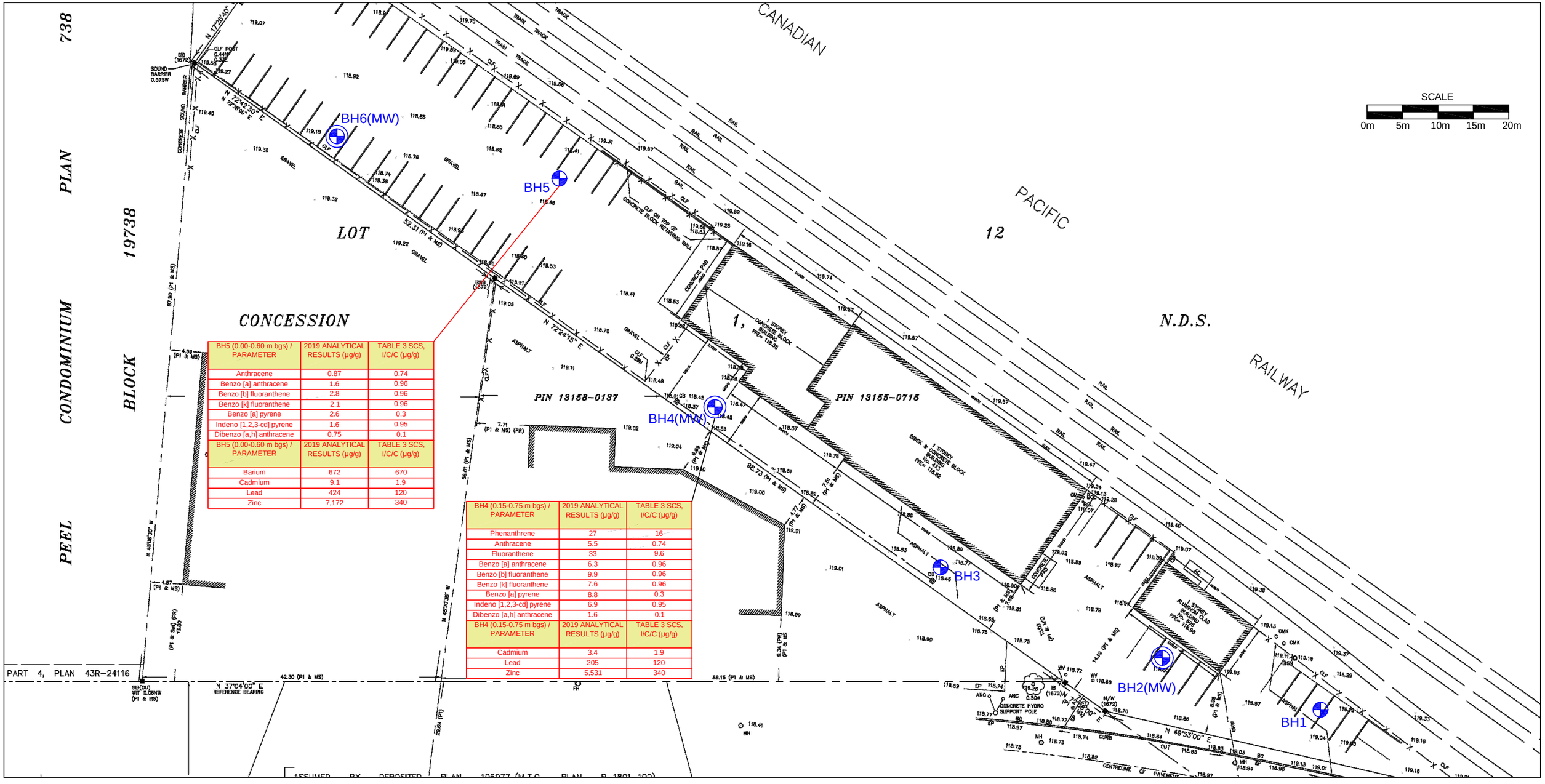
LOT 12
CONCESSION 1,
PACIFIC RAILWAY
N.D.S.

PIN 13158-0136
PIN 13158-0137
PIN 13155-0715

N 37°04'00" E
REFERENCE BEARING

FISHER ENVIRONMENTAL LTD. 400 Esna Park Dr., #15 Markham, Ontario L3R 3K2 Tel: 905 475-7755 Fax: 905 475-7718	NORTH	LEGEND BOREHOLE BY FISHER (2019) MONITORING WELL BY FISHER (2019)	PROJECT NAME AND ADDRESS PHASE II ESA 473-505 HENSELL CR MISSISSAUGA ON

PROJECT NO. FE-P 19-9266	FIGURE 1: SITE PLAN WITH BOREHOLE AND MONITORING WELL LOCATIONS	SHEET NO. 1
DATE 21 FEBRUARY 2019		
SCALE AS SHOWN		



BH5 (0.00-0.60 m bgs) / PARAMETER	2019 ANALYTICAL RESULTS (µg/g)	TABLE 3 SCS, I/C/C (µg/g)
Anthracene	0.87	0.74
Benzo [a] anthracene	1.6	0.96
Benzo [b] fluoranthene	2.8	0.96
Benzo [k] fluoranthene	2.1	0.96
Benzo [a] pyrene	2.6	0.3
Indeno [1,2,3-cd] pyrene	1.6	0.95
Dibenzo [a,h] anthracene	0.75	0.1
BH5 (0.00-0.60 m bgs) / PARAMETER	2019 ANALYTICAL RESULTS (µg/g)	TABLE 3 SCS, I/C/C (µg/g)
Barium	672	670
Cadmium	9.1	1.9
Lead	424	120
Zinc	7,172	340

BH4 (0.15-0.75 m bgs) / PARAMETER	2019 ANALYTICAL RESULTS (µg/g)	TABLE 3 SCS, I/C/C (µg/g)
Phenanthrene	27	16
Anthracene	5.5	0.74
Fluoranthene	33	9.6
Benzo [a] anthracene	6.3	0.96
Benzo [b] fluoranthene	9.9	0.96
Benzo [k] fluoranthene	7.6	0.96
Benzo [a] pyrene	8.8	0.3
Indeno [1,2,3-cd] pyrene	6.9	0.95
Dibenzo [a,h] anthracene	1.6	0.1
BH4 (0.15-0.75 m bgs) / PARAMETER	2019 ANALYTICAL RESULTS (µg/g)	TABLE 3 SCS, I/C/C (µg/g)
Cadmium	3.4	1.9
Lead	205	120
Zinc	5,531	340

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

NORTH

LEGEND

- BOREHOLE BY FISHER (2019)
- MONITORING WELL BY FISHER (2019)

PROJECT NAME AND ADDRESS

PHASE II ESA

473-505 HENSELL CR
MISSISSAUGA ON

PROJECT NO.
FE-P 19-9266

DATE
28 FEBRUARY 2019

SCALE
AS SHOWN

FIGURE 2:
SITE PLAN WITH SOIL SAMPLES IN EXCEEDANCE OF TABLE 3 SCS FOR ALL TESTED PARAMETERS

SHEET NO.
2

APPENDIX B – LOG OF BOREHOLES

FISHER ENVIRONMENTAL LTD.

Log of Borehole: BH1
473, 505 Hensell Cr.
Mississauga, Ontario

Sheet: 1 of 6
Project #: 19-9266
G.S.Elevation:

Location: 9m E of EBL, 4m N of SBL of # 505

Drill Method: Diedrich 50
Drilling Date: 14 February 2019

Sample Method: Split Spoon
Dates: Water Level N/A

Borehole Diameter: 6"
Water Level: N/A
Logged By: AH
Checked By: TB

DEPTH (meters)	Sample No.	Blow Counts	H.C.Vapour (ppm)	(feet) DEPTH (meters)	Materials Description	Monitoring Well Construction & Water Level (m)
					ASPHALT 2"	
0–1				0–2	Brown SAND and GRAVEL, moist	
1–2				2–4	Brown SAND and GRAVEL, moist	
2–3				4–6	Brown to dark brown SAND, moist	
3–4				6–10	Brown GRAVELLY SAND, moist to wet	
4–5				10–16	Greyish brown GRAVEL, some SAND, moist to wet	
5–5.18				16–17	Coarse GRAVEL, some SAND, grey, weathered SHALE pieces (Spoon Refusal @ 16.5')	
					End of borehole at 5.18m	

FISHER ENVIRONMENTAL LTD.

Log of Borehole: BH2(MW)
473, 505 Hensell Cr.
Mississauga, Ontario

Sheet: 2 of 6
Project #: 19-9266
G.S.Elevation:

Location: 5m W of EBL, 3m S of SBL of # 505

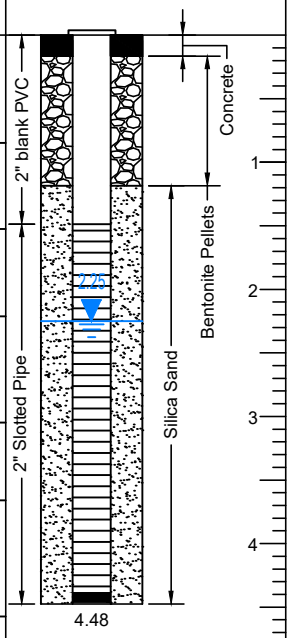
Drill Method: Diedrich 50
Drilling Date: 14 February 2019

Sample Method: Split Spoon
Dates: Water Level 15 February 2019

Borehole Diameter: 6"
Water Level: 2.25m
Logged By: AH
Checked By: TB

DEPTH (meters)	Sample No.	Blow Counts	H.C.Vapour (ppm)	DEPTH (feet)	DEPTH (meters)	Materials Description
						ASPHALT 2"
0				0	0	Brown to black SAND and GRAVEL, moist
				2	0.5	
1				4	1	Brown Silty SAND and GRAVEL, moist
				6	1.5	Brown SAND, trace GRAVEL, moist
2				8	2	
				10	2.5	Brown SAND, trace GRAVEL, moist
3				12	3	Brown GRAVEL with trace SAND, moist and wet
				14	3.5	
4				16	4	Brown GRAVEL, grey weathered SHALE pieces
				18	4.5	End of borehole at 4.57m
5				20	5	
				22	5.5	
6				24	6	
				26	6.5	
7				28	7	
				30	7.5	
8				32	8	
9					9	
10					10	

Monitoring Well Construction & Water Level (m)



FISHER ENVIRONMENTAL LTD.

Log of Borehole: BH3
473, 505 Hensell Cr.
Mississauga, Ontario

Sheet: 3 of 6
Project #: 19-9266
G.S.Elevation:

Location: 9m W of EBL, 4.5m S of SBL of # 473

Drill Method: Diedrich 50
Drilling Date: 14 February 2019

Sample Method: Split Spoon
Dates: Water Level N/A

Borehole Diameter: 6"
Water Level:
Logged By: AH
Checked By: TB

DEPTH (meters)	Sample No.	Blow Counts	H.C.Vapour (ppm)	(feet) DEPTH (meters)	Materials Description	Monitoring Well Construction & Water Level (m)
					ASPHALT 2"	
0–1				0–2	Brown SAND and GRAVEL, dark brown SILTY SAND, trace CLAY, moist	
1–2				2–6	Brown SILTY SAND, trace CLAY, moist, pieces of tree root	
2–3				6–10	Brown SILT, very fine SAND, moist	
3–4				10–14	Brown very fine SAND, moist to wet	
				12	Brown very fine SAND, moist to wet	
4–5				14–16	Brown very fine SAND, moist to wet	
5–6				16–18	Spoon refusal at ~ 16.5 ft Coarse GRAVEL, grey weathered SHALE pieces	
					End of borehole at 5.18m	
6–7				20–22		
7–8				24–26		
8–9				28–30		
9–10				32		

FISHER ENVIRONMENTAL LTD.

Log of Borehole: BH4(MW)
473, 505 Hensell Cr.
Mississauga, Ontario

Sheet: 4 of 6
Project #: 19-9266
G.S.Elevation:

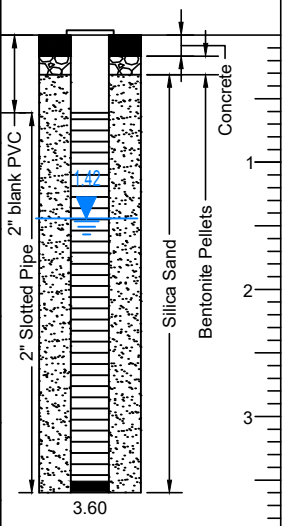
Location: 12m E of WBL, 5m S of SBL of # 473

Drill Method: Diedrich 50
Drilling Date: 14 February 2019

Sample Method: Split Spoon
Dates: Water Level 15 February 2019

Borehole Diameter: 4"
Water Level: 1.42m
Logged By: AH
Checked By: TB

DEPTH (meters)	Sample No.	Blow Counts	H.C.Vapour (ppm)	(feet) DEPTH (meters)	Materials Description	Monitoring Well Construction & Water Level (m)
					ASPHALT 2"	
				2	Black SAND and GRAVEL, brown SAND	
1				4	Brown SILT, very fine SAND, moist	
				6	Brown SILT, very fine SAND, moist	
2				8	Grayish brown very fine SAND, moist to wet	
3				10	Brown SAND, grey weathered SHALE pieces	
				12	Spoon refusal at ~ 11 ft Auger refusal at ~12 ft	
4				14	End of borehole at 3.65m	
				16		
5				18		
				20		
6				22		
7				24		
				26		
8				28		
9				30		
				32		
10						



FISHER ENVIRONMENTAL LTD.

Log of Borehole: BH5
473, 505 Hensell Cr.
Mississauga, Ontario

Sheet: 5 of 6
Project #: 19-9266
G.S.Elevation:

Location: 16m W of WBL of # 473, 6m S of NPL

Drill Method: Diedrich 50
Drilling Date: 14 February 2019

Sample Method: Split Spoon
Dates: Water Level N/A

Borehole Diameter: 4"
Water Level:
Logged By: AH
Checked By: TB

DEPTH (meters)	Sample No.	Blow Counts	H.C.Vapour (ppm)	(feet) DEPTH (meters)	Materials Description	Monitoring Well Construction & Water Level (m)
					GRASS	
				2	Top soil, black SAND and GRAVEL, SILT	
1				4	Black organic SILT to 4ft, moist, brown SAND to 5ft	1
				6	Brown SAND, some GRAVEL, moist	
2				8	Brown to grey very fine SAND, moist	2
				10	Spoon refusal at ~ 10.5 ft Grey weathered SHALE pieces	
3				12	End of borehole at 3.65m	3
				14		
4				16		4
				18		
5				20		5
				22		
6				24		6
				26		
7				28		7
				30		
8				32		8
9						9
10						10

FISHER ENVIRONMENTAL LTD.

Log of Borehole: BH6(MW)
473, 505 Hensell Cr.
Mississauga, Ontario

Sheet: 6 of 6
Project #: 19-9266
G.S.Elevation:

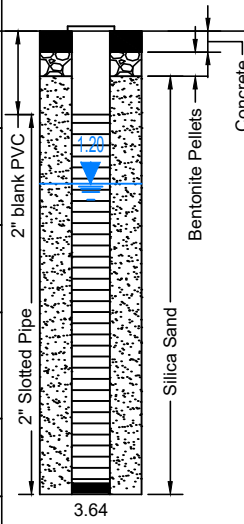
Location: 42m W of WBL of #473, 3m N of SFL

Drill Method: Diedrich 50
Drilling Date: 14 February 2019

Sample Method: Split Spoon
Dates: Water Level 15 February 2019

Borehole Diameter: 6"
Water Level: 1.20m
Logged By: AH
Checked By: TB

DEPTH (meters)	Sample No.	Blow Counts	H.C.Vapour (ppm)	(feet) DEPTH (meters)	Materials Description	Monitoring Well Construction & Water Level (m)
					GRASS	
0–1				0–2	Top soil, black SAND and GRAVEL, SILT, pieces of red brick	
1–2				4–6	Rustic brown SAND, moist	
2–3				6–10	Rustic brown to brown SAND, moist to wet	
3–4				8–12	Brown very fine SAND/SILT, dry	
3–4				10–12	Spoon refusal at ~ 10.5 ft , Grey weathered SHALE pieces, dry	
4				12	End of borehole at 3.65m	



APPENDIX C – CERTIFICATES OF ANALYSIS

FISHER ENVIRONMENTAL LABORATORIES

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FAX: 905 475-7718
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Client: DeMan Construction Corp.
Address: 776 Dundas St E, Suite 201
Mississauga, ON
L4Y 2B6
Tel: 905-277-0363
Email:
Attn.: Mr. Peter DeMan

F.E. Job #: 19-1957
Project Name: Phase II ESA
Project ID: FE-19-9266
Date Sampled: 14, 15-Feb-19
Date Received: 15-Feb-19
Date Reported: 27-Feb-19
Location: 473 & 505 Hensall Circle
Mississauga, ON

Certificate of Analysis

Analyses	Matrix	Quantity	Date Extracted	Date Analyzed	Lab SOP	Method Reference
Metals	Soil	6	19-Feb-19	19-Feb-19	Metals F-18	SM 3125-B
VOCs	Soil	2	15-Feb-19	21-Feb-19	VOCs F-14	SW-846, 8260C
PHCs (F1 & BTEX)	Soil	6	15-Feb-19	21-Feb-19	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Soil	6	19-Feb-19	21-Feb-19	PHCs F-7	CCME CWS
PAHs	Soil	2	20-Feb-19	20-Feb-19	PAHs F-4	SM 6410-B
pH	Soil	2	22-Feb-19	22-Feb-19	pH-EC-SAR F-16	SW-846, 9045D
Grain Size	Soil	1	N/A	22-Feb-19	Grain Size F-28	ASTM D6913-04
Moisture Content	Soil	6	N/A	21-Feb-19	Support Procedures F-99	Carter (1993)
Metals	Water	5	N/A	25-Feb-19	Metals F-1	SM 3120-B
VOCs	Water	5	N/A	19-Feb-19	VOCs F-6	SM 6200-B
PHCs (F1 & BTEX)	Water	5	N/A	19-Feb-19	PHCs F-7	CCME CWS
PHCs (F2 - F4)	Water	5	19-Feb-19	21-Feb-19	PHCs F-7	CCME CWS
PAHs	Water	1	19-Feb-19	19-Feb-19	PAHs F-4	SM 6410B

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

Authorized by:

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

Results related only to the items tested

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-1*** BH1 1.50-2.10m	***19-1957-2*** BH2 0.90-1.50m	***19-1957-3*** BH3 2.40-3.00m	***19-1957-4*** BH4 0.15-0.75m	***19-1957-5*** BH5 0.00-0.60m	**Soil Standards** [1]
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1	<1	<1	5.4	32	(50) 40
Arsenic	1.2	3.3	<1	8.4	12	18
Barium	21	41	16	461	**672**	670
Beryllium	<2	<2	<2	<2	<2	(10) 8
Boron	<5	6.3	<5	14	24	120
Cadmium	<1	<1	<1	**3.4**	**9.1**	1.9
Chromium	<5	6.3	6.1	13	40	160
Cobalt	2.0	2.0	2.5	4.0	5.5	(100) 80
Copper	7.0	19	6.7	32	90	(300) 230
Lead	<10	10	<10	**205**	**424**	120
Molybdenum	<2	<2	<2	<2	2.1	40
Nickel	<5	5.3	<5	11	18	(340) 270
Selenium	<1	<1	<1	1.4	3.1	5.5
Silver	<0.5	<0.5	<0.5	<0.5	<0.5	(50) 40
Thallium	<1	<1	<1	<1	<1	3.3
Uranium	<1	<1	2.0	<1	1.0	33
Vanadium	<10	<10	<10	17	31	86
Zinc	<30	53	<30	**5531**	**7172**	340

< result obtained was below RL (Reporting Limit).

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

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-6*** BH6 1.50-2.10m					**Soil Standards** [1]
	Concentration (µg/g)					
Metals in Soil						
Antimony	<1					(50) 40
Arsenic	1.0					18
Barium	17					670
Beryllium	<2					(10) 8
Boron	<5					120
Cadmium	<1					1.9
Chromium	5.9					160
Cobalt	2.6					(100) 80
Copper	<5					(300) 230
Lead	<10					120
Molybdenum	<2					40
Nickel	<5					(340) 270
Selenium	<1					5.5
Silver	<0.5					(50) 40
Thallium	<1					3.3
Uranium	<1					33
Vanadium	13					86
Zinc	44					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	97	80-120	91	70-130
Arsenic	<1	1	101	80-120	97	70-130
Barium	<5	5	109	80-120	113	70-130
Beryllium	<2	2	99	80-120	94	70-130
Boron	<5	5	84	80-120	72	70-130
Cadmium	<1	1	106	80-120	95	70-130
Chromium	<5	5	104	80-120	88	70-130
Cobalt	<2	2	112	80-120	96	70-130
Copper	<5	5	112	80-120	118	70-130
Lead	<10	10	103	80-120	97	70-130
Molybdenum	<2	2	101	80-120	81	70-130
Nickel	<5	5	111	80-120	88	70-130
Selenium	<1	1	108	80-120	77	70-130
Silver	<0.5	0.5	106	80-120	87	70-130
Thallium	<1	1	104	80-120	103	70-130
Uranium	<1	1	102	80-120	104	70-130
Vanadium	<10	10	107	80-120	89	70-130
Zinc	<30	30	118	80-120	97	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	0.0	0-30				
Arsenic	0.4	0-30				
Barium	5.5	0-30				
Beryllium	0.0	0-30				
Boron	23	0-30				
Cadmium	0.0	0-30				
Chromium	2.6	0-30				
Cobalt	1.4	0-30				
Copper	6.8	0-30				
Lead	0.0	0-30				
Molybdenum	0.0	0-30				
Nickel	1.2	0-30				
Selenium	0.0	0-30				
Silver	0.0	0-30				
Thallium	0.0	0-30				
Uranium	0.0	0-30				
Vanadium	0.4	0-30				
Zinc	0.2	0-30				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-1*** BH1 1.50-2.10m	***19-1957-3*** BH3 2.40-3.00m				**Soil Standards [1]**
	Concentration (µg/g)					
VOCs in Soil						
Acetone	<0.5	<0.5				(28) 16
Benzene	<0.02	<0.02				(0.4) 0.32
Bromodichloromethane	<0.05	<0.05				18
Bromoform	<0.05	<0.05				(1.7) 0.61
Bromomethane	<0.05	<0.05				0.05
Carbon Tetrachloride	<0.05	<0.05				(1.5) 0.21
Chlorobenzene	<0.05	<0.05				(2.7) 2.4
Chloroform	<0.05	<0.05				(0.18) 0.47
Dibromochloromethane	<0.05	<0.05				13
1,2-Dichlorobenzene	<0.05	<0.05				(8.5) 6.8
1,3-Dichlorobenzene	<0.05	<0.05				(12) 9.6
1,4-Dichlorobenzene	<0.05	<0.05				(0.84) 0.2
Dichlordifluoromethane	<0.05	<0.05				(25) 16
1,1-Dichloroethane	<0.05	<0.05				(21) 17
1,2-Dichloroethane	<0.05	<0.05				0.05
1,1-Dichloroethylene	<0.05	<0.05				(0.48) 0.064
c-1,2-Dichloroethylene	<0.05	<0.05				(37) 55
t-1,2-Dichloroethylene	<0.05	<0.05				(9.3) 1.3
1,2-Dichloropropane	<0.05	<0.05				(0.68) 0.16
1,3-Dichloropropene (cis-+trans-)	<0.05	<0.05				(0.21) 0.18
Ethylbenzene	<0.05	<0.05				(19) 9.5
Ethylene Dibromide	<0.05	<0.05				0.05
Hexane (n)	<0.05	<0.05				(88) 46
Methyl Ethyl Ketone	<0.5	<0.5				(88) 70
Methyl Isobutyl Ketone	<0.5	<0.5				(210) 31
Methyl tert-butyl Ether	<0.05	<0.05				(3.2) 11
Methylene Chloride	<0.05	<0.05				(2) 1.6
Styrene	<0.05	<0.05				(43) 34
1,1,1,2-Tetrachloroethane	<0.05	<0.05				(0.11) 0.087
1,1,2,2-Tetrachloroethane	<0.05	<0.05				(0.094) 0.05
Tetrachloroethylene	<0.05	<0.05				(21) 4.5
Toluene	<0.2	<0.2				(78) 68
1,1,1-Trichloroethane	<0.05	<0.05				(12) 6.1
1,1,2-Trichloroethane	<0.05	<0.05				(0.11) 0.05
Trichloroethylene	<0.05	<0.05				(0.61) 0.91
Trichlorofluoromethane	<0.05	<0.05				(5.8) 4
Vinyl Chloride	<0.02	<0.02				(0.25) 0.032
Xylenes	<0.05	<0.05				(30) 26
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	137	126				50-140
Toluene-d8	135	104				50-140
4-Bromofluorobenzene	135	135				50-140

< result obtained was below RL (Reporting Limit).

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

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

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

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/g)		Recovery (%)		Recovery (%)	
VOCs in Soil						
Acetone	<0.5	0.5	100	50-140	100	50-140
Benzene	<0.02	0.02	86	60-130	82	50-140
Bromodichloromethane	<0.05	0.05	83	50-140	76	50-140
Bromoform	<0.05	0.05	97	60-130	80	50-140
Bromomethane	<0.05	0.05	100	50-140	100	50-140
Carbon Tetrachloride	<0.05	0.05	100	60-130	100	50-140
Chlorobenzene	<0.05	0.05	100	60-130	100	50-140
Chloroform	<0.05	0.05	114	60-130	88	50-140
Dibromochloromethane	<0.05	0.05	116	60-130	72	50-140
1,2-Dichlorobenzene	<0.05	0.05	100	60-130	100	50-140
1,3-Dichlorobenzene	<0.05	0.05	100	60-130	100	50-140
1,4-Dichlorobenzene	<0.05	0.05	100	60-130	100	50-140
Dichlorodifluoromethane	<0.05	0.05	100	50-140	100	50-140
1,1-Dichloroethane	<0.05	0.05	100	60-130	100	50-140
1,2-Dichloroethane	<0.05	0.05	100	60-130	100	50-140
1,1-Dichloroethylene	<0.05	0.05	100	60-130	100	50-140
c-1,2-Dichloroethylene	<0.05	0.05	100	60-130	100	50-140
t-1,2-Dichloroethylene	<0.05	0.05	100	60-130	100	50-140
1,2-Dichloropropane	<0.05	0.05	100	60-130	100	50-140
1,3-Dichloropropene (cis-+trans-)	<0.05	0.05	100	60-130	100	50-140
Ethylbenzene	<0.05	0.05	119	60-130	75	50-140
Ethylene Dibromide	<0.05	0.05	100	60-130	100	50-140
Hexane (n)	<0.05	0.05	100	60-130	100	50-140
Methyl Ethyl Ketone	<0.5	0.5	100	50-140	100	50-140
Methyl Isobutyl Ketone	<0.5	0.5	100	50-140	100	50-140
Methyl tert-butyl Ether	<0.05	0.05	100	60-130	100	50-140
Methylene Chloride	<0.05	0.05	94	60-130	139	50-140
Styrene	<0.05	0.05	100	60-130	100	50-140
1,1,1,2-Tetrachloroethane	<0.05	0.05	100	60-130	100	50-140
1,1,2,2-Tetrachloroethane	<0.05	0.05	100	60-130	100	50-140
Tetrachloroethylene	<0.05	0.05	81	60-130	72	50-140
Toluene	<0.2	0.2	85	60-130	79	50-140
1,1,1-Trichloroethane	<0.05	0.05	108	60-130	89	50-140
1,1,2-Trichloroethane	<0.05	0.05	100	60-130	100	50-140
Trichloroethylene	<0.05	0.05	90	60-130	82	50-140
Trichlorofluoromethane	<0.05	0.05	100	50-140	100	50-140
Vinyl Chloride	<0.02	0.02	100	50-140	100	50-140
Xylenes	<0.05	0.05	108	60-130	78	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
1,2-Dichloroethane-d4	96	60-140	128	60-140	97	60-140
Toluene-d8	77	60-140	102	60-140	70	60-140
4-Bromofluorobenzene	65	60-140	132	60-140	70	60-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
VOCs in Soil						
Acetone	0.0	0-50				
Benzene	0.0	0-50				
Bromodichloromethane	0.0	0-50				
Bromoform	0.0	0-50				
Bromomethane	0.0	0-50				
Carbon Tetrachloride	0.0	0-50				
Chlorobenzene	0.0	0-50				
Chloroform	0.0	0-50				
Dibromochloromethane	0.0	0-50				
1,2-Dichlorobenzene	0.0	0-50				
1,3-Dichlorobenzene	0.0	0-50				
1,4-Dichlorobenzene	0.0	0-50				
Dichlorodifluoromethane	0.0	0-50				
1,1-Dichloroethane	0.0	0-50				
1,2-Dichloroethane	0.0	0-50				
1,1-Dichloroethylene	0.0	0-50				
c-1,2-Dichloroethylene	0.0	0-50				
t-1,2-Dichloroethylene	0.0	0-50				
1,2-Dichloropropane	0.0	0-50				
1,3-Dichloropropene (cis-+trans-)	0.0	0-50				
Ethylbenzene	0.0	0-50				
Ethylene Dibromide	0.0	0-50				
Hexane (n)	0.0	0-50				
Methyl Ethyl Ketone	0.0	0-50				
Methyl Isobutyl Ketone	0.0	0-50				
Methyl tert-butyl Ether	0.0	0-50				
Methylene Chloride	0.0	0-50				
Styrene	0.0	0-50				
1,1,1,2-Tetrachloroethane	0.0	0-50				
1,1,2,2-Tetrachloroethane	0.0	0-50				
Tetrachloroethylene	0.0	0-50				
Toluene	6	0-50				
1,1,1-Trichloroethane	0.0	0-50				
1,1,2-Trichloroethane	0.0	0-50				
Trichloroethylene	0.0	0-50				
Trichlorofluoromethane	0.0	0-50				
Vinyl Chloride	0.0	0-50				
Xylenes	0.0	0-50				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
1,2-Dichloroethane-d4	121	60-140				
Toluene-d8	100	60-140				
4-Bromofluorobenzene	123	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-1*** BH1 1.50-2.10m	***19-1957-2*** BH2 0.90-1.50m	***19-1957-3*** BH3 2.40-3.00m	***19-1957-4*** BH4 0.15-0.75m	***19-1957-5*** BH5 0.00-0.60m	**Soil Standards [1]**
	Concentration (µg/g)					
BTEX in Soil						
Benzene	<0.02	<0.02	<0.02	<0.02	<0.02	(0.4) 0.32
Toluene	<0.2	<0.2	<0.2	<0.2	<0.2	(78) 68
Ethylbenzene	<0.05	<0.05	<0.05	<0.05	<0.05	(19) 9.5
Xylenes	<0.05	<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	<10	(65) 55
F2 (C_{10} - C_{16})	<10	<10	<10	<10	<10	(250) 230
F3 (C_{16} - C_{34})	<50	270	<50	299	450	(2,500) 1,700
F4 (C_{34}-C_{50})	<50	98	<50	142	194	(6,600) 3,300
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes	Yes	
Surrogate Recovery (%)						
1,2-Dichloroethane-d4	137	103	126	137	137	60-140
Toluene-d8	135	81	104	113	137	60-140
4-Bromofluorobenzene	135	117	135	138	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 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, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-6*** BH6 1.50-2.10m					**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 (%)						
1,2-Dichloroethane-d4	115					60-140
Toluene-d8	95					60-140
4-Bromofluorobenzene	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	86	60-130	82	50-140
Toluene	<0.2	0.2	85	60-130	79	50-140
Ethylbenzene	<0.05	0.05	119	60-130	75	50-140
Xylenes	<0.05	0.05	108	60-130	78	50-140
PHCs (F_1-F_4) in Soil						
$F1_{-BTEX}$ (C_6 - C_{10})	<10	10	85	80-120	79	60-140
F2 (C_{10} - C_{16})	<10	10	97	80-120	111	60-140
F3 (C_{16} - C_{34})	<50	50	103	80-120	97	60-140
F4 (C_{34}-C_{50})	<50	50	107	80-120	69	60-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
1,2-Dichloroethane-d4	96	60-140	128	60-140	97	60-140
Toluene-d8	77	60-140	102	60-140	70	60-140
4-Bromofluorobenzene	65	60-140	132	60-140	70	60-140

LEGEND:

RL - Reporting Limit

LCS - Laboratory Control Sample

MS - Matrix Spike

AR - Acceptable Range

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
BTEX in Soil						
Benzene	0.0	0-50				
Toluene	6	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})	18	0-30				
F2 (C_{10} - C_{16})	0.0	0-30				
F3 (C_{16} - C_{34})	15	0-30				
F4 (C_{34}-C_{50})	22	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
1,2-Dichloroethane-d4	121	60-140				
Toluene-d8	100	60-140				
4-Bromofluorobenzene	123	60-140				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-4*** BH4 0.15-0.75m	***19-1957-5*** BH5 0.00-0.60m				**Soil Standards [1]**
	Concentration (µg/g)					
PAHs in Soil						
Naphthalene	0.85	0.12				(28) 9.6
2-Methylnaphthalene	1.2	0.26				(85) 76
1-Methylnaphthalene	0.90	0.25				
Acenaphthylene	<0.05	0.05				(0.17) 0.15
Acenaphthene	1.8	0.34				96
Fluorene	1.9	0.32				(69) 62
Phenanthrene	**27**	4.2				(16) 12
Anthracene	**5.5**	**0.87**				(0.74) 0.67
Fluoranthene	**33**	6.4				9.6
Pyrene	23	5.1				96
Benzo [a] anthracene	**6.3**	**1.6**				0.96
Chrysene	7.1	1.8				9.6
Benzo [b] fluoranthene	**9.9**	**2.8**				0.96
Benzo [k] fluoranthene	**7.6**	**2.1**				0.96
Benzo [a] pyrene	**8.8**	**2.6**				0.3
Indeno [1,2,3-cd] pyrene	**6.9**	**1.6**				(0.95) 0.76
Dibenzo [a,h] anthracene	**1.6**	**0.75**				0.1
Benzo [g,h,i] perylene	5.4	1.4				9.6
Surrogate Recovery (%)						
Naphthalene-d8	105	73				50-140
Phenanthrene-d10	117	101				50-140
Chrysene-d12	122	112				50-140

< result obtained was below RL (Reporting Limit).

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**); ( ) 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	74	50-140	77	50-140
2-Methylnaphthalene	<0.05	0.05	99	50-140	86	50-140
1-Methylnaphthalene	<0.05	0.05	82	50-140	83	50-140
Acenaphthylene	<0.05	0.05	106	50-140	102	50-140
Acenaphthene	<0.05	0.05	100	50-140	102	50-140
Fluorene	<0.05	0.05	120	50-140	138	50-140
Phenanthrene	<0.05	0.05	104	50-140	136	50-140
Anthracene	<0.05	0.05	95	50-140	129	50-140
Fluoranthene	<0.05	0.05	120	50-140	132	50-140
Pyrene	<0.05	0.05	109	50-140	138	50-140
Benzo [a] anthracene	<0.05	0.05	86	50-140	110	50-140
Chrysene	<0.05	0.05	99	50-140	114	50-140
Benzo [b] fluoranthene	<0.05	0.05	121	50-140	114	50-140
Benzo [k] fluoranthene	<0.05	0.05	93	50-140	88	50-140
Benzo [a] pyrene	<0.05	0.05	97	50-140	92	50-140
Indeno [1,2,3-cd] pyrene	<0.1	0.1	108	50-140	95	50-140
Dibenzo [a,h] anthracene	<0.1	0.1	113	50-140	90	50-140
Benzo [g,h,i] perylene	<0.1	0.1	107	50-140	103	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	117	50-140	130	50-140	128	50-140
Phenanthrene-d10	98	50-140	106	50-140	138	50-140
Chrysene-d12	123	50-140	109	50-140	111	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	140	50-140				
Phenanthrene-d10	99	50-140				
Chrysene-d12	108	50-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-2*** BH2 0.90-1.50m	***19-1957-3*** BH3 2.40-3.00m				**Soil Standards** *
pH *(pH unit)*	7.40	7.42				(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)*	6.99	7.00-7.40	0.10	<0.3		

LEGEND:
LCS - Laboratory Control Sample
AR - Acceptable Range

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-6*** BH6 1.50-2.10m					
Grain Size in Soil						
Total Sample, g	20.5					
Coarse Fraction >75µm, g	8.7					
Fine Fraction <75µm, g	11.8					
Coarse Fraction >75µm, %	42.3					
Fine Fraction <75µm, %	57.7					
Comments	Medium to fine textured					

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-1*** BH1 1.50-2.10m	***19-1957-2*** BH2 0.90-1.50m	***19-1957-3*** BH3 2.40-3.00m	***19-1957-4*** BH4 0.15-0.75m	***19-1957-5*** BH5 0.00-0.60m	***19-1957-6*** BH6 1.50-2.10m
Moisture Content (%)	13	19	18	17	25	18

QA/QC Report

Parameter	**Blank**	**RL**	**LCS**	**AR**	**Duplicate**	**AR**
			Recovery (%)		**RPD (%)**	
Moisture Content (%)	<0.1	0.1	99	70-130	1.0	0-20

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, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-7*** BH2(MW)	***19-1957-8*** BH2(MW) Duplicate	***19-1957-9*** BH4(MW)	***19-1957-10*** BH6(MW)	***19-1957-11*** Blank	**Ground Water Standards** [2]
	Concentration (µg/L)					
Metals in Water						
Antimony	<0.5	<0.5	<0.5	0.67	<0.5	20,000
Arsenic	14	15	10	14	<1	1,900
Barium	184	182	214	179	<2	29,000
Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	67
Boron	584	607	648	710	<10	45,000
Cadmium	<0.5	0.58	0.58	0.68	<0.5	2.7
Chromium	37	36	28	36	<10	810
Cobalt	3.8	3.8	<1	1.4	<1	66
Copper	<5	<5	<5	<5	<5	87
Lead	<1	<1	<1	<1	<1	25
Molybdenum	2.3	2.1	2.0	4.1	<0.5	9,200
Nickel	7.5	7.6	3.6	5.5	<1	490
Selenium	<5	<5	<5	<5	<5	63
Silver	<0.3	<0.3	<0.3	<0.3	<0.3	1.5
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	510
Uranium	4.3	4.6	<2	<2	<2	420
Vanadium	9.6	9.5	7.3	9.3	<0.5	250
Zinc	<5	<5	5.9	<5	<5	1,100

< result obtained was below RL (Reporting Limit).

[2] 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.

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/L)		Recovery (%)		Recovery (%)	
Metals in Water						
Antimony	<0.5	0.5	92	80-120	125	70-130
Arsenic	<1	1	96	80-120	89	70-130
Barium	<2	2	97	80-120	96	70-130
Beryllium	<0.5	0.5	111	80-120	119	70-130
Boron	<10	10	100	80-120	105	70-130
Cadmium	<0.5	0.5	99	80-120	121	70-130
Chromium	<10	10	115	80-120	112	70-130
Cobalt	<1	1	107	80-120	129	70-130
Copper	<5	5	100	80-120	109	70-130
Lead	<1	1	97	80-120	116	70-130
Molybdenum	<0.5	0.5	95	80-120	124	70-130
Nickel	<1	1	106	80-120	125	70-130
Selenium	<5	5	93	80-120	90	70-130
Silver	<0.3	0.3	100	80-120	87	70-130
Thallium	<0.5	0.5	97	80-120	120	70-130
Uranium	<2	2	92	80-120	116	70-130
Vanadium	<0.5	0.5	114	80-120	121	70-130
Zinc	<5	5	106	80-120	76	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 Water						
Antimony	0.0	0-20				
Arsenic	0.0	0-20				
Barium	18	0-20				
Beryllium	0.0	0-20				
Boron	18	0-20				
Cadmium	0.0	0-20				
Chromium	0.0	0-20				
Cobalt	0.0	0-20				
Copper	0.0	0-20				
Lead	0.0	0-20				
Molybdenum	0.0	0-20				
Nickel	19	0-20				
Selenium	0.0	0-20				
Silver	0.0	0-20				
Thallium	0.0	0-20				
Uranium	0.0	0-20				
Vanadium	0.0	0-20				
Zinc	9.1	0-20				

LEGEND:
AR - Acceptable Range
RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-7*** BH2(MW)	***19-1957-8*** BH2(MW) Duplicate	***19-1957-9*** BH4(MW)	***19-1957-10*** BH6(MW)	***19-1957-11*** Blank	**Ground Water Standards [2]**
	Concentration (µ g/L)					
VOCs in Water						
Acetone	<30	<30	<30	<30	<30	130000
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	(430) 44
Bromodichloromethane	<2	<2	<2	<2	<2	85000
Bromoform	<5	<5	<5	<5	<5	(770) 380
Bromomethane	<0.5	<0.5	<0.5	<0.5	<0.5	(56) 5.6
Carbon Tetrachloride	<0.2	<0.2	<0.2	<0.2	<0.2	(8.4) 0.79
Chlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	630
Chloroform	<1	<1	<1	<1	<1	(22) 2.4
Dibromochloromethane	<2	<2	<2	<2	<2	82000
1,2-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	(9600) 4600
1,3-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	9600
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	(67) 8
Dichlordifluoromethane	<2	<2	<2	<2	<2	4400
1,1-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	(3100) 320
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	(12) 1.6
1,1-Dichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	(17) 1.6
c-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	(17) 1.6
t-1,2-Dichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	(17) 1.6
1,2-Dichloropropane	<0.5	<0.5	<0.5	<0.5	<0.5	(140) 16
1,3-Dichloropropene (cis-+trans-)	<0.5	<0.5	<0.5	<0.5	<0.5	(45) 5.2
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	2300
Ethylene Dibromide	<0.2	<0.2	<0.2	<0.2	<0.2	(0.83) 0.25
Hexane (n)	<5	<5	<5	<5	<5	(520) 51
Methyl Ethyl Ketone	<20	<20	<20	<20	<20	(1500000)470000
Methyl Isobutyl Ketone	<20	<20	<20	<20	<20	(580000)140000
Methyl tert-butyl Ether	<2	<2	<2	<2	<2	(1400) 190
Methylene Chloride	<5	<5	<5	<5	<5	(5500) 610
Styrene	<0.5	<0.5	<0.5	<0.5	<0.5	(9100) 1300
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	(28) 3.3
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	(15) 3.2
Tetrachloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	(17) 1.6
Toluene	<0.5	<0.5	<0.5	2.7	<0.5	18000
1,1,1-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	(6700) 640
1,1,2-Trichloroethane	<0.5	<0.5	<0.5	<0.5	<0.5	(30) 4.7
Trichloroethylene	<0.5	<0.5	<0.5	<0.5	<0.5	(17) 1.6
Trichlorofluoromethane	<5	<5	<5	<5	<5	2500
Vinyl Chloride	<0.5	<0.5	<0.5	<0.5	<0.5	(1.7) 0.5
Xylenes	<0.5	<0.5	<0.5	<0.5	<0.5	4200
Surrogate Recovery (%)						
Bromochloromethane	83	86	104	112	122	60-140
1,4-Difluorobenzene	89	90	109	111	125	60-140
1,4-Dichlorobutane	83	83	99	118	114	60-140

< result obtained was below RL (Reporting Limit).

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

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

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

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(ug/L)		Recovery (%)		Recovery (%)	
VOCs in Water						
Acetone	<30	<30	78	50-140	116	50-140
Benzene	<0.5	<0.5	103	60-130	104	50-140
Bromodichloromethane	<2	<2	100	50-140	112	50-140
Bromoform	<5	<5	107	60-130	100	50-140
Bromomethane	<0.5	<0.5	92	50-140	104	50-140
Carbon Tetrachloride	<0.2	<0.2	92	60-130	83	50-140
Chlorobenzene	<0.5	<0.5	112	60-130	73	50-140
Chloroform	<1	<1	100	60-130	97	50-140
Dibromochloromethane	<2	<2	110	60-130	96	50-140
1,2-Dichlorobenzene	<0.5	<0.5	104	60-130	67	50-140
1,3-Dichlorobenzene	<0.5	<0.5	79	60-130	84	50-140
1,4-Dichlorobenzene	<0.5	<0.5	98	60-130	88	50-140
Dichlordifluoromethane	<2	<2	94	50-140	87	50-140
1,1-Dichloroethane	<0.5	<0.5	103	60-130	68	50-140
1,2-Dichloroethane	<0.5	<0.5	97	60-130	103	50-140
1,1-Dichloroethylene	<0.5	<0.5	94	60-130	124	50-140
c-1,2-Dichloroethylene	<0.5	<0.5	91	60-130	119	50-140
t-1,2-Dichloroethylene	<0.5	<0.5	77	60-130	81	50-140
1,2-Dichloropropane	<0.5	<0.5	108	60-130	82	50-140
1,3-Dichloropropene (cis-+trans-)	<0.5	<0.5	109	60-130	68	50-140
Ethylbenzene	<0.5	<0.5	101	60-130	86	50-140
Ethylene Dibromide	<0.2	<0.2	76	60-130	113	50-140
Hexane (n)	<5	<5	107	60-130	73	50-140
Methyl Ethyl Ketone	<20	<20	78	50-140	122	50-140
Methyl Isobutyl Ketone	<20	<20	104	50-140	123	50-140
Methyl tert-butyl Ether	<2	<2	85	60-130	127	50-140
Methylene Chloride	<5	<5	102	60-130	85	50-140
Styrene	<0.5	<0.5	114	60-130	114	50-140
1,1,1,2-Tetrachloroethane	<0.5	<0.5	108	60-130	118	50-140
1,1,2,2-Tetrachloroethane	<0.5	<0.5	93	60-130	92	50-140
Tetrachloroethylene	<0.5	<0.5	110	60-130	98	50-140
Toluene	<0.5	<0.5	103	60-130	114	50-140
1,1,1-Trichloroethane	<0.5	<0.5	115	60-130	93	50-140
1,1,2-Trichloroethane	<0.5	<0.5	101	60-130	82	50-140
Trichloroethylene	<0.5	<0.5	99	60-130	95	50-140
Trichlorofluoromethane	<5	<5	111	50-140	119	50-140
Vinyl Chloride	<0.5	<0.5	81	50-140	72	50-140
Xylenes	<0.5	<0.5	107	60-130	67	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Bromocholoromethane	81	60-140	122	60-140	74	60-140
1,4-Difluorobenzene	87	60-140	107	60-140	73	60-140
1,4-Dichlorobutane	96	60-140	98	60-140	80	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	1.0	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				
Dichlordifluoromethane	0.0	0-30				
1,1-Dichloroethane	0.0	0-30				
1,2-Dichloroethane	0.0	0-30				
1,1-Dichloroethylene	0.0	0-30				
c-1,2-Dichloroethylene	0.0	0-30				
t-1,2-Dichloroethylene	0.0	0-30				
1,2-Dichloropropane	0.0	0-30				
1,3-Dichloropropene (cis-+trans-)	0.0	0-30				
Ethylbenzene	2.0	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	22	0-30				
1,1,1-Trichloroethane	0.0	0-30				
1,1,2-Trichloroethane	0.0	0-30				
Trichloroethylene	0.0	0-30				
Trichlorofluoromethane	0.0	0-30				
Vinyl Chloride	0.0	0-30				
Xylenes	1.0	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Bromocholoromethane	136	60-140				
1,4-Difluorobenzene	123	60-140				
1,4-Dichlorobutane	133	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-7*** BH2(MW)	***19-1957-8*** BH2(MW) Duplicate	***19-1957-9*** BH4(MW)	***19-1957-10*** BH6(MW)	***19-1957-11*** Blank	**Ground Water Standards** [2]
	Concentration (µ g/L)					
BTEX in Water						
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	(430) 44
Toluene	<0.5	<0.5	<0.5	2.7	<0.5	18000
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	2300
Xylenes	<0.5	<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	<100	<100	-	500
F4 (>C_{34})	<100	<100	<100	<100	-	500
Chromatogram descends to baseline by nC50 ? (Yes/No)	Yes	Yes	Yes	Yes	-	
Surrogate Recovery (%)						
Bromochloromethane	83	86	104	112	122	60-140
1,4-Difluorobenzene	89	90	109	111	125	60-140
1,4-Dichlorobutane	83	83	99	118	114	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).

Bold: Result exceeds limit noted in Ground Water Standards.

[2] 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	<0.5	0.5	103	60-130	104	50-140
Toluene	<0.5	0.5	103	60-130	114	50-140
Ethylbenzene	<0.5	0.5	101	60-130	86	50-140
Xylenes	<0.5	0.5	107	60-130	101	50-140
PHC (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	<25	25	103	60-140	74	60-140
F2 (C_{10} - C_{16})	<100	100	117	60-140	111	60-140
F3 (C_{16} - C_{34})	<100	100	118	60-140	97	60-140
F4 (>C_{34})	<100	100	102	60-140	69	60-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Bromochloromethane	102	60-140	102	60-140	83	60-140
1,4-Difluorobenzene	95	60-140	92	60-140	78	60-140
1,4-Dichlorobutane	103	60-140	100	60-140	82	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	1.0	0-30				
Toluene	22	0-30				
Ethylbenzene	2.0	0-30				
Xylenes	1.0	0-30				
PHC (F1-F4) in Water						
$F1_{-BTEX}$ (C_6 - C_{10})	18	0-30				
F2 (C_{10} - C_{16})	0.0	0-30				
F3 (C_{16} - C_{34})	15	0-30				
F4 (>C_{34})	22	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Bromochloromethane	136	60-140				
1,4-Difluorobenzene	123	60-140				
1,4-Dichlorobutane	133	60-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference

Certificate of Analysis

Analysis Requested:	Metals, VOCs, PHCs, PAHs, pH, Grain Size
Sample Description:	6 Soil and 5 Water Samples

Parameter	***19-1957-7*** BH2(MW)					**Ground Water Standards** [2]
	Concentration (µg/L)					
PAHs in Water						
Naphthalene	<2					(6400) 1400
2-Methylnaphthalene	<1					1800
1-Methylnaphthalene	<1					
Acenaphthylene	<1					1.8
Acenaphthene	<1					(1700) 600
Fluorene	<0.5					400
Phenanthrene	<0.1					580
Anthracene	<0.1					2.4
Fluoranthene	<0.4					130
Pyrene	<0.2					68
Benzo [a] anthracene	<0.2					4.7
Chrysene	<0.1					1
Benzo [b] fluoranthene	<0.1					0.75
Benzo [k] fluoranthene	<0.1					0.4
Benzo [a] pyrene	<0.01					0.81
Indeno [1,2,3-cd] pyrene	<0.2					0.2
Dibenzo [a,h] anthracene	<0.2					0.52
Benzo [g,h,i] perylene	<0.2					0.2
Surrogate Recovery (%)						
Naphthalene-d8	52					50-140
Phenanthrene-d10	126					50-140
Chrysene-d12	81					50-140

< result obtained was below RL (Reporting Limit).

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

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

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

QA/QC Report

Parameter	Blank	RL	LCS	AR	MS	AR
	(µg/L)		Recovery (%)		Recovery (%)	
PAHs in Water						
Naphthalene	<2	2	51	50-140	59	50-140
2-Methylnaphthalene	<1	1	58	50-140	60	50-140
1-Methylnaphthalene	<1	1	62	50-140	71	50-140
Acenaphthylene	<1	1	51	50-140	56	50-140
Acenaphthene	<1	1	58	50-140	56	50-140
Fluorene	<0.5	0.5	50	50-140	51	50-140
Phenanthrene	<0.1	0.1	62	50-140	55	50-140
Anthracene	<0.1	0.1	66	50-140	55	50-140
Fluoranthene	<0.4	0.4	53	50-140	59	50-140
Pyrene	<0.2	0.2	51	50-140	54	50-140
Benzo [a] anthracene	<0.2	0.2	62	50-140	60	50-140
Chrysene	<0.1	0.1	52	50-140	54	50-140
Benzo [b] fluoranthene	<0.1	0.1	80	50-140	87	50-140
Benzo [k] fluoranthene	<0.1	0.1	80	50-140	87	50-140
Benzo [a] pyrene	<0.01	0.01	72	50-140	85	50-140
Indeno [1,2,3-cd] pyrene	<0.2	0.2	78	50-140	81	50-140
Dibenzo [a,h] anthracene	<0.2	0.2	96	50-140	88	50-140
Benzo [g,h,i] perylene	<0.2	0.2	96	50-140	88	50-140
Surrogates						
Parameter	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**	**Recovery (%)**	**AR**
Naphthalene-d8	60	50-140	68	50-140	71	50-140
Phenanthrene-d10	65	50-140	79	50-140	76	50-140
Chrysene-d12	63	50-140	59	50-140	56	50-140

LEGEND:

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

QA/QC Report

Parameter	Duplicate	AR				
	RPD (%)					
PAHs in Water						
Naphthalene	4.6	0-30				
2-Methylnaphthalene	0.8	0-30				
1-Methylnaphthalene	4.3	0-30				
Acenaphthylene	1.5	0-30				
Acenaphthene	13	0-30				
Fluorene	1.0	0-30				
Phenanthrene	13	0-30				
Anthracene	15	0-30				
Fluoranthene	0.2	0-30				
Pyrene	3.7	0-30				
Benzo [a] anthracene	13	0-30				
Chrysene	13	0-30				
Benzo [b] fluoranthene	0.7	0-30				
Benzo [k] fluoranthene	0.7	0-30				
Benzo [a] pyrene	2.0	0-30				
Indeno [1,2,3-cd] pyrene	2.9	0-30				
Dibenzo [a,h] anthracene	0.7	0-30				
Benzo [g,h,i] perylene	3.3	0-30				
Surrogates						
Parameter	**Recovery (%)**	**AR**				
Naphthalene-d8	83	50-140				
Phenanthrene-d10	84	50-140				
Chrysene-d12	51	50-140				

LEGEND:

AR - Acceptable Range

RPD - Relative Percent Difference