Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1 ROSETTA STREET
GEORGETOWN, ONTARIO

Prepared for: **1 Rosetta Street (Halton Hills) GP Limited**
700 Lawrence Ave. W #375
Toronto, Ontario
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Attention: **Mr. Yaniv Geler**

File No: 1-20-0249-42
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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 EXECUTIVE SUMMARY

1 Rosetta Street (Halton Hills) GP Limited retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Property located at 1 Rosetta Street, Georgetown, Ontario, hereafter referred to as *'the Property'*.

A Phase One Environmental Site Assessment (Phase One ESA) of the Property was conducted as outlined in the document entitled *'Phase One Environmental Site Assessment, 1Rosetta Street, Georgetown, Ontario,'* dated September 29, 2020 and it was noted that the conclusions of the Phase One ESA indicated twenty-two (22) Areas of Potential Environmental Concern (APECs) were present on the Property. The Phase Two ESA was required to investigate the APECs for the Contaminants of Potential Concern (COPCs) that have been identified on the Property.

The Phase Two Property currently consists of an irregular-shaped parcel with a total area of approximately 3.3 acres (1.34 hectares). The Property is currently developed with a one-storey industrial building that has a partial basement, is comprised of several individual units and is surrounded by asphaltic parking lots and roadways. The Property is zoned as Development by the Town of Halton Hills and is considered to be in Industrial Land Use as defined by the Ontario Ministry of the Environment, Conservation and Parks (MECP). The Property is bounded by residential properties, Caroline Street and Rosetta Street to the north; Georgetown Go Station and Railway to the south; Rosetta Street, residential and commercial properties to the east; as well as residential properties and St. Michaels Street and Caroline Street to the west. It is understood that the proposed redevelopment of the site includes demolishing the existing building to facilitate the redevelopment of the site to include two 12-storey and one 6-storey residential buildings resting on a shared two-level underground parking structure.

As the proposed development of the Property will result in a change of Land Use to include a more sensitive Land Use, the MECP will require a Record of Site Condition (RSC) to be filed.

The conclusions of the Phase Two ESA are:

- The applicable Site Condition Standards are the 2011 Ministry of the Environment, Conservation and Parks (MECP) Table 2 Standards for Residential/ Parkland/ Institutional Land Use with Coarse textured soils (MECP Table 2 RPI Coarse Standards).
- In summary, the surface conditions on the Property consisted of asphalt parking lots and roadways. The average ground surface elevation of the Property is approximately 260.0 metres above sea level (masl). In general, four (4) main stratigraphic units were encountered during the investigation as follows:
    1. Earth fill (on average extending to Elev. 258.3 masl) encountered in all boreholes;
    2. Sand to Sand and Gravel (on average extending to Elev. 245.5 masl) encountered in all boreholes;

3. Glacial Till (on average extending to Elev. 246.0 masl) encountered in Boreholes 105, 107 and 110; and,
4. Sandy Silt to Sand and Silt/Silty Sand (extending to full depth of excavation and to Elev. 243.5 masl) encountered in Boreholes 101, 102, 104, and 107 to 110.

- The shallow water table is present at approximately 6.5 m below ground surface (approximately 253.5 masl). As three (3) of the six monitoring wells remained dry, and BH105 was screened in a different stratigraphic layer than BH109 and BH110S, the shallow ground water flow pattern could not be interpreted.
- There were exceedances of the applicable Site Condition Standards noted at BH102, BH107 and BH108 in the fill material, consisting of Metals (Barium and Lead) and Hydride Forming Metals (Arsenic). Exceedances were also noted in the fill material of BH102, BH103, BH107 and BH108, consisting of Polycyclic Aromatic Hydrocarbons (Acenaphthylene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b/j)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene and 2-and 1-methyl Naphthalene). Moreover, there were apparent exceedances of the applicable Site Condition Standards noted in the fill material for electrical conductivity and sodium adsorption ratio at BH101, BH102, BH103, BH105, BH107, BH108 and BH110, which are included for soil management purposes only.
- There were apparent exceedances of the applicable Site Condition Standards noted in the native soil for sodium adsorption ratio at BH102 and BH107, which are attributed to de-icing activities and are included for soil management purposes only.
- There were no Contaminants of Concern associated with the ground water quality on the Property. All of the samples analysed met the MECP Table 2 Coarse Standards with exception of a Chloride apparent exceedance at BH110S, which is attributed with de-icing activities.

The subsurface investigation fully addressed the APECs identified in Terraprobe's Phase One ESA conducted on the Property, with exception of APEC 1, APEC 2, APEC 3, APEC 4, APEC 5, APEC 6, APEC 8, APEC 10, APEC 12 and APEC 21. Moreover, due to soil exceedances of the applicable Site Condition Standards noted in the fill material for samples taken from boreholes BH102, BH103, BH107 and BH108, an RSC cannot be filed at this time. Additional drilling of boreholes/monitoring wells to investigate the APECs that were not fully addressed is recommended, after which, a Remedial Action Plan should be developed in order to remove the impacts on the Property where exceedances of the applicable Site Condition Standards were identified.

2.0 INTRODUCTION

1 Rosetta Street (Halton Hills) GP Limited retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property located at 1 Rosetta Street in Georgetown, Ontario, hereafter referred to as 'the Property'.

A Phase One Environmental Site Assessment (Phase One ESA) of the Property was conducted as outlined in the document entitled *'Phase One Environmental Site Assessment, 1Rosetta Street, Georgetown, Ontario,'* dated September 29, 2020 and it was noted that the conclusions of the Phase One ESA indicated twenty-two (22) Areas of Potential Environmental Concern (APECs) were present on the Property. The Phase Two ESA was required to investigate the APECs for the Contaminants of Potential Concern (COPCs) that have been identified on the Property.

2.1 Site Description

The Property is irregular in shape, with a total area of approximately 3.3 acres (1.34 hectares). The Property is currently developed with a one-storey industrial building that has a partial basement, is comprised of several individual units and is surrounded by asphaltic parking lots and roadways.

The Property is zoned as Development by the Town of Halton Hills and is considered to be in Industrial Property Use as defined by the Ontario Ministry of the Environment, Conservation and Parks (MECP). It is understood that the proposed redevelopment of the site includes demolishing the existing building to facilitate the redevelopment of the site to include two 12-storey and one 6-storey residential buildings resting on a shared two-level underground parking structure.

The general location of the Property is presented on Figure 1. The former and existing features on the Property are shown on Figure 2A. The layout of the Property with respect to the Potentially Contaminating Activities (PCAs) and APECs are presented on Figures 2B & 2C, respectively. A copy of the legal survey is provided in Appendix B.

The Property information is as follows:

Legal Description	Lots 30-32, Plan 37 N of Station Ground; Lots 37-39, Plan 37 W of Rosetta St Lots 3 & 4, Plan 29 S of Caroline St Part Caroline St, Plan 29 Lot 36, Plan 37 E of St. Michael Street Lot 35, Plan 37 N of Station Ground Part Lots 1& 2, Plan 29 NE of St. Michael Street
PIN(s)	25039-0317 (LT)
Assessment Roll Number	2415010002100000000

Municipal Address	1 Rosetta Street, Georgetown Ontario
Zoning	Development
Area	3.3 acres (1.34 hectares)
Zone Northing Easting	587217.00 m E, 4834308.00 m N
Persons, other than Property Owner, who engaged the Qualified Person to conduct the Phase Two ESA	Yaniv Geler yaniv@byronequities.com

2.2 Property Ownership

The ownership information for the Phase Two Property is as follows:

Legal Description	Lots 30-32, Plan 37 N of Station Ground; Lots 37-39, Plan 37 W of Rosetta St Lots 3 & 4, Plan 29 S of Caroline St Part Caroline St, Plan 29 Lot 36, Plan 37 E of St. Michael Street Lot 35, Plan 37 N of Station Ground Part Lots 1& 2, Plan 29 NE of St. Michael Street
PIN(s)	25039-0317 (LT)
Property Owner Information	1 Rosetta Street (Halton Hills) GP Limited 700 Lawrence Ave. W #375 Toronto, Ontario M6A 3B4

2.3 Current and Proposed Future Uses

2.3.1 Current Property Use

The Phase Two Property currently consists of an irregular-shaped land, with a total area of approximately 3.3 acres (1.34 hectares). The Property is currently developed with a one-storey industrial building that has a partial basement, is comprised of several individual units and is surrounded by asphaltic parking lots and roadways. The Property is zoned as Development by the Town of Halton Hills. The Property is bounded by residential properties, Caroline Street and Rosetta Street to the north; Georgetown Go Station and Railway to the south; Rosetta Street, residential and commercial properties to the east; as well as residential properties and St. Michaels Street and Caroline Street to the west. It is understood that the proposed redevelopment of the site includes demolishing the existing buildings to facilitate the redevelopment of the

site to include two 12-storey and one 6-storey residential buildings resting on a shared two-level underground parking structure.

As the proposed development of the Property will result in a change of Property Use to include a more sensitive Property Use, the MECP will require a Record of Site Condition (RSC) to be filed.

2.4 Applicable Site Condition Standards

The applicable soil and ground water Standards for the Property were determined to be those in Table 2 (potable ground water condition) of "*Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*", MECP, April 15, 2011, for Residential/Parkland/Institutional Property Use for Coarse textured soil (Table 2 RPI Coarse Standards). These are considered to be the applicable Standards for the following reasons:

- The intended use for the proposed development on the Property is residential land use.
- Soil pH is within the ranges within which generic criteria other than the Table 1 (Background) Standards may be applied.
- Soil at the Property was found to be coarse textured based on a review of the soil samples collected from the boreholes and the results of soil grain size analyses.
- The Property is not located within 30 m of a surface water body.
- The Property is not located in, adjacent to, or within 30 m of an area of natural significance.
- Bedrock across the Property is found at depths of greater than 2 m.
- The Property is located within the Town of Halton Hills, is within a wellhead protection area, and is located within a highly vulnerable aquifer as identified in the Region's Source Water Protection Planning under the Clean Water Act, 2006. The correspondence regarding the use of potable ground water standards can be found in Appendix D.

2.5 Objectives of Investigation

The general objectives of the investigation included the following:

- To determine the concentration and location of Contaminants of Potential Concern (COPCs) identified in a Phase One ESA for the Property and found through the course of conducting the Phase Two ESA, in soil, sediment, and ground water, as applicable.
- To determine if all COPCs identified in the investigation met their respective generic Site Condition Standards, as applicable.

To ensure that the general objectives of the investigation were met, the Qualified Person ensured the following:

- That the investigation provided sufficient information to provide an understanding of the geological and hydrogeological conditions at the Phase Two Property; and,
- That one or more rounds of field sampling were conducted for all COPCs identified for the Property, as identified in the Sampling and Analysis Plan (Appendix E) of the Phase Two ESA and found through the course of conducting the Phase Two ESA, in soil, sediment, and ground water, as applicable.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

3.1.1 Water Bodies, Wetlands and Areas of Natural Significance

Mapping from the Ontario Ministry of Natural Resources and Forestry (MNRF) was reviewed to determine if water bodies were present on the Property and within 250 m of the Property. The MNRF National Heritage Information Centre database for listings of Areas of Natural or Scientific Interest (ANSIs) was reviewed. The information is summarized below.

Water Bodies (Property)	• No water bodies were identified on the Property.
Water Bodies (Study Area)	• The nearest water body is Credit River West Branch, which is located approximately 356 m west of the Property.
Wetland (Property)	Provincially Significant • No Provincially Significant wetlands were present on the Property Non-Provincially Significant • No Non-Provincially Significant wetlands were present on the Property Unevaluated • No Unevaluated wetlands were present on the Property
Wetland (Study Area)	Provincially Significant • No Provincially Significant wetlands were present in the Study Area. Non-Provincially Significant • No Non-Provincially Significant wetlands were present in the Study Area Unevaluated • No Unevaluated wetlands were present on the Property
ANSIs (Property)	Provincially Significant Life Science ANSI • No Life Science ANSIs were identified on the Property. Provincially Significant Earth Science ANSI • No Earth Science ANSIs were identified on the Property.

ANSIs (Study Area)	Provincially Significant Life Science ANSI • No Life Science ANSIs were identified in the Study Area. Provincially Significant Earth Science ANSI • No Earth Science ANSIs were identified on the Property.

3.1.2 Topography and Surface Water Drainage

A topographic map from the MNRF and the geological mapping produced by the Ontario Ministry of Northern Development and Mines - Ontario Geological Survey was reviewed. The information gleaned from the mapping is summarized below.

Topography	The approximate elevation of the Property is 261.0 masl and is gently rolling to rolling towards the south.
Hydrology and Hydrogeology	The nearest water body is Credit River West Branch, which is located approximately 356 m west of the Property. The approximate depth to ground water is expected to be approximately 7 mbgs and 20 mbgs. Ground water is expected to flow southeast towards Lake Ontario according to Toporama Ontario Base Maps.
Geology (overburden)	The overburden for centre and south of the Property consists of clay to silt-textured till (derived from glaciolacustrine deposits or shale). The overburden for north of the Property consists of ice-contact stratifies deposits of sand and gravel, minor silt, clay, and till.
Geology (bedrock)	The bedrock on the site is of the Queenston Formation, which is comprised of shale, limestone, dolostone and siltstone.
Geology (depth to bedrock)	Based upon historic borehole information from Water Well Records in the vicinity from the MECP, the depth to bedrock in the vicinity of the Property is approximately 42 mbgs.

3.2 Past Investigations

Previous environmental reports for the Property were searched for and reviewed as part of the investigation. Details from each of the report are summarized below. A summary of Terraprobe's Phase One ESA that was conducted for the Property is also summarized below. Note that a Phase II ESA was conducted by Golder Associates Ltd. in 2001, results of which are discussed in Fisher's Phase II ESA, but was not provided to Terraprobe for review.

Report Title	Phase II Environmental Site Assessment; 1 Rosetta Street, Town of Halton Hills, Ontario
Report Date	February 2006
File/Project Number	Project: FE-P2804

Prepared By	Fisher Environmental Ltd. (Fisher)
Prepared For	Mr. Uzi Ziv, CEO of Econsult

- Fisher Environmental Ltd. (Fisher) was retained by Mr. Uzi Ziv, CEO of Econsult to conduct a Phase II ESA of the property located at 1 Rosetta Street, Town of Halton Hills, Ontario to address potential environmental concerns identified during a Phase I ESA conducted by Fisher in May 2005.
- The Phase I conducted had identified several diverse activities taking place on the Property which have some degree of potential environmental impact. Based on the Phase I ESA findings, a follow-up Phase II ESA was recommended by Fisher to address and confirm the environmental condition of the Property.
- The Phase II ESA was conducted in accordance with the Canadian Standards Association (CSA) Standard CAN/CSA-Z769-00 which consisted of advancing eight (8) boreholes outside of the building to depths from 0.91 m to 5.18 m, and five (5) boreholes inside the building to depths of 0.71 m to 1.32 m. Groundwater was not encountered within the depths investigated.
- Soil samples were analyzed for Petroleum Hydrocarbons (PHCs) F1 to F4, Metals, Polycyclic Aromatic Hydrocarbons (PAHs), and Polychlorinated Biphenyls (PCBs).
- The results of laboratory analysis for the soil samples were assessed based on the MOE Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act of March 2004. Criteria were determined to be *Table 2 Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use*, for coarse textured soils and a potable groundwater condition.
- The report concluded that the results were found to meet the *Table 2 Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use*.
- When compared to current MECP Table 2 RPI standards, Fisher identified an exceedance of PAHs in BH4

Report Title	Phase One Environmental Site Assessment
Report Date	September 29, 2020
Prepared By	Terraprobe Inc.
Report Authors	David Mably, P.Eng., QP_{ESA} & Yousr Hiweish, B.Eng., E.I.T.
Prepared For	1 Rosetta Street (Halton Hills) GP Limited

File #	1-20-0249-41

- Terraprobe was retained by 1 Rosetta Street (Halton Hills) GP Limited to conduct a Phase One Environmental Site Assessment (ESA) of the Property located at 1 Rosetta Street, Georgetown, Ontario.
- The Phase One ESA was completed to satisfy the intent of the requirements, methodology and practices for a Phase One ESA as described in O.Reg. 153/04, as amended. The Phase One ESA is required to support the filing of a Record of Site Condition (RSC).
- The work scope of the Phase One ESA included a review of historical background information for the Property and surrounding areas available. Additionally, a site inspection of the subject Property and surrounding properties was conducted to determine the current condition of the Property and surrounding areas.
- Based on the Phase One ESA, which consisted of a review of historical information available in and a detailed site inspection of the Property and the surrounding area; Potentially Contaminating Activities (PCA) were identified resulting in twenty-two (22) Areas of Potential Environmental Concern (APEC) on the Property.
- The Phase One ESA concluded that a Phase Two Environmental Site Assessment would be required to investigate the issues of potential environmental concern which may have resulted in adverse impacts to the environmental condition of the property.

The following table presents the PCAs that were identified, from previous investigations, on the Property and within the Study Area which resulted in APECs on the Property. The APECs that have been identified should be investigated simultaneously for soil and ground water, as applicable.

Area of Potential Environmental Concern	Location	Contaminants of Potential Concern (COPCs)	Media Potentially Impacted
APEC 1	East section of the building on the Phase One Property	M&I, HFM, VOCs, PHCs, BTEX	Soil & ground water
APEC 2	South-center section of the building on the Phase One Property	M&I, HFM, VOCs, PHCs, BTEX	Soil & ground water
APEC 3	West section of the building on the Phase One Property	M&I, VOCs, PHCs, BTEX	Soil & ground water

Area of Potential Environmental Concern	Location	Contaminants of Potential Concern (COPCs)	Media Potentially Impacted
APEC 4	Central section of Phase One Property	M&I, VOCs, PHCs, BTEX	Soil & ground water
APEC 5	Central section of the building on the Phase One Property	VOCs, PHCs, PCBs	Soil
APEC 6	North-centre section of the Phase One Property	M&I, VOCs, PHCs, BTEX	Soil & ground water
APEC 7	Central-east section of the Phase One Property	VOCs, PHCs, PCBs	Soil
APEC 8	South-west section of the Phase One Property	M&I, HFM, VOCs, PHCs, BTEX	Soil & ground water
APEC 9	South-west section of the Phase One Property	VOCs, PHCs, PCBs	Soil
APEC 10	South-west section of the Phase One Property	VOCs, PHCs, BTEX	Soil & ground water
APEC 11	North section of the Phase One Property	VOCs, PHCs, PCBs	Soil
APEC 12	South-west section of the Phase One Property	M&I, HFM, VOCs, PHCs, PAHs, BTEX	Soil & ground water
APEC 13	Site-Wide	M&I, HFM, VOCs, PHCs, PAHs, BTEX	Soil & ground water
APEC 14	Site-Wide	M&I	Soil & ground water
APEC 15	Site-Wide	M&I, HFM	Soil & ground water
APEC 16	Site-Wide	M&I, HFM, PAHs	Soil & ground water

Area of Potential Environmental Concern	Location	Contaminants of Potential Concern (COPCs)	Media Potentially Impacted
APEC 17	North-west section of the Phase One Property	PAHs	Soil & ground water
APEC 18	West section of the Phase One Property	M&I, HFM, VOCs, PHCs, BTEX	Soil & ground water
APEC 19	East section of the Phase One Property	M&I, HFM, VOCs, PHCs, BTEX	Soil & ground water
APEC 20	Northeast of the Property	M&I, HFM, PAHs, VOCs, PHCs, BTEX	Soil
APEC 21	Southwest of the building on the Property	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water
APEC 22A & 22B	East and West asphaltic areas of the Property	M&I, HFM	Soil and ground water

M&I – Metals & Inorganics
HFM – Hydride Forming Metals (As, Se and Sb)
VOCs – Volatile Organic Compounds
PHCs – Petroleum Hydrocarbons (F1 – F4)
PAHs – Polycyclic Aromatic Hydrocarbons
BTEX – Benzene, Toluene, Ethylbenzene, Xylene
PCBs – Polychlorinated Biphenyls

The Phase One Conceptual Site Model is attached in Appendix A. Figure 2C indicates the borehole locations with respect to the APECs investigated for site coverage.

4.0 SCOPE OF THE INVESTIGATION

The scope of work for the Phase Two ESA was determined on the basis of the results of the previous reports and in accordance with the scope of work proposed by Terraprobe.

4.1 Overview of Site Investigation

In 2020, Terraprobe conducted the following subsurface work at the Property for a Phase Two Environmental Site Assessment:

- A total of ten boreholes (BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109 and BH110) were drilled to depths ranging from approximately 9.1 – 23.0 m below existing grades. Borehole 110 includes nested shallow and deep wells, i.e. denoted as BH110S and BH110D.
- Ground water monitoring wells were installed in boreholes 103, 104, 105, 109, 110S, and 110D.
- Laboratory analysis of selected soil samples for parameters including:
    - Metals & Inorganics;
    - Hydride-Forming Metals (HFM; As, Sb, Se);
    - Volatile Organic Compounds (VOCs);
    - Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
    - Petroleum Hydrocarbons (PHCs);
    - Polycyclic Aromatic Hydrocarbons (PAHs); and
    - Polychlorinated Biphenyls (PCBs).
- Surveying of all boreholes and monitoring wells to a geodetic benchmark.
- Measurement of ground water elevations to determine ground water elevation and flow direction.
- Development and sampling of all monitoring wells.
- Laboratory analyses of ground water samples for:
    - Metals & Inorganics;
    - Hydride-Forming Metals (HFM; As, Sb, Se);
    - Volatile Organic Compounds (VOCs);
    - Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
    - Petroleum Hydrocarbons (PHCs); and
    - Polycyclic Aromatic Hydrocarbons (PAHs).

The table below summarizes the scope of work conducted by Terraprobe. The number of samples listed includes duplicate analyses, but do not include the trip blanks and field blanks that were collected. Water level measurements are provided in Appendix I. Field protocols are provided in Appendix F.

Date	Scope of Investigation	Scope of Soil Analysis	Scope of Ground Water Analysis
August 10 – September 11, 2020	• Drilled ten (10) boreholes (BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109 and BH110) and sampled for soil • Installed six (6) monitoring wells in boreholes 103, 104, 105, 109, 110S, and 110D.	• 15 M&I analyses • 15 HFM analyses • 12 PHC analyses • 12 VOC analyses • 12 BTEX analyses • 16 PAH analyses • 4 PCBs analyses	N/A
September 14 – 21, 2020	• Water levels taken from all monitoring wells • All monitoring wells were developed for sampling, with exception of BH103, BH104 and BH110D, due to limited ground water • All monitoring wells were sampled, with exception of BH103, BH104 and BH110D, due to limited ground water	N/A	• 4 M&I analyses • 4 HFM analyses • 4 PHC analyses • 4 VOC analyses • 4 BTEX analyses • 4 PAH analyses
September 30, 2020	• Water levels taken from all monitoring wells	N/A	N/A
October 14, 2020		N/A	N/A

4.2 Media Investigated

4.2.1 Rationale for Inclusion or Exclusion of Media

Media	Included or Excluded	Rationale
Soil	Included	Based upon the Phase One ESA investigation, soil sampling was required on the Property for the potential contaminants of concern (COPCs). Sample locations were selected to investigate soil across the Property.
Sediment	Excluded	Sediment sampling was not conducted on the Phase Two Property because there are no water bodies on the Property.
Ground Water	Included	Based upon the Phase One ESA investigation, ground water sampling was required on the Property for the COPCs. Monitoring wells were installed to investigate ground water quality across the Property.
Surface Water	Excluded	Surface water sampling was not conducted on the Phase Two Property because there are no water bodies on the Property.

4.2.2 Overview of Field Investigation of Media

Soil sampling was conducted during the drilling program by use of a split spoon sampling device. Ground water sampling was conducted from monitoring wells installed within the completed boreholes.

4.3 Deviations from Sampling and Analysis Plan

The sampling and analysis plan is provided in Appendix E. There were no deviations from the sampling and analysis plan.

4.4 Impediments

There were no impediments encountered during the investigation.

5.0 INVESTIGATION METHOD

5.1 General

Public and private utility clearances were undertaken prior to commencing the subsurface investigation. The Phase Two ESA generally followed the methods outlined in the following documents:

- *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, MECP, December 1996;
- "*Guide for completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04*", MECP, March 22, 2016, updated May 23, 2019; and
- "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*", MECP, March 09, 2004, amended July 01, 2011.

The methods used in the Phase Two ESA investigation did not differ from the associated standard operating procedures. The Standard Field Investigation Protocol is presented in Appendix F.

5.2 Drilling

The drilling information for the Phase Two ESA is provided below:

Borehole	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109 and BH110
Date of Work	August 10 – September 11, 2020
Name of Contractor	TEC Geotechnical Drilling Inc.
Equipment Used	Continuous flight hollow stem augers method
Decontamination Measures	The split spoon sampling device was washed between each sample to minimize the potential for cross-contamination.
Sampling Frequency	Please refer to the borehole logs in Appendix G for the sampling frequency.

5.3 Soil Sampling

5.3.1 Equipment Used

- Laboratory-supplied sampling containers
- Nitrile gloves
- Cooler with loose ice
- RKI Instruments EAGLE 2 Instrument

5.3.2 Geological Description of Soil

Please refer to the borehole logs in Appendix G for the geological description of each soil sample collected.

5.4 Field Screening Measurements

Soil samples were screened in the field using portable hydrocarbon vapour testing equipment and following the procedure outlined in the 1996 Guideline.

Samples were screened using an RKI Instruments EAGLE 2 Monitor. The monitor has a range of 0 parts per million (ppm) to 50,000 ppm and an accuracy of +/- 5%. The monitor was calibrated with hexane (combustible vapour mode) and isobutylene (photoionization detector [PID] mode) prior to field screening as per the calibration procedure outlined by RKI Instruments in "*Instruction Manual Eagle Series Portable Multi-Gas Detector 71-0028RK*" released August 8, 2010.

Field screening measurements were used to help select samples for petroleum hydrocarbon and volatile organic compounds laboratory analysis. PID field screening readings are provided on the borehole logs in Appendix G.

5.5 Ground Water Monitoring Well Installation

Monitoring wells were installed in each of boreholes 103, 104, 105, 109, 110S, and 110D. The monitoring wells were drilled by drilling sub-contractors between August 10 and September 11, 2020, under the supervision of an experienced Terraprobe field technician. All monitoring wells were constructed of 50-mm (2-in) ID PVC screens and risers. Filter sand was placed around the well screen to approximately 0.6 m above the top of the screen. All monitoring wells were then backfilled with bentonite to approximately 0.3 m below ground surface. The monitoring wells were finished with flush mount casings.

The monitoring well locations are provided on Figure 3. The monitoring well installation details are provided on the borehole logs in Appendix G.

5.6 Field Measurement of Water Quality Parameters Ground Water: Sampling

Field measurement of water quality parameters were measured using a Hanna Instrument portable pH/EC/TDS/Temperature meter.

Hanna Instruments HI 98129

Range

- pH 0.00 to 14.00 pH
- EC 0 to 3999 µS/cm
- TDS 0 to 2000 mg/L (ppm)
- Temperature -5.0 to 60.0°C

Resolution

- pH 0.01 pH
- EC 1 µS/cm
- TDS 1 mg/L (ppm)
- Temperature 0.1°C

Accuracy

- pH ±0.05 pH at 25°C
- EC ±2% F.S.
- TDS ±2% F.S.
- Temperature ±0.5°C

5.7 Ground Water Sampling

The monitoring wells were purged using a standard flow Waterra inertial lift pump system. Ground water was sampled using a dedicated bailer, or non-gas contact positive displacement pump (bladder pump) and low flow sampling techniques. Low flow sampling involves extracting ground water at rates comparable to ambient ground water flow (typically less than 300 ml/min), so that the drawdown of the water level is minimized, and the mixing of stagnant water with water from the screened intake area in a well is reduced.

Stabilization of parameters (pH, conductivity, temperature, etc.) of the purged water are monitored before a sample is taken, thus low flow methods facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

Stabilization was considered to occur when consecutive readings were within the following:

- Conductivity ± 3%
- Temperature ± 3%
- pH ± 0.1 unit

The use of bladder pumps result in the least amount of alteration in sample integrity as compared to other sample retrieval methods. Water comes in contact with the inside of the bladder (Teflon) and the sample tubing (also Teflon), which may be dedicated to each well.

The use of dedicated bailers helps prevent cross contamination and mitigate disturbances to the sample collected.

5.8 Sediment Sampling

No sediment sampling was conducted as part of this investigation because there are no water bodies on-site.

5.9 Analytical Testing

Analytical testing of all soil and ground water samples was conducted by ALS Environmental, a laboratory accredited by the Canadian Association for Laboratory Accreditation.

5.10 Residue Management Procedures

5.10.1 Soil Cuttings

Soil cuttings generated during the drilling activities were disposed of in drums that were removed from the Property after the drilling was complete.

5.10.2 Ground Water

The development and purge water generated during the ground water sampling events was drummed and removed from the Property by a licenced subcontractor.

5.10.3 Fluids from Equipment Cleaning

The fluids from cleaning were removed from the Property and disposed of by the drilling sub-contractor.

5.11 Elevation Surveying

The elevations of the boreholes on the Property were surveyed by Terraprobe using a Trimble R10 Global Navigation Satellite System (GNSS). The Trimble R10 system is a differential global positioning system (GPS) which involves the cooperation of two receivers, one that is stationary and another that is roving around making position measurements. The elevation of each borehole on the Property is presented on the borehole logs in Appendix G.

5.12 Quality Assurance and Quality Control Measures

5.12.1 Containers, Labelling, Handling and Chain of Custody

Containers

The following laboratory-supplied sample containers were used for all sampling conducted on the Property (where applicable).

Soil Parameters	**Container**
PHC (F1, BTEX), VOCs, 1,4-Dioxane	2 x 40mL glass vial (methanol preservative)
Metals, Mercury, Boron-HWS, Hexavalent Chromium, EC, SAR, pH, Chloride, Cyanide	250 mL glass jar, Teflon lined lid
PHCs (F2-F4), VOC moisture, PAHs, OCPs, PCBs, CPs, ABNs, Methyl mercury, FOCs, Dioxins & Furans	125 mL glass jar, Teflon lined lid
Ground Water Parameters	**Container**
Chloride, electrical conductivity, pH	125 mL HDPE
Cyanide (CN^-)	60 mL HDPE (sodium hydroxide preservative)
Hexavalent chromium	60 mL HDPE (0.45um field filter followed by ammonium buffer solution)
Metals (includes hydride-forming metals, calcium, magnesium, sodium)	60 mL HDPE (0.45um field filter nitric acid preservative)
Mercury	40 mL clear glass bottle (0.45um field filter hydrochloric acid preservative)
Methyl mercury	125 mL Teflon (FLPE) (hydrochloric acid preservative)
BTEX, PHCs (F1),THMs, VOCs;	2 x 40 mL glass VOA vials (sodium bisulfate preservative, no headspace)
PHCs (F2–F4), PAHs	2 x 100 mL amber glass bottle, (sodium bisulfate preservative, 1 cm headspace)
PCBs	2 x 250 mL amber glass bottle, Teflon lined lid
Benzo(a)pyrene (Lab Filtered)	2 x 100 mL amber glass bottle, Teflon lined lid (sodium bisulfate preservative, 1 cm headspace)
OCPs	2 x 500 mL amber glass bottle, Teflon lined lid
CPs, ABNs,	500 mL amber glass bottle, Teflon lined lid
Dioxins and furans	2 x 1 L amber glass bottle, Teflon lined lid

Labelling

All sampling containers were identified with laboratory-supplied labels. The labels included the following information:

- Unique Sample ID
- Company Name
- Date and Time
- Project Number

Handling

Samples were placed in coolers with loose ice after collection for transportation to the laboratory. Sample hold times were met for all submitted ground water samples.

Chain of Custody

Laboratory-supplied Chain of Custody forms were completed for all samples submitted for analysis.

5.12.2 Equipment Cleaning Procedures

All non-dedicated sampling and monitoring equipment was cleaned following each use. During soil sampling, the split spoon sampling device was washed between samples to minimize cross-contamination. During ground water sampling, any part of the interface meter which came in contact with the ground water was cleaned between monitoring wells.

Dedicated equipment (nitrile gloves, terra core samplers, bladders, tubing) were changed between each sample to avoid cross-contamination.

5.12.3 Field Quality Control Measures

- All non-dedicated sampling and monitoring equipment was cleaned following each use.
- Where ground water samples were to be analyzed for volatile organic compounds one trip blank sample was submitted for laboratory analysis with each laboratory submission.
- Sufficient field duplicate samples were collected in each medium being sampled, so that at least one (1) field duplicate sample could be submitted for laboratory analysis for every ten (10) samples submitted for laboratory analysis.
- Calibration checks on field instruments occurred daily prior to the commencement of sampling.

5.12.4 Deviations in the Quality Assurance and Quality Control Measures

There were no deviations in the quality assurance and quality control measures.

6.0 REVIEW AND EVALUATION

6.1 Geology

Detailed geological information for the Property is presented on the borehole logs in Appendix G. The geology at the Property is summarized below.

6.1.1 Geological Unit Thicknesses (Estimated)

The surficial layers (Topsoil, Asphalt and Aggregate material) thickness ranged from approximately 0.05 to 0.35 metres below ground surface (mbgs), with an average thickness of 0.23 m were encountered in all boreholes. The Earth Fill material thickness ranged from approximately 0.9 to 2.65 mbgs, with an average thickness of 1.86 m and was encountered in all boreholes. The native soil thickness ranged from approximately 9.4 to 20.7 mbgs, with an average thickness of 14.4 m in all boreholes. Bedrock was not encountered in any of the boreholes during the investigation. The geological unit thicknesses are presented in Appendix J.

6.1.2 Elevations of Geological Units

The elevation of the topsoil, asphalt/aggregate materials started at approximately 259.9 meters above sea level (masl) and extended to an elevation depth of approximately 259.7 masl. The elevation of the earth fill material started at approximately 259.7 masl (ranging from 258.4 to 261.1 masl) and extended to an elevation depth of approximately 257.9 masl (ranging from 256.2 to 259.3 masl). The native soil elevation started where the earth fill ended at approximately 257.9 masl (ranging from 256.2 to 259.3 masl) and extended to the maximum depth of investigation, ranging from 235.7 to 248.7 masl. Bedrock was not encountered in any of the boreholes during the investigation. The geological unit elevations are presented in Appendix J.

6.1.3 Material in Geological Units

Surficial Layers

An asphalt pavement structure consisting of 50 to 90 mm thick asphaltic concrete underlain by 50 to 475 mm thick granular base/subbase course was encountered in Boreholes 101 to 110 with the exception of Borehole 106.

A topsoil layer was encountered at the ground surface in Borehole 106. The topsoil thickness was 300 mm.

Earth Fill

Earth fill materials, consisting of sand/gravelly sand, with trace amounts of silt and clay were encountered beneath the pavement structure in Boreholes 101 to 103 and extended to about 1.5 to 2.3 m depth below grade.

Earth fill materials, consisting of silty sand to sandy silt with trace to some gravel, trace amounts of clay and brick fragments and organics was encountered beneath the surficial layer borehole 104, 106 to 108 and 110 and extended to depths ranging 1.5 to 3 m below grade.

Earth fill materials, consisting of clayey silt with some sand and trace amounts of gravel was encountered beneath the asphalt pavement structure in borehole 105 and 109 and extended to depths ranging 0.8 m and 1.1 m below grade.

Standard Penetration Test results (N-values) obtained from the cohesive fill zone were 10 and 18 blows per 300 mm of penetration, indicating a stiff to very stiff consistency. The in-situ moisture content of the cohesive earth fill samples was 12 and 19 percent by mass, indicating a moist condition.

N-Value obtained from the cohesionless earth fill zone ranged was 2 to 24 blows per 300 mm of penetration, indicating a very loose to compact relative density. The in-situ moisture content of the cohesionless earth fill samples ranged from 2 to 13 percent by mass, indicating a moist condition.

Sand to Sand and Gravel

The matrix of sand and gravel with trace to some silt was encountered beneath the earth fill zone in Boreholes 101 to 108 and beneath sandy silt to sand and silt deposit in Boreholes 104, 109 and 110 and extended to depths ranging from 6.1 to 23 m below grade.

N-values obtained from the matrix of sand and gravel ranged from 3 to over 50 blows per 300 mm of penetration, indicating a very loose to very dense (typically compact to dense) relative density.

The in-situ moisture contents of the gravelly sand soil samples ranged from 1 to 11 percent by mass, indicating a moist condition.

Glacial Till

Clayey silt till deposits with some sand and trace to some gravel were encountered beneath the sand and gravel matrix in Boreholes 105, 107 and in between sand and silt layer in Borehole 110 and extended to depths ranging from 11.3 to 16.8 m below grade.

N-values obtained from the clayey silt till layer ranged from 22 to 105 blows per 300 mm of penetration indicating a very stiff to hard consistency.

Sandy silt till deposits with some clay and trace amounts of gravel were encountered beneath sand and gravel layer in Borehole 105, beneath the sand layer in Borehole 108 and beneath earth fill zone in Borehole 109 and extended to depths ranging from 2.3 to 23 m below grade.

N-values obtained from the sandy silt till layer ranged from 14 to over 50 blows per 300 mm of penetration, indicating a compact to very dense (typically dense) relative density.

The in-situ moisture contents of the till samples ranged from 5 to 16 percent by mass, indicating a moist condition.

Sandy Silt to Sand and Silt/Silty Sand

Sandy silt to silty sand deposit with trace to some clay and trace amounts of gravel and stone fragments were encountered beneath the sand and gravel matrix, the glacial till deposit or the earth fill zone in Boreholes 101, 102 and 104, and 107 to 110 and extended to depths of about 11.7 to 21.3 m.

N-values obtained from the sandy silt to silty sand deposit ranged from 13 to over 50 blows per 300 mm of penetration, indicating a compact to very dense (typically dense) relative density.

The in-situ moisture contents of the native sandy silt to silty sand samples ranged from 4 to 28 percent, by mass, indicating a moist to wet condition.

Bedrock

Bedrock was not encountered during the subsurface investigation of the Property.

6.1.4 Properties of Aquifers and Aquitards

Native Soil

The water table was encountered in the native sandy silt (glacial till) at BH105, in the native sand and silt at BH109, as well as in the gravelly sand at BH110S. All aquifers are considered unconfined.

6.1.5 Rationale for Choice of Aquifers and Aquitards Investigated

Monitoring wells were located across the Property in order to provide full site coverage. The monitoring wells were screened within the sand, sand and silt, sandy silt glacial till, clayey silt glacial till, as well as the gravelly sand unit. Screen intervals were chosen within the native sandy silt, sand and silt, and the gravelly sand units where ground water was encountered to allow for the collection of ground water samples within the native soil for assessment of ground water quality. Additional screening in the clayey silt and sand, as well as the sand and silt units were chosen to evaluate the potential presence of a ground water aquifer.

6.2 Ground Water Elevations and Flow Direction

6.2.1 Rationale for Monitoring Well Locations and Screen Intervals

Monitoring wells were located across the Property in order to provide full site coverage. The monitoring wells were screened within the sand, sand and silt, sandy silt glacial till, clayey silt glacial till, as well as the gravelly sand unit. Screen intervals were chosen within the native sandy silt, sand and silt, and the gravelly sand units across the Property to allow for the collection of ground water samples within the strata of interest.

6.2.2 Result of Interface Probe Measurements

Interface probe measurements indicated that only water was present on the Property. No light or dense non-aqueous phase liquids (LNAPLs or DNAPLs) were detected.

6.2.3 Thickness of Free-Flowing Product

No free-flowing product was encountered on the Property.

6.2.4 Ground Water Elevations

Unstabilized ground water levels were measured in each of borehole as they were drilled and after completion, as noted in the borehole logs in Appendix G. Ground water levels were measured in the installed monitoring wells using a Solinst interface probe and were typically approximately 6.93 to 21.1 mbgs. Ground water elevations, typically 253.5 to 237.61 masl, are presented in Appendix I.

6.2.5 Interpreted Direction of Ground Water Flow

As three (3) of the six monitoring wells remained dry, and BH105 was screened at a different stratigraphic layer than BH109 and BH110S, the shallow groundwater flow pattern could not be interpreted.

6.2.6 Influence of Buried Utilities

The water table is present at approximately 6.93 to 21.1 mbgs and there is no known indication of any soil vapour issue. It is expected that the utilities for buildings on-site would be at relatively shallow depths. As such, there is no potential effect from buried utilities to influence the ground water flow.

6.3 Ground Water Hydraulic Gradients and Hydraulic Conductivity

6.3.1 Horizontal Hydraulic Gradient

The horizontal hydraulic gradient is calculated using the following equation:

$$I = \Delta h/\Delta s$$

where: I = horizontal hydraulic gradient,
Δh (m) = ground water elevation difference; and,
Δs (m) = separation distance

Since three (3) of the six monitoring wells remained dry, and BH105 was screened at a different stratigraphic layer than BH109 and BH110S, the shallow groundwater flow pattern could not be interpreted and therefore the horizontal hydraulic gradient could not be calculated.

6.3.2 Vertical Hydraulic Gradient

The vertical hydraulic gradient cannot be accurately determined at this time. Although there are nested monitoring wells installed on the Property, the vertical hydraulic gradient needs to be measured between neighboring monitoring wells installed in two different strata or at different depths within the same unit and both monitoring wells have water. Since BH110D is dry, the vertical hydraulic gradient cannot be calculated.

6.3.3 Hydraulic Conductivity

Monitoring wells BH105, BH109, and BH110S underwent single well response tests (SWRTs) to assess the hydraulic conductivity (K) for saturated shallow aquifer subsoils at the depths of the well screens. Each monitoring well was equipped with a digital transducer to record the fluctuation made to complete the SWRT. Monitoring wells BH103, BH104 and BH110D remained dry over the monitoring program. As such, in situ hydraulic conductivity measurement was not completed at these monitoring wells. The results of the analysis are presented in Appendix C. A summary of the findings is provided below:

Well ID	Ground El. (masl)	Monitoring Well Depth (mbgs)	Screen Interval (mbgs)	Screened Soil Strata	Hydraulic Conductivity (K) (m/sec)	Test Method
BH105	258.7	22.9	19.9-22.9	Sandy Silt till and Sand and Gravel	4.47×10^{-8}	Falling Head Test
BH109	260.4	9.1	9.1-6.1	Sand and Silt	2.51×10^{-8}	Falling Head Test
BH110S	206.5	9.1	6.1-9.1	Sandy Silt and Gravelly Sand	1.49×10^{-7}	Falling Head Test

Notes:
mbgs metres below ground surface
masl metres above sea level

A review of the findings suggests a low hydraulic conductivity for the strata within the screen intervals.

Based on the soil samples submitted for grain size analysis, the hydraulic conductivities can be estimated based on the D10 values (Hazen Method). The D10 value is the soil particle diameter at which 10% of the sample's mass has a diameter less than this value. The hydraulic conductivities can be found in the table below.

Well ID	Soil Sample Depth (mbgs)	Soil Sample Elevation (masl)	Soil Strata	Hydraulic Conductivity (m/sec)
BH101-SS11	9.4	250.9	Sand, some Silt	2.30×10^{-7}
BH105-SS13	13.3	245.4	Clayey Silt Till	1.60×10^{-9}
BH109-SS8	7.9	252.5	Silt and Sand, some Clay	2.25×10^{-8}

The hydraulic conductivity estimates, determined using the Hazen Equation, suggest a moderate to low hydraulic conductivity for the strata contacted beneath the Site.

It should be noted that the above hydraulic conductivities were estimated based on grain size analysis of disturbed samples and do not consider compaction or saturation of the soils. The grain size analysis can be found in Appendix H.

According to Freeze and Cherry (1979), the typical hydraulic conductivities of the strata investigated at the Property are:

- Silty Sand 10^{-3} m/s to 10^{-7}
- Silt 10^{-5} m/s to 10^{-9} m/s
- Glacial Till 10^{-6} m/s to 10^{-12} m/s

The hydraulic conductivity field results are relatively consistent with the published values associated with the geological materials which were tested.

6.4 Soil Texture

6.4.1 Rationale for Use of Coarse Soil Texture

A total of three (3) soil samples from selected boreholes were submitted for grain size analysis. In order to determine the soil texture for the applicable standard, the Ontario Regulation 153/04 (Records of Site Condition–Part XV.1 of the Environmental Protection Act) in Section 42(1). Subsection (1), states the following:

'If the qualified person determines that at least 1/3 of the soil at the property, measured by volume, consists of coarse textured soil, the qualified person shall apply the standard for coarse textured soil.'

Coarse textured soil is defined as soil that contains more than 50% by mass of particles that are 75 micrometres or larger in mean diameter. The results of the grain size analysis indicated that one native soil sample from the sand unit was of coarse textured soil and that two native samples from the clayey silt and silt and sand units were of medium/fine textured soil. Since the sand unit from the investigated boreholes comprised more than 1/3 of the overall soil, coarse textured soil was considered for the applicable site condition.

6.5 Soil: Field Screening

All recovered soil samples were screened in the field using portable hydrocarbon vapour and PID testing equipment and following the procedure outlined in the 1996 Guideline.

Field screening measurements were used to help select samples for petroleum hydrocarbon and volatile organic compounds laboratory analysis. PID field screening readings are provided on the borehole logs in Appendix G.

6.6 Soil Quality

6.6.1 Location and Depth of Samples

Borehole Samples excluding duplicates (depth measured from original ground surface):

Sample ID	Depth / Elev. (m) / (masl)	Strata	Date Sampled	Soil						
				Metals & Inorganics	Hydride Forming Metals	PHCs (F1-F4)	BTEX	VOCs	PAHs	PCBs
BH101 SS2	0.8-1.4 / 259.5-258.9	Fill	Aug 10, 2020	✓	✓				✓	
BH101 SS3	1.6-2.2 / 258.7-258.1	Fill	Aug 10, 2020			✓	✓	✓		
BH101 SS6	3.9-4.5 / 256.4-255.8	Native	Aug 10, 2020			✓	✓	✓		
BH102 SS1	0.0-0.6 / 258.5-257.9	Fill	Sep 02, 2020	✓	✓				✓	✓
BH102 SS2	0.8-1.4 / 257.7-257.1	Fill	Sep 02, 2020			✓	✓	✓		
BH102 SS3	1.6-2.2 / 256.9-256.3	Native	Sep 11, 2020	✓	✓				✓	
BH103 AS1	0.0-0.6 / 258.5-257.9	Fill	Sep 11, 2020	✓	✓				✓	
BH103 AS2	0.8-1.4 / 257.7-257.1	Fill	Sep 11, 2020			✓	✓	✓		
BH103 SS4	2.4-3.0 / 256.1-255.5	Native	Sep 23, 2020						✓	
BH104 SS1	0.0-0.6 / 260.5-259.9	Fill	Sep 01, 2020			✓	✓	✓		✓
BH104 SS2	0.8-1.4 / 259.7-259.1	Fill	Sep 01, 2020	✓	✓				✓	
BH105 SS1	0.0-0.6 / 258.7-258.1	Fill	Aug 14, 2020	✓	✓					
BH105 SS2	0.8-1.4 / 257.9-257.3	Fill	Aug 14, 2020			✓	✓	✓	✓	
BH106 SS1	0.0-0.6 / 260.3-259.7	Fill	Aug 12, 2020	✓	✓				✓	
BH106 SS2	0.8-1.4 / 259.5-258.9	Fill	Aug 12, 2020			✓	✓	✓		
BH107 SS2	0.8-1.4 / 259.6-259	Fill	Aug 13, 2020	✓	✓				✓	
BH107 SS3	1.6-2.2 / 258.8-258.2	Fill	Aug 13, 2020			✓	✓	✓		
BH107 SS5	3.1-3.7 / 257.3-256.7	Native	Aug 13, 2020	✓	✓				✓	
BH108 SS1	0.0-0.6 / 261.3-260.7	Fill	Aug 19, 2020	✓	✓				✓	

Sample ID	Depth / Elev. (m) / (masl)	Strata	Date Sampled	Soil						
				Metals & Inorganics	Hydride Forming Metals	PHCs (F1-F4)	BTEX	VOCs	PAHs	PCBs
BH108 SS4	2.4-3.0 / 258.9-258.3	Native	Aug 19, 2020			✓	✓	✓		
BH108 SS5	3.1-3.7 / 258.2-257.6	Native	Aug 28, 2020	✓	✓				✓	
BH109 SS1	0.0-0.6 / 260.4-259.8	Fill	Aug 18, 2020	✓	✓				✓	✓
BH109 SS2A	0.8-1.1 / 259.6-259.3	Fill	Aug 18, 2020			✓	✓	✓		
BH110 SS1	0.0-0.6 / 260.5-259.9	Fill	Aug 11, 2020	✓	✓				✓	
BH110 SS3	1.6-2.2 / 258.9-258.3	Fill	Aug 11, 2020			✓	✓	✓		

M&I – Metals & Inorganics
HFM – Hydride Forming Metals (As, Se and Sb)
VOCs – Volatile Organic Compounds
PHCs – Petroleum Hydrocarbons (F1 – F4)
PAHs – Polycyclic Aromatic Hydrocarbons
BTEX – Benzene, Toluene, Ethylbenzene, Xylene
PCBs – Polychlorinated Biphenyls

6.6.2 Comparison to Applicable Standards (Soil)

Select soil samples were analysed for the Contaminants of Potential Concern (COPCs). COPCs include:

- Metals & Inorganics (M&I);
- Hydride-Forming Metals (HFM; As, Sb, Se);
- Volatile Organic Compounds (VOCs);
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
- Petroleum Hydrocarbons (PHCs);
- Polycyclic Aromatic Hydrocarbons (PAHs); and
- Polychlorinated Biphenyls (PCBs).

The results of the analysis were compared to the MECP Table 2 RPI Coarse Standards. The laboratory certificates of analysis are provided in Appendix L, and the results of the soil chemical analysis are provided in Tables 1 to 6.

Metals & Hydride-Forming Metals in Soil

The following exceedances for Metals and HFM of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 2 RPI CT	BH102 SS1 Fill (0.0-0.6)	BH107 SS2 Fill (0.8-1.4)	BH108 SS1 Fill (0.0-0.6)
Barium	µg/g	390	402	158	304
Lead	µg/g	120	346	199	93.6
Arsenic	µg/g	18.0	21.8	6.80	22.9

Notes: RED values exceed the applicable MECP Table 2 RPI Coarse Standards
BLUE values meet the applicable MECP Table 2 RPI Coarse Standards
Sample depths are in meters below ground surface (mbgs)

All other samples analyzed met the MECP Table 2 RPI Coarse Standards for Metals and HFM. The results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L. The samples exceeding for M and HFM as noted above are shown on Figure 4.

Inorganics in Soil

The following apparent exceedances for inorganics of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 2 RPI CT	BH102 SS1 Fill (0.0-0.6)	BH103 AS1 Fill (0.0-0.6)	BH108 SS1 Fill (0.0-0.6)	BH110 SS1 Fill (0.0-0.6)
Electrical Conductivity	mS/cm	0.7	1.34	1.27	0.716	1.23

Notes: RED values exceed the applicable MECP Table 2 RPI Coarse Standards
BLUE values meet the applicable MECP Table 2 RPI Coarse Standards
Sample depths are in meters below ground surface (mbgs)

Contaminants of Concern	Units	MECP Table 2 RPI CT	BH101 SS2 Fill (0.8-1.4)	BH102 SS1 Fill (0.0-0.6)	BH102 SS3 Native (1.6-2.2)	BH105 SS1 Fill (0.0-0.6)	DUP1 (BH105 SS1) Fill (0.0-0.6)	BH107 SS5 Native (3.1-3.7)	BH110 SS1 Fill (0.0-0.6)
Sodium Adsorption Ratio	N/A	5.0	25.0	92.7	>29.0	9.68	11.0	5.59	42.2

Notes: RED values exceed the applicable MECP Table 2 RPI Coarse Standards
BLUE values meet the applicable MECP Table 2 RPI Coarse Standards
Sample depths are in meters below ground surface (mbgs)

Clause 41(1)(b) of O.Reg. 153/04 requires the Qualified Person to determine whether or not a property is an environmentally sensitive area due to pH levels in soil. All of the pH sample results were within the acceptable range outlined by O.Reg. 153/04 for surface soils (5.0 to 9.0), with exception of sample BH103 AS1 (pH = 11.80). The sample was delineated vertically by BH103 SS4 (pH = 8.16) and all of the other surface soil pH results were within the acceptable range. As such, the Qualified Person does not believe that the Property is classified an environmentally sensitive area.

All other samples analyzed met the MECP Table 2 RPI Coarse Standards for Inorganics. All results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L. The samples apparently exceeding for Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR), as noted above, are shown on Figure 5 and Figure 6, respectively.

The term "apparent exceedances" is used because Paragraph 1 of Section 49(1) of O.Reg. 153/04 states that apparent exceedances of the Site Condition Standards are deemed not to be exceedances if the Qualified Person attributes these results to the use of de-icing salt application to surfaces for the safety of vehicular and pedestrian traffic under conditions of snow and ice or both. As the elevated EC and SAR are associated with outdoor parking areas, the Qualified Person attributes these results to the use of de-icing salt and deems the associated Standards not to be exceeded (the same rationale applies to chloride in ground water). The data are included because of their relevance from an excess soil management perspective.

Petroleum Hydrocarbons in Soil

No PHCs exceedances of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed. All results are summarized in Table 2 and the laboratory certificates of analysis are provided in Appendix L.

Volatile Organic Compounds in Soil

No VOCs exceedances of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed. All results are summarized in Table 3 and the laboratory certificates of analysis are provided in Appendix L.

Benzene, Toluene, Ethylbenzene, and Xylenes in Soil

No BTEX exceedances of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed. All results are summarized in Table 4 and the laboratory certificates of analysis are provided in Appendix L.

Polycyclic Aromatic Hydrocarbons in Soil

The following exceedances for PAHs of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 2 RPI CT	BH102 SS1 Fill (0.0-0.6)	BH103 AS1 Fill (0.0-0.6)	BH107 SS2 Fill (0.8-1.4)	BH108 SS1 Fill (0.0-0.6)
Acenaphthylene	µg/g	0.15	<0.050	0.095	0.349	<0.050
Benzo(a)anthracene	µg/g	0.50	0.224	0.441	1.78	0.586
Benzo(a)pyrene	µg/g	0.30	0.180	0.543	1.73	0.446
Benzo(b/j)fluoranthene	µg/g	0.78	0.294	0.813	2.52	0.728
Dibenzo(a,h)anthracene	µg/g	0.10	<0.050	0.098	0.317	0.078
Fluoranthene	µg/g	0.69	0.456	0.815	4.17	1.350
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.107	0.412	1.32	0.257
2-and 1-methyl Naphthalene	µg/g	0.99	1.13	0.158	0.327	0.608

Notes: RED values exceed the applicable MECP Table 2 RPI Coarse Standards
BLUE values meet the applicable MECP Table 2 RPI Coarse Standards
Sample depths are in meters below ground surface (mbgs)

All other samples analyzed met the MECP Table 2 RPI Coarse Standards for PAHs. The results are summarized in Table 5 and the laboratory certificates of analysis are provided in Appendix L. The samples exceeding for PAHs as noted above are shown on Figure 7.

Polychlorinated Biphenyls in Soil

No PCBs exceedances of the MECP Table 2 RPI Coarse Standards were noted in the samples analyzed. All results are summarized in Table 6 and the laboratory certificates of analysis are provided in Appendix L.

6.6.3 Contaminants of Concern (Soil)

The Contaminants of Concern associated with the earth fill on the Property are Metals (Barium and Lead), HFM (Arsenic), Inorganics (EC and SAR; relevant from an excess soil management perspective only) and PAHs (Acenaphthylene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b/j)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene and 2-and 1-methyl Naphthalene).

The Contaminant of Concern associated with the native soils on the Property is Sodium Adsorption Ratio (relevant from an excess soil management perspective only).

6.6.4 Contamination Impact on Other Media

There were no exceedances detected in the analyzed ground water samples, other than Chloride which is considered as an apparent exceedance only. Therefore, the Contaminants of Concern identified within the fill and native soils, which exceeded the applicable Site Condition Standards, are unlikely to impact the ground water.

6.6.5 Presence of Light or Dense Non-Aqueous Phase Liquids (In Soil)

Light non-aqueous phase liquids (LNAPL) and dense non-aqueous phase liquids (DNAPL) were not detected in the earth fill or native soil on the Property.

6.7 Ground Water Quality

6.7.1 Location and Depth of Sample Locations

Ground water sampling was completed for the monitoring wells on the Property for a total of one (1) event. Ground water samples were analysed for parameters including Metals & Inorganics, Hydride-Forming Metals (HFM), PHCs, BTEX, VOCs, and PAHs. The laboratory certificates of analysis are provided in Appendix L.

Monitoring Well	Screen/Sample Elevation (masl)	Metals & Inorganics	HFM	PHCs (F1-F4)	BTEX	VOCs	PAHs
BH103	238.5-241.6	×	×	×	×	×	×
BH104	242.2-245.3	×	×	×	×	×	×
BH105	235.8-238.9	✓	✓	✓	✓	✓	✓
BH109	251.3-254.3	✓	✓	✓	✓	✓	✓
BH110S	251.4-254.4	✓	✓	✓	✓	✓	✓
BH110D	237.7-240.7	×	×	×	×	×	×

Notes: × – Insufficient ground water present for sampling

6.7.2 Field Filtering

Field filtering occurred for all metal samples analyses that require field filtering as per the requirements of the Analytical Protocol. Field filtration utilized dedicated disposable in-line 0.45 micron filters.

6.7.3 Comparison to Applicable Standards (Ground Water)

Select ground water samples were analysed for the COPCs. COPCs include:

- Metals & Inorganics;
- Hydride-Forming Metals (HFM; As, Sb, Se);
- Volatile Organic Compounds (VOCs);
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
- Petroleum Hydrocarbons (PHCs); and,
- Polycyclic Aromatic Hydrocarbons (PAHs).

The results of the analysis were compared to the applicable MECP site condition standard for the Property (MECP Table 2 Coarse Standards). The laboratory certificates of analysis are provided in Appendix L, and the results of the ground water chemical analysis are provided in Tables 7 to 11.

Metals & Inorganics in Ground Water

The following apparent exceedances for Inorganics of the MECP Table 2 All Types of Property Uses Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 2 All Property Use CT	BH110S
Chloride (Cl)	mg/L	790	**2620**

Notes: **RED** values exceed the applicable MECP Table 2 Coarse Standards
BLUE values meet the applicable MECP Table 2 Coarse Standards

All other samples analyzed met the MECP Table 2 Coarse Standards for Metals and Inorganics. All results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix L.

The term "apparent exceedances" is used because Paragraph 1 of Section 49(1) of O.Reg. 153/04 states that apparent exceedances of the Site Condition Standards are deemed not to be exceedances if the Qualified Person attributes these results to the use of de-icing salt application to surfaces for the safety of vehicular and pedestrian traffic under conditions of snow and ice or both. As the elevated Chloride are associated with outdoor parking areas, the Qualified Person attributes these results to the use of de-icing salt and deems the associated Standards not to be exceeded.

Hydride-Forming Metals in Ground Water

No HFM exceedances of the MECP Table 2 Coarse Standards were noted in the samples analyzed. All results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix L.

Petroleum Hydrocarbons in Ground Water

No PHCs exceedances of the MECP Table 2 Coarse Standards were noted in the samples analyzed. All results are summarized in Table 8 and the laboratory certificates of analysis are provided in Appendix L.

Volatile Organic Compounds in Ground Water

No VOCs exceedances of the MECP Table 2 Coarse Standards were noted in the samples analyzed. All results are summarized in Table 9 and the laboratory certificates of analysis are provided in Appendix L.

Benzene, Toluene, Ethylbenzene, and Xylenes in Ground Water

No BTEX exceedances of the MECP Table 2 Coarse Standards were noted in the samples analyzed. All results are summarized in Table 10 and the laboratory certificates of analysis are provided in Appendix L.

Polycyclic Aromatic Hydrocarbons in Ground Water

No PAHs exceedances of the MECP Table 2 Coarse Standards were noted in the samples analyzed. All results are summarized in Table 11 and the laboratory certificates of analysis are provided in Appendix L.

6.7.4 Contaminants of Concern (Ground Water)

There were no Contaminants of Concern associated with the ground water quality on the Property. All of the samples analyzed met the MECP Table 2 Standards with exception of a Chloride apparent exceedance in BH110S which are attributed with de-icing activities. The results are summarized in Tables 7 to 11 and the laboratory certificates of analysis are provided in Appendix L.

6.7.5 Chemical or Biological Transformations

There was no indication of chemical or biological transformations.

6.7.6 Contamination Impact on Other Media

There were no Contaminations of Concern identified within the ground water media.

6.7.7 Presence of Light or Dense Non-Aqueous Phase Liquids (Ground Water)

Light non-aqueous phase liquids (LNAPL) and dense non-aqueous phase liquids (DNAPL) were not detected in the ground water on the Property.

6.8 Quality Assurance and Quality Control Results

6.8.1 Types of Quality Control Samples Collected and Results

In general, samples were handled in accordance with the Analytical Protocol with respect to holding time, preservation method, storage requirement and sample container type. Laboratory results were compared to MECP standards for quality control under the Analytical Protocol which require laboratory results to meet specific performance criteria such as specified method detection limit (MDL) requirements. The sampling and analyses performed conformed with the requirements of the 1996 Guideline and the Analytical Protocol.

Duplicate samples were submitted at a rate of 10% for the ground water samples.

6.8.2 Samples Not Handled in Accordance with the Analytical Protocol

Holding Time

All samples met the holding times specified in the Analytical Protocol.

Preservation Method

All samples met the preservation methods specified in the Analytical Protocol.

Storage Requirement

All samples met the storage requirements specified in the Analytical Protocol.

Container Type

All samples used were the container type specified in the Analytical Protocol.

6.8.3 Subsection 47 (3) of the Regulation

All certificates of analysis or analytical reports received pursuant to clause 47(2)(b) of the Regulation comply with subsection 47(3). A certificate of analysis or analytical report has been received for each sample submitted for analysis. All certificates of analysis or analytical reports received have been included in full in Appendix L to this Phase Two ESA report.

6.8.4 Results Qualified by Laboratory

The Laboratory did not make any significant comments that changed the outcome of the analytical results regarding the soil and ground water samples.

6.8.5 Overall Quality of Field Data

Decision making regarding the environmental condition of the Property was not affected by the overall quality of the field data. The overall quality of the field data was considered by the Qualified Person to meet the objectives of the investigation and assessment.

7.0 CONCLUSIONS

The conclusions of the Phase Two ESA are:

- The applicable Site Condition Standards are the 2011 Ministry of the Environment, Conservation and Parks (MECP) Table 2 Standards for Residential/ Parkland/ Institutional Land Use with Coarse textured soils (MECP Table 2 RPI Coarse Standards).
- In summary, the surface conditions on the Property consisted of asphalt parking lots and roadways. The average ground surface elevation of the Property is approximately 260.0 metres above sea level (masl). In general, four (4) main stratigraphic units were encountered during the investigation as follows:
    1. Earth fill (on average extending to Elev. 258.3 masl) encountered in all boreholes;
    2. Sand to Sand and Gravel (on average extending to Elev. 245.5 masl) encountered in all boreholes;
    3. Glacial Till (on average extending to Elev. 246.0 masl) encountered in Boreholes 105, 107 and 110; and
    4. Sandy Silt to Sand and Silt/Silty Sand (extending to full depth of excavation and to Elev. 243.5 masl) encountered in Boreholes 101, 102, 104, and 107 to 110.
- The shallow water table is present at approximately 6.5 m below ground surface (approximately 253.5 masl). As three (3) of the six monitoring wells remained dry, and BH105 was screened in a different stratigraphic layer than BH109 and BH110S, the shallow ground water flow pattern could not be interpreted.
- There were exceedances of the Table 2 Site Condition Standards for Coarse textured soil noted in the fill material consisting of:
    - Metals (Barium and Lead) and Hydride Forming Metals (Arsenic) in BH102, BH107 and BH108.
    - Polycyclic Aromatic Hydrocarbons (Acenaphthylene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b/j)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene and 2-and 1-methyl Naphthalene) in BH102, BH103, BH107 and BH108.
    - There were apparent exceedances of the applicable Site Condition Standards noted in the fill material for electrical conductivity and sodium adsorption ratio at BH101, BH102, BH103, BH105, BH107, BH108 and BH110, which are included for soil management purposes only.

The locations of the exceedances are noted on Figures 4, 5, 6 and 7 and are outlined in Tables 1 and 5.

- There were no exceedances of the Table 2 Site Condition Standards for Coarse textured soil noted in the native soil, with exception of the Sodium Adsorption Ratio apparent exceedance found in BH102 and BH107. This is considered an apparent exceedance attributed to de-icing activities and is included for soil management purposes only. The location of this apparent exceedance is noted on Figure 6 and outlined in Table 1.
- There were no Contaminants of Concern associated with the ground water quality on the Property. All of the samples analyzed met the MECP Table 2 Coarse Standards with exception of a Chloride apparent exceedance in BH110S which is attributed with de-icing activities. The results are summarized in Tables 7 to 11 and the laboratory certificates of analysis are provided in Appendix L.

The subsurface investigation fully addressed the APECs identified in Terraprobe's Phase One ESA conducted on the Property, with exception of APEC 1, APEC 2, APEC 3, APEC 4, APEC 5, APEC 6, APEC 8, APEC 10, APEC 12 and APEC 21. Moreover, due to soil exceedances of the applicable Site Condition Standards noted in the fill material for samples taken from boreholes BH102, BH103, BH107 and BH108, an RSC cannot be filed at this time. Additional drilling of boreholes/monitoring wells to investigate the APECs that were not fully addressed is recommended, after which, a Remedial Action Plan should be developed in order to remove the impacts on the Property where exceedances of the applicable Site Condition Standards were identified.

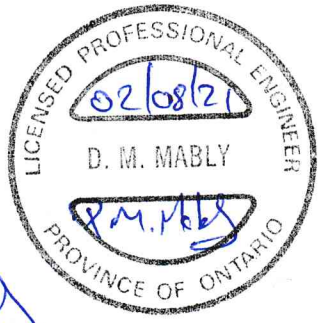
8.0 SIGNATURES

The Phase Two Environmental Site Assessment has been completed by Yousr Hiweish, B. Eng., E.I.T. under the direction and supervision of R. Baker Wohayeb, M.A.Sc., P. Eng., QP_{RA} and was reviewed by David Mably, P.Eng., QP_{ESA}. The findings and conclusions presented in this report have been determined on the basis of the information that was obtained from review of previous investigations provided and from the current investigation of the Phase Two Property.

We trust this report meets with your requirements. Should you have any questions regarding the information presented, please do not hesitate to contact our office.

Yours truly,

Terraprobe Inc.



Yousr Hiweish, B. Eng., E.I.T.
Project Coordinator

David Mably, P. Eng., QP_{ESA}
Senior Environmental Engineer

Brampton Office

9.0 REFERENCES

1. Armstrong, D.K. and Dodge, J.E.P. *Paleozoic Geology Map of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 219.

2. Chapman, L.J. and Putnam, D.F. 2007. *The Physiography of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 228.

3. Freeze, R. Allen and Cherry, John A., 1979. *Groundwater*. Page 29.

4. Ministry of the Environment, Conservation and Parks, December 1996. *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.*

5. Ministry of Environment, Conservation and Parks, 15 April 2011. *Soil, Ground Water and Sediment Standards for use under part XV.1of the Environmental Protection Act.*

6. Ministry of the Environment, Conservation and Parks, June 2011. *Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04.*

7. Ministry of the Environment, Conservation and Parks, July 2011. *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.*

8. Ministry of the Environment, Conservation and Parks, January 30, 2020. *Amendments to the Records of Site Condition Regulation.*

9. Fisher Environmental Ltd., *"Phase II Environmental Site Assessment; 1 Rosetta Street, Town of Halton Hills, ON,"* dated February 2006.

10. Terraprobe Inc. *"Phase One Environmental Site Assessment, 1 Rosetta Street, Georgetown, Ontario"* dated September 29, 2020.

10.0 LIMITATIONS AND USE OF THE REPORT

This report was prepared for the exclusive use of 1 Rosetta Street (Halton Hills) GP Limited and is intended to provide an assessment of the environmental condition on the property located at 1 Rosetta Street, Georgetown, Ontario. The report was prepared for the purpose of identifying potential environmental concerns, including an assessment of the likelihood that the environmental quality of the soil and ground water at the Property may have been adversely affected by past and present practices at the Property, and/or those of the surrounding properties prior to development of the Property. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Terraprobe accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, including consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The assessment should not be considered a comprehensive audit that eliminates all risks of encountering environmental problems. The information presented in this report is based on information collected during the completion of the subsurface investigation conducted by Terraprobe Inc. It is based on conditions at the Property at the time of the site inspection. The subsurface conditions were assessed based on information collected at specific borehole and monitoring well locations. The actual subsurface conditions between the sampling points may vary.

There is no warranty expressed or implied by this report regarding the environmental status of the Property. Professional judgment was exercised in gathering and analyzing information collected by our staff, as well as that submitted by others. The conclusions presented are the product of professional care and competence, and cannot be construed as an absolute guarantee.

In the event that during future work new information regarding the environmental condition of the Property is encountered, or in the event that the outstanding responses from the regulatory agencies indicate outstanding issues on file with respect to the Property, Terraprobe should be notified in order that we may re-evaluate the findings of this assessment and provide amendments, as required.

FIGURES

TERRAPROBE INC.

Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
TOWN OF HALTON HILLS
MapLinks

Notes:

Legend:
Phase Two Property Boundary

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
PHASE TWO PROPERTY LOCATION

Designed By: YH	*File No.:* 1-20-0249-42
Drawn By: AA	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 1
Date: February 2021	

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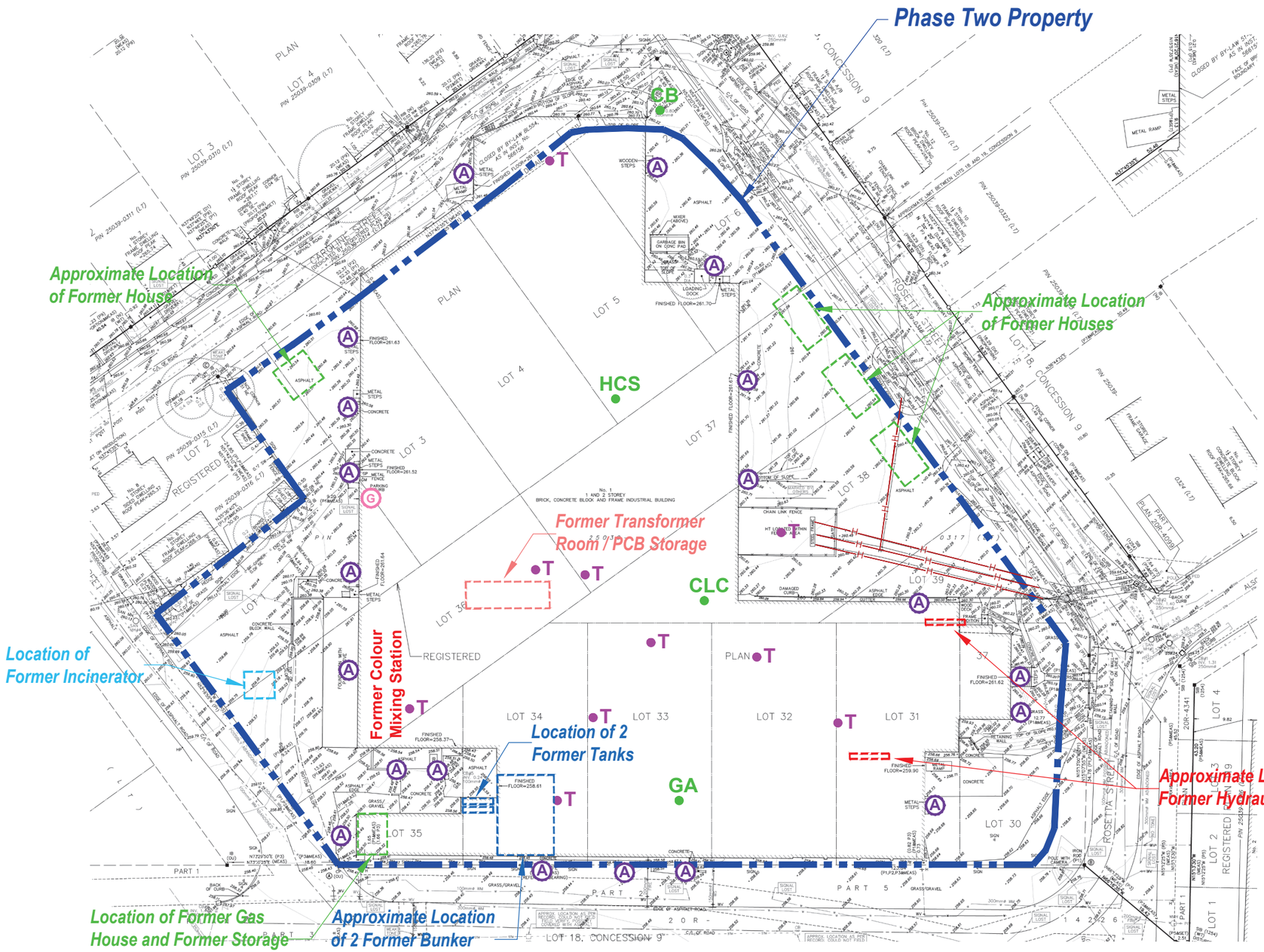

Terraprobe Inc.

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Reference:

J.D BARNES LIMITED
LAND INFORMATION SPECIALISTS
401 Wheelabrator Way, Suite A, Milton, ON
Drawn by: AP
Ref.: 17-30-157-02-A
File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

Legend:

	Phase One Property Boundary
A	Access and Exit Point
T	Transformer
G	Gas
H	Overhead Hydro
CB	Catch Basin
HCS	Hardwood Coating Storage
CLC	Coatings Leaks Containers
GA	Garage

Project Title:

Phase Two Environmental Site Assessment

Site Location:

1 Rosetta Street, Georgetown, ON

Figure Title:

SITE PLAN SHOWING FORMER AND EXISTING FEATURES

Designed By: YH	***File No.:*** 1-20-0249-42
Drawn By: AA	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 2A
Date: February 2021	

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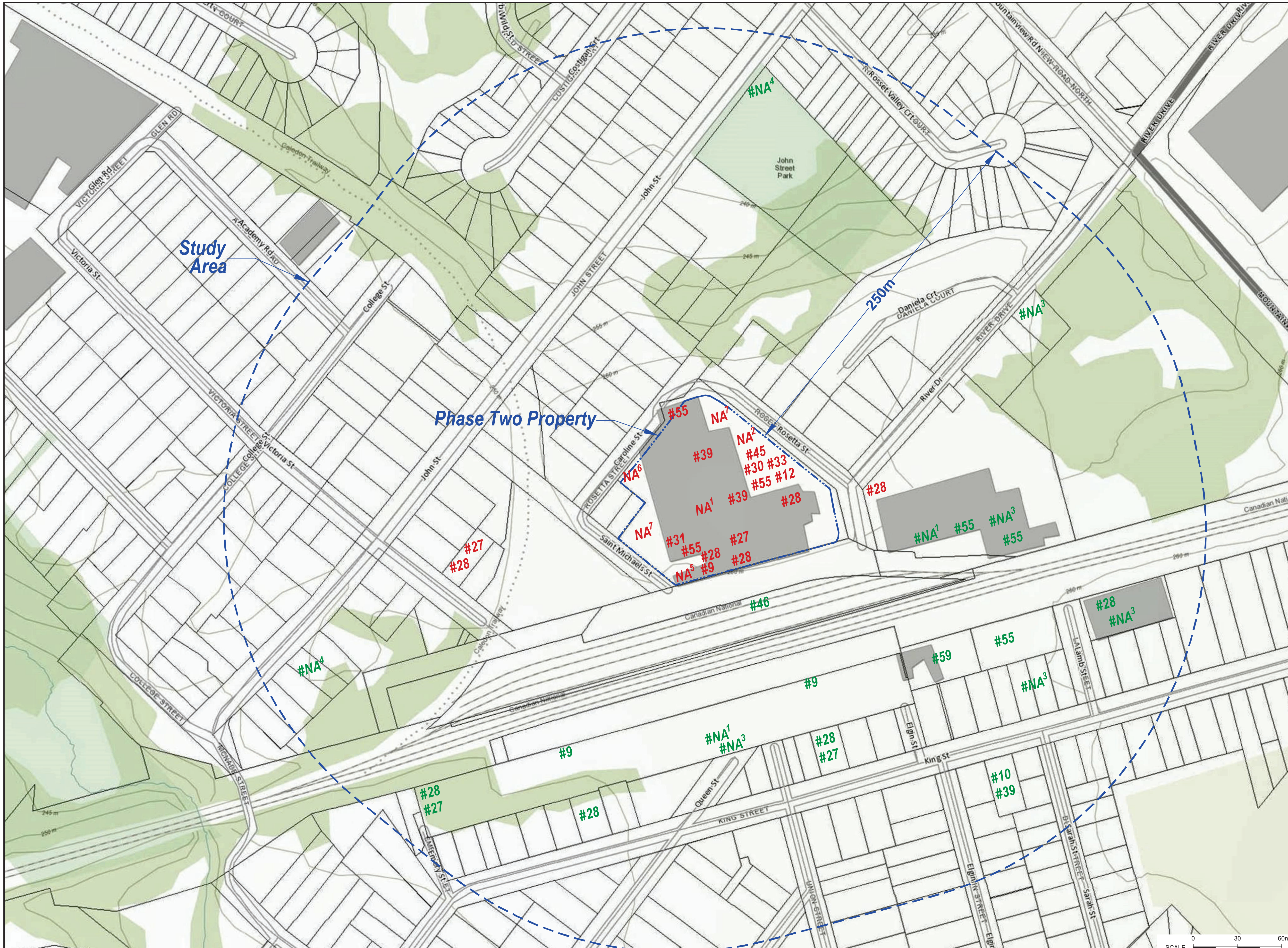

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Reference:
TOWN OF HALTON HILLS
MapLinks

Notes:
PCA - Potentially Contaminating Activity
Red PCA Causing APEC
Green PCA Not Causing APEC

Legend:

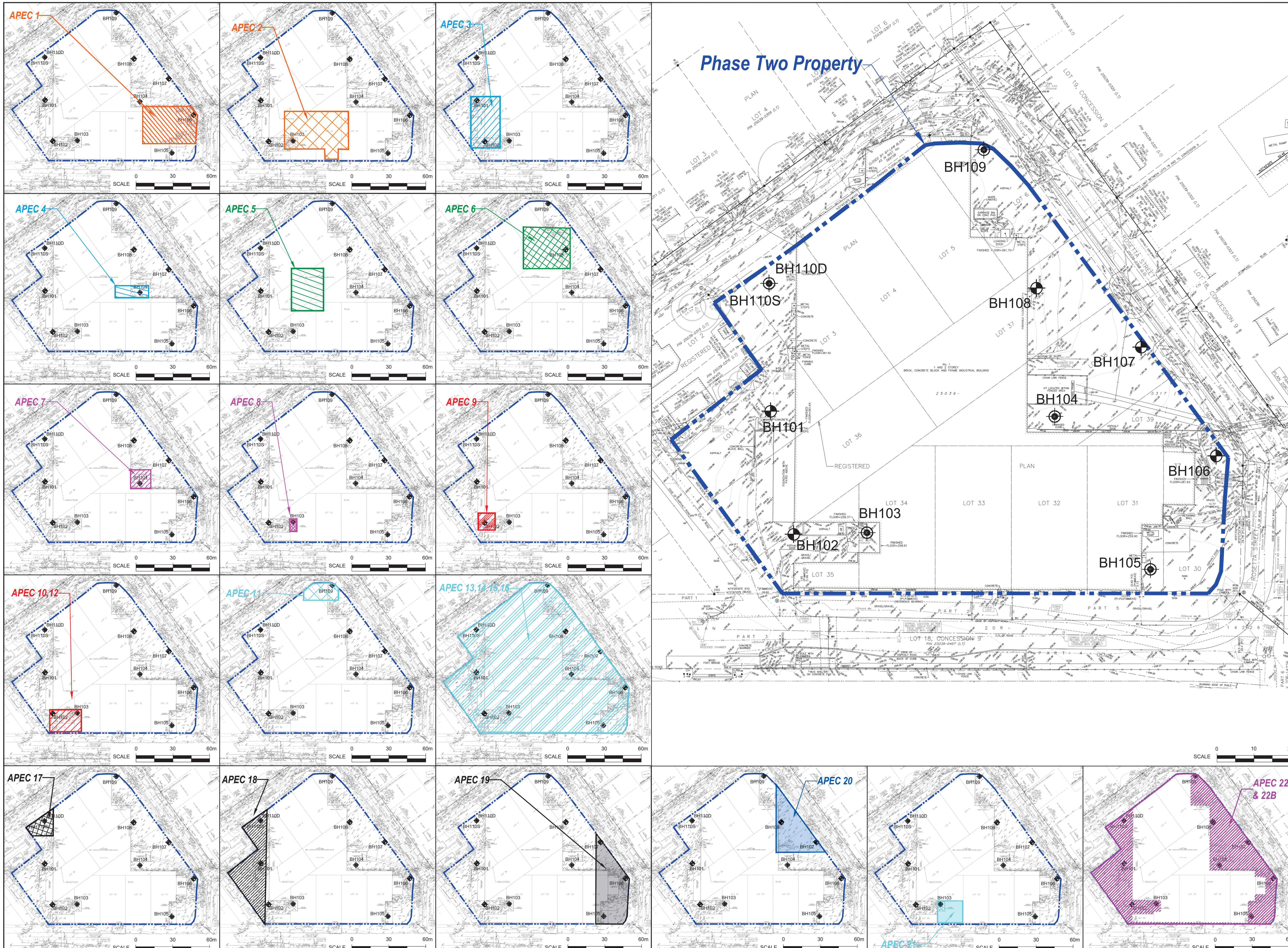
(dash-dot line)	Phase Two Property Boundary
(dashed line)	Phase Two Study Area, 250m
#9	Coal Gasification
#10	Commercial Body Shops
#12	Concrete, Cement and Lime Manufacturing
#27	Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
#28	Gasoline and Associated Products Storage in Fixed Tanks
#30	Importation of Fill Material of Unknown Quality
#31	Ink Manufacturing, Processing and Bulk Storage
#33	Metal Treatment, Coating, Plating and Finishing
#39	Paints Manufacturing, Processing and Bulk Storage
#45	Pulp, Paper and Paperboard Manufacturing and Processing
#46	Rail Yards, Tracks and Spurs
#55	Transformer Manufacturing, Processing and Use
#59	Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products
NA1	PCB Storage
NA2	Waste Receivers
NA3	Waste Generator
NA4	Ontario Spill
NA5	Storage of Hazardous Materials
NA6	Previous Exceedance
NA7	Deicing Activities

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
PCA LOCATIONS

Designed By: YH	File No.: 1-20-0249-42
Drawn By: AA	Scale: As Shown
Reviewed By: BW	Figure No.: 2B
Date: February 2021	



Terraprobe Inc.

Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing

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File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

APEC - Area of Potential Environmental Concern

Legend:

- Phase Two Property Boundary
- Borehole Location
- Monitoring Well Location
- APEC 1
- APEC 2
- APEC 3
- APEC 4
- APEC 5
- APEC 6
- APEC 7
- APEC 8
- APEC 9
- APEC 10,12
- APEC 11
- APEC 13,14,15,16
- APEC 17
- APEC 18
- APEC 19
- APEC 20
- APEC 21
- APEC 22A & 22B

Project Title:

Phase Two Environmental Site Assessment

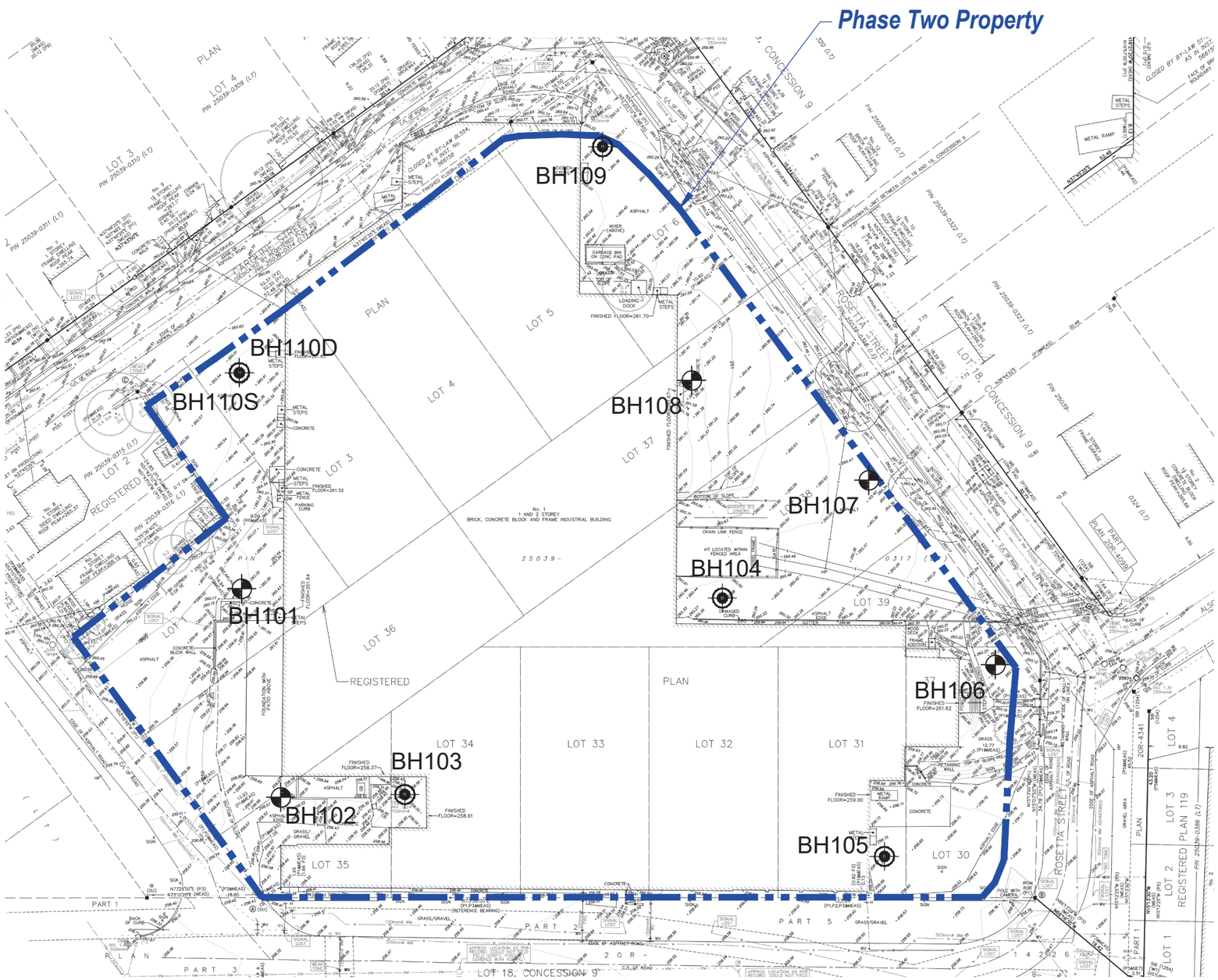
Site Location:

1 Rosetta Street, Georgetown, ON

Figure Title:

BOREHOLE LOCATIONS & APEC LOCATIONS PLAN

Designed By: YH	**File No.:** 1-20-0249-42
Drawn By: AA	**Scale:** As Shown
Reviewed By: BW	
Date: February 2021	**Figure No.:** 2C



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Ref.: 17-30-157-02-A
File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

Legend:

- Phase Two Property Boundary
- Borehole Location
- Monitoring Well Location

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
BOREHOLE LOCATION PLAN

Designed By: YH	***File No.:*** 1-20-0249-42
Drawn By: AA	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 3
Date: February 2021	

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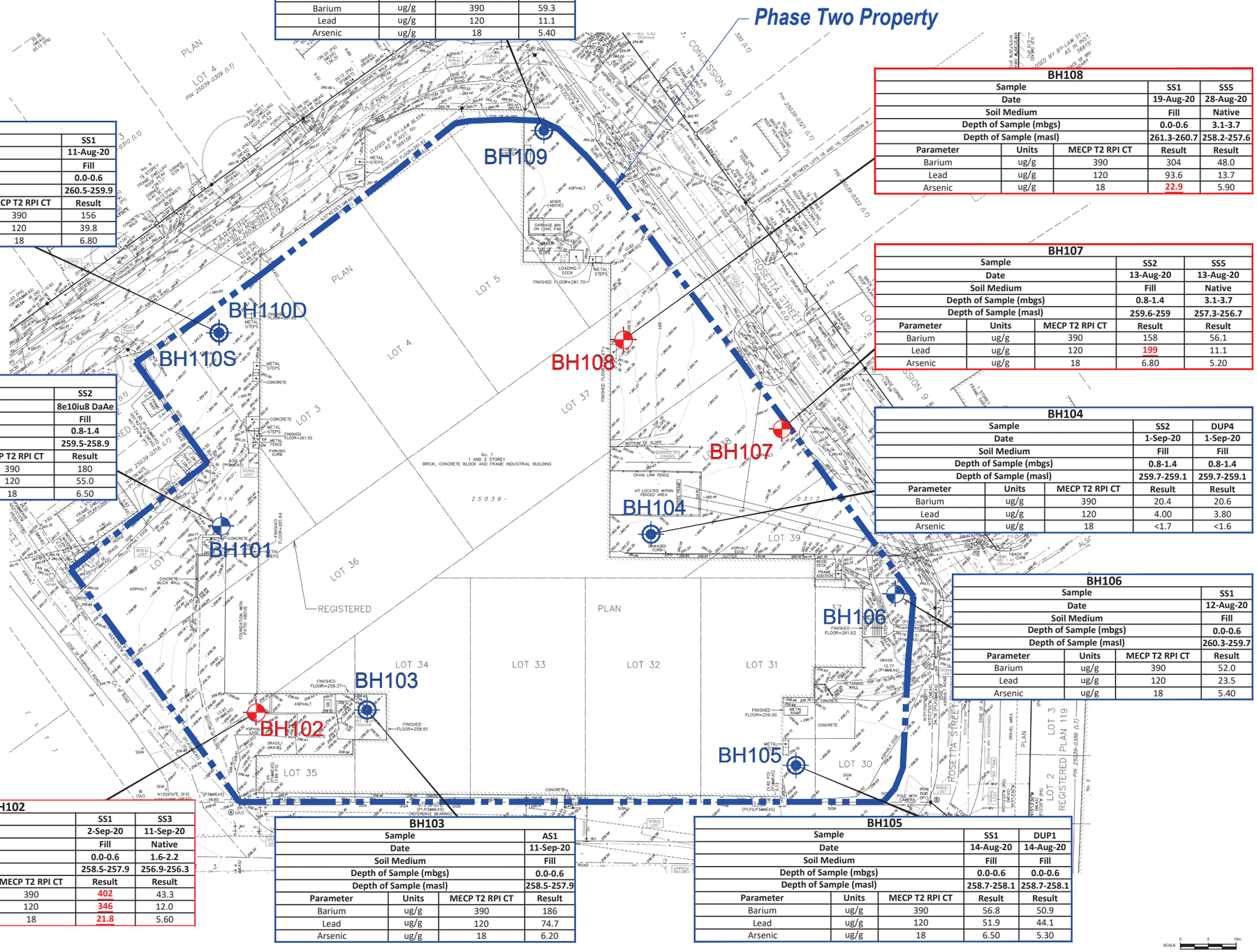

BH109			
Sample			SS1
Date			18-Aug-20
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.4-259.8
Parameter	Units	MECP T2 RPI CT	Result
Barium	ug/g	390	59.3
Lead	ug/g	120	11.1
Arsenic	ug/g	18	5.40

BH110			
Sample			SS1
Date			11-Aug-20
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.5-259.9
Parameter	Units	MECP T2 RPI CT	Result
Barium	ug/g	390	156
Lead	ug/g	120	39.8
Arsenic	ug/g	18	6.80

BH101			
Sample			SS2
Date			8e10iu8 DaAe
Soil Medium			Fill
Depth of Sample (mbgs)			0.8-1.4
Depth of Sample (masl)			259.5-258.9
Parameter	Units	MECP T2 RPI CT	Result
Barium	ug/g	390	180
Lead	ug/g	120	55.0
Arsenic	ug/g	18	6.50

BH102				
Sample			SS1	SS3
Date			2-Sep-20	11-Sep-20
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	1.6-2.2
Depth of Sample (masl)			258.5-257.9	256.9-256.3
Parameter	Units	MECP T2 RPI CT	Result	Result
Barium	ug/g	390	402	43.3
Lead	ug/g	120	346	12.0
Arsenic	ug/g	18	21.8	5.60

BH103			
Sample			AS1
Date			11-Sep-20
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			258.5-257.9
Parameter	Units	MECP T2 RPI CT	Result
Barium	ug/g	390	186
Lead	ug/g	120	74.7
Arsenic	ug/g	18	6.20

BH105				
Sample			SS1	DUP1
Date			14-Aug-20	14-Aug-20
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.0-0.6	0.0-0.6
Depth of Sample (masl)			258.7-258.1	258.7-258.1
Parameter	Units	MECP T2 RPI CT	Result	Result
Barium	ug/g	390	56.8	50.9
Lead	ug/g	120	51.9	44.1
Arsenic	ug/g	18	6.50	5.30

BH108				
Sample			SS1	SS5
Date			19-Aug-20	28-Aug-20
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	3.1-3.7
Depth of Sample (masl)			261.3-260.7	258.2-257.6
Parameter	Units	MECP T2 RPI CT	Result	Result
Barium	ug/g	390	304	48.0
Lead	ug/g	120	93.6	13.7
Arsenic	ug/g	18	22.9	5.90

BH107				
Sample			SS2	SS5
Date			13-Aug-20	13-Aug-20
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.8-1.4	3.1-3.7
Depth of Sample (masl)			259.6-259	257.3-256.7
Parameter	Units	MECP T2 RPI CT	Result	Result
Barium	ug/g	390	158	56.1
Lead	ug/g	120	199	11.1
Arsenic	ug/g	18	6.80	5.20

BH104				
Sample			SS2	DUP4
Date			1-Sep-20	1-Sep-20
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.8-1.4	0.8-1.4
Depth of Sample (masl)			259.7-259.1	259.7-259.1
Parameter	Units	MECP T2 RPI CT	Result	Result
Barium	ug/g	390	20.4	20.6
Lead	ug/g	120	4.00	3.80
Arsenic	ug/g	18	<1.7	<1.6

BH106			
Sample			SS1
Date			12-Aug-20
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.3-259.7
Parameter	Units	MECP T2 RPI CT	Result
Barium	ug/g	390	52.0
Lead	ug/g	120	23.5
Arsenic	ug/g	18	5.40

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Construction Materials, Inspection & Testing
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Reference:
J.D BARNES LIMITED
LAND INFORMATION SPECIALISTS
401 Wheelabrator Way, Suite A, Milton, ON
Drawn by: AP
Ref.: 17-30-157-02-A
File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

Legend:

Phase Two Property Boundary

Sample in Borehole / Monitoring Well Meets Standard

Sample in Borehole / Monitoring Well Exceeds Standard

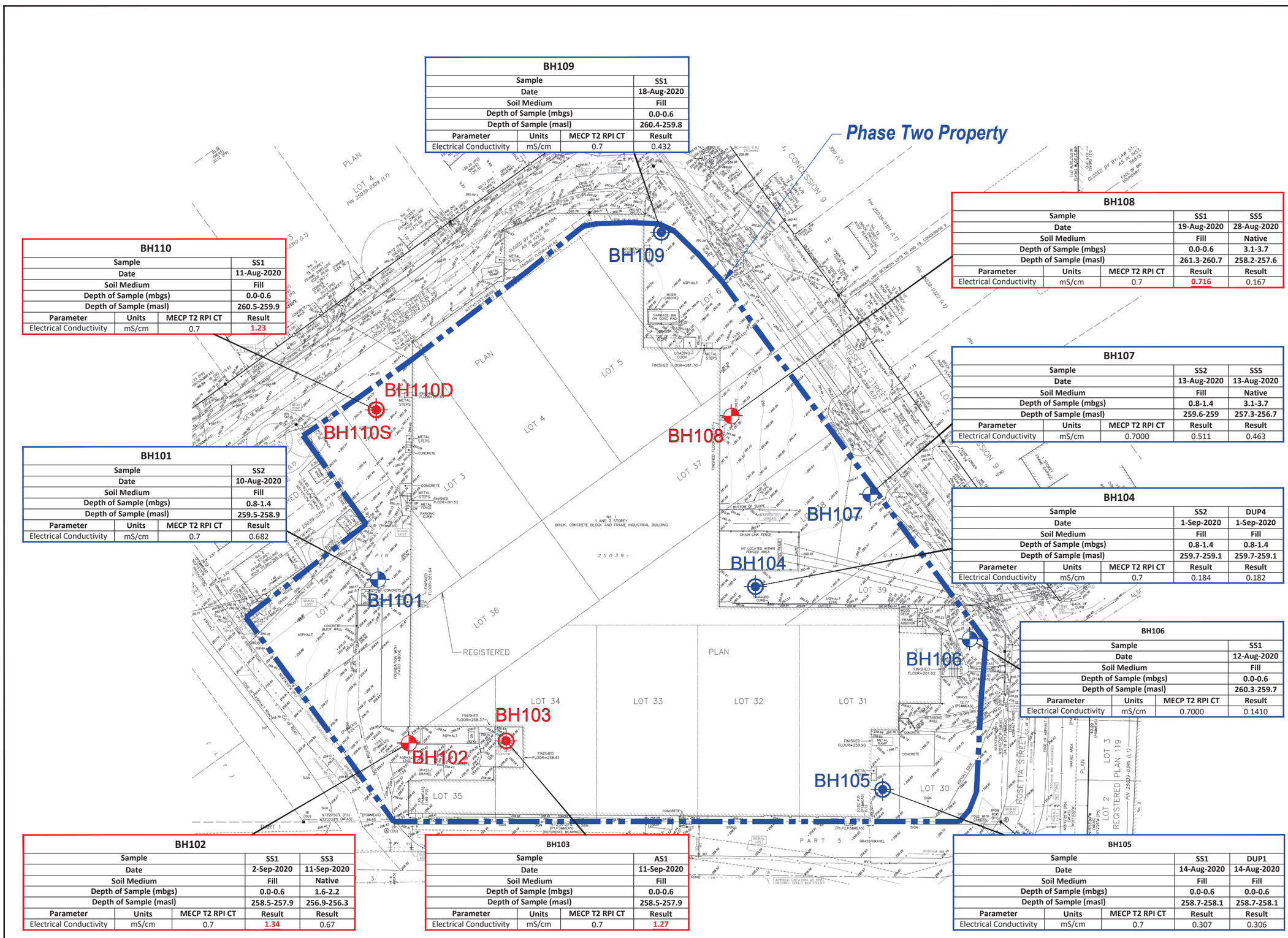
Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
M & HFM Soil Exceedances Plan View

Designed By: YH	*File No.:* 1-20-0249-42
Drawn By: AA	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 4
Date: February 2021	

Z:\1 Project Files\2020\1-20-0249 - 1 Rosetta Street, Halton Hills\4.3 Phase Two ESA\A. Dwgs, Logs\AutoCAD\1-20-0249-42.dwg
aa graham



BH109			
Sample			SS1
Date			18-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.4-259.8
Parameter	Units	MECP T2 RPI CT	Result
Electrical Conductivity	mS/cm	0.7	0.432

BH110			
Sample			SS1
Date			11-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.5-259.9
Parameter	Units	MECP T2 RPI CT	Result
Electrical Conductivity	mS/cm	0.7	1.23

BH101			
Sample			SS2
Date			10-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.8-1.4
Depth of Sample (masl)			259.5-258.9
Parameter	Units	MECP T2 RPI CT	Result
Electrical Conductivity	mS/cm	0.7	0.682

BH108				
Sample			SS1	SS5
Date			19-Aug-2020	28-Aug-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	3.1-3.7
Depth of Sample (masl)			261.3-260.7	258.2-257.6
Parameter	Units	MECP T2 RPI CT	Result	Result
Electrical Conductivity	mS/cm	0.7	0.716	0.167

BH107				
Sample			SS2	SS5
Date			13-Aug-2020	13-Aug-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.8-1.4	3.1-3.7
Depth of Sample (masl)			259.6-259	257.3-256.7
Parameter	Units	MECP T2 RPI CT	Result	Result
Electrical Conductivity	mS/cm	0.7000	0.511	0.463

BH104				
Sample			SS2	DUP4
Date			1-Sep-2020	1-Sep-2020
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.8-1.4	0.8-1.4
Depth of Sample (masl)			259.7-259.1	259.7-259.1
Parameter	Units	MECP T2 RPI CT	Result	Result
Electrical Conductivity	mS/cm	0.7	0.184	0.182

BH106			
Sample			SS1
Date			12-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.3-259.7
Parameter	Units	MECP T2 RPI CT	Result
Electrical Conductivity	mS/cm	0.7000	0.1410

BH102				
Sample			SS1	SS3
Date			2-Sep-2020	11-Sep-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	1.6-2.2
Depth of Sample (masl)			258.5-257.9	256.9-256.3
Parameter	Units	MECP T2 RPI CT	Result	Result
Electrical Conductivity	mS/cm	0.7	1.34	0.67

BH103			
Sample			AS1
Date			11-Sep-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			258.5-257.9
Parameter	Units	MECP T2 RPI CT	Result
Electrical Conductivity	mS/cm	0.7	1.27

BH105				
Sample			SS1	DUP1
Date			14-Aug-2020	14-Aug-2020
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.0-0.6	0.0-0.6
Depth of Sample (masl)			258.7-258.1	258.7-258.1
Parameter	Units	MECP T2 RPI CT	Result	Result
Electrical Conductivity	mS/cm	0.7	0.307	0.306

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Drawn by: AP
Ref.: 17-30-157-02-A
File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

Legend:

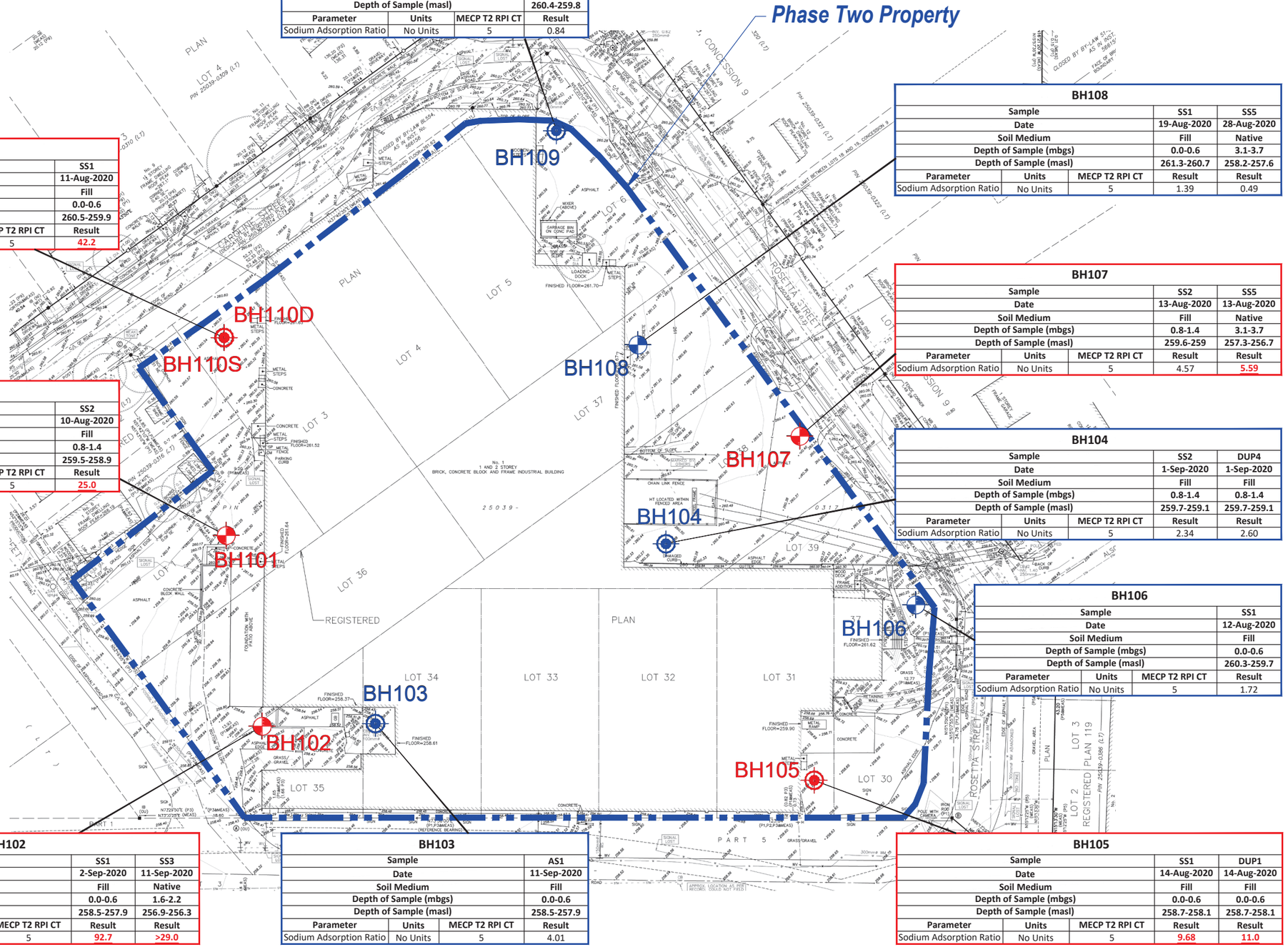
- Phase Two Property Boundary
- Sample in Borehole / Monitoring Well Meets Standard
- Sample in Borehole / Monitoring Well Exceeds Standard

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
EC Soil Exceedances - Plan View

Designed By: YH	*File No.:* 1-20-0249-42
Drawn By: AA	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 5
Date: February 2021	



BH109

Sample			SS1
Date			18-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.4-259.8
Parameter	Units	MECP T2 RPI CT	Result
Sodium Adsorption Ratio	No Units	5	0.84

BH110

Sample			SS1
Date			11-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.5-259.9
Parameter	Units	MECP T2 RPI CT	Result
Sodium Adsorption Ratio	No Units	5	42.2

BH108

Sample			SS1	SS5
Date			19-Aug-2020	28-Aug-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	3.1-3.7
Depth of Sample (masl)			261.3-260.7	258.2-257.6
Parameter	Units	MECP T2 RPI CT	Result	Result
Sodium Adsorption Ratio	No Units	5	1.39	0.49

BH107

Sample			SS2	SS5
Date			13-Aug-2020	13-Aug-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.8-1.4	3.1-3.7
Depth of Sample (masl)			259.6-259	257.3-256.7
Parameter	Units	MECP T2 RPI CT	Result	Result
Sodium Adsorption Ratio	No Units	5	4.57	5.59

BH101

Sample			SS2
Date			10-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.8-1.4
Depth of Sample (masl)			259.5-258.9
Parameter	Units	MECP T2 RPI CT	Result
Sodium Adsorption Ratio	No Units	5	25.0

BH104

Sample			SS2	DUP4
Date			1-Sep-2020	1-Sep-2020
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.8-1.4	0.8-1.4
Depth of Sample (masl)			259.7-259.1	259.7-259.1
Parameter	Units	MECP T2 RPI CT	Result	Result
Sodium Adsorption Ratio	No Units	5	2.34	2.60

BH106

Sample			SS1
Date			12-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.3-259.7
Parameter	Units	MECP T2 RPI CT	Result
Sodium Adsorption Ratio	No Units	5	1.72

BH102

Sample			SS1	SS3
Date			2-Sep-2020	11-Sep-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	1.6-2.2
Depth of Sample (masl)			258.5-257.9	256.9-256.3
Parameter	Units	MECP T2 RPI CT	Result	Result
Sodium Adsorption Ratio	No Units	5	92.7	>29.0

BH103

Sample			AS1
Date			11-Sep-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			258.5-257.9
Parameter	Units	MECP T2 RPI CT	Result
Sodium Adsorption Ratio	No Units	5	4.01

BH105

Sample			SS1	DUP1
Date			14-Aug-2020	14-Aug-2020
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.0-0.6	0.0-0.6
Depth of Sample (masl)			258.7-258.1	258.7-258.1
Parameter	Units	MECP T2 RPI CT	Result	Result
Sodium Adsorption Ratio	No Units	5	9.68	11.0

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File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

Legend:

- Phase Two Property Boundary
- Sample in Borehole / Monitoring Well Meets Standard
- Sample in Borehole / Monitoring Well Exceeds Standard

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
SAR Soil Exceedances - Plan View

Designed By: YH	*File No.:* 1-20-0249-42
Drawn By: AA	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 6
Date: February 2021	

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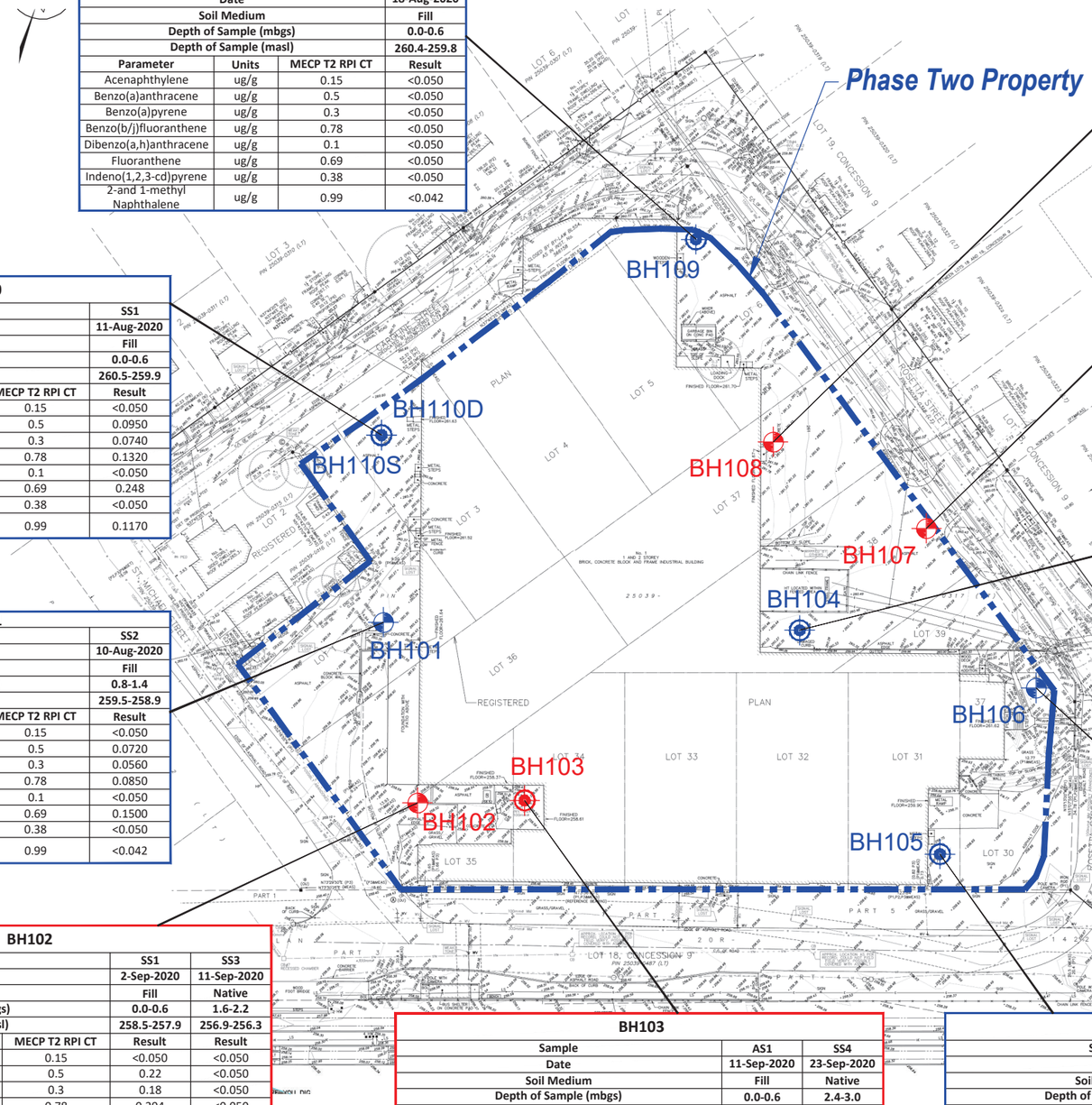

BH109

Sample			SS1
Date			18-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.4-259.8
Parameter	**Units**	**MECP T2 RPI CT**	**Result**
Acenaphthylene	ug/g	0.15	<0.050
Benzo(a)anthracene	ug/g	0.5	<0.050
Benzo(a)pyrene	ug/g	0.3	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050
Fluoranthene	ug/g	0.69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	<0.042

BH110

Sample			SS1
Date			11-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.5-259.9
Parameter	**Units**	**MECP T2 RPI CT**	**Result**
Acenaphthylene	ug/g	0.15	<0.050
Benzo(a)anthracene	ug/g	0.5	0.0950
Benzo(a)pyrene	ug/g	0.3	0.0740
Benzo(b/j)fluoranthene	ug/g	0.78	0.1320
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050
Fluoranthene	ug/g	0.69	0.248
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	0.1170

BH101

Sample			SS2
Date			10-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.8-1.4
Depth of Sample (masl)			259.5-258.9
Parameter	**Units**	**MECP T2 RPI CT**	**Result**
Acenaphthylene	ug/g	0.15	<0.050
Benzo(a)anthracene	ug/g	0.5	0.0720
Benzo(a)pyrene	ug/g	0.3	0.0560
Benzo(b/j)fluoranthene	ug/g	0.78	0.0850
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050
Fluoranthene	ug/g	0.69	0.1500
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	<0.042

BH102

Sample			SS1	SS3
Date			2-Sep-2020	11-Sep-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	1.6-2.2
Depth of Sample (masl)			258.5-257.9	256.9-256.3
Parameter	**Units**	**MECP T2 RPI CT**	**Result**	**Result**
Acenaphthylene	ug/g	0.15	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	0.22	<0.050
Benzo(a)pyrene	ug/g	0.3	0.18	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	0.294	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.456	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.107	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	1.13	<0.042

BH103

Sample			AS1	SS4
Date			11-Sep-2020	23-Sep-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	2.4-3.0
Depth of Sample (masl)			258.5-257.9	256.1-255.5
Parameter	**Units**	**MECP T2 RPI CT**	**Result**	**Result**
Acenaphthylene	ug/g	0.15	0.095	<0.050
Benzo(a)anthracene	ug/g	0.5	0.441	<0.050
Benzo(a)pyrene	ug/g	0.3	0.543	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	0.813	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	0.098	<0.050
Fluoranthene	ug/g	0.69	0.815	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.412	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	0.158	<0.042

BH105

Sample			SS2	DUP2
Date			14-Aug-2020	14-Aug-2020
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.8-1.4	0.8-1.4
Depth of Sample (masl)			257.9-257.3	257.9-257.3
Parameter	**Units**	**MECP T2 RPI CT**	**Result**	**Result**
Acenaphthylene	ug/g	0.15	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	<0.050	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	<0.050	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.0880	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	<0.042	<0.042

BH108

Sample			SS1	SS5
Date			19-Aug-2020	28-Aug-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.0-0.6	3.1-3.7
Depth of Sample (masl)			261.3-260.7	258.2-257.6
Parameter	**Units**	**MECP T2 RPI CT**	**Result**	**Result**
Acenaphthylene	ug/g	0.15	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	0.586	<0.050
Benzo(a)pyrene	ug/g	0.3	0.446	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	0.728	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	0.078	<0.050
Fluoranthene	ug/g	0.69	1.350	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.257	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	0.608	<0.042

BH107

Sample			SS2	SS5
Date			13-Aug-2020	13-Aug-2020
Soil Medium			Fill	Native
Depth of Sample (mbgs)			0.8-1.4	3.1-3.7
Depth of Sample (masl)			259.6-259	257.3-256.7
Parameter	**Units**	**MECP T2 RPI CT**	**Result**	**Result**
Acenaphthylene	ug/g	0.15	0.349	<0.050
Benzo(a)anthracene	ug/g	0.5	1.78	<0.050
Benzo(a)pyrene	ug/g	0.3	1.73	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	2.52	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	0.317	<0.050
Fluoranthene	ug/g	0.69	4.17	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	1.32	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	0.327	<0.042

BH104

Sample			SS2	DUP4
Date			1-Sep-2020	1-Sep-2020
Soil Medium			Fill	Fill
Depth of Sample (mbgs)			0.8-1.4	0.8-1.4
Depth of Sample (masl)			259.7-259.1	259.7-259.1
Parameter	**Units**	**MECP T2 RPI CT**	**Result**	**Result**
Acenaphthylene	ug/g	0.15	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	<0.050	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	<0.050	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	<0.042	<0.042

BH106

Sample			SS1
Date			12-Aug-2020
Soil Medium			Fill
Depth of Sample (mbgs)			0.0-0.6
Depth of Sample (masl)			260.3-259.7
Parameter	**Units**	**MECP T2 RPI CT**	**Result**
Acenaphthylene	ug/g	0.15	<0.050
Benzo(a)anthracene	ug/g	0.5	<0.050
Benzo(a)pyrene	ug/g	0.3	<0.050
Benzo(b/j)fluoranthene	ug/g	0.78	<0.050
Dibenzo(a,h)anthracene	ug/g	0.1	<0.050
Fluoranthene	ug/g	0.69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050
2-and 1-methyl Naphthalene	ug/g	0.99	<0.042

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Drawn by: AP
Ref.: 17-30-157-02-A
File: G:\17-30-157\02\Drawing\17-30-157-02-A.dgn
Date: July 2nd 2020

Notes:

Legend:

- Phase Two Property Boundary
- Sample in Borehole / Monitoring Well Meets Standard
- Sample in Borehole / Monitoring Well Exceeds Standard

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1 Rosetta Street, Georgetown, ON

Figure Title:
PAH Soil Exceedances - Plan View

Designed By: YH	***File No.:*** 1-20-0249-42
Drawn By: AA	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 7
Date: February 2021	

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TABLES

TERRAPROBE INC.

TABLE 1
SOIL QUALITY ANALYSIS
METALS & INORGANICS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name	MECP			BH101 SS2	BH102 SS1	BH102 SS3	BH103 AS1	BH103 SS4	BH104 SS2	DUP 4	BH105 SS1	DUP1	BH106 SS1	BH107 SS2	BH107 SS5	BH108 SS1	BH108 SS5	BH109 SS1	BH110 SS1
ALS Lab ID#	Table 2	Maximum	Units	L2487509-1	L2497939-1	L2502013-1	L2502693-1	L2530944-1	L2497295-3	L2497295-4	L2490028-1	L2490028-2	L2489232-1	L2489231-1	L2493781-1	L2491989-1	L2495925-1	L2491701-1	L2487513-1
Date	Criteria			10-Aug-20	02-Sep-20	11-Sep-20	11-Sep-20	17-Nov-20	01-Sep-20	01-Sep-20	14-Aug-20	14-Aug-20	12-Aug-20	13-Aug-20	13-Aug-20	19-Aug-20	28-Aug-20	18-Aug-20	11-Aug-20
Depth of Sample (mbgs)	Coarse			0.8-1.4	0.0-0.6	1.6-2.2	0.0-0.6	2.3-2.9	0.8-1.4	0.8-1.4	0.0-0.6	0.0-0.6	0.0-0.6	0.8-1.4	3.1-3.7	0.0-0.6	3.1-3.7	0.0-0.6	0.0-0.6
Sample Medium				Fill	Fill	Native	Fill	Native	Fill	Fill	Fill	Fill	Fill	Fill	Native	Fill	Native	Fill	Fill
Parameter	R/P/I									BH104 SS2		BH105 SS1							
Metals																			
Barium	390	402	µg/g	180	402	43.3	186	NA	20.4	20.6	56.8	50.9	52	158	56.1	304	48	59.3	156
Beryllium	4	1.22	µg/g	0.51	0.91	0.53	< 0.5	NA	< 0.5	< 0.5	0.51	<0.50	< 0.5	0.77	< 0.5	1.22	< 0.5	0.6	0.64
Boron	120	19.6	µg/g	8.7	15.8	13	11.8	NA	< 5	< 5	7.3	6.5	5.3	19.6	13.2	15.3	12.1	8.1	8
Cadmium	1.2	0.5	µg/g	< 0.50	< 0.50	< 0.50	< 0.50	NA	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chromium	160	60.2	µg/g	17.9	60.2	16.6	16.4	NA	6.5	6.2	14.7	11.7	12.2	27.7	16.0	21.9	14.3	18.4	18.8
Cobalt	22	10.1	µg/g	6.4	8.4	10.1	4.2	NA	2.7	2.5	6.7	5.5	5.4	6.6	9.1	9.3	9.0	8.5	6.9
Copper	140	60.2	µg/g	43.4	60.2	45.4	32.8	NA	7.4	7.3	34.3	27.2	24.7	24.6	45.1	56.7	43.9	32.6	32.3
Lead	120	346	µg/g	55	346	12	74.7	NA	4	3.8	51.9	44.1	23.5	199	11.1	93.6	13.7	11.1	39.8
Molybdenum	6.9	2.4	µg/g	< 1.0	1.8	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.4	< 1.0	< 1.0	< 1.0
Nickel	100	23.5	µg/g	14.6	20.7	20.3	10.3	NA	5.1	5.1	15.2	12.1	11.3	16.3	17.9	23.5	17.6	18.6	15.0
Silver	20	0.2	µg/g	< 0.20	< 0.20	< 0.20	< 0.20	NA	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Thallium	1	0.61	µg/g	< 0.50	< 0.50	< 0.50	< 0.50	NA	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.61	< 0.50	< 0.50	< 0.50
Uranium	23	1	µg/g	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	86	32.6	µg/g	19.4	23.2	23.7	18.1	NA	17	14.7	25.2	20.9	18.6	32.6	23	27.1	25.8	29	25.6
Zinc	340	167	µg/g	80.1	92.4	55.4	68.3	NA	13.2	13.3	63.7	54.3	41.9	97.0	52.3	167.0	53.6	51.8	62.7
Hydride Metals																			
Antimony	7.5	3	µg/g	< 1.0	2.2	< 1.0	3.0	NA	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 1.0
Arsenic	18	22.9	µg/g	6.5	21.8	5.6	6.2	NA	< 1.7	< 1.6	6.5	5.3	5.4	6.8	5.2	22.9	5.9	5.4	6.8
Selenium	2.4	1	µg/g	< 1.0	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Other Regulated Parameters																			
Boron (Hot Water Soluble)	1.5	0.8	µg/g	0.4	0.37	0.16	0.28	NA	0.21	0.22	0.13	0.13	0.25	0.8	0.67	0.74	0.38	0.52	0.35
Chromium, Hexavalent	8	1.08	µg/g	0.22	0.42	< 0.2	1.08	NA	0.33	0.28	< 0.2	0.23	0.31	0.6	< 0.2	< 0.2	< 0.2	0.5	0.97
Cyanide, Free	0.051	0.05	ug/g	< 0.050	< 0.050	< 0.050	< 0.050	NA	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Mercury	0.27	0.223	µg/g	0.223	0.0421	0.0107	0.0504	NA	0.0093	0.0085	0.0413	0.0393	0.0471	0.0504	0.0102	0.194	0.0235	0.0319	0.0981
Electrical Conductivity	0.7	1.34	mS/cm	0.682	1.34	0.67	1.27	NA	0.184	0.182	0.307	0.306	0.141	0.511	0.463	0.716	0.167	0.432	1.23
Sodium Adsorption Ratio	5	11	no units	25.0*	92.7*	> 29.0**	4.01*	NA	2.34*	2.60*	9.68	11.0	1.72*	4.57	5.59	1.39	0.49	0.84	42.2*
pH	-	11.8	pH	7.80	7.88	7.98	11.80	8.16	7.64	7.77	7.74	7.85	7.63	8.20	8.04	7.76	7.99	7.34	7.68

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected
NV = No value
NA = Not assessed
* Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
**SAR is incalculable due to Ca and Mg below DL (with Na above DL). Lowest possible SAR is reported as minimum value.

TABLE 2
SOIL QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbgs) Sample Medium Parameter	MECP Table 2 Criteria Coarse R/P/I	Maximum	Units	BH101 SS3 L2487509-2 10-Aug-20 1.6-2.2 Fill	BH101 SS6 L2487509-3 10-Aug-20 3.9-4.5 Native	BH102 SS2 L2497939-1 02-Sep-20 0.8-1.4 Fill	BH103 AS2 L2502693-2 11-Sep-20 0.8-1.4 Fill	BH104 SS1 L2497295-1 01-Sep-20 0.0-0.6 Fill	DUP 3 L2497295-2 01-Sep-20 0.0-0.6 Fill BH104SS1	BH105 SS2 L2490028-3 14-Aug-20 0.8-1.4 Fill	BH106 SS2 L2489232-2 12-Aug-20 0.8-1.4 Fill	BH107 SS3 L2489231-2 13-Aug-20 1.6-2.2 Fill	BH108 SS4 L2491989-2 19-Aug-20 2.4-3.0 Native	BH109 SS2A L2491701-2 18-Aug-20 0.8-1.1 Fill	BH110 SS3 L2487513-2 11-Aug-20 1.6-2.2 Fill
F1 (C6 to C10)	NV	5	µg/g	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
F1 (C6 to C10) minus BTEX	55	5	µg/g	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
F2 (C10 to C16)	98	10	µg/g	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F3 (C16 to C34)	300	102	µg/g	< 50	< 50	< 50	102	< 50	< 50	64	< 50	< 50	< 50	< 50	< 50
F4 (C34 to C50)	2800	123	µg/g	< 50	< 50	< 50	64	< 50	< 50	123	< 50	< 50	< 50	< 50	< 50
F4G-SG (GHH-Silica) - Gravimetric Heavy Hydrocarbons	-	340	-							340					
Chrom. To baseline at nC50	-	0	-	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES
Moisture Content	-	15.6	%	8.32	6.42	6.03	8.65	7.14	7.63	4.82	6.26	8.15	11.7	15.6	13.5

Notes
Value highlighted in red indicate exceedances above the applicable criteria
Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standards
ND = Not detected
NV = No value
NA = Not assessed

TABLE 3
SOIL QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS I
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbgs) Sample Medium Parameter	MECP Table 2 Criteria Coarse R/P/I	Maximum	Units	BH101 SS3 L2487509-2 10-Aug-20 1.6-2.2 Fill	BH101 SS6 L2487509-3 10-Aug-20 3.9-4.5 Native	BH102 SS2 L2497939-2 02-Sep-20 0.8-1.4 Fill	BH103 AS2 L2502693-2 11-Sep-20 0.8-1.4 Fill	BH104 SS1 L2497295-1 01-Sep-20 0.0-0.6 Fill	DUP 3 L2497295-2 01-Sep-20 0.0-0.6 Fill BH104 SS1	BH105 SS2 L2490028-3 14-Aug-20 0.8-1.4 Fill	BH106 SS2 L2489232-2 12-Aug-20 0.8-1.4 Fill	BH107 SS3 L2489231-2 13-Aug-20 1.6-2.2 Fill	BH108 SS4 L2491989-2 19-Aug-20 2.4-3.0 Native	BH109 SS2A L2491701-2 18-Aug-20 0.8-1.1 Fill	BH110 SS3 L2487513-2 11-Aug-20 1.6-2.2 Fill
Acetone	16	< 0.50	µg/g	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	1.5	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Bromoform	0.27	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Bromomethane	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Carbon Tetrachloride	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Chlorobenzene	2.4	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Dibromochloromethane	2.3	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Chloroform	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Ethylene Dibromide (1,2 -Dibromoethane)	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,2-Dichlorobenzene	1.2	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,3-Dichlorobenzene	4.8	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,4-Dichlorobenzene	0.083	0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Dichlorodifluoromethane	16	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,1-Dichloroethane	0.47	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,2-Dichloroethane	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,1-Dichloroethylene	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Cis- 1,2-Dichloroethylene	1.9	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Trans- 1,2-Dichloroethylene	0.084	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Methylene Chloride	0.1	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,2-Dichloropropane	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,3-Dichloropropene	0.05	< 0.04	µg/g	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042
n-Hexane	2.8	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Methyl Ethyl Ketone	16	< 0.50	µg/g	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methyl Isobutyl Ketone	1.7	< 0.50	µg/g	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methyl tert-butyl Ether (MTBE)	0.75	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Styrene	0.7	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,1,1,2-Tetrachloroethane	0.058	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,1,2,2-Tetrachloroethane	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Tetrachloroethylene	0.28	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,1,1-Trichloroethane	0.38	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
1,1,2-Trichloroethane	0.05	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Trichloroethylene	0.061	0.02	µg/g	< 0.010	< 0.010	0.021	0.014	0.011	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Trichlorofluoromethane	4	< 0.05	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Vinyl Chloride	0.02	< 0.02	µg/g	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020

Notes
Value highlighted in red indicate exceedances above the applicable criteria
Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard
ND = Not detected
NV = No value
NA = Not assessed

TABLE 4
SOIL QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS II (BTEX)
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbgs) Sample Medium Parameter	MECP Table 2 Criteria Coarse R/P/I	Maximum	Units	BH101 SS3 L2487509-2 10-Aug-20 1.6-2.2 Fill	BH101 SS6 L2487509-3 10-Aug-20 3.9-4.5 Native	BH102 SS2 L2497939-2 02-Sep-20 0.8-1.4 Fill	BH103 AS2 L2502693-2 11-Sep-20 0.8-1.4 Fill	BH104 SS1 L2497295-1 01-Sep-20 0.0-0.6 Fill	DUP 3 L2497295-2 01-Sep-20 0.0-0.6 Fill BH104 SS1	BH105 SS2 L2490028-3 14-Aug-20 0.8-1.4 Fill	BH106 SS2 L2489232-2 12-Aug-20 0.8-1.4 Fill	BH107 SS3 L2489231-2 13-Aug-20 1.6-2.2 Fill	BH108 SS4 L2491989-2 19-Aug-20 2.4-3.0 Native	BH109 SS2A L2491701-2 18-Aug-20 0.8-1.1 Fill	BH110 SS3 L2487513-2 11-Aug-20 1.6-2.2 Fill
Benzene	0.21	< 0.0068	µg/g	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068
Toluene	2.3	< 0.08	µg/g	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080
Ethylbenzene	1.1	< 0.018	µg/g	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018
Xylenes (Total)	3.1	0.123	µg/g	< 0.050	< 0.050	< 0.050	0.123	< 0.050	0.079	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected
NV = No value
NA = Not assessed

TABLE 5
SOIL QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbgs) Sample Medium Parameter	MECP Table 2 Criteria Coarse R/P/I	Maximum	Units	BH101 SS2 L2487509-1 10-Aug-20 0.8-1.4 Fill	BH102 SS1 L2497939-2 02-Sep-20 0.0-0.6 Fill	BH102 SS3 L2502013-1 11-Sep-20 1.6-2.2 Native	BH103 AS1 L2502693-1 11-Sep-20 0.0-0.6 Fill	BH103 SS4 L2507368-1 23-Sep-20 2.4-3.0 Native	BH104 SS2 L2497295-3 01-Sep-20 0.8-1.4 Fill	DUP 4 L2497295-4 01-Sep-20 0.8-1.4 Fill BH104 SS2	BH105 SS2 L2490028-3 14-Aug-20 0.8-1.4 Fill	DUP2 L2490028-4 14-Aug-20 0.8-1.4 Fill BH105 SS2	BH106 SS1 L2489232-1 12-Aug-20 0.0-0.6 Fill	BH107 SS2 L2489231-1 13-Aug-20 0.8-1.4 Fill	BH107 SS5 L2493781-1 13-Aug-20 3.1-3.7 Native	BH108 SS1 L2491989-1 19-Aug-20 0.0-0.6 Fill	BH108 SS5 L2491989-3 19-Aug-20 3.1-3.7 Native	BH109 SS1 L2491701-1 18-Aug-20 0.0-0.6 Fill	BH110 SS1 L2487513-1 11-Aug-20 0.0-0.6 Fill
Acenaphthene	7.9	0.182	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.182	< 0.050	0.055	< 0.050	< 0.050	< 0.050
Acenaphthylene	0.15	**0.349**	µg/g	< 0.050	< 0.050	< 0.050	0.095	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	**0.349**	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Anthracene	0.67	0.536	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.536	< 0.050	0.175	< 0.050	< 0.050	< 0.050
Benzo(a)anthracene	0.5	**1.78**	µg/g	0.072	0.224	< 0.050	0.441	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	**1.78**	< 0.050	**0.586**	< 0.050	< 0.050	0.095
Benzo(a)pyrene	0.3	**1.73**	µg/g	0.056	0.180	< 0.050	**0.543**	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	**1.73**	< 0.050	**0.446**	< 0.050	< 0.050	0.074
Benzo(b/j)fluoranthene	0.78	**2.52**	µg/g	0.085	0.294	< 0.050	**0.813**	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	**2.52**	< 0.050	0.728	< 0.050	< 0.050	0.132
Benzo(g,h,i)perylene	6.6	1.43	µg/g	< 0.050	0.140	< 0.050	0.465	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	1.43	< 0.050	0.277	< 0.050	< 0.050	< 0.050
Benzo(k)fluoranthene	0.78	0.724	µg/g	< 0.050	0.093	< 0.050	0.243	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.724	< 0.050	0.196	< 0.050	< 0.050	< 0.050
Chrysene	7	2.25	µg/g	0.083	0.295	< 0.050	0.547	< 0.050	< 0.050	< 0.050	0.053	< 0.050	< 0.050	2.25	< 0.050	0.653	< 0.050	< 0.050	0.129
Dibenzo(a,h)anthracene	0.1	**0.317**	µg/g	< 0.050	< 0.050	< 0.050	0.098	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	**0.317**	< 0.050	0.078	< 0.050	< 0.050	< 0.050
Fluoranthene	0.69	**4.17**	µg/g	0.150	0.456	< 0.050	**0.815**	< 0.050	< 0.050	< 0.050	0.088	< 0.050	< 0.050	**4.17**	< 0.050	**1.350**	< 0.050	< 0.050	0.248
Fluorene	62	0.202	µg/g	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.202	< 0.050	0.058	< 0.050	< 0.050	< 0.050
Indeno(1,2,3-cd)pyrene	0.38	**1.32**	µg/g	< 0.050	0.107	< 0.050	**0.412**	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	**1.32**	< 0.050	0.257	< 0.050	< 0.050	< 0.050
2-and 1-methyl Naphthalene	0.99	**1.13**	µg/g	< 0.042	**1.13**	< 0.042	0.158	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	0.327	< 0.042	0.608	< 0.042	< 0.042	0.117
Naphthalene	0.6	0.324	µg/g	< 0.013	< 0.324	< 0.013	0.050	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	< 0.013	0.155*	< 0.013	0.189	< 0.013	< 0.013	0.037
Phenanthrene	6.2	3.19	µg/g	0.096	< 0.506	< 0.046	0.275	< 0.046	< 0.046	< 0.046	0.047	< 0.046	< 0.046	3.19	< 0.046	1.020	< 0.046	< 0.046	0.147
Pyrene	78	3.43	µg/g	0.124	< 0.402	< 0.050	0.742	< 0.050	< 0.050	< 0.050	0.076	< 0.050	< 0.050	3.43	< 0.050	1.170	< 0.050	< 0.050	0.202

Notes

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ND = Not detected
NV = No value
NA = Not assessed
*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

TABLE 6
SOIL QUALITY ANALYSIS
POLYCHLORINATED BIPHENYLS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name **ALS Lab ID#** **Date** **Depth of Sample (mbgl)** **Sample Medium** **Parameter**	**MECP Table 2 Criteria Coarse** **R/P/I**	**Maximum**	**Units**	**BH102 SS1** **L2497939-2** **02-Sep-20** **0.0-0.6** **Fill**	**BH104 SS1** **L2497295-1** **01-Sep-20** **0.0-0.6** **Fill**	**DUP 3** **L2497295-2** **01-Sep-20** **0.0-0.6** **Fill** **BH104 SS1**	**BH109 SS1** **L2491701-1** **18-Aug-20** **0.0-0.6** **Fill**
Aroclor 1242	NV	< 0.01	µg/g	< 0.01	< 0.01	< 0.01	< 0.01
Aroclor 1248	NV	< 0.01	µg/g	< 0.01	< 0.01	< 0.01	< 0.01
Aroclor 1254	NV	< 0.01	µg/g	0.029	< 0.01	< 0.01	< 0.01
Aroclor 1260	NV	< 0.01	µg/g	0.018	< 0.01	< 0.01	< 0.01
Polychlorinated Biphenyls	0.35	< 0.02	µg/g	0.047	< 0.02	< 0.02	< 0.02
d14-Terphenyl			%	97.3	103.6	95.1	117.8

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected
NV = No value
NA = Not assessed

TABLE 7
GROUND WATER QUALITY ANALYSIS
METALS AND INORGANICS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Screened (masl) Parameter	MECP Table 2 2011 Criteria Coarse	Maximum	Units	BH 105 L2507369-1 23-Sep-20 238.9-235.8	BH 109 L2507369-2 23-Sep-20 254.3-251.3	DUP L2507369-3 23-Sep-20 254.3-251.3 BH 109	BH 110S L2507369-1 23-Sep-20 254.4-251.4
Metals							
Barium	1000	104	µg/L	78.2	104	103	385*
Beryllium	4	< 0.1	µg/L	< 0.10	< 0.10	< 0.10	< 1.0*
Boron	5000	< 420	µg/L	420	64	67	580*
Cadmium	2.7	< 0	µg/L	< 0.020**	< 0.020**	< 0.020**	< 0.05*
Chromium	50	< 0.5	µg/L	< 0.50	< 0.50	< 0.50	< 5.00*
Cobalt	3.8	0.67	µg/L	0.67	0.37	0.37	2.0*
Copper	87	4.22	µg/L	0.98	0.38	4.22	< 2.0*
Lead	10	< 0.169	µg/L	< 0.050	< 0.050	0.169	< 0.50*
Molybdenum	70	44.6	µg/L	30.2	44.6	42.5	7.31*
Nickel	100	< 2.24	µg/L	2.24	0.77	0.74	< 5.0*
Silver	1.5	< 0.05	µg/L	< 0.050	< 0.050	< 0.050	< 0.50*
Thallium	2	< 0.026	µg/L	0.026	< 0.01	0.01	< 0.10*
Uranium	20	5.11	µg/L	5.11	1.45	1.44	5.58*
Vanadium	6.2	< 0.5	µg/L	< 0.50	< 0.50	< 0.50	< 5.0*
Zinc	1100	5.1	µg/L	5.1	< 1	2.6	< 10*
Metal Hydrides							
Antimony	6	0.26	µg/L	0.26	0.22	0.22	< 1.0*
Arsenic	25	0.76	µg/L	0.76	0.46	0.46	< 1.0*
Selenium	10	0.31	µg/L	0.314	0.079	0.072	< 0.5*
Other Regulated Parameters							
Sodium	490000	70100	µg/L	70100	21200	21100	272000*
Mercury	0.29	< 0.0050	µg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Chromium VI	25	< 0.50	µg/L	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide	66	< 2.0	µg/L	< 2.0	< 2.0	< 2.0	< 2.0
Chloride	790	57.8	mg/L	232*	57.8	57.6	**2620***
Electrical Conductivity	NV	6.54	mS/cm	1.41	0.741	0.74	6.54
pH	NV	8.08	pH Units	7.89	8.08	8.07	7.51

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected
NV = No value
NA = Not assessed
*Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
**Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

TABLE 8
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Screened (masl) Parameter	MECP Table 2 2011 Criteria Coarse	Maximum	Units	BH 105 L2507369-1 23-Sep-20 238.9-235.8	BH 109 L2507369-2 23-Sep-20 254.3-251.3	DUP L2507369-3 23-Sep-20 254.3-251.3 BH 109	BH 110S L2507369-1 23-Sep-20 254.4-251.4
F1 (C6 to C10)	750	< 25	µg/L	< 25*	< 25	< 25	< 25
F1 (C6 to C10) minus BTEX	750	< 25	µg/L	< 25	< 25	< 25	< 25
F2 (C10 to C16)	150	< 100	µg/L	< 100	< 100	< 100	< 100
F2 (C10 to C16) minus Naphthalene	-	< 100	µg/L	< 100	< 100	< 100	< 100
F3 (C16 to C34)	500	< 250	µg/L	< 250	< 250	< 250	< 250
F3 (C16 to C34) minus PAHs	-	< 250	µg/L	< 250	< 250	< 250	< 250
F4 (C34 to C50)	500	< 250	µg/L	< 250	< 250	< 250	< 250
Total Hydrocarbons (C6-C50)	500	ND	µg/L	< 370	< 370	< 370	< 370
Chrom. to baseline at nC50			-	YES	YES	YES	YES
2-Bromobenzotrifluoride		72.6	%	72.2	72.6	67.9	65.5
3,4-Dichlorotoluene		96.4	%	96.1	90.6	96.4	90.5

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected
NV = No value
NA = Not assessed
*Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.

TABLE 9
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS I
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Screened (masl) Parameter	MECP Table 2 2011 Criteria Coarse	Maximum	Units	BH 105 L2507369-1 23-Sep-20 238.9-235.8	BH 109 L2507369-2 23-Sep-20 254.3-251.3	DUP L2507369-3 23-Sep-20 254.3-251.3 BH 109	BH 110S L2507369-1 23-Sep-20 254.4-251.4
Acetone	2700	< 30	µg/L	< 30*	< 30	< 30	< 30
Bromodichloromethane	16	< 2	µg/L	< 2.0*	< 2.0	< 2.0	< 2.0
Bromoform	25	< 5	µg/L	< 5.0*	< 5.0	< 5.0	< 5.0
Bromomethane	0.89	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Carbon Tetrachloride	0.79	< 0.2	µg/L	< 0.20*	< 0.20	< 0.20	< 0.20
Chlorobenzene	30	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Dibromochloromethane	25	< 2	µg/L	< 2.0*	< 2.0	< 2.0	< 2.0
Chloroform	2.4	< 1	µg/L	< 1.0*	< 1.0	< 1.0	< 1.0
Ethylene Dibromide	0.2	< 0.2	µg/L	< 0.2*	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	3	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	59	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	1	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Dichlorodifluoromethane	590	< 2	µg/L	< 2.0*	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	5	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	1.6	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,1-Dichloroethylene	1.6	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Cis- 1,2-Dichloroethylene	1.6	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Trans- 1,2-Dichloroethylene	1.6	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Methylene Chloride	50	< 5	µg/L	< 5.0*	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	5	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,3-Dichloropropene	0.5	< 0.5	µg/L	< 0.50	< 0.50	< 0.50	< 0.50
n-Hexane	51	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Methyl Ethyl Ketone	1800	< 20	µg/L	< 20*	< 20	< 20	< 20
Methyl Isobutyl Ketone	640	< 20	µg/L	< 20*	< 20	< 20	< 20
Methyl tert-butyl Ether	15	< 2	µg/L	< 2.0*	< 2.0	< 2.0	< 2.0
Styrene	5.4	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,1,1,2-Tetrachloroethane	1.1	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	1	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Tetrachloroethylene	1.6	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,1,1-Trichloroethane	200	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
1,1,2-Trichloroethane	4.7	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Trichloroethylene	1.6	0.5	µg/L	0.58*	< 0.50	< 0.50	< 0.50
Trichlorofluoromethane	150	< 5	µg/L	< 5.0*	< 5.0	< 5.0	< 5.0
Vinyl Chloride	0.5	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50

Notes

Value highlighted in red indicate exceedances above the applicable criteria

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NV = No value
NA = Not assessed

*Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.

TABLE 10
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS II (BTEX)
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Screened (masl) Parameter	MECP Table 2 2011 Criteria Coarse	Maximum	Units	BH 105 L2507369-1 23-Sep-20 238.9-235.8	BH 109 L2507369-2 23-Sep-20 254.3-251.3	DUP L2507369-3 23-Sep-20 254.3-251.3 BH 109	BH 110S L2507369-1 23-Sep-20 254.4-251.4
Benzene	5	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Toluene	24	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
Ethylbenzene	2.4	< 0.5	µg/L	< 0.50*	< 0.50	< 0.50	< 0.50
m & p-Xylene	NV	< 0.4	µg/L	< 0.40*	< 0.40	< 0.40	< 0.40
o-Xylene	NV	< 0.3	µg/L	< 0.30*	< 0.30	< 0.30	< 0.30
Xylene Mixture	300	< 0.5	µg/L	< 0.50	< 0.50	< 0.50	< 0.50

Notes
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Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard
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NV = No value
NA = Not assessed

TABLE 11
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
1 Rosetta Street
GEORGETOWN, ONTARIO

Sample Name ALS Lab ID# Date Screened (masl) Parameter	MECP Table 2 2011 Criteria Coarse	Maximum	Units	BH 105 L2507369-1 23-Sep-20 238.9-235.8	BH 109 L2507369-2 23-Sep-20 254.3-251.3	DUP L2507369-3 23-Sep-20 254.3-251.3 BH 109	BH 110S L2507369-1 23-Sep-20 254.4-251.4
Acenaphthene	4.1	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Acenaphthylene	1	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Anthracene	2.4	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Benzo(a)anthracene	1	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Benzo(a)pyrene	0.01	0.01	µg/L	< 0.010	< 0.010	< 0.010	< 0.010
Benzo(b)fluoranthene	0.1	0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Benzo(g,h,i)perylene	0.2	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Benzo(k)fluoranthene	0.1	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Chrysene	0.1	0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Dibenzo(a,h)anthracene	0.2	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Fluoranthene	0.41	0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Fluorene	120	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Indeno(1,2,3-cd)pyrene	0.2	< 0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
1+2 Methylnaphthalenes	3.2	0.028	µg/L	< 0.028	< 0.028	< 0.028	< 0.028
Naphthalene	11	< 0.05	µg/L	< 0.050	< 0.050	< 0.050	< 0.050
Phenanthrene	1	0.02	µg/L	< 0.020	< 0.020	< 0.020	< 0.020
Pyrene	4.1	0.024	µg/L	0.024	< 0.020	< 0.020	< 0.020

Notes

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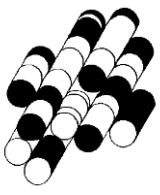
NV = No value
NA = Not assessed

APPENDIX A

TERRAPROBE INC.



PHASE ONE CONCEPTUAL SITE MODEL

1 Rosetta St., Georgetown, Ontario

Phase One CSM		Information Pertaining to Property
Figures of the Phase One Study Area are provided that:		
i.	Show any existing buildings and structures	There is a one-storey industrial building that has a partial basement and is comprised of several individual units on the Property. The Property is an irregular parcel of land with the municipal address of 1 Rosetta Street, Georgetown, Ontario. A topographic survey which included the Property was provided and has legal descriptions of: • Lots 30-32, Plan 37 N of Station Ground; Lots 37-39, Plan 37 W of Rosetta St • Lots 3 & 4, Plan 29 S of Caroline St • Part Caroline St, Plan 29 • Lot 36, Plan 37 E of St. Michael Street • Lot 35, Plan 37 N of Station Ground • Part Lots 1& 2, Plan 29 NE of St. Michael Street Under PIN# 25039-0317 (LT)
ii.	Identify and locate water bodies located in whole or in part on the Phase One Study Area	No water bodies were identified on the Property. The nearest water body is Credit River West Branch, which is located approximately 356 m west of the Property. All water bodies on the Phase One Property and in the Phase One Study Area are shown on Figure 1 (if any).
iii.	Identify and locate any Areas of Natural Significance located in whole or in part on the Phase One Study Area	Terraprobe reviewed the Ontario Ministry of Natural Resources and Forestry (MNRF). No Areas of Natural Significance were located in the Phase One Study Area.
iv.	Locate any drinking water wells at the Phase One Property	No drinking water wells were identified on the Property.
v.	Show roads, including names, within the Phase One Study Area	The Property is bounded by Caroline Street and Rosetta Street and residential properties to the north; St. Michaels Street and Caroline Street and residential properties to the west; Rosetta Street and residential and commercial properties to the east; and Georgetown GO Station and Railway to the south. Other roads and properties within the Study Area are presented on Figure 3.
vi.	Show use of properties adjacent to the Phase One Property	The Land Uses of the adjacent properties are shown on Figure 4.
vii.	Identify and locate areas where any potentially contaminating activity has occurred, and show tanks in such areas	Potentially Contaminating Activities (PCAs) located on the Property and within the Study Area are shown on Figure 5.

Phase One CSM		Information Pertaining to Property
viii.	Identify and locate any areas of potential environmental concern	Twenty-two (22) Areas of Potential Environmental Concern (APECs) and associated Contaminants of Potential Concern are described on the Table of Areas of Potential Environmental Concern. The locations of the APECs on the Phase One Property are shown on Figure 6.
The following is a description and assessment of:		
i.	Any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred	1 Rosetta Street, Georgetown, Ontario (Phase One Property) On-Site PCAs: • #NA[1] – PCB Storage • #NA[2] – Waste Receiver • #NA[5] – Storage of Hazardous Materials • #NA[6] – Previous Exceedance • #NA[7] – De-icing Activities • #9 – Coal Gasification • #12 – Concrete, Cement and Lime Manufacturing • #27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles • #28 – Gasoline and Associated Products Storage in Fixed Tanks • #30 – Importation of Fill Material of Unknown Quality • #31 – Ink Manufacturing, Processing and Bulk Storage • #33 – Metal Treatment, Coating, Plating and Finishing • #39 – Paints Manufacturing, Processing and Bulk Storage • #45 – Pulp, Paper and Paperboard Manufacturing and Processing • #55 – Transformer Manufacturing, Processing and Use Off-Site PCAs: • #27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles • #28 – Gasoline and Associated Products Storage in Fixed Tanks
ii.	Any contaminants of potential concern	Potential Contaminants of Concern (PCoCs) identified the Property include: • Metals in soil and groundwater • Hydride Forming Metals (As, Sb, Se) in soil and groundwater • VOCs in soil and groundwater • BTEX in soil and groundwater • PHCs in soil and groundwater • PAHs in soil and groundwater • PCB in soil
iii.	The potential for underground utilities, if any present, to affect contaminant distribution and transport	The water table is present approximately 7 to 20 mbgs and there is no known indication of any soil vapour issue. It is expected that utilities for buildings on-site would be at relatively shallow depths. As such, the potential for underground utilities to affect the horizontal distribution or transport of contaminants is considered to be low.

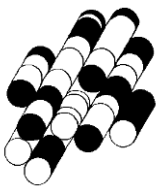
Phase One CSM		Information Pertaining to Property
iv.	Available regional or site specific geological and hydrogeological information	Topography • The OBM, Toporama, MNR and Google Earth maps were reviewed and it was identified that the approximate elevation of the Property is 261.0 masl and is gently rolling to rolling towards the south Hydrology and Hydrogeology • The nearest water body is Credit River West Branch, which is located approximately 356 m west of the Property. The approximate depth to ground water is expected to be approximately 7 mbgs and 20 mbgs. Ground water is expected to flow southeast towards Lake Ontario according to Toporama Ontario Base Maps. Geology (overburden) • The overburden for the centre and south of the Property consists of clay to silt-textured till (derived from glaciolacustrine deposits or shale). The overburden north of the Property consists of ice-contact stratifies deposits of sand and gravel, minor silt, clay, and till. Geology (bedrock) • The bedrock on the site is of the Queenston Formation, which is comprised of shale, limestone, dolostone and siltstone. Geology (depth to bedrock) • Based upon historic borehole information from Water Well Records in the vicinity from the MECP, the depth to bedrock in the vicinity of the Property is approximately 42 mbgs.
v.	How could any uncertainty or absence of information obtained in each of the components of the Phase One ESA affect the validity of the model	Based upon the information obtained, as noted above, it is the belief of the QP that there are no significant uncertainties or absence of information that would affect the conclusion as to the presence of an APEC or the validity of the Phase One Conceptual Site Model.

Figures:

Figure 1 – Phase One Property Location
Figure 2 – Phase One Property
Figure 3 – Phase One Study Area
Figure 4 – Adjacent Property Land Uses
Figure 5 – PCA Locations
Figure 6 – APEC Locations

APPENDIX B

TERRAPROBE INC.



PLAN OF SURVEY ILLUSTRATING TOPOGRAPHY

CAROLINE STREET, LYING BETWEEN ST. MICHAEL STREET AND ROSETTA STREET REGISTERED PLAN 29 AND PART OF ROSETTA STREET REGISTERED PLAN 37

TOWN OF HALTON HILLS

REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 250

0 5 10 15 metres

J.D. BARNES LIMITED

METRIC: DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

UNDERGROUND UTILITY NOTE:

THIS IS A PRELIMINARY PLAN. RECORDS HAVE NOT YET BEEN OBTAINED FROM UTILITIES AND OTHER BURIED UTILITIES MAY BE PRESENT IN WORKSPACE, WHICH HAVE NOT BEEN DEPICTED

UNDERGROUND UTILITY NOTES

THE UTILITY DATA SHOWN ON THIS DRAWING WERE ACQUIRED IN ACCORDANCE WITH CI/ASCE STANDARD 38-02. THE INFORMATION IS SHOWN BY ATTRIBUTED QUALITY LEVELS WHICH ARE DEFINED AS FOLLOWS:

DATA QUALITY LEVEL

HIGHEST QUALITY

QUALITY LEVEL A
QUALITY LEVEL B
QUALITY LEVEL C
QUALITY LEVEL D

LOWEST QUALITY

QUALITY LEVEL "A" – INFORMATION OBTAINED BY ACTUAL PHYSICAL EXPOSURE OF SUBSURFACE UTILITIES AND SUBSEQUENT MEASUREMENT OF THE EXPOSED PRECISE HORIZONTAL AND VERTICAL POSITION.

QUALITY LEVEL "B" – INFORMATION OBTAINED USING GEOPHYSICAL/LOCATE EQUIPMENT TO SURVEY AND PLOT THE APPROXIMATE HORIZONTAL POSITION OF THE DESIGNATED UTILITIES

QUALITY LEVEL "C" – INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO THE QUALITY "D" INFORMATION OBTAINED.

QUALITY LEVEL "D" – INFORMATION DERIVED FROM UTILITY RECORDS OR VERBAL RECOLLECTIONS

ALL SERVICES ARE QUALITY "D" UNLESS NOTED OTHERWISE.
LEVEL "D" RECORD INFORMATION SHOWN ON THIS PLAN HAVE BEEN PLOTTED APPROXIMATELY AS PER THE RECORDS FOUND AND COULD NOT BE FIELD VERIFIED BY ONSITE LOCATES LTD. TO OBTAIN HIGHER QUALITY DATA, IF REQUIRED, IT IS SUGGESTED THAT LEVEL "A" METHODOLOGIES BE EMPLOYED

LOST SIGNAL= DENOTES/INDICATES A POINT WHERE QL-B METHODS COULD NO LONGER ASCERTAIN THE HORIZONTAL POSITION OF A FACILITY.

SEWER INVERT NOTE:

SEWER INVERT DEPTHS ARE MANUALLY MEASURED FROM THE LID/GRATE OF THE GIVEN FEATURE.

ANNOTATIONS DISPLAYED AS «VALUE» WITH AN ASTERISK* HAVE BEEN INTERPOLATED FROM RECORDS AND WERE NOT FIELD VERIFIED BY ONSITE LOCATES LTD.

INVERT DEPTH MEASUREMENTS ARE FROM THE ASSUMED BOTTOM OF THE FACILITY STRUCTURE.

DEPTHS ARE NOT SUITABLE FOR EXCAVATION PURPOSES. SEWER NETWORK CONNECTIONS WERE COMPILED WHERE FIELD EVIDENCE COINCIDED WITH AS-BUILT RECORDS

WHERE NO DEPTH INFORMATION COULD BE OBTAINED, UTILITIES ARE ASSUMED TO BE AT STANDARD INSTALLATION DEPTH FOR THE SPECIFIC TYPE OF UTILITY.

THE MOST RELIABLE WAY TO PRECISELY DETERMINE THE HORIZONTAL AND VERTICAL LOCATION OF AN UNDERGROUND UTILITY IS THROUGH PHYSICAL EXPOSURE USING SAFE DIGGING TECHNIQUES (COMMONLY PERFORMED WITH HYDRO VACUUM EXCAVATION)

INVERT DEPTH MEASUREMENTS HEREON ARE PROVIDED IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE MINISTRY OF TRANSPORTATION BENCH MARKS:
No. 0017354/05RF
ELEVATION=258.735m
No. 0017354/06RF
ELEVATION=250.480m

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A, B AND C, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999953.

FOR BEARING COMPARISONS, A ROTATION OF 00°39'10" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P1 AND P3.

FOR BEARING COMPARISONS, A ROTATION OF 00°47'50" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P5, P7 AND D6.

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0).

COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
ORP (A)	587 186.48	4 834 248.67
ORP (B)	587 305.25	4 834 283.62
ORP (C)	587 144.31	4 834 320.70

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
RIB	DENOTES	ROUND IRON BAR
IB	DENOTES	IRON BAR
CC	DENOTES	CUT CROSS
PPW	DENOTES	PLASTIC PIN AND WASHER
PB	DENOTES	PLASTIC BAR
WIT	DENOTES	WITNESS
P1	DENOTES	SURVEYOR'S REAL PROPERTY REPORT BY MacAULAY, WHITE & MUIR LTD., DATED NOVEMBER 27, 2003., FILE No. 03-156
P2	DENOTES	PLAN 20R-14226 DEPOSITED BY M.H. CARR, O.L.S., DATED JULY 20, 1966. FILE No. 66-185
P3	DENOTES	PLAN 20R-14226
P4	DENOTES	PLAN OF SURVEY BY R.E. CLIPSHAM LTD, OLS (DATED JANUARY 14th, 1983, FILE 83-0244-10
P5	DENOTES	PLAN 20R-4341
P6	DENOTES	PLAN 20R-4293
P7	DENOTES	SURVEYOR'S REAL PROPERTY REPORT BY FIDDES CLIPSHAM INC., DATED DECEMBER 21, 2014., FILE No. 14-5239.
P8	DENOTES	PLAN 29C-43451
P9	DENOTES	REGISTERED PLAN No. 29
D1	DENOTES	INSTRUMENT No. 294023
D3	DENOTES	INSTRUMENT No. 302353
D4	DENOTES	INSTRUMENT No. 346186
D5	DENOTES	INSTRUMENT No. 465649
D6	DENOTES	INSTRUMENT No. 554136
MEAS	DENOTES	MEASURED
JDB	DENOTES	J.D. BARNES LIMITED
CDS	DENOTES	R.M. MINETT, O.L.S.
1254	DENOTES	R.E. CLIPSHAM, O.L.S.
1799	DENOTES	E.G. SPERLING, O.L.S.

N=NORTH / S=SOUTH / E=EAST / W=WEST

ALL BUILDING TIES ARE TAKEN TO CONCRETE FOUNDATION.

ALL SET SURVEY MONUMENTS ARE PLASTIC BARS, UNLESS NOTED OTHERWISE.

ALL SET SSIB AND PB MONUMENTS WERE USED DUE TO LACK OF OVERBURDEN AND/OR PROXIMITY OF UNDERGROUND UTILITIES IN ACCORDANCE WITH SECTION 11 (4) OF O.REG. 525/91.

PRIMARY CONTOURS ARE AT 1.00m INTERVALS.
SECONDARY CONTOURS ARE AT 0.25m INTERVALS.

TOPOGRAPHIC LEGEND

□ CB	DENOTES	CATCHBASIN
▪ GM	DENOTES	GAS METER
▫ SP	DENOTES	STAND PIPE
▪ HM	DENOTES	HYDRO METER
■ HW	DENOTES	HANDWELL
◯ HMH	DENOTES	HYDRO MANHOLE
◯ MH	DENOTES	MANHOLE
◯ SAN MH	DENOTES	SANITARY MANHOLE
▪ BOL	DENOTES	BOLLARD
▪ HP	DENOTES	HYDRO POLE
▪ LS	DENOTES	LIGHT STANDARD
⊡ TJB	DENOTES	TELEPHONE JUNCTION BOX
⊣ H	DENOTES	FIRE HYDRANT
⊸ WV	DENOTES	WATER VALVE
GB	DENOTES	GARBAGE BIN
▪	DENOTES	MAIL BOX
⊙	DENOTES	SHRUB
—E—	DENOTES	OVERHEAD HYDRO CABLE
—UE—	DENOTES	BURIED HYDRO CABLE
—UT—	DENOTES	BURIED TELEPHONE CABLE
—W—	DENOTES	BURIED WATER LINE
	DENOTES	CONIFEROUS TREE DIA=DIAMETER OF TRUNK IN METRES CL#=NUMBER OF TREES IN A CLUSTER
	DENOTES	DECIDUOUS TREE DIA=DIAMETER OF TRUNK IN METRES CL#=NUMBER OF TREES IN A CLUSTER

UNDERGROUND UTILITY LEGEND

— SAN —	DENOTES	UNDERGROUND SANITARY SEWER
— STM —	DENOTES	UNDERGROUND STORM SEWER
— G —	DENOTES	UNDERGROUND GAS LINE
— E —	DENOTES	UNDERGROUND HYDRO LINE
— UE —	DENOTES	UNDERGROUND HYDRO LINE
— UT —	DENOTES	UNDERGROUND TELEPHONE LINE
— W —	DENOTES	UNDERGROUND WATER SERVICE LINE
— UNK —	DENOTES	UNDERGROUND UNKNOWN LINE
⊣ FH	DENOTES	END CAP/ CAPPED
⊣ PIV	DENOTES	POST INDICATOR VALVE

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 30th DAY OF JUNE, 2020.

JULY 2nd, 2020 — DATE

G.T. STROMBLE — ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2123113

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY
ISSUED BY THE SURVEYOR
(O.REG 216/10 Section 9 (3) Regulation 1026 Section 29(3))

J.D.BARNES LIMITED — SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
401 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C3
T: (905) 875-9055 F: (905) 873-9906 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
AP		17-30-157-02-A

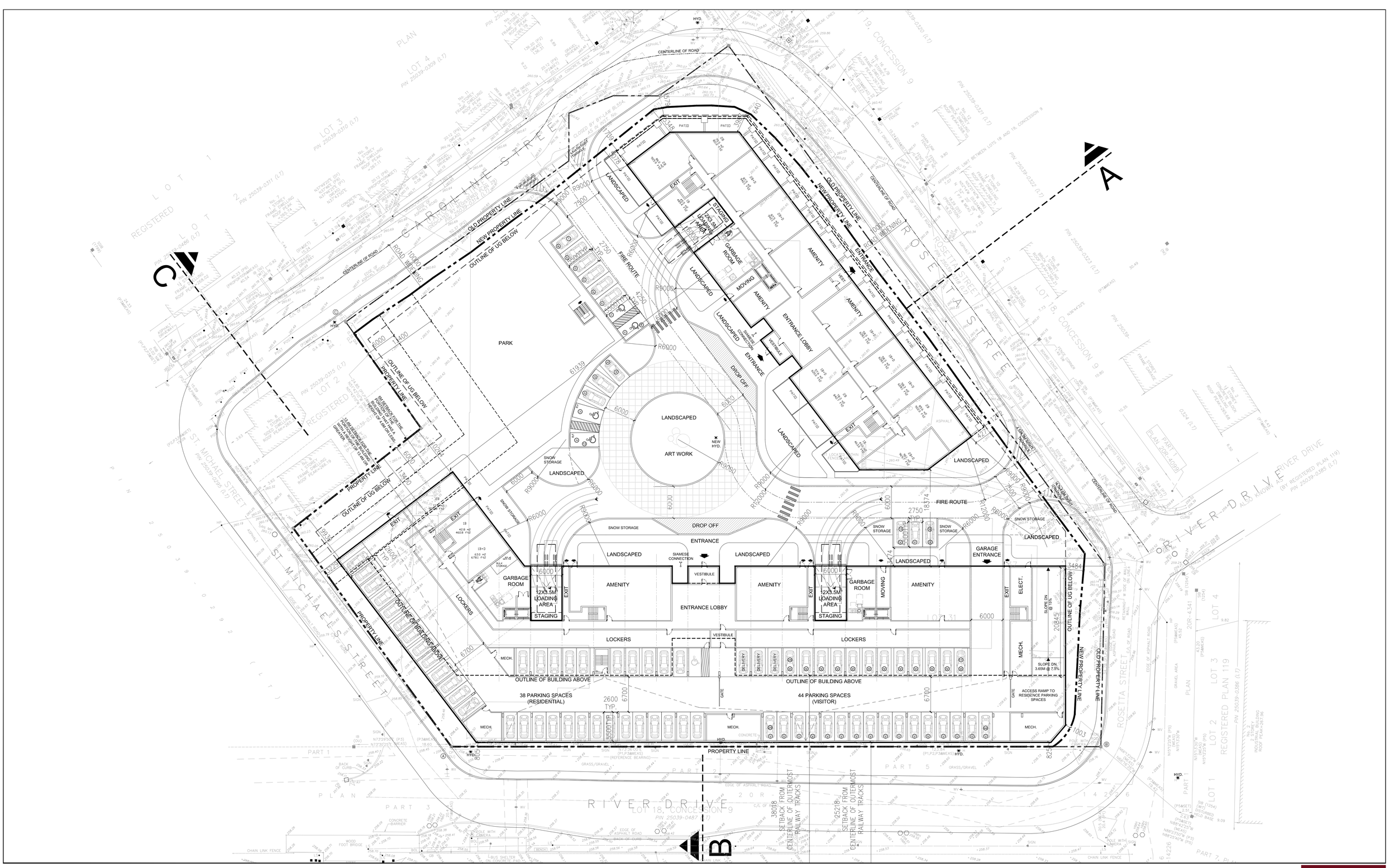
FILE: G:\17-30-157-02\Drawing\17-30-157-02-A.dgn — DATED: JULY 2nd, 2020 — PLOTTED: 7/2/2020

BEFORE DIGGING, UNDERGROUND SERVICES SHOULD BE LOCATED ON SITE BY THE RESPECTIVE AGENCIES.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT LOCAL BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED AND THAT THE RELATIVE ELEVATIONS AGREE WITH THE INFORMATION SHOWN ON THIS PLAN.

CAUTION: CALL BEFORE YOU DIG

THIS PLAN IS INTENDED FOR DESIGN PURPOSES ONLY. OTHER BURIED UTILITIES MAY EXIST. PLANS OBTAINED FROM UTILITIES PROVIDE ONLY INFORMATION OF APPROXIMATE INSTALLATION. CONTACT ALL POSSIBLE OWNERS OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION OR BREAKING GROUND.
IT IS THE RESPONSIBILITY OF THE CONTRACTOR/BUILDER TO ENSURE THE APPROPRIATE LEGAL REQUIREMENTS ARE MET.



NO.	REVISION/ISSUE	DATE	NO.	REVISION/ISSUE	DATE

CONTRACTORS SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT. ALL DRAWINGS AND DESIGNS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED IN THE CONDITION OF THE WORK DRAWINGS CAN ALSO BE E-MAILED.

NORTH

1 ROSETTA STREET
GEORGETOWN, ON

DRAWING TITLE
GROUND FLOOR PLAN

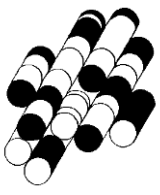
Scale: 1/300
Date: OCT. 20, 2020
Project No. 17127

Drawn by: RK
Checked by: RE
Drawing No. A203

ICON ARCHITECTS
8913 - 4789 YONGE ST. TORONTO
ONTARIO, CANADA M2N 0G3
T: 416-224-0606 F: 416-224-0604

APPENDIX C

TERRAPROBE INC.



Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Engineering, Inspection & Testing

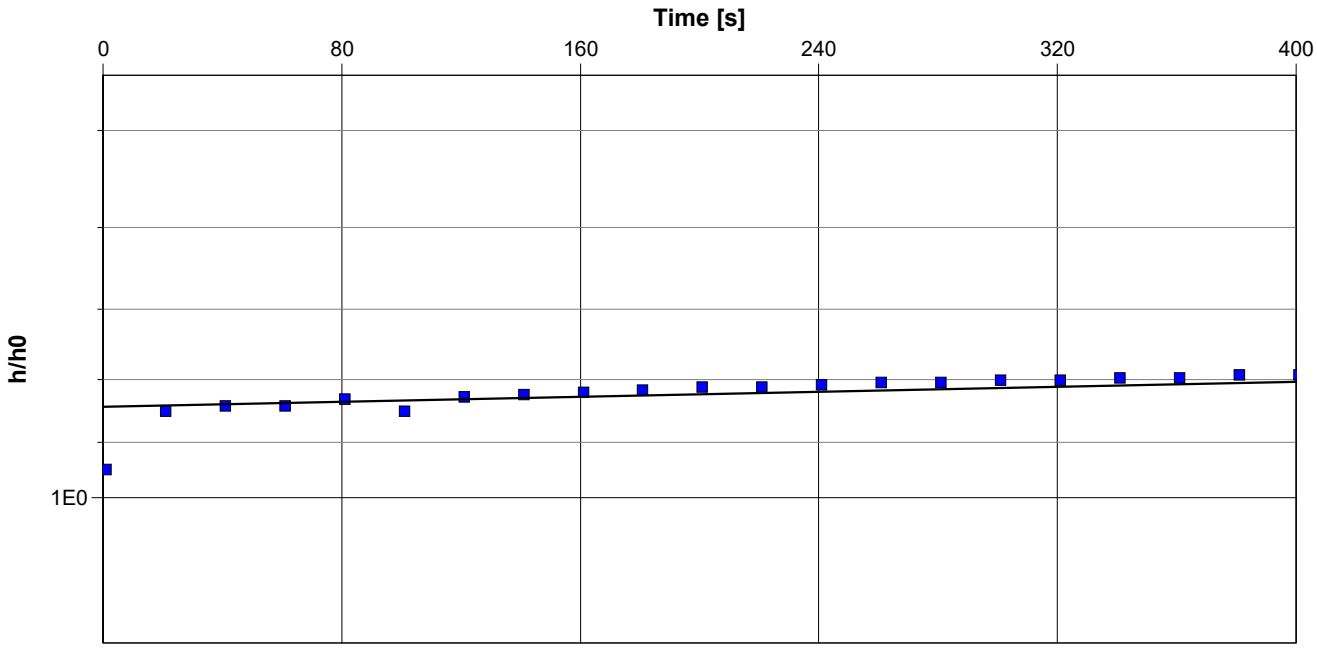
Slug Test Analysis Report

Project: 1 Rosetta Street

Number: 1-20-0249

Client: 1 Rosetta Street (Halton Hills) GP Limited

Location: Halton Hills, Ontario	Slug Test: BH105	Test Well: BH105
Test Conducted by: JR		Test Date: 10/15/2020
Analysis Performed by: TS	BH105 FHT	Analysis Date: 10/20/2020
Aquifer Thickness: 1.86 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]	
BH105	4.47×10^{-8}	

Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Engineering, Inspection & Testing

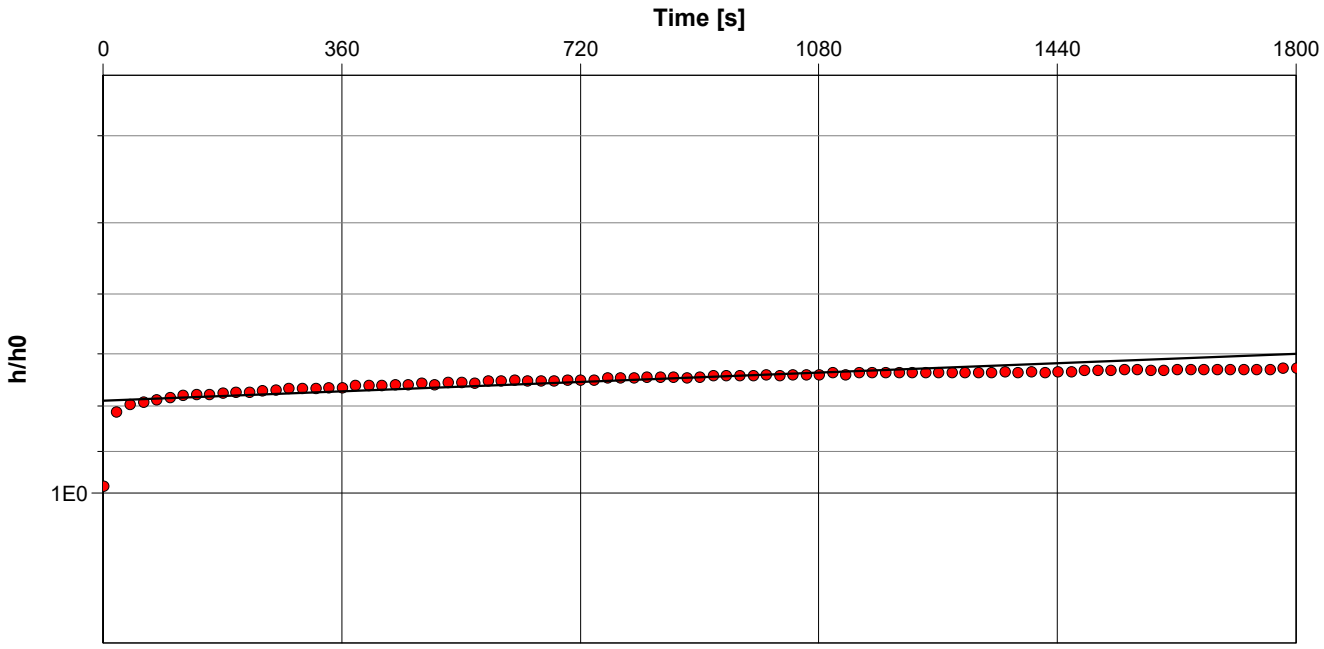
Slug Test Analysis Report

Project: 1 Rosetta Street

Number: 1-20-0249

Client: 1 Rosetta Street (Halton Hills) GP Limited

Location: Halton Hills, Ontario	Slug Test: BH109	Test Well: BH109
Test Conducted by: MS		Test Date: 9/30/2020
Analysis Performed by: TS	BH109 FHT	Analysis Date: 10/20/2020
Aquifer Thickness: 5.75 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]	
BH109	2.51×10^{-8}	

Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Engineering, Inspection & Testing

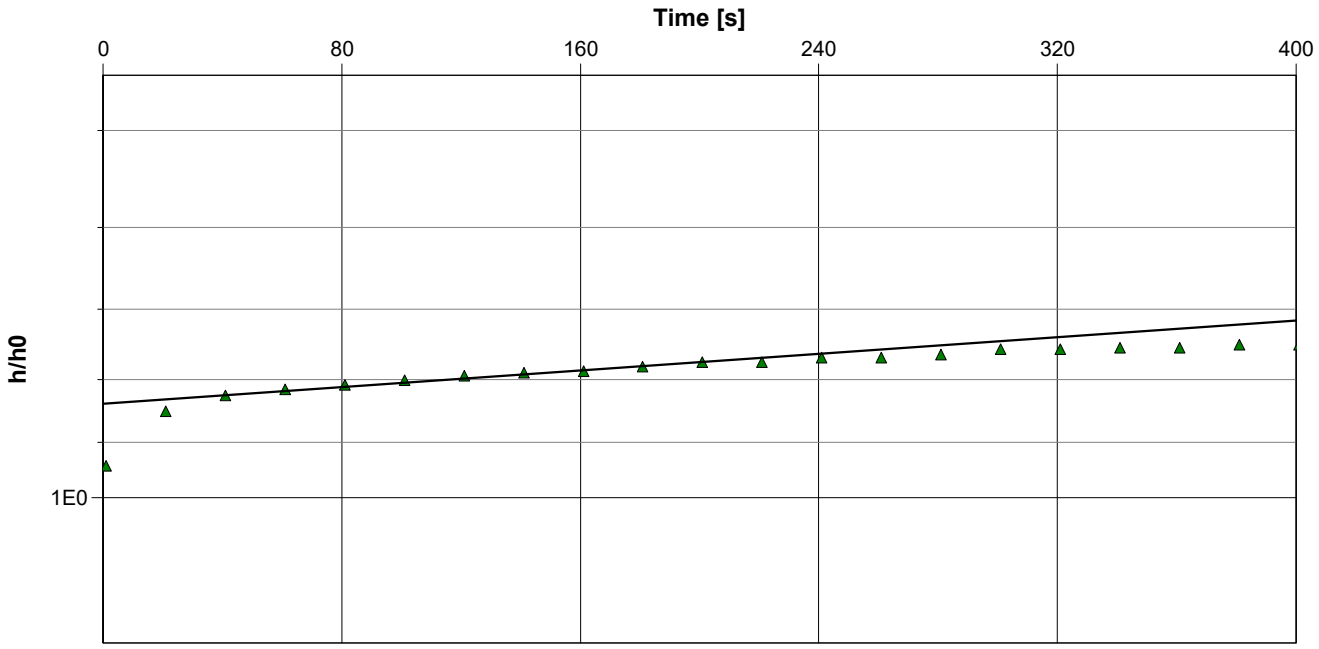
Slug Test Analysis Report

Project: 1 Rosetta Street

Number: 1-20-0249

Client: 1 Rosetta Street (Halton Hills) GP Limited

Location: Halton Hills, Ontario	Slug Test: BH110S	Test Well: BH110S
Test Conducted by: MS		Test Date: 9/30/2020
Analysis Performed by: TS	BH110S FHT	Analysis Date: 10/20/2020
Aquifer Thickness: 15.36 m		

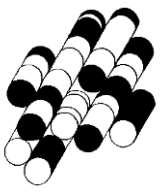


Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
BH110S	1.49×10^{-7}

APPENDIX D

TERRAPROBE INC.



Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

August 27, 2020

File No. 1-20-0249-42
Brampton Office

Regional Municipality of Halton
1151 Bronte Road
Oakville, Ontario
L6M 3L1

Attention: Behnam Doulatyari, Planning Services

RE: NOTIFICATION OF INTENT TO USE NON-POTABLE GROUND WATER STANDARD UNDER PART XV.1 OF THE ENVIRONMENTAL PROTECTION ACT

Terraprobe Inc. has been retained by the owner of a property in the Town of Halton Hills to conduct a Phase Two Environmental Site Assessment in general accordance with Ontario Regulation 153/04. The property is located at 1 Rosetta Street, Georgetown, Ontario. A Location Map showing the property and the adjacent properties is attached.

Terraprobe intends to use the Full Depth Site Condition Standards in a Non-Potable Ground Water Condition, for Residential/Park/Institutional use from the "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*" for the evaluation of soil and ground water at the property. This letter is to formally notify the Town of Halton Hills of the intention to use the non-potable ground water criteria for the above noted property. The subject property and surrounding area are municipally serviced by potable water and sewers. No evidence was obtained by Terraprobe to indicate that any of the surrounding properties were using water wells as a source of drinking water.

Please contact our office within 30 days if the Town of Halton Hills has any objection to the use of non-potable ground water criteria at the property. If you have any questions, please do not hesitate to call this office.

Sincerely,

Terraprobe Inc.

Yousr Hiweish, B. Eng., E.I.T.
yhiweish@terraprobe.ca

Legislative & Planning Services
Planning Services
1151 Bronte Road
Oakville ON L6M 3L1

Aug 28, 2020

Yousr Hiweish
Terraprobe Inc.
11 Indell Lane, Brampton, Ontario, L6T 3Y3

Dear Yousr Hiweish,

RE: **Notification f Intent to Use Non-Potable Groundwater Site Condition Standards**
Subject Property: **1 Rosetta Street, Halton Hills**

Further to your correspondence received by Halton Region Planning Services on **August 27, 2020**, Regional Municipality of Halton staff has prepared this letter in response to your O. Reg. 153/04 Records of Site Condition – Part XV.1 of the Environmental Protection Act request to assume that the groundwater beneath the subject property "does not or will not serve as a raw water supply for a drinking water system, as defined in the Safe Drinking Water Act (2002)".

The key features for this request are presented in Table 1 below:

Table 1: Key Features Assessment

Key Feature	Is the property located within or nearby these Key Features (yes/no)
Wellhead Protection Area	**Yes**
Highly Vulnerable Aquifer	**Yes**
Environmentally Sensitive Area (within 30m)	**No**
Rural Area	**No**
Water Well Records Within 250 metres	**No**

Region of Halton records indicate that the property is located within the **Town of Halton Hills** and **is** within a wellhead protection area, **and is** located within a highly vulnerable aquifer, as identified in the Region's Source Water Protection Planning under the Clean Water Act, 2006. The property **is not** located within 30m of environmentally sensitive areas (see definition in O. Reg. 153/04). There are **no** potable well records that are located within 250m of the property.

Based on this information, Halton Region **objects** to the intention to apply non-potable water use criteria for the assessment of the subject property. **Potable standards** must be used for this property.

If you have any questions regarding this information, please contact the undersigned at ext. 3241.

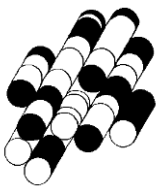
Sincerely,

Behnam Doulatyari
Planner – Groundwater and Hydrology, Sustainable Planning

c. Tim Edwards, District Engineer, Ministry of the Environment, Halton-Peel District Office (email)
Nicole Mathews, Manager, Environmental Health, Halton Region (email)

APPENDIX E

TERRAPROBE INC.



RE: SAMPLING AND ANALYSIS PLAN (SAP)
1 ROSETTA STREET
GEORGETOWN, ONTARIO

1. INTRODUCTION

This appendix presents the Sampling and Analysis Plan (SAP) that was developed in support of the Phase Two Environmental Site Assessment (ESA) for the Property located at 1 Rosetta Street, in the Georgetown, Ontario (hereinafter referred to as the 'Property'). The Phase Two ESA is conducted to provide characterization of the Property subsurface conditions, identify the extent of soil and ground water impacts, if any, and to assess remedial options such that, upon completion of remedial actions, if required, a Record of Site Condition (RSC) can be filed on the Ministry of the Environment, Conservation and Parks (MECP) Brownfields Environmental Site Registry. The SAP presents the procedures and approach to the field investigative activities to characterize the Property site conditions and meet the data quality objectives of the Phase Two ESA.

The SAP presents the sampling program for the Property, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/ quality control (QA/QC) measures for the collection of accurate, reproducible and representative data. These components are described in further detail below.

2. QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM

The data quality objectives of the quality assurance/quality control (QA/QC) program is to obtain soil and ground water samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA. The objectives of the QA/QC program are achieved through the implementation of procedures for the collection of unbiased (i.e. non-contaminated) samples, sample documentation and the collection of appropriate QC samples to provide a measure of sample reproducibility and accuracy.

The field QA/QC program includes the following components:

- Decontamination Protocols;
- Equipment Calibration;
- Sample Preservation;
- Sample Documentation; and,
- Field Quality Control Samples.

Details on the field QA/QC components are provided below.

2.1 Decontamination Protocols

Decontamination protocols are followed during field sampling where non-dedicated sampling equipment is used to prevent sample cross contamination. For the borehole drilling and soil sampling, split soil sampling devices are cleaned and decontaminated between sampling intervals and auger flights between borehole locations in accordance with Standard Operating Procedure (SOP) requirements as indicated in Appendix F. For the monitoring well installation, well components are not to come into contact with the ground surface prior to insertion into boreholes. Electronic water level meters are decontaminated between monitoring well locations during well development and purging activities. All decontamination fluids are collected and stored in sealed, labelled containers.

2.2 Equipment Calibration

All equipment requiring calibration are calibrated in the field according to manufacturer's requirements using analytical grade reagents, or by the supplier prior to conducting field activities, and subsequently checked in the field. The calibration of all pre-calibrated instruments are checked in the field using analytical grade reagents and re-calibrated as required. For multiple day sampling events, equipment calibration is checked prior to the beginning of sampling activities. All calibration data are documented in a bound hard cover notebook.

2.3 Sample Preservation

Laboratory supplied sample containers are used for all sampling conducted on the Property. All samples are preserved using appropriate analytical test group specific reagents, as required and as provided by the laboratory, and upon collection placed in ice-filled insulated coolers for storage and transport.

2.4 Sample Documentation

All samples are assigned a unique identification number, which is recorded along with the date, time, project number, company name, location and requested analysis in a bound field notebook. All samples are handled and transported following Chain of Custody protocols.

2.5 Field Quality Control Samples

Field quality controls samples are collected to evaluate the accuracy and reproducibility of the field sampling procedures. For soil sampling, one (1) field duplicate sample is collected for every ten (10) samples of a specific geologic unit submitted for analysis. For ground water sampling, one (1) field duplicate is collected for every ten (10) samples submitted for chemical analysis. The field duplicate samples are assessed by calculating the relative percent difference (RPD) and comparing to the analytical test group specific acceptance criteria.

For ground water samples submitted for the analysis of VOCs, one (1) field blank prepared in the field using de-ionized water and/or one (1) trip blank prepared by the contractual laboratory are submitted for chemical analysis to evaluate the potential for sample cross-contamination during sampling and transportation. The recommended alert criterion is the detection of any test group analyte at a concentration in excess of laboratory detection limits.

3. DATA QUALITY OBJECTIVES

The data quality objectives of the quality assurance/quality control (QA/QC) program are as follows:

- To obtain soil and ground water samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA.
- To collect samples of unbiased (i.e. non-contaminated) samples, document sampling procedures, and to collect appropriate QC samples to provide a measure of sample reproducibility and accuracy.
- To collect field quality control samples at a rate that meets or exceeds those specified in Section 2.5, and to ensure that the results of those QC samples are satisfactory.

The data quality objectives for all types of field data collected during the Phase Two ESA field investigation that set the level of uncertainty in environmental data were set such that:

- Decision-making is not affected; and,
- The general (general) objectives of the investigation are met.

The data quality objectives are met through implementation of the QA/QC program and in the use of the Standard Operating Procedures identified below.

4. STANDARD OPERATION PROCEDURES FOR FIELD INVESTIGATION METHODS

To meet the requirements of the field sampling program, the following field investigative methods are undertaken:

- Borehole Drilling;
- Field Screening Measurements, including Calibration Procedures;
- Monitoring Well Installation;
- Monitoring Well Development;
- Field Measurement of Water Quality Indicators, including Calibration Procedures;
- Residue Management Procedures;
- Ground water Level Measurements;
- Elevation Survey; and,
- Ground water Sampling.

The following procedures are not required for this investigation:

- Sediment Sampling.

The field investigative methods required for this investigation are described in the following sections.

4.1 Borehole Drilling

Boreholes are advanced at the Property to facilitate the collection of soil samples for chemical analysis and geologic characterization; and, for the installation of ground water monitoring wells. Multiple boreholes are required at the Property and would require depths to investigate the surficial fill and native till overburden materials to provide for the collection of samples of the surficial and subsurface materials beneath the Property. Additional boreholes may be drilled for delineation of any soil and ground water impacts identified during the investigation. The borehole locations are selected to assess the soil and ground water quality in the areas of potential environmental concern (APECs) identified at the Property as below:

1. APEC 1 is the result of a potential on-site source from two (2) former hydraulic above ground oil storage tanks identified from Fisher Environmental 2006 Phase II ESA. The APEC covers the east portion of the Property. Contaminants of Potential Concern (COPCs) are metals & inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
2. APEC 2 is the result of potential on-site source from a garage that repairs and maintains vehicles identified from site reconnaissance at Unit 11 south of the Property. The APEC includes the south-center portion of the Property. COPCs are metals & inorganics, hydride-forming metals, petroleum

hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.

3. APEC 3 is the result of potential on-site source from a former paper mill company that included a "Colour Department" that likely manufactured, processed or stored ink in bulk. The APEC includes the western section of the building of the Property. COPCs are metals & inorganics, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
4. APEC 4 is the result of a potential on-site source consisting of stations for containment of coatings' spillage and the distillation of coatings identified from the site reconnaissance. The APEC includes the central section of the Property. COPCs are metals & inorganics, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
5. APEC 5 is the result of potential on-site source consisting of PCB inventory and former transformer room in Unit 4 of the building. The APEC includes the central section of the building on the Property. COPCs are petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). The COPCs may have impacted the soil.
6. APEC 6 is the result of potential on-site source consisting of the storage of hardwood coatings identified from the site reconnaissance north-centre of the building on the Property. The APEC includes the north-center portion of the Property. COPCs are metals & inorganics, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
7. APEC 7 is the result of potential on-site source consisting of oil-filled transformer located east of the building on the Property. The APEC includes the central-east section of the Property. COPCs are petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). The COPCs may have impacted the soil.
8. APEC 8 is the result of potential on-site source consisting of two tanks that were identified southwest of the building on the Property from 1976 site plan. The APEC includes the southwest section of the Property. COPCs are metals & inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
9. APEC 9 is the result of potential on-site source consisting of potentially PCB-containing transformer identified in Unit 6 during the site reconnaissance. The APEC includes the southwest portion Property. COPCs are petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). The COPCs may have impacted the soil.

10. APEC 10 is the result of potential on-site source consisting of the storage of hazardous materials identified south of the building on the Property from the 1976 inspection report. The APEC includes the southwest portion of the building on the Property. COPCs are petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
11. APEC 11 is the result of potential on-site source consisting of a potentially PCB-containing transformer that was identified north of the Property during the site reconnaissance. The APEC includes the northern portion of the Property. COPCs are petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). The COPCs may have impacted the soil.
12. APEC 12 is the result of potential on-site source consisting of coal gasification that resulted from the use of coal as a fuel source; identified from 1960 fire insurance plan. The APEC includes the southwest portion of the Property. COPCs are metals and inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.
13. APEC 13 is the result of potential on-site source consisting of waste receiving as the Property was identified as a private landfill and sludge farms facility in 1986 to 1990 and 1992 to 1998. The APEC includes the entire Property. COPCs are metals and inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.
14. APEC 14 is the result of potential on-site source consisting of pulp and paper manufacturing and processing as records show that the Property operated as a paper mill. The APEC includes the entire Property. COPCs are metals and inorganics. The COPCs may have impacted the soil and ground water.
15. APEC 15 is the result of potential on-site source consisting of the former manufacturing of metal products and plate work. The APEC includes the entire Property. COPCs are metals and inorganics and hydride-forming metals. The COPCs may have impacted the soil and ground water.
16. APEC 16 is the result of potential on-site source consisting of the former concrete product manufacturing. The APEC includes the entire Property. COPCs are metals and inorganics, hydride-forming metals and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.
17. APEC 17 is the result of potential on-site source consisting of a previous PAHs exceedance identified from Fisher Environmental 2006 Phase II ESA. The APEC includes the northwest section of the Property. COPCs are polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.

18. APEC 18 is the result of potential off-site sources located at 5 Victoria Street (50 m west of the Property) that consist of the storage of underground gasoline service tank and the operation of a garage. The APEC includes the west section of the Property. COPCs are metals & inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
19. APEC 19 is the result of potential an off-site source located at 2 Rosetta Street (37 m east of the Property) that consists of an underground storage tank identified in the 1960 fire insurance plan. The APEC includes the east section of the Property. COPCs are metals & inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
20. APEC 20 is the result of potential on-site source consisting of the existence of fill of unknown quality identified during Terraprobe's concurrent geotechnical investigation. The APEC includes the northeast section of the Property. COPCs are metals and inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil.
21. APEC 21 is the result of potential on-site source consisting of two aboveground bunker fuel tanks that were identified in Unit 9 south of the Property from Fisher Environmental 2006 Phase II ESA. The APEC includes the southwest section of the Property. COPCs are metals & inorganics, hydride-forming metals, petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
22. APEC 22A and APEC 22B are the result of potential on-site source consisting of private de-icing activities of asphaltic parking and roadways surrounding the building on-site. The APEC includes the east and west asphaltic areas of the Property. COPCs are metals & inorganics and hydride-forming metals. The COPCs may have impacted the soil and ground water.

Prior to borehole drilling, utility clearances are obtained from public and private locators, as required. If any uncertainty regarding the location of a buried utility at a borehole location is encountered or if a borehole location is within 1 m of a buried utility, the borehole is initiated by daylighting or hand augering to a sufficient depth to be clear of any utilities. Boreholes are required to be advanced into the surficial fill and overburden soils by a drilling company under the full-time supervision of Terraprobe staff. An appropriate drill rig equipped with sampling arrangement is utilized to advance the boreholes through the overburden materials.

4.2 Soil Sampling

Soil samples for geologic characterization and chemical analysis are required to be collected on a continuous basis in the overburden materials using 5 cm diameter and 60 cm long tube samplers advanced into the subsurface using a portable direct push drill rig or a truck mounted drill rig equipped with hollow or solid stem augers and split spoon sampler. The soil cores are extruded from the plastic lined inner tubes/split spoon samplers. Geologic and sampling details of the recovered cores are logged and the samples are assessed for the potential presence of non-aqueous phase liquids.

Samples for chemical analysis are selected on the basis of visual, combustible gas and olfactory evidence of impacts and at specific intervals to define the lateral and vertical extent of known impacts.

Recommended volumes of soil samples selected for chemical analysis are collected into pre-cleaned, laboratory supplied, analytical test group specific containers. The samples are placed into clean insulated coolers chilled with ice for storage and transport. Samples intended for VOC and/or petroleum hydrocarbon (PHC) fractions F1 and F2 analysis are collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. The samples are assigned unique identification numbers, and the date, time, location, and requested analyses for each sample are documented in a bound field notebook. The samples are submitted to the contractual laboratory within analytical test group holding times under Chain of Custody (COC) protocols. New disposable chemical resistant gloves are used during the handling and sample collection for each soil core to prevent sample cross-contamination.

4.3 Field Screening Measurements, including Calibration Procedures

A portion of each soil core is placed in a re-sealable plastic bag and allowed to reach ambient temperature prior to field screening with a combustible gas detector or photo-ionization detector (PID) that is calibrated with an appropriate reference gas prior to use. The vapour measurements are made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings provide a real-time indication of the relative concentration of volatile organic vapours encountered in the subsurface during drilling.

4.4 Monitoring Well Installation

Select boreholes are required to be instrumented as ground water monitoring wells installed with 1.5 m long screens intercepting the ground water table in the overburden within the aquifers of interest. Additional monitoring wells may be installed for delineation of any ground water impacts identified during investigation, or to confirm ground water quality after remediation, if conducted. The monitoring wells are installed in general accordance with the Ontario Water Resources Act- R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03 and are installed by a licensed well contractor.

The monitoring wells are constructed using 38 mm diameter, Schedule 40, PVC riser pipe and number 10 slot size (0.25 mm) well screens. The bases of the well screens are sealed with PVC end caps. All well pipe connections are factory machined threaded flush couplings. The pipe components are pre-wrapped in plastic, which are removed prior to insertion in the borehole to minimize the potential for contamination. No lubricants or adhesives are used in the construction of the monitoring well. The annular space around the well screens is backfilled with silica sand to an average height of 0.3 m above the top of the screen. Granular bentonite is placed in the borehole annulus from the top of the sand pack to approximately 0.3 m below grade. The monitoring wells are completed with a flush mount or stick-up protective steel casing cemented into place.

4.5 Monitoring Well Development

The monitoring wells are developed to remove fine sediment particles potentially lodged in the sand pack and well screen to enhance hydraulic communication with the surrounding formation waters. The monitoring wells are developed using a Waterra^{TM} sample tubing and surge block SBD-25. Monitoring well development is monitored by visual observations of turbidity, and by taking field measurements of pH, specific conductance and temperature for every standing well (i.e. wetted casing) volume removed. Standing water volumes are determined by means of an electronic water level meter. Approximately three to five (3 to 5) wetted well volumes are removed; and, well development continues until the purged water has chemically stabilized as indicated by visual observations and field parameters measurements.

Well development details are documented on a well development log sheet or in a bound hard cover notebook. All development waters are collected and stored in labelled, sealed containers.

4.6 Field Measurement of Water Quality Indicators, including Calibration Procedures

Water quality parameter measurements are recorded using a multi meter instrument. The instrument probes are calibrated prior to use, following manufacturer's procedures using analytical grade reagents, or if obtained from a field equipment supplier, the calibration checked. Approximately three to five (3 to 5) wetted well volumes are removed; and, well development continues until the purged water has chemically stabilized as indicated by visual observations and field parameters measurements.

Details of field measurement of water quality indicators are documented on a log sheet or in a bound hard cover notebook, indicating the values of the parameters, the volumes of water purged, the date of purging, and additional information. A Hanna Instruments HI 98129 System was used.

4.7 Residue Management Procedures

The residue materials produced during the borehole drilling, soil sampling programs and monitoring well sampling programs comprised of soil cuttings from drilling activities, decontamination fluids from equipment cleaning, and waters from well development and purging are placed in labeled, sealed drums for off-Site disposal, or are disposed of by the licensed well contractor.

4.8 Ground Water Level Measurements

Ground water level measurements are recorded for monitoring wells to determine ground water flow and direction in the overburden aquifers beneath the Property. Water levels are measured with respect to the top of the casing by means of a Solinst interface probe, an electronic water level meter. The water levels are recorded on water level log sheets or in a bound field notebook. The water level meter probe is decontaminated between each monitoring well location.

4.9 Elevation Survey

The borehole ground surface elevations were surveyed by Terraprobe. The Trimble R10 system uses the Global Navigation Satellite System and the Can-Net reference system to determine target location and elevation. The Trimble R10 system is reported to have an accuracy of up to 10 mm horizontally and up to 30 mm vertically. It should be noted that the elevations provided on the Borehole Logs in Appendix G are approximate only, for the purpose of relating soil stratigraphy and should not be used or relied on for other purposes.

4.10 Ground Water Sampling

Ground water samples are collected from monitoring wells for chemical analysis. The monitoring wells are purged first of three to five wetted well volumes of water to remove standing water and draw in fresh formation water. Wells, which are purged dry, are to recover to 75% of static levels before sampling.

Recommended ground water sample volumes are collected into pre-cleaned, laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples are placed in an insulated cooler chilled with ice for storage and transport. Samples for VOC analysis are collected in triplicate vials prepared with concentrated hydrochloric acid as a preservative. Each VOC vial is inverted and inspected for gas bubbles prior to being placed in the cooler to ensure that no head- space is present.

All ground water samples are assigned unique identification numbers, and the date, time, project number, company name, location and requested analyses for each sample are documented in a bound hard cover notebook. The samples are submitted to the contractual laboratory within analytical test group holding times under COC protocols. New disposable chemical resistant gloves are used for each sampling location to prevent sample cross-contamination.

5. PHYSICAL IMPEDIMENTS

No physical impediments are expected to be encountered that interfere with or limit the ability to conduct sampling and analysis of the required parameters and media at the Phase Two Property.

6. SAMPLING AND ANALYSIS PLAN RATIONALE AND PROCEDURES

The SAP has identified rationale and procedures for the following items:

- Choice of Sampling System;
- Sampling Media;
- Number of Samples;
- Sampling Frequency;
- Sampling Points;
- Sampling Depth Intervals;
- Other Field Information; and,
- Samples to be Submitted for Laboratory Analysis.

These sampling and analysis plan rationale and procedures are listed in further details in the following sections.

6.1 Choice of Sampling System

A judgemental sampling system has been selected for the purposes of this investigation. Random sampling and grid sampling systems have not been chosen as the primary sampling system in this investigation as APECs have been identified and there is an understanding as to where potential contaminants may be found. Investigation of the APECs is considered sufficient and more effective in locating contaminants within the Property.

6.2 Sampling Media

The soil sampling media consists of the earth fill underneath the surficial materials, and the underlying native glacial till. There are no APECs identified for the sediment at the Property and thus sediment is not included in the soil sampling media. The soil sampling, in the case of VOCs, is location-specific to assess for the potential presence of these chemical constituents based on field screening observations, or the identification of areas of potential concern.

The ground water samples are collected from the aquifers of interest contained within the native soil and glacial till. The ground water sampling is location-specific to assess for the potential presence of chemical constituents based on previous observations, or the identification of potential areas of concern.

6.3 Number of Samples

At least one sample is required to be taken for each contaminant of concern in each medium for which that contaminant was identified for each APEC. Where exceedances are found, additional samples may be required to delineate the impact.

6.4 Sampling Frequency

Soil sampling is completed at the Property at 0.6 m (2 ft.) for every 0.76 m (2.5 ft.) drilled for the first 3.0 m (10 ft.), then at 0.6 m (2 ft.) for every 1.52 m (5 ft.) drilled. However, if fill material is present then soil sampling proceeds at 0.6 m (2 ft.) for every 0.76 m (2.5 ft.) drilled until the samples no longer indicate the presence of fill material or until the depth of the investigation.

Ground water sampling and analysis is completed at the Property for each monitoring well at least once after the development of the well is complete and water quality parameters indicate the formation water is stable.

6.5 Sampling Points

Soil sampling points for PAHs may be identified by the presence of cinders or apparent indication of PAHs within the soil samples. Soil sampling points for PHCs may be identified by the presence of hydrocarbon odours, signs of obvious staining, and combustible gas readings. Soil sampling points for VOCs may be identified by the presence of solvent odour and signs of obvious staining. Details including the exact depth are marked on the borehole log prior to sampling. Sampling points do not apply to Metals, Hydride-forming metals, and Other Regulated Parameters soil sampling as a composite sample is taken over a sampling depth interval. However, for reference, the mid-depth of the interval is used as the sampling point. Further details are indicated in Section 6.6. These details identify the specific locations of potential exceedances and assist in the analysis of migration and source of the contaminant of concern.

Sampling points for ground water samples are identified at the mid-point of the well screen elevation when the low flow sampling rate is equal to or lower than the recharge rate at the monitoring well of interest. However, if the sampling rate exceeds the recharge rate or if the water table is present below the mid-point of the well screen, the sampling point does not apply to ground water sampling. Instead, a sampling depth interval is recorded using the top of the water table to the bottom of the well screen in the aquifer of interest. Further details are indicated in Section 6.6.

6.6 Sampling Depth Intervals

Sampling depth intervals for soil sampling are identified as the full split spoon sampler (or equivalent) depth with respect to the geodetic elevation. The sampling depth intervals typically correspond with the sampling frequency as mentioned in Section 6.4.

Sampling depth intervals for ground water sampling when non-low flow sampling is utilized is identified as the top of the well screen to the bottom of the well screen when the water table is above the top of the well screen. In the event the water table is below the top of the well screen, the top of the water table to the bottom of the well screen will be used as the sampling depth interval for ground water sampling.

6.7 Other Field Information

Vertical control of the boreholes and monitoring wells will ultimately be obtained through the completion of an elevation survey with reference to a geodetic benchmark. Ground water flow and direction in the water table aquifer are determined through ground water level measurements and the relative ground water elevations established in the Property elevation survey.

Wells are required with screens within the native soil, which is the aquifer of interest. This provides data regarding ground water quality in the aquifer of interest. The water table aquifer is the zone that is expected to be impacted in the APECs identified in the Phase One studies.

6.8 Samples to be submitted for Laboratory Analysis

The field sampling program was developed to provide for the collection of samples of the surficial and subsurface soil materials and ground water for chemical analysis of one or more of the following parameters: Metals & Inorganics, HFMs, PHCs, VOCs, PAHs, PCBs and BTEX.

7. SAMPLING AND ANALYSIS PLAN CRITERIA

The QP considered the PCAs, all COPCs, and appropriate subsets of such contaminants and any other information and matters relating to the environmental condition of the property which are relevant to an informed professional judgment.

Based on the consideration of all matters and items above, the QP determined the sampling and analysis of COPCs and appropriate sampling and analysis for any other relevant contaminants that may be of concern at the Property.

The Phase Two ESA investigations, rationale for sampling locations with respect to APECs is summarized in the following table:

Area of Potential Environmental Concern	Location of Potentially Contaminating Activities	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted	Borehole/Monitoring Well for Sampling
APEC 1: East section of the building on the Phase One Property	On-Site 1 Rosetta St.	# 28 – Gasoline and Associated Products Storage in Fixed Tanks	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH106
APEC 2: South-center section of the building on the Phase One Property	On-Site 1 Rosetta St.	#27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH103
APEC 3: West section of the building on the Phase One Property	On-Site 1 Rosetta St.	#31 – Ink Manufacturing, Processing and Bulk Storage	M&I, VOCs, PHCs, BTEX	Soil and ground water	BH101, BH102
APEC 4: Central section of Phase One Property	On-Site 1 Rosetta St.	#39 – Paints Manufacturing, Processing and Bulk Storage	M&I, VOCs, PHCs, BTEX	Soil and ground water	BH104
APEC 5: Central section of the building on the Phase One Property	On-Site 1 Rosetta St.	#NA[1] – PCB Storage	VOCs, PHCs, PCBs	Soil	N/A
APEC 6: North-centre section of the Phase One Property	On-Site 1 Rosetta St.	#39 – Paints Manufacturing, Processing and Bulk Storage	M&I, VOCs, PHCs, BTEX	Soil and ground water	BH108

Area of Potential Environmental Concern	Location of Potentially Contaminating Activities	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted	Borehole/Monitoring Well for Sampling
APEC 7: Central-east section of the Phase One Property	On-Site 1 Rosetta St.	#55 – Transformer Manufacturing, Processing and Use	VOCs, PHCs, PCBs	Soil	BH104
APEC 8: South-west section of the Phase One Property	On-Site 1 Rosetta St.	# 28 – Gasoline and Associated Products Storage in Fixed Tanks	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH103
APEC 9: South-west section of the Phase One Property	On-Site 1 Rosetta St.	#55 – Transformer Manufacturing, Processing and Use	VOCs, PHCs, PCBs	Soil	BH102
APEC 10: South-west section of the Phase One Property	On-Site 1 Rosetta St.	#NA[5] – Storage of Hazardous Materials	VOCs, PHCs, BTEX	Soil and ground water	BH102, BH103
APEC 11: North section of the Phase One Property	On-Site 1 Rosetta St.	#55 – Transformer Manufacturing, Processing and Use	VOCs, PHCs, PCBs	Soil	BH109
APEC 12: South-west section of the Phase One Property	On-Site 1 Rosetta St.	#9 – Coal Gasification	M&I, HFM, VOCs, PHCs, PAHs, BTEX	Soil and ground water	BH102, BH103

Area of Potential Environmental Concern	Location of Potentially Contaminating Activities	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted	Borehole/Monitoring Well for Sampling
APEC 13: Site-Wide	On-Site 1 Rosetta St.	#NA[2] – Waste Receiver	M&I, HFM, VOCs, PHCs, PAHs, BTEX	Soil and ground water	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109, BH110
APEC 14: Site-Wide	On-Site 1 Rosetta St.	#45 – Pulp, Paper and Paperboard Manufacturing and Processing	M&I	Soil and ground water	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109, BH110
APEC 15: Site-Wide	On-Site 1 Rosetta St.	#33 – Metal Treatment, Coating, Plating and Finishing	M&I, HFM	Soil and ground water	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109, BH110
APEC 16: Site-Wide	On-Site 1 Rosetta St.	#12 – Concrete, Cement and Lime Manufacturing	M&I, HFM, PAHs	Soil and ground water	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109, BH110
APEC 17: North-west section of the Phase One Property	On-Site 1 Rosetta St.	#NA[6] – Previous Exceedance	PAHs	Soil and ground water	BH110
APEC 18: West section of the Phase One Property	Off-Site 5 Victoria Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH101, BH110
		#27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH101, BH110
APEC 19: East section of the Phase One Property	Off-Site 2 Rosetta St.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH105, BH106, BH107

Area of Potential Environmental Concern	Location of Potentially Contaminating Activities	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted	Borehole/Monitoring Well for Sampling
APEC 20: Northeast of the Phase One Property	On-Site 1 Rosetta St.	#30 – Importation of Fill Material of Unknown Quality	M&I, HFM, PAHs, VOCs, PHCs, BTEX	Soil	BH107, BH108
APEC 21: Southwest of the building on the Property	On-Site 1 Rosetta St.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	M&I, HFM, VOCs, PHCs, BTEX	Soil and ground water	BH103
APEC 22A & 22B: East and West asphaltic areas of the Property	On-Site 1 Rosetta St.	#NA[7] – De-icing Activities	M&I, HFM	Soil and ground water	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH109, BH110

M&I – Metals & Inorganics
HFM – Hydride Forming Metals (As, Se and Sb)
VOCs – Volatile Organic Compounds
PHCs – Petroleum Hydrocarbons (F1 – F4)
BTEX – Benzene, Toluene, Ethylbenzene, Xylene
PCBs - Polychlorinated Biphenyls

7.1 Plan of Implementation

Borehole	Rationale	*APEC*	Chemical Analyses	
			Soil	GW
BH101	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 3* *APEC 13* *APEC 14* *APEC 15* *APEC16* *APEC 18* *APEC 22*	1 M&I 1 HFM 2 PHCs 2 VOCs 2 BTEX 1 PAH	N/A No Well Installed
BH102	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 3* *APEC 9* *APEC 10* *APEC 12* *APEC 13* *APEC 14* *APEC 15* *APEC16* *APEC 22*	2 M&I 2 HFM 1 PHCs 1 VOCs 1 BTEX 2 PAH 1 PCB	N/A No Well Installed
BH103	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	*APEC 2* *APEC 8* *APEC 10* *APEC 12* *APEC 13* *APEC 14* *APEC 15* *APEC16* *APEC 21* *APEC 22*	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 2 PAH	N/A Dry Well
BH104	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	*APEC 4* *APEC 13* *APEC 14* *APEC 15* *APEC16* *APEC 22*	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH 1 PCB	N/A Dry Well

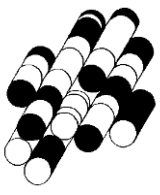
Borehole	Rationale	*APEC*	Chemical Analyses	
			Soil	GW
BH105	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	*APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 19* *APEC 22*	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH
BH106	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 1* *APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 19* *APEC 22*	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH	N/A No Well Installed
BH107	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 19* *APEC 20* *APEC 22*	2 M&I 2 HFM 1 PHCs 1 VOCs 1 BTEX 2 PAH	N/A No Well Installed
BH108	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 6* *APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 20* *APEC 22*	2 M&I 2 HFM 1 PHCs 1 VOCs 1 BTEX 2 PAH	N/A No Well Installed

Borehole	Rationale	*APEC*	Chemical Analyses	
			Soil	GW
BH109	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	*APEC 11* *APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 22*	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH 1 PCB	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH
BH110S	Monitoring well placed to determine possible contaminants and shallow ground water elevation.	*APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 17* *APEC 18* *APEC 22*	N/A Nested Well to BH110D	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH
BH110D	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	*APEC 13* *APEC 14* *APEC 15* *APEC 16* *APEC 17* *APEC 18* *APEC 22*	1 M&I 1 HFM 1 PHCs 1 VOCs 1 BTEX 1 PAH	N/A Dry Well

M&I – Metals & Inorganics
HFM – Hydride Forming Metals (As, Se and Sb)
VOCs – Volatile Organic Compounds
PHCs – Petroleum Hydrocarbons (F1 – F4)
PAHs – Polycyclic Aromatic Hydrocarbons
BTEX – Benzene, Toluene, Ethylbenzene, Xylene
PCBs – Polychlorinated Biphenyls

APPENDIX F

TERRAPROBE INC.



STANDARD OPERATING PROCEDURE – SOIL SAMPLING

General Procedures

Introduction

Subsurface investigations typically involve sampling of subsurface soils at various depths at locations of interest. Several soil sampling methods can be implemented depending on the nature of the investigations. Field screening of soil samples may be performed when potential contaminants of concern include VOC and PHC F1.

Equipment Required

- Nitrile Gloves
- Field Parameter Measurement Device (Gastech, PID)
- Laboratory Sample Bottles
- Terracores or sampling syringes (sampler)
- Field Notebook and/or Field Sheets
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice and cooler

Procedure

1. Review sampling plan and sampling locations with project manager
2. Determine what equipment and supplies are required.
3. Obtain necessary sampling and monitoring equipment.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all sampling locations.
7. Assemble the appropriate laboratory supplied jars/vials.
8. Collect the samples to be analyzed
    a. Borehole - split spoon, sample from spoon
        i. Split spoon sampling methods are primarily used to collect shallow and deep subsurface soils.
        ii. Gravel, concrete, asphalt and etc. present at or near the surface of the sampling location should be removed prior to split spoon sampling.

iii. Split spoons used for soil sampling must be constructed with stainless steel and are 2 inches in diameter and 18 to 24 inches in length.

iv. The top several inches of the material in the spoon must be discarded before remove any portion of the spoon for sampling.

b. Test pit (backhoe), bag from excavator bucket, then sample.

i. Usually used in the collection of surface and shallow soil samples. Allow soil samples to be collected from very specific intervals.

ii. The bucket must be decontaminated prior to sample collection.

iii. Ensure to scrap off any smeared material on the surface of the bucket that may cross-contaminate the sample prior to jarring the soil sample.

iv. Make sure to not physically enter backhoe excavations to collect a sample for safety issue.

c. Hand-dig (hang augers), sample.

i. Hand augers are typically used to advanced boreholes and collect surficial soils and shallow subsurface soils. A 4 inch stainless steel auger buckets with cutting heads are usually used. The bucket is advanced by simultaneously pushing and turning using an attached handle with extension.

ii. The top several inches of the soil collected by the auger bucket should be discarded and not be placed in the laboratory supplied container for sample submission.

iii. VOC samples need to be collected directly from the auger bucket, if possible.

iv. The entire hand auger assembly must be decontaminated before sampling at a new location. This is to minimize cross-contamination of soil samples.

9. Fill the appropriate jars, making sure to label properly; include the date, company name, parameter to be analyzed, and project number.
10. Change Nitrile gloves between samples.
11. Clean off loose soil that may be on the outside of the jar.
12. Place in a cooler with ice.
13. Log samples in field book.
14. Complete a Chain of Custody for all samples.
15. Package samples and complete necessary paperwork.
16. Transport samples (that have been kept cool) to laboratory or transport to office and call for pick up.

References

- *SESD Operating Procedure – Soil Sampling* U.S EPA, December 2011
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011

STANDARD OPERATING PROCEDURE – BOREHOLE DRILLING

Solid and Hollow Stem Augers

Introduction

Soil drilling, using a drill rig or other equipment based on site accessibility is a common way to obtain soil samples on a site. Soil drilling is typically completed with a truck or bombardier-mounted drill rig, or Pionjar (or other portable drilling equipment) depending on the site accessibility. The driller operator will handle all equipment, including opening the split spoon.

Hollow stem augers are typically used when wet or loose cohesionless materials are encountered to permit sampling without removing the augers. Alternatively, solid stem augers are advanced and removed at each sampling depth. Samples and in-situ Standard Penetration Testing (STP) are conducted by driving a standard 2" diameter split spoon (hollow sampling tube) through a process of continuous or intermittent sampling. If monitoring wells are to be installed in the boreholes, hollow stem augers are to be used.

Equipment Required

- Personal Protective Equipment (PPE)
    - Hard hat, safety vest, protective eyewear, steel toed boots
- Nitrile Gloves
- Slider Bags
- Borehole logs & Clipboard
- Portable Soil Vapour Measurement Device (Gastech/PID)
- Laboratory Sample Bottles
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice
- Drums for Soil Storage

Procedure

1. Prior to drilling, boreholes will be numbered and marked and the site cleared for utilities.
2. Downhole equipment is cleaned/decontaminated by the contractor.

3. All drill cuttings are to be placed in labeled drums or other container and moved to a designated location.
4. Review sampling plan and borehole locations with project manager
5. Determine what equipment and supplies are required.
6. Obtain necessary sampling and monitoring equipment.
7. Coordinate with project manager and clients and drilling crew, as required, for site access.
8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
9. Perform health and safety meeting, discuss safety around rig and muster points should there be an emergency.
10. The technician will direct the drill crew where to set up the rig to begin drilling.
11. A borehole log must be prepared for every borehole drilled. Include: elevation, GPS coordinates, depth, soil classification, drilling details, sampling, water levels, free product (if any).
12. Record the type of equipment used (solid stem or hollow, type of rig) and the start time when drilling begins.
13. Sampling will be at pre-specified intervals; typically every 2 ½" to 10-15 feet then once every 5 feet from then on. Between samples, split spoons will be cleaned (if an environmental sampling is being conducted).
14. At each sampling interval record; interval number (or sample ID), blow counts, soil description, PPM reading
15. Record depth of borehole, caving (if any) and water level when borehole is complete.
16. Upon completion of drilling in an open borehole that will not be converted to a well the borehole is to be properly filled and abandoned. There are two methods depending on whether the static water level is above or below the bottom of the borehole.
    a. Above and less than 20 feet deep: Abandon borehole by mixing cement or cement/bentonite grout and pouring the mixture into the borehole until it is filled to ground surface.
    b. Below and more than 20 feet deep: Mix and pump cement/bentonite mixture to the bottom of the hole until filled to ground surface.

References

- *Standard Operating Procedure No. 6. Drilling, Logging, and Sampling of Subsurface Materials.*
- *Geotechnical Field Investigations, Terraprobe Limited, July 1990.*

STANDARD OPERATING PROCEDURE – GROUND WATER SAMPLING

Non-Gas Contact Positive Displacement Pump (Bladder Pump)

Introduction

Low flow purging and sampling involves extracting groundwater at rates comparable to ambient groundwater flow (typically less than 500 ml/min), so that the drawdown of the water level is minimized, and the mixing of stagnant water with water from the screened intake area in a well is reduced.

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken, thus low flow methods facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

Non-gas contact positive displacement pumps cause the least amount of alteration in sample integrity as compared to other sample retrieval methods. Water comes into contact with the inside of the bladder (Teflon) and the sample tubing, also Teflon which may be dedicated to each well.

Equipment Required

- Interface or Water Level Meter
- Bladder Pump (appropriate size for monitoring wells)
- Controler Unit and Batteries
- Required Replacement Bladders
- Required Teflon Tubing
- Required String/Rope
- Nitrile Gloves
- Bucket
- Graduated Cylinder
- Stop Watch
- Field Parameter Measurement Device (Horiba Flow Cell, YSI Meter, Hanna Meter, etc.)
- Laboratory Sample Bottles
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.
5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Coordinate with project manager and clients, as required, for site access.
7. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
8. Identify and mark all sampling locations.
9. Start sampling at the least contaminated monitoring well.
10. Remove locking well cap, note location time of day, and date in your notebook
11. Remove well casing cap.
12. Lower water level measuring device or equivalent into well until water surface is encountered.
13. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
14. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook
15. Calculate the volume of water in the well and record in field notebook.
16. Select the appropriate purging and sampling equipment.
17. Assemble Teflon tubing, pump and charged control box.
18. Assemble pump, hoses and safety cable, and lower the pump into the well to the. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen NOTE: Running the pump without water may cause damage to the bladder.
19. Attach power supply, and purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured either by a flow through cell (HORIBA) or hand held device (YSI). When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
    a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every 15 to 30 seconds). If the purge volume is large, measurements taken every 5 to 10 minutes may be sufficient.
    b. Stabilization occurs when:
        i. Turbidity (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
        ii. Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
        iii. Conductivity (3%),

iv. Temperature (3%),

v. pH (± 0.1 unit),

vi. Oxidation/Reduction Potential (± 10 millivolts).

c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.

d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.

20. Collect and dispose of purge waters as specified in the site-specific sampling plan.
21. Assemble the appropriate laboratory supplied bottles.
22. Turn pump on, increase the cycle time and reduce the pressure to the minimum that will allow the sample to come to the surface and not induce significant drawdown.
23. Collect samples in the laboratory supplied bottle
    a. For non-filtered samples collect directly from the outlet tubing into the sample bottle.
    b. For filtered samples, connect the pump outlet tubing directly to the filter unit. The pump pressure should remain decreased so that the pressure build-up on the filter does not blow out the pump bladder or displace the filter.
24. Cap the sample bottle tightly and place relabeled sample container in a carrier
25. Replace the well cap.
26. Log all samples in the site logbook and label all samples.
27. Package samples and complete necessary paperwork.
28. Transport sample to staging area for preparation for transport to analytical laboratory.
29. On completion, remove the tubing from the well and either replace the Teflon tubing and bladder with new dedicated tubing and bladder or rigorously decontaminate the existing materials.

NOTE: Purging should be completed immediately prior to sample collection although it is acceptable to purge and then collect samples within 24 hours. During purging, water level measurements may be taken regularly at 15- to 30-second intervals. This data may be used to compute aquifer transmissivity and other hydraulic characteristics.

References

- *Low Stress (low flow) purging and Sampling Procedure for the Collecting of Groundwater Samples From Monitoring Wells*, U.S.EPA, September 2010
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011

STANDARD OPERATING PROCEDURE – FIELD SCREENING AND CALIBRATION

RKI Eagle Gastech and Mini Rae Photo-Ionization Detector

Introduction

Field screening is an important tool in that it provides data for onsite, real time total vapor measurements, evaluation of existing conditions, sample location optimization, extent of contamination, and health and safety evaluations.

RKI Eagle

Portable Multi-Gas Detector

The gastech can be used for reading headspace values in soil and water (wells). There are two types of 'Gastechs' in the Terraprobe office, the RKI Eagle 1 and Eagle 2. These portable gas detectors assist in screening field samples on many projects.

Portable VOC Monitor (Mini Rae 2000)

Portable VOC Monitors or PIDs (photo-ionization detector) monitors VOCs using the photo-ionization detector. If screening is required for VOCs, then this machine can be used. The PIDs are also used for health and safety for workers in enclosed spaces (such as trenches) in a known contaminated area.

Equipment Required

For Cailbration

- Canister of gas (Hexane at 400ppm for Eagle 1, Hexane at 1650ppm for Eagle 2, Isobutylene at 100ppm for PID)
- Regulator.
- Tubing to attach probe to canister.

Field Screening

- Eagle or Mini Rae
- Nitrile Gloves
- Slider Bags
- Sampling Plan (from project manager)

- Access Agreements (if required)
- Field Notebook and/or Field Sheets
  Appropriate Sampling Jars

Procedure (Calibration)

In order to ensure accuracy in the field, Terraprobe calibrates its Gastechs and PIDs each time they will be in the field.

There are three different gas canisters – one for the Eagle 1, the other for the Eagle 2 and a third for the MiniRae. The Eagle 1 is calibrated using the concentration of 400ppm while the Eagle 2 is calibrated with the concentration of 1650ppm. The PID is calibrated with Isobutylene at a concentration of 100ppm. Calibrating each machine is similar in principle but there are differences due to the different models we are using.

Eagle 1:

1. Take the Eagle to a fresh-air location
2. Turn the Eagle on and allow one minute for warm up
3. Hold the AIR button until a tone sounds
4. Press and hold SHIFT/▼ and then press the DISP/ADJ button. This will display the Calibration menu.
5. Select Single Calibration, press Enter
6. Press Enter to select HEX
7. The screen displays the channel selected, and the gas reading will flash
8. Connect the tubing from the regulator to the Eagle's probe.
9. If needed, use the AIR /▲ and SHIFT/▼ buttons to adjust the reading to match the concentration on the cylinder.
10. Press the ENTER button to set the value. Single Calibration will end and the menu will display.
11. Disconnect the tubing from the probe.
12. With the single calibration menu still displayed, use the SHIFT/▼ button until the ESC message displays, then press the ENTER button to return to the Calibration menu.
13. Press the SHIFT/▼ button to place the arrow next to Normal Operation and then press ENTER to return to the normal screen.

Eagle 2:

1. Take the Eagle to a fresh-air environment.
2. Turn the Eagle on and allow one minute for warm up.
3. Press and hold the RANGE/SHIFT button, when press the DISPLAY/ADJUST/NO button and release both buttons.
4. The Calibration Mode Screen displays with the cursor beside Auto Calibration.
5. Set the fresh air reading by: Moving the cursor to the Perform Air Adjust menu item by using the RANGE/SHIFT button. Press and release the POWER/ENTER/RESET button. The screen will say “Perform Air Adjust?” Press the AIR/YES button to continue. The Eagle 2 will indicate it is adjusting the zero reading before it returns to the Calibration Mode Screen.
6. Move the cursor to Single Calibration menu item by using the AIR/YES button.
7. Press and release the POWER/ENTER/RESET button. The “Select Sensor Screen” appears with the cursor flashing.
8. Move the cursor next to the sensor you want to calibrate with the AIR/YES and RANGE/SHIFT buttons.
9. Press and release the power enter reset button to proceed to the Single Calibration Gas Value screen. The calibration gas value is flashing
10. If necessary, adjust the calibration gas value to match the cylinder concentration with the air/yes and range/shift buttons.
11. Press and release the power/enter/reset button to proceed to the single calibration apply gas screen. Cal in Process is flashing.
12. Connect the tubing from the demand flow regulator to the probe. Allow the Eagle 2 to draw gas for one minute.

Mini Rae PID Calibration

1. Bring the Mini Rae to a fresh air environment.
2. Push the MODE and N/- buttons together to access a sub menu.
3. “Fresh Air Cal?” will appear.
4. Press the Y/+ key, the display shows “zero in progress” followed by “wait” and a countdown timer.
5. After about 15 seconds, the display shows the message “zeroed… reading = X.Xppm…” Press any key or wait, the monitor will return to “Fresh Air Calibration?” menu.
6. Connect the tubing to the regulator on the gas cylinder.
7. Press the Y/+ key at the “Span Cal?” to start calibration. The display shows the gas name and the span value of the corresponding gas.
8. The display shows “Apply gas now!” Turn on the valve of the span gas supply.

9. Display shows "wait… 30" with a countdown timer showing the number of remaining seconds while the monitor performs the calibration.
10. When the countdown timer reaches 0, the display gas shows the calibrated value.
11. After a span calibration is completed, the display will show the message "Span Cal Done! Turn Off Gas!"
12. Turn off the flow of gas and disconnect the calibration tubing from the Mini Rae.
13. Press any key to return to the sub menu. Press MENU to return to main menu and being operations.

Procedure (Field Screening)

1. Place soil sample in a slider bag and gently break up the pieces.
2. Using the Eagle, insert the probe into the bag and hold it above the soil. Do NOT put the probe in the soil. Wait 30 seconds for the probe to read the soil vapour.
3. Record the value and remove the probe from the slider bag.
4. PIDs can be used the same way HOWEVER, it must be noted that if sampling for VOCs, the sample must be preserved within 10-12 seconds of sampling. This means that any sample that is potentially going to be jarred must have a methanol vial stored immediately.
5. Using the probes to measure headspace readings in a well follows the same basic principles. Open the j-plug or slip cap and quickly insert the probe into the top of the well taking extreme caution not to allow the probe to touch any water, and cover the top of the well with your hand.
6. Wait 30 seconds for the probe to establish a reading.
7. Remove the probe and record the value.

References

- *US EPA Field Sampling Guidance Document #1210 "Soil Sampling for Volatile Compounds"*
- *MiniRae 2000 Portable VOC Monitor Operation and Maintenance Manual, Rev. C*
- *US EPA Field Screening Methods Catalog User's Guide*
- *Instruction Manual Eagle Series Portable Multi Gas Detector. Rev.H.*
- *RKI Eagle 2 Operator's Manual. Rev. Q.*

STANDARD OPERATING PROCEDURE – FIELD MEASUREMENT OF WATER QUALITY INDICATORS

YSI 63 Hand-held System

Introduction

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken. The YSI 63 Hand-held system can be used with all ground water sampling methods (manual or low-flow).

YSI 63's micro-processor allows the system to be easily calibrated with the press of a few keys. Additionally, the micro-processor performs a self-diagnostic routine each time the instrument is turned on. The self-diagnostic routine provides useful information about the function of the instrument and probe.

Equipment Required

- Interface or Water Level Meter
- Water pump or bailer
- Nitrile Gloves
- Bucket and/or Graduated Cylinder
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.
5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Calibrate pH and Conductivity on the YSI 63 Hand-held System as follow:
    a. Prior to Calibration
        i. Ensure all sensors are immersed in calibration solutions. The top vent hole of the conductivity sensor must be immersed.

ii. Fill a bucket with ambient temperature water to rinse the probe module between calibration solutions. Prepare clean, absorbent paper towels or cotton cloth available to dry probe module between rinses. This reduces carry-over contamination and increase accuracy of the calibration.

b. pH Calibration (pH calibration on YSI 63 MUST be performed before taking pH measurements)

i. Accessing the calibration screen from the main menu by pressing up arrow and down arrow at the same time.

ii. Calibration may be performed at 1, 2 or 3-points (at pH 7, 4 and 10, or at pH 6.86, 4.01 and 9.18). Perform a 1-point calibration (at pH 7 or at pH 6.86) ONLY if a previous 2 or 3-point calibration has been performed recently. In most cases, a 2-point pH calibration will be sufficient for accurate pH measurements, but if the general range of pH in the sample is not known, a 3-point calibration may be necessary. Enter the calibration standard of choice.

iii. First calibration must be either pH 7 or pH 6.86.

iv. Place 30 to 35 mL of the pH buffer you have chosen to calibrate the system with (pH 7 or 6.86) in the 100 mL graduated cylinder. The graduated cylinder minimizes the amount of solution needed.

v. Exit the calibrate menu and rinse the probe module and sensors in tap or purified water and dry. Repeat step ii to iv for 2- and 3-point buffers using the corresponding pH buffer solutions.

c. Conductivity Calibration (system calibration is rarely required because of the factory calibration of YSI 63)

i. Accessing the calibration screen from the main menu.

ii. It is recommended that the conductivity standard chosen should be within the same conductivity range as the samples to be measured (fresh water = 1 mS/cm; brackish water = 10 mS/cm; seawater = 50 mS/cm).

iii. Carefully immerse the sensor end of probe module into the solution. Do not use 100 mL graduated cylinder because the diameter of the cylinder is too small for accurate conductivity measurements.

iv. Move the probe vigorously from side to side to dislodge any air bubbles from the electrodes.

v. Be sure to enter the value in mS/cm at 25°C and allow at least one minute for temperature equilibration before proceeding.

vi. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.

vii. Press the up arrow and down arrow and the same time to record calibration and rinse the probe module and sensors in tap or purified water and dry.

7. Coordinate with project manager and clients, as required, for site access.
8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
9. Identify and mark all sampling locations.
10. Start sampling at the least contaminated monitoring well.
11. Remove locking well cap, note location time of day, and date in your notebook

12. Remove well casing cap.
13. Lower water level measuring device or equivalent into well until water surface is encountered.
14. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
15. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook.
16. Calculate the volume of water in the well and record in field notebook.
17. Select the appropriate purging and sampling equipment.
18. Lower the pump into the well. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen
19. Attach power supply, and purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured by placing the YSI 63 Hand-held system in a measuring container (bucket or 100 ml cylinder). When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
    a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every ¼ casing volume). If the purge volume is large, measurements taken every ½ to 1 casing volume may be sufficient.
    b. Stabilization occurs when:
        i. Conductivity (± 3%),
        ii. Temperature (± 3%),
        iii. pH (± 0.1 unit),
        iv. Salinity (determined automatically from conductivity and temperature readings).
    c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
    d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.

20. Collect and dispose of purge waters as specified in the site-specific sampling plan.

References

- *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S.EPA, April 1996
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011
- *YSI 63 MPS Operations Manual*, YSI Environmental, January 2007

STANDARD OPERATING PROCEDURE – FIELD MEASUREMENT OF WATER QUALITY INDICATORS

YSI 556 Flow-through System

Introduction

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken. It is recommended to use the YSI 556 Flow-through system with low flow sampling methods in order to facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

YSI 556 Flow-through system can simultaneously measure water quality parameters while utilizing a flow cell to give continuous data.

Equipment Required

- Interface or Water Level Meter
- Water pump (Bladder Pump or Peristaltic Pump)
- Controller Unit and Batteries
- Required Replacement Bladders (if Bladder Pump is used)
- Required Teflon Tubing
- Required String/Rope (if Bladder Pump is used)
- Nitrile Gloves
- Bucket
- Graduated Cylinder
- Stop Watch
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.

5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Calibrate all the sensors (with the exception of temperature) on the YSI 556 Flow-through System as follow:
    a. Prior to Calibration
        i. The transport/calibration cup comes with the probe module serves as a calibration chamber; however, laboratory glassware may be used.
        ii. Ensure all sensors are immersed in calibration solutions. The top vent hole of the conductivity sensor must be immersed.
        iii. Fill a bucket with ambient temperature water to rinse the probe module between calibration solutions. Prepare clean, absorbent paper towels or cotton cloth available to dry probe module between rinse ands and calibration solutions. This reduces carry-over contamination and increase accuracy of the calibration.
    b. Conductivity Calibration
        i. Accessing the calibration screen from the main menu.
        ii. Choose conductivity calibration, then *specific conductance*. The recommended calibration solution volume is 55 ml for both upright and upside down orientation.
        iii. It is recommended that the conductivity standard chosen should be within the same conductivity range as the samples to be measured (fresh water = 1 mS/cm; brackish water = 10 mS/cm; seawater = 50 mS/cm).
        iv. Carefully immerse the sensor end of probe module into the solution and rotate or move up and down to remove any bubbles from the conductivity cell.
        v. Secured transport/calibration cup on the threaded end of the probe module and prevent over tighten.
        vi. Enter the calibration standard of choice. Be sure to enter the value in mS/cm at 25°C and allow at least one minute for temperature equilibration before proceeding.
        vii. Observe reading under *specific conductance*. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
        viii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
    c. Dissolved Oxygen Calibration
        i. Accessing the calibration screen from the main menu and choose DO calibration.
        ii. Calibrate either % or mg/L automatically calibrates the other.
        iii. **For %:** Place 3mm (1/8 inch) of water in the bottom of the transport/calibration cup and place the probe module in the transport/calibration cup (ensure DO and temperature sensors are not immersed in the water).
        iv. Engaged only 1 or 2 threads of the transport/calibration cup to ensure the DO sensor is vented to the atmosphere. Enter the current local barometric pressure (no entry is required if *optional barometer* unit is present).
        v. Allow approximately ten minutes for the air in the calibration cup to become water saturated and for the temperature to equilibrate before proceeding. Start calibrating.

vi. **For mg/L:** Place the probe module in water with a known DO concentration (immerse all the sensors). Proceed to enter the known DO concentration of the water.

vii. Stir the water with a stir bar or rapidly move the probe module to provide fresh sample to the DO sensor. Allow at least one minute for temperature equilibration before proceeding.

viii. **For % and mg/L**: It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.

ix. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.

d. pH Calibration

i. Accessing the calibration screen from the main menu

ii. Choose **1-point** if you are adjusting previous calibration; **2-point** if the media being monitor is known to be either basic or acidic (use two calibration standards); **3-point** assures maximum accuracy when the pH of the media cannot be anticipated. Always calibrate with buffer 7 first regardless of calibration options.

iii. Recommended calibration solution volume is 30 ml for upright orientation and 60 ml for upside down orientation.

iv. Immerse the sensor end of the probe module into the solution and gently rotate the probe to remove any bubbles from the pH sensor. Secure the calibration cup to the probe module.

v. Enter the calibration value of the buffer for current temperature. Allow at least one minute for temperature equilibration before proceeding.

vi. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.

vii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.

viii. Repeat step d-iii to d-vii using a second pH buffer (for 2-point/3-point options)

e. ORP Calibration

i. Accessing the calibration screen from the main menu and choose ORP calibration.

ii. Placed either 30 ml (upright) or 60 ml (upside down) of known ORP solution into a calibration cup.

iii. Rotate probe module up and down to remove any bubbles from the OPR sensor.

iv. Secured transport/calibration cup on the threaded end of the probe module and prevent over tighten.

v. Enter correct calibration solution value at the current temperature as shown below:

Temperature °C	Zobell Solution Value, mV
-5	270.0
0	263.5
5	257.0

Temperature °C	Zobell Solution Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0
40	211.5
45	205.0

vi. Allow at least one minute for temperature equilibration before proceeding. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.

vii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.

7. Coordinate with project manager and clients, as required, for site access.
8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
9. Identify and mark all sampling locations.
10. Start sampling at the least contaminated monitoring well.
11. Remove locking well cap, note location time of day, and date in your notebook
12. Remove well casing cap.
13. Lower water level measuring device or equivalent into well until water surface is encountered.
14. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
15. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook
16. Calculate the volume of water in the well and record in field notebook.
17. Select the appropriate purging and sampling equipment.
18. Lower the pump into the well to the. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen
19. Purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured by attaching the YSI 556 multi probe system to a flow through cell. When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
    a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every 15 to 30 seconds). If the purge volume is large, measurements taken every 5 to 10 minutes may be sufficient.
    b. Stabilization occurs when:

i. Turbidity (± 10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),

ii. Dissolved Oxygen (± 10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),

iii. Conductivity (± 3%),

iv. Temperature (± 3%),

v. pH (± 0.1 unit),

vi. Oxidation/Reduction Potential (± 10 millivolts).

c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.

d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.

20. Collect and dispose of purge waters as specified in the site-specific sampling plan.

References

- *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S.EPA, April 1996
- *Low-Flow Sampling of Water Quality Paramenters Used in Determining Groundwater Stability*, YSI Environmental, 2005
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011
- *YSI 556 MPS Operations Manual*, YSI Environmental, August 2009

STANDARD OPERATING PROCEDURE – WELL INSTALLATION

Introduction

All wells are to be constructed with flush-thread joints and factory-slotted screen. Terraprobe monitoring wells are 2-inch (50 mm) inside diameter PVC unless otherwise stipulated or required by site specific standards or sampling requirements. Other possible well diameters and materials include:

- 1-inch (25 mm) PVC,
- 1.5 –inch (37 mm) PVC,
- 4-inch (100mm) steel,
- 6 inch (150 mm) steel,
- 10 inch (255 mm) steel and;
- 3 foot (915 mm) concrete.

Water washed silica sand is used for the filter pack, bentonite is used to create a seal above the screen to just below the surface and sand is added to ground level. Well casings are installed using cement to secure them.

Notes:

- Monitoring wells are to be installed by a licenced well driller only.
- The installation procedures outlined in this document are for reference only to insure familiarization with the process.
- The installation procedures outlined in this document are for the installation of a typical 2-inch PVC monitoring well.
- Maximum length of well screen allowed under O.Reg. 153/04 is 3 m (10 feet)
- A MOE Well Record is required under O.Reg. 903 if:
    - The monitoring well is greater than 3 m (10 feet) and/or
    - The monitoring well will be in place longer than 30 days
- Well Records can be either for a single well or a group of wells (cluster).
- A well cluster record can be written only if all the wells are within the same property, or adjacent properties owned by the same owner.

Equipment Required

- Interface or Water Level Meter
- Field Notebook and/or Field Sheets
- Well Keys/Locks or Tools Required
- PVC Pipe (risers/casing)
- PVC Screen
- J-Plugs
- Flush Mount Casing or Above Grade Casing
- Bentonite
- Silica Sand
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. After borehole completion, measure total depth before riser casing and screen are installed and before the augers are removed. This confirms drilling depths are accurate.
2. Decontaminate screen and casing (typically done off-site by water well driller), check that casing sections are straight and not cracked or damaged.
3. Verify and record diameter and lengths of casings and screen.
4. The casing/screen will be installed by:
    a. Placing an end cap on the screen section
    b. Attaching a section of riser to the screen and lowering into the borehole
    c. Additional sections of riser will be added and lowered into the borehole until the desired screened interval is reached
5. Record the length of screen and riser pipe used for the monitoring well.
6. Verify and record that the proper filter (sand) pack has been selected.
7. The sand is poured into the space around the screen. Ensure it fills the hole to at least two feet above the screen.
    a. In hollow stem auger wells, the sand pack must be poured down the hollow stem of the augers. Augers are then pulled out of the borehole in 2-1/2 to 5 feet increments, sand is poured and level measured with a weighted tape.
8. Use a weighted tape and take continuous measurements while the sand is being poured to ensure proper installation. Pack the sand down to verify.
9. Record how much sand is used.
10. A bentonite seal is placed directly above the sand pack, minimum two feet thick, and should extend into the next soil strata.
11. Record how much bentonite is used.
12. A grout seal is then placed above the bentonite and can be a mixture of cement, bentonite, sand and water.

13. Surface completion is to be completed one of two ways.
    a. Above grade: Locking well cover sticking above grade, secured by lock and key.
    b. At grade: Flush mount casing, lock with ratchet bolts or allen key.
14. Each casing is installed over the PVC pipe and cemented into place.
15. Record GPS coordinates and measure stick up (if above grade).
16. Confirm that a well record will be completed for the monitoring well. Confirm the information to be submitted on the well record or the cluster of wells.
17. Survey the completed monitoring well to a geodetic or recoverable benchmark

References

- *Geotechnical Field Investigations, Terraprobe Ltd, July 26, 1990*
- *Ontario Water Resources Act R.R.O. 1990 Regulation 903 Wells*
- *Environmental Protection Act Ontario Regulation 153/04*

STANDARD OPERATING PROCEDURE – SOIL SAMPLING

VOC

Introduction

To properly screen for VOC and PHC F1 that may be present in the soil, it is necessary to preserve ALL samples. Upon retrieval of soil samples from borehole and test pit investigations, soil should be placed in methanol vials as quickly as possible (within 10 to 15 seconds after retrieval). Temporary storage of soil in split spoons, jars or ziplock bags is not permitted.

Field screening may still be used to decide which samples will be submitted for analysis but all potential samples must be immediately chemically preserved. Once the VOC or PHC F1 sample has been collected the remaining portion of the sample can be placed into plastic bags and sealed tightly with a nominal head space. Upon completion of each borehole, gas tech or PID readings can be taken of each sample collected to determine which sample(s) will be submitted for chemical analysis.

In addition to samples collected in methanol vials, a separate container must be collected to determine moisture content. The same jars that are used to collect other soil samples are appropriate containers (60ml or 120ml).

Equipment Required

- Nitrile Gloves
- Field Parameter Measurement Device (Gastech, PID)
- Laboratory Sample Bottles
- Terracores or sampling syringes (sampler)
- Field Notebook and/or Field Sheets
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice

Procedure

1. Review sampling plan and sampling locations with project manager
2. Determine what equipment and supplies are required.

3. Obtain necessary sampling and monitoring equipment.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all sampling locations.
7. Assemble the appropriate laboratory supplied bottles.
8. Collect the sample to be analyzed
    a. Borehole - split spoon, sample from spoon
    b. Test pit, collect sample in bag from excavator bucket, then sample immediately
9. Push the sampler into the soil to retrieve the sample.
10. Remove the sampler from the soil.
11. Clean off loose soil that may be on the outside of the sampler and remove extra soil if applicable.
12. Place the mouth of the sampler into the 40ml methanol vial.
13. Ensure vial is at an angle to reduce the chance of splashing chemical.
14. Collect samples in the laboratory supplied bottle
15. Log all samples in the site logbook and label all samples.
16. Package samples and complete necessary paperwork.
17. Transport sample to staging area for preparation for transport to analytical laboratory.

References

- *Field Sampling guidance Document # 1210 – Soil Sampling for Volatile Compounds*, U.S.EPA,
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011

STANDARD OPERATING PROCEDURE – WELL DEVELOPMENT

Introduction

Monitoring well development is necessary to ensure that complete hydraulic connection is made and maintained between the well and the aquifer material surrounding the well screen and filter pack. It also serves to restore the groundwater properties disturbed during drilling.

Most common techniques at Terraprobe include 'surging', and bailing, often used together. Other development methods that may be used include jetting, airlift, and submersible pump methods. Jetting is typically not used as a development method for environmental investigations, but is commonly used for water resource monitoring wells or drinking water wells. Generally a phased process is used to develop wells, starting with a gentle bailing phase to remove sand, followed by a surging phase, and finally a pumping phase after the well begins to clear up.

After a well is first installed, and in fact, often before the bentonite pellet seal is set, gentle bailing is used to remove water and sand from the well. Bailing can be accomplished through the use of dedicated bailers or Waterra inertia pumps. The purpose of this technique is used to settle the sand pack. After further well sealant materials have been added and allowed to set for approximately 48 hours, bailing is resumed as part of well development. The purpose of bailing is to remove any fine material that may have accumulated in the well, and start pulling in natural material into the sand pack. Bailing is often conducted until the sand content in the removed water begins to decrease.

After the sand content begins to decrease, surging is conducted. A surge block is used to move sediments from the filter pack into the well casing. All surge blocks will be constructed of materials that will not introduce contamination into the well. Surge blocks should have some manner of allowing pressure release to prevent casing collapse. Terraprobe uses Waterra surge blocks which fit onto Waterra inertia pumps. The surge block is moved up and down the well screen interval and then removed, followed by a return to bailing to remove any sand brought into the well by the surging action. Care should be taken to not surge too strongly with subsequent casing deformation or collapse; the well screen interval is often the weakest part of a well. Surging should be followed by additional bailing to remove fine materials that may have entered the well during the surging effort.

After surging has been completed and the sand content of the bailed water has decreased, a submersible pump or inertia pump is used to continue well development. The pump should be moved up and

down the well screen interval until the obtained water is relatively clear. Well development will continue until the water in the well clarifies and monitoring parameters such as pH, specific conductivity, and temperature stabilize as defined in the project-specific planning documents. It should be noted that where very fine-grained formations are present at the screened interval, continued well development until clear water is obtained might be impossible. Decisions regarding when to cease development where very fine-grained conditions exist should be made between the field supervisor and project manager.

During well development pH, specific conductivity, temperature, and turbidity should be monitored frequently to establish natural conditions and evaluate whether the well has been completely developed. The main criterion for well development is clear water (Nephelometric turbidity units or NTU of less than 5). As mentioned above, clear water can often be impossible to obtain with environmental monitoring wells. A further criterion for completed well development is that the other water quality parameters mentioned above stabilize to within 10 percent between readings over one well volume. The minimum volume of water purged from the well during development will be approximately a minimum of 3 borehole volumes (wells will typically not reach stabilization of water quality parameters before this condition is achieved and may not have reached stability even after this threshold has been achieved).

Equipment Required

- Interface or Water Level Meter
- Nitrile Gloves
- Water Quality Meter (EC, pH, Temperature)
- Bucket
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Waterra
- Waterra cutters (avoid using knives)
- Surge Blocks (if required)
- Foot valves
- Storage for contaminated (or suspected contaminated) water.
- Access Agreements (if required)

Procedure

1. Review monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Obtain Waterra tubing, foot valves and surge blocks.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all monitoring wells.

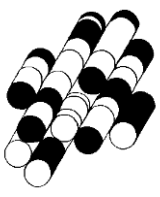
7. Open the monitoring well and take initial readings (ie; head space air monitor readings, water level, well depth) and record in the field notebook.
8. Organize equipment.
9. Bailing the monitoring well:
    a. Calculate casing volume to determine the ideal amount to be purged (three casing volumes).
    b. Attach foot valve to that end of Waterra
    c. Slowly lower Waterra down the well. Once it hits the bottom, leave some extra Waterra above the top of the well to easily handle pumping and cut the Waterra.
    d. Slowly remove three casing volumes from the monitoring well.
    e. Dispose of purged water in barrels if known or suspected contaminates are of concern, or however the project manager instructs.
10. Surging the monitoring well
    a. Slip surge block onto the end of the Waterra and reattach the foot valve, securing the surge block
    b. Place surge block and Waterra back into the monitoring well
    c. Raise and lower the surge block along the screen. (Should be able to feel location of the well screen)
    d. Continue surging for 5-10 minutes.
11. Final purge of the monitoring well
    a. Remove surge block from Waterra
    b. Lower the Waterra back down the well. Begin pumping water out of the well, taking care to note water quality and appearance (smell, clarity, etc.).
    c. Continue to purge the monitoring well until the following water quality parameters have stabilized:
        i. Turbidity (± 10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
        ii. Conductivity (± 3%),
        iii. Temperature (± 3%),
        iv. pH (± 0.1 unit),
    d. Dispose of purged water in barrels if known or suspected contaminates are of concern, or however the project manager instructs.
12. Record final measurements in field book, record date, water level before and after development, quantity of water removed, equipment used and techniques (surge and purge, or purge only).

References

- *ASTM Standard Practice and Installation of Ground Water Monitoring Wells in Aquifers*
- *EPA SOP#2044 Well Development March 10, 199*

APPENDIX G

TERRAPROBE INC.



LOG OF BOREHOLE 101

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 10, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 1	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587169, N: 4834296 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev / Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Unstabilized Water Level	Lab Data and Comments (GR SA SI CL)
0	260.3	**GROUND SURFACE**					260						
	259.7	75mm **ASPHALTIC CONCRETE**		1	SS	23				PID: 0			
	0.6	475mm **AGGREGATE**											
1		**FILL**, sand, some gravel, trace silt, loose, brown, moist		2	SS	8	259			PID: 0			
2	258.0			3	SS	6	258			PID: 0			
	2.3	**SAND**, some gravel to gravelly, trace to some silt, loose to compact, brown, moist		4	SS	8				PID: 0			
3				5	SS	12	257			PID: 0			
4				6	SS	9	256			PID: 25			
5				7	SS	12				PID: 10			
				8	SS	11	255			PID: 0			
6				9	SS	12	254			PID: 0			
7							253						
				10	SS	14				PID: 0			
8							252						
9		...trace gravel ...trace clay		11	SS	27	251			PID: 0			8 66 19 7
10							250						
11	249.0	...dense		12	SS	35				PID: 0			
	11.3	**SANDY SILT**, trace clay, trace gravel, trace stone fragments, dense, brown, moist					249						
12				13	SS	44	248			PID: 0			
	247.5 12.8	**END OF BOREHOLE**											

Borehole was dry and open upon completion of drilling.

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 102

Terraprobe

Project No. : 1-20-0249-01 | Client : 1 Rosetta Street (Halton Hills) GP Limited | Originated by : DH

Date started : September 1, 2020 | Project : 1 Rosetta Street | Compiled by : HR

Sheet No. : 1 of 2 | Location : Halton Hills, Ontario | Checked by : AR

Position : E: 587185, N: 4834262 (UTM 17T) | Elevation Datum : Geodetic

Rig type : Truck-mounted | Drilling Method : Hollow stem augers

Depth Scale (m)	Elev / Depth (m)	Description	Graphic Log	Sample Number	Sample Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
0	258.5	**GROUND SURFACE**					258					
		65mm **ASPHALTIC CONCRETE** 50mm **AGGREGATE** **FILL**, gravelly sand, trace clay, loose to compact, brown, moist		1	SS	13				PID: 0		
1				2	SS	5	257			PID: 10		
	257.0 / 1.5	**SAND**, some gravel to gravelly, trace to some silt, compact to very dense, brown, moist		3	SS	11				PID: 0		
2				4	SS	12	256			PID: 5		
3				5	SS	11	255			PID: 0		
4							254					
5				6	SS	23				PID: 0		
							253					
6				7	SS	15	252			PID: 0		
7							251					
8				8	SS	20				PID: 0		
							250					
9				9	SS	23	249			PID: 0		
10							248					
11				10	SS	25				PID: 0		
							247					
12				11	SS	27	246			PID: 25		
13							245					
14				12	SS	22				PID: 15		
							244					

Penetration Test Values (Blows / 0.3m): Dynamic Cone (10, 20, 30, 40)

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane (40, 80, 120, 160)

Moisture / Plasticity: Plastic Limit (PL), Natural Water Content (MC), Liquid Limit (LL) (10, 20, 30)

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

(continued next page)

LOG OF BOREHOLE 102

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : DH
Date started : September 1, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 2 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587185, N: 4834262 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev / Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
15		*(continued)*						Dynamic Cone 10 20 30 40; Unconfined / Pocket Penetrometer / Field Vane / Lab Vane 40 80 120 160	Plastic Limit / Natural Water Content / Liquid Limit PL MC LL 10 20 30			Unstabilized Water Level; GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
		SAND, some gravel to gravelly, trace to some silt, compact to very dense, brown, moist *(continued)* ...stone fragments		13	SS	60	243			PID: 0		
16							242					
	241.7 16.8											
17		**SANDY SILT**, trace to some clay, trace gravel, trace stone fragments, dense, brown, moist		14	SS	47				PID: 0		
	241.1 17.4											

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

LOG OF BOREHOLE 103

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : DH
Date started : September 2, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587204, N: 4834269 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity	Headspace Vapour (ppm)	Instrument Details	Unstabilized Water Level	Lab Data and Comments
0	258.5	**GROUND SURFACE**					258	Dynamic Cone 10 20 30 40; Unconfined, Pocket Penetrometer, Field Vane, Lab Vane 40 80 120 160	Plastic Limit / Natural Water Content / Liquid Limit PL MC LL 10 20 30				GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
		50mm **ASPHALTIC CONCRETE**		1	AS								
		FILL, gravelly sand, trace clay, trace brick fragments, compact, brown, moist		2	AS								
2				3	SS	18	257						
	256.2												
	2.3	**SAND**, some gravel to gravelly, trace to some silt, compact to dense, brown, moist		4	SS	14	256						
3				5	SS	15	255			PID: 5			
5				6	SS	19	254			PID: 0			
6				7	SS	31	253			PID: 10			
8				8	SS	33	252			PID: 0			
9				9	SS	27	250			PID: 0			
11				10	SS	26	249			PID: 15			
12				11	SS	34	247			PID: 0			
14				12	SS	35	246			PID: 0			
							244			PID: 5			

(continued next page)

LOG OF BOREHOLE 103

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : DH
Date started : September 2, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 2 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587204, N: 4834269 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Sample Number	Sample Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
15		**SAND**, some gravel to gravelly, trace to some silt, compact to dense, brown, moist *(continued)*					243			PID: 0		
16		...stone fragments below		13	SS	37	242					
17				14	SS	43	241			PID: 0		
18				15	SS	41	240			PID: 0		
19							239					
20	238.2 20.3	...very dense		16	SS	68/ 280mm						

Penetration Test Values (Blows / 0.3m): Dynamic Cone (×) 10 20 30 40

Undrained Shear Strength (kPa): Unconfined (○) Pocket Penetrometer (●) Field Vane (+) Lab Vane (■) 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL) Natural Water Content (MC) Liquid Limit (LL) 10 20 30

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Sep 30, 2020	dry	n/a

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 104

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : September 3, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587242, N: 4834316 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
0	260.5	**GROUND SURFACE**					260					
	260.3 / 0.2	90mm **ASPHALTIC CONCRETE** 75mm **AGGREGATE**		1	SS	12				PID: 35		
1		**FILL**, silty sand, trace clay, trace gravel, loose to compact, green, moist		2	SS	5	259			PID: 20		
	259.0 / 1.5	**SAND**, some gravel to gravelly, trace to some silt, loose to compact, brown, moist		3	SS	6				PID: 25		
2				4	SS	5	258			PID: 15		
3				5	SS	8	257			PID: 35		
4							256					
5				6	SS	15				PID: 20		
							255					
6				7	SS	27				PID: 20		
7							254					
		...dense below		8	SS	35	253			PID: 0		
8												
9	251.4 / 9.1	**SAND AND SILT**, trace clay, compact to very dense, brown, moist		9	SS	50	252			PID: 25		
10							251					
				10	SS	43	250			PID: 25		
11												
12		...wet		11	SS	45	249			PID: 0		
13							248					
				12	SS	52	247			PID: 0		
14							246					

Penetration Test Values (Blows / 0.3m): Dynamic Cone; 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane; 40 80 120 160

Moisture / Plasticity: Plastic Limit, Natural Water Content, Liquid Limit; PL MC LL; 10 20 30

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

(continued next page)

LOG OF BOREHOLE 104

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : September 3, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 2 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587242, N: 4834316 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev / Depth (m)	Description (continued)	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
15		**SAND AND SILT**, trace clay, compact to very dense, brown, moist *(continued)*					245					
		...wet		13	SS	26				PID: 0		
16	243.7						244					
	16.8	**SAND**, some silt, some gravel, some stone fragments, very dense, grey, moist		14	SS	91				PID: 0		
17							243					
18		...trace gravel		15	SS	50 / 150mm	242			PID: 0		
	241.9 / 18.6											

Penetration Test Values (Blows / 0.3m): × Dynamic Cone; 10 20 30 40

Undrained Shear Strength (kPa): ○ Unconfined ● Pocket Penetrometer + Field Vane ■ Lab Vane; 40 80 120 160

Moisture / Plasticity: Plastic Limit | Natural Water Content | Liquid Limit; PL MC LL; 10 20 30

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Sep 30, 2020	dry	n/a

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 105

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : DH
Date started : August 14, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587281, N: 4834284 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity	Headspace Vapour (ppm)	Instrument Details	Unstabilized Water Level	Lab Data and Comments
	258.7	**GROUND SURFACE**											
0	258.5	80mm **ASPHALTIC CONCRETE**											
	0.2	75mm **AGGREGATE**		1	SS	10				PID: 0			SS1 Analysis: M&I, PAH, PCB
	257.9	**FILL**, clayey silt, sandy, trace gravel, stiff, brown, moist											
1	0.8	**FILL**, sand, some silt, some gravel, trace clay, compact, brown, moist		2	SS	12	258			PID: 0			SS2 Analysis: PAH, VOC, PHC
				3	SS	13	257			PID: 0			
2	256.4												
	2.3	**SAND**, some gravel to gravelly, trace to some silt, compact, brown, moist		4	SS	16	256			PID: 0			
3				5	SS	15				PID: 0			
							255						
4				6	SS	27				PID: 0			
							254						
5				7	SS	22				PID: 0			
							253						
6	252.6												
	6.1	**SAND AND GRAVEL**, trace stone fragments, dense to very dense, brown, moist		8	SS	31	252			PID: 0			SS8 Analysis: VOC, PHC
7													
							251						
8				9	SS	43				PID: 0			
							250						
9				10	SS	65				PID: 0			
							249						
10													
				11	SS	64	248			PID: 0			
11													
							247						
12				12	SS	50 / 100mm				PID: 0			
							246						
13	245.6												
	13.1	**CLAYEY SILT**, some sand to sandy, trace to some gravel, oxidation staining, hard, brown, moist (GLACIAL TILL)		13	SS	105	245			PID: 0			2 20 47 31
14				14	SS	45				PID: 0			
							244						

Penetration Test Values (Blows / 0.3m): Dynamic Cone; scale 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane; scale 40 80 120 160

Moisture / Plasticity: Plastic Limit, Natural Water Content, Liquid Limit; PL MC LL; scale 10 20 30

GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

(continued next page)

LOG OF BOREHOLE 105

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : DH
Date started : August 14, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 2 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587281, N: 4834284 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
		(continued)				
15	243.5 / 15.2	**SAND AND GRAVEL**, trace stone fragments, very dense, brown, moist		15	SS	50 / 75mm
16						
17		...sand, some silt, some gravel		16	SS	57
18				17	SS	50 / 50mm
19						
20	238.7 / 20.0	**SANDY SILT**, some clay to clayey, some gravel, hard, reddish brown, moist (GLACIAL TILL)		18	SS	92 / 250mm
21				19	SS	92 / 225mm
22						
	235.7 / 23.0	**END OF BOREHOLE**		20	SS	50 / 100mm

Borehole was dry and open upon completion of drilling.

Elevation Scale (m): 243, 242, 241, 240, 239, 238, 237, 236

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane — 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL) Natural Water Content (MC) Liquid Limit (LL) — 10 20 30

Headspace Vapour (ppm): PID: 0

Instrument Details

Unstabilized Water Level

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Sep 30, 2020	21.1	237.6

file: 1-20-0249-01 bh logs.gpj

Terraprobe

LOG OF BOREHOLE 106

Project No. : 1-20-0249-01 | Client : 1 Rosetta Street (Halton Hills) GP Limited | Originated by : SM

Date started : August 12, 2020 | Project : 1 Rosetta Street | Compiled by : HR

Sheet No. : 1 of 1 | Location : Halton Hills, Ontario | Checked by : AR

Position : E: 587289, N: 4834316 (UTM 17T) | Elevation Datum : Geodetic

Rig type : Truck-mounted | Drilling Method : Hollow stem augers

Depth (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
	260.3	**GROUND SURFACE**				
0	260.0	300mm **TOPSOIL**		1	SS	3
	0.3	**FILL**, silty sand, trace to some gravel, trace clay, very loose to loose, brown, moist		2	SS	2
1						
				3	SS	9
2	258.0					
	2.3	**SAND**, some gravel to gravelly, trace to some silt, compact to dense, brown, moist		4	SS	16
3				5	SS	11
				6	SS	13
4						
				7	SS	28
5						
				8	SS	39
6						
				9	SS	45
7						
8				10	SS	41
9	251.2					
	9.1	**SAND AND GRAVEL**, trace stone fragments, dense to very dense, brown, moist		11	SS	44
10						
				12	SS	80
11						
12				13	SS	39
	247.5					
	12.8	**END OF BOREHOLE**				

Unstabilized water level measured at 8.2 m below ground surface; borehole was open upon completion of drilling.

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane; 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL) | Natural Water Content (MC) | Liquid Limit (LL); 10 20 30

Elevation Scale (m): 260 259 258 257 256 255 254 253 252 251 250 249 248

Headspace Vapour (ppm): PID: 0

Lab Data and Comments

SS1 Analysis: M&I, PAH

SS2 Analysis: VOC, PHC

SS5 Analysis: M&I, PAH, VOC, PHC

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 107

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 13, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 1	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587262, N: 4834340 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
0	**260.4**	**GROUND SURFACE**					260					
	260.1	90mm **ASPHALT**										
	0.3	210mm **AGGREGATE**										
1		**FILL**, silty sand, trace to some gravel, trace clay, trace brick fragments, trace organics, loose to compact, brown, moist		1	SS	13				PID: 0		
				2	SS	6	259			PID: 0		SS2 Analysis: M&I, PAH, VOC, PHC
2				3	SS	7				PID: 0		
	258.1						258					
	2.3	**SAND**, some gravel to gravelly, trace to some silt, compact, brown, moist		4	SS	11				PID: 0		
3				5	SS	21	257			PID: 0		SS5 Analysis: VOC, PHC
4				6	SS	18				PID: 0		SS6 Analysis: M&I, PAH
				7	SS	27	256			PID: 0		
5												
6				8	SS	28	255			PID: 0		
7												
				9	SS	21	254			PID: 0		
8												
				10	SS	24	253			PID: 0		
9												
	249.4						252					
10	11.0	**CLAYEY SILT**, some sand, trace gravel, very stiff, brown, moist (GLACIAL TILL)		11	SS	22				PID: 0		
	249.1						251					
	11.3			12	SS	59				PID: 0		
11	248.7						250					
	11.7	**SAND AND SILT**, trace clay, trace gravel, very dense, brown, moist										
		END OF BOREHOLE					249			PID: 0		

Borehole was dry and open upon completion of drilling.

Unstabilized Water Level

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (MIT)

GR SA SI CL

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 108

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 19, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 1	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587229, N: 4834350 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
0	261.3	**GROUND SURFACE**					261					
	261.1 / 0.2	80mm **ASPHALTIC CONCRETE** 80mm **AGGREGATE**										
1		**FILL**, silty sand, trace gravel, trace clay, trace organics, trace brick pieces, very loose to compact, dark brown, moist		1	SS	24				PID: 0		SS1 Analysis: M&I, PAH
				2	SS	3	260			PID: 10		
2				3	SS	3				PID: 0		
	259.0 / 2.3						259					
		SAND, some gravel to gravelly, trace to some silt, very loose to loose, brown, moist		4	SS	3				PID: 35		SS4 Analysis: M&I, PAH, VOC, PHC
3				5	SS	9	258			PID: 0		
4				6	SS	9				PID: 0		
				7	SS	9	257			PID: 0		
5												
							256					
6	255.2 / 6.1											
		SANDY SILT, some clay, trace gravel, compact to dense, grey, moist (GLACIAL TILL)		8	SS	33	255			PID: 0		
7												
				9	SS	26	254			PID: 0		
8												
							253					
9	252.2 / 9.1											
		SANDY SILT, trace silt clay partings, very dense, brown, moist		10	SS	63	252			PID: 0		
10												
							251					
11				11	SS	53				PID: 0		
							250					
12												
	248.7 / 12.6			12	SS	92 / 250mm	249			PID: 0		

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane 40 80 120 160

Moisture / Plasticity: Plastic Limit, Natural Water Content, Liquid Limit; PL, MC, LL 10 20 30

Unstabilized Water Level

GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 109

Terraprobe

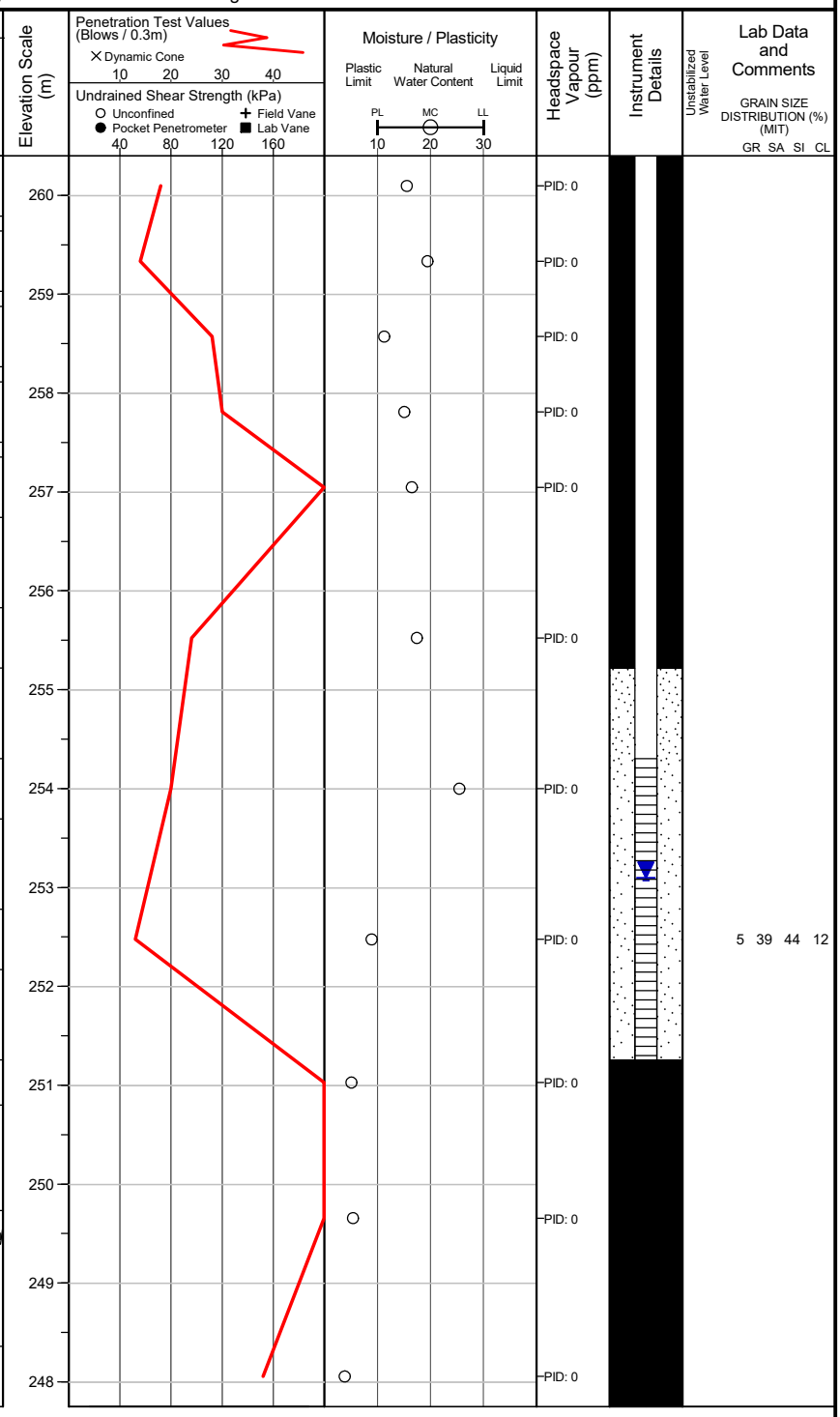
Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 18, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 1	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587206, N: 4834376 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
	260.4	**GROUND SURFACE**				
0	260.2	80mm **ASPHALT**		1	SS	18
	0.2	120mm **AGGREGATE**				
		FILL, clayey silt, some sand, trace gravel, stiff to very stiff, brown, moist				
1	259.3			2	SS	14
	1.1	**SANDY SILT**, some clay, trace gravel, compact, brown, moist (GLACIAL TILL)				
2	258.1			3	SS	28
	2.3	**SAND AND SILT**, trace clay, trace gravel, compact to very dense, brown, moist		4	SS	30
3				5	SS	52
4						
		...grey, wet below		6	SS	24
5						
6				7	SS	20
7						
		...some clay		8	SS	13
8						
9	251.3					
	9.1	**SAND AND GRAVEL**, some stone fragments, very dense, brown, moist		9	SS	85
	250.5					
10	9.9	**SANDY SILT**, trace clay, trace gravel, trace stone fragments, very dense, brown, moist		10	SS	50 / 150mm
11						
12	248.2					
	12.2	**SILTY SAND**, trace gravel, dense, brown, moist		11	SS	38
	247.8					
	12.6	**END OF BOREHOLE**				

Borehole was dry and open upon completion of drilling.



WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Sep 30, 2020	7.3	253.1

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 110D

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 10, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587160, N: 4834330 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
0	**260.5**	**GROUND SURFACE**					260					
	260.1	50mm **ASPHALTIC CONCRETE**		1	SS	14				PID: 0		
	0.4	300mm **AGGREGATE**										
1		**FILL**, sandy silt, trace to some clay, some gravel, some cinders, trace brick fragments, loose to compact, brown, moist		2	SS	7	259			PID: 0		
2				3	SS	23				PID: 0		
				4	SS	78	258			PID: 0		
3	257.5	...obstruction										
	3.0	**SANDY SILT**, trace clay, trace gravel, dense, brown, moist		5	SS	36	257			PID: 0		
4												
				6	SS	37	256			PID: 0		
5												
6		...wet		7	SS	44	255			PID: 0		
7	252.9											
	7.6	**GRAVELLY SAND**, some silt, trace clay, trace stone fragments, compact, grey, wet		8	SS	26	254			PID: 0		
8												
9	251.4						253					
	9.1	**SANDY SILT**, some clay, trace gravel, very dense, grey, moist		9	SS	91				PID: 0		
10							252					
	249.8											
	10.7	**SAND AND SILT**, trace clay, trace gravel, compact to very dense, brown, moist		10	SS	63	251			PID: 0		
11												
12				11	SS	77	249			PID: 0		
13							248					
		...some clay, grey, wet		12	SS	16	247			PID: 0		
14							246					

Penetration Test Values (Blows / 0.3m): Dynamic Cone; 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane; 40 80 120 160

Moisture / Plasticity: Plastic Limit, Natural Water Content, Liquid Limit; PL MC LL; 10 20 30

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

(continued next page)

LOG OF BOREHOLE 110D

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 10, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 2 of 2	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587160, N: 4834330 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
		SOIL PROFILE (continued)		SAMPLES		
15	245.3					
	15.2	**CLAYEY SILT**, some sand, trace gravel, stiff, grey, moist (GLACIAL TILL)		13	SS	22
16						
	243.7					
17	16.8	. ...silt, some clay		14	SS	63
18						
				15	SS	74
19						
20				16	SS	60
21	239.2					
	21.3	**SAND**, some gravel, some silt, very dense, brown, moist		17	SS	50 / 100mm
22						
	237.5					
	23.0	...stone fragments		18	SS	50 / 100mm

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Elevation Scale (m): 245, 244, 243, 242, 241, 240, 239, 238

Penetration Test Values (Blows / 0.3m) — Dynamic Cone: 10, 20, 30, 40

Undrained Shear Strength (kPa) — Unconfined, Pocket Penetrometer, Field Vane, Lab Vane: 40, 80, 120, 160

Moisture / Plasticity — Plastic Limit (PL), Natural Water Content (MC), Liquid Limit (LL): 10, 20, 30

Headspace Vapour (ppm): PID: 0

Instrument Details

Unstabilized Water Level

Lab Data and Comments — GRAIN SIZE DISTRIBUTION (%) (MIT) — GR SA SI CL

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Sep 30, 2020	dry	n/a

file: 1-20-0249-01 bh logs.gpj

LOG OF BOREHOLE 110S

Terraprobe

Project No. : 1-20-0249-01	Client : 1 Rosetta Street (Halton Hills) GP Limited	Originated by : SM
Date started : August 10, 2020	Project : 1 Rosetta Street	Compiled by : HR
Sheet No. : 1 of 1	Location : Halton Hills, Ontario	Checked by : AR

Position : E: 587160, N: 4834330 (UTM 17T) Elevation Datum : Geodetic

Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	260.5	**GROUND SURFACE**				
	260.1	50mm **ASPHALTIC CONCRETE**		1	SS	14
	0.4	300mm **AGGREGATE**				
		FILL, sandy silt, trace to some clay, some gravel, some cinders, trace brick fragments, loose to compact, brown, moist		2	SS	7
1						
				3	SS	23
2						
				4	SS	78
3	257.5					
	3.0	**SANDY SILT**, trace clay, trace gravel, dense, brown, moist		5	SS	36
4						
				6	SS	37
5						
				7	SS	44
6						
7						
	252.9					
	7.6	**GRAVELLY SAND**, some silt, trace clay, trace stone fragments, compact, grey, wet		8	SS	26
8						
9	251.4					
	9.1	**END OF BOREHOLE**				

Borehole was dry and open upon completion of drilling.

Elevation Scale (m): 260, 259, 258, 257, 256, 255, 254, 253, 252

Penetration Test Values (Blows / 0.3m) — Dynamic Cone: 10 20 30 40

Undrained Shear Strength (kPa) — Unconfined, Pocket Penetrometer, Field Vane, Lab Vane: 40 80 120 160

Moisture / Plasticity — Plastic Limit, Natural Water Content, Liquid Limit: PL MC LL; 10 20 30

Headspace Vapour (ppm)

Instrument Details

Unstabilized Water Level

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

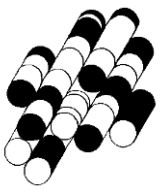
WATER LEVEL READINGS

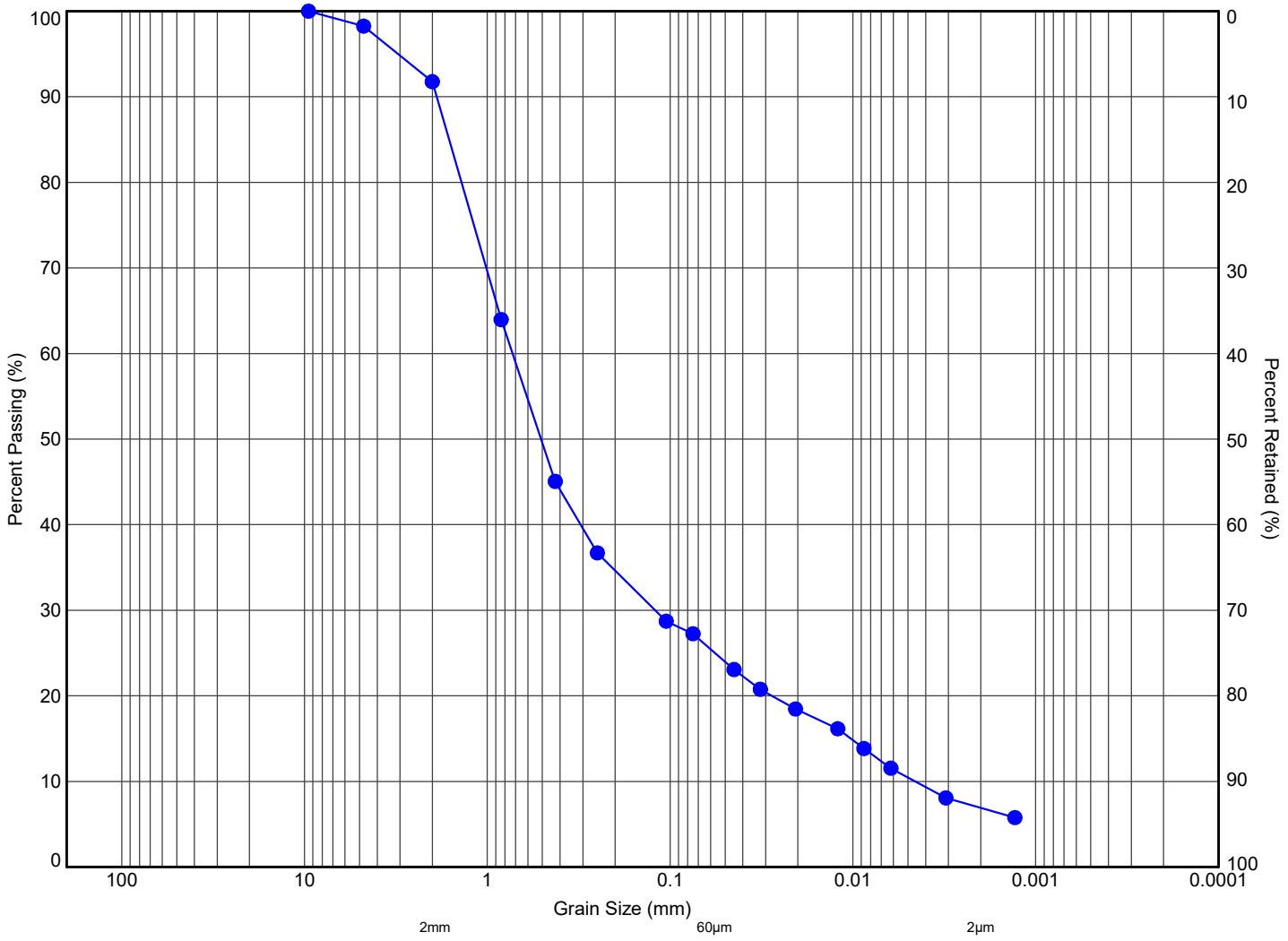
Date	Water Depth (m)	Elevation (m)
Sep 30, 2020	7.7	252.8

file: 1-20-0249-01 bh logs.gpj

APPENDIX H

TERRAPROBE INC.





MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM

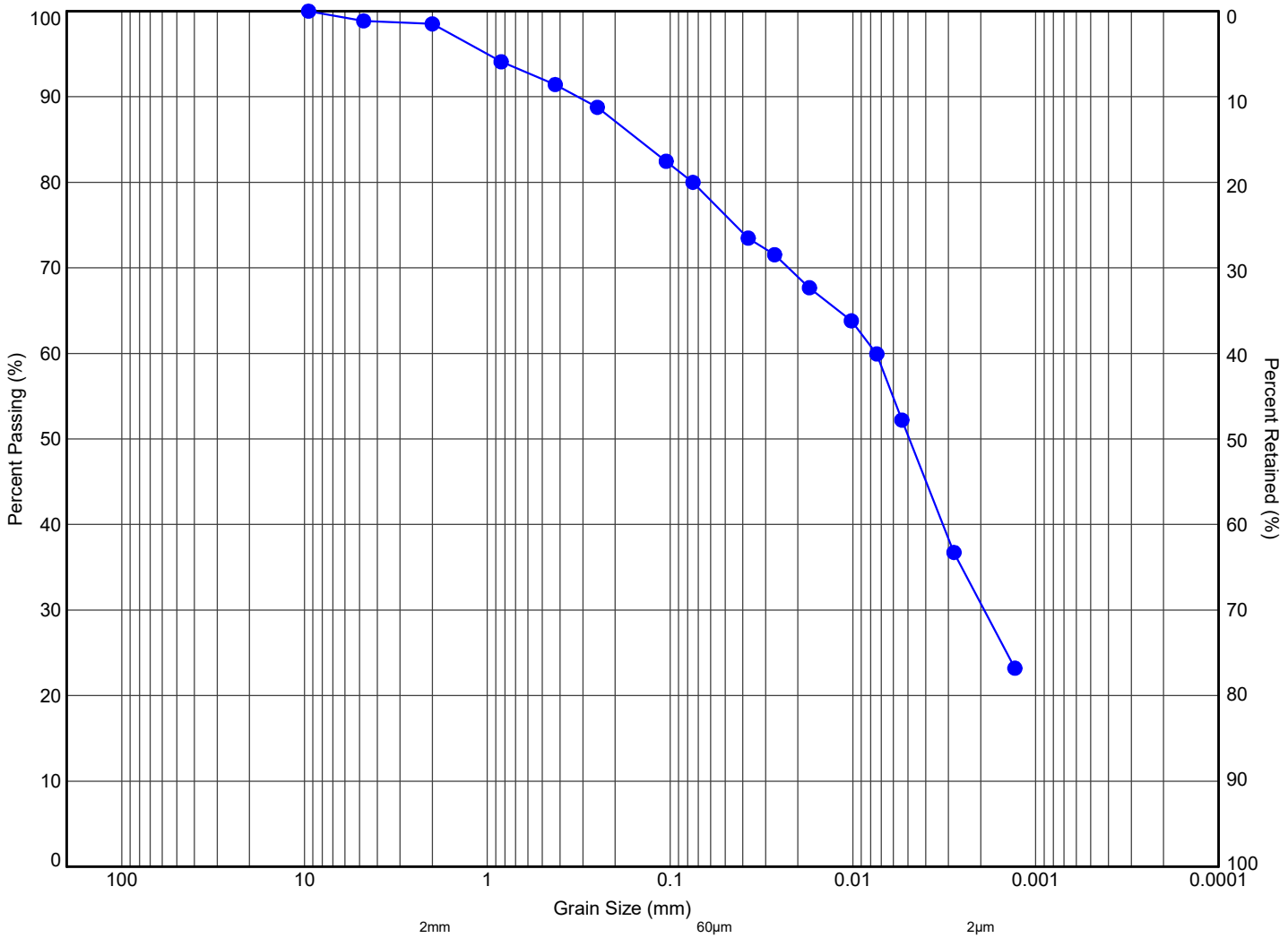
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**101**	SS11	9.4	250.9	8	66	19	7	

Terraprobe
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

GRAIN SIZE DISTRIBUTION
SAND, SOME SILT, TRACE GRAVEL, TRACE CLAY

File No.: **1-20-0249-01**



MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM

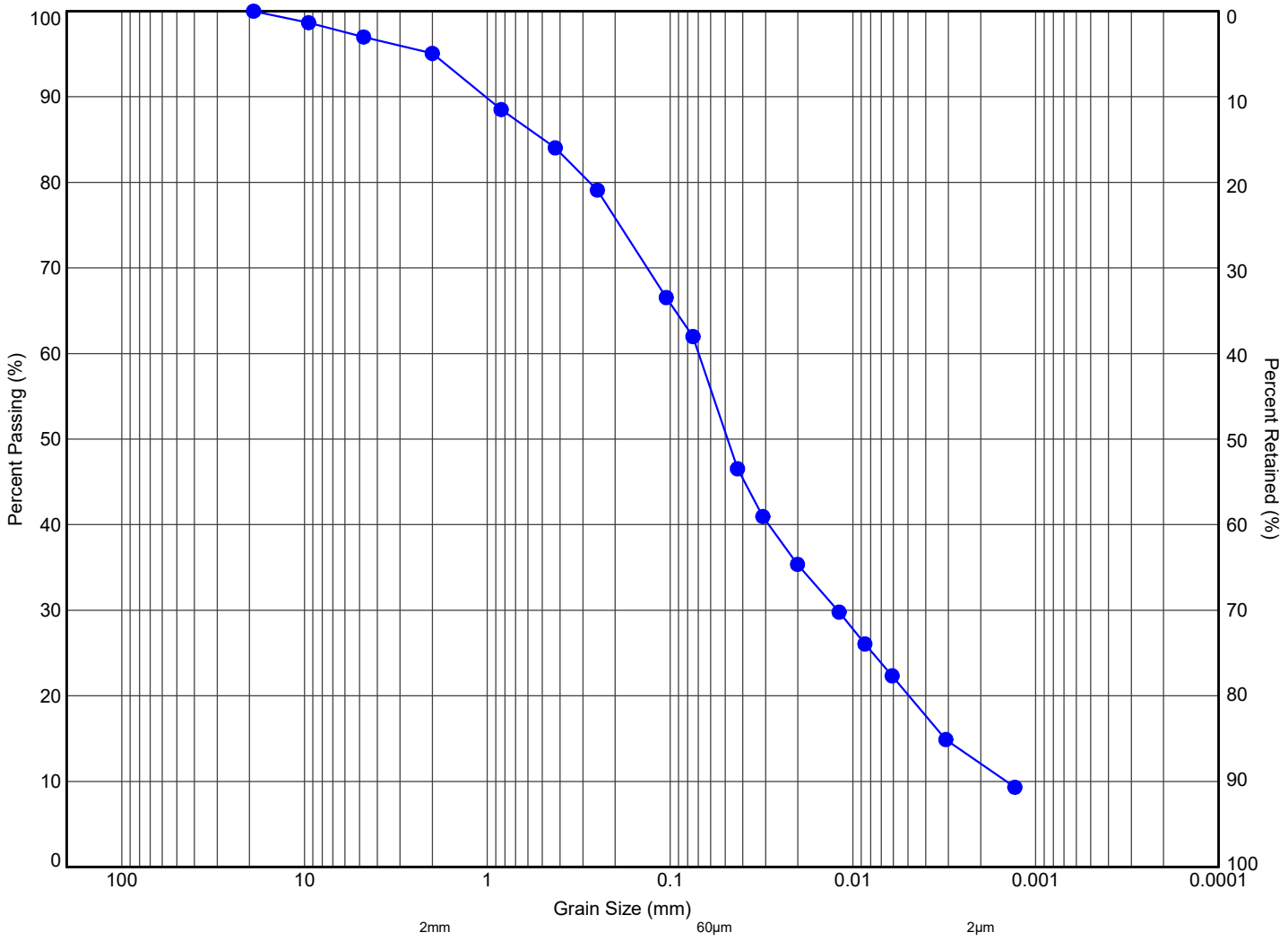
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**105**	SS13	13.3	245.4	2	20	47	31	

Terraprobe
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

GRAIN SIZE DISTRIBUTION
CLAYEY SILT, SANDY, TRACE GRAVEL

File No.: **1-20-0249-01**



MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM

	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**109**	SS8	7.9	252.5	5	39	44	12	

Terraprobe
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

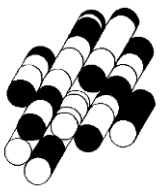
Title:

GRAIN SIZE DISTRIBUTION
SILT AND SAND, SOME CLAY, TRACE GRAVEL

File No.: **1-20-0249-01**

APPENDIX I

TERRAPROBE INC.



1 Rosetta Street, Halton Hills

Ground Water Depths (meter below ground surface)

Monitoring Well ID	Ground Surface Elevation (masl)	Stick up (m)	Well Depth (mbgs)	Top of the Well Screen Depth (mbgs)	1st GW Monitoring Event	Supplementary GW Monitoring Event	2nd GW Monitoring Event	3rd GW Monitoring Event
					Depth to water September 14, 2020 (mbgs)	Depth to water September 21, 2020 (mbgs)	Depth to water September 30, 2020 (mbgs)	Depth to water October 14, 2020 (mbgs)
BH103	258.50	0.00	20.00	16.95	Dry	Dry	Dry	Dry
BH104	260.50	0.00	18.30	15.25	Dry	Dry	Dry	Dry
BH105	258.70	0.00	22.86	19.81	20.95	21.06	21.10	21.10
BH109	260.43	0.00	9.14	6.09	7.23	7.49	7.30	6.93
BH110S	260.53	0.00	9.14	6.09	7.63	7.83	7.73	7.71
BH110D	260.53	0.00	22.86	19.81	Dry	Dry	Dry	Dry

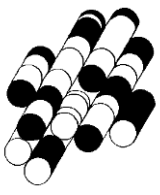
Ground Water Elevations (meters above sea level)

Monitoring Well ID	Ground Surface Elevation (masl)	Top of the Riser Elevation (masl)	Well Screen Bottom Elevation (masl)	Top of the Well Screen Elevation (masl)	1st GW Monitoring Event	Supplementary GW Monitoring Event	2nd GW Monitoring Event	3rd GW Monitoring Event
					Groundwater Level Elevation September 14, 2020 (masl)	Groundwater Level Elevation September 21, 2020 (masl)	Groundwater Level Elevation September 30, 2020 (masl)	Groundwater Level Elevation October 14, 2020 (masl)
BH103	258.50	258.50	238.50	241.55	Dry	Dry	Dry	Dry
BH104	260.50	260.50	242.20	245.25	Dry	Dry	Dry	Dry
BH105	258.70	258.70	235.84	238.89	237.75	237.64	237.60	237.61
BH109	260.43	260.43	251.29	254.34	253.20	252.94	253.13	253.50
BH110S	260.53	260.53	251.39	254.44	252.90	252.70	252.80	252.83
BH110D	260.53	260.53	237.67	240.72	Dry	Dry	Dry	Dry

Note: mbgs - meters below ground surface
masl - meters above sea level
N/A - not available

APPENDIX J

TERRAPROBE INC.



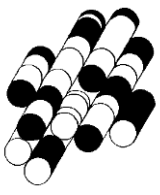
GEOLOGICAL UNITS
1 Rosetta Street
GEORGETOWN, ONTARIO
PROJECT # 1-20-0249-42

Borehole	BH101			BH102			BH103			BH104			BH105		
	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)
Asphalt	260.3	260.2	0.075	258.5	258.4	0.065	258.5	258.5	0.050	260.5	260.4	0.090	258.7	258.6	0.080
Aggregate	260.2	259.8	0.475	258.4	258.4	0.050	***Not Encountered***			260.4	260.3	0.075	258.6	258.5	0.075
Topsoil	***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***		
Earth Fill	259.8	258.0	1.8	258.4	257.0	1.4	258.5	256.2	2.3	260.3	259.0	1.3	258.55	256.4	2.1
Native Soil	258.0	247.5	10.5	257.0	241.1	15.9	256.2	238.2	18.0	259.0	241.9	17.1	256.4	235.7	20.7
Bedrock	***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***		

Borehole	BH106			BH107			BH108			BH109			BH110		
	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)
Asphalt	***Not Encountered***			260.4	260.3	0.090	261.3	261.2	0.080	260.4	260.3	0.080	260.5	260.5	0.050
Aggregate	***Not Encountered***			260.3	260.1	0.210	261.2	261.1	0.080	260.3	260.2	0.120	260.5	260.15	0.300
Topsoil	260.3	260.0	0.300	***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***		
Earth Fill	260.0	258.0	2.0	260.1	258.1	2.0	261.1	259.0	2.1	260.2	259.3	0.9	260.15	257.5	2.6
Native Soil	258.0	247.5	10.5	258.1	248.7	9.4	259.0	248.7	10.3	259.3	247.8	11.5	257.5	237.5	20.0
Bedrock	***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***		

APPENDIX K

TERRAPROBE INC.



MONITORING WELL CONSTRUCTION

1 Rosetta Street

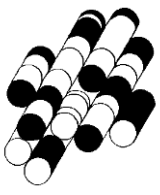
GEORGETOWN, ONTARIO

PROJECT # 1-20-0249-42

Well ID	BH103		BH104		BH105		BH109		BH110S		BH110D	
Stick Up (m)	-		-		-		-		-		-	
Ground Elev. (masl)	258.50		260.50		258.70		260.40		260.50		260.50	
Well Component	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**
Bentonite - Top	0.00	258.50	0.00	260.50	0.00	258.70	0.00	260.40	0.00	260.50	0.00	260.50
Bentonite - Bottom	16.15	242.35	14.63	245.87	18.59	240.11	5.18	255.22	5.49	255.01	19.20	241.30
Sand - Top	16.15	242.35	14.63	245.87	18.59	240.11	5.18	255.22	5.49	255.01	19.20	241.30
Screen - Top	16.76	241.74	15.24	245.26	19.81	238.89	6.10	254.30	6.10	254.40	19.18	241.32
Screen - Bottom	19.18	239.32	18.29	242.21	22.86	235.84	9.14	251.26	9.14	251.36	22.86	237.64
Sand - Bottom	20.27	238.23	18.59	241.91	22.96	235.74	12.65	247.75	9.14	251.36	22.96	237.54

APPENDIX L

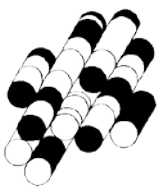
TERRAPROBE INC.



CERTIFICATE OF ANALYSIS

(SOIL)

TERRAPROBE INC.



TERRAPROBE-BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 12-AUG-20
Report Date: 21-SEP-20 09:09 (MT)
Version: FINAL REV. 4

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2487509

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: ADDITIONAL 27-AUG-20 12:19 - PAH analysis added to sample L2487509-1 BH 101 SS2
Report revised to compare to O. Reg 153/511 T3 RPI (C/F) criteria - E. Smith (20 Aug 2020).
Report revised to compare to O. Reg 153/511 T2 RPI (C/F) criteria - E. Smith (20 Aug 2020).

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2487509-1	BH 101 SS2	Saturated Paste Extractables	SAR	25.0	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2487509-1	BH 101 SS2	Saturated Paste Extractables	SAR	25.0	5	SAR

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits				
Lab ID				L2487509-1	L2487509-2	L2487509-3
Sample Date				10-AUG-20	10-AUG-20	10-AUG-20
Sample ID				BH 101 SS2	BH 101 SS3	BH 101 SS6
Analyte	**Unit**	**#1**	**#2**			
Conductivity	mS/cm	0.7	0.7	0.682		
% Moisture	%	-	-	5.68	8.32	6.42
pH	pH units	-	-	7.80		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2487509-1
			Sample Date	10-AUG-20
			Sample ID	BH 101 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

		Guide Limits		Lab ID	Sample Date	Sample ID
Analyte	Unit	#1	#2			
				L2487509-1	10-AUG-20	BH 101 SS2
SAR	SAR	5	5	25.0 SAR:M		
Calcium (Ca)	mg/L	-	-	2.21		
Magnesium (Mg)	mg/L	-	-	<0.50		
Sodium (Na)	mg/L	-	-	135		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Metals - SOIL

			Lab ID	L2487509-1
			Sample Date	10-AUG-20
			Sample ID	BH 101 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	6.5
Barium (Ba)	ug/g	390	390	180
Beryllium (Be)	ug/g	4	5	0.51
Boron (B)	ug/g	120	120	8.7
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.40
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	17.9
Cobalt (Co)	ug/g	22	22	6.4
Copper (Cu)	ug/g	140	180	43.4
Lead (Pb)	ug/g	120	120	55.0
Mercury (Hg)	ug/g	0.27	1.8	0.223
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	14.6
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	19.4
Zinc (Zn)	ug/g	340	340	80.1

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2487509-1 Sample Date: 10-AUG-20 Sample ID: BH 101 SS2
Chromium, Hexavalent	ug/g	8	10	0.22

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

				Lab ID	L2487509-2	L2487509-3
				Sample Date	10-AUG-20	10-AUG-20
				Sample ID	BH 101 SS3	BH 101 SS6
		Guide Limits				
Analyte	Unit	#1	#2			
Acetone	ug/g	16	28	<0.50	<0.50	
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068	
Bromodichloromethane	ug/g	1.5	1.9	<0.050	<0.050	
Bromoform	ug/g	0.27	0.26	<0.050	<0.050	
Bromomethane	ug/g	0.05	0.05	<0.050	<0.050	
Carbon tetrachloride	ug/g	0.05	0.12	<0.050	<0.050	
Chlorobenzene	ug/g	2.4	2.7	<0.050	<0.050	
Dibromochloromethane	ug/g	2.3	2.9	<0.050	<0.050	
Chloroform	ug/g	0.05	0.18	<0.050	<0.050	
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050	<0.050	
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050	<0.050	
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050	<0.050	
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050	<0.050	
Dichlorodifluoromethane	ug/g	16	25	<0.050	<0.050	
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050	<0.050	
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050	<0.050	
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050	<0.050	
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050	<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050	<0.050	
Methylene Chloride	ug/g	0.1	0.96	<0.050	<0.050	
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050	<0.050	
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042	<0.042	
Ethylbenzene	ug/g	1.1	1.6	<0.018	<0.018	
n-Hexane	ug/g	2.8	34	<0.050	<0.050	
Methyl Ethyl Ketone	ug/g	16	44	<0.50	<0.50	
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50	<0.50	
MTBE	ug/g	0.75	1.4	<0.050	<0.050	
Styrene	ug/g	0.7	2.2	<0.050	<0.050	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2487509-2	L2487509-3
			Sample Date	10-AUG-20	10-AUG-20
			Sample ID	BH 101 SS3	BH 101 SS6
		Guide Limits			
Analyte	**Unit**	**#1**	**#2**		
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050	<0.050
Toluene	ug/g	2.3	6	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020	<0.020
o-Xylene	ug/g	-	-	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	86.0	79.6
Surrogate: 1,4-Difluorobenzene	%	-	-	112.6	105.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

			Lab ID	L2487509-2	L2487509-3
			Sample Date	10-AUG-20	10-AUG-20
			Sample ID	BH 101 SS3	BH 101 SS6
		Guide Limits			
Analyte	**Unit**	**#1**	**#2**		
F1 (C6-C10)	ug/g	55	65	<5.0	<5.0
F1-BTEX	ug/g	55	65	<5.0	<5.0
F2 (C10-C16)	ug/g	98	150	<10	<10
F3 (C16-C34)	ug/g	300	1300	<50	<50
F4 (C34-C50)	ug/g	2800	5600	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72
Chrom. to baseline at nC50		-	-	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	93.5	88.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	97.4	88.2

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2487509-1
			Sample Date	10-AUG-20
			Sample ID	BH 101 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.072
Benzo(a)pyrene	ug/g	0.3	0.3	0.056
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.085
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	0.083
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	0.150 DUPH
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013
Phenanthrene	ug/g	6.2	7.8	0.096 DUPH
Pyrene	ug/g	78	78	0.124
Surrogate: 2-Fluorobiphenyl	%	-	-	88.9
Surrogate: p-Terphenyl d14	%	-	-	109.7

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
DUPH	Duplicate results outside ALS DQO, due to sample heterogeneity.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2487509 Report Date: 21-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5190990								
WG3385325-4 DUP		**L2487571-1**						
Boron (B), Hot Water Ext.		0.50	0.53		ug/g	4.7	30	18-AUG-20
WG3385325-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			110.4		%		70-130	18-AUG-20
WG3385325-3 LCS								
Boron (B), Hot Water Ext.			100.0		%		70-130	18-AUG-20
WG3385325-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	18-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5189996								
WG3383262-3 DUP		**L2485527-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	17-AUG-20
WG3383262-2 LCS								
Cyanide, Weak Acid Diss			95.9		%		80-120	17-AUG-20
WG3383262-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	17-AUG-20
WG3383262-4 MS		**L2485527-1**						
Cyanide, Weak Acid Diss			107.8		%		70-130	17-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5190080								
WG3383266-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.4		%		70-130	17-AUG-20
WG3383266-3 DUP		**L2487509-1**						
Chromium, Hexavalent		0.22	0.33	J	ug/g	0.11	0.4	17-AUG-20
WG3383266-2 LCS								
Chromium, Hexavalent			91.8		%		80-120	17-AUG-20
WG3383266-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	17-AUG-20
EC-WT	**Soil**							
Batch R5191059								
WG3385328-4 DUP		**WG3385328-3**						
Conductivity		0.181	0.178		mS/cm	2.0	20	18-AUG-20
WG3385328-2 IRM		**WT SAR4**						
Conductivity			100.6		%		70-130	18-AUG-20
WG3385598-1 LCS								
Conductivity			99.3		%		90-110	18-AUG-20
WG3385328-1 MB								

Quality Control Report

Workorder: L2487509 Report Date: 21-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5191059								
WG3385328-1 MB								
Conductivity			<0.0040		mS/cm		0.004	18-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	16-AUG-20
WG3382228-2 LCS								
F1 (C6-C10)			97.0		%		80-120	16-AUG-20
WG3382228-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	16-AUG-20
Surrogate: 3,4-Dichlorotoluene			91.5		%		60-140	16-AUG-20
WG3382228-6 MS		**L2487828-2**						
F1 (C6-C10)			78.7		%		60-140	16-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5190735								
WG3383961-3 DUP		**WG3383961-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	18-AUG-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	18-AUG-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	18-AUG-20
WG3383961-2 LCS								
F2 (C10-C16)			104.1		%		80-120	18-AUG-20
F3 (C16-C34)			102.7		%		80-120	18-AUG-20
F4 (C34-C50)			102.2		%		80-120	18-AUG-20
WG3383961-1 MB								
F2 (C10-C16)			<10		ug/g		10	18-AUG-20
F3 (C16-C34)			<50		ug/g		50	18-AUG-20
F4 (C34-C50)			<50		ug/g		50	18-AUG-20
Surrogate: 2-Bromobenzotrifluoride			91.2		%		60-140	18-AUG-20
WG3383961-4 MS		**WG3383961-5**						
F2 (C10-C16)			101.7		%		60-140	18-AUG-20
F3 (C16-C34)			102.7		%		60-140	18-AUG-20
F4 (C34-C50)			105.0		%		60-140	18-AUG-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5190682								
WG3385316-2 CRM		**WT-SS-2**						
Mercury (Hg)			116.5		%		70-130	18-AUG-20
WG3385316-6 DUP		**WG3385316-5**						
Mercury (Hg)		0.0391	0.0354		ug/g	9.8	40	18-AUG-20
WG3385316-3 LCS								
Mercury (Hg)			107.0		%		80-120	18-AUG-20
WG3385316-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	18-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5191481								
WG3385316-2 CRM		**WT-SS-2**						
Antimony (Sb)			100.5		%		70-130	18-AUG-20
Arsenic (As)			97.0		%		70-130	18-AUG-20
Barium (Ba)			103.3		%		70-130	18-AUG-20
Beryllium (Be)			103.0		%		70-130	18-AUG-20
Boron (B)			10.2		mg/kg		3.5-13.5	18-AUG-20
Cadmium (Cd)			97.8		%		70-130	18-AUG-20
Chromium (Cr)			103.2		%		70-130	18-AUG-20
Cobalt (Co)			100.2		%		70-130	18-AUG-20
Copper (Cu)			101.8		%		70-130	18-AUG-20
Lead (Pb)			98.5		%		70-130	18-AUG-20
Molybdenum (Mo)			107.9		%		70-130	18-AUG-20
Nickel (Ni)			100.4		%		70-130	18-AUG-20
Selenium (Se)			0.13		mg/kg		0-0.34	18-AUG-20
Silver (Ag)			115.0		%		70-130	18-AUG-20
Thallium (Tl)			0.077		mg/kg		0.029-0.129	18-AUG-20
Uranium (U)			96.5		%		70-130	18-AUG-20
Vanadium (V)			102.3		%		70-130	18-AUG-20
Zinc (Zn)			93.7		%		70-130	18-AUG-20
WG3385316-6 DUP		**WG3385316-5**						
Antimony (Sb)		0.10	<0.10	RPD-NA	ug/g	N/A	30	18-AUG-20
Arsenic (As)		1.92	1.85		ug/g	4.1	30	18-AUG-20
Barium (Ba)		43.6	41.4		ug/g	5.0	40	18-AUG-20
Beryllium (Be)		0.51	0.45		ug/g	12	30	18-AUG-20
Boron (B)		7.2	6.9		ug/g	4.4	30	18-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5191481								
WG3385316-6 DUP		**WG3385316-5**						
Cadmium (Cd)		0.074	0.065		ug/g	13	30	18-AUG-20
Chromium (Cr)		10.2	9.90		ug/g	3.2	30	18-AUG-20
Cobalt (Co)		3.78	3.66		ug/g	3.2	30	18-AUG-20
Copper (Cu)		9.01	8.48		ug/g	6.1	30	18-AUG-20
Lead (Pb)		17.9	16.9		ug/g	5.9	40	18-AUG-20
Molybdenum (Mo)		0.34	0.27		ug/g	23	40	18-AUG-20
Nickel (Ni)		7.99	7.80		ug/g	2.4	30	18-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	18-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	18-AUG-20
Thallium (Tl)		0.058	0.059		ug/g	1.6	30	18-AUG-20
Uranium (U)		0.461	0.426		ug/g	7.8	30	18-AUG-20
Vanadium (V)		15.7	15.2		ug/g	3.7	30	18-AUG-20
Zinc (Zn)		35.4	31.2		ug/g	13	30	18-AUG-20
WG3385316-4 LCS								
Antimony (Sb)			103.4		%		80-120	18-AUG-20
Arsenic (As)			96.5		%		80-120	18-AUG-20
Barium (Ba)			99.6		%		80-120	18-AUG-20
Beryllium (Be)			99.3		%		80-120	18-AUG-20
Boron (B)			98.5		%		80-120	18-AUG-20
Cadmium (Cd)			97.1		%		80-120	18-AUG-20
Chromium (Cr)			95.7		%		80-120	18-AUG-20
Cobalt (Co)			95.6		%		80-120	18-AUG-20
Copper (Cu)			93.9		%		80-120	18-AUG-20
Lead (Pb)			95.2		%		80-120	18-AUG-20
Molybdenum (Mo)			102.0		%		80-120	18-AUG-20
Nickel (Ni)			95.4		%		80-120	18-AUG-20
Selenium (Se)			95.6		%		80-120	18-AUG-20
Silver (Ag)			99.5		%		80-120	18-AUG-20
Thallium (Tl)			96.3		%		80-120	18-AUG-20
Uranium (U)			93.7		%		80-120	18-AUG-20
Vanadium (V)			98.9		%		80-120	18-AUG-20
Zinc (Zn)			90.6		%		80-120	18-AUG-20
WG3385316-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5191481								
WG3385316-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	18-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	18-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	18-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	18-AUG-20
Boron (B)			<5.0		mg/kg		5	18-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	18-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	18-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	18-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	18-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	18-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	18-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	18-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	18-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	18-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	18-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	18-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	18-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	18-AUG-20
MOISTURE-WT	**Soil**							
Batch R5187996								
WG3383268-3 DUP		**L2479483-1**						
% Moisture		N/A	64.0		%	2.1	20	14-AUG-20
WG3383268-2 LCS								
% Moisture			102.7		%		90-110	14-AUG-20
WG3383268-1 MB								
% Moisture			<0.25		%		0.25	14-AUG-20
PAH-511-WT	**Soil**							
Batch R5204344								
WG3392737-8 DUP		**WG3392737-10**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	30-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	30-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5204344								
WG3392737-8 DUP		**WG3392737-10**						
Benzo(a)anthracene		0.072	0.117	J	ug/g	0.046	0.1	30-AUG-20
Benzo(a)pyrene		0.056	0.092	J	ug/g	0.035	0.1	30-AUG-20
Benzo(b)fluoranthene		0.085	0.134	J	ug/g	0.049	0.1	30-AUG-20
Benzo(g,h,i)perylene		<0.050	0.060	RPD-NA	ug/g	N/A	40	30-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-AUG-20
Chrysene		0.083	0.133	J	ug/g	0.050	0.1	30-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-AUG-20
Fluoranthene		0.150	0.272	DUP-H,J	ug/g	0.122	0.1	30-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	0.052	RPD-NA	ug/g	N/A	40	30-AUG-20
Naphthalene		<0.013	0.016	RPD-NA	ug/g	N/A	40	30-AUG-20
Phenanthrene		0.096	0.195	DUP-H,J	ug/g	0.099	0.092	30-AUG-20
Pyrene		0.124	0.220	J	ug/g	0.096	0.1	30-AUG-20
WG3392737-7 LCS								
1-Methylnaphthalene			85.9		%		50-140	30-AUG-20
2-Methylnaphthalene			83.1		%		50-140	30-AUG-20
Acenaphthene			88.4		%		50-140	30-AUG-20
Acenaphthylene			81.6		%		50-140	30-AUG-20
Anthracene			85.6		%		50-140	30-AUG-20
Benzo(a)anthracene			83.9		%		50-140	30-AUG-20
Benzo(a)pyrene			86.3		%		50-140	30-AUG-20
Benzo(b)fluoranthene			81.7		%		50-140	30-AUG-20
Benzo(g,h,i)perylene			90.3		%		50-140	30-AUG-20
Benzo(k)fluoranthene			91.2		%		50-140	30-AUG-20
Chrysene			97.1		%		50-140	30-AUG-20
Dibenzo(ah)anthracene			86.6		%		50-140	30-AUG-20
Fluoranthene			84.0		%		50-140	30-AUG-20
Fluorene			83.1		%		50-140	30-AUG-20
Indeno(1,2,3-cd)pyrene			82.3		%		50-140	30-AUG-20
Naphthalene			84.8		%		50-140	30-AUG-20
Phenanthrene			88.2		%		50-140	30-AUG-20
Pyrene			86.1		%		50-140	30-AUG-20
WG3392737-6 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5204344								
WG3392737-6 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	30-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	30-AUG-20
Acenaphthene			<0.050		ug/g		0.05	30-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	30-AUG-20
Anthracene			<0.050		ug/g		0.05	30-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	30-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	30-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	30-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	30-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	30-AUG-20
Chrysene			<0.050		ug/g		0.05	30-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	30-AUG-20
Fluoranthene			<0.050		ug/g		0.05	30-AUG-20
Fluorene			<0.050		ug/g		0.05	30-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	30-AUG-20
Naphthalene			<0.013		ug/g		0.013	30-AUG-20
Phenanthrene			<0.046		ug/g		0.046	30-AUG-20
Pyrene			<0.050		ug/g		0.05	30-AUG-20
Surrogate: 2-Fluorobiphenyl			90.2		%		50-140	30-AUG-20
Surrogate: p-Terphenyl d14			106.4		%		50-140	30-AUG-20
WG3392737-9 MS		**WG3392737-10**						
1-Methylnaphthalene			88.5		%		50-140	30-AUG-20
2-Methylnaphthalene			85.2		%		50-140	30-AUG-20
Acenaphthene			91.5		%		50-140	30-AUG-20
Acenaphthylene			80.6		%		50-140	30-AUG-20
Anthracene			90.8		%		50-140	30-AUG-20
Benzo(a)anthracene			99.4		%		50-140	30-AUG-20
Benzo(a)pyrene			97.8		%		50-140	30-AUG-20
Benzo(b)fluoranthene			98.2		%		50-140	30-AUG-20
Benzo(g,h,i)perylene			97.3		%		50-140	30-AUG-20
Benzo(k)fluoranthene			97.2		%		50-140	30-AUG-20
Chrysene			110.3		%		50-140	30-AUG-20
Dibenzo(ah)anthracene			84.7		%		50-140	30-AUG-20
Fluoranthene			125.2		%		50-140	30-AUG-20

Quality Control Report

Workorder: L2487509 Report Date: 21-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5204344								
WG3392737-9 MS		**WG3392737-10**						
Fluorene			86.0		%		50-140	30-AUG-20
Indeno(1,2,3-cd)pyrene			90.4		%		50-140	30-AUG-20
Naphthalene			85.8		%		50-140	30-AUG-20
Phenanthrene			123.2		%		50-140	30-AUG-20
Pyrene			118.4		%		50-140	30-AUG-20
PH-WT	**Soil**							
Batch R5190372								
WG3383263-1 DUP		**L2485527-2**						
pH		8.15	8.18	J	pH units	0.03	0.3	17-AUG-20
WG3384919-1 LCS								
pH			6.94		pH units		6.9-7.1	17-AUG-20
SAR-R511-WT	**Soil**							
Batch R5191026								
WG3385328-4 DUP		**WG3385328-3**						
Calcium (Ca)		17.5	18.4		mg/L	5.0	30	18-AUG-20
Sodium (Na)		15.4	12.9		mg/L	18	30	18-AUG-20
Magnesium (Mg)		4.60	4.90		mg/L	6.3	30	18-AUG-20
WG3385328-2 IRM		**WT SAR4**						
Calcium (Ca)			103.0		%		70-130	18-AUG-20
Sodium (Na)			91.6		%		70-130	18-AUG-20
Magnesium (Mg)			101.7		%		70-130	18-AUG-20
WG3385328-5 LCS								
Calcium (Ca)			102.3		%		80-120	18-AUG-20
Sodium (Na)			99.4		%		80-120	18-AUG-20
Magnesium (Mg)			98.2		%		80-120	18-AUG-20
WG3385328-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	18-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	18-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	18-AUG-20
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	16-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	16-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Methylene Chloride		0.057	0.056		ug/g	0.5	40	16-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-AUG-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	16-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050		ug/g			16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-AUG-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-AUG-20
WG3382228-2 LCS								
1,1,1,2-Tetrachloroethane			101.1		%		60-130	16-AUG-20
1,1,2,2-Tetrachloroethane			96.8		%		60-130	16-AUG-20
1,1,1-Trichloroethane			109.6		%		60-130	16-AUG-20
1,1,2-Trichloroethane			99.8		%		60-130	16-AUG-20
1,1-Dichloroethane			118.4		%		60-130	16-AUG-20
1,1-Dichloroethylene			105.2		%		60-130	16-AUG-20
1,2-Dibromoethane			94.1		%		70-130	16-AUG-20
1,2-Dichlorobenzene			108.3		%		70-130	16-AUG-20
1,2-Dichloroethane			110.6		%		60-130	16-AUG-20
1,2-Dichloropropane			108.2		%		70-130	16-AUG-20
1,3-Dichlorobenzene			113.5		%		70-130	16-AUG-20
1,4-Dichlorobenzene			116.3		%		70-130	16-AUG-20
Acetone			120.4		%		60-140	16-AUG-20
Benzene			111.9		%		70-130	16-AUG-20
Bromodichloromethane			122.6		%		50-140	16-AUG-20
Bromoform			103.2		%		70-130	16-AUG-20
Bromomethane			118.1		%		50-140	16-AUG-20
Carbon tetrachloride			113.1		%		70-130	16-AUG-20
Chlorobenzene			105.8		%		70-130	16-AUG-20
Chloroform			114.9		%		70-130	16-AUG-20
cis-1,2-Dichloroethylene			99.2		%		70-130	16-AUG-20
cis-1,3-Dichloropropene			99.3		%		70-130	16-AUG-20
Dibromochloromethane			99.9		%		60-130	16-AUG-20
Dichlorodifluoromethane			68.9		%		50-140	16-AUG-20
Ethylbenzene			106.6		%		70-130	16-AUG-20
n-Hexane			107.6		%		70-130	16-AUG-20
Methylene Chloride			115.5		%		70-130	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-2 LCS								
MTBE			105.5		%		70-130	16-AUG-20
m+p-Xylenes			108.8		%		70-130	16-AUG-20
Methyl Ethyl Ketone			102.3		%		60-140	16-AUG-20
Methyl Isobutyl Ketone			86.6		%		60-140	16-AUG-20
o-Xylene			112.5		%		70-130	16-AUG-20
Styrene			101.8		%		70-130	16-AUG-20
Tetrachloroethylene			106.8		%		60-130	16-AUG-20
Toluene			101.8		%		70-130	16-AUG-20
trans-1,2-Dichloroethylene			110.4		%		60-130	16-AUG-20
trans-1,3-Dichloropropene			94.8		%		70-130	16-AUG-20
Trichloroethylene			108.9		%		60-130	16-AUG-20
Trichlorofluoromethane			96.9		%		50-140	16-AUG-20
Vinyl chloride			102.7		%		60-140	16-AUG-20
WG3382228-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	16-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	16-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	16-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	16-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	16-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	16-AUG-20
Acetone			<0.50		ug/g		0.5	16-AUG-20
Benzene			<0.0068		ug/g		0.0068	16-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	16-AUG-20
Bromoform			<0.050		ug/g		0.05	16-AUG-20
Bromomethane			<0.050		ug/g		0.05	16-AUG-20
Carbon tetrachloride			<0.050		ug/g		0.05	16-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	16-AUG-20
Chloroform			<0.050		ug/g		0.05	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	16-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	16-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	16-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	16-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	16-AUG-20
n-Hexane			<0.050		ug/g		0.05	16-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	16-AUG-20
MTBE			<0.050		ug/g		0.05	16-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	16-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	16-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	16-AUG-20
o-Xylene			<0.020		ug/g		0.02	16-AUG-20
Styrene			<0.050		ug/g		0.05	16-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	16-AUG-20
Toluene			<0.080		ug/g		0.08	16-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	16-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	16-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	16-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	16-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	16-AUG-20
Surrogate: 1,4-Difluorobenzene			105.6		%		50-140	16-AUG-20
Surrogate: 4-Bromofluorobenzene			79.9		%		50-140	16-AUG-20
WG3382228-5 MS		**WG3382228-3**						
1,1,1,2-Tetrachloroethane			99.5		%		50-140	16-AUG-20
1,1,2,2-Tetrachloroethane			97.9		%		50-140	16-AUG-20
1,1,1-Trichloroethane			107.9		%		50-140	16-AUG-20
1,1,2-Trichloroethane			99.5		%		50-140	16-AUG-20
1,1-Dichloroethane			117.2		%		50-140	16-AUG-20
1,1-Dichloroethylene			104.2		%		50-140	16-AUG-20
1,2-Dibromoethane			94.1		%		50-140	16-AUG-20
1,2-Dichlorobenzene			100.3		%		50-140	16-AUG-20
1,2-Dichloroethane			108.5		%		50-140	16-AUG-20
1,2-Dichloropropane			105.8		%		50-140	16-AUG-20
1,3-Dichlorobenzene			101.2		%		50-140	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-5 MS		**WG3382228-3**						
1,4-Dichlorobenzene			103.0		%		50-140	16-AUG-20
Acetone			119.6		%		50-140	16-AUG-20
Benzene			109.2		%		50-140	16-AUG-20
Bromodichloromethane			119.9		%		50-140	16-AUG-20
Bromoform			102.3		%		50-140	16-AUG-20
Bromomethane			116.7		%		50-140	16-AUG-20
Carbon tetrachloride			111.1		%		50-140	16-AUG-20
Chlorobenzene			102.6		%		50-140	16-AUG-20
Chloroform			112.8		%		50-140	16-AUG-20
cis-1,2-Dichloroethylene			95.4		%		50-140	16-AUG-20
cis-1,3-Dichloropropene			93.2		%		50-140	16-AUG-20
Dibromochloromethane			99.1		%		50-140	16-AUG-20
Dichlorodifluoromethane			76.4		%		50-140	16-AUG-20
Ethylbenzene			103.7		%		50-140	16-AUG-20
n-Hexane			107.5		%		50-140	16-AUG-20
Methylene Chloride			112.1		%		50-140	16-AUG-20
MTBE			103.2		%		50-140	16-AUG-20
m+p-Xylenes			104.3		%		50-140	16-AUG-20
Methyl Ethyl Ketone			87.0		%		50-140	16-AUG-20
Methyl Isobutyl Ketone			86.2		%		50-140	16-AUG-20
o-Xylene			108.8		%		50-140	16-AUG-20
Styrene			97.3		%		50-140	16-AUG-20
Tetrachloroethylene			103.0		%		50-140	16-AUG-20
Toluene			99.6		%		50-140	16-AUG-20
trans-1,2-Dichloroethylene			106.3		%		50-140	16-AUG-20
trans-1,3-Dichloropropene			91.8		%		50-140	16-AUG-20
Trichloroethylene			104.5		%		50-140	16-AUG-20
Trichlorofluoromethane			97.6		%		50-140	16-AUG-20
Vinyl chloride			103.8		%		50-140	16-AUG-20

Quality Control Report

Workorder: L2487509 Report Date: 21-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DUP-H,J	Duplicate results outside ALS DQO, due to sample heterogeneity. Duplicate results and limits are expressed in terms of absolute difference.
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

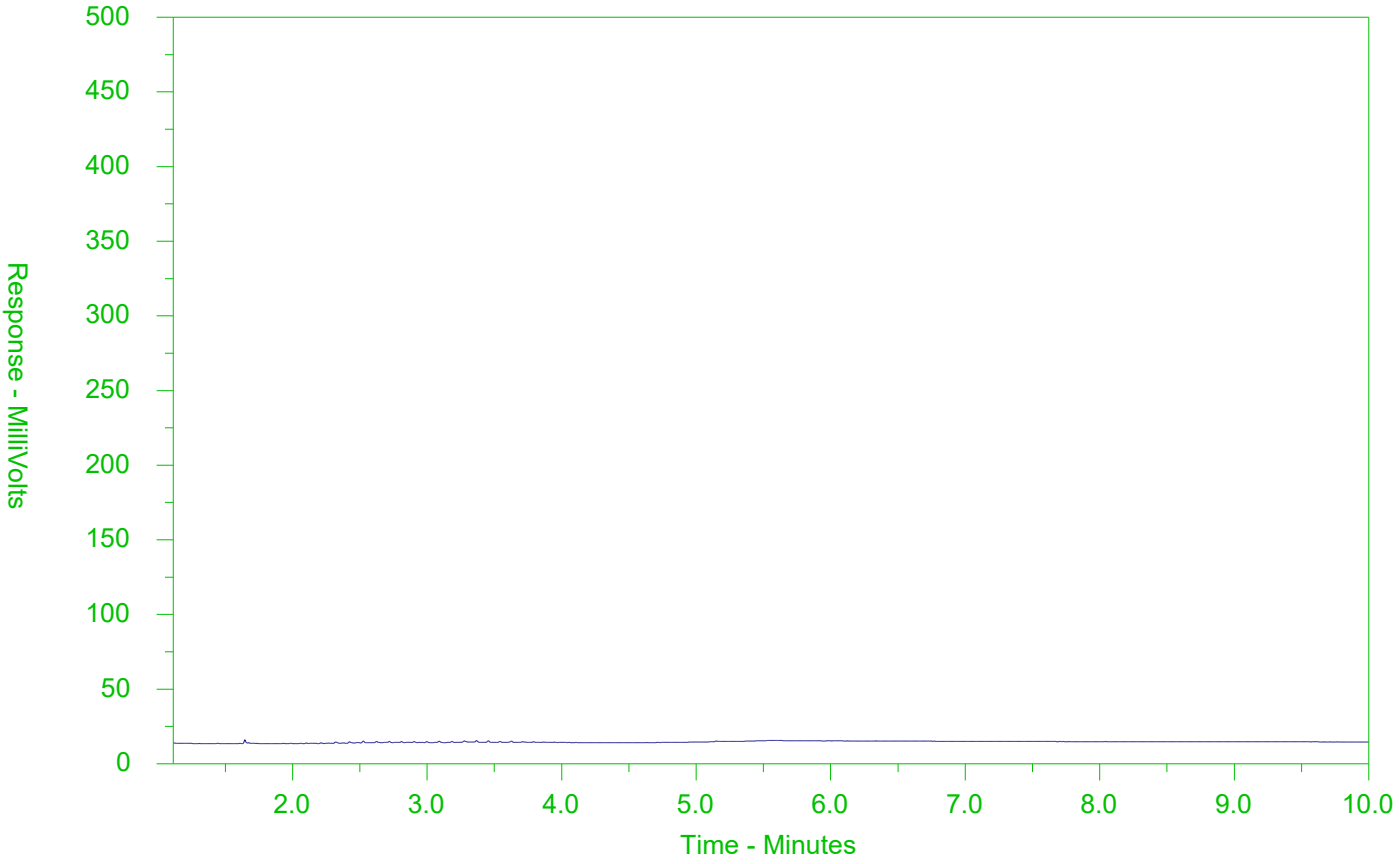
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2487509-2
Client Sample ID: BH 101 SS3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

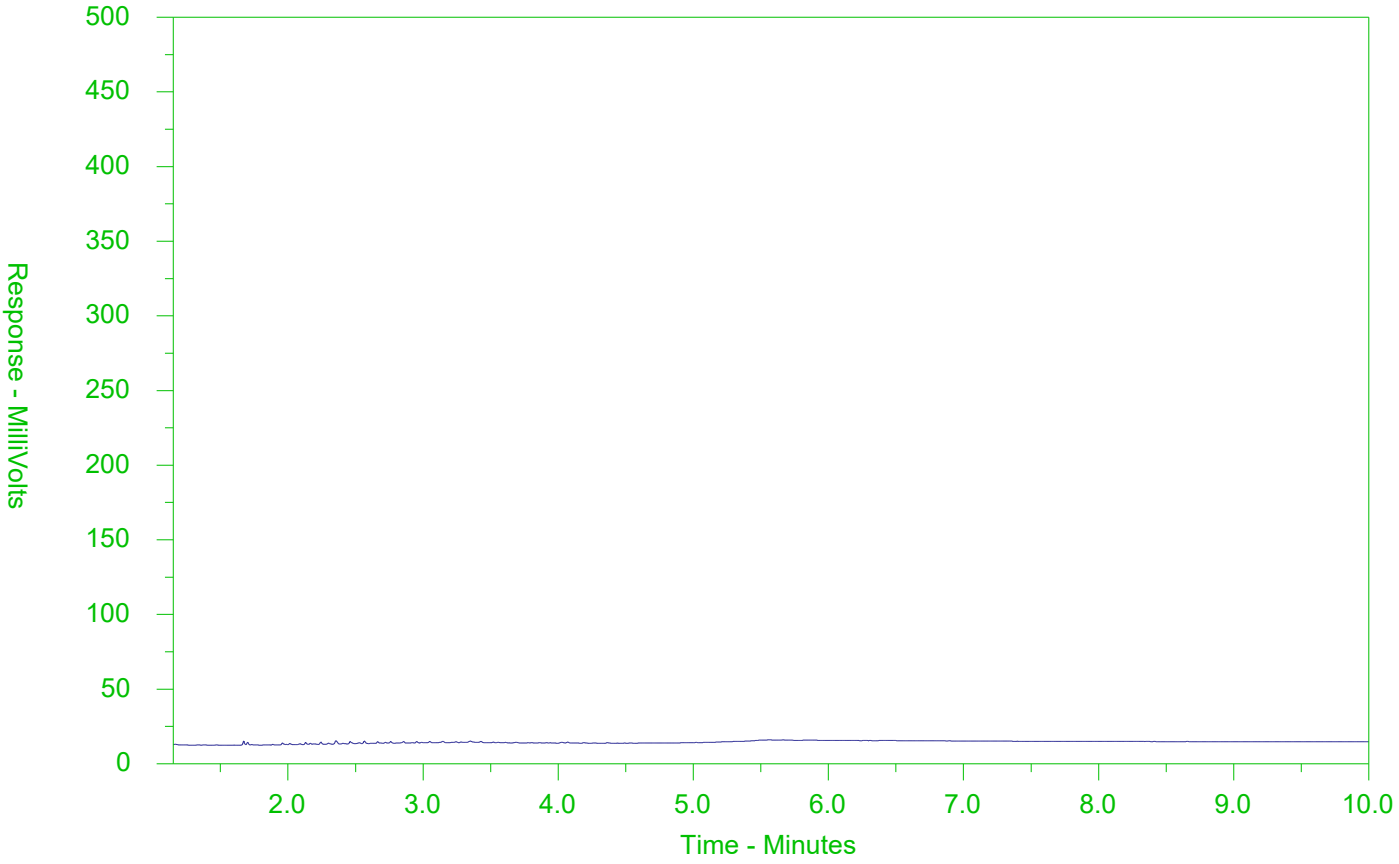
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2487509-3
Client Sample ID: BH 101 SS6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2487509-COFC

COC Number: 17 -

Page of

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4-20%] ☐		1 Business day [E - 100%] ☐
	3 day [P3-25%] ☐		Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)] ☐
	2 day [P2-50%] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62481	AFE/Cost Center:	PO#
Job #:	1-20-0249-42	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2487509	**ALS Contact:**	**Sampler:** YH

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below: Metals & Inorganics	PAHs	VOCs (Icluding BTEX)	PHCs (F1 - F4)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 101 SS2	10-Aug-20		Soil	1	✓					
	BH 101 SS3	10-Aug-20		Soil	3			✓	✓		
	BH 101 SS6	10-Aug-20		Soil	3			✓	✓		

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human consumption/ use? ☐ YES ☑ NO	MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8.9				13.4			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Yousr Hiweish	Aug. 11/2020	7:00 PM		12/8/20	8:30	DB	08/12/20	15:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

TERRAPROBE - BRAMPTON
ATTN: Yousr Hiweish
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 02-SEP-20
Report Date: 10-SEP-20 14:16 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2497939

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2497939-1	BH102 SS1	Physical Tests	Conductivity	1.34	0.7	mS/cm
		Saturated Paste Extractables	SAR	92.7	5	SAR
		Metals	Arsenic (As)	21.8	18	ug/g
			Barium (Ba)	402	390	ug/g
			Lead (Pb)	346	120	ug/g
		Polycyclic Aromatic Hydrocarbons	1+2-Methylnaphthalenes	1.13	0.99	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2497939-1	BH102 SS1	Physical Tests	Conductivity	1.34	0.7	mS/cm
		Saturated Paste Extractables	SAR	92.7	5	SAR
		Metals	Arsenic (As)	21.8	18	ug/g
			Barium (Ba)	402	390	ug/g
			Lead (Pb)	346	120	ug/g

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

			Lab ID	L2497939-1	L2497939-2
			Sample Date	02-SEP-20	02-SEP-20
			Sample ID	BH102 SS1	BH102 SS2
Analyte	**Unit**	**Guide Limits #1**	**#2**		
Conductivity	mS/cm	0.7	0.7	1.34	
% Moisture	%	-	-	9.65	6.03
pH	pH units	-	-	7.88	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2497939-1
			Sample Date	02-SEP-20
			Sample ID	BH102 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

			Lab ID	L2497939-1
			Sample Date	02-SEP-20
			Sample ID	BH102 SS1
Analyte	**Unit**	**Guide Limits #1**	**#2**	
SAR	SAR	5	5	92.7 SAR:M
Calcium (Ca)	mg/L	-	-	0.67
Magnesium (Mg)	mg/L	-	-	<0.50
Sodium (Na)	mg/L	-	-	275

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2497939-1 Sample Date: 02-SEP-20 Sample ID: BH102 SS1
Antimony (Sb)	ug/g	7.5	7.5	2.2
Arsenic (As)	ug/g	18	18	21.8
Barium (Ba)	ug/g	390	390	402
Beryllium (Be)	ug/g	4	5	0.91
Boron (B)	ug/g	120	120	15.8
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.37
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	60.2
Cobalt (Co)	ug/g	22	22	8.4
Copper (Cu)	ug/g	140	180	60.2
Lead (Pb)	ug/g	120	120	346
Mercury (Hg)	ug/g	0.27	1.8	0.0421
Molybdenum (Mo)	ug/g	6.9	6.9	1.8
Nickel (Ni)	ug/g	100	130	20.7
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	23.2
Zinc (Zn)	ug/g	340	340	92.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2497939-1 Sample Date: 02-SEP-20 Sample ID: BH102 SS1
Chromium, Hexavalent	ug/g	8	10	0.42

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2497939-2
			Sample Date	02-SEP-20
			Sample ID	BH102 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	1.5	1.9	<0.050
Bromoform	ug/g	0.27	0.26	<0.050
Bromomethane	ug/g	0.05	0.05	<0.050
Carbon tetrachloride	ug/g	0.05	0.12	<0.050
Chlorobenzene	ug/g	2.4	2.7	<0.050
Dibromochloromethane	ug/g	2.3	2.9	<0.050
Chloroform	ug/g	0.05	0.18	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050
Dichlorodifluoromethane	ug/g	16	25	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050
Methylene Chloride	ug/g	0.1	0.96	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042
Ethylbenzene	ug/g	1.1	1.6	<0.018
n-Hexane	ug/g	2.8	34	<0.050
Methyl Ethyl Ketone	ug/g	16	44	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50
MTBE	ug/g	0.75	1.4	<0.050
Styrene	ug/g	0.7	2.2	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2497939-2
			Sample Date	02-SEP-20
			Sample ID	BH102 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	0.021
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	75.8
Surrogate: 1,4-Difluorobenzene	%	-	-	96.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Hydrocarbons - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2497939-2
Sample Date				02-SEP-20
Sample ID				BH102 SS2
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F3 (C16-C34)	ug/g	300	1300	<50
F4 (C34-C50)	ug/g	2800	5600	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	80.4
Surrogate: 3,4-Dichlorotoluene	%	-	-	96.2

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2497939-1
			Sample Date	02-SEP-20
			Sample ID	BH102 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.224
Benzo(a)pyrene	ug/g	0.3	0.3	0.180
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.294
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.140
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.093
Chrysene	ug/g	7	7.8	0.295
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	0.456
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.107
1+2-Methylnaphthalenes	ug/g	0.99	3.4	1.13
1-Methylnaphthalene	ug/g	0.99	3.4	0.538
2-Methylnaphthalene	ug/g	0.99	3.4	0.589
Naphthalene	ug/g	0.6	0.75	0.324
Phenanthrene	ug/g	6.2	7.8	0.506
Pyrene	ug/g	78	78	0.402
Surrogate: 2-Fluorobiphenyl	%	-	-	100.1
Surrogate: p-Terphenyl d14	%	-	-	105.7

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Polychlorinated Biphenyls - SOIL

			Lab ID	L2497939-1
			Sample Date	02-SEP-20
			Sample ID	BH102 SS1
		Guide Limits		
Analyte	Unit	#1	#2	
Aroclor 1242	ug/g	-	-	<0.010
Aroclor 1248	ug/g	-	-	<0.010
Aroclor 1254	ug/g	-	-	0.029
Aroclor 1260	ug/g	-	-	0.018
Total PCBs	ug/g	0.35	0.35	0.047
Surrogate: d14-Terphenyl	%	-	-	97.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2497939 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5220650								
WG3401290-4 DUP		**L2497278-5**						
Boron (B), Hot Water Ext.		0.41	0.44		ug/g	6.5	30	10-SEP-20
WG3401290-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			111.6		%		70-130	10-SEP-20
WG3401290-3 LCS								
Boron (B), Hot Water Ext.			104.0		%		70-130	10-SEP-20
WG3401290-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	10-SEP-20
CN-WAD-R511-WT	**Soil**							
Batch R5214764								
WG3397210-3 DUP		**L2497812-3**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	04-SEP-20
WG3397210-2 LCS								
Cyanide, Weak Acid Diss			94.9		%		80-120	04-SEP-20
WG3397210-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	04-SEP-20
WG3397210-4 MS		**L2497812-3**						
Cyanide, Weak Acid Diss			103.7		%		70-130	04-SEP-20
CR-CR6-IC-WT	**Soil**							
Batch R5213498								
WG3397902-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			106.1		%		70-130	04-SEP-20
WG3397902-3 DUP		**L2495745-2**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/g	N/A	35	04-SEP-20
WG3397902-2 LCS								
Chromium, Hexavalent			107.4		%		80-120	04-SEP-20
WG3397902-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	04-SEP-20
EC-WT	**Soil**							
Batch R5220976								
WG3401298-4 DUP		**WG3401298-3**						
Conductivity		0.237	0.243		mS/cm	2.5	20	10-SEP-20
WG3401298-2 IRM		**WT SAR4**						
Conductivity			106.4		%		70-130	10-SEP-20
WG3401544-1 LCS								
Conductivity			98.7		%		90-110	10-SEP-20
WG3401298-1 MB								

Quality Control Report

Workorder: L2497939 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5220976								
WG3401298-1 MB								
Conductivity			<0.0040		mS/cm		0.004	10-SEP-20
F1-HS-511-WT	**Soil**							
Batch R5210110								
WG3396845-4 DUP		**WG3396845-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	04-SEP-20
WG3396845-2 LCS								
F1 (C6-C10)			108.2		%		80-120	04-SEP-20
WG3396845-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	04-SEP-20
Surrogate: 3,4-Dichlorotoluene			100.4		%		60-140	04-SEP-20
WG3396845-6 MS		**L2497347-2**						
F1 (C6-C10)			84.8		%		60-140	04-SEP-20
F2-F4-511-WT	**Soil**							
Batch R5214216								
WG3398105-3 DUP		**WG3398105-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	08-SEP-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	08-SEP-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	08-SEP-20
WG3398105-2 LCS								
F2 (C10-C16)			90.8		%		80-120	08-SEP-20
F3 (C16-C34)			91.4		%		80-120	08-SEP-20
F4 (C34-C50)			90.8		%		80-120	08-SEP-20
WG3398105-1 MB								
F2 (C10-C16)			<10		ug/g		10	08-SEP-20
F3 (C16-C34)			<50		ug/g		50	08-SEP-20
F4 (C34-C50)			<50		ug/g		50	08-SEP-20
Surrogate: 2-Bromobenzotrifluoride			83.0		%		60-140	08-SEP-20
WG3398105-4 MS		**WG3398105-5**						
F2 (C10-C16)			85.4		%		60-140	08-SEP-20
F3 (C16-C34)			88.6		%		60-140	08-SEP-20
F4 (C34-C50)			91.0		%		60-140	08-SEP-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5219739								
WG3401287-2 CRM		**WT-SS-2**						
Mercury (Hg)			97.4		%		70-130	10-SEP-20
WG3401287-6 DUP		**WG3401287-5**						
Mercury (Hg)		0.0121	0.0135		ug/g	10	40	10-SEP-20
WG3401287-3 LCS								
Mercury (Hg)			94.5		%		80-120	10-SEP-20
WG3401287-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	10-SEP-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5220376								
WG3401287-2 CRM		**WT-SS-2**						
Antimony (Sb)			88.5		%		70-130	10-SEP-20
Arsenic (As)			95.8		%		70-130	10-SEP-20
Barium (Ba)			99.3		%		70-130	10-SEP-20
Beryllium (Be)			98.8		%		70-130	10-SEP-20
Boron (B)			8.4		mg/kg		3.5-13.5	10-SEP-20
Cadmium (Cd)			103.0		%		70-130	10-SEP-20
Chromium (Cr)			92.6		%		70-130	10-SEP-20
Cobalt (Co)			97.6		%		70-130	10-SEP-20
Copper (Cu)			94.5		%		70-130	10-SEP-20
Lead (Pb)			103.2		%		70-130	10-SEP-20
Molybdenum (Mo)			96.9		%		70-130	10-SEP-20
Nickel (Ni)			98.9		%		70-130	10-SEP-20
Selenium (Se)			0.12		mg/kg		0-0.34	10-SEP-20
Silver (Ag)			94.4		%		70-130	10-SEP-20
Thallium (Tl)			0.075		mg/kg		0.029-0.129	10-SEP-20
Uranium (U)			98.0		%		70-130	10-SEP-20
Vanadium (V)			95.6		%		70-130	10-SEP-20
Zinc (Zn)			93.4		%		70-130	10-SEP-20
WG3401287-6 DUP		**WG3401287-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	10-SEP-20
Arsenic (As)		3.15	3.08		ug/g	2.3	30	10-SEP-20
Barium (Ba)		154	152		ug/g	1.0	40	10-SEP-20
Beryllium (Be)		0.75	0.73		ug/g	3.4	30	10-SEP-20
Boron (B)		15.1	16.2		ug/g	7.4	30	10-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5220376								
WG3401287-6 DUP		**WG3401287-5**						
Cadmium (Cd)		0.079	0.074		ug/g	7.1	30	10-SEP-20
Chromium (Cr)		32.4	32.1		ug/g	1.1	30	10-SEP-20
Cobalt (Co)		11.3	10.9		ug/g	3.5	30	10-SEP-20
Copper (Cu)		22.3	21.7		ug/g	2.7	30	10-SEP-20
Lead (Pb)		8.27	7.87		ug/g	4.9	40	10-SEP-20
Molybdenum (Mo)		0.49	0.42		ug/g	16	40	10-SEP-20
Nickel (Ni)		23.8	23.2		ug/g	2.4	30	10-SEP-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	10-SEP-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	10-SEP-20
Thallium (Tl)		0.202	0.192		ug/g	5.3	30	10-SEP-20
Uranium (U)		0.717	0.694		ug/g	3.3	30	10-SEP-20
Vanadium (V)		44.9	44.0		ug/g	2.0	30	10-SEP-20
Zinc (Zn)		52.7	51.5		ug/g	2.2	30	10-SEP-20
WG3401287-4 LCS								
Antimony (Sb)			100.8		%		80-120	10-SEP-20
Arsenic (As)			100.1		%		80-120	10-SEP-20
Barium (Ba)			97.1		%		80-120	10-SEP-20
Beryllium (Be)			96.4		%		80-120	10-SEP-20
Boron (B)			95.3		%		80-120	10-SEP-20
Cadmium (Cd)			98.3		%		80-120	10-SEP-20
Chromium (Cr)			98.1		%		80-120	10-SEP-20
Cobalt (Co)			97.0		%		80-120	10-SEP-20
Copper (Cu)			94.9		%		80-120	10-SEP-20
Lead (Pb)			104.3		%		80-120	10-SEP-20
Molybdenum (Mo)			100.3		%		80-120	10-SEP-20
Nickel (Ni)			94.8		%		80-120	10-SEP-20
Selenium (Se)			96.3		%		80-120	10-SEP-20
Silver (Ag)			102.1		%		80-120	10-SEP-20
Thallium (Tl)			98.1		%		80-120	10-SEP-20
Uranium (U)			100.2		%		80-120	10-SEP-20
Vanadium (V)			99.7		%		80-120	10-SEP-20
Zinc (Zn)			94.7		%		80-120	10-SEP-20
WG3401287-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5220376								
WG3401287-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	10-SEP-20
Arsenic (As)			<0.10		mg/kg		0.1	10-SEP-20
Barium (Ba)			<0.50		mg/kg		0.5	10-SEP-20
Beryllium (Be)			<0.10		mg/kg		0.1	10-SEP-20
Boron (B)			<5.0		mg/kg		5	10-SEP-20
Cadmium (Cd)			<0.020		mg/kg		0.02	10-SEP-20
Chromium (Cr)			<0.50		mg/kg		0.5	10-SEP-20
Cobalt (Co)			<0.10		mg/kg		0.1	10-SEP-20
Copper (Cu)			<0.50		mg/kg		0.5	10-SEP-20
Lead (Pb)			<0.50		mg/kg		0.5	10-SEP-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	10-SEP-20
Nickel (Ni)			<0.50		mg/kg		0.5	10-SEP-20
Selenium (Se)			<0.20		mg/kg		0.2	10-SEP-20
Silver (Ag)			<0.10		mg/kg		0.1	10-SEP-20
Thallium (Tl)			<0.050		mg/kg		0.05	10-SEP-20
Uranium (U)			<0.050		mg/kg		0.05	10-SEP-20
Vanadium (V)			<0.20		mg/kg		0.2	10-SEP-20
Zinc (Zn)			<2.0		mg/kg		2	10-SEP-20
MOISTURE-WT	**Soil**							
Batch R5210097								
WG3398079-6 DUP		**L2498561-1**						
% Moisture		14.7	15.2		%	2.8	20	04-SEP-20
WG3398079-5 LCS								
% Moisture			100.6		%		90-110	04-SEP-20
WG3398079-4 MB								
% Moisture			<0.25		%		0.25	04-SEP-20
PAH-511-WT	**Soil**							
Batch R5210413								
WG3397121-3 DUP		**WG3397121-5**						
1-Methylnaphthalene		0.044	0.039		ug/g	13	40	04-SEP-20
2-Methylnaphthalene		0.054	0.042		ug/g	25	40	04-SEP-20
Acenaphthene		0.153	0.104		ug/g	39	40	04-SEP-20
Acenaphthylene		0.103	0.173	J	ug/g	0.070	0.1	04-SEP-20
Anthracene		0.287	0.244		ug/g	16	40	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5210413								
WG3397121-3 DUP		**WG3397121-5**						
Benzo(a)anthracene		1.07	1.35		ug/g	24	40	04-SEP-20
Benzo(a)pyrene		1.15	1.46		ug/g	24	40	04-SEP-20
Benzo(b)fluoranthene		1.69	2.15		ug/g	24	40	04-SEP-20
Benzo(g,h,i)perylene		0.817	1.04		ug/g	24	40	04-SEP-20
Benzo(k)fluoranthene		0.492	0.642		ug/g	26	40	04-SEP-20
Chrysene		1.39	1.70		ug/g	20	40	04-SEP-20
Dibenzo(ah)anthracene		0.214	0.259		ug/g	19	40	04-SEP-20
Fluoranthene		2.51	3.03		ug/g	19	40	04-SEP-20
Fluorene		0.124	0.093		ug/g	29	40	04-SEP-20
Indeno(1,2,3-cd)pyrene		0.813	1.06		ug/g	27	40	04-SEP-20
Naphthalene		0.097	0.079		ug/g	21	40	04-SEP-20
Phenanthrene		1.55	1.48		ug/g	4.7	40	04-SEP-20
Pyrene		2.07	2.50		ug/g	19	40	04-SEP-20
WG3397121-2 LCS								
1-Methylnaphthalene			94.3		%		50-140	04-SEP-20
2-Methylnaphthalene			91.1		%		50-140	04-SEP-20
Acenaphthene			94.4		%		50-140	04-SEP-20
Acenaphthylene			87.8		%		50-140	04-SEP-20
Anthracene			86.1		%		50-140	04-SEP-20
Benzo(a)anthracene			90.1		%		50-140	04-SEP-20
Benzo(a)pyrene			91.2		%		50-140	04-SEP-20
Benzo(b)fluoranthene			93.1		%		50-140	04-SEP-20
Benzo(g,h,i)perylene			95.9		%		50-140	04-SEP-20
Benzo(k)fluoranthene			92.7		%		50-140	04-SEP-20
Chrysene			103.3		%		50-140	04-SEP-20
Dibenzo(ah)anthracene			95.8		%		50-140	04-SEP-20
Fluoranthene			88.9		%		50-140	04-SEP-20
Fluorene			88.5		%		50-140	04-SEP-20
Indeno(1,2,3-cd)pyrene			91.3		%		50-140	04-SEP-20
Naphthalene			91.9		%		50-140	04-SEP-20
Phenanthrene			91.8		%		50-140	04-SEP-20
Pyrene			88.9		%		50-140	04-SEP-20
WG3397121-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5210413								
WG3397121-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	04-SEP-20
2-Methylnaphthalene			<0.030		ug/g		0.03	04-SEP-20
Acenaphthene			<0.050		ug/g		0.05	04-SEP-20
Acenaphthylene			<0.050		ug/g		0.05	04-SEP-20
Anthracene			<0.050		ug/g		0.05	04-SEP-20
Benzo(a)anthracene			<0.050		ug/g		0.05	04-SEP-20
Benzo(a)pyrene			<0.050		ug/g		0.05	04-SEP-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	04-SEP-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	04-SEP-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	04-SEP-20
Chrysene			<0.050		ug/g		0.05	04-SEP-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	04-SEP-20
Fluoranthene			<0.050		ug/g		0.05	04-SEP-20
Fluorene			<0.050		ug/g		0.05	04-SEP-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	04-SEP-20
Naphthalene			<0.013		ug/g		0.013	04-SEP-20
Phenanthrene			<0.046		ug/g		0.046	04-SEP-20
Pyrene			<0.050		ug/g		0.05	04-SEP-20
Surrogate: 2-Fluorobiphenyl			87.9		%		50-140	04-SEP-20
Surrogate: p-Terphenyl d14			92.5		%		50-140	04-SEP-20
WG3397121-4 MS		**WG3397121-5**						
1-Methylnaphthalene			91.1		%		50-140	04-SEP-20
2-Methylnaphthalene			87.2		%		50-140	04-SEP-20
Acenaphthene			79.8		%		50-140	04-SEP-20
Acenaphthylene			87.7		%		50-140	04-SEP-20
Anthracene			68.3		%		50-140	04-SEP-20
Benzo(a)anthracene			N/A	MS-B	%		-	04-SEP-20
Benzo(a)pyrene			N/A	MS-B	%		-	04-SEP-20
Benzo(b)fluoranthene			N/A	MS-B	%		-	04-SEP-20
Benzo(g,h,i)perylene			72.9		%		50-140	04-SEP-20
Benzo(k)fluoranthene			100.1		%		50-140	04-SEP-20
Chrysene			N/A	MS-B	%		-	04-SEP-20
Dibenzo(ah)anthracene			82.3		%		50-140	04-SEP-20
Fluoranthene			N/A	MS-B	%		-	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5210413								
WG3397121-4 MS		**WG3397121-5**						
Fluorene			78.9		%		50-140	04-SEP-20
Indeno(1,2,3-cd)pyrene			65.1		%		50-140	04-SEP-20
Naphthalene			84.8		%		50-140	04-SEP-20
Phenanthrene			N/A	MS-B	%		-	04-SEP-20
Pyrene			N/A	MS-B	%		-	04-SEP-20
PCB-511-WT	**Soil**							
Batch R5210044								
WG3397121-3 DUP		**WG3397121-5**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
WG3397121-2 LCS								
Aroclor 1242			97.9		%		60-140	03-SEP-20
Aroclor 1248			88.0		%		60-140	03-SEP-20
Aroclor 1254			84.2		%		60-140	03-SEP-20
Aroclor 1260			91.3		%		60-140	03-SEP-20
WG3397121-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	03-SEP-20
Aroclor 1248			<0.010		ug/g		0.01	03-SEP-20
Aroclor 1254			<0.010		ug/g		0.01	03-SEP-20
Aroclor 1260			<0.010		ug/g		0.01	03-SEP-20
Surrogate: d14-Terphenyl			91.6		%		60-140	03-SEP-20
WG3397121-4 MS		**WG3397121-5**						
Aroclor 1242			93.6		%		60-140	03-SEP-20
Aroclor 1254			82.8		%		60-140	03-SEP-20
Aroclor 1260			90.0		%		60-140	03-SEP-20
PH-WT	**Soil**							
Batch R5210950								
WG3397211-1 DUP		**L2497295-3**						
pH		7.64	7.67	J	pH units	0.03	0.3	04-SEP-20
WG3398421-1 LCS								
pH			6.96		pH units		6.9-7.1	04-SEP-20
SAR-R511-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R5220358								
WG3401298-4 DUP		**WG3401298-3**						
Calcium (Ca)		0.65	0.65		mg/L	1.1	30	10-SEP-20
Sodium (Na)		51.1	49.2		mg/L	3.8	30	10-SEP-20
Magnesium (Mg)		<0.50	<0.50	RPD-NA	mg/L	N/A	30	10-SEP-20
WG3401298-2 IRM		**WT SAR4**						
Calcium (Ca)			99.1		%		70-130	10-SEP-20
Sodium (Na)			106.8		%		70-130	10-SEP-20
Magnesium (Mg)			106.0		%		70-130	10-SEP-20
WG3401298-5 LCS								
Calcium (Ca)			105.3		%		80-120	10-SEP-20
Sodium (Na)			103.2		%		80-120	10-SEP-20
Magnesium (Mg)			101.0		%		80-120	10-SEP-20
WG3401298-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	10-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	10-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	10-SEP-20
VOC-511-HS-WT	**Soil**							
Batch R5210110								
WG3396845-4 DUP		**WG3396845-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	04-SEP-20
Benzene		0.0105	0.0102		ug/g	3.2	40	04-SEP-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210110								
WG3396845-4 DUP		**WG3396845-3**						
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-SEP-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Ethylbenzene		0.025	0.025		ug/g	1.3	40	04-SEP-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
m+p-Xylenes		0.071	0.070		ug/g	1.4	40	04-SEP-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	04-SEP-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	04-SEP-20
o-Xylene		0.046	0.046		ug/g	0.7	40	04-SEP-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	04-SEP-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-SEP-20
Trichloroethylene		0.017	0.017		ug/g	1.9	40	04-SEP-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-SEP-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	04-SEP-20
WG3396845-2 LCS								
1,1,1,2-Tetrachloroethane			107.0		%		60-130	04-SEP-20
1,1,2,2-Tetrachloroethane			121.7		%		60-130	04-SEP-20
1,1,1-Trichloroethane			104.7		%		60-130	04-SEP-20
1,1,2-Trichloroethane			106.3		%		60-130	04-SEP-20
1,1-Dichloroethane			104.2		%		60-130	04-SEP-20
1,1-Dichloroethylene			96.7		%		60-130	04-SEP-20
1,2-Dibromoethane			105.3		%		70-130	04-SEP-20
1,2-Dichlorobenzene			106.6		%		70-130	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210110								
WG3396845-2 LCS								
1,2-Dichloroethane			107.7		%		60-130	04-SEP-20
1,2-Dichloropropane			103.0		%		70-130	04-SEP-20
1,3-Dichlorobenzene			102.3		%		70-130	04-SEP-20
1,4-Dichlorobenzene			108.5		%		70-130	04-SEP-20
Acetone			142.4	MES	%		60-140	04-SEP-20
Benzene			100.3		%		70-130	04-SEP-20
Bromodichloromethane			119.1		%		50-140	04-SEP-20
Bromoform			127.5		%		70-130	04-SEP-20
Bromomethane			97.6		%		50-140	04-SEP-20
Carbon tetrachloride			110.4		%		70-130	04-SEP-20
Chlorobenzene			101.4		%		70-130	04-SEP-20
Chloroform			110.9		%		70-130	04-SEP-20
cis-1,2-Dichloroethylene			114.3		%		70-130	04-SEP-20
cis-1,3-Dichloropropene			102.4		%		70-130	04-SEP-20
Dibromochloromethane			108.3		%		60-130	04-SEP-20
Dichlorodifluoromethane			79.7		%		50-140	04-SEP-20
Ethylbenzene			88.6		%		70-130	04-SEP-20
n-Hexane			86.9		%		70-130	04-SEP-20
Methylene Chloride			112.9		%		70-130	04-SEP-20
MTBE			98.9		%		70-130	04-SEP-20
m+p-Xylenes			95.9		%		70-130	04-SEP-20
Methyl Ethyl Ketone			88.8		%		60-140	04-SEP-20
Methyl Isobutyl Ketone			111.6		%		60-140	04-SEP-20
o-Xylene			101.5		%		70-130	04-SEP-20
Styrene			97.7		%		70-130	04-SEP-20
Tetrachloroethylene			100.4		%		60-130	04-SEP-20
Toluene			91.5		%		70-130	04-SEP-20
trans-1,2-Dichloroethylene			102.8		%		60-130	04-SEP-20
trans-1,3-Dichloropropene			102.5		%		70-130	04-SEP-20
Trichloroethylene			106.2		%		60-130	04-SEP-20
Trichlorofluoromethane			96.5		%		50-140	04-SEP-20
Vinyl chloride			93.6		%		60-140	04-SEP-20
WG3396845-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210110								
WG3396845-1 MB								
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	04-SEP-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	04-SEP-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	04-SEP-20
1,1-Dichloroethane			<0.050		ug/g		0.05	04-SEP-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	04-SEP-20
1,2-Dibromoethane			<0.050		ug/g		0.05	04-SEP-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	04-SEP-20
1,2-Dichloroethane			<0.050		ug/g		0.05	04-SEP-20
1,2-Dichloropropane			<0.050		ug/g		0.05	04-SEP-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	04-SEP-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	04-SEP-20
Acetone			<0.50		ug/g		0.5	04-SEP-20
Benzene			<0.0068		ug/g		0.0068	04-SEP-20
Bromodichloromethane			<0.050		ug/g		0.05	04-SEP-20
Bromoform			<0.050		ug/g		0.05	04-SEP-20
Bromomethane			<0.050		ug/g		0.05	04-SEP-20
Carbon tetrachloride			<0.050		ug/g		0.05	04-SEP-20
Chlorobenzene			<0.050		ug/g		0.05	04-SEP-20
Chloroform			<0.050		ug/g		0.05	04-SEP-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	04-SEP-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	04-SEP-20
Dibromochloromethane			<0.050		ug/g		0.05	04-SEP-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	04-SEP-20
Ethylbenzene			<0.018		ug/g		0.018	04-SEP-20
n-Hexane			<0.050		ug/g		0.05	04-SEP-20
Methylene Chloride			<0.050		ug/g		0.05	04-SEP-20
MTBE			<0.050		ug/g		0.05	04-SEP-20
m+p-Xylenes			<0.030		ug/g		0.03	04-SEP-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	04-SEP-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	04-SEP-20
o-Xylene			<0.020		ug/g		0.02	04-SEP-20
Styrene			<0.050		ug/g		0.05	04-SEP-20
Tetrachloroethylene			<0.050		ug/g		0.05	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210110								
WG3396845-1 MB								
Toluene			<0.080		ug/g		0.08	04-SEP-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	04-SEP-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	04-SEP-20
Trichloroethylene			<0.010		ug/g		0.01	04-SEP-20
Trichlorofluoromethane			<0.050		ug/g		0.05	04-SEP-20
Vinyl chloride			<0.020		ug/g		0.02	04-SEP-20
Surrogate: 1,4-Difluorobenzene			92.0		%		50-140	04-SEP-20
Surrogate: 4-Bromofluorobenzene			74.5		%		50-140	04-SEP-20
WG3396845-5 MS		**WG3396845-3**						
1,1,1,2-Tetrachloroethane			119.6		%		50-140	04-SEP-20
1,1,2,2-Tetrachloroethane			9.8	MSDL	%		50-140	04-SEP-20
1,1,1-Trichloroethane			114.1		%		50-140	04-SEP-20
1,1,2-Trichloroethane			118.0		%		50-140	04-SEP-20
1,1-Dichloroethane			116.0		%		50-140	04-SEP-20
1,1-Dichloroethylene			106.9		%		50-140	04-SEP-20
1,2-Dibromoethane			119.6		%		50-140	04-SEP-20
1,2-Dichlorobenzene			110.9		%		50-140	04-SEP-20
1,2-Dichloroethane			116.1		%		50-140	04-SEP-20
1,2-Dichloropropane			117.2		%		50-140	04-SEP-20
1,3-Dichlorobenzene			109.0		%		50-140	04-SEP-20
1,4-Dichlorobenzene			111.3		%		50-140	04-SEP-20
Acetone			134.0		%		50-140	04-SEP-20
Benzene			112.7		%		50-140	04-SEP-20
Bromodichloromethane			129.6		%		50-140	04-SEP-20
Bromoform			131.0		%		50-140	04-SEP-20
Bromomethane			104.8		%		50-140	04-SEP-20
Carbon tetrachloride			119.6		%		50-140	04-SEP-20
Chlorobenzene			116.7		%		50-140	04-SEP-20
Chloroform			121.7		%		50-140	04-SEP-20
cis-1,2-Dichloroethylene			121.3		%		50-140	04-SEP-20
cis-1,3-Dichloropropene			118.9		%		50-140	04-SEP-20
Dibromochloromethane			118.9		%		50-140	04-SEP-20
Dichlorodifluoromethane			80.4		%		50-140	04-SEP-20
Ethylbenzene			111.0		%		50-140	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210110								
WG3396845-5 MS		**WG3396845-3**						
n-Hexane			94.3		%		50-140	04-SEP-20
Methylene Chloride			122.4		%		50-140	04-SEP-20
MTBE			114.3		%		50-140	04-SEP-20
m+p-Xylenes			114.7		%		50-140	04-SEP-20
Methyl Ethyl Ketone			116.6		%		50-140	04-SEP-20
Methyl Isobutyl Ketone			114.7		%		50-140	04-SEP-20
o-Xylene			124.9		%		50-140	04-SEP-20
Styrene			115.9		%		50-140	04-SEP-20
Tetrachloroethylene			118.1		%		50-140	04-SEP-20
Toluene			110.6		%		50-140	04-SEP-20
trans-1,2-Dichloroethylene			113.4		%		50-140	04-SEP-20
trans-1,3-Dichloropropene			121.5		%		50-140	04-SEP-20
Trichloroethylene			211.2	MSDH	%		50-140	04-SEP-20
Trichlorofluoromethane			102.7		%		50-140	04-SEP-20
Vinyl chloride			101.6		%		50-140	04-SEP-20

Quality Control Report

Workorder: L2497939 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
MSDH	TCE recovery in MS was high. Spiked 1122-TCA converted to TCE due to sample matrix (dehydrohalogenation).
MSDL	1122-TCA recovery in MS was low. Analyte is unstable in this sample matrix due to dehydrohalogenation.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

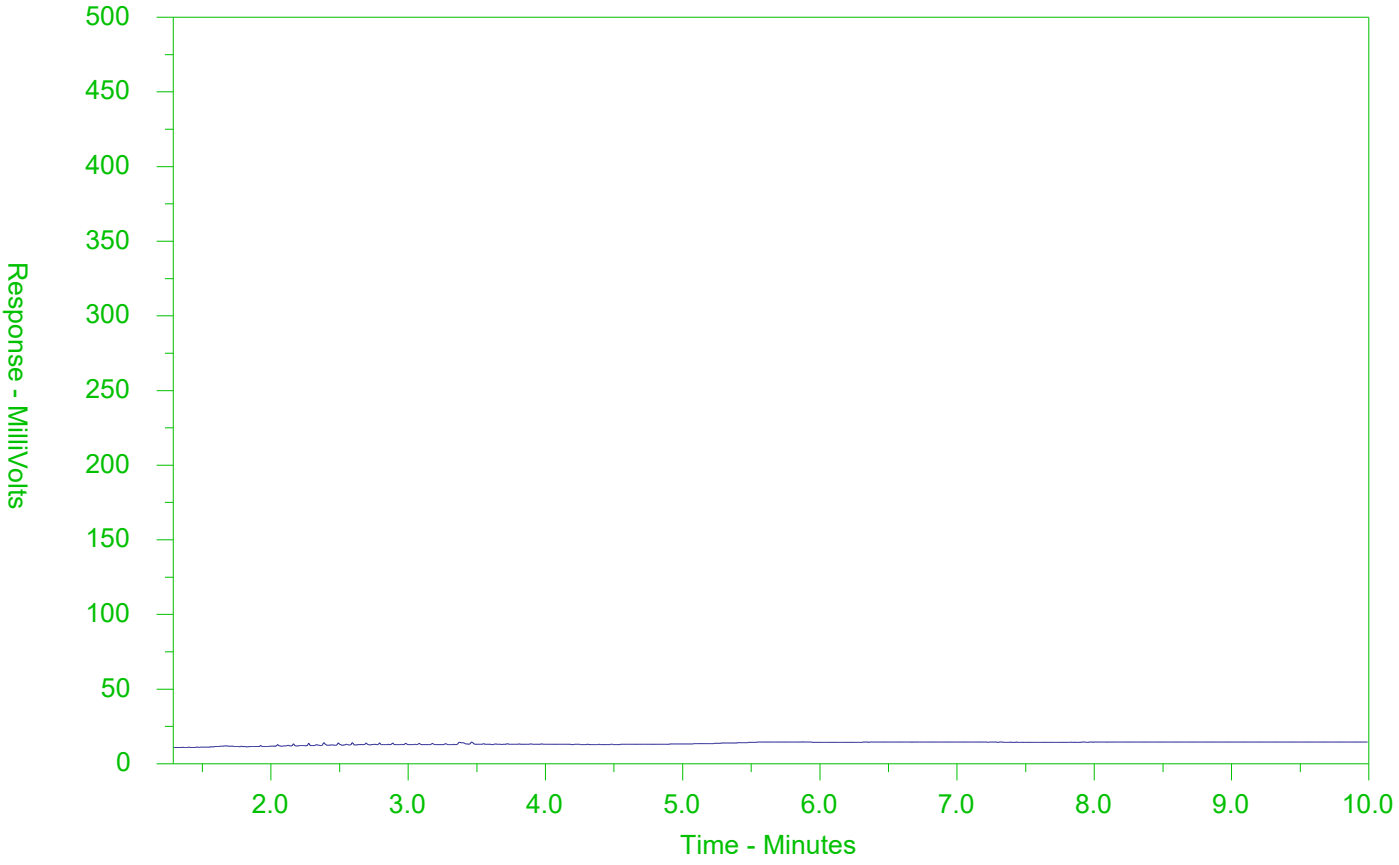
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2497939-2
Client Sample ID: BH102 SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2497939-COFC

umber: 17 -

Page of

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62481	AFE/Cost Center:	PO#
Job #:	1-20-0249-42	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2497939	ALS Contact:	Sampler: YH

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 102 SS1	02-Sep-20		Soil	3	✓	✓			✓		
	BH 102 SS2	"		"	3			✓	✓			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☒ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☒

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
15.4				7.4			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Yousr Hiweish	Sep. 2nd/2020	2:30	Karanjeetsingh	Sept. 2, 2020	15:33		9-2-2020	17:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

TERRAPROBE - BRAMPTON
ATTN: Yousr Hiweish
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 11-SEP-20
Report Date: 27-SEP-20 06:58 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2502013

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: SAR result exceeds guideline criteria for L2502013-1 sample BH 102 SS3. Refer to report remarks regarding this result - E. Smith (27 Sep 2020)

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	Guideline

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)

(No parameter exceedances)

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)

(No parameter exceedances)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

			Lab ID	L2502013-1
			Sample Date	11-SEP-20
			Sample ID	BH 102 SS3
Analyte	**Unit**	**Guide Limits #1**	**#2**	
Conductivity	mS/cm	0.7	0.7	0.670
% Moisture	%	-	-	7.33
pH	pH units	-	-	7.98

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2502013-1 Sample Date: 11-SEP-20 Sample ID: BH 102 SS3
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

			Lab ID	L2502013-1
			Sample Date	11-SEP-20
			Sample ID	BH 102 SS3
Analyte	**Unit**	**Guide Limits #1**	**#2**	
SAR	SAR	5	5	>29. SAR:L
Calcium (Ca)	mg/L	-	-	<0.50
Magnesium (Mg)	mg/L	-	-	<0.50
Sodium (Na)	mg/L	-	-	123

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2502013-1 Sample Date: 11-SEP-20 Sample ID: BH 102 SS3
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	5.6
Barium (Ba)	ug/g	390	390	43.3
Beryllium (Be)	ug/g	4	5	0.53
Boron (B)	ug/g	120	120	13.0
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.16
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	16.6
Cobalt (Co)	ug/g	22	22	10.1
Copper (Cu)	ug/g	140	180	45.4
Lead (Pb)	ug/g	120	120	12.0
Mercury (Hg)	ug/g	0.27	1.8	0.0107
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	20.3
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	23.7
Zinc (Zn)	ug/g	340	340	55.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2502013-1
Sample Date				11-SEP-20
Sample ID				BH 102 SS3
Chromium, Hexavalent	ug/g	8	10	<0.20

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2502013-1
			Sample Date	11-SEP-20
			Sample ID	BH 102 SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046
Pyrene	ug/g	78	78	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	84.2
Surrogate: p-Terphenyl d14	%	-	-	91.9

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:L	SAR is incalculable due to Ca and Mg below DL (with Na above DL). Lowest possible SAR is reported as minimum value.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2502013 Report Date: 27-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5226822								
WG3405993-4 DUP		**L2502048-2**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	17-SEP-20
WG3405993-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			98.4		%		70-130	17-SEP-20
WG3405993-3 LCS								
Boron (B), Hot Water Ext.			104.0		%		70-130	17-SEP-20
WG3405993-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	17-SEP-20
CN-WAD-R511-WT	**Soil**							
Batch R5223814								
WG3403597-3 DUP		**L2502034-20**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	15-SEP-20
WG3403597-2 LCS								
Cyanide, Weak Acid Diss			93.8		%		80-120	15-SEP-20
WG3403597-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	15-SEP-20
WG3403597-4 MS		**L2502034-20**						
Cyanide, Weak Acid Diss			103.3		%		70-130	15-SEP-20
CR-CR6-IC-WT	**Soil**							
Batch R5224622								
WG3403606-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			101.6		%		70-130	16-SEP-20
WG3403606-3 DUP		**L2502034-20**						
Chromium, Hexavalent		0.56	0.43		ug/g	27	35	16-SEP-20
WG3403606-2 LCS								
Chromium, Hexavalent			103.0		%		80-120	16-SEP-20
WG3403606-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	16-SEP-20
EC-WT	**Soil**							
Batch R5226598								
WG3406003-4 DUP		**WG3406003-3**						
Conductivity		0.137	0.137		mS/cm	0.1	20	17-SEP-20
WG3406003-2 IRM		**WT SAR4**						
Conductivity			102.2		%		70-130	17-SEP-20
WG3406467-1 LCS								
Conductivity			98.5		%		90-110	17-SEP-20
WG3406003-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5226598								
WG3406003-1 MB								
Conductivity			<0.0040		mS/cm		0.004	17-SEP-20
HG-200.2-CVAA-WT	**Soil**							
Batch R5226437								
WG3405831-2 CRM		**WT-SS-2**						
Mercury (Hg)			108.9		%		70-130	17-SEP-20
WG3405831-6 DUP		**WG3405831-5**						
Mercury (Hg)		0.0494	0.0496		ug/g	0.5	40	17-SEP-20
WG3405831-3 LCS								
Mercury (Hg)			109.5		%		80-120	17-SEP-20
WG3405831-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	17-SEP-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5227059								
WG3405831-2 CRM		**WT-SS-2**						
Antimony (Sb)			103.0		%		70-130	18-SEP-20
Arsenic (As)			102.7		%		70-130	18-SEP-20
Barium (Ba)			101.0		%		70-130	18-SEP-20
Beryllium (Be)			109.2		%		70-130	18-SEP-20
Boron (B)			9.5		mg/kg		3.5-13.5	18-SEP-20
Cadmium (Cd)			97.1		%		70-130	18-SEP-20
Chromium (Cr)			111.6		%		70-130	18-SEP-20
Cobalt (Co)			103.0		%		70-130	18-SEP-20
Copper (Cu)			102.3		%		70-130	18-SEP-20
Lead (Pb)			101.4		%		70-130	18-SEP-20
Molybdenum (Mo)			101.5		%		70-130	18-SEP-20
Nickel (Ni)			106.4		%		70-130	18-SEP-20
Selenium (Se)			0.12		mg/kg		0-0.34	18-SEP-20
Thallium (Tl)			0.074		mg/kg		0.029-0.129	18-SEP-20
Uranium (U)			103.3		%		70-130	18-SEP-20
Vanadium (V)			105.4		%		70-130	18-SEP-20
Zinc (Zn)			103.2		%		70-130	18-SEP-20
WG3405831-6 DUP		**WG3405831-5**						
Antimony (Sb)		0.19	0.19		ug/g	1.8	30	18-SEP-20
Arsenic (As)		7.94	7.76		ug/g	2.2	30	18-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5227059								
WG3405831-6 DUP		**WG3405831-5**						
Barium (Ba)		45.0	46.1		ug/g	2.3	40	18-SEP-20
Beryllium (Be)		0.54	0.53		ug/g	3.0	30	18-SEP-20
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	18-SEP-20
Cadmium (Cd)		0.261	0.260		ug/g	0.3	30	18-SEP-20
Chromium (Cr)		17.8	17.3		ug/g	2.8	30	18-SEP-20
Cobalt (Co)		6.36	6.35		ug/g	0.2	30	18-SEP-20
Copper (Cu)		13.1	12.9		ug/g	1.6	30	18-SEP-20
Lead (Pb)		12.4	12.4		ug/g	0.0	40	18-SEP-20
Molybdenum (Mo)		0.75	0.75		ug/g	0.5	40	18-SEP-20
Nickel (Ni)		12.5	12.7		ug/g	1.7	30	18-SEP-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	18-SEP-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	18-SEP-20
Thallium (Tl)		0.091	0.090		ug/g	0.8	30	18-SEP-20
Uranium (U)		0.523	0.519		ug/g	0.8	30	18-SEP-20
Vanadium (V)		37.8	36.3		ug/g	4.0	30	18-SEP-20
Zinc (Zn)		96.0	95.5		ug/g	0.5	30	18-SEP-20
WG3405831-4 LCS								
Antimony (Sb)			104.9		%		80-120	18-SEP-20
Arsenic (As)			100.4		%		80-120	18-SEP-20
Barium (Ba)			95.0		%		80-120	18-SEP-20
Beryllium (Be)			95.4		%		80-120	18-SEP-20
Boron (B)			93.9		%		80-120	18-SEP-20
Cadmium (Cd)			94.4		%		80-120	18-SEP-20
Chromium (Cr)			98.5		%		80-120	18-SEP-20
Cobalt (Co)			94.2		%		80-120	18-SEP-20
Copper (Cu)			92.1		%		80-120	18-SEP-20
Lead (Pb)			93.6		%		80-120	18-SEP-20
Molybdenum (Mo)			98.7		%		80-120	18-SEP-20
Nickel (Ni)			96.3		%		80-120	18-SEP-20
Selenium (Se)			95.7		%		80-120	18-SEP-20
Silver (Ag)			95.0		%		80-120	18-SEP-20
Thallium (Tl)			95.0		%		80-120	18-SEP-20
Uranium (U)			87.8		%		80-120	18-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5227059								
WG3405831-4 LCS								
Vanadium (V)			97.8		%		80-120	18-SEP-20
Zinc (Zn)			93.4		%		80-120	18-SEP-20
WG3405831-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	18-SEP-20
Arsenic (As)			<0.10		mg/kg		0.1	18-SEP-20
Barium (Ba)			<0.50		mg/kg		0.5	18-SEP-20
Beryllium (Be)			<0.10		mg/kg		0.1	18-SEP-20
Boron (B)			<5.0		mg/kg		5	18-SEP-20
Cadmium (Cd)			<0.020		mg/kg		0.02	18-SEP-20
Chromium (Cr)			<0.50		mg/kg		0.5	18-SEP-20
Cobalt (Co)			<0.10		mg/kg		0.1	18-SEP-20
Copper (Cu)			<0.50		mg/kg		0.5	18-SEP-20
Lead (Pb)			<0.50		mg/kg		0.5	18-SEP-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	18-SEP-20
Nickel (Ni)			<0.50		mg/kg		0.5	18-SEP-20
Selenium (Se)			<0.20		mg/kg		0.2	18-SEP-20
Silver (Ag)			<0.10		mg/kg		0.1	18-SEP-20
Thallium (Tl)			<0.050		mg/kg		0.05	18-SEP-20
Uranium (U)			<0.050		mg/kg		0.05	18-SEP-20
Vanadium (V)			<0.20		mg/kg		0.2	18-SEP-20
Zinc (Zn)			<2.0		mg/kg		2	18-SEP-20
MOISTURE-WT	**Soil**							
Batch R5223545								
WG3403645-3 DUP		**L2502042-1**						
% Moisture		14.8	13.8		%	7.5	20	15-SEP-20
WG3403645-2 LCS								
% Moisture			99.97		%		90-110	15-SEP-20
WG3403645-1 MB								
% Moisture			<0.25		%		0.25	15-SEP-20
PAH-511-WT	**Soil**							
Batch R5235836								
WG3409366-3 DUP		**WG3409366-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-SEP-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5235836								
WG3409366-3 DUP		**WG3409366-5**						
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	25-SEP-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	25-SEP-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
WG3409366-2 LCS								
1-Methylnaphthalene			88.6		%		50-140	25-SEP-20
2-Methylnaphthalene			85.5		%		50-140	25-SEP-20
Acenaphthene			91.0		%		50-140	25-SEP-20
Acenaphthylene			95.9		%		50-140	25-SEP-20
Anthracene			90.5		%		50-140	25-SEP-20
Benzo(a)anthracene			91.1		%		50-140	25-SEP-20
Benzo(a)pyrene			86.2		%		50-140	25-SEP-20
Benzo(b)fluoranthene			82.4		%		50-140	25-SEP-20
Benzo(g,h,i)perylene			87.7		%		50-140	25-SEP-20
Benzo(k)fluoranthene			80.3		%		50-140	25-SEP-20
Chrysene			88.9		%		50-140	25-SEP-20
Dibenzo(ah)anthracene			89.3		%		50-140	25-SEP-20
Fluoranthene			83.7		%		50-140	25-SEP-20
Fluorene			86.5		%		50-140	25-SEP-20
Indeno(1,2,3-cd)pyrene			88.1		%		50-140	25-SEP-20
Naphthalene			85.8		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5235836								
WG3409366-2 LCS								
Phenanthrene			83.6		%		50-140	25-SEP-20
Pyrene			87.4		%		50-140	25-SEP-20
WG3409366-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-SEP-20
2-Methylnaphthalene			<0.030		ug/g		0.03	25-SEP-20
Acenaphthene			<0.050		ug/g		0.05	25-SEP-20
Acenaphthylene			<0.050		ug/g		0.05	25-SEP-20
Anthracene			<0.050		ug/g		0.05	25-SEP-20
Benzo(a)anthracene			<0.050		ug/g		0.05	25-SEP-20
Benzo(a)pyrene			<0.050		ug/g		0.05	25-SEP-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-SEP-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-SEP-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-SEP-20
Chrysene			<0.050		ug/g		0.05	25-SEP-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-SEP-20
Fluoranthene			<0.050		ug/g		0.05	25-SEP-20
Fluorene			<0.050		ug/g		0.05	25-SEP-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-SEP-20
Naphthalene			<0.013		ug/g		0.013	25-SEP-20
Phenanthrene			<0.046		ug/g		0.046	25-SEP-20
Pyrene			<0.050		ug/g		0.05	25-SEP-20
Surrogate: 2-Fluorobiphenyl			96.5		%		50-140	25-SEP-20
Surrogate: p-Terphenyl d14			106.0		%		50-140	25-SEP-20
WG3409366-4 MS		**WG3409366-5**						
1-Methylnaphthalene			84.3		%		50-140	25-SEP-20
2-Methylnaphthalene			81.1		%		50-140	25-SEP-20
Acenaphthene			86.3		%		50-140	25-SEP-20
Acenaphthylene			87.7		%		50-140	25-SEP-20
Anthracene			84.9		%		50-140	25-SEP-20
Benzo(a)anthracene			82.8		%		50-140	25-SEP-20
Benzo(a)pyrene			81.1		%		50-140	25-SEP-20
Benzo(b)fluoranthene			83.0		%		50-140	25-SEP-20
Benzo(g,h,i)perylene			77.7		%		50-140	25-SEP-20
Benzo(k)fluoranthene			74.4		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5235836								
WG3409366-4 MS		**WG3409366-5**						
Chrysene			86.9		%		50-140	25-SEP-20
Dibenzo(ah)anthracene			78.0		%		50-140	25-SEP-20
Fluoranthene			78.5		%		50-140	25-SEP-20
Fluorene			81.6		%		50-140	25-SEP-20
Indeno(1,2,3-cd)pyrene			76.7		%		50-140	25-SEP-20
Naphthalene			82.5		%		50-140	25-SEP-20
Phenanthrene			81.3		%		50-140	25-SEP-20
Pyrene			81.9		%		50-140	25-SEP-20
PH-WT	**Soil**							
Batch R5224020								
WG3403148-1 DUP		**L2502013-1**						
pH		7.98	7.97	J	pH units	0.01	0.3	15-SEP-20
WG3404598-1 LCS								
pH			6.98		pH units		6.9-7.1	15-SEP-20
SAR-R511-WT	**Soil**							
Batch R5227263								
WG3406003-4 DUP		**WG3406003-3**						
Calcium (Ca)		6.34	6.13		mg/L	3.4	30	17-SEP-20
Sodium (Na)		12.5	12.7		mg/L	1.6	30	17-SEP-20
Magnesium (Mg)		1.34	1.29		mg/L	3.8	30	17-SEP-20
WG3406003-2 IRM		**WT SAR4**						
Calcium (Ca)			98.8		%		70-130	17-SEP-20
Sodium (Na)			97.7		%		70-130	17-SEP-20
Magnesium (Mg)			101.7		%		70-130	17-SEP-20
WG3406003-5 LCS								
Calcium (Ca)			103.7		%		80-120	17-SEP-20
Sodium (Na)			101.0		%		80-120	17-SEP-20
Magnesium (Mg)			100.2		%		80-120	17-SEP-20
WG3406003-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	17-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	17-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	17-SEP-20

Quality Control Report

Workorder: L2502013 Report Date: 27-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2502013-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62481	AFE/Cost Center:	PO#
Job #:	1-20-0249-42	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:	PO	Location:	
ALS Lab Work Order # (lab use only):	L2502013	ALS Contact:	Sampler: YH

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 102 SS3	11-Sep-20		Soil	1	✓						

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | Ice Packs ☒ | Ice Cubes ☐ | Cooling Initiated ☐

SIF Observations Yes ☐ No ☐

Custody seal intact Yes ☐ No ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.9				1.8			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Yousr Hiweish	Sept. 11 /2020	11:00	FM	Sep 11/20	14:19	AP	11-Sep-20	17:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

TERRAPROBE-BRAMPTON
ATTN: Yousr Hiweish
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 14-SEP-20
Report Date: 18-NOV-20 23:00 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2502693

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: Report revised to update sample IDs:
BH103 SS1 was updated to BH103 AS1. Both of these IDs refer to the same sample.
BH103 SS2 was updated to BH103 AS2. Both of these IDs refer to the same sample.
-E. Smith (18 Nov 2020).

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2502693-1	BH 103 AS1	Physical Tests	Conductivity	1.27	0.7	mS/cm
		Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene	0.543	0.3	ug/g
			Benzo(b)fluoranthene	0.813	0.78	ug/g
			Fluoranthene	0.815	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	0.412	0.38	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2502693-1	BH 103 AS1	Physical Tests	Conductivity	1.27	0.7	mS/cm
		Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene	0.543	0.3	ug/g
			Benzo(b)fluoranthene	0.813	0.78	ug/g
			Fluoranthene	0.815	0.69	ug/g

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2502693-1 Sample Date: 11-SEP-20 Sample ID: BH 103 AS1	Lab ID: L2502693-2 Sample Date: 11-SEP-20 Sample ID: BH 103 AS2
Conductivity	mS/cm	0.7	0.7	1.27	
% Moisture	%	-	-	7.77	8.65
pH	pH units	-	-	11.80	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2502693-1
			Sample Date	11-SEP-20
			Sample ID	BH 103 AS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2502693-1 Sample Date: 11-SEP-20 Sample ID: BH 103 AS1
SAR	SAR	5	5	4.01 SAR:M
Calcium (Ca)	mg/L	-	-	79.8
Magnesium (Mg)	mg/L	-	-	<0.50
Sodium (Na)	mg/L	-	-	130

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

			Lab ID	L2502693-1
			Sample Date	11-SEP-20
			Sample ID	BH 103 AS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Antimony (Sb)	ug/g	7.5	7.5	3.0
Arsenic (As)	ug/g	18	18	6.2
Barium (Ba)	ug/g	390	390	186
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	11.8
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.28
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	16.4
Cobalt (Co)	ug/g	22	22	4.2
Copper (Cu)	ug/g	140	180	32.8
Lead (Pb)	ug/g	120	120	74.7
Mercury (Hg)	ug/g	0.27	1.8	0.0504
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	10.3
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	18.1
Zinc (Zn)	ug/g	340	340	68.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2502693-1
Sample Date				11-SEP-20
Sample ID				BH 103 AS1
Chromium, Hexavalent	ug/g	8	10	1.08

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2502693-2
			Sample Date	11-SEP-20
			Sample ID	BH 103 AS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	1.5	1.9	<0.050
Bromoform	ug/g	0.27	0.26	<0.050
Bromomethane	ug/g	0.05	0.05	<0.050
Carbon tetrachloride	ug/g	0.05	0.12	<0.050
Chlorobenzene	ug/g	2.4	2.7	<0.050
Dibromochloromethane	ug/g	2.3	2.9	<0.050
Chloroform	ug/g	0.05	0.18	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050
Dichlorodifluoromethane	ug/g	16	25	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050
Methylene Chloride	ug/g	0.1	0.96	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042
Ethylbenzene	ug/g	1.1	1.6	<0.018
n-Hexane	ug/g	2.8	34	<0.050
Methyl Ethyl Ketone	ug/g	16	44	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50
MTBE	ug/g	0.75	1.4	<0.050
Styrene	ug/g	0.7	2.2	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2502693-2
			Sample Date	11-SEP-20
			Sample ID	BH 103 AS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	0.014
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	0.062
m+p-Xylenes	ug/g	-	-	0.060
Xylenes (Total)	ug/g	3.1	25	0.123
Surrogate: 4-Bromofluorobenzene	%	-	-	92.1
Surrogate: 1,4-Difluorobenzene	%	-	-	115.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

			Lab ID	L2502693-2
			Sample Date	11-SEP-20
			Sample ID	BH 103 AS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F3 (C16-C34)	ug/g	300	1300	102
F4 (C34-C50)	ug/g	2800	5600	64
Total Hydrocarbons (C6-C50)	ug/g	-	-	166
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	82.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	89.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2502693-1
			Sample Date	11-SEP-20
			Sample ID	BH 103 AS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	0.095
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.441
Benzo(a)pyrene	ug/g	0.3	0.3	0.543
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.813
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.465
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.243
Chrysene	ug/g	7	7.8	0.547
Dibenzo(ah)anthracene	ug/g	0.1	0.1	0.098
Fluoranthene	ug/g	0.69	0.69	0.815
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.412
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.158
1-Methylnaphthalene	ug/g	0.99	3.4	0.077
2-Methylnaphthalene	ug/g	0.99	3.4	0.081
Naphthalene	ug/g	0.6	0.75	0.050
Phenanthrene	ug/g	6.2	7.8	0.275 DUPH
Pyrene	ug/g	78	78	0.742
Surrogate: 2-Fluorobiphenyl	%	-	-	100.2
Surrogate: p-Terphenyl d14	%	-	-	117.9

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
DUPH	Duplicate results outside ALS DQO, due to sample heterogeneity.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2502693 Report Date: 18-NOV-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5229660								
WG3406935-4 DUP		**L2502672-26**						
Boron (B), Hot Water Ext.		0.17	0.18		ug/g	5.9	30	18-SEP-20
WG3406935-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			116.6		%		70-130	18-SEP-20
WG3406935-3 LCS								
Boron (B), Hot Water Ext.			103.0		%		70-130	18-SEP-20
WG3406935-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	18-SEP-20
CN-WAD-R511-WT	**Soil**							
Batch R5226601								
WG3405256-3 DUP		**L2502579-3**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	17-SEP-20
WG3405256-2 LCS								
Cyanide, Weak Acid Diss			95.7		%		80-120	17-SEP-20
WG3405256-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	17-SEP-20
WG3405256-4 MS		**L2502579-3**						
Cyanide, Weak Acid Diss			100.9		%		70-130	17-SEP-20
CR-CR6-IC-WT	**Soil**							
Batch R5226920								
WG3404912-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			102.4		%		70-130	17-SEP-20
WG3404912-3 DUP		**L2502672-25**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	17-SEP-20
WG3404912-2 LCS								
Chromium, Hexavalent			99.8		%		80-120	17-SEP-20
WG3404912-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	17-SEP-20
EC-WT	**Soil**							
Batch R5229976								
WG3407118-4 DUP		**WG3407118-3**						
Conductivity		0.840	0.837		mS/cm	0.4	20	18-SEP-20
WG3407118-2 IRM		**WT SAR4**						
Conductivity			102.6		%		70-130	18-SEP-20
WG3407459-1 LCS								
Conductivity			99.0		%		90-110	18-SEP-20
WG3407118-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5229976								
WG3407118-1 MB								
Conductivity			<0.0040		mS/cm		0.004	18-SEP-20
F1-HS-511-WT	**Soil**							
Batch R5231261								
WG3404414-4 DUP		**WG3404414-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	21-SEP-20
WG3404414-2 LCS								
F1 (C6-C10)			97.8		%		80-120	21-SEP-20
WG3404414-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	21-SEP-20
Surrogate: 3,4-Dichlorotoluene			107.8		%		60-140	21-SEP-20
WG3404414-6 MS		**L2502693-2**						
F1 (C6-C10)			101.8		%		60-140	21-SEP-20
F2-F4-511-WT	**Soil**							
Batch R5225877								
WG3405231-3 DUP		**WG3405231-5**						
F2 (C10-C16)		2960	3380		ug/g	13	30	17-SEP-20
F3 (C16-C34)		1050	1150		ug/g	9.4	30	17-SEP-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	17-SEP-20
WG3405231-2 LCS								
F2 (C10-C16)			97.0		%		80-120	17-SEP-20
F3 (C16-C34)			98.9		%		80-120	17-SEP-20
F4 (C34-C50)			93.0		%		80-120	17-SEP-20
WG3405231-1 MB								
F2 (C10-C16)			<10		ug/g		10	17-SEP-20
F3 (C16-C34)			<50		ug/g		50	17-SEP-20
F4 (C34-C50)			<50		ug/g		50	17-SEP-20
Surrogate: 2-Bromobenzotrifluoride			79.2		%		60-140	17-SEP-20
WG3405231-4 MS		**WG3405231-5**						
F2 (C10-C16)			N/A	MS-B	%		-	17-SEP-20
F3 (C16-C34)			N/A	MS-B	%		-	17-SEP-20
F4 (C34-C50)			81.9		%		60-140	17-SEP-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5228784								
WG3406734-2 CRM		**WT-SS-2**						
Mercury (Hg)			103.2		%		70-130	18-SEP-20
WG3406734-6 DUP		**WG3406734-5**						
Mercury (Hg)		0.0135	0.0145		ug/g	6.8	40	18-SEP-20
WG3406734-3 LCS								
Mercury (Hg)			96.5		%		80-120	18-SEP-20
WG3406734-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	18-SEP-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5229576								
WG3406734-2 CRM		**WT-SS-2**						
Antimony (Sb)			104.5		%		70-130	18-SEP-20
Arsenic (As)			105.9		%		70-130	18-SEP-20
Barium (Ba)			101.8		%		70-130	18-SEP-20
Beryllium (Be)			109.0		%		70-130	18-SEP-20
Boron (B)			10.1		mg/kg		3.5-13.5	18-SEP-20
Cadmium (Cd)			96.8		%		70-130	18-SEP-20
Chromium (Cr)			114.8		%		70-130	18-SEP-20
Cobalt (Co)			103.6		%		70-130	18-SEP-20
Copper (Cu)			103.6		%		70-130	18-SEP-20
Lead (Pb)			102.5		%		70-130	18-SEP-20
Molybdenum (Mo)			109.1		%		70-130	18-SEP-20
Nickel (Ni)			108.6		%		70-130	18-SEP-20
Selenium (Se)			0.10		mg/kg		0-0.34	18-SEP-20
Silver (Ag)			82.4		%		70-130	18-SEP-20
Thallium (Tl)			0.075		mg/kg		0.029-0.129	18-SEP-20
Uranium (U)			98.5		%		70-130	18-SEP-20
Vanadium (V)			108.0		%		70-130	18-SEP-20
Zinc (Zn)			102.2		%		70-130	18-SEP-20
WG3406734-6 DUP		**WG3406734-5**						
Antimony (Sb)		0.26	0.27		ug/g	0.8	30	18-SEP-20
Arsenic (As)		6.56	6.62		ug/g	0.9	30	18-SEP-20
Barium (Ba)		36.5	41.2		ug/g	12	40	18-SEP-20
Beryllium (Be)		0.74	0.83		ug/g	11	30	18-SEP-20
Boron (B)		13.3	17.3		ug/g	26	30	18-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5229576								
WG3406734-6 DUP		**WG3406734-5**						
Cadmium (Cd)		0.056	0.051		ug/g	8.4	30	18-SEP-20
Chromium (Cr)		26.9	28.8		ug/g	6.9	30	18-SEP-20
Cobalt (Co)		14.5	14.5		ug/g	0.2	30	18-SEP-20
Copper (Cu)		25.0	25.0		ug/g	0.0	30	18-SEP-20
Lead (Pb)		11.1	15.1		ug/g	31	40	18-SEP-20
Molybdenum (Mo)		0.49	0.45		ug/g	7.6	40	18-SEP-20
Nickel (Ni)		31.6	31.9		ug/g	0.9	30	18-SEP-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	18-SEP-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	18-SEP-20
Thallium (Tl)		0.078	0.092		ug/g	17	30	18-SEP-20
Uranium (U)		0.584	0.616		ug/g	5.2	30	18-SEP-20
Vanadium (V)		30.8	36.1		ug/g	16	30	18-SEP-20
Zinc (Zn)		73.8	73.1		ug/g	1.0	30	18-SEP-20
WG3406734-4 LCS								
Antimony (Sb)			103.3		%		80-120	18-SEP-20
Arsenic (As)			102.0		%		80-120	18-SEP-20
Barium (Ba)			99.5		%		80-120	18-SEP-20
Beryllium (Be)			99.2		%		80-120	18-SEP-20
Boron (B)			94.0		%		80-120	18-SEP-20
Cadmium (Cd)			98.3		%		80-120	18-SEP-20
Chromium (Cr)			103.0		%		80-120	18-SEP-20
Cobalt (Co)			99.5		%		80-120	18-SEP-20
Copper (Cu)			96.9		%		80-120	18-SEP-20
Lead (Pb)			96.1		%		80-120	18-SEP-20
Molybdenum (Mo)			97.0		%		80-120	18-SEP-20
Nickel (Ni)			101.1		%		80-120	18-SEP-20
Selenium (Se)			94.9		%		80-120	18-SEP-20
Silver (Ag)			98.2		%		80-120	18-SEP-20
Thallium (Tl)			99.2		%		80-120	18-SEP-20
Uranium (U)			91.6		%		80-120	18-SEP-20
Vanadium (V)			103.2		%		80-120	18-SEP-20
Zinc (Zn)			98.5		%		80-120	18-SEP-20
WG3406734-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5229576								
WG3406734-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	18-SEP-20
Arsenic (As)			<0.10		mg/kg		0.1	18-SEP-20
Barium (Ba)			<0.50		mg/kg		0.5	18-SEP-20
Beryllium (Be)			<0.10		mg/kg		0.1	18-SEP-20
Boron (B)			<5.0		mg/kg		5	18-SEP-20
Cadmium (Cd)			<0.020		mg/kg		0.02	18-SEP-20
Chromium (Cr)			<0.50		mg/kg		0.5	18-SEP-20
Cobalt (Co)			<0.10		mg/kg		0.1	18-SEP-20
Copper (Cu)			<0.50		mg/kg		0.5	18-SEP-20
Lead (Pb)			<0.50		mg/kg		0.5	18-SEP-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	18-SEP-20
Nickel (Ni)			<0.50		mg/kg		0.5	18-SEP-20
Selenium (Se)			<0.20		mg/kg		0.2	18-SEP-20
Silver (Ag)			<0.10		mg/kg		0.1	18-SEP-20
Thallium (Tl)			<0.050		mg/kg		0.05	18-SEP-20
Uranium (U)			<0.050		mg/kg		0.05	18-SEP-20
Vanadium (V)			<0.20		mg/kg		0.2	18-SEP-20
Zinc (Zn)			<2.0		mg/kg		2	18-SEP-20
MOISTURE-WT	**Soil**							
Batch R5224288								
WG3404422-3 DUP		**L2502672-8**						
% Moisture		7.84	7.55		%	3.8	20	16-SEP-20
WG3404422-2 LCS								
% Moisture			100.9		%		90-110	16-SEP-20
WG3404422-1 MB								
% Moisture			<0.25		%		0.25	16-SEP-20
PAH-511-WT	**Soil**							
Batch R5225999								
WG3404421-3 DUP		**WG3404421-5**						
1-Methylnaphthalene		0.077	0.094		ug/g	20	40	17-SEP-20
2-Methylnaphthalene		0.081	0.104		ug/g	24	40	17-SEP-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-SEP-20
Acenaphthylene		0.095	0.114		ug/g	18	40	17-SEP-20
Anthracene		<0.050	0.054	RPD-NA	ug/g	N/A	40	17-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5225999								
WG3404421-3 DUP		**WG3404421-5**						
Benzo(a)anthracene		0.441	0.513		ug/g	15	40	17-SEP-20
Benzo(a)pyrene		0.543	0.618		ug/g	13	40	17-SEP-20
Benzo(b)fluoranthene		0.813	0.913		ug/g	12	40	17-SEP-20
Benzo(g,h,i)perylene		0.465	0.527		ug/g	13	40	17-SEP-20
Benzo(k)fluoranthene		0.243	0.269		ug/g	10	40	17-SEP-20
Chrysene		0.547	0.676		ug/g	21	40	17-SEP-20
Dibenzo(ah)anthracene		0.098	0.107		ug/g	8.7	40	17-SEP-20
Fluoranthene		0.815	1.09		ug/g	29	40	17-SEP-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	17-SEP-20
Indeno(1,2,3-cd)pyrene		0.412	0.466		ug/g	12	40	17-SEP-20
Naphthalene		0.050	0.064		ug/g	25	40	17-SEP-20
Phenanthrene		0.275	0.462	DUP-H	ug/g	51	40	17-SEP-20
Pyrene		0.742	0.960		ug/g	26	40	17-SEP-20
WG3404421-2 LCS								
1-Methylnaphthalene			88.5		%		50-140	17-SEP-20
2-Methylnaphthalene			85.9		%		50-140	17-SEP-20
Acenaphthene			92.6		%		50-140	17-SEP-20
Acenaphthylene			88.8		%		50-140	17-SEP-20
Anthracene			89.0		%		50-140	17-SEP-20
Benzo(a)anthracene			88.8		%		50-140	17-SEP-20
Benzo(a)pyrene			84.7		%		50-140	17-SEP-20
Benzo(b)fluoranthene			89.1		%		50-140	17-SEP-20
Benzo(g,h,i)perylene			76.1		%		50-140	17-SEP-20
Benzo(k)fluoranthene			88.3		%		50-140	17-SEP-20
Chrysene			92.6		%		50-140	17-SEP-20
Dibenzo(ah)anthracene			69.8		%		50-140	17-SEP-20
Fluoranthene			84.7		%		50-140	17-SEP-20
Fluorene			87.6		%		50-140	17-SEP-20
Indeno(1,2,3-cd)pyrene			77.1		%		50-140	17-SEP-20
Naphthalene			86.2		%		50-140	17-SEP-20
Phenanthrene			87.7		%		50-140	17-SEP-20
Pyrene			84.8		%		50-140	17-SEP-20
WG3404421-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5225999								
WG3404421-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	17-SEP-20
2-Methylnaphthalene			<0.030		ug/g		0.03	17-SEP-20
Acenaphthene			<0.050		ug/g		0.05	17-SEP-20
Acenaphthylene			<0.050		ug/g		0.05	17-SEP-20
Anthracene			<0.050		ug/g		0.05	17-SEP-20
Benzo(a)anthracene			<0.050		ug/g		0.05	17-SEP-20
Benzo(a)pyrene			<0.050		ug/g		0.05	17-SEP-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	17-SEP-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	17-SEP-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	17-SEP-20
Chrysene			<0.050		ug/g		0.05	17-SEP-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	17-SEP-20
Fluoranthene			<0.050		ug/g		0.05	17-SEP-20
Fluorene			<0.050		ug/g		0.05	17-SEP-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	17-SEP-20
Naphthalene			<0.013		ug/g		0.013	17-SEP-20
Phenanthrene			<0.046		ug/g		0.046	17-SEP-20
Pyrene			<0.050		ug/g		0.05	17-SEP-20
Surrogate: 2-Fluorobiphenyl			94.7		%		50-140	17-SEP-20
Surrogate: p-Terphenyl d14			105.0		%		50-140	17-SEP-20
WG3404421-4 MS		**WG3404421-5**						
1-Methylnaphthalene			98.9		%		50-140	17-SEP-20
2-Methylnaphthalene			96.8		%		50-140	17-SEP-20
Acenaphthene			101.3		%		50-140	17-SEP-20
Acenaphthylene			95.0		%		50-140	17-SEP-20
Anthracene			96.5		%		50-140	17-SEP-20
Benzo(a)anthracene			91.5		%		50-140	17-SEP-20
Benzo(a)pyrene			82.7		%		50-140	17-SEP-20
Benzo(b)fluoranthene			73.6		%		50-140	17-SEP-20
Benzo(g,h,i)perylene			81.3		%		50-140	17-SEP-20
Benzo(k)fluoranthene			97.8		%		50-140	17-SEP-20
Chrysene			90.7		%		50-140	17-SEP-20
Dibenzo(ah)anthracene			73.7		%		50-140	17-SEP-20
Fluoranthene			103.7		%		50-140	17-SEP-20

Quality Control Report

Workorder: L2502693 Report Date: 18-NOV-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5225999								
WG3404421-4 MS		**WG3404421-5**						
Fluorene			96.5		%		50-140	17-SEP-20
Indeno(1,2,3-cd)pyrene			81.1		%		50-140	17-SEP-20
Naphthalene			94.6		%		50-140	17-SEP-20
Phenanthrene			121.4		%		50-140	17-SEP-20
Pyrene			97.5		%		50-140	17-SEP-20
PH-WT	**Soil**							
Batch R5224929								
WG3404943-1 DUP		**L2502707-1**						
pH		7.64	7.66	J	pH units	0.02	0.3	16-SEP-20
WG3405798-1 LCS								
pH			6.98		pH units		6.9-7.1	16-SEP-20
SAR-R511-WT	**Soil**							
Batch R5229860								
WG3407118-4 DUP		**WG3407118-3**						
Calcium (Ca)		<0.50	<0.50	RPD-NA	mg/L	N/A	30	18-SEP-20
Sodium (Na)		169	168		mg/L	0.6	30	18-SEP-20
Magnesium (Mg)		<0.50	<0.50	RPD-NA	mg/L	N/A	30	18-SEP-20
WG3407118-2 IRM		**WT SAR4**						
Calcium (Ca)			100.2		%		70-130	18-SEP-20
Sodium (Na)			100.1		%		70-130	18-SEP-20
Magnesium (Mg)			103.4		%		70-130	18-SEP-20
WG3407118-5 LCS								
Calcium (Ca)			105.0		%		80-120	18-SEP-20
Sodium (Na)			103.2		%		80-120	18-SEP-20
Magnesium (Mg)			101.0		%		80-120	18-SEP-20
WG3407118-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	18-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	18-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	18-SEP-20
VOC-511-HS-WT	**Soil**							
Batch R5231261								
WG3404414-4 DUP		**WG3404414-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5231261								
WG3404414-4 DUP		**WG3404414-3**						
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	21-SEP-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	21-SEP-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-SEP-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	21-SEP-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-SEP-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	21-SEP-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	21-SEP-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-SEP-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	21-SEP-20
trans-1,2-Dichloroethylene		<0.050	<0.050		ug/g			21-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5231261								
WG3404414-4 DUP		**WG3404414-3**						
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-SEP-20
Trichloroethylene		0.022	0.023		ug/g	2.6	40	21-SEP-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-SEP-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	21-SEP-20
WG3404414-2 LCS								
1,1,1,2-Tetrachloroethane			102.7		%		60-130	21-SEP-20
1,1,2,2-Tetrachloroethane			91.7		%		60-130	21-SEP-20
1,1,1-Trichloroethane			104.8		%		60-130	21-SEP-20
1,1,2-Trichloroethane			105.9		%		60-130	21-SEP-20
1,1-Dichloroethane			103.9		%		60-130	21-SEP-20
1,1-Dichloroethylene			97.7		%		60-130	21-SEP-20
1,2-Dibromoethane			106.6		%		70-130	21-SEP-20
1,2-Dichlorobenzene			109.2		%		70-130	21-SEP-20
1,2-Dichloroethane			109.2		%		60-130	21-SEP-20
1,2-Dichloropropane			107.6		%		70-130	21-SEP-20
1,3-Dichlorobenzene			112.7		%		70-130	21-SEP-20
1,4-Dichlorobenzene			114.5		%		70-130	21-SEP-20
Acetone			121.7		%		60-140	21-SEP-20
Benzene			104.3		%		70-130	21-SEP-20
Bromodichloromethane			114.2		%		50-140	21-SEP-20
Bromoform			108.3		%		70-130	21-SEP-20
Bromomethane			95.4		%		50-140	21-SEP-20
Carbon tetrachloride			103.4		%		70-130	21-SEP-20
Chlorobenzene			107.9		%		70-130	21-SEP-20
Chloroform			109.8		%		70-130	21-SEP-20
cis-1,2-Dichloroethylene			113.2		%		70-130	21-SEP-20
cis-1,3-Dichloropropene			103.9		%		70-130	21-SEP-20
Dibromochloromethane			102.3		%		60-130	21-SEP-20
Dichlorodifluoromethane			57.1		%		50-140	21-SEP-20
Ethylbenzene			101.9		%		70-130	21-SEP-20
n-Hexane			90.4		%		70-130	21-SEP-20
Methylene Chloride			108.4		%		70-130	21-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5231261								
WG3404414-2 LCS								
MTBE			104.9		%		70-130	21-SEP-20
m+p-Xylenes			104.9		%		70-130	21-SEP-20
Methyl Ethyl Ketone			110.5		%		60-140	21-SEP-20
Methyl Isobutyl Ketone			96.7		%		60-140	21-SEP-20
o-Xylene			111.1		%		70-130	21-SEP-20
Styrene			103.9		%		70-130	21-SEP-20
Tetrachloroethylene			103.0		%		60-130	21-SEP-20
Toluene			102.6		%		70-130	21-SEP-20
trans-1,2-Dichloroethylene			105.3		%		60-130	21-SEP-20
trans-1,3-Dichloropropene			105.6		%		70-130	21-SEP-20
Trichloroethylene			107.3		%		60-130	21-SEP-20
Trichlorofluoromethane			92.2		%		50-140	21-SEP-20
Vinyl chloride			90.1		%		60-140	21-SEP-20
WG3404414-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	21-SEP-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	21-SEP-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	21-SEP-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	21-SEP-20
1,1-Dichloroethane			<0.050		ug/g		0.05	21-SEP-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	21-SEP-20
1,2-Dibromoethane			<0.050		ug/g		0.05	21-SEP-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	21-SEP-20
1,2-Dichloroethane			<0.050		ug/g		0.05	21-SEP-20
1,2-Dichloropropane			<0.050		ug/g		0.05	21-SEP-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	21-SEP-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	21-SEP-20
Acetone			<0.50		ug/g		0.5	21-SEP-20
Benzene			<0.0068		ug/g		0.0068	21-SEP-20
Bromodichloromethane			<0.050		ug/g		0.05	21-SEP-20
Bromoform			<0.050		ug/g		0.05	21-SEP-20
Bromomethane			<0.050		ug/g		0.05	21-SEP-20
Carbon tetrachloride			<0.050		ug/g		0.05	21-SEP-20
Chlorobenzene			<0.050		ug/g		0.05	21-SEP-20
Chloroform			<0.050		ug/g		0.05	21-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5231261								
WG3404414-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	21-SEP-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	21-SEP-20
Dibromochloromethane			<0.050		ug/g		0.05	21-SEP-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	21-SEP-20
Ethylbenzene			<0.018		ug/g		0.018	21-SEP-20
n-Hexane			<0.050		ug/g		0.05	21-SEP-20
Methylene Chloride			<0.050		ug/g		0.05	21-SEP-20
MTBE			<0.050		ug/g		0.05	21-SEP-20
m+p-Xylenes			<0.030		ug/g		0.03	21-SEP-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	21-SEP-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	21-SEP-20
o-Xylene			<0.020		ug/g		0.02	21-SEP-20
Styrene			<0.050		ug/g		0.05	21-SEP-20
Tetrachloroethylene			<0.050		ug/g		0.05	21-SEP-20
Toluene			<0.080		ug/g		0.08	21-SEP-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	21-SEP-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	21-SEP-20
Trichloroethylene			<0.010		ug/g		0.01	21-SEP-20
Trichlorofluoromethane			<0.050		ug/g		0.05	21-SEP-20
Vinyl chloride			<0.020		ug/g		0.02	21-SEP-20
Surrogate: 1,4-Difluorobenzene			112.1		%		50-140	21-SEP-20
Surrogate: 4-Bromofluorobenzene			93.1		%		50-140	21-SEP-20
WG3404414-5 MS		**WG3404414-3**						
1,1,1,2-Tetrachloroethane			111.4		%		50-140	21-SEP-20
1,1,2,2-Tetrachloroethane			105.3		%		50-140	21-SEP-20
1,1,1-Trichloroethane			115.0		%		50-140	21-SEP-20
1,1,2-Trichloroethane			112.4		%		50-140	21-SEP-20
1,1-Dichloroethane			111.5		%		50-140	21-SEP-20
1,1-Dichloroethylene			106.2		%		50-140	21-SEP-20
1,2-Dibromoethane			111.8		%		50-140	21-SEP-20
1,2-Dichlorobenzene			116.4		%		50-140	21-SEP-20
1,2-Dichloroethane			114.4		%		50-140	21-SEP-20
1,2-Dichloropropane			112.9		%		50-140	21-SEP-20
1,3-Dichlorobenzene			116.3		%		50-140	21-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5231261								
WG3404414-5 MS		**WG3404414-3**						
1,4-Dichlorobenzene			118.7		%		50-140	21-SEP-20
Acetone			130.3		%		50-140	21-SEP-20
Benzene			111.2		%		50-140	21-SEP-20
Bromodichloromethane			122.6		%		50-140	21-SEP-20
Bromoform			118.2		%		50-140	21-SEP-20
Bromomethane			101.4		%		50-140	21-SEP-20
Carbon tetrachloride			113.1		%		50-140	21-SEP-20
Chlorobenzene			115.3		%		50-140	21-SEP-20
Chloroform			119.1		%		50-140	21-SEP-20
cis-1,2-Dichloroethylene			121.3		%		50-140	21-SEP-20
cis-1,3-Dichloropropene			105.1		%		50-140	21-SEP-20
Dibromochloromethane			109.2		%		50-140	21-SEP-20
Dichlorodifluoromethane			61.1		%		50-140	21-SEP-20
Ethylbenzene			108.6		%		50-140	21-SEP-20
n-Hexane			98.6		%		50-140	21-SEP-20
Methylene Chloride			113.7		%		50-140	21-SEP-20
MTBE			113.1		%		50-140	21-SEP-20
m+p-Xylenes			111.9		%		50-140	21-SEP-20
Methyl Ethyl Ketone			102.4		%		50-140	21-SEP-20
Methyl Isobutyl Ketone			102.2		%		50-140	21-SEP-20
o-Xylene			118.4		%		50-140	21-SEP-20
Styrene			109.7		%		50-140	21-SEP-20
Tetrachloroethylene			109.5		%		50-140	21-SEP-20
Toluene			109.7		%		50-140	21-SEP-20
trans-1,2-Dichloroethylene			112.4		%		50-140	21-SEP-20
trans-1,3-Dichloropropene			106.9		%		50-140	21-SEP-20
Trichloroethylene			115.0		%		50-140	21-SEP-20
Trichlorofluoromethane			102.0		%		50-140	21-SEP-20
Vinyl chloride			95.1		%		50-140	21-SEP-20

Quality Control Report

Workorder: L2502693 Report Date: 18-NOV-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

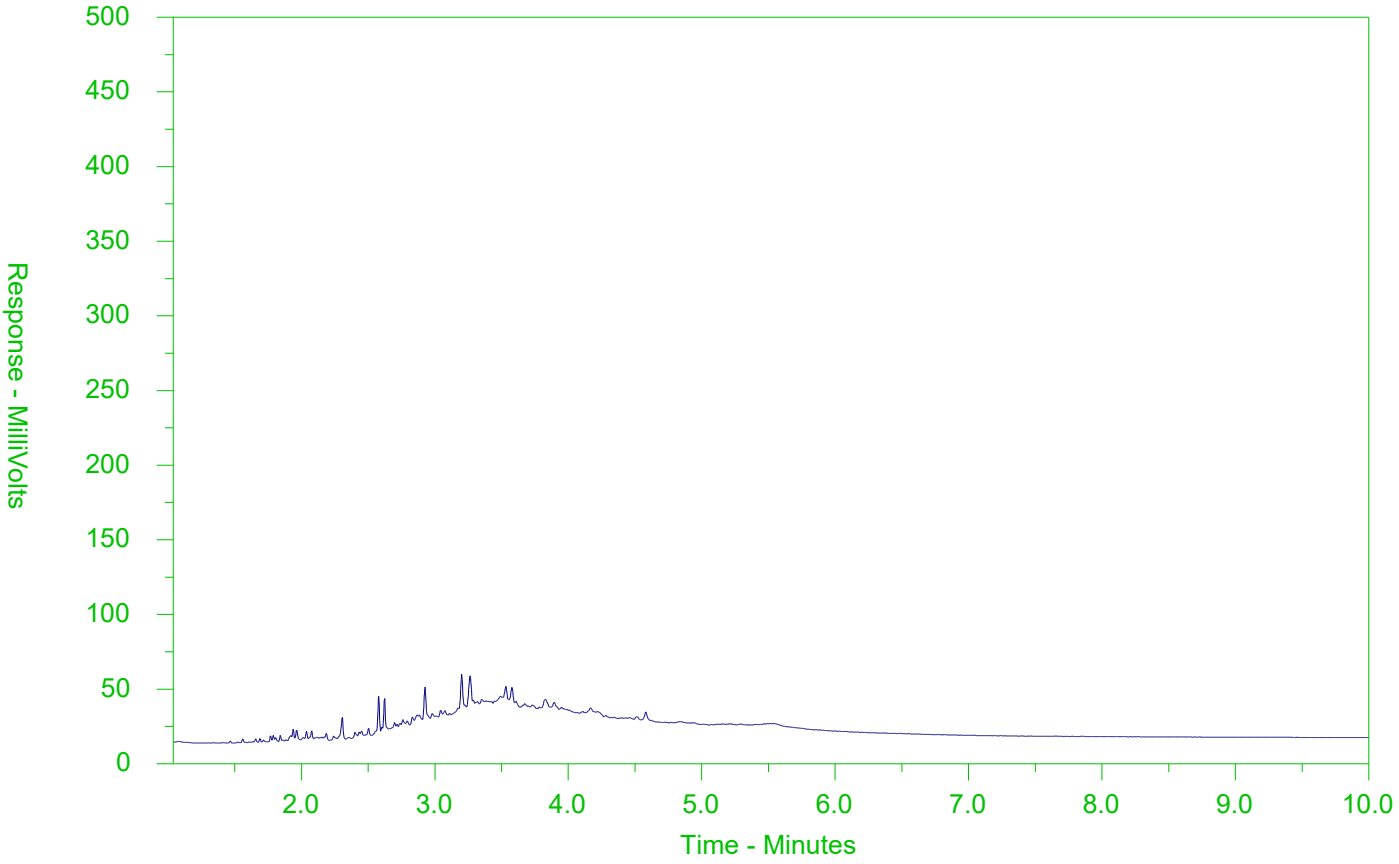
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2502693-2
Client Sample ID: BH 103 SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2502693-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: yhiweish@terraprobe.ca
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: lrossi@terraprobe.ca
Email 2:

Project Information

ALS Account # / Quote #: Q62481
Job #: 1-20-0249-42
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): L2502693KH **ALS Contact:** **Sampler:** YH

Turnaround Time (TAT) Options - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Icluding BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 103 SS1	11-Sep-20		Soil	2	✓	✓					
	BH 103 SS2	11-Sep-20		Soil	3			✓	✓			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				8.4			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Yousr Hiweish	Sep. 14/2020	11:30

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	9-14-20	1500

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

TERRAPROBE - BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 23-SEP-20
Report Date: 27-SEP-20 08:24 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2507368

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
(No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
(No parameter exceedances)						

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2507368-1 Sample Date: 23-SEP-20 Sample ID: BH 103 SS4
% Moisture	%	-	-	6.70

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2507368-1
			Sample Date	23-SEP-20
			Sample ID	BH 103 SS4
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046
Pyrene	ug/g	78	78	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	103.0
Surrogate: p-Terphenyl d14	%	-	-	116.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2507368 Report Date: 27-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R5235356								
WG3411573-3 DUP		**L2507270-10**						
% Moisture		4.64	4.41		%	5.1	20	25-SEP-20
WG3411573-2 LCS								
% Moisture			99.2		%		90-110	25-SEP-20
WG3411573-1 MB								
% Moisture			<0.25		%		0.25	25-SEP-20
PAH-511-WT	**Soil**							
Batch R5236040								
WG3411173-3 DUP		**WG3411173-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-SEP-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-SEP-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	25-SEP-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	25-SEP-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-SEP-20
WG3411173-2 LCS								
1-Methylnaphthalene			93.6		%		50-140	25-SEP-20
2-Methylnaphthalene			89.6		%		50-140	25-SEP-20
Acenaphthene			94.2		%		50-140	25-SEP-20
Acenaphthylene			84.9		%		50-140	25-SEP-20
Anthracene			87.1		%		50-140	25-SEP-20
Benzo(a)anthracene			83.4		%		50-140	25-SEP-20
Benzo(a)pyrene			84.9		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5236040								
WG3411173-2 LCS								
Benzo(b)fluoranthene			90.3		%		50-140	25-SEP-20
Benzo(g,h,i)perylene			75.7		%		50-140	25-SEP-20
Benzo(k)fluoranthene			95.7		%		50-140	25-SEP-20
Chrysene			94.1		%		50-140	25-SEP-20
Dibenzo(ah)anthracene			82.3		%		50-140	25-SEP-20
Fluoranthene			90.6		%		50-140	25-SEP-20
Fluorene			89.0		%		50-140	25-SEP-20
Indeno(1,2,3-cd)pyrene			75.3		%		50-140	25-SEP-20
Naphthalene			92.4		%		50-140	25-SEP-20
Phenanthrene			94.9		%		50-140	25-SEP-20
Pyrene			91.4		%		50-140	25-SEP-20
WG3411173-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-SEP-20
2-Methylnaphthalene			<0.030		ug/g		0.03	25-SEP-20
Acenaphthene			<0.050		ug/g		0.05	25-SEP-20
Acenaphthylene			<0.050		ug/g		0.05	25-SEP-20
Anthracene			<0.050		ug/g		0.05	25-SEP-20
Benzo(a)anthracene			<0.050		ug/g		0.05	25-SEP-20
Benzo(a)pyrene			<0.050		ug/g		0.05	25-SEP-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-SEP-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-SEP-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-SEP-20
Chrysene			<0.050		ug/g		0.05	25-SEP-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-SEP-20
Fluoranthene			<0.050		ug/g		0.05	25-SEP-20
Fluorene			<0.050		ug/g		0.05	25-SEP-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-SEP-20
Naphthalene			<0.013		ug/g		0.013	25-SEP-20
Phenanthrene			<0.046		ug/g		0.046	25-SEP-20
Pyrene			<0.050		ug/g		0.05	25-SEP-20
Surrogate: 2-Fluorobiphenyl			97.4		%		50-140	25-SEP-20
Surrogate: p-Terphenyl d14			112.9		%		50-140	25-SEP-20
WG3411173-4 MS		**WG3411173-5**						
1-Methylnaphthalene			91.5		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5236040								
WG3411173-4 MS		**WG3411173-5**						
2-Methylnaphthalene			86.8		%		50-140	25-SEP-20
Acenaphthene			93.1		%		50-140	25-SEP-20
Acenaphthylene			84.8		%		50-140	25-SEP-20
Anthracene			84.7		%		50-140	25-SEP-20
Benzo(a)anthracene			82.9		%		50-140	25-SEP-20
Benzo(a)pyrene			83.7		%		50-140	25-SEP-20
Benzo(b)fluoranthene			86.7		%		50-140	25-SEP-20
Benzo(g,h,i)perylene			69.0		%		50-140	25-SEP-20
Benzo(k)fluoranthene			90.5		%		50-140	25-SEP-20
Chrysene			91.4		%		50-140	25-SEP-20
Dibenzo(ah)anthracene			76.4		%		50-140	25-SEP-20
Fluoranthene			87.9		%		50-140	25-SEP-20
Fluorene			87.2		%		50-140	25-SEP-20
Indeno(1,2,3-cd)pyrene			75.5		%		50-140	25-SEP-20
Naphthalene			89.5		%		50-140	25-SEP-20
Phenanthrene			91.4		%		50-140	25-SEP-20
Pyrene			88.7		%		50-140	25-SEP-20

Quality Control Report

Workorder: L2507368 Report Date: 27-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2507368-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ ☑ NO
	Copy of Invoice with Report ☑ ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution

Select Report Format: ☑ ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ ☐ NO

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: yhiweish@terraprobe.ca

Email 2:

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: lrossi@terraprobe.ca

Email 2:

Project Information

ALS Account # / Quote #: Q62481

Job #: 1-20-0249-42

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2507368

ALS Contact: ES

Sampler: YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 103 SS4	23-Sep-20		Soil	1		✓					

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ ☑ NO

Are samples for human consumption/ use? ☐ ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.9				0.3			

SHIPMENT RELEASE (client use)

Released by: Yousr Hiweish Date: Sep-23/2020 Time: 11:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Karan Sarta Date: 9/23/2020 Time: 15:21

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: 9-23-20 Time: 1700

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

TERRAPROBE-BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-NOV-20
Report Date: 25-NOV-20 15:53 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2530944

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
(No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
(No parameter exceedances)						

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2530944-1 Sample Date: 17-NOV-20 Sample ID: BH103 SS4
pH	pH units	-	-	8.16

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2530944 Report Date: 25-NOV-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Soil**							
Batch R5292496								
WG3448534-2 DUP		**L2531070-6**						
pH		8.05	8.01	J	pH units	0.04	0.3	20-NOV-20
WG3449076-1 LCS								
pH			7.00		pH units		6.9-7.1	20-NOV-20

Quality Control Report

Workorder: L2530944 Report Date: 25-NOV-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

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The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2530944-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	

Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Project Information	
ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only):	L2530944

Oil and Gas Required Fields (client use)		
AFE/Cost Center:		PO#
Major/Minor Code:		Routing Code:
Requisitioner:		
Location:		
ALS Contact:		Sampler: YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	pH	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH103 SS4	17-NOV-20		Soil	1	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
7.0			3.3		

SHIPMENT RELEASE (client use)		
Released by: Yousr Hiweish	Date: NOV. 17/2020	Time: 3:00

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by: Kiran Partab	Date: 11/18/2020	Time: 8:42

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: 11/18/20	Time: 1400

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

TERRAPROBE - BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 01-SEP-20
Report Date: 10-SEP-20 13:48 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2497295

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	Guideline

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)

(No parameter exceedances)

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)

(No parameter exceedances)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Physical Tests - SOIL

		Guide Limits					
Lab ID				L2497295-1	L2497295-2	L2497295-3	L2497295-4
Sample Date				01-SEP-20	01-SEP-20	01-SEP-20	01-SEP-20
Sample ID				BH 104 SS1	DUP3	BH 104 SS2	DUP4
Analyte	**Unit**	**#1**	**#2**				
Conductivity	mS/cm	0.7	0.7			0.184	0.182
% Moisture	%	-	-	7.14	7.63	6.31	5.90
pH	pH units	-	-			7.64	7.77

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Cyanides - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2497295-3 Sample Date: 01-SEP-20 Sample ID: BH 104 SS2	Lab ID: L2497295-4 Sample Date: 01-SEP-20 Sample ID: DUP4
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2497295-3, Sample Date: 01-SEP-20, Sample ID: BH 104 SS2	Lab ID: L2497295-4, Sample Date: 01-SEP-20, Sample ID: DUP4
SAR	SAR	5	5	2.34 SAR:M	2.60 SAR:M
Calcium (Ca)	mg/L	-	-	11.5	11.5
Magnesium (Mg)	mg/L	-	-	<0.50	<0.50
Sodium (Na)	mg/L	-	-	28.8	32.0

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Metals - SOIL

			Lab ID	L2497295-3	L2497295-4
			Sample Date	01-SEP-20	01-SEP-20
			Sample ID	BH 104 SS2	DUP4
		Guide Limits			
Analyte	**Unit**	**#1**	**#2**		
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0
Arsenic (As)	ug/g	18	18	1.7	1.6
Barium (Ba)	ug/g	390	390	20.4	20.6
Beryllium (Be)	ug/g	4	5	<0.50	<0.50
Boron (B)	ug/g	120	120	<5.0	<5.0
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.21	0.22
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50
Chromium (Cr)	ug/g	160	160	6.5	6.2
Cobalt (Co)	ug/g	22	22	2.7	2.5
Copper (Cu)	ug/g	140	180	7.4	7.3
Lead (Pb)	ug/g	120	120	4.0	3.8
Mercury (Hg)	ug/g	0.27	1.8	0.0093	0.0085
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	5.2	5.1
Selenium (Se)	ug/g	2.4	2.4	<1.0	<1.0
Silver (Ag)	ug/g	20	25	<0.20	<0.20
Thallium (Tl)	ug/g	1	1	<0.50	<0.50
Uranium (U)	ug/g	23	23	<1.0	<1.0
Vanadium (V)	ug/g	86	86	17.0	14.7
Zinc (Zn)	ug/g	340	340	13.2	13.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits			
Lab ID				L2497295-3	L2497295-4
Sample Date				01-SEP-20	01-SEP-20
Sample ID				BH 104 SS2	DUP4
Analyte	**Unit**	**#1**	**#2**		
Chromium, Hexavalent	ug/g	8	10	0.33	0.28

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

				Lab ID	L2497295-1	L2497295-2
				Sample Date	01-SEP-20	01-SEP-20
				Sample ID	BH 104 SS1	DUP3
		Guide Limits				
Analyte	Unit	#1	#2			
Acetone	ug/g	16	28		<0.50	<0.50
Benzene	ug/g	0.21	0.17		<0.0068	<0.0068
Bromodichloromethane	ug/g	1.5	1.9		<0.050	<0.050
Bromoform	ug/g	0.27	0.26		<0.050	<0.050
Bromomethane	ug/g	0.05	0.05		<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	0.12		<0.050	<0.050
Chlorobenzene	ug/g	2.4	2.7		<0.050	<0.050
Dibromochloromethane	ug/g	2.3	2.9		<0.050	<0.050
Chloroform	ug/g	0.05	0.18		<0.050	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05		<0.050	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7		<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6		<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097		<0.050	<0.050
Dichlorodifluoromethane	ug/g	16	25		<0.050	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6		<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05		<0.050	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05		<0.050	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5		<0.050	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75		<0.050	<0.050
Methylene Chloride	ug/g	0.1	0.96		<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085		<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	-	-		<0.030	<0.030
trans-1,3-Dichloropropene	ug/g	-	-		<0.030	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081		<0.042	<0.042
Ethylbenzene	ug/g	1.1	1.6		<0.018	<0.018
n-Hexane	ug/g	2.8	34		<0.050	<0.050
Methyl Ethyl Ketone	ug/g	16	44		<0.50	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3		<0.50	<0.50
MTBE	ug/g	0.75	1.4		<0.050	<0.050
Styrene	ug/g	0.7	2.2		<0.050	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2497295-1	L2497295-2
			Sample Date	01-SEP-20	01-SEP-20
			Sample ID	BH 104 SS1	DUP3
		Guide Limits			
Analyte	Unit	#1	#2		
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050	<0.050
Toluene	ug/g	2.3	6	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050	<0.050
Trichloroethylene	ug/g	0.061	0.52	0.011	0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020	<0.020
o-Xylene	ug/g	-	-	0.024	0.037
m+p-Xylenes	ug/g	-	-	<0.030	0.042
Xylenes (Total)	ug/g	3.1	25	<0.050	0.079
Surrogate: 4-Bromofluorobenzene	%	-	-	82.9	86.2
Surrogate: 1,4-Difluorobenzene	%	-	-	97.1	104.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

		Guide Limits			
Lab ID				L2497295-1	L2497295-2
Sample Date				01-SEP-20	01-SEP-20
Sample ID				BH 104 SS1	DUP3
Analyte	**Unit**	**#1**	**#2**		
F1 (C6-C10)	ug/g	55	65	<5.0	<5.0
F1-BTEX	ug/g	55	65	<5.0	<5.0
F2 (C10-C16)	ug/g	98	150	<10	<10
F3 (C16-C34)	ug/g	300	1300	<50	<50
F4 (C34-C50)	ug/g	2800	5600	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72
Chrom. to baseline at nC50		-	-	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	128.9	86.1
Surrogate: 3,4-Dichlorotoluene	%	-	-	88.4	86.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2497295-3	L2497295-4
			Sample Date	01-SEP-20	01-SEP-20
			Sample ID	BH 104 SS2	DUP4
		Guide Limits			
Analyte	**Unit**	**#1**	**#2**		
Acenaphthene	ug/g	7.9	29	<0.050	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050
Anthracene	ug/g	0.67	0.74	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050
Chrysene	ug/g	7	7.8	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050	<0.050
Fluorene	ug/g	62	69	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046	<0.046
Pyrene	ug/g	78	78	<0.050	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	90.8	93.0
Surrogate: p-Terphenyl d14	%	-	-	104.6	106.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Polychlorinated Biphenyls - SOIL

			Lab ID	L2497295-1	L2497295-2
			Sample Date	01-SEP-20	01-SEP-20
			Sample ID	BH 104 SS1	DUP3
Analyte	**Unit**	**Guide Limits #1**	**#2**		
Aroclor 1242	ug/g	-	-	<0.010	<0.010
Aroclor 1248	ug/g	-	-	<0.010	<0.010
Aroclor 1254	ug/g	-	-	<0.010	<0.010
Aroclor 1260	ug/g	-	-	<0.010	<0.010
Total PCBs	ug/g	0.35	0.35	<0.020	<0.020
Surrogate: d14-Terphenyl	%	-	-	103.6	95.1

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2497295 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5218423								
WG3400366-4 DUP		**L2497121-1**						
Boron (B), Hot Water Ext.		0.20	0.18		ug/g	12	30	09-SEP-20
WG3400366-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			106.3		%		70-130	09-SEP-20
WG3400366-3 LCS								
Boron (B), Hot Water Ext.			104.0		%		70-130	09-SEP-20
WG3400366-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	09-SEP-20
CN-WAD-R511-WT	**Soil**							
Batch R5214764								
WG3397119-3 DUP		**L2497335-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	04-SEP-20
WG3397119-2 LCS								
Cyanide, Weak Acid Diss			89.1		%		80-120	04-SEP-20
WG3397119-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	04-SEP-20
WG3397119-4 MS		**L2497335-1**						
Cyanide, Weak Acid Diss			106.1		%		70-130	04-SEP-20
CR-CR6-IC-WT	**Soil**							
Batch R5213498								
WG3397902-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			106.1		%		70-130	04-SEP-20
WG3397902-3 DUP		**L2495745-2**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/g	N/A	35	04-SEP-20
WG3397902-2 LCS								
Chromium, Hexavalent			107.4		%		80-120	04-SEP-20
WG3397902-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	04-SEP-20
EC-WT	**Soil**							
Batch R5218005								
WG3400368-4 DUP		**WG3400368-3**						
Conductivity		0.279	0.268		mS/cm	4.0	20	09-SEP-20
WG3400368-2 IRM		**WT SAR4**						
Conductivity			101.4		%		70-130	09-SEP-20
WG3400700-1 LCS								
Conductivity			99.9		%		90-110	09-SEP-20
WG3400368-1 MB								

Quality Control Report

Workorder: L2497295 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5218005								
WG3400368-1 MB								
Conductivity			<0.0040		mS/cm		0.004	09-SEP-20
F1-HS-511-WT	**Soil**							
Batch R5210021								
WG3396434-4 DUP		**WG3396434-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	03-SEP-20
WG3396434-2 LCS								
F1 (C6-C10)			98.7		%		80-120	03-SEP-20
WG3396434-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	03-SEP-20
Surrogate: 3,4-Dichlorotoluene			94.3		%		60-140	03-SEP-20
WG3396434-5 MS		**WG3396434-3**						
F1 (C6-C10)			98.4		%		60-140	03-SEP-20
WG3396434-6 MS		**WG3396434-7**						
F1 (C6-C10)			93.7		%		60-140	03-SEP-20
F2-F4-511-WT	**Soil**							
Batch R5211339								
WG3397666-3 DUP		**WG3397666-5**						
F2 (C10-C16)		<50	10		ug/g	6.1	30	04-SEP-20
F3 (C16-C34)		320	241		ug/g	30	30	04-SEP-20
F4 (C34-C50)		<250	114	J	ug/g	65	500	04-SEP-20
WG3397666-2 LCS								
F2 (C10-C16)			94.2		%		80-120	04-SEP-20
F3 (C16-C34)			90.4		%		80-120	04-SEP-20
F4 (C34-C50)			80.5		%		80-120	04-SEP-20
WG3397666-1 MB								
F2 (C10-C16)			<10		ug/g		10	04-SEP-20
F3 (C16-C34)			<50		ug/g		50	04-SEP-20
F4 (C34-C50)			<50		ug/g		50	04-SEP-20
Surrogate: 2-Bromobenzotrifluoride			85.0		%		60-140	04-SEP-20
WG3397666-4 MS		**WG3397666-5**						
F2 (C10-C16)			91.9		%		60-140	04-SEP-20
F3 (C16-C34)			90.4		%		60-140	04-SEP-20
F4 (C34-C50)			93.4		%		60-140	04-SEP-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5219619								
WG3400362-2 CRM		**WT-SS-2**						
Mercury (Hg)			107.8		%		70-130	10-SEP-20
WG3400362-6 DUP		**WG3400362-5**						
Mercury (Hg)		0.0267	0.0259		ug/g	3.0	40	10-SEP-20
WG3400362-3 LCS								
Mercury (Hg)			106.0		%		80-120	10-SEP-20
WG3400362-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	10-SEP-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5218876								
WG3400362-2 CRM		**WT-SS-2**						
Antimony (Sb)			103.5		%		70-130	09-SEP-20
Arsenic (As)			98.0		%		70-130	09-SEP-20
Barium (Ba)			114.8		%		70-130	09-SEP-20
Beryllium (Be)			97.8		%		70-130	09-SEP-20
Boron (B)			8.0		mg/kg		3.5-13.5	09-SEP-20
Cadmium (Cd)			99.4		%		70-130	09-SEP-20
Chromium (Cr)			96.1		%		70-130	09-SEP-20
Cobalt (Co)			93.5		%		70-130	09-SEP-20
Copper (Cu)			91.6		%		70-130	09-SEP-20
Lead (Pb)			96.3		%		70-130	09-SEP-20
Molybdenum (Mo)			104.5		%		70-130	09-SEP-20
Nickel (Ni)			94.0		%		70-130	09-SEP-20
Selenium (Se)			0.13		mg/kg		0-0.34	09-SEP-20
Silver (Ag)			94.9		%		70-130	09-SEP-20
Thallium (Tl)			0.071		mg/kg		0.029-0.129	09-SEP-20
Uranium (U)			86.5		%		70-130	09-SEP-20
Vanadium (V)			96.9		%		70-130	09-SEP-20
Zinc (Zn)			91.5		%		70-130	09-SEP-20
WG3400362-6 DUP		**WG3400362-5**						
Antimony (Sb)		0.12	0.12		ug/g	0.2	30	09-SEP-20
Arsenic (As)		5.20	5.21		ug/g	0.2	30	09-SEP-20
Barium (Ba)		107	107		ug/g	0.2	40	09-SEP-20
Beryllium (Be)		0.67	0.67		ug/g	0.2	30	09-SEP-20
Boron (B)		8.3	8.3		ug/g	0.2	30	09-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5218876								
WG3400362-6 DUP		**WG3400362-5**						
Cadmium (Cd)		0.082	0.082		ug/g	0.2	30	09-SEP-20
Chromium (Cr)		21.5	21.5		ug/g	0.2	30	09-SEP-20
Cobalt (Co)		10.8	10.9		ug/g	0.2	30	09-SEP-20
Copper (Cu)		26.8	26.8		ug/g	0.2	30	09-SEP-20
Lead (Pb)		12.1	12.1		ug/g	0.2	40	09-SEP-20
Molybdenum (Mo)		0.43	0.43		ug/g	0.2	40	09-SEP-20
Nickel (Ni)		23.9	24.0		ug/g	0.2	30	09-SEP-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	09-SEP-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	09-SEP-20
Thallium (Tl)		0.146	0.146		ug/g	0.2	30	09-SEP-20
Uranium (U)		0.521	0.522		ug/g	0.2	30	09-SEP-20
Vanadium (V)		32.2	32.3		ug/g	0.2	30	09-SEP-20
Zinc (Zn)		53.4	53.5		ug/g	0.2	30	09-SEP-20
WG3400362-4 LCS								
Antimony (Sb)			102.3		%		80-120	09-SEP-20
Arsenic (As)			99.9		%		80-120	09-SEP-20
Barium (Ba)			109.1		%		80-120	09-SEP-20
Beryllium (Be)			94.2		%		80-120	09-SEP-20
Boron (B)			91.0		%		80-120	09-SEP-20
Cadmium (Cd)			92.9		%		80-120	09-SEP-20
Chromium (Cr)			94.7		%		80-120	09-SEP-20
Cobalt (Co)			92.2		%		80-120	09-SEP-20
Copper (Cu)			90.1		%		80-120	09-SEP-20
Lead (Pb)			100.8		%		80-120	09-SEP-20
Molybdenum (Mo)			101.2		%		80-120	09-SEP-20
Nickel (Ni)			92.0		%		80-120	09-SEP-20
Selenium (Se)			96.8		%		80-120	09-SEP-20
Silver (Ag)			98.2		%		80-120	09-SEP-20
Thallium (Tl)			97.8		%		80-120	09-SEP-20
Uranium (U)			93.4		%		80-120	09-SEP-20
Vanadium (V)			100.4		%		80-120	09-SEP-20
Zinc (Zn)			89.5		%		80-120	09-SEP-20
WG3400362-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5218876								
WG3400362-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	09-SEP-20
Arsenic (As)			<0.10		mg/kg		0.1	09-SEP-20
Barium (Ba)			<0.50		mg/kg		0.5	09-SEP-20
Beryllium (Be)			<0.10		mg/kg		0.1	09-SEP-20
Boron (B)			<5.0		mg/kg		5	09-SEP-20
Cadmium (Cd)			<0.020		mg/kg		0.02	09-SEP-20
Chromium (Cr)			<0.50		mg/kg		0.5	09-SEP-20
Cobalt (Co)			<0.10		mg/kg		0.1	09-SEP-20
Copper (Cu)			<0.50		mg/kg		0.5	09-SEP-20
Lead (Pb)			<0.50		mg/kg		0.5	09-SEP-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	09-SEP-20
Nickel (Ni)			<0.50		mg/kg		0.5	09-SEP-20
Selenium (Se)			<0.20		mg/kg		0.2	09-SEP-20
Silver (Ag)			<0.10		mg/kg		0.1	09-SEP-20
Thallium (Tl)			<0.050		mg/kg		0.05	09-SEP-20
Uranium (U)			<0.050		mg/kg		0.05	09-SEP-20
Vanadium (V)			<0.20		mg/kg		0.2	09-SEP-20
Zinc (Zn)			<2.0		mg/kg		2	09-SEP-20
MOISTURE-WT	**Soil**							
Batch R5210078								
WG3397314-3 DUP		**L2497323-1**						
% Moisture		9.19	9.21		%	0.2	20	03-SEP-20
WG3397314-2 LCS								
% Moisture			102.5		%		90-110	03-SEP-20
WG3397314-1 MB								
% Moisture			<0.25		%		0.25	03-SEP-20
PAH-511-WT	**Soil**							
Batch R5211656								
WG3397024-3 DUP		**WG3397024-5**						
1-Methylnaphthalene		0.209	0.216		ug/g	3.3	40	05-SEP-20
2-Methylnaphthalene		0.230	0.226		ug/g	1.7	40	05-SEP-20
Acenaphthene		0.148	0.118		ug/g	23	40	05-SEP-20
Acenaphthylene		0.078	0.079		ug/g	1.7	40	05-SEP-20
Anthracene		0.509	0.404		ug/g	23	40	05-SEP-20

Quality Control Report

Workorder: L2497295 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5211656								
WG3397024-3 DUP		**WG3397024-5**						
Benzo(a)anthracene		1.38	1.13		ug/g	20	40	05-SEP-20
Benzo(a)pyrene		1.21	0.996		ug/g	19	40	05-SEP-20
Benzo(b)fluoranthene		1.59	1.32		ug/g	18	40	05-SEP-20
Benzo(g,h,i)perylene		0.843	0.712		ug/g	17	40	05-SEP-20
Benzo(k)fluoranthene		0.497	0.414		ug/g	18	40	05-SEP-20
Chrysene		1.44	1.22		ug/g	17	40	05-SEP-20
Dibenzo(ah)anthracene		0.235	0.194		ug/g	19	40	05-SEP-20
Fluoranthene		2.88	2.31		ug/g	22	40	05-SEP-20
Fluorene		0.147	0.124		ug/g	17	40	05-SEP-20
Indeno(1,2,3-cd)pyrene		0.746	0.646		ug/g	14	40	05-SEP-20
Naphthalene		0.166	0.165		ug/g	0.2	40	05-SEP-20
Phenanthrene		1.96	1.57		ug/g	22	40	05-SEP-20
Pyrene		2.37	1.91		ug/g	22	40	05-SEP-20
WG3397024-2 LCS								
1-Methylnaphthalene			86.3		%		50-140	05-SEP-20
2-Methylnaphthalene			83.3		%		50-140	05-SEP-20
Acenaphthene			90.3		%		50-140	05-SEP-20
Acenaphthylene			84.8		%		50-140	05-SEP-20
Anthracene			83.5		%		50-140	05-SEP-20
Benzo(a)anthracene			86.6		%		50-140	05-SEP-20
Benzo(a)pyrene			86.4		%		50-140	05-SEP-20
Benzo(b)fluoranthene			85.6		%		50-140	05-SEP-20
Benzo(g,h,i)perylene			85.6		%		50-140	05-SEP-20
Benzo(k)fluoranthene			87.8		%		50-140	05-SEP-20
Chrysene			98.3		%		50-140	05-SEP-20
Dibenzo(ah)anthracene			81.6		%		50-140	05-SEP-20
Fluoranthene			84.2		%		50-140	05-SEP-20
Fluorene			84.4		%		50-140	05-SEP-20
Indeno(1,2,3-cd)pyrene			79.0		%		50-140	05-SEP-20
Naphthalene			85.0		%		50-140	05-SEP-20
Phenanthrene			87.4		%		50-140	05-SEP-20
Pyrene			85.3		%		50-140	05-SEP-20
WG3397024-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5211656								
WG3397024-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	05-SEP-20
2-Methylnaphthalene			<0.030		ug/g		0.03	05-SEP-20
Acenaphthene			<0.050		ug/g		0.05	05-SEP-20
Acenaphthylene			<0.050		ug/g		0.05	05-SEP-20
Anthracene			<0.050		ug/g		0.05	05-SEP-20
Benzo(a)anthracene			<0.050		ug/g		0.05	05-SEP-20
Benzo(a)pyrene			<0.050		ug/g		0.05	05-SEP-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	05-SEP-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	05-SEP-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	05-SEP-20
Chrysene			<0.050		ug/g		0.05	05-SEP-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	05-SEP-20
Fluoranthene			<0.050		ug/g		0.05	05-SEP-20
Fluorene			<0.050		ug/g		0.05	05-SEP-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	05-SEP-20
Naphthalene			<0.013		ug/g		0.013	05-SEP-20
Phenanthrene			<0.046		ug/g		0.046	05-SEP-20
Pyrene			<0.050		ug/g		0.05	05-SEP-20
Surrogate: 2-Fluorobiphenyl			93.5		%		50-140	05-SEP-20
Surrogate: p-Terphenyl d14			106.2		%		50-140	05-SEP-20
WG3397024-4 MS		**WG3397024-5**						
1-Methylnaphthalene			86.6		%		50-140	05-SEP-20
2-Methylnaphthalene			82.6		%		50-140	05-SEP-20
Acenaphthene			96.1		%		50-140	05-SEP-20
Acenaphthylene			89.0		%		50-140	05-SEP-20
Anthracene			85.9		%		50-140	05-SEP-20
Benzo(a)anthracene			N/A	MS-B	%		-	05-SEP-20
Benzo(a)pyrene			N/A	MS-B	%		-	05-SEP-20
Benzo(b)fluoranthene			N/A	MS-B	%		-	05-SEP-20
Benzo(g,h,i)perylene			88.6		%		50-140	05-SEP-20
Benzo(k)fluoranthene			112.7		%		50-140	05-SEP-20
Chrysene			N/A	MS-B	%		-	05-SEP-20
Dibenzo(ah)anthracene			81.3		%		50-140	05-SEP-20
Fluoranthene			N/A	MS-B	%		-	05-SEP-20

Quality Control Report

Workorder: L2497295 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5211656								
WG3397024-4 MS		**WG3397024-5**						
Fluorene			91.0		%		50-140	05-SEP-20
Indeno(1,2,3-cd)pyrene			80.2		%		50-140	05-SEP-20
Naphthalene			84.8		%		50-140	05-SEP-20
Phenanthrene			N/A	MS-B	%		-	05-SEP-20
Pyrene			N/A	MS-B	%		-	05-SEP-20
PCB-511-WT	**Soil**							
Batch R5210044								
WG3397121-3 DUP		**WG3397121-5**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
WG3397121-2 LCS								
Aroclor 1242			97.9		%		60-140	03-SEP-20
Aroclor 1248			88.0		%		60-140	03-SEP-20
Aroclor 1254			84.2		%		60-140	03-SEP-20
Aroclor 1260			91.3		%		60-140	03-SEP-20
WG3397121-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	03-SEP-20
Aroclor 1248			<0.010		ug/g		0.01	03-SEP-20
Aroclor 1254			<0.010		ug/g		0.01	03-SEP-20
Aroclor 1260			<0.010		ug/g		0.01	03-SEP-20
Surrogate: d14-Terphenyl			91.6		%		60-140	03-SEP-20
WG3397121-4 MS		**WG3397121-5**						
Aroclor 1242			93.6		%		60-140	03-SEP-20
Aroclor 1254			82.8		%		60-140	03-SEP-20
Aroclor 1260			90.0		%		60-140	03-SEP-20
PH-WT	**Soil**							
Batch R5210950								
WG3397211-1 DUP		**L2497295-3**						
pH		7.64	7.67	J	pH units	0.03	0.3	04-SEP-20
WG3398421-1 LCS								
pH			6.96		pH units		6.9-7.1	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Soil**							
Batch R5215396								
WG3397793-1 DUP		**L2495745-2**						
pH		7.15	7.26	J	pH units	0.11	0.3	08-SEP-20
WG3399820-1 LCS								
pH			6.98		pH units		6.9-7.1	08-SEP-20
SAR-R511-WT	**Soil**							
Batch R5218525								
WG3400368-4 DUP		**WG3400368-3**						
Calcium (Ca)		4.58	5.31		mg/L	15	30	09-SEP-20
Sodium (Na)		56.7	59.8		mg/L	5.3	30	09-SEP-20
Magnesium (Mg)		0.60	0.67		mg/L	10	30	09-SEP-20
WG3400368-2 IRM		**WT SAR4**						
Calcium (Ca)			97.4		%		70-130	09-SEP-20
Sodium (Na)			97.4		%		70-130	09-SEP-20
Magnesium (Mg)			98.3		%		70-130	09-SEP-20
WG3400368-5 LCS								
Calcium (Ca)			105.0		%		80-120	09-SEP-20
Sodium (Na)			109.2		%		80-120	09-SEP-20
Magnesium (Mg)			101.2		%		80-120	09-SEP-20
WG3400368-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	09-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	09-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	09-SEP-20
VOC-511-HS-WT	**Soil**							
Batch R5210021								
WG3396434-4 DUP		**WG3396434-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210021								
WG3396434-4 DUP		**WG3396434-3**						
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-SEP-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	03-SEP-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-SEP-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	03-SEP-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-SEP-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-SEP-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	03-SEP-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	03-SEP-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	03-SEP-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	03-SEP-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	03-SEP-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	03-SEP-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	03-SEP-20
WG3396434-2 LCS								
1,1,1,2-Tetrachloroethane			99.6		%		60-130	03-SEP-20
1,1,2,2-Tetrachloroethane			103.9		%		60-130	03-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210021								
WG3396434-2 LCS								
1,1,1-Trichloroethane			102.0		%		60-130	03-SEP-20
1,1,2-Trichloroethane			101.4		%		60-130	03-SEP-20
1,1-Dichloroethane			104.3		%		60-130	03-SEP-20
1,1-Dichloroethylene			97.7		%		60-130	03-SEP-20
1,2-Dibromoethane			103.7		%		70-130	03-SEP-20
1,2-Dichlorobenzene			103.9		%		70-130	03-SEP-20
1,2-Dichloroethane			98.4		%		60-130	03-SEP-20
1,2-Dichloropropane			103.2		%		70-130	03-SEP-20
1,3-Dichlorobenzene			107.2		%		70-130	03-SEP-20
1,4-Dichlorobenzene			106.6		%		70-130	03-SEP-20
Acetone			110.8		%		60-140	03-SEP-20
Benzene			103.9		%		70-130	03-SEP-20
Bromodichloromethane			113.5		%		50-140	03-SEP-20
Bromoform			101.0		%		70-130	03-SEP-20
Bromomethane			123.2		%		50-140	03-SEP-20
Carbon tetrachloride			100.7		%		70-130	03-SEP-20
Chlorobenzene			105.1		%		70-130	03-SEP-20
Chloroform			105.8		%		70-130	03-SEP-20
cis-1,2-Dichloroethylene			100.7		%		70-130	03-SEP-20
cis-1,3-Dichloropropene			93.4		%		70-130	03-SEP-20
Dibromochloromethane			100.4		%		60-130	03-SEP-20
Dichlorodifluoromethane			79.7		%		50-140	03-SEP-20
Ethylbenzene			104.8		%		70-130	03-SEP-20
n-Hexane			98.3		%		70-130	03-SEP-20
Methylene Chloride			100.6		%		70-130	03-SEP-20
MTBE			101.0		%		70-130	03-SEP-20
m+p-Xylenes			104.6		%		70-130	03-SEP-20
Methyl Ethyl Ketone			98.7		%		60-140	03-SEP-20
Methyl Isobutyl Ketone			102.4		%		60-140	03-SEP-20
o-Xylene			112.1		%		70-130	03-SEP-20
Styrene			98.6		%		70-130	03-SEP-20
Tetrachloroethylene			105.4		%		60-130	03-SEP-20
Toluene			105.0		%		70-130	03-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210021								
WG3396434-2 LCS								
trans-1,2-Dichloroethylene			98.7		%		60-130	03-SEP-20
trans-1,3-Dichloropropene			105.0		%		70-130	03-SEP-20
Trichloroethylene			103.4		%		60-130	03-SEP-20
Trichlorofluoromethane			97.2		%		50-140	03-SEP-20
Vinyl chloride			110.1		%		60-140	03-SEP-20
WG3396434-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	03-SEP-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	03-SEP-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	03-SEP-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	03-SEP-20
1,1-Dichloroethane			<0.050		ug/g		0.05	03-SEP-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	03-SEP-20
1,2-Dibromoethane			<0.050		ug/g		0.05	03-SEP-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	03-SEP-20
1,2-Dichloroethane			<0.050		ug/g		0.05	03-SEP-20
1,2-Dichloropropane			<0.050		ug/g		0.05	03-SEP-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	03-SEP-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	03-SEP-20
Acetone			<0.50		ug/g		0.5	03-SEP-20
Benzene			<0.0068		ug/g		0.0068	03-SEP-20
Bromodichloromethane			<0.050		ug/g		0.05	03-SEP-20
Bromoform			<0.050		ug/g		0.05	03-SEP-20
Bromomethane			<0.050		ug/g		0.05	03-SEP-20
Carbon tetrachloride			<0.050		ug/g		0.05	03-SEP-20
Chlorobenzene			<0.050		ug/g		0.05	03-SEP-20
Chloroform			<0.050		ug/g		0.05	03-SEP-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	03-SEP-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	03-SEP-20
Dibromochloromethane			<0.050		ug/g		0.05	03-SEP-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	03-SEP-20
Ethylbenzene			<0.018		ug/g		0.018	03-SEP-20
n-Hexane			<0.050		ug/g		0.05	03-SEP-20
Methylene Chloride			<0.050		ug/g		0.05	03-SEP-20
MTBE			<0.050		ug/g		0.05	03-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210021								
WG3396434-1 MB								
m+p-Xylenes			<0.030		ug/g		0.03	03-SEP-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	03-SEP-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	03-SEP-20
o-Xylene			<0.020		ug/g		0.02	03-SEP-20
Styrene			<0.050		ug/g		0.05	03-SEP-20
Tetrachloroethylene			<0.050		ug/g		0.05	03-SEP-20
Toluene			<0.080		ug/g		0.08	03-SEP-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	03-SEP-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	03-SEP-20
Trichloroethylene			<0.010		ug/g		0.01	03-SEP-20
Trichlorofluoromethane			<0.050		ug/g		0.05	03-SEP-20
Vinyl chloride			<0.020		ug/g		0.02	03-SEP-20
Surrogate: 1,4-Difluorobenzene			102.6		%		50-140	03-SEP-20
Surrogate: 4-Bromofluorobenzene			88.2		%		50-140	03-SEP-20
WG3396434-5 MS		**WG3396434-3**						
1,1,1,2-Tetrachloroethane			109.1		%		50-140	03-SEP-20
1,1,2,2-Tetrachloroethane			118.2		%		50-140	03-SEP-20
1,1,1-Trichloroethane			113.7		%		50-140	03-SEP-20
1,1,2-Trichloroethane			111.8		%		50-140	03-SEP-20
1,1-Dichloroethane			115.4		%		50-140	03-SEP-20
1,1-Dichloroethylene			107.0		%		50-140	03-SEP-20
1,2-Dibromoethane			114.2		%		50-140	03-SEP-20
1,2-Dichlorobenzene			111.0		%		50-140	03-SEP-20
1,2-Dichloroethane			108.6		%		50-140	03-SEP-20
1,2-Dichloropropane			113.2		%		50-140	03-SEP-20
1,3-Dichlorobenzene			111.4		%		50-140	03-SEP-20
1,4-Dichlorobenzene			110.1		%		50-140	03-SEP-20
Acetone			124.9		%		50-140	03-SEP-20
Benzene			113.7		%		50-140	03-SEP-20
Bromodichloromethane			124.4		%		50-140	03-SEP-20
Bromoform			113.1		%		50-140	03-SEP-20
Bromomethane			131.7		%		50-140	03-SEP-20
Carbon tetrachloride			110.1		%		50-140	03-SEP-20
Chlorobenzene			113.0		%		50-140	03-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5210021								
WG3396434-5 MS		**WG3396434-3**						
Chloroform			116.2		%		50-140	03-SEP-20
cis-1,2-Dichloroethylene			109.0		%		50-140	03-SEP-20
cis-1,3-Dichloropropene			95.6		%		50-140	03-SEP-20
Dibromochloromethane			110.3		%		50-140	03-SEP-20
Dichlorodifluoromethane			95.0		%		50-140	03-SEP-20
Ethylbenzene			112.7		%		50-140	03-SEP-20
n-Hexane			109.5		%		50-140	03-SEP-20
Methylene Chloride			110.2		%		50-140	03-SEP-20
MTBE			107.9		%		50-140	03-SEP-20
m+p-Xylenes			111.4		%		50-140	03-SEP-20
Methyl Ethyl Ketone			98.9		%		50-140	03-SEP-20
Methyl Isobutyl Ketone			115.0		%		50-140	03-SEP-20
o-Xylene			121.1		%		50-140	03-SEP-20
Styrene			105.8		%		50-140	03-SEP-20
Tetrachloroethylene			110.8		%		50-140	03-SEP-20
Toluene			113.3		%		50-140	03-SEP-20
trans-1,2-Dichloroethylene			104.7		%		50-140	03-SEP-20
trans-1,3-Dichloropropene			106.5		%		50-140	03-SEP-20
Trichloroethylene			111.0		%		50-140	03-SEP-20
Trichlorofluoromethane			107.6		%		50-140	03-SEP-20
Vinyl chloride			120.4		%		50-140	03-SEP-20

Quality Control Report

Workorder: L2497295 Report Date: 10-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

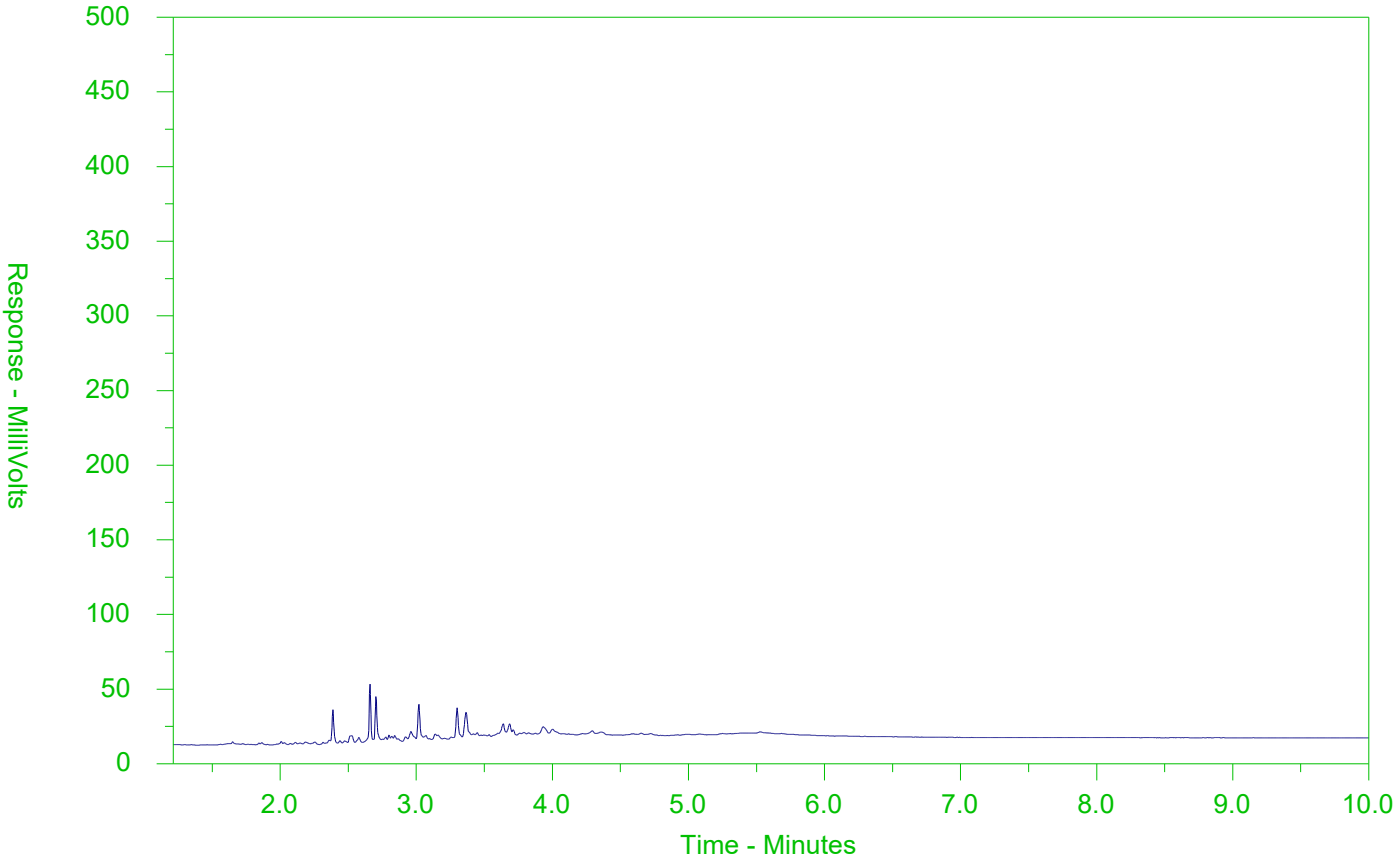
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2497295-1
Client Sample ID: BH 104 SS1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

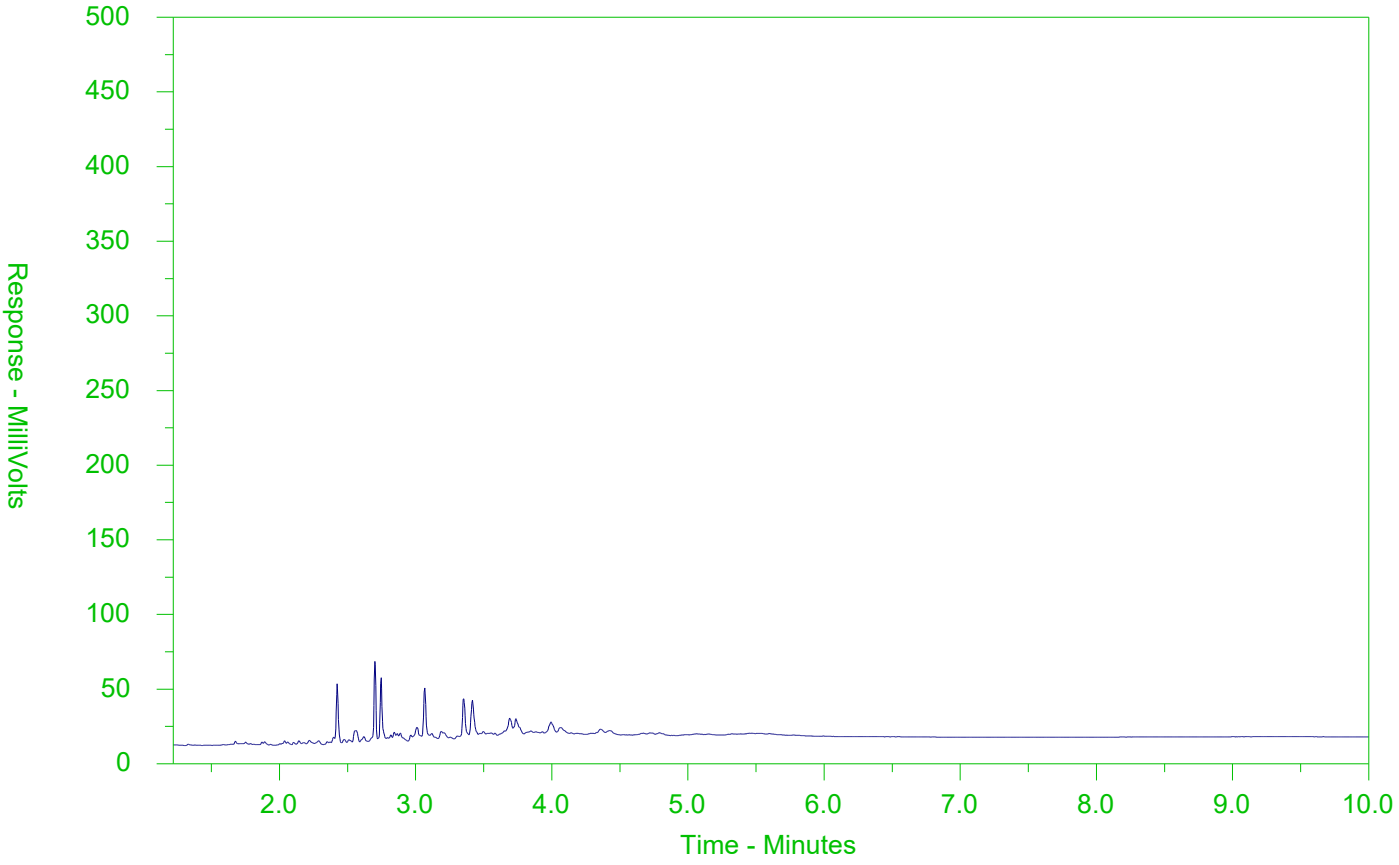
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2497295-2
Client Sample ID: DUP3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2497295-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Project Information

ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	
ALS Lab Work Order # (lab use only):	L2497295 A

Report Form

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: yhiweish@terraprobe.ca

Email 2:

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: lrossi@terraprobe.ca

Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#:

Major/Minor Code: | Routing Code:

Requisitioner:

Location:

ALS Contact: | Sampler: YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 104 SS1	01-Sep-20		Soil	4			✓	✓	✓			
	DUP3	"		"	4			✓	✓	✓			
	BH 104 SS2	"		"	2	✓	✓				Limited Soil		
	DUP 4	"		"	2	✓	✓				Limited Soil		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

~~MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04~~

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☐ | Ice Cubes ☒ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				5.8			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Yousr Hiweish	Sep. 1/2020	11:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	4-1-20	1645

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

TERRAPROBE - BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-AUG-20
Report Date: 21-AUG-20 20:22 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2490028

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2490028-1	BH105 SS1	Saturated Paste Extractables	SAR	9.68	5	SAR
L2490028-2	DUP1	Saturated Paste Extractables	SAR	11.0	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2490028-1	BH105 SS1	Saturated Paste Extractables	SAR	9.68	5	SAR
L2490028-2	DUP1	Saturated Paste Extractables	SAR	11.0	5	SAR

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits					
Lab ID				L2490028-1	L2490028-2	L2490028-3	L2490028-4
Sample Date				14-AUG-20	14-AUG-20	14-AUG-20	14-AUG-20
Sample ID				BH105 SS1	DUP1	BH105 SS2	DUP2
Analyte	**Unit**	**#1**	**#2**				
Conductivity	mS/cm	0.7	0.7	0.307	0.306		
% Moisture	%	-	-	8.31	8.45	4.82	5.30
pH	pH units	-	-	7.74	7.85		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Cyanides - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2490028-1 Sample Date: 14-AUG-20 Sample ID: BH105 SS1	Lab ID: L2490028-2 Sample Date: 14-AUG-20 Sample ID: DUP1
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2490028-1 Sample Date: 14-AUG-20 Sample ID: BH105 SS1	Lab ID: L2490028-2 Sample Date: 14-AUG-20 Sample ID: DUP1
SAR	SAR	5	5	9.68	11.0
Calcium (Ca)	mg/L	-	-	1.92	1.71
Magnesium (Mg)	mg/L	-	-	1.09	0.72
Sodium (Na)	mg/L	-	-	67.8	67.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2490028-1 / Sample Date: 14-AUG-20 / Sample ID: BH105 SS1	Lab ID: L2490028-2 / Sample Date: 14-AUG-20 / Sample ID: DUP1
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0
Arsenic (As)	ug/g	18	18	6.5	5.3
Barium (Ba)	ug/g	390	390	56.8	50.9
Beryllium (Be)	ug/g	4	5	0.51	<0.50
Boron (B)	ug/g	120	120	7.3	6.5
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.13	0.13
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50
Chromium (Cr)	ug/g	160	160	14.7	11.7
Cobalt (Co)	ug/g	22	22	6.7	5.5
Copper (Cu)	ug/g	140	180	34.3	27.2
Lead (Pb)	ug/g	120	120	51.9	44.1
Mercury (Hg)	ug/g	0.27	1.8	0.0413	0.0393
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	15.2	12.1
Selenium (Se)	ug/g	2.4	2.4	<1.0	<1.0
Silver (Ag)	ug/g	20	25	<0.20	<0.20
Thallium (Tl)	ug/g	1	1	<0.50	<0.50
Uranium (U)	ug/g	23	23	<1.0	<1.0
Vanadium (V)	ug/g	86	86	25.2	20.9
Zinc (Zn)	ug/g	340	340	63.7	54.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2490028-1 Sample Date: 14-AUG-20 Sample ID: BH105 SS1	Lab ID: L2490028-2 Sample Date: 14-AUG-20 Sample ID: DUP1
Chromium, Hexavalent	ug/g	8	10	<0.20	0.23

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Volatile Organic Compounds - SOIL

			Lab ID	L2490028-3
			Sample Date	14-AUG-20
			Sample ID	BH105 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	1.5	1.9	<0.050
Bromoform	ug/g	0.27	0.26	<0.050
Bromomethane	ug/g	0.05	0.05	<0.050
Carbon tetrachloride	ug/g	0.05	0.12	<0.050
Chlorobenzene	ug/g	2.4	2.7	<0.050
Dibromochloromethane	ug/g	2.3	2.9	<0.050
Chloroform	ug/g	0.05	0.18	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050
Dichlorodifluoromethane	ug/g	16	25	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050
Methylene Chloride	ug/g	0.1	0.96	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042
Ethylbenzene	ug/g	1.1	1.6	<0.018
n-Hexane	ug/g	2.8	34	<0.050
Methyl Ethyl Ketone	ug/g	16	44	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50
MTBE	ug/g	0.75	1.4	<0.050
Styrene	ug/g	0.7	2.2	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

			Lab ID	L2490028-3
			Sample Date	14-AUG-20
			Sample ID	BH105 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	102.7
Surrogate: 1,4-Difluorobenzene	%	-	-	120.9

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Hydrocarbons - SOIL

			Lab ID	L2490028-3
			Sample Date	14-AUG-20
			Sample ID	BH105 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F2-Naphth	ug/g	-	-	<10
F3 (C16-C34)	ug/g	300	1300	64
F3-PAH	ug/g	-	-	64
F4 (C34-C50)	ug/g	2800	5600	123
F4G-SG (GHH-Silica)	ug/g	2800	5600	340
Total Hydrocarbons (C6-C50)	ug/g	-	-	187
Chrom. to baseline at nC50		-	-	NO
Surrogate: 2-Bromobenzotrifluoride	%	-	-	78.5
Surrogate: 3,4-Dichlorotoluene	%	-	-	84.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

		Guide Limits			
Lab ID				L2490028-3	L2490028-4
Sample Date				14-AUG-20	14-AUG-20
Sample ID				BH105 SS2	DUP2
Analyte	**Unit**	**#1**	**#2**		
Acenaphthene	ug/g	7.9	29	<0.050	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050
Anthracene	ug/g	0.67	0.74	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050
Chrysene	ug/g	7	7.8	0.053	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.69	0.088	<0.050
Fluorene	ug/g	62	69	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013	<0.013
Phenanthrene	ug/g	6.2	7.8	0.047	<0.046
Pyrene	ug/g	78	78	0.076	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	86.6	94.3
Surrogate: p-Terphenyl d14	%	-	-	104.3	106.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2490028 Report Date: 21-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5192761								
WG3387171-4 DUP		**L2490030-4**						
Boron (B), Hot Water Ext.		0.14	0.14		ug/g	0.7	30	20-AUG-20
WG3387171-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			94.2		%		70-130	20-AUG-20
WG3387171-3 LCS								
Boron (B), Hot Water Ext.			99.2		%		70-130	20-AUG-20
WG3387171-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	20-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5191595								
WG3385862-3 DUP		**L2489760-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	19-AUG-20
WG3385862-2 LCS								
Cyanide, Weak Acid Diss			93.4		%		80-120	19-AUG-20
WG3385862-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	19-AUG-20
WG3385862-4 MS		**L2489760-1**						
Cyanide, Weak Acid Diss			101.8		%		70-130	19-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5195127								
WG3386257-7 CRM		**WT-SQC012**						
Chromium, Hexavalent			103.0		%		70-130	20-AUG-20
WG3386257-6 DUP		**L2489180-23**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	20-AUG-20
WG3386257-5 LCS								
Chromium, Hexavalent			93.4		%		80-120	20-AUG-20
WG3386257-4 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	20-AUG-20
EC-WT	**Soil**							
Batch R5192670								
WG3387174-4 DUP		**WG3387174-3**						
Conductivity		0.249	0.252		mS/cm	1.2	20	20-AUG-20
WG3387174-2 IRM		**WT SAR4**						
Conductivity			105.0		%		70-130	20-AUG-20
WG3387528-1 LCS								
Conductivity			100.1		%		90-110	20-AUG-20
WG3387174-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5192670								
WG3387174-1 MB								
Conductivity			<0.0040		mS/cm		0.004	20-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5192210								
WG3385431-4 DUP		**WG3385431-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	20-AUG-20
WG3385431-2 LCS								
F1 (C6-C10)			94.9		%		80-120	20-AUG-20
WG3385431-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	20-AUG-20
Surrogate: 3,4-Dichlorotoluene			103.2		%		60-140	20-AUG-20
WG3385431-6 MS		**L2489750-18**						
F1 (C6-C10)			109.6		%		60-140	20-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5193376								
WG3385954-3 DUP		**WG3385954-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	20-AUG-20
F3 (C16-C34)		76	126	J	ug/g	50	100	20-AUG-20
F4 (C34-C50)		62	90	J	ug/g	28	100	20-AUG-20
WG3385954-2 LCS								
F2 (C10-C16)			99.3		%		80-120	20-AUG-20
F3 (C16-C34)			104.0		%		80-120	20-AUG-20
F4 (C34-C50)			107.4		%		80-120	20-AUG-20
WG3385954-1 MB								
F2 (C10-C16)			<10		ug/g		10	20-AUG-20
F3 (C16-C34)			<50		ug/g		50	20-AUG-20
F4 (C34-C50)			<50		ug/g		50	20-AUG-20
Surrogate: 2-Bromobenzotrifluoride			81.1		%		60-140	20-AUG-20
WG3385954-4 MS		**WG3385954-5**						
F2 (C10-C16)			103.9		%		60-140	20-AUG-20
F3 (C16-C34)			113.1		%		60-140	20-AUG-20
F4 (C34-C50)			111.2		%		60-140	20-AUG-20
F4G-ADD-511-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F4G-ADD-511-WT	**Soil**							
Batch R5194417								
WG3388207-2 LCS								
F4G-SG (GHH-Silica)			86.6		%		60-140	19-AUG-20
WG3388207-1 MB								
F4G-SG (GHH-Silica)			<250		ug/g		250	19-AUG-20
HG-200.2-CVAA-WT	**Soil**							
Batch R5192561								
WG3387156-2 CRM		**WT-SS-2**						
Mercury (Hg)			96.5		%		70-130	20-AUG-20
WG3387156-6 DUP		**WG3387156-5**						
Mercury (Hg)		0.0135	0.0162		ug/g	18	40	20-AUG-20
WG3387156-3 LCS								
Mercury (Hg)			102.5		%		80-120	20-AUG-20
WG3387156-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	20-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5192408								
WG3387156-2 CRM		**WT-SS-2**						
Antimony (Sb)			102.0		%		70-130	20-AUG-20
Arsenic (As)			98.7		%		70-130	20-AUG-20
Barium (Ba)			101.2		%		70-130	20-AUG-20
Beryllium (Be)			102.9		%		70-130	20-AUG-20
Boron (B)			9.9		mg/kg		3.5-13.5	20-AUG-20
Cadmium (Cd)			96.4		%		70-130	20-AUG-20
Chromium (Cr)			108.3		%		70-130	20-AUG-20
Cobalt (Co)			104.0		%		70-130	20-AUG-20
Copper (Cu)			103.3		%		70-130	20-AUG-20
Lead (Pb)			100.0		%		70-130	20-AUG-20
Molybdenum (Mo)			100.8		%		70-130	20-AUG-20
Nickel (Ni)			104.0		%		70-130	20-AUG-20
Selenium (Se)			0.12		mg/kg		0-0.34	20-AUG-20
Silver (Ag)			92.6		%		70-130	20-AUG-20
Thallium (Tl)			0.071		mg/kg		0.029-0.129	20-AUG-20
Uranium (U)			96.7		%		70-130	20-AUG-20
Vanadium (V)			106.6		%		70-130	20-AUG-20
Zinc (Zn)			96.5		%		70-130	20-AUG-20
WG3387156-6 DUP		**WG3387156-5**						

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5192408								
WG3387156-6 DUP		**WG3387156-5**						
Antimony (Sb)		0.40	0.38		ug/g	4.6	30	20-AUG-20
Arsenic (As)		7.85	7.71		ug/g	1.9	30	20-AUG-20
Barium (Ba)		64.9	65.8		ug/g	1.4	40	20-AUG-20
Beryllium (Be)		0.54	0.57		ug/g	6.5	30	20-AUG-20
Boron (B)		12.8	14.1		ug/g	9.5	30	20-AUG-20
Cadmium (Cd)		0.272	0.231		ug/g	16	30	20-AUG-20
Chromium (Cr)		19.9	20.8		ug/g	4.1	30	20-AUG-20
Cobalt (Co)		9.75	9.85		ug/g	1.0	30	20-AUG-20
Copper (Cu)		17.1	17.7		ug/g	3.5	30	20-AUG-20
Lead (Pb)		9.40	9.98		ug/g	1.6	40	20-AUG-20
Molybdenum (Mo)		3.81	3.90		ug/g	2.4	40	20-AUG-20
Nickel (Ni)		25.6	26.1		ug/g	2.1	30	20-AUG-20
Selenium (Se)		0.26	0.21		ug/g	23	30	20-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	20-AUG-20
Thallium (Tl)		0.213	0.221		ug/g	3.5	30	20-AUG-20
Uranium (U)		1.40	1.44		ug/g	2.8	30	20-AUG-20
Vanadium (V)		28.8	30.7		ug/g	6.5	30	20-AUG-20
Zinc (Zn)		48.5	49.1		ug/g	1.3	30	20-AUG-20
WG3387156-4 LCS								
Antimony (Sb)			100.9		%		80-120	20-AUG-20
Arsenic (As)			100.2		%		80-120	20-AUG-20
Barium (Ba)			98.3		%		80-120	20-AUG-20
Beryllium (Be)			96.4		%		80-120	20-AUG-20
Boron (B)			93.7		%		80-120	20-AUG-20
Cadmium (Cd)			98.6		%		80-120	20-AUG-20
Chromium (Cr)			100.1		%		80-120	20-AUG-20
Cobalt (Co)			97.8		%		80-120	20-AUG-20
Copper (Cu)			96.1		%		80-120	20-AUG-20
Lead (Pb)			95.0		%		80-120	20-AUG-20
Molybdenum (Mo)			98.5		%		80-120	20-AUG-20
Nickel (Ni)			98.2		%		80-120	20-AUG-20
Selenium (Se)			96.0		%		80-120	20-AUG-20
Silver (Ag)			96.0		%		80-120	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5192408								
WG3387156-4 LCS								
Thallium (Tl)			95.1		%		80-120	20-AUG-20
Uranium (U)			97.3		%		80-120	20-AUG-20
Vanadium (V)			100.7		%		80-120	20-AUG-20
Zinc (Zn)			90.6		%		80-120	20-AUG-20
WG3387156-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	20-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	20-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	20-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	20-AUG-20
Boron (B)			<5.0		mg/kg		5	20-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	20-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	20-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	20-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	20-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	20-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	20-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	20-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	20-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	20-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	20-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	20-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	20-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	20-AUG-20
MOISTURE-WT	**Soil**							
Batch R5191298								
WG3385852-3 DUP		**L2489959-1**						
% Moisture		10.6	10.1		%	5.2	20	19-AUG-20
WG3385852-2 LCS								
% Moisture			102.2		%		90-110	19-AUG-20
WG3385852-1 MB								
% Moisture			<0.25		%		0.25	19-AUG-20
PAH-511-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5196619								
WG3386308-3 DUP		**WG3386308-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(a)anthracene		<0.050	0.051	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(b)fluoranthene		<0.050	0.059	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Chrysene		0.053	0.064		ug/g	19	40	21-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Fluoranthene		0.088	0.108		ug/g	20	40	21-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	21-AUG-20
Phenanthrene		0.047	0.058		ug/g	20	40	21-AUG-20
Pyrene		0.076	0.090		ug/g	17	40	21-AUG-20
WG3386308-2 LCS								
1-Methylnaphthalene			86.8		%		50-140	21-AUG-20
2-Methylnaphthalene			81.8		%		50-140	21-AUG-20
Acenaphthene			88.5		%		50-140	21-AUG-20
Acenaphthylene			84.4		%		50-140	21-AUG-20
Anthracene			87.7		%		50-140	21-AUG-20
Benzo(a)anthracene			86.7		%		50-140	21-AUG-20
Benzo(a)pyrene			89.7		%		50-140	21-AUG-20
Benzo(b)fluoranthene			85.6		%		50-140	21-AUG-20
Benzo(g,h,i)perylene			87.8		%		50-140	21-AUG-20
Benzo(k)fluoranthene			93.8		%		50-140	21-AUG-20
Chrysene			94.8		%		50-140	21-AUG-20
Dibenzo(ah)anthracene			87.5		%		50-140	21-AUG-20
Fluoranthene			81.9		%		50-140	21-AUG-20
Fluorene			82.8		%		50-140	21-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5196619								
WG3386308-2 LCS								
Indeno(1,2,3-cd)pyrene			86.3		%		50-140	21-AUG-20
Naphthalene			84.6		%		50-140	21-AUG-20
Phenanthrene			84.4		%		50-140	21-AUG-20
Pyrene			85.8		%		50-140	21-AUG-20
WG3386308-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	21-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	21-AUG-20
Acenaphthene			<0.050		ug/g		0.05	21-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	21-AUG-20
Anthracene			<0.050		ug/g		0.05	21-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	21-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	21-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	21-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Chrysene			<0.050		ug/g		0.05	21-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	21-AUG-20
Fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Fluorene			<0.050		ug/g		0.05	21-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	21-AUG-20
Naphthalene			<0.013		ug/g		0.013	21-AUG-20
Phenanthrene			<0.046		ug/g		0.046	21-AUG-20
Pyrene			<0.050		ug/g		0.05	21-AUG-20
Surrogate: 2-Fluorobiphenyl			89.1		%		50-140	21-AUG-20
Surrogate: p-Terphenyl d14			105.5		%		50-140	21-AUG-20
WG3386308-4 MS		**WG3386308-5**						
1-Methylnaphthalene			87.7		%		50-140	21-AUG-20
2-Methylnaphthalene			84.7		%		50-140	21-AUG-20
Acenaphthene			92.8		%		50-140	21-AUG-20
Acenaphthylene			87.9		%		50-140	21-AUG-20
Anthracene			87.8		%		50-140	21-AUG-20
Benzo(a)anthracene			86.5		%		50-140	21-AUG-20
Benzo(a)pyrene			87.0		%		50-140	21-AUG-20
Benzo(b)fluoranthene			84.8		%		50-140	21-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5196619								
WG3386308-4 MS		**WG3386308-5**						
Benzo(g,h,i)perylene			83.2		%		50-140	21-AUG-20
Benzo(k)fluoranthene			87.4		%		50-140	21-AUG-20
Chrysene			91.9		%		50-140	21-AUG-20
Dibenzo(ah)anthracene			83.4		%		50-140	21-AUG-20
Fluoranthene			85.8		%		50-140	21-AUG-20
Fluorene			87.1		%		50-140	21-AUG-20
Indeno(1,2,3-cd)pyrene			75.6		%		50-140	21-AUG-20
Naphthalene			83.1		%		50-140	21-AUG-20
Phenanthrene			82.9		%		50-140	21-AUG-20
Pyrene			81.9		%		50-140	21-AUG-20
PH-WT	**Soil**							
Batch R5191936								
WG3386295-1 DUP		**L2490028-1**						
pH		7.74	7.84	J	pH units	0.10	0.3	19-AUG-20
WG3386825-1 LCS								
pH			7.00		pH units		6.9-7.1	19-AUG-20
SAR-R511-WT	**Soil**							
Batch R5192887								
WG3387174-4 DUP		**WG3387174-3**						
Calcium (Ca)		1.38	1.60		mg/L	15	30	20-AUG-20
Sodium (Na)		61.6	59.7		mg/L	3.1	30	20-AUG-20
Magnesium (Mg)		<0.50	<0.50	RPD-NA	mg/L	N/A	30	20-AUG-20
WG3387174-2 IRM		**WT SAR4**						
Calcium (Ca)			99.1		%		70-130	20-AUG-20
Sodium (Na)			97.4		%		70-130	20-AUG-20
Magnesium (Mg)			102.6		%		70-130	20-AUG-20
WG3387174-5 LCS								
Calcium (Ca)			101.7		%		80-120	20-AUG-20
Sodium (Na)			99.6		%		80-120	20-AUG-20
Magnesium (Mg)			98.4		%		80-120	20-AUG-20
WG3387174-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	20-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	20-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5192210								
WG3385431-4 DUP		**WG3385431-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	20-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	20-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	20-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	20-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	20-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	20-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	20-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	20-AUG-20
Styrene		<0.050	<0.050		ug/g			20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5192210								
WG3385431-4 DUP		**WG3385431-3**						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	20-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	20-AUG-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	20-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	20-AUG-20
WG3385431-2 LCS								
1,1,1,2-Tetrachloroethane			110.5		%		60-130	20-AUG-20
1,1,2,2-Tetrachloroethane			124.3		%		60-130	20-AUG-20
1,1,1-Trichloroethane			111.8		%		60-130	20-AUG-20
1,1,2-Trichloroethane			111.6		%		60-130	20-AUG-20
1,1-Dichloroethane			111.6		%		60-130	20-AUG-20
1,1-Dichloroethylene			104.7		%		60-130	20-AUG-20
1,2-Dibromoethane			110.5		%		70-130	20-AUG-20
1,2-Dichlorobenzene			112.4		%		70-130	20-AUG-20
1,2-Dichloroethane			113.9		%		60-130	20-AUG-20
1,2-Dichloropropane			110.8		%		70-130	20-AUG-20
1,3-Dichlorobenzene			113.3		%		70-130	20-AUG-20
1,4-Dichlorobenzene			113.3		%		70-130	20-AUG-20
Acetone			133.2		%		60-140	20-AUG-20
Benzene			111.1		%		70-130	20-AUG-20
Bromodichloromethane			122.7		%		50-140	20-AUG-20
Bromoform			114.5		%		70-130	20-AUG-20
Bromomethane			122.3		%		50-140	20-AUG-20
Carbon tetrachloride			112.4		%		70-130	20-AUG-20
Chlorobenzene			114.3		%		70-130	20-AUG-20
Chloroform			115.3		%		70-130	20-AUG-20
cis-1,2-Dichloroethylene			107.5		%		70-130	20-AUG-20
cis-1,3-Dichloropropene			107.8		%		70-130	20-AUG-20
Dibromochloromethane			111.5		%		60-130	20-AUG-20
Dichlorodifluoromethane			69.6		%		50-140	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5192210								
WG3385431-2 LCS								
Ethylbenzene			112.3		%		70-130	20-AUG-20
n-Hexane			106.1		%		70-130	20-AUG-20
Methylene Chloride			112.1		%		70-130	20-AUG-20
MTBE			111.0		%		70-130	20-AUG-20
m+p-Xylenes			113.2		%		70-130	20-AUG-20
Methyl Ethyl Ketone			119.0		%		60-140	20-AUG-20
Methyl Isobutyl Ketone			118.5		%		60-140	20-AUG-20
o-Xylene			121.1		%		70-130	20-AUG-20
Styrene			112.0		%		70-130	20-AUG-20
Tetrachloroethylene			111.0		%		60-130	20-AUG-20
Toluene			112.3		%		70-130	20-AUG-20
trans-1,2-Dichloroethylene			109.4		%		60-130	20-AUG-20
trans-1,3-Dichloropropene			114.8		%		70-130	20-AUG-20
Trichloroethylene			111.5		%		60-130	20-AUG-20
Trichlorofluoromethane			96.9		%		50-140	20-AUG-20
Vinyl chloride			102.3		%		60-140	20-AUG-20
WG3385431-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	20-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	20-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	20-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	20-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	20-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	20-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	20-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	20-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	20-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	20-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	20-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	20-AUG-20
Acetone			<0.50		ug/g		0.5	20-AUG-20
Benzene			<0.0068		ug/g		0.0068	20-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	20-AUG-20
Bromoform			<0.050		ug/g		0.05	20-AUG-20
Bromomethane			<0.050		ug/g		0.05	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5192210								
WG3385431-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	20-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	20-AUG-20
Chloroform			<0.050		ug/g		0.05	20-AUG-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	20-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	20-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	20-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	20-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	20-AUG-20
n-Hexane			<0.050		ug/g		0.05	20-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	20-AUG-20
MTBE			<0.050		ug/g		0.05	20-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	20-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	20-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	20-AUG-20
o-Xylene			<0.020		ug/g		0.02	20-AUG-20
Styrene			<0.050		ug/g		0.05	20-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	20-AUG-20
Toluene			<0.080		ug/g		0.08	20-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	20-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	20-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	20-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	20-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	20-AUG-20
Surrogate: 1,4-Difluorobenzene			128.5		%		50-140	20-AUG-20
Surrogate: 4-Bromofluorobenzene			110.8		%		50-140	20-AUG-20
WG3385431-5 MS		**WG3385431-3**						
1,1,1,2-Tetrachloroethane			108.5		%		50-140	20-AUG-20
1,1,2,2-Tetrachloroethane			117.1		%		50-140	20-AUG-20
1,1,1-Trichloroethane			110.5		%		50-140	20-AUG-20
1,1,2-Trichloroethane			109.1		%		50-140	20-AUG-20
1,1-Dichloroethane			109.3		%		50-140	20-AUG-20
1,1-Dichloroethylene			103.7		%		50-140	20-AUG-20
1,2-Dibromoethane			107.7		%		50-140	20-AUG-20
1,2-Dichlorobenzene			110.0		%		50-140	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5192210								
WG3385431-5 MS		**WG3385431-3**						
1,2-Dichloroethane			111.9		%		50-140	20-AUG-20
1,2-Dichloropropane			107.6		%		50-140	20-AUG-20
1,3-Dichlorobenzene			111.6		%		50-140	20-AUG-20
1,4-Dichlorobenzene			111.6		%		50-140	20-AUG-20
Acetone			131.9		%		50-140	20-AUG-20
Benzene			108.7		%		50-140	20-AUG-20
Bromodichloromethane			119.8		%		50-140	20-AUG-20
Bromoform			110.3		%		50-140	20-AUG-20
Bromomethane			118.0		%		50-140	20-AUG-20
Carbon tetrachloride			111.0		%		50-140	20-AUG-20
Chlorobenzene			111.7		%		50-140	20-AUG-20
Chloroform			113.1		%		50-140	20-AUG-20
cis-1,2-Dichloroethylene			105.4		%		50-140	20-AUG-20
cis-1,3-Dichloropropene			100.8		%		50-140	20-AUG-20
Dibromochloromethane			108.9		%		50-140	20-AUG-20
Dichlorodifluoromethane			74.0		%		50-140	20-AUG-20
Ethylbenzene			110.5		%		50-140	20-AUG-20
n-Hexane			105.5		%		50-140	20-AUG-20
Methylene Chloride			109.8		%		50-140	20-AUG-20
MTBE			110.3		%		50-140	20-AUG-20
m+p-Xylenes			111.0		%		50-140	20-AUG-20
Methyl Ethyl Ketone			102.3		%		50-140	20-AUG-20
Methyl Isobutyl Ketone			113.4		%		50-140	20-AUG-20
o-Xylene			118.6		%		50-140	20-AUG-20
Styrene			108.8		%		50-140	20-AUG-20
Tetrachloroethylene			108.7		%		50-140	20-AUG-20
Toluene			110.9		%		50-140	20-AUG-20
trans-1,2-Dichloroethylene			107.1		%		50-140	20-AUG-20
trans-1,3-Dichloropropene			107.0		%		50-140	20-AUG-20
Trichloroethylene			108.9		%		50-140	20-AUG-20
Trichlorofluoromethane			96.9		%		50-140	20-AUG-20
Vinyl chloride			101.4		%		50-140	20-AUG-20

Quality Control Report

Workorder: L2490028 Report Date: 21-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

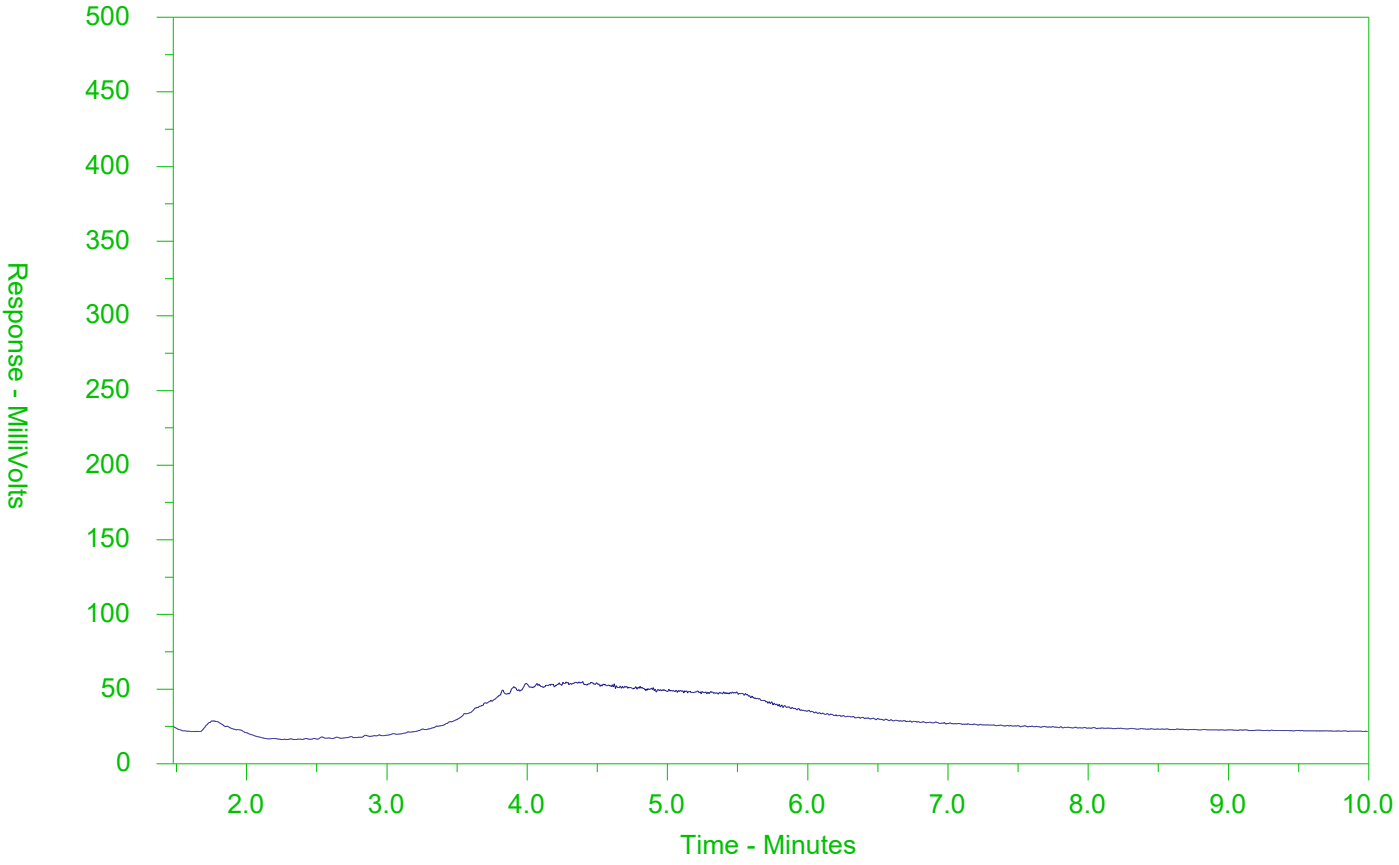
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2490028-3
Client Sample ID: BH105 SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2490028-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3

Report Form	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	

Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Project Information	
ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2490028 AP

ALS Contact: Sampler: YH

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 105 SS1	14-Aug-20		Soil	1	✓					
	DUP1	"		Soil	1	✓					
	BH 105 SS2	"		"	4		✓	✓	✓		
	DUP2	"		"	1		✓				

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

.ow - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04
Are samples for human consumption/ use? ☐ YES ☑ NO	MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
10.0							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Yousr Hiweish	Date: Aug 17/2020	Time: 5:00	Received by:	Date: 18/8/20	Time: 8:05	Received by:	Date: 08/18/20	Time: 10:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

TERRAPROBE-BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 14-AUG-20
Report Date: 23-AUG-20 18:31 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2489232

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: Report revised to compare to O. Reg 153/511 T2 criteria - E. Smith (23 Aug 2020).

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
(No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
(No parameter exceedances)						

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits			
Lab ID				L2489232-1	L2489232-2
Sample Date				12-AUG-20	12-AUG-20
Sample ID				BH106 SS1	BH106 SS2
Analyte	**Unit**	**#1**	**#2**		
Conductivity	mS/cm	0.7	0.7	0.141	
% Moisture	%	-	-	7.45	6.26
pH	pH units	-	-	7.63	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2489232-1
			Sample Date	12-AUG-20
			Sample ID	BH106 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

			Lab ID	L2489232-1
			Sample Date	12-AUG-20
			Sample ID	BH106 SS1
Analyte	**Unit**	**Guide Limits #1**	**#2**	
SAR	SAR	5	5	1.72 SAR:M
Calcium (Ca)	mg/L	-	-	8.63
Magnesium (Mg)	mg/L	-	-	<0.50
Sodium (Na)	mg/L	-	-	18.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2489232-1 Sample Date: 12-AUG-20 Sample ID: BH106 SS1
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	5.4
Barium (Ba)	ug/g	390	390	52.0
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	5.3
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.25
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	12.2
Cobalt (Co)	ug/g	22	22	5.4
Copper (Cu)	ug/g	140	180	24.7
Lead (Pb)	ug/g	120	120	23.5
Mercury (Hg)	ug/g	0.27	1.8	0.0471
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	11.3
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	18.6
Zinc (Zn)	ug/g	340	340	41.9

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

			Lab ID	L2489232-1
			Sample Date	12-AUG-20
			Sample ID	BH106 SS1
		Guide Limits		
Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/g	8	10	0.31

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

				Lab ID	L2489232-2
				Sample Date	12-AUG-20
				Sample ID	BH106 SS2
		Guide Limits			
Analyte	Unit	#1	#2		
Acetone	ug/g	16	28	<0.50	
Benzene	ug/g	0.21	0.17	<0.0068	
Bromodichloromethane	ug/g	1.5	1.9	<0.050	
Bromoform	ug/g	0.27	0.26	<0.050	
Bromomethane	ug/g	0.05	0.05	<0.050	
Carbon tetrachloride	ug/g	0.05	0.12	<0.050	
Chlorobenzene	ug/g	2.4	2.7	<0.050	
Dibromochloromethane	ug/g	2.3	2.9	<0.050	
Chloroform	ug/g	0.05	0.18	<0.050	
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050	
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050	
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050	
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050	
Dichlorodifluoromethane	ug/g	16	25	<0.050	
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050	
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050	
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050	
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050	
Methylene Chloride	ug/g	0.1	0.96	<0.050	
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050	
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042	
Ethylbenzene	ug/g	1.1	1.6	<0.018	
n-Hexane	ug/g	2.8	34	<0.050	
Methyl Ethyl Ketone	ug/g	16	44	<0.50	
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50	
MTBE	ug/g	0.75	1.4	<0.050	
Styrene	ug/g	0.7	2.2	<0.050	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2489232-2
			Sample Date	12-AUG-20
			Sample ID	BH106 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	84.4
Surrogate: 1,4-Difluorobenzene	%	-	-	111.1

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

			Lab ID	L2489232-2
			Sample Date	12-AUG-20
			Sample ID	BH106 SS2
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F3 (C16-C34)	ug/g	300	1300	<50
F4 (C34-C50)	ug/g	2800	5600	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	92.1
Surrogate: 3,4-Dichlorotoluene	%	-	-	80.9

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2489232-1
			Sample Date	12-AUG-20
			Sample ID	BH106 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046
Pyrene	ug/g	78	78	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	92.6
Surrogate: p-Terphenyl d14	%	-	-	103.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2489232 Report Date: 23-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5192719								
WG3387177-4 DUP		**L2489989-1**						
Boron (B), Hot Water Ext.		0.12	0.12		ug/g	4.1	30	20-AUG-20
WG3387177-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			94.3		%		70-130	20-AUG-20
WG3387177-3 LCS								
Boron (B), Hot Water Ext.			99.7		%		70-130	20-AUG-20
WG3387177-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	20-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5191595								
WG3385198-3 DUP		**L2488953-11**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	19-AUG-20
WG3385198-2 LCS								
Cyanide, Weak Acid Diss			97.1		%		80-120	19-AUG-20
WG3385198-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	19-AUG-20
WG3385198-4 MS		**L2488953-11**						
Cyanide, Weak Acid Diss			101.2		%		70-130	19-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5192172								
WG3385366-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.1		%		70-130	20-AUG-20
WG3385366-3 DUP		**L2489160-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	20-AUG-20
WG3385366-2 LCS								
Chromium, Hexavalent			100.3		%		80-120	20-AUG-20
WG3385366-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	20-AUG-20
EC-WT	**Soil**							
Batch R5192888								
WG3387178-4 DUP		**WG3387178-3**						
Conductivity		0.133	0.131		mS/cm	1.7	20	20-AUG-20
WG3387178-2 IRM		**WT SAR4**						
Conductivity			105.0		%		70-130	20-AUG-20
WG3387518-1 LCS								
Conductivity			101.0		%		90-110	20-AUG-20
WG3387178-1 MB								

Quality Control Report

Workorder: L2489232 Report Date: 23-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5192888								
WG3387178-1 MB								
Conductivity			<0.0040		mS/cm		0.004	20-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	19-AUG-20
WG3384160-2 LCS								
F1 (C6-C10)			102.4		%		80-120	19-AUG-20
WG3384160-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	19-AUG-20
Surrogate: 3,4-Dichlorotoluene			103.1		%		60-140	19-AUG-20
WG3384160-6 MS		**L2488953-9**						
F1 (C6-C10)			94.2		%		60-140	19-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5192001								
WG3385097-3 DUP		**WG3385097-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	19-AUG-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	19-AUG-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	19-AUG-20
WG3385097-2 LCS								
F2 (C10-C16)			101.4		%		80-120	19-AUG-20
F3 (C16-C34)			103.6		%		80-120	19-AUG-20
F4 (C34-C50)			105.9		%		80-120	19-AUG-20
WG3385097-1 MB								
F2 (C10-C16)			<10		ug/g		10	19-AUG-20
F3 (C16-C34)			<50		ug/g		50	19-AUG-20
F4 (C34-C50)			<50		ug/g		50	19-AUG-20
Surrogate: 2-Bromobenzotrifluoride			97.0		%		60-140	19-AUG-20
WG3385097-4 MS		**WG3385097-5**						
F2 (C10-C16)			99.0		%		60-140	19-AUG-20
F3 (C16-C34)			104.7		%		60-140	19-AUG-20
F4 (C34-C50)			113.6		%		60-140	19-AUG-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5195129								
WG3387936-2 CRM		**WT-SS-2**						
Mercury (Hg)			109.5		%		70-130	21-AUG-20
WG3387936-4 DUP		**L2489180-20**						
Mercury (Hg)		0.0154	0.0151		ug/g	1.9	40	21-AUG-20
WG3387936-3 LCS								
Mercury (Hg)			106.5		%		80-120	21-AUG-20
WG3387936-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	21-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5192694								
WG3387170-2 CRM		**WT-SS-2**						
Antimony (Sb)			102.9		%		70-130	20-AUG-20
Arsenic (As)			96.6		%		70-130	20-AUG-20
Barium (Ba)			96.2		%		70-130	20-AUG-20
Beryllium (Be)			92.2		%		70-130	20-AUG-20
Boron (B)			8.2		mg/kg		3.5-13.5	20-AUG-20
Cadmium (Cd)			95.0		%		70-130	20-AUG-20
Chromium (Cr)			97.5		%		70-130	20-AUG-20
Cobalt (Co)			100.2		%		70-130	20-AUG-20
Copper (Cu)			98.3		%		70-130	20-AUG-20
Lead (Pb)			97.7		%		70-130	20-AUG-20
Molybdenum (Mo)			98.6		%		70-130	20-AUG-20
Nickel (Ni)			99.2		%		70-130	20-AUG-20
Selenium (Se)			0.14		mg/kg		0-0.34	20-AUG-20
Silver (Ag)			89.7		%		70-130	20-AUG-20
Thallium (Tl)			0.071		mg/kg		0.029-0.129	20-AUG-20
Uranium (U)			94.2		%		70-130	20-AUG-20
Vanadium (V)			98.8		%		70-130	20-AUG-20
Zinc (Zn)			90.3		%		70-130	20-AUG-20
WG3387170-6 DUP		**WG3387170-5**						
Antimony (Sb)		0.22	0.21		ug/g	3.6	30	20-AUG-20
Arsenic (As)		9.97	9.57		ug/g	4.1	30	20-AUG-20
Barium (Ba)		30.3	30.6		ug/g	1.0	40	20-AUG-20
Beryllium (Be)		1.04	1.08		ug/g	3.4	30	20-AUG-20
Boron (B)		16.7	16.9		ug/g	1.2	30	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5192694								
WG3387170-6 DUP		**WG3387170-5**						
Cadmium (Cd)		0.090	0.092		ug/g	3.0	30	20-AUG-20
Chromium (Cr)		29.5	28.6		ug/g	2.9	30	20-AUG-20
Cobalt (Co)		18.7	18.3		ug/g	2.5	30	20-AUG-20
Copper (Cu)		197	190		ug/g	3.5	30	20-AUG-20
Lead (Pb)		7.69	7.62		ug/g	1.0	40	20-AUG-20
Molybdenum (Mo)		0.33	0.32		ug/g	2.9	40	20-AUG-20
Nickel (Ni)		37.9	37.2		ug/g	1.7	30	20-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	20-AUG-20
Silver (Ag)		0.10	0.11		ug/g	3.0	40	20-AUG-20
Thallium (Tl)		0.157	0.155		ug/g	1.0	30	20-AUG-20
Uranium (U)		0.596	0.585		ug/g	1.9	30	20-AUG-20
Vanadium (V)		34.8	34.0		ug/g	2.4	30	20-AUG-20
Zinc (Zn)		86.7	86.0		ug/g	0.8	30	20-AUG-20
WG3387170-4 LCS								
Antimony (Sb)			100.2		%		80-120	20-AUG-20
Arsenic (As)			97.9		%		80-120	20-AUG-20
Barium (Ba)			98.8		%		80-120	20-AUG-20
Beryllium (Be)			92.8		%		80-120	20-AUG-20
Boron (B)			89.8		%		80-120	20-AUG-20
Cadmium (Cd)			97.1		%		80-120	20-AUG-20
Chromium (Cr)			98.2		%		80-120	20-AUG-20
Cobalt (Co)			93.9		%		80-120	20-AUG-20
Copper (Cu)			94.5		%		80-120	20-AUG-20
Lead (Pb)			95.6		%		80-120	20-AUG-20
Molybdenum (Mo)			99.4		%		80-120	20-AUG-20
Nickel (Ni)			96.6		%		80-120	20-AUG-20
Selenium (Se)			95.4		%		80-120	20-AUG-20
Silver (Ag)			96.2		%		80-120	20-AUG-20
Thallium (Tl)			96.2		%		80-120	20-AUG-20
Uranium (U)			94.7		%		80-120	20-AUG-20
Vanadium (V)			97.5		%		80-120	20-AUG-20
Zinc (Zn)			90.3		%		80-120	20-AUG-20
WG3387170-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5192694								
WG3387170-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	20-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	20-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	20-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	20-AUG-20
Boron (B)			<5.0		mg/kg		5	20-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	20-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	20-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	20-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	20-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	20-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	20-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	20-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	20-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	20-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	20-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	20-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	20-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	20-AUG-20
MOISTURE-WT	**Soil**							
Batch R5190544								
WG3385368-3 DUP		**L2489180-22**						
% Moisture		7.30	7.35		%	0.7	20	19-AUG-20
WG3385368-2 LCS								
% Moisture			100.6		%		90-110	19-AUG-20
WG3385368-1 MB								
% Moisture			<0.25		%		0.25	19-AUG-20
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-3 DUP		**WG3385360-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-3 DUP		**WG3385360-5**						
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	21-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	21-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
WG3385360-2 LCS								
1-Methylnaphthalene			93.2		%		50-140	21-AUG-20
2-Methylnaphthalene			89.7		%		50-140	21-AUG-20
Acenaphthene			93.1		%		50-140	21-AUG-20
Acenaphthylene			91.4		%		50-140	21-AUG-20
Anthracene			90.2		%		50-140	21-AUG-20
Benzo(a)anthracene			93.8		%		50-140	21-AUG-20
Benzo(a)pyrene			95.3		%		50-140	21-AUG-20
Benzo(b)fluoranthene			94.1		%		50-140	21-AUG-20
Benzo(g,h,i)perylene			89.8		%		50-140	21-AUG-20
Benzo(k)fluoranthene			89.3		%		50-140	21-AUG-20
Chrysene			101.2		%		50-140	21-AUG-20
Dibenzo(ah)anthracene			95.7		%		50-140	21-AUG-20
Fluoranthene			90.2		%		50-140	21-AUG-20
Fluorene			88.0		%		50-140	21-AUG-20
Indeno(1,2,3-cd)pyrene			102.0		%		50-140	21-AUG-20
Naphthalene			90.2		%		50-140	21-AUG-20
Phenanthrene			90.4		%		50-140	21-AUG-20
Pyrene			90.6		%		50-140	21-AUG-20
WG3385360-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	21-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	21-AUG-20
Acenaphthene			<0.050		ug/g		0.05	21-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	21-AUG-20
Anthracene			<0.050		ug/g		0.05	21-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	21-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	21-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	21-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Chrysene			<0.050		ug/g		0.05	21-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	21-AUG-20
Fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Fluorene			<0.050		ug/g		0.05	21-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	21-AUG-20
Naphthalene			<0.013		ug/g		0.013	21-AUG-20
Phenanthrene			<0.046		ug/g		0.046	21-AUG-20
Pyrene			<0.050		ug/g		0.05	21-AUG-20
Surrogate: 2-Fluorobiphenyl			96.0		%		50-140	21-AUG-20
Surrogate: p-Terphenyl d14			107.4		%		50-140	21-AUG-20
WG3385360-4 MS		**WG3385360-5**						
1-Methylnaphthalene			88.3		%		50-140	21-AUG-20
2-Methylnaphthalene			84.8		%		50-140	21-AUG-20
Acenaphthene			88.6		%		50-140	21-AUG-20
Acenaphthylene			83.6		%		50-140	21-AUG-20
Anthracene			84.6		%		50-140	21-AUG-20
Benzo(a)anthracene			88.8		%		50-140	21-AUG-20
Benzo(a)pyrene			90.4		%		50-140	21-AUG-20
Benzo(b)fluoranthene			90.3		%		50-140	21-AUG-20
Benzo(g,h,i)perylene			84.4		%		50-140	21-AUG-20
Benzo(k)fluoranthene			87.8		%		50-140	21-AUG-20
Chrysene			98.5		%		50-140	21-AUG-20
Dibenzo(ah)anthracene			89.2		%		50-140	21-AUG-20
Fluoranthene			86.6		%		50-140	21-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-4 MS		**WG3385360-5**						
Fluorene			83.5		%		50-140	21-AUG-20
Indeno(1,2,3-cd)pyrene			94.2		%		50-140	21-AUG-20
Naphthalene			86.0		%		50-140	21-AUG-20
Phenanthrene			86.9		%		50-140	21-AUG-20
Pyrene			86.6		%		50-140	21-AUG-20
PH-WT	**Soil**							
Batch R5191845								
WG3385338-1 DUP		**L2489676-1**						
pH		7.64	7.59	J	pH units	0.05	0.3	19-AUG-20
WG3386494-1 LCS								
pH			7.05		pH units		6.9-7.1	19-AUG-20
SAR-R511-WT	**Soil**							
Batch R5192917								
WG3387178-4 DUP		**WG3387178-3**						
Calcium (Ca)		18.3	18.7		mg/L	2.2	30	20-AUG-20
Sodium (Na)		5.51	5.38		mg/L	2.4	30	20-AUG-20
Magnesium (Mg)		0.71	0.72		mg/L	1.1	30	20-AUG-20
WG3387178-2 IRM		**WT SAR4**						
Calcium (Ca)			101.4		%		70-130	20-AUG-20
Sodium (Na)			94.3		%		70-130	20-AUG-20
Magnesium (Mg)			102.6		%		70-130	20-AUG-20
WG3387178-5 LCS								
Calcium (Ca)			102.3		%		80-120	20-AUG-20
Sodium (Na)			100.0		%		80-120	20-AUG-20
Magnesium (Mg)			99.0		%		80-120	20-AUG-20
WG3387178-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	20-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	20-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	20-AUG-20
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	19-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	19-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-AUG-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Tetrachloroethylene		0.178	0.177		ug/g	0.9	40	19-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	19-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050		ug/g			19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-AUG-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-AUG-20
WG3384160-2 LCS								
1,1,1,2-Tetrachloroethane			105.9		%		60-130	19-AUG-20
1,1,2,2-Tetrachloroethane			95.9		%		60-130	19-AUG-20
1,1,1-Trichloroethane			105.9		%		60-130	19-AUG-20
1,1,2-Trichloroethane			106.3		%		60-130	19-AUG-20
1,1-Dichloroethane			107.6		%		60-130	19-AUG-20
1,1-Dichloroethylene			98.1		%		60-130	19-AUG-20
1,2-Dibromoethane			102.1		%		70-130	19-AUG-20
1,2-Dichlorobenzene			104.2		%		70-130	19-AUG-20
1,2-Dichloroethane			104.7		%		60-130	19-AUG-20
1,2-Dichloropropane			104.5		%		70-130	19-AUG-20
1,3-Dichlorobenzene			109.6		%		70-130	19-AUG-20
1,4-Dichlorobenzene			111.1		%		70-130	19-AUG-20
Acetone			103.2		%		60-140	19-AUG-20
Benzene			107.4		%		70-130	19-AUG-20
Bromodichloromethane			114.8		%		50-140	19-AUG-20
Bromoform			105.6		%		70-130	19-AUG-20
Bromomethane			118.5		%		50-140	19-AUG-20
Carbon tetrachloride			107.3		%		70-130	19-AUG-20
Chlorobenzene			107.6		%		70-130	19-AUG-20
Chloroform			110.8		%		70-130	19-AUG-20
cis-1,2-Dichloroethylene			97.9		%		70-130	19-AUG-20
cis-1,3-Dichloropropene			97.0		%		70-130	19-AUG-20
Dibromochloromethane			101.0		%		60-130	19-AUG-20
Dichlorodifluoromethane			65.3		%		50-140	19-AUG-20
Ethylbenzene			100.3		%		70-130	19-AUG-20
n-Hexane			94.0		%		70-130	19-AUG-20
Methylene Chloride			105.2		%		70-130	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-2 LCS								
MTBE			103.7		%		70-130	19-AUG-20
m+p-Xylenes			103.9		%		70-130	19-AUG-20
Methyl Ethyl Ketone			92.0		%		60-140	19-AUG-20
Methyl Isobutyl Ketone			78.2		%		60-140	19-AUG-20
o-Xylene			109.3		%		70-130	19-AUG-20
Styrene			98.1		%		70-130	19-AUG-20
Tetrachloroethylene			107.6		%		60-130	19-AUG-20
Toluene			102.5		%		70-130	19-AUG-20
trans-1,2-Dichloroethylene			103.8		%		60-130	19-AUG-20
trans-1,3-Dichloropropene			98.1		%		70-130	19-AUG-20
Trichloroethylene			106.9		%		60-130	19-AUG-20
Trichlorofluoromethane			94.2		%		50-140	19-AUG-20
Vinyl chloride			99.3		%		60-140	19-AUG-20
WG3384160-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	19-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	19-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	19-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	19-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	19-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	19-AUG-20
Acetone			<0.50		ug/g		0.5	19-AUG-20
Benzene			<0.0068		ug/g		0.0068	19-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	19-AUG-20
Bromoform			<0.050		ug/g		0.05	19-AUG-20
Bromomethane			<0.050		ug/g		0.05	19-AUG-20
Carbon tetrachloride			<0.050		ug/g		0.05	19-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	19-AUG-20
Chloroform			<0.050		ug/g		0.05	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	19-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	19-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	19-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	19-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	19-AUG-20
n-Hexane			<0.050		ug/g		0.05	19-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	19-AUG-20
MTBE			<0.050		ug/g		0.05	19-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	19-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	19-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	19-AUG-20
o-Xylene			<0.020		ug/g		0.02	19-AUG-20
Styrene			<0.050		ug/g		0.05	19-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	19-AUG-20
Toluene			<0.080		ug/g		0.08	19-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	19-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	19-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	19-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	19-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	19-AUG-20
Surrogate: 1,4-Difluorobenzene			114.4		%		50-140	19-AUG-20
Surrogate: 4-Bromofluorobenzene			95.5		%		50-140	19-AUG-20
WG3384160-5 MS		**WG3384160-3**						
1,1,1,2-Tetrachloroethane			105.6		%		50-140	19-AUG-20
1,1,2,2-Tetrachloroethane			100.3		%		50-140	19-AUG-20
1,1,1-Trichloroethane			102.8		%		50-140	19-AUG-20
1,1,2-Trichloroethane			110.2		%		50-140	19-AUG-20
1,1-Dichloroethane			106.6		%		50-140	19-AUG-20
1,1-Dichloroethylene			95.7		%		50-140	19-AUG-20
1,2-Dibromoethane			107.2		%		50-140	19-AUG-20
1,2-Dichlorobenzene			102.7		%		50-140	19-AUG-20
1,2-Dichloroethane			108.1		%		50-140	19-AUG-20
1,2-Dichloropropane			105.0		%		50-140	19-AUG-20
1,3-Dichlorobenzene			105.9		%		50-140	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-5 MS		**WG3384160-3**						
1,4-Dichlorobenzene			108.2		%		50-140	19-AUG-20
Acetone			114.6		%		50-140	19-AUG-20
Benzene			106.1		%		50-140	19-AUG-20
Bromodichloromethane			115.8		%		50-140	19-AUG-20
Bromoform			109.8		%		50-140	19-AUG-20
Bromomethane			117.0		%		50-140	19-AUG-20
Carbon tetrachloride			103.5		%		50-140	19-AUG-20
Chlorobenzene			106.3		%		50-140	19-AUG-20
Chloroform			110.3		%		50-140	19-AUG-20
cis-1,2-Dichloroethylene			97.8		%		50-140	19-AUG-20
cis-1,3-Dichloropropene			96.1		%		50-140	19-AUG-20
Dibromochloromethane			103.7		%		50-140	19-AUG-20
Dichlorodifluoromethane			63.4		%		50-140	19-AUG-20
Ethylbenzene			96.4		%		50-140	19-AUG-20
n-Hexane			91.2		%		50-140	19-AUG-20
Methylene Chloride			106.6		%		50-140	19-AUG-20
MTBE			101.6		%		50-140	19-AUG-20
m+p-Xylenes			99.9		%		50-140	19-AUG-20
Methyl Ethyl Ketone			94.1		%		50-140	19-AUG-20
Methyl Isobutyl Ketone			83.9		%		50-140	19-AUG-20
o-Xylene			105.4		%		50-140	19-AUG-20
Styrene			94.8		%		50-140	19-AUG-20
Tetrachloroethylene			103.8		%		50-140	19-AUG-20
Toluene			100.2		%		50-140	19-AUG-20
trans-1,2-Dichloroethylene			101.6		%		50-140	19-AUG-20
trans-1,3-Dichloropropene			99.1		%		50-140	19-AUG-20
Trichloroethylene			103.8		%		50-140	19-AUG-20
Trichlorofluoromethane			91.3		%		50-140	19-AUG-20
Vinyl chloride			96.6		%		50-140	19-AUG-20

Quality Control Report

Workorder: L2489232 Report Date: 23-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

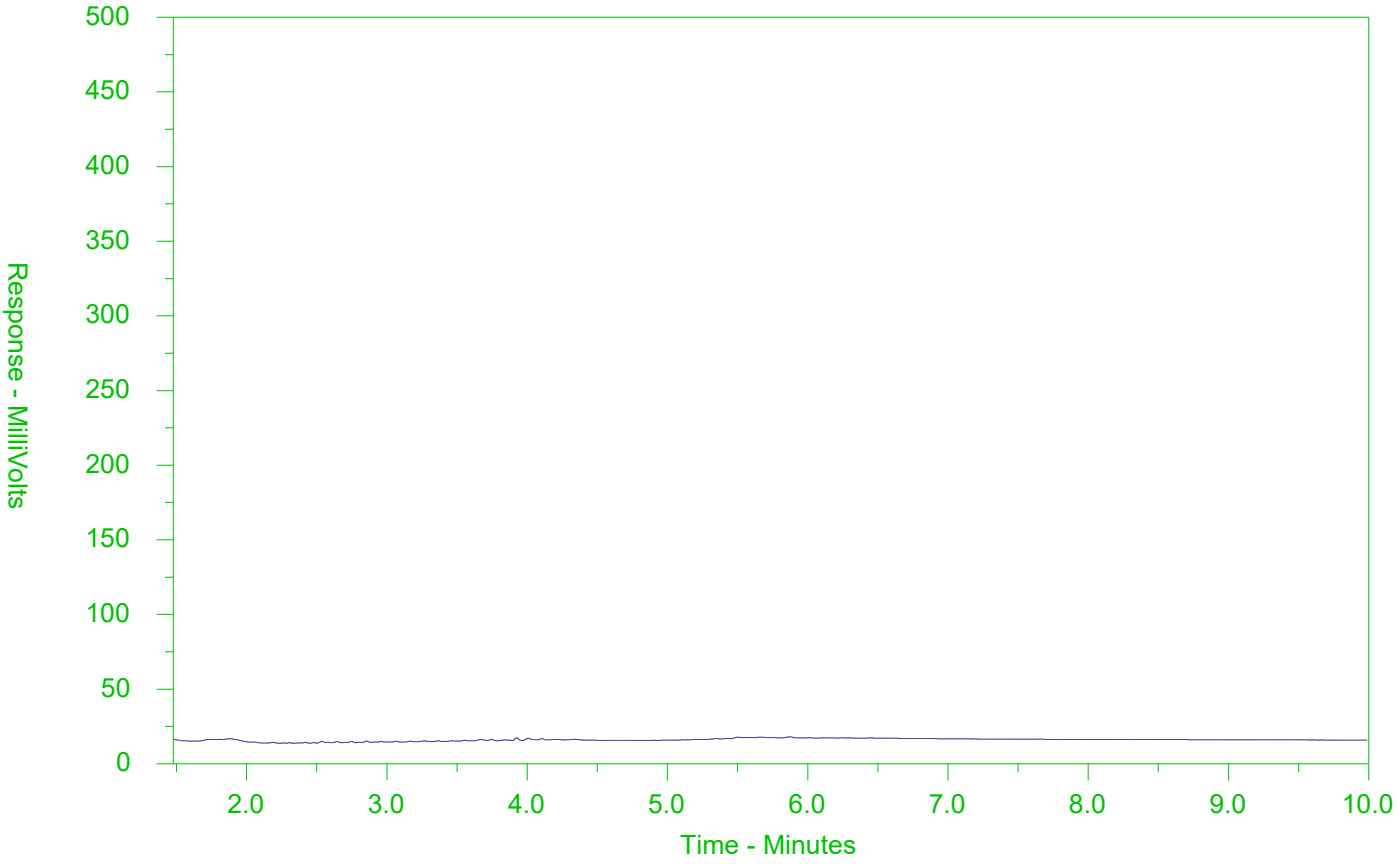
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2489232-2
Client Sample ID: BH106 SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2489232-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: yhiweish@terraprobe.ca
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: lrossi@terraprobe.ca
Email 2:

Project Information

ALS Account # / Quote #: Q62481
Job #: 1-20-0249-42
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):

ALS Contact:

Sampler: YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 106 SS1	12-Aug-20		Soil	2	✓	✓	✓	✓		
	BH 106 SS2	12-Aug-20		"	3			✓	✓		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☑ Custody seal intact Yes ☑ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				6.3			

SHIPMENT RELEASE (client use)

Released by: Yousr Hiweish | Date: Aug. 14/2020 | Time: 12:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: | Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: Aug 14/20 | Time: 1715

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION. By the use of this form the Authorized Person acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

Failure to complete all portions of this form may delay analysis. Please fill in this form legibly. If there is insufficient space, please submit using an Authorized Form.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW Form.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

TERRAPROBE-BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 14-AUG-20
Report Date: 23-AUG-20 18:23 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2489231

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: Report revised to compare to O. Reg 153/511 T2 RPI (C/F) criteria - E. Smith (23 Aug 2020).

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2489231-1	BH107 SS2	Metals	Lead (Pb)	199	120	ug/g
		Polycyclic Aromatic Hydrocarbons	Acenaphthylene	0.349	0.15	ug/g
			Benzo(a)anthracene	1.78	0.5	ug/g
			Benzo(a)pyrene	1.73	0.3	ug/g
			Benzo(b)fluoranthene	2.52	0.78	ug/g
			Dibenzo(ah)anthracene	0.317	0.1	ug/g
			Fluoranthene	4.17	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	1.32	0.38	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2489231-1	BH107 SS2	Metals	Lead (Pb)	199	120	ug/g
		Polycyclic Aromatic Hydrocarbons	Acenaphthylene	0.349	0.17	ug/g
			Benzo(a)anthracene	1.78	0.63	ug/g
			Benzo(a)pyrene	1.73	0.3	ug/g
			Benzo(b)fluoranthene	2.52	0.78	ug/g
			Dibenzo(ah)anthracene	0.317	0.1	ug/g
			Fluoranthene	4.17	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	1.32	0.48	ug/g

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits			
Lab ID				L2489231-1	L2489231-2
Sample Date				13-AUG-20	13-AUG-20
Sample ID				BH107 SS2	BH107 SS3
Analyte	**Unit**	**#1**	**#2**		
Conductivity	mS/cm	0.7	0.7	0.511	
% Moisture	%	-	-	8.42	8.15
pH	pH units	-	-	8.20	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

		Guide Limits		Lab ID	Sample Date	Sample ID
Analyte	Unit	#1	#2			
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	L2489231-1	13-AUG-20	BH107 SS2
				<0.050		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

				Lab ID	Sample Date	Sample ID
		Guide Limits				
Analyte	Unit	#1	#2			
				L2489231-1	13-AUG-20	BH107 SS2
SAR	SAR	5	5	4.57		
Calcium (Ca)	mg/L	-	-	15.7		
Magnesium (Mg)	mg/L	-	-	3.37		
Sodium (Na)	mg/L	-	-	76.5		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Metals - SOIL

			Lab ID	L2489231-1
			Sample Date	13-AUG-20
			Sample ID	BH107 SS2
Analyte	**Unit**	**Guide Limits #1**	**#2**	
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	6.8
Barium (Ba)	ug/g	390	390	158
Beryllium (Be)	ug/g	4	5	0.77
Boron (B)	ug/g	120	120	19.6
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.80
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	27.7
Cobalt (Co)	ug/g	22	22	6.6
Copper (Cu)	ug/g	140	180	24.6
Lead (Pb)	ug/g	120	120	199
Mercury (Hg)	ug/g	0.27	1.8	0.0504
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	16.3
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	32.6
Zinc (Zn)	ug/g	340	340	97.0

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2489231-1
Sample Date				13-AUG-20
Sample ID				BH107 SS2
Chromium, Hexavalent	ug/g	8	10	0.60

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

				Lab ID	L2489231-2
				Sample Date	13-AUG-20
				Sample ID	BH107 SS3
		Guide Limits			
Analyte	Unit	#1	#2		
Acetone	ug/g	16	28	<0.50	
Benzene	ug/g	0.21	0.17	<0.0068	
Bromodichloromethane	ug/g	1.5	1.9	<0.050	
Bromoform	ug/g	0.27	0.26	<0.050	
Bromomethane	ug/g	0.05	0.05	<0.050	
Carbon tetrachloride	ug/g	0.05	0.12	<0.050	
Chlorobenzene	ug/g	2.4	2.7	<0.050	
Dibromochloromethane	ug/g	2.3	2.9	<0.050	
Chloroform	ug/g	0.05	0.18	<0.050	
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050	
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050	
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050	
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050	
Dichlorodifluoromethane	ug/g	16	25	<0.050	
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050	
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050	
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050	
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050	
Methylene Chloride	ug/g	0.1	0.96	<0.050	
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050	
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042	
Ethylbenzene	ug/g	1.1	1.6	<0.018	
n-Hexane	ug/g	2.8	34	<0.050	
Methyl Ethyl Ketone	ug/g	16	44	<0.50	
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50	
MTBE	ug/g	0.75	1.4	<0.050	
Styrene	ug/g	0.7	2.2	<0.050	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2489231-2
			Sample Date	13-AUG-20
			Sample ID	BH107 SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	87.8
Surrogate: 1,4-Difluorobenzene	%	-	-	112.7

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

			Lab ID	L2489231-2
			Sample Date	13-AUG-20
			Sample ID	BH107 SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F3 (C16-C34)	ug/g	300	1300	<50
F4 (C34-C50)	ug/g	2800	5600	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	90.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	87.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2489231-1
			Sample Date	13-AUG-20
			Sample ID	BH107 SS2
Analyte	**Unit**	**Guide Limits #1**	**#2**	
Acenaphthene	ug/g	7.9	29	0.182
Acenaphthylene	ug/g	0.15	0.17	0.349
Anthracene	ug/g	0.67	0.74	0.536
Benzo(a)anthracene	ug/g	0.5	0.63	1.78
Benzo(a)pyrene	ug/g	0.3	0.3	1.73
Benzo(b)fluoranthene	ug/g	0.78	0.78	2.52
Benzo(g,h,i)perylene	ug/g	6.6	7.8	1.43
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.724
Chrysene	ug/g	7	7.8	2.25
Dibenzo(ah)anthracene	ug/g	0.1	0.1	0.317
Fluoranthene	ug/g	0.69	0.69	4.17
Fluorene	ug/g	62	69	0.202
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	1.32
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.327
1-Methylnaphthalene	ug/g	0.99	3.4	0.174 DLM
2-Methylnaphthalene	ug/g	0.99	3.4	0.154 DLM
Naphthalene	ug/g	0.6	0.75	0.155 DLM
Phenanthrene	ug/g	6.2	7.8	3.19
Pyrene	ug/g	78	78	3.43
Surrogate: 2-Fluorobiphenyl	%	-	-	106.8
Surrogate: p-Terphenyl d14	%	-	-	116.0

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2489231 Report Date: 23-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5192719								
WG3387177-4 DUP		**L2489989-1**						
Boron (B), Hot Water Ext.		0.12	0.12		ug/g	4.1	30	20-AUG-20
WG3387177-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			94.3		%		70-130	20-AUG-20
WG3387177-3 LCS								
Boron (B), Hot Water Ext.			99.7		%		70-130	20-AUG-20
WG3387177-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	20-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5191595								
WG3385198-3 DUP		**L2488953-11**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	19-AUG-20
WG3385198-2 LCS								
Cyanide, Weak Acid Diss			97.1		%		80-120	19-AUG-20
WG3385198-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	19-AUG-20
WG3385198-4 MS		**L2488953-11**						
Cyanide, Weak Acid Diss			101.2		%		70-130	19-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5192172								
WG3385366-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.1		%		70-130	20-AUG-20
WG3385366-3 DUP		**L2489160-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	20-AUG-20
WG3385366-2 LCS								
Chromium, Hexavalent			100.3		%		80-120	20-AUG-20
WG3385366-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	20-AUG-20
EC-WT	**Soil**							
Batch R5192888								
WG3387178-4 DUP		**WG3387178-3**						
Conductivity		0.133	0.131		mS/cm	1.7	20	20-AUG-20
WG3387178-2 IRM		**WT SAR4**						
Conductivity			105.0		%		70-130	20-AUG-20
WG3387518-1 LCS								
Conductivity			101.0		%		90-110	20-AUG-20
WG3387178-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5192888								
WG3387178-1 MB								
Conductivity			<0.0040		mS/cm		0.004	20-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	19-AUG-20
WG3384160-2 LCS								
F1 (C6-C10)			102.4		%		80-120	19-AUG-20
WG3384160-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	19-AUG-20
Surrogate: 3,4-Dichlorotoluene			103.1		%		60-140	19-AUG-20
WG3384160-6 MS		**L2488953-9**						
F1 (C6-C10)			94.2		%		60-140	19-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5192001								
WG3385097-3 DUP		**WG3385097-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	19-AUG-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	19-AUG-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	19-AUG-20
WG3385097-2 LCS								
F2 (C10-C16)			101.4		%		80-120	19-AUG-20
F3 (C16-C34)			103.6		%		80-120	19-AUG-20
F4 (C34-C50)			105.9		%		80-120	19-AUG-20
WG3385097-1 MB								
F2 (C10-C16)			<10		ug/g		10	19-AUG-20
F3 (C16-C34)			<50		ug/g		50	19-AUG-20
F4 (C34-C50)			<50		ug/g		50	19-AUG-20
Surrogate: 2-Bromobenzotrifluoride			97.0		%		60-140	19-AUG-20
WG3385097-4 MS		**WG3385097-5**						
F2 (C10-C16)			99.0		%		60-140	19-AUG-20
F3 (C16-C34)			104.7		%		60-140	19-AUG-20
F4 (C34-C50)			113.6		%		60-140	19-AUG-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5195129								
WG3387936-2 CRM		**WT-SS-2**						
Mercury (Hg)			109.5		%		70-130	21-AUG-20
WG3387936-4 DUP		**L2489180-20**						
Mercury (Hg)		0.0154	0.0151		ug/g	1.9	40	21-AUG-20
WG3387936-3 LCS								
Mercury (Hg)			106.5		%		80-120	21-AUG-20
WG3387936-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	21-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5192694								
WG3387170-2 CRM		**WT-SS-2**						
Antimony (Sb)			102.9		%		70-130	20-AUG-20
Arsenic (As)			96.6		%		70-130	20-AUG-20
Barium (Ba)			96.2		%		70-130	20-AUG-20
Beryllium (Be)			92.2		%		70-130	20-AUG-20
Boron (B)			8.2		mg/kg		3.5-13.5	20-AUG-20
Cadmium (Cd)			95.0		%		70-130	20-AUG-20
Chromium (Cr)			97.5		%		70-130	20-AUG-20
Cobalt (Co)			100.2		%		70-130	20-AUG-20
Copper (Cu)			98.3		%		70-130	20-AUG-20
Lead (Pb)			97.7		%		70-130	20-AUG-20
Molybdenum (Mo)			98.6		%		70-130	20-AUG-20
Nickel (Ni)			99.2		%		70-130	20-AUG-20
Selenium (Se)			0.14		mg/kg		0-0.34	20-AUG-20
Silver (Ag)			89.7		%		70-130	20-AUG-20
Thallium (Tl)			0.071		mg/kg		0.029-0.129	20-AUG-20
Uranium (U)			94.2		%		70-130	20-AUG-20
Vanadium (V)			98.8		%		70-130	20-AUG-20
Zinc (Zn)			90.3		%		70-130	20-AUG-20
WG3387170-6 DUP		**WG3387170-5**						
Antimony (Sb)		0.22	0.21		ug/g	3.6	30	20-AUG-20
Arsenic (As)		9.97	9.57		ug/g	4.1	30	20-AUG-20
Barium (Ba)		30.3	30.6		ug/g	1.0	40	20-AUG-20
Beryllium (Be)		1.04	1.08		ug/g	3.4	30	20-AUG-20
Boron (B)		16.7	16.9		ug/g	1.2	30	20-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5192694								
WG3387170-6 DUP		**WG3387170-5**						
Cadmium (Cd)		0.090	0.092		ug/g	3.0	30	20-AUG-20
Chromium (Cr)		29.5	28.6		ug/g	2.9	30	20-AUG-20
Cobalt (Co)		18.7	18.3		ug/g	2.5	30	20-AUG-20
Copper (Cu)		197	190		ug/g	3.5	30	20-AUG-20
Lead (Pb)		7.69	7.62		ug/g	1.0	40	20-AUG-20
Molybdenum (Mo)		0.33	0.32		ug/g	2.9	40	20-AUG-20
Nickel (Ni)		37.9	37.2		ug/g	1.7	30	20-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	20-AUG-20
Silver (Ag)		0.10	0.11		ug/g	3.0	40	20-AUG-20
Thallium (Tl)		0.157	0.155		ug/g	1.0	30	20-AUG-20
Uranium (U)		0.596	0.585		ug/g	1.9	30	20-AUG-20
Vanadium (V)		34.8	34.0		ug/g	2.4	30	20-AUG-20
Zinc (Zn)		86.7	86.0		ug/g	0.8	30	20-AUG-20
WG3387170-4 LCS								
Antimony (Sb)			100.2		%		80-120	20-AUG-20
Arsenic (As)			97.9		%		80-120	20-AUG-20
Barium (Ba)			98.8		%		80-120	20-AUG-20
Beryllium (Be)			92.8		%		80-120	20-AUG-20
Boron (B)			89.8		%		80-120	20-AUG-20
Cadmium (Cd)			97.1		%		80-120	20-AUG-20
Chromium (Cr)			98.2		%		80-120	20-AUG-20
Cobalt (Co)			93.9		%		80-120	20-AUG-20
Copper (Cu)			94.5		%		80-120	20-AUG-20
Lead (Pb)			95.6		%		80-120	20-AUG-20
Molybdenum (Mo)			99.4		%		80-120	20-AUG-20
Nickel (Ni)			96.6		%		80-120	20-AUG-20
Selenium (Se)			95.4		%		80-120	20-AUG-20
Silver (Ag)			96.2		%		80-120	20-AUG-20
Thallium (Tl)			96.2		%		80-120	20-AUG-20
Uranium (U)			94.7		%		80-120	20-AUG-20
Vanadium (V)			97.5		%		80-120	20-AUG-20
Zinc (Zn)			90.3		%		80-120	20-AUG-20
WG3387170-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5192694								
WG3387170-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	20-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	20-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	20-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	20-AUG-20
Boron (B)			<5.0		mg/kg		5	20-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	20-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	20-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	20-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	20-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	20-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	20-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	20-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	20-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	20-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	20-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	20-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	20-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	20-AUG-20
MOISTURE-WT	**Soil**							
Batch R5190544								
WG3385368-3 DUP		**L2489180-22**						
% Moisture		7.30	7.35		%	0.7	20	19-AUG-20
WG3385368-2 LCS								
% Moisture			100.6		%		90-110	19-AUG-20
WG3385368-1 MB								
% Moisture			<0.25		%		0.25	19-AUG-20
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-3 DUP		**WG3385360-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-3 DUP		**WG3385360-5**						
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	21-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	21-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-AUG-20
WG3385360-2 LCS								
1-Methylnaphthalene			93.2		%		50-140	21-AUG-20
2-Methylnaphthalene			89.7		%		50-140	21-AUG-20
Acenaphthene			93.1		%		50-140	21-AUG-20
Acenaphthylene			91.4		%		50-140	21-AUG-20
Anthracene			90.2		%		50-140	21-AUG-20
Benzo(a)anthracene			93.8		%		50-140	21-AUG-20
Benzo(a)pyrene			95.3		%		50-140	21-AUG-20
Benzo(b)fluoranthene			94.1		%		50-140	21-AUG-20
Benzo(g,h,i)perylene			89.8		%		50-140	21-AUG-20
Benzo(k)fluoranthene			89.3		%		50-140	21-AUG-20
Chrysene			101.2		%		50-140	21-AUG-20
Dibenzo(ah)anthracene			95.7		%		50-140	21-AUG-20
Fluoranthene			90.2		%		50-140	21-AUG-20
Fluorene			88.0		%		50-140	21-AUG-20
Indeno(1,2,3-cd)pyrene			102.0		%		50-140	21-AUG-20
Naphthalene			90.2		%		50-140	21-AUG-20
Phenanthrene			90.4		%		50-140	21-AUG-20
Pyrene			90.6		%		50-140	21-AUG-20
WG3385360-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	21-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	21-AUG-20
Acenaphthene			<0.050		ug/g		0.05	21-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	21-AUG-20
Anthracene			<0.050		ug/g		0.05	21-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	21-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	21-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	21-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Chrysene			<0.050		ug/g		0.05	21-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	21-AUG-20
Fluoranthene			<0.050		ug/g		0.05	21-AUG-20
Fluorene			<0.050		ug/g		0.05	21-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	21-AUG-20
Naphthalene			<0.013		ug/g		0.013	21-AUG-20
Phenanthrene			<0.046		ug/g		0.046	21-AUG-20
Pyrene			<0.050		ug/g		0.05	21-AUG-20
Surrogate: 2-Fluorobiphenyl			96.0		%		50-140	21-AUG-20
Surrogate: p-Terphenyl d14			107.4		%		50-140	21-AUG-20
WG3385360-4 MS		**WG3385360-5**						
1-Methylnaphthalene			88.3		%		50-140	21-AUG-20
2-Methylnaphthalene			84.8		%		50-140	21-AUG-20
Acenaphthene			88.6		%		50-140	21-AUG-20
Acenaphthylene			83.6		%		50-140	21-AUG-20
Anthracene			84.6		%		50-140	21-AUG-20
Benzo(a)anthracene			88.8		%		50-140	21-AUG-20
Benzo(a)pyrene			90.4		%		50-140	21-AUG-20
Benzo(b)fluoranthene			90.3		%		50-140	21-AUG-20
Benzo(g,h,i)perylene			84.4		%		50-140	21-AUG-20
Benzo(k)fluoranthene			87.8		%		50-140	21-AUG-20
Chrysene			98.5		%		50-140	21-AUG-20
Dibenzo(ah)anthracene			89.2		%		50-140	21-AUG-20
Fluoranthene			86.6		%		50-140	21-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5194456								
WG3385360-4 MS		**WG3385360-5**						
Fluorene			83.5		%		50-140	21-AUG-20
Indeno(1,2,3-cd)pyrene			94.2		%		50-140	21-AUG-20
Naphthalene			86.0		%		50-140	21-AUG-20
Phenanthrene			86.9		%		50-140	21-AUG-20
Pyrene			86.6		%		50-140	21-AUG-20
PH-WT	**Soil**							
Batch R5191845								
WG3385338-1 DUP		**L2489676-1**						
pH		7.64	7.59	J	pH units	0.05	0.3	19-AUG-20
WG3386494-1 LCS								
pH			7.05		pH units		6.9-7.1	19-AUG-20
SAR-R511-WT	**Soil**							
Batch R5192917								
WG3387178-4 DUP		**WG3387178-3**						
Calcium (Ca)		18.3	18.7		mg/L	2.2	30	20-AUG-20
Sodium (Na)		5.51	5.38		mg/L	2.4	30	20-AUG-20
Magnesium (Mg)		0.71	0.72		mg/L	1.1	30	20-AUG-20
WG3387178-2 IRM		**WT SAR4**						
Calcium (Ca)			101.4		%		70-130	20-AUG-20
Sodium (Na)			94.3		%		70-130	20-AUG-20
Magnesium (Mg)			102.6		%		70-130	20-AUG-20
WG3387178-5 LCS								
Calcium (Ca)			102.3		%		80-120	20-AUG-20
Sodium (Na)			100.0		%		80-120	20-AUG-20
Magnesium (Mg)			99.0		%		80-120	20-AUG-20
WG3387178-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	20-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	20-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	20-AUG-20
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	19-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	19-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	19-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-AUG-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Tetrachloroethylene		0.178	0.177		ug/g	0.9	40	19-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	19-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050		ug/g			19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-4 DUP		**WG3384160-3**						
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-AUG-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	19-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-AUG-20
WG3384160-2 LCS								
1,1,1,2-Tetrachloroethane			105.9		%		60-130	19-AUG-20
1,1,2,2-Tetrachloroethane			95.9		%		60-130	19-AUG-20
1,1,1-Trichloroethane			105.9		%		60-130	19-AUG-20
1,1,2-Trichloroethane			106.3		%		60-130	19-AUG-20
1,1-Dichloroethane			107.6		%		60-130	19-AUG-20
1,1-Dichloroethylene			98.1		%		60-130	19-AUG-20
1,2-Dibromoethane			102.1		%		70-130	19-AUG-20
1,2-Dichlorobenzene			104.2		%		70-130	19-AUG-20
1,2-Dichloroethane			104.7		%		60-130	19-AUG-20
1,2-Dichloropropane			104.5		%		70-130	19-AUG-20
1,3-Dichlorobenzene			109.6		%		70-130	19-AUG-20
1,4-Dichlorobenzene			111.1		%		70-130	19-AUG-20
Acetone			103.2		%		60-140	19-AUG-20
Benzene			107.4		%		70-130	19-AUG-20
Bromodichloromethane			114.8		%		50-140	19-AUG-20
Bromoform			105.6		%		70-130	19-AUG-20
Bromomethane			118.5		%		50-140	19-AUG-20
Carbon tetrachloride			107.3		%		70-130	19-AUG-20
Chlorobenzene			107.6		%		70-130	19-AUG-20
Chloroform			110.8		%		70-130	19-AUG-20
cis-1,2-Dichloroethylene			97.9		%		70-130	19-AUG-20
cis-1,3-Dichloropropene			97.0		%		70-130	19-AUG-20
Dibromochloromethane			101.0		%		60-130	19-AUG-20
Dichlorodifluoromethane			65.3		%		50-140	19-AUG-20
Ethylbenzene			100.3		%		70-130	19-AUG-20
n-Hexane			94.0		%		70-130	19-AUG-20
Methylene Chloride			105.2		%		70-130	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-2 LCS								
MTBE			103.7		%		70-130	19-AUG-20
m+p-Xylenes			103.9		%		70-130	19-AUG-20
Methyl Ethyl Ketone			92.0		%		60-140	19-AUG-20
Methyl Isobutyl Ketone			78.2		%		60-140	19-AUG-20
o-Xylene			109.3		%		70-130	19-AUG-20
Styrene			98.1		%		70-130	19-AUG-20
Tetrachloroethylene			107.6		%		60-130	19-AUG-20
Toluene			102.5		%		70-130	19-AUG-20
trans-1,2-Dichloroethylene			103.8		%		60-130	19-AUG-20
trans-1,3-Dichloropropene			98.1		%		70-130	19-AUG-20
Trichloroethylene			106.9		%		60-130	19-AUG-20
Trichlorofluoromethane			94.2		%		50-140	19-AUG-20
Vinyl chloride			99.3		%		60-140	19-AUG-20
WG3384160-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	19-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	19-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	19-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	19-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	19-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	19-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	19-AUG-20
Acetone			<0.50		ug/g		0.5	19-AUG-20
Benzene			<0.0068		ug/g		0.0068	19-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	19-AUG-20
Bromoform			<0.050		ug/g		0.05	19-AUG-20
Bromomethane			<0.050		ug/g		0.05	19-AUG-20
Carbon tetrachloride			<0.050		ug/g		0.05	19-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	19-AUG-20
Chloroform			<0.050		ug/g		0.05	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	19-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	19-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	19-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	19-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	19-AUG-20
n-Hexane			<0.050		ug/g		0.05	19-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	19-AUG-20
MTBE			<0.050		ug/g		0.05	19-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	19-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	19-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	19-AUG-20
o-Xylene			<0.020		ug/g		0.02	19-AUG-20
Styrene			<0.050		ug/g		0.05	19-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	19-AUG-20
Toluene			<0.080		ug/g		0.08	19-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	19-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	19-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	19-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	19-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	19-AUG-20
Surrogate: 1,4-Difluorobenzene			114.4		%		50-140	19-AUG-20
Surrogate: 4-Bromofluorobenzene			95.5		%		50-140	19-AUG-20
WG3384160-5 MS		**WG3384160-3**						
1,1,1,2-Tetrachloroethane			105.6		%		50-140	19-AUG-20
1,1,2,2-Tetrachloroethane			100.3		%		50-140	19-AUG-20
1,1,1-Trichloroethane			102.8		%		50-140	19-AUG-20
1,1,2-Trichloroethane			110.2		%		50-140	19-AUG-20
1,1-Dichloroethane			106.6		%		50-140	19-AUG-20
1,1-Dichloroethylene			95.7		%		50-140	19-AUG-20
1,2-Dibromoethane			107.2		%		50-140	19-AUG-20
1,2-Dichlorobenzene			102.7		%		50-140	19-AUG-20
1,2-Dichloroethane			108.1		%		50-140	19-AUG-20
1,2-Dichloropropane			105.0		%		50-140	19-AUG-20
1,3-Dichlorobenzene			105.9		%		50-140	19-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5191444								
WG3384160-5 MS		**WG3384160-3**						
1,4-Dichlorobenzene			108.2		%		50-140	19-AUG-20
Acetone			114.6		%		50-140	19-AUG-20
Benzene			106.1		%		50-140	19-AUG-20
Bromodichloromethane			115.8		%		50-140	19-AUG-20
Bromoform			109.8		%		50-140	19-AUG-20
Bromomethane			117.0		%		50-140	19-AUG-20
Carbon tetrachloride			103.5		%		50-140	19-AUG-20
Chlorobenzene			106.3		%		50-140	19-AUG-20
Chloroform			110.3		%		50-140	19-AUG-20
cis-1,2-Dichloroethylene			97.8		%		50-140	19-AUG-20
cis-1,3-Dichloropropene			96.1		%		50-140	19-AUG-20
Dibromochloromethane			103.7		%		50-140	19-AUG-20
Dichlorodifluoromethane			63.4		%		50-140	19-AUG-20
Ethylbenzene			96.4		%		50-140	19-AUG-20
n-Hexane			91.2		%		50-140	19-AUG-20
Methylene Chloride			106.6		%		50-140	19-AUG-20
MTBE			101.6		%		50-140	19-AUG-20
m+p-Xylenes			99.9		%		50-140	19-AUG-20
Methyl Ethyl Ketone			94.1		%		50-140	19-AUG-20
Methyl Isobutyl Ketone			83.9		%		50-140	19-AUG-20
o-Xylene			105.4		%		50-140	19-AUG-20
Styrene			94.8		%		50-140	19-AUG-20
Tetrachloroethylene			103.8		%		50-140	19-AUG-20
Toluene			100.2		%		50-140	19-AUG-20
trans-1,2-Dichloroethylene			101.6		%		50-140	19-AUG-20
trans-1,3-Dichloropropene			99.1		%		50-140	19-AUG-20
Trichloroethylene			103.8		%		50-140	19-AUG-20
Trichlorofluoromethane			91.3		%		50-140	19-AUG-20
Vinyl chloride			96.6		%		50-140	19-AUG-20

Quality Control Report

Workorder: L2489231 Report Date: 23-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

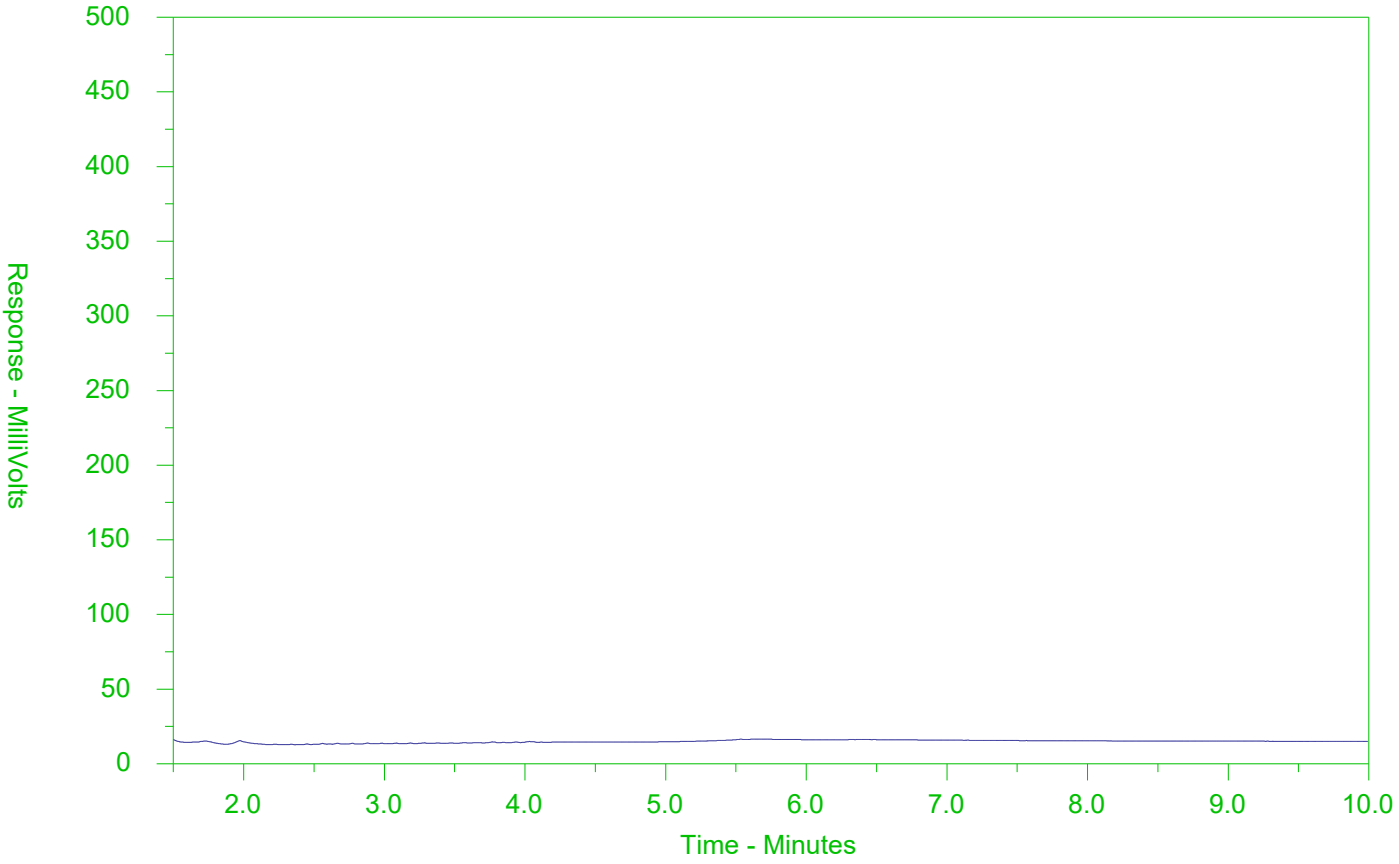
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2489231-2
Client Sample ID: BH107 SS3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2489231-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62481	AFE/Cost Center:	PO#
Job #:	1-20-0249-42	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): L2489231 **ALS Contact:** **Sampler:** YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Icluding BTEX)	PHCs (F1 - F4)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 107 SS2	13-Aug-20		Soil	2	✓	✓				
	BH 107 SS3	13-Aug-20		Soil	3			✓	✓		

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human consumption/ use? ☐ YES ☑ NO	MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	
Ice Packs	☐ Ice Cubes ☑	Custody seal intact	Yes ☐	No	
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C	
				7.6	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	
Yousr Hiweish	Aug. 14/2020	12:00						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

TERRAPROBE-BRAMPTON
ATTN: Yousr Hiweish
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 25-AUG-20
Report Date: 02-SEP-20 17:35 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2493781

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: Report revised to compare to T2 RPI (C/F) criteria - E. Smith (02 Sep 2020).

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2493781-1	BH 107 SS5	Saturated Paste Extractables	SAR	5.59	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2493781-1	BH 107 SS5	Saturated Paste Extractables	SAR	5.59	5	SAR

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits		
Lab ID				L2493781-1
Sample Date				13-AUG-20
Sample ID				BH 107 SS5
Analyte	**Unit**	**#1**	**#2**	
Conductivity	mS/cm	0.7	0.7	0.463
% Moisture	%	-	-	6.59
pH	pH units	-	-	8.04

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2493781-1
			Sample Date	13-AUG-20
			Sample ID	BH 107 SS5
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

			Lab ID	L2493781-1
			Sample Date	13-AUG-20
			Sample ID	BH 107 SS5
Analyte	**Unit**	**Guide Limits #1**	**#2**	
SAR	SAR	5	5	5.59
Calcium (Ca)	mg/L	-	-	7.89
Magnesium (Mg)	mg/L	-	-	3.05
Sodium (Na)	mg/L	-	-	72.9

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

			Lab ID	L2493781-1
			Sample Date	13-AUG-20
			Sample ID	BH 107 SS5
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	5.2
Barium (Ba)	ug/g	390	390	56.1
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	13.2
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.67
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	16.0
Cobalt (Co)	ug/g	22	22	9.1
Copper (Cu)	ug/g	140	180	45.1
Lead (Pb)	ug/g	120	120	11.1
Mercury (Hg)	ug/g	0.27	1.8	0.0102
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	17.9
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	23.0
Zinc (Zn)	ug/g	340	340	52.3

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2493781-1
Sample Date				13-AUG-20
Sample ID				BH 107 SS5
Chromium, Hexavalent	ug/g	8	10	<0.20

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2493781-1
			Sample Date	13-AUG-20
			Sample ID	BH 107 SS5
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046
Pyrene	ug/g	78	78	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	92.8
Surrogate: p-Terphenyl d14	%	-	-	109.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2493781 Report Date: 02-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5202948								
WG3392138-4 DUP		**L2494424-10**						
Boron (B), Hot Water Ext.		0.44	0.41		ug/g	7.1	30	27-AUG-20
WG3392138-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			107.7		%		70-130	27-AUG-20
WG3392138-3 LCS								
Boron (B), Hot Water Ext.			103.0		%		70-130	27-AUG-20
WG3392138-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	27-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5202275								
WG3390913-7 DUP		**WG3390913-9**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	26-AUG-20
WG3390913-6 LCS								
Cyanide, Weak Acid Diss			103.5		%		80-120	26-AUG-20
WG3390913-5 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	26-AUG-20
WG3390913-8 MS		**WG3390913-9**						
Cyanide, Weak Acid Diss			117.8		%		70-130	26-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5203388								
WG3391269-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			102.6		%		70-130	27-AUG-20
WG3391269-3 DUP		**L2490956-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	27-AUG-20
WG3391269-2 LCS								
Chromium, Hexavalent			96.4		%		80-120	27-AUG-20
WG3391269-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	27-AUG-20
EC-WT	**Soil**							
Batch R5202908								
WG3392126-4 DUP		**WG3392126-3**						
Conductivity		0.271	0.272		mS/cm	0.4	20	27-AUG-20
WG3392126-2 IRM		**WT SAR4**						
Conductivity			98.2		%		70-130	27-AUG-20
WG3392474-1 LCS								
Conductivity			98.0		%		90-110	27-AUG-20
WG3392126-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5202908								
WG3392126-1 MB								
Conductivity			<0.0040		mS/cm		0.004	27-AUG-20
HG-200.2-CVAA-WT	**Soil**							
Batch R5202711								
WG3392121-2 CRM		**WT-SS-2**						
Mercury (Hg)			118.6		%		70-130	27-AUG-20
WG3392121-6 DUP		**WG3392121-5**						
Mercury (Hg)		0.0155	0.0136		ug/g	13	40	27-AUG-20
WG3392121-3 LCS								
Mercury (Hg)			103.0		%		80-120	27-AUG-20
WG3392121-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	27-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5202670								
WG3392121-2 CRM		**WT-SS-2**						
Antimony (Sb)			110.4		%		70-130	27-AUG-20
Arsenic (As)			92.1		%		70-130	27-AUG-20
Barium (Ba)			95.6		%		70-130	27-AUG-20
Beryllium (Be)			97.6		%		70-130	27-AUG-20
Boron (B)			8.2		mg/kg		3.5-13.5	27-AUG-20
Cadmium (Cd)			90.5		%		70-130	27-AUG-20
Chromium (Cr)			95.3		%		70-130	27-AUG-20
Cobalt (Co)			98.1		%		70-130	27-AUG-20
Copper (Cu)			98.4		%		70-130	27-AUG-20
Lead (Pb)			101.3		%		70-130	27-AUG-20
Molybdenum (Mo)			98.4		%		70-130	27-AUG-20
Nickel (Ni)			97.8		%		70-130	27-AUG-20
Selenium (Se)			0.12		mg/kg		0-0.34	27-AUG-20
Silver (Ag)			97.9		%		70-130	27-AUG-20
Thallium (Tl)			0.071		mg/kg		0.029-0.129	27-AUG-20
Uranium (U)			89.7		%		70-130	27-AUG-20
Vanadium (V)			97.4		%		70-130	27-AUG-20
Zinc (Zn)			90.5		%		70-130	27-AUG-20
WG3392121-6 DUP		**WG3392121-5**						
Antimony (Sb)		0.20	0.17		ug/g	18	30	27-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5202670								
WG3392121-6 DUP		**WG3392121-5**						
Arsenic (As)		5.04	5.10		ug/g	1.1	30	27-AUG-20
Barium (Ba)		36.3	36.8		ug/g	1.3	40	27-AUG-20
Beryllium (Be)		0.48	0.48		ug/g	0.3	30	27-AUG-20
Boron (B)		7.4	7.6		ug/g	2.5	30	27-AUG-20
Cadmium (Cd)		0.104	0.106		ug/g	1.3	30	27-AUG-20
Chromium (Cr)		15.9	16.0		ug/g	0.4	30	27-AUG-20
Cobalt (Co)		12.4	12.3		ug/g	1.1	30	27-AUG-20
Copper (Cu)		29.8	29.5		ug/g	1.3	30	27-AUG-20
Lead (Pb)		9.25	9.15		ug/g	1.1	40	27-AUG-20
Molybdenum (Mo)		0.55	0.58		ug/g	4.1	40	27-AUG-20
Nickel (Ni)		22.0	22.0		ug/g	0.4	30	27-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	27-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	27-AUG-20
Thallium (Tl)		0.115	0.112		ug/g	2.4	30	27-AUG-20
Uranium (U)		0.508	0.507		ug/g	0.3	30	27-AUG-20
Vanadium (V)		23.2	23.7		ug/g	1.9	30	27-AUG-20
Zinc (Zn)		46.5	45.1		ug/g	3.1	30	27-AUG-20
WG3392121-4 LCS								
Antimony (Sb)			99.5		%		80-120	27-AUG-20
Arsenic (As)			96.9		%		80-120	27-AUG-20
Barium (Ba)			98.5		%		80-120	27-AUG-20
Beryllium (Be)			97.0		%		80-120	27-AUG-20
Boron (B)			92.4		%		80-120	27-AUG-20
Cadmium (Cd)			96.3		%		80-120	27-AUG-20
Chromium (Cr)			96.5		%		80-120	27-AUG-20
Cobalt (Co)			97.0		%		80-120	27-AUG-20
Copper (Cu)			96.1		%		80-120	27-AUG-20
Lead (Pb)			93.8		%		80-120	27-AUG-20
Molybdenum (Mo)			99.95		%		80-120	27-AUG-20
Nickel (Ni)			97.9		%		80-120	27-AUG-20
Selenium (Se)			92.9		%		80-120	27-AUG-20
Silver (Ag)			98.4		%		80-120	27-AUG-20
Thallium (Tl)			92.5		%		80-120	27-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5202670								
WG3392121-4 LCS								
Uranium (U)			97.4		%		80-120	27-AUG-20
Vanadium (V)			100.1		%		80-120	27-AUG-20
Zinc (Zn)			90.0		%		80-120	27-AUG-20
WG3392121-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	27-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	27-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	27-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	27-AUG-20
Boron (B)			<5.0		mg/kg		5	27-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	27-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	27-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	27-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	27-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	27-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	27-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	27-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	27-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	27-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	27-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	27-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	27-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	27-AUG-20
MOISTURE-WT	**Soil**							
Batch R5200218								
WG3391148-3 DUP		**L2490956-2**						
% Moisture		0.44	0.39		%	13	20	26-AUG-20
WG3391148-2 LCS								
% Moisture			100.0		%		90-110	26-AUG-20
WG3391148-1 MB								
% Moisture			<0.25		%		0.25	26-AUG-20
PAH-511-WT	**Soil**							
Batch R5203792								
WG3391210-3 DUP		**WG3391210-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	28-AUG-20

Quality Control Report

Workorder: L2493781 Report Date: 02-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5203792								
WG3391210-3 DUP		**WG3391210-5**						
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	28-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	28-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	28-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	28-AUG-20
WG3391210-2 LCS								
1-Methylnaphthalene			87.3		%		50-140	28-AUG-20
2-Methylnaphthalene			83.9		%		50-140	28-AUG-20
Acenaphthene			89.8		%		50-140	28-AUG-20
Acenaphthylene			82.2		%		50-140	28-AUG-20
Anthracene			84.2		%		50-140	28-AUG-20
Benzo(a)anthracene			81.1		%		50-140	28-AUG-20
Benzo(a)pyrene			84.2		%		50-140	28-AUG-20
Benzo(b)fluoranthene			80.2		%		50-140	28-AUG-20
Benzo(g,h,i)perylene			92.1		%		50-140	28-AUG-20
Benzo(k)fluoranthene			88.2		%		50-140	28-AUG-20
Chrysene			95.8		%		50-140	28-AUG-20
Dibenzo(ah)anthracene			87.4		%		50-140	28-AUG-20
Fluoranthene			82.3		%		50-140	28-AUG-20
Fluorene			84.0		%		50-140	28-AUG-20
Indeno(1,2,3-cd)pyrene			86.2		%		50-140	28-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5203792								
WG3391210-2 LCS								
Naphthalene			85.8		%		50-140	28-AUG-20
Phenanthrene			87.0		%		50-140	28-AUG-20
Pyrene			84.1		%		50-140	28-AUG-20
WG3391210-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	28-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	28-AUG-20
Acenaphthene			<0.050		ug/g		0.05	28-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	28-AUG-20
Anthracene			<0.050		ug/g		0.05	28-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	28-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	28-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	28-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	28-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	28-AUG-20
Chrysene			<0.050		ug/g		0.05	28-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	28-AUG-20
Fluoranthene			<0.050		ug/g		0.05	28-AUG-20
Fluorene			<0.050		ug/g		0.05	28-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	28-AUG-20
Naphthalene			<0.013		ug/g		0.013	28-AUG-20
Phenanthrene			<0.046		ug/g		0.046	28-AUG-20
Pyrene			<0.050		ug/g		0.05	28-AUG-20
Surrogate: 2-Fluorobiphenyl			92.8		%		50-140	28-AUG-20
Surrogate: p-Terphenyl d14			108.8		%		50-140	28-AUG-20
WG3391210-4 MS		**WG3391210-5**						
1-Methylnaphthalene			91.2		%		50-140	28-AUG-20
2-Methylnaphthalene			88.1		%		50-140	28-AUG-20
Acenaphthene			95.0		%		50-140	28-AUG-20
Acenaphthylene			86.2		%		50-140	28-AUG-20
Anthracene			89.1		%		50-140	28-AUG-20
Benzo(a)anthracene			88.3		%		50-140	28-AUG-20
Benzo(a)pyrene			91.6		%		50-140	28-AUG-20
Benzo(b)fluoranthene			88.9		%		50-140	28-AUG-20
Benzo(g,h,i)perylene			98.3		%		50-140	28-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5203792								
WG3391210-4 MS		**WG3391210-5**						
Benzo(k)fluoranthene			93.7		%		50-140	28-AUG-20
Chrysene			101.4		%		50-140	28-AUG-20
Dibenzo(ah)anthracene			94.6		%		50-140	28-AUG-20
Fluoranthene			87.9		%		50-140	28-AUG-20
Fluorene			88.9		%		50-140	28-AUG-20
Indeno(1,2,3-cd)pyrene			90.9		%		50-140	28-AUG-20
Naphthalene			88.4		%		50-140	28-AUG-20
Phenanthrene			91.7		%		50-140	28-AUG-20
Pyrene			89.6		%		50-140	28-AUG-20
PH-WT	**Soil**							
Batch R5201238								
WG3391199-1 DUP		**L2490956-1**						
pH		8.24	8.28	J	pH units	0.04	0.3	26-AUG-20
WG3391432-1 LCS								
pH			7.02		pH units		6.9-7.1	26-AUG-20
SAR-R511-WT	**Soil**							
Batch R5202971								
WG3392126-4 DUP		**WG3392126-3**						
Calcium (Ca)		5.18	5.15		mg/L	0.6	30	27-AUG-20
Sodium (Na)		31.2	30.9		mg/L	1.0	30	27-AUG-20
Magnesium (Mg)		5.71	5.65		mg/L	1.1	30	27-AUG-20
WG3392126-2 IRM		**WT SAR4**						
Calcium (Ca)			88.1		%		70-130	27-AUG-20
Sodium (Na)			99.4		%		70-130	27-AUG-20
Magnesium (Mg)			96.6		%		70-130	27-AUG-20
WG3392126-5 LCS								
Calcium (Ca)			104.0		%		80-120	27-AUG-20
Sodium (Na)			100.8		%		80-120	27-AUG-20
Magnesium (Mg)			100.0		%		80-120	27-AUG-20
WG3392126-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	27-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	27-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	27-AUG-20

Quality Control Report

Workorder: L2493781 Report Date: 02-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2493781-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: yhiweish@terraprobe.ca

Email 2:

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: lrossi@terraprobe.ca

Email 2:

Project Information

ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2493781 **ALS Contact:** ES **Sampler:** YH

Turnaround Time (TAT) Options (Regular [R] TAT is Standard TAT if received by 3 pm - business days - no surcharges apply)

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH107 SS5	13-Aug-20		Soil	2	✓	✓				Limited Soil	

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
5.6°C			12.8°		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Yousr Hiweish	Date: Aug 24/2020	Time: 11:00	Received by:	Date: 25/Aug/2020	Time: 9:00	Received by:	Date: Aug 25	Time: 14:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

TERRAPROBE-BRAMPTON
ATTN: Yousr Hiweish
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 20-AUG-20
Report Date: 27-AUG-20 22:58 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2491989

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: Report revised to compare to O. Reg 153 T2 RPI (C/F) criteria - E. Smith (28 Aug 2020).

Emily Smith
Account Manager

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2491989-1	BH108 SS1	Physical Tests	Conductivity	0.716	0.7	mS/cm
		Metals	Arsenic (As)	22.9	18	ug/g
		Polycyclic Aromatic Hydrocarbons	Benzo(a)anthracene	0.586	0.5	ug/g
			Benzo(a)pyrene	0.446	0.3	ug/g
			Fluoranthene	1.35	0.69	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2491989-1	BH108 SS1	Physical Tests	Conductivity	0.716	0.7	mS/cm
		Metals	Arsenic (As)	22.9	18	ug/g
		Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene	0.446	0.3	ug/g
			Fluoranthene	1.35	0.69	ug/g

ANALYTICAL REPORT

Physical Tests - SOIL

			Lab ID	L2491989-1	L2491989-2	L2491989-3
			Sample Date	19-AUG-20	19-AUG-20	19-AUG-20
			Sample ID	BH108 SS1	BH108 SS4	BH108 SS5
Analyte	**Unit**	**Guide Limits #1**	**#2**			
Conductivity	mS/cm	0.7	0.7	0.716		
% Moisture	%	-	-	7.41	11.7	6.17
pH	pH units	-	-	7.76		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Cyanides - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2491989-1 Sample Date: 19-AUG-20 Sample ID: BH108 SS1
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Saturated Paste Extractables - SOIL

			Lab ID	L2491989-1
			Sample Date	19-AUG-20
			Sample ID	BH108 SS1
Analyte	**Unit**	**Guide Limits #1**	**#2**	
SAR	SAR	5	5	1.39
Calcium (Ca)	mg/L	-	-	83.0
Magnesium (Mg)	mg/L	-	-	5.79
Sodium (Na)	mg/L	-	-	48.5

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2491989-1 Sample Date: 19-AUG-20 Sample ID: BH108 SS1
Antimony (Sb)	ug/g	7.5	7.5	1.4
Arsenic (As)	ug/g	18	18	22.9
Barium (Ba)	ug/g	390	390	304
Beryllium (Be)	ug/g	4	5	1.22
Boron (B)	ug/g	120	120	15.3
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.74
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	21.9
Cobalt (Co)	ug/g	22	22	9.3
Copper (Cu)	ug/g	140	180	56.7
Lead (Pb)	ug/g	120	120	93.6
Mercury (Hg)	ug/g	0.27	1.8	0.194
Molybdenum (Mo)	ug/g	6.9	6.9	2.4
Nickel (Ni)	ug/g	100	130	23.5
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	0.61
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	27.1
Zinc (Zn)	ug/g	340	340	167

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2491989-1 Sample Date: 19-AUG-20 Sample ID: BH108 SS1
Chromium, Hexavalent	ug/g	8	10	<0.20

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Volatile Organic Compounds - SOIL

			Lab ID	L2491989-2
			Sample Date	19-AUG-20
			Sample ID	BH108 SS4
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	1.5	1.9	<0.050
Bromoform	ug/g	0.27	0.26	<0.050
Bromomethane	ug/g	0.05	0.05	<0.050
Carbon tetrachloride	ug/g	0.05	0.12	<0.050
Chlorobenzene	ug/g	2.4	2.7	<0.050
Dibromochloromethane	ug/g	2.3	2.9	<0.050
Chloroform	ug/g	0.05	0.18	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050
Dichlorodifluoromethane	ug/g	16	25	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050
Methylene Chloride	ug/g	0.1	0.96	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042
Ethylbenzene	ug/g	1.1	1.6	<0.018
n-Hexane	ug/g	2.8	34	<0.050
Methyl Ethyl Ketone	ug/g	16	44	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50
MTBE	ug/g	0.75	1.4	<0.050
Styrene	ug/g	0.7	2.2	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

			Lab ID	L2491989-2
			Sample Date	19-AUG-20
			Sample ID	BH108 SS4
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	99.0
Surrogate: 1,4-Difluorobenzene	%	-	-	117.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Hydrocarbons - SOIL

		Guide Limits			
				Lab ID	L2491989-2
				Sample Date	19-AUG-20
				Sample ID	BH108 SS4
Analyte	**Unit**	**#1**	**#2**		
F1 (C6-C10)	ug/g	55	65	<5.0	
F1-BTEX	ug/g	55	65	<5.0	
F2 (C10-C16)	ug/g	98	150	<10	
F3 (C16-C34)	ug/g	300	1300	<50	
F4 (C34-C50)	ug/g	2800	5600	<50	
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	
Chrom. to baseline at nC50		-	-	YES	
Surrogate: 2-Bromobenzotrifluoride	%	-	-	83.8	
Surrogate: 3,4-Dichlorotoluene	%	-	-	74.6	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

		Guide Limits			
Lab ID				L2491989-1	L2491989-3
Sample Date				19-AUG-20	19-AUG-20
Sample ID				BH108 SS1	BH108 SS5
Analyte	**Unit**	**#1**	**#2**		
Acenaphthene	ug/g	7.9	29	0.055	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050
Anthracene	ug/g	0.67	0.74	0.175	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.586	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	0.446	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.728	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.277	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.196	<0.050
Chrysene	ug/g	7	7.8	0.653	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	0.078	<0.050
Fluoranthene	ug/g	0.69	0.69	1.35	<0.050
Fluorene	ug/g	62	69	0.058	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.257	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.608	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	0.309	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	0.299	<0.030
Naphthalene	ug/g	0.6	0.75	0.189	<0.013
Phenanthrene	ug/g	6.2	7.8	1.02	<0.046
Pyrene	ug/g	78	78	1.17	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	74.6	87.0
Surrogate: p-Terphenyl d14	%	-	-	86.3	100.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2491989 Report Date: 27-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5199099								
WG3389407-4 DUP		**L2492029-2**						
Boron (B), Hot Water Ext.		0.84	0.84		ug/g	0.0	30	24-AUG-20
WG3389407-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			98.6		%		70-130	24-AUG-20
WG3389407-3 LCS								
Boron (B), Hot Water Ext.			102.0		%		70-130	24-AUG-20
WG3389407-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	24-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5198399								
WG3388118-3 DUP		**L2492019-2**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	24-AUG-20
WG3388118-2 LCS								
Cyanide, Weak Acid Diss			96.3		%		80-120	24-AUG-20
WG3388118-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	24-AUG-20
WG3388118-4 MS		**L2492019-2**						
Cyanide, Weak Acid Diss			115.6		%		70-130	24-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5198677								
WG3388114-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.6		%		70-130	24-AUG-20
WG3388114-3 DUP		**L2491976-6**						
Chromium, Hexavalent		0.53	0.55		ug/g	4.0	35	24-AUG-20
WG3388114-2 LCS								
Chromium, Hexavalent			101.0		%		80-120	24-AUG-20
WG3388114-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	24-AUG-20
EC-WT	**Soil**							
Batch R5199235								
WG3389408-4 DUP		**WG3389408-3**						
Conductivity		0.305	0.303		mS/cm	0.7	20	24-AUG-20
WG3389408-2 IRM		**WT SAR4**						
Conductivity			104.8		%		70-130	24-AUG-20
WG3389631-1 LCS								
Conductivity			99.3		%		90-110	24-AUG-20
WG3389408-1 MB								

Quality Control Report

Workorder: L2491989 Report Date: 27-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5199235								
WG3389408-1 MB								
Conductivity			<0.0040		mS/cm		0.004	24-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5197659								
WG3388092-4 DUP		**WG3388092-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	24-AUG-20
WG3388092-2 LCS								
F1 (C6-C10)			100.9		%		80-120	23-AUG-20
WG3388092-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	23-AUG-20
Surrogate: 3,4-Dichlorotoluene			101.7		%		60-140	23-AUG-20
WG3388092-6 MS		**L2491992-2**						
F1 (C6-C10)			90.6		%		60-140	23-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5199643								
WG3388989-3 DUP		**WG3388989-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	25-AUG-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	25-AUG-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	25-AUG-20
WG3388989-2 LCS								
F2 (C10-C16)			100.3		%		80-120	25-AUG-20
F3 (C16-C34)			98.4		%		80-120	25-AUG-20
F4 (C34-C50)			98.8		%		80-120	25-AUG-20
WG3388989-1 MB								
F2 (C10-C16)			<10		ug/g		10	25-AUG-20
F3 (C16-C34)			<50		ug/g		50	25-AUG-20
F4 (C34-C50)			<50		ug/g		50	25-AUG-20
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	25-AUG-20
WG3388989-4 MS		**WG3388989-5**						
F2 (C10-C16)			101.4		%		60-140	25-AUG-20
F3 (C16-C34)			101.3		%		60-140	25-AUG-20
F4 (C34-C50)			104.0		%		60-140	25-AUG-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5198676								
WG3389399-2 CRM		**WT-SS-2**						
Mercury (Hg)			118.7		%		70-130	24-AUG-20
WG3389399-6 DUP		**WG3389399-5**						
Mercury (Hg)		0.0182	0.0182		ug/g	0.2	40	24-AUG-20
WG3389399-3 LCS								
Mercury (Hg)			106.0		%		80-120	24-AUG-20
WG3389399-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	24-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5199569								
WG3389399-2 CRM		**WT-SS-2**						
Antimony (Sb)			102.8		%		70-130	24-AUG-20
Arsenic (As)			101.4		%		70-130	24-AUG-20
Barium (Ba)			110.6		%		70-130	24-AUG-20
Beryllium (Be)			107.0		%		70-130	24-AUG-20
Boron (B)			10.2		mg/kg		3.5-13.5	24-AUG-20
Cadmium (Cd)			105.3		%		70-130	24-AUG-20
Chromium (Cr)			105.0		%		70-130	24-AUG-20
Cobalt (Co)			100.8		%		70-130	24-AUG-20
Copper (Cu)			100.1		%		70-130	24-AUG-20
Lead (Pb)			102.7		%		70-130	24-AUG-20
Molybdenum (Mo)			101.1		%		70-130	24-AUG-20
Nickel (Ni)			102.1		%		70-130	24-AUG-20
Selenium (Se)			0.13		mg/kg		0-0.34	24-AUG-20
Silver (Ag)			93.3		%		70-130	24-AUG-20
Thallium (Tl)			0.068		mg/kg		0.029-0.129	24-AUG-20
Uranium (U)			90.0		%		70-130	24-AUG-20
Vanadium (V)			104.1		%		70-130	24-AUG-20
Zinc (Zn)			96.4		%		70-130	24-AUG-20
WG3389399-6 DUP		**WG3389399-5**						
Antimony (Sb)		0.14	0.15		ug/g	5.5	30	24-AUG-20
Arsenic (As)		6.89	7.18		ug/g	4.1	30	24-AUG-20
Barium (Ba)		47.2	47.1		ug/g	0.4	40	24-AUG-20
Beryllium (Be)		0.73	0.71		ug/g	3.1	30	24-AUG-20
Boron (B)		11.6	11.9		ug/g	2.6	30	24-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5199569								
WG3389399-6 DUP		**WG3389399-5**						
Cadmium (Cd)		0.051	0.067		ug/g	28	30	24-AUG-20
Chromium (Cr)		21.3	21.5		ug/g	0.6	30	24-AUG-20
Cobalt (Co)		12.7	13.2		ug/g	3.8	30	24-AUG-20
Copper (Cu)		46.6	44.2		ug/g	5.3	30	24-AUG-20
Lead (Pb)		7.57	9.83		ug/g	26	40	24-AUG-20
Molybdenum (Mo)		0.27	0.28		ug/g	5.0	40	24-AUG-20
Nickel (Ni)		27.2	32.7		ug/g	18	30	24-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	24-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-AUG-20
Thallium (Tl)		0.095	0.104		ug/g	9.1	30	24-AUG-20
Uranium (U)		0.609	0.597		ug/g	2.0	30	24-AUG-20
Vanadium (V)		28.9	29.8		ug/g	3.1	30	24-AUG-20
Zinc (Zn)		58.7	61.4		ug/g	4.5	30	24-AUG-20
WG3389399-4 LCS								
Antimony (Sb)			115.2		%		80-120	24-AUG-20
Arsenic (As)			99.7		%		80-120	24-AUG-20
Barium (Ba)			100.5		%		80-120	24-AUG-20
Beryllium (Be)			103.1		%		80-120	24-AUG-20
Boron (B)			105.1		%		80-120	24-AUG-20
Cadmium (Cd)			98.6		%		80-120	24-AUG-20
Chromium (Cr)			99.4		%		80-120	24-AUG-20
Cobalt (Co)			95.9		%		80-120	24-AUG-20
Copper (Cu)			96.7		%		80-120	24-AUG-20
Lead (Pb)			100.2		%		80-120	24-AUG-20
Molybdenum (Mo)			105.0		%		80-120	24-AUG-20
Nickel (Ni)			97.4		%		80-120	24-AUG-20
Selenium (Se)			97.7		%		80-120	24-AUG-20
Silver (Ag)			97.9		%		80-120	24-AUG-20
Thallium (Tl)			96.8		%		80-120	24-AUG-20
Uranium (U)			88.7		%		80-120	24-AUG-20
Vanadium (V)			99.8		%		80-120	24-AUG-20
Zinc (Zn)			93.4		%		80-120	24-AUG-20
WG3389399-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5199569								
WG3389399-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	24-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	24-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	24-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	24-AUG-20
Boron (B)			<5.0		mg/kg		5	24-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	24-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	24-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	24-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	24-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	24-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	24-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	24-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	24-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	24-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	24-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	24-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	24-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	24-AUG-20
MOISTURE-WT	**Soil**							
Batch R5196616								
WG3388218-3 DUP		**L2491976-1**						
% Moisture		7.67	6.60		%	15	20	21-AUG-20
WG3388218-2 LCS								
% Moisture			102.3		%		90-110	21-AUG-20
WG3388218-1 MB								
% Moisture			<0.25		%		0.25	21-AUG-20
Batch R5196618								
WG3388157-3 DUP		**L2491974-1**						
% Moisture		6.72	7.08		%	5.2	20	22-AUG-20
WG3388157-2 LCS								
% Moisture			101.8		%		90-110	22-AUG-20
WG3388157-1 MB								
% Moisture			<0.25		%		0.25	22-AUG-20
PAH-511-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5200153								
WG3388162-3 DUP		**WG3388162-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	25-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	25-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
WG3388162-2 LCS								
1-Methylnaphthalene			79.2		%		50-140	25-AUG-20
2-Methylnaphthalene			75.5		%		50-140	25-AUG-20
Acenaphthene			82.7		%		50-140	25-AUG-20
Acenaphthylene			79.2		%		50-140	25-AUG-20
Anthracene			80.1		%		50-140	25-AUG-20
Benzo(a)anthracene			78.7		%		50-140	25-AUG-20
Benzo(a)pyrene			82.0		%		50-140	25-AUG-20
Benzo(b)fluoranthene			84.8		%		50-140	25-AUG-20
Benzo(g,h,i)perylene			80.2		%		50-140	25-AUG-20
Benzo(k)fluoranthene			79.0		%		50-140	25-AUG-20
Chrysene			89.1		%		50-140	25-AUG-20
Dibenzo(ah)anthracene			82.8		%		50-140	25-AUG-20
Fluoranthene			71.0		%		50-140	25-AUG-20
Fluorene			78.2		%		50-140	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5200153								
WG3388162-2 LCS								
Indeno(1,2,3-cd)pyrene			82.3		%		50-140	25-AUG-20
Naphthalene			79.5		%		50-140	25-AUG-20
Phenanthrene			80.9		%		50-140	25-AUG-20
Pyrene			77.9		%		50-140	25-AUG-20
WG3388162-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	25-AUG-20
Acenaphthene			<0.050		ug/g		0.05	25-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	25-AUG-20
Anthracene			<0.050		ug/g		0.05	25-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	25-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	25-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-AUG-20
Chrysene			<0.050		ug/g		0.05	25-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-AUG-20
Fluoranthene			<0.050		ug/g		0.05	25-AUG-20
Fluorene			<0.050		ug/g		0.05	25-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-AUG-20
Naphthalene			<0.013		ug/g		0.013	25-AUG-20
Phenanthrene			<0.046		ug/g		0.046	25-AUG-20
Pyrene			<0.050		ug/g		0.05	25-AUG-20
Surrogate: 2-Fluorobiphenyl			87.7		%		50-140	25-AUG-20
Surrogate: p-Terphenyl d14			101.6		%		50-140	25-AUG-20
WG3388162-4 MS		**WG3388162-5**						
1-Methylnaphthalene			81.4		%		50-140	25-AUG-20
2-Methylnaphthalene			77.3		%		50-140	25-AUG-20
Acenaphthene			84.7		%		50-140	25-AUG-20
Acenaphthylene			80.7		%		50-140	25-AUG-20
Anthracene			82.3		%		50-140	25-AUG-20
Benzo(a)anthracene			81.2		%		50-140	25-AUG-20
Benzo(a)pyrene			83.9		%		50-140	25-AUG-20
Benzo(b)fluoranthene			88.9		%		50-140	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5200153								
WG3388162-4 MS		**WG3388162-5**						
Benzo(g,h,i)perylene			80.9		%		50-140	25-AUG-20
Benzo(k)fluoranthene			80.5		%		50-140	25-AUG-20
Chrysene			91.7		%		50-140	25-AUG-20
Dibenzo(ah)anthracene			84.2		%		50-140	25-AUG-20
Fluoranthene			73.7		%		50-140	25-AUG-20
Fluorene			79.0		%		50-140	25-AUG-20
Indeno(1,2,3-cd)pyrene			83.4		%		50-140	25-AUG-20
Naphthalene			81.4		%		50-140	25-AUG-20
Phenanthrene			83.2		%		50-140	25-AUG-20
Pyrene			80.8		%		50-140	25-AUG-20
PH-WT	**Soil**							
Batch R5196160								
WG3388160-1 DUP		**L2491974-1**						
pH		7.90	7.96	J	pH units	0.06	0.3	21-AUG-20
WG3388715-1 LCS								
pH			6.98		pH units		6.9-7.1	21-AUG-20
SAR-R511-WT	**Soil**							
Batch R5199220								
WG3389408-4 DUP		**WG3389408-3**						
Calcium (Ca)		3.24	2.96		mg/L	9.0	30	24-AUG-20
Sodium (Na)		56.0	56.4		mg/L	0.7	30	24-AUG-20
Magnesium (Mg)		<0.50	<0.50	RPD-NA	mg/L	N/A	30	24-AUG-20
WG3389408-2 IRM		**WT SAR4**						
Calcium (Ca)			105.4		%		70-130	24-AUG-20
Sodium (Na)			98.0		%		70-130	24-AUG-20
Magnesium (Mg)			104.3		%		70-130	24-AUG-20
WG3389408-5 LCS								
Calcium (Ca)			99.0		%		80-120	24-AUG-20
Sodium (Na)			97.4		%		80-120	24-AUG-20
Magnesium (Mg)			95.2		%		80-120	24-AUG-20
WG3389408-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	24-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	24-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	24-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5197659								
WG3388092-4 DUP		**WG3388092-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	24-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	24-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	24-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-AUG-20
Styrene		<0.050	<0.050		ug/g			24-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5197659								
WG3388092-4 DUP		**WG3388092-3**						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	24-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	24-AUG-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	24-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	24-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	24-AUG-20
WG3388092-2 LCS								
1,1,1,2-Tetrachloroethane			99.6		%		60-130	23-AUG-20
1,1,2,2-Tetrachloroethane			95.7		%		60-130	23-AUG-20
1,1,1-Trichloroethane			100.2		%		60-130	23-AUG-20
1,1,2-Trichloroethane			98.2		%		60-130	23-AUG-20
1,1-Dichloroethane			103.4		%		60-130	23-AUG-20
1,1-Dichloroethylene			92.5		%		60-130	23-AUG-20
1,2-Dibromoethane			99.9		%		70-130	23-AUG-20
1,2-Dichlorobenzene			100.6		%		70-130	23-AUG-20
1,2-Dichloroethane			100.3		%		60-130	23-AUG-20
1,2-Dichloropropane			102.3		%		70-130	23-AUG-20
1,3-Dichlorobenzene			99.6		%		70-130	23-AUG-20
1,4-Dichlorobenzene			99.6		%		70-130	23-AUG-20
Acetone			111.6		%		60-140	23-AUG-20
Benzene			101.9		%		70-130	23-AUG-20
Bromodichloromethane			108.6		%		50-140	23-AUG-20
Bromoform			100.6		%		70-130	23-AUG-20
Bromomethane			110.3		%		50-140	23-AUG-20
Carbon tetrachloride			100.5		%		70-130	23-AUG-20
Chlorobenzene			99.0		%		70-130	23-AUG-20
Chloroform			103.8		%		70-130	23-AUG-20
cis-1,2-Dichloroethylene			94.3		%		70-130	23-AUG-20
cis-1,3-Dichloropropene			94.0		%		70-130	23-AUG-20
Dibromochloromethane			98.1		%		60-130	23-AUG-20
Dichlorodifluoromethane			61.5		%		50-140	23-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5197659								
WG3388092-2 LCS								
Ethylbenzene			97.1		%		70-130	23-AUG-20
n-Hexane			92.2		%		70-130	23-AUG-20
Methylene Chloride			100.7		%		70-130	23-AUG-20
MTBE			97.2		%		70-130	23-AUG-20
m+p-Xylenes			97.1		%		70-130	23-AUG-20
Methyl Ethyl Ketone			104.6		%		60-140	23-AUG-20
Methyl Isobutyl Ketone			99.6		%		60-140	23-AUG-20
o-Xylene			105.4		%		70-130	23-AUG-20
Styrene			100.7		%		70-130	23-AUG-20
Tetrachloroethylene			102.1		%		60-130	23-AUG-20
Toluene			96.8		%		70-130	23-AUG-20
trans-1,2-Dichloroethylene			95.3		%		60-130	23-AUG-20
trans-1,3-Dichloropropene			105.5		%		70-130	23-AUG-20
Trichloroethylene			103.0		%		60-130	23-AUG-20
Trichlorofluoromethane			88.1		%		50-140	23-AUG-20
Vinyl chloride			95.2		%		60-140	23-AUG-20
WG3388092-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	23-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	23-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	23-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	23-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	23-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	23-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	23-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	23-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	23-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	23-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	23-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	23-AUG-20
Acetone			<0.50		ug/g		0.5	23-AUG-20
Benzene			<0.0068		ug/g		0.0068	23-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	23-AUG-20
Bromoform			<0.050		ug/g		0.05	23-AUG-20
Bromomethane			<0.050		ug/g		0.05	23-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5197659								
WG3388092-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	23-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	23-AUG-20
Chloroform			<0.050		ug/g		0.05	23-AUG-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	23-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	23-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	23-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	23-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	23-AUG-20
n-Hexane			<0.050		ug/g		0.05	23-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	23-AUG-20
MTBE			<0.050		ug/g		0.05	23-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	23-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	23-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	23-AUG-20
o-Xylene			<0.020		ug/g		0.02	23-AUG-20
Styrene			<0.050		ug/g		0.05	23-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	23-AUG-20
Toluene			<0.080		ug/g		0.08	23-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	23-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	23-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	23-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	23-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	23-AUG-20
Surrogate: 1,4-Difluorobenzene			116.2		%		50-140	23-AUG-20
Surrogate: 4-Bromofluorobenzene			102.0		%		50-140	23-AUG-20
WG3388092-5 MS		**WG3388092-3**						
1,1,1,2-Tetrachloroethane			109.0		%		50-140	23-AUG-20
1,1,2,2-Tetrachloroethane			95.3		%		50-140	23-AUG-20
1,1,1-Trichloroethane			114.3		%		50-140	23-AUG-20
1,1,2-Trichloroethane			102.6		%		50-140	23-AUG-20
1,1-Dichloroethane			111.0		%		50-140	23-AUG-20
1,1-Dichloroethylene			102.7		%		50-140	23-AUG-20
1,2-Dibromoethane			101.8		%		50-140	23-AUG-20
1,2-Dichlorobenzene			103.0		%		50-140	23-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5197659								
WG3388092-5 MS		**WG3388092-3**						
1,2-Dichloroethane			102.5		%		50-140	23-AUG-20
1,2-Dichloropropane			108.1		%		50-140	23-AUG-20
1,3-Dichlorobenzene			99.0		%		50-140	23-AUG-20
1,4-Dichlorobenzene			96.2		%		50-140	23-AUG-20
Acetone			115.8		%		50-140	23-AUG-20
Benzene			109.1		%		50-140	23-AUG-20
Bromodichloromethane			113.9		%		50-140	23-AUG-20
Bromoform			101.3		%		50-140	23-AUG-20
Bromomethane			114.5		%		50-140	23-AUG-20
Carbon tetrachloride			112.5		%		50-140	23-AUG-20
Chlorobenzene			103.7		%		50-140	23-AUG-20
Chloroform			111.6		%		50-140	23-AUG-20
cis-1,2-Dichloroethylene			98.6		%		50-140	23-AUG-20
cis-1,3-Dichloropropene			84.7		%		50-140	23-AUG-20
Dibromochloromethane			102.7		%		50-140	23-AUG-20
Dichlorodifluoromethane			80.4		%		50-140	23-AUG-20
Ethylbenzene			105.5		%		50-140	23-AUG-20
n-Hexane			107.8		%		50-140	23-AUG-20
Methylene Chloride			104.7		%		50-140	23-AUG-20
MTBE			100.5		%		50-140	23-AUG-20
m+p-Xylenes			103.1		%		50-140	23-AUG-20
Methyl Ethyl Ketone			83.7		%		50-140	23-AUG-20
Methyl Isobutyl Ketone			93.5		%		50-140	23-AUG-20
o-Xylene			114.3		%		50-140	23-AUG-20
Styrene			103.0		%		50-140	23-AUG-20
Tetrachloroethylene			105.7		%		50-140	23-AUG-20
Toluene			106.5		%		50-140	23-AUG-20
trans-1,2-Dichloroethylene			94.6		%		50-140	23-AUG-20
trans-1,3-Dichloropropene			94.3		%		50-140	23-AUG-20
Trichloroethylene			106.0		%		50-140	23-AUG-20
Trichlorofluoromethane			102.8		%		50-140	23-AUG-20
Vinyl chloride			106.6		%		50-140	23-AUG-20

Quality Control Report

Workorder: L2491989 Report Date: 27-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

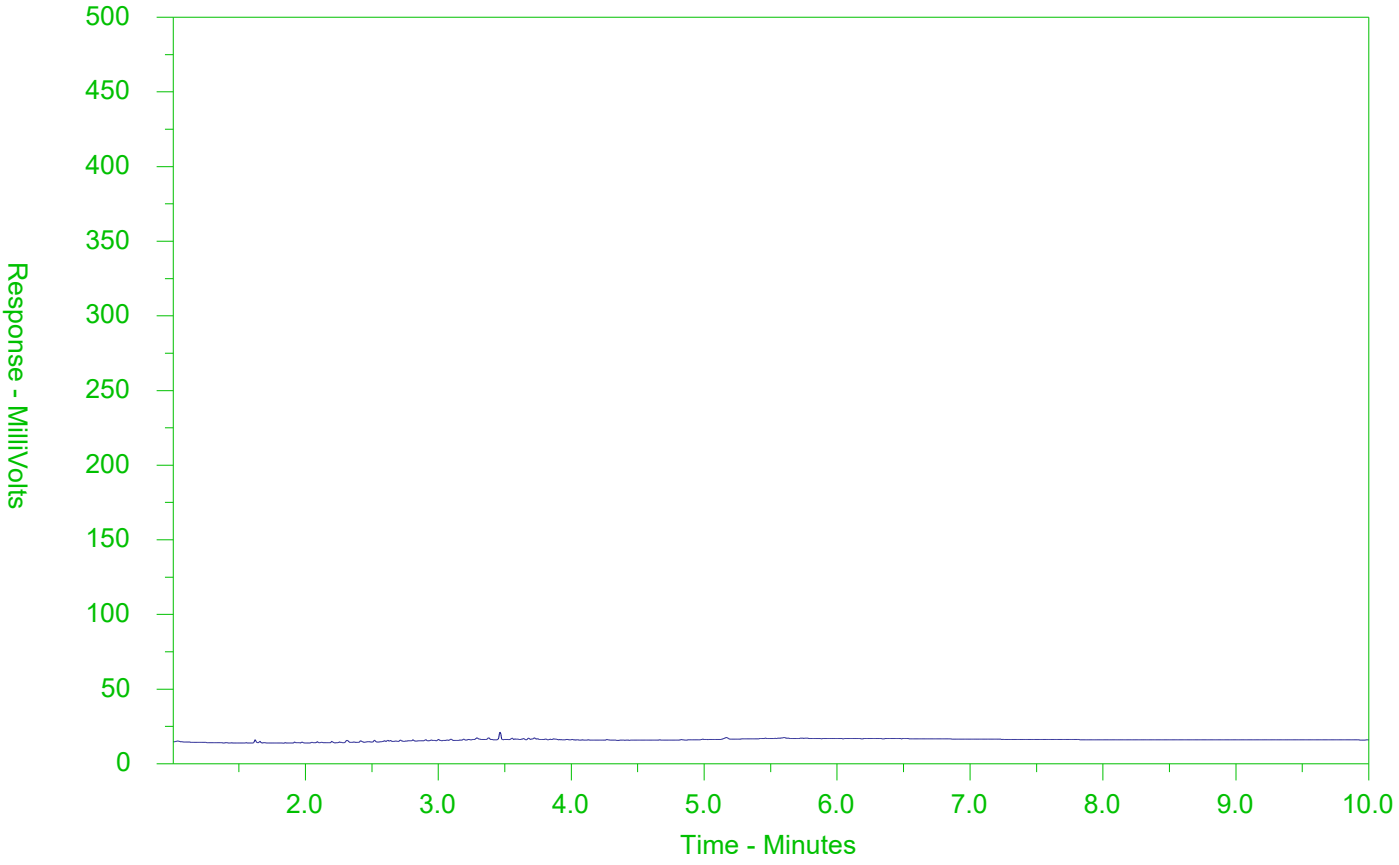
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2491989-2
Client Sample ID: BH108 SS4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2491989-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Project Information	
ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	

ALS Lab Work Order # (lab use only): L2491989

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: **Sampler:** YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & inorganics	PAHs	VOCs (Icluding BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 108 SS1	19-Aug-20		Soil	2	✓	✓					
	BH 108 SS4	"		"	3			✓	✓			
	BH 108 SS5	"		"	1		✓					

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				14.0			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Yousr Hiweish	Aug 20/2020	12:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
	Aug 20	17:05

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

TERRAPROBE - BRAMPTON
ATTN: Yousr Hiweish
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 28-AUG-20
Report Date: 05-SEP-20 15:47 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2495925

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
(No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
(No parameter exceedances)						

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2495925-1
Sample Date				28-AUG-20
Sample ID				BH 108 SS5
Conductivity	mS/cm	0.7	0.7	0.167
% Moisture	%	-	-	6.75
pH	pH units	-	-	7.99

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Cyanides - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2495925-1
Sample Date				28-AUG-20
Sample ID				BH 108 SS5
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

		Guide Limits		Lab ID	Sample Date	Sample ID
Analyte	Unit	#1	#2			
				L2495925-1	28-AUG-20	BH 108 SS5
SAR	SAR	5	5	0.49		
Calcium (Ca)	mg/L	-	-	13.6		
Magnesium (Mg)	mg/L	-	-	0.70		
Sodium (Na)	mg/L	-	-	6.90		

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2495925-1 Sample Date: 28-AUG-20 Sample ID: BH 108 SS5
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	5.9
Barium (Ba)	ug/g	390	390	48.0
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	12.1
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.38
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	14.3
Cobalt (Co)	ug/g	22	22	9.0
Copper (Cu)	ug/g	140	180	43.9
Lead (Pb)	ug/g	120	120	13.7
Mercury (Hg)	ug/g	0.27	1.8	0.0235
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	17.6
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	25.8
Zinc (Zn)	ug/g	340	340	53.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2495925-1
Sample Date				28-AUG-20
Sample ID				BH 108 SS5
Chromium, Hexavalent	ug/g	8	10	<0.20

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2495925 Report Date: 05-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5210531								
WG3398107-4 DUP		**L2496955-7**						
Boron (B), Hot Water Ext.		3.98	4.32		ug/g	8.2	30	04-SEP-20
WG3398107-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			113.6		%		70-130	04-SEP-20
WG3398107-3 LCS								
Boron (B), Hot Water Ext.			102.0		%		70-130	04-SEP-20
WG3398107-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	04-SEP-20
CN-WAD-R511-WT	**Soil**							
Batch R5208719								
WG3395320-3 DUP		**L2495796-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	02-SEP-20
WG3395320-2 LCS								
Cyanide, Weak Acid Diss			98.7		%		80-120	02-SEP-20
WG3395320-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	02-SEP-20
WG3395320-4 MS		**L2495796-1**						
Cyanide, Weak Acid Diss			102.5		%		70-130	02-SEP-20
CR-CR6-IC-WT	**Soil**							
Batch R5209371								
WG3395312-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			102.1		%		70-130	02-SEP-20
WG3395312-3 DUP		**L2495967-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	02-SEP-20
WG3395312-2 LCS								
Chromium, Hexavalent			98.4		%		80-120	02-SEP-20
WG3395312-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	02-SEP-20
EC-WT	**Soil**							
Batch R5210678								
WG3398126-4 DUP		**WG3398126-3**						
Conductivity		0.232	0.224		mS/cm	3.5	20	04-SEP-20
WG3398126-2 IRM		**WT SAR4**						
Conductivity			101.2		%		70-130	04-SEP-20
WG3398429-1 LCS								
Conductivity			100.9		%		90-110	04-SEP-20
WG3398126-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5210678								
WG3398126-1 MB								
Conductivity			<0.0040		mS/cm		0.004	04-SEP-20
HG-200.2-CVAA-WT	**Soil**							
Batch R5210352								
WG3398103-2 CRM		**WT-SS-2**						
Mercury (Hg)			104.1		%		70-130	04-SEP-20
WG3398103-6 DUP		**WG3398103-5**						
Mercury (Hg)		0.0100	0.0101		ug/g	0.6	40	04-SEP-20
WG3398103-3 LCS								
Mercury (Hg)			106.0		%		80-120	04-SEP-20
WG3398103-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	04-SEP-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5210493								
WG3398103-2 CRM		**WT-SS-2**						
Antimony (Sb)			105.7		%		70-130	04-SEP-20
Arsenic (As)			102.9		%		70-130	04-SEP-20
Barium (Ba)			107.4		%		70-130	04-SEP-20
Beryllium (Be)			97.1		%		70-130	04-SEP-20
Boron (B)			9.1		mg/kg		3.5-13.5	04-SEP-20
Cadmium (Cd)			101.2		%		70-130	04-SEP-20
Chromium (Cr)			102.2		%		70-130	04-SEP-20
Cobalt (Co)			107.0		%		70-130	04-SEP-20
Copper (Cu)			104.9		%		70-130	04-SEP-20
Lead (Pb)			103.5		%		70-130	04-SEP-20
Molybdenum (Mo)			113.3		%		70-130	04-SEP-20
Nickel (Ni)			106.8		%		70-130	04-SEP-20
Selenium (Se)			0.14		mg/kg		0-0.34	04-SEP-20
Silver (Ag)			80.5		%		70-130	04-SEP-20
Thallium (Tl)			0.073		mg/kg		0.029-0.129	04-SEP-20
Uranium (U)			106.7		%		70-130	04-SEP-20
Vanadium (V)			105.0		%		70-130	04-SEP-20
Zinc (Zn)			101.4		%		70-130	04-SEP-20
WG3398103-6 DUP		**WG3398103-5**						
Antimony (Sb)		0.13	0.12		ug/g	6.9	30	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5210493								
WG3398103-6 DUP		**WG3398103-5**						
Arsenic (As)		4.47	4.50		ug/g	0.7	30	04-SEP-20
Barium (Ba)		57.9	58.1		ug/g	0.3	40	04-SEP-20
Beryllium (Be)		0.42	0.38		ug/g	9.2	30	04-SEP-20
Boron (B)		8.2	7.3		ug/g	11	30	04-SEP-20
Cadmium (Cd)		0.057	0.063		ug/g	11	30	04-SEP-20
Chromium (Cr)		14.9	14.5		ug/g	2.5	30	04-SEP-20
Cobalt (Co)		9.23	9.17		ug/g	0.6	30	04-SEP-20
Copper (Cu)		30.7	30.6		ug/g	0.3	30	04-SEP-20
Lead (Pb)		7.05	7.12		ug/g	0.9	40	04-SEP-20
Molybdenum (Mo)		0.37	0.36		ug/g	3.7	40	04-SEP-20
Nickel (Ni)		16.9	17.0		ug/g	0.3	30	04-SEP-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	04-SEP-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	04-SEP-20
Thallium (Tl)		0.105	0.097		ug/g	7.6	30	04-SEP-20
Uranium (U)		0.505	0.493		ug/g	2.5	30	04-SEP-20
Vanadium (V)		24.5	24.7		ug/g	0.7	30	04-SEP-20
Zinc (Zn)		38.1	37.9		ug/g	0.7	30	04-SEP-20
WG3398103-4 LCS								
Antimony (Sb)			96.5		%		80-120	04-SEP-20
Arsenic (As)			94.6		%		80-120	04-SEP-20
Barium (Ba)			99.4		%		80-120	04-SEP-20
Beryllium (Be)			91.9		%		80-120	04-SEP-20
Boron (B)			90.8		%		80-120	04-SEP-20
Cadmium (Cd)			93.6		%		80-120	04-SEP-20
Chromium (Cr)			94.9		%		80-120	04-SEP-20
Cobalt (Co)			94.0		%		80-120	04-SEP-20
Copper (Cu)			91.0		%		80-120	04-SEP-20
Lead (Pb)			93.3		%		80-120	04-SEP-20
Molybdenum (Mo)			98.1		%		80-120	04-SEP-20
Nickel (Ni)			93.7		%		80-120	04-SEP-20
Selenium (Se)			93.3		%		80-120	04-SEP-20
Silver (Ag)			96.3		%		80-120	04-SEP-20
Thallium (Tl)			90.3		%		80-120	04-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5210493								
WG3398103-4 LCS								
Uranium (U)			98.5		%		80-120	04-SEP-20
Vanadium (V)			96.6		%		80-120	04-SEP-20
Zinc (Zn)			88.7		%		80-120	04-SEP-20
WG3398103-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	04-SEP-20
Arsenic (As)			<0.10		mg/kg		0.1	04-SEP-20
Barium (Ba)			<0.50		mg/kg		0.5	04-SEP-20
Beryllium (Be)			<0.10		mg/kg		0.1	04-SEP-20
Boron (B)			<5.0		mg/kg		5	04-SEP-20
Cadmium (Cd)			<0.020		mg/kg		0.02	04-SEP-20
Chromium (Cr)			<0.50		mg/kg		0.5	04-SEP-20
Cobalt (Co)			<0.10		mg/kg		0.1	04-SEP-20
Copper (Cu)			<0.50		mg/kg		0.5	04-SEP-20
Lead (Pb)			<0.50		mg/kg		0.5	04-SEP-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	04-SEP-20
Nickel (Ni)			<0.50		mg/kg		0.5	04-SEP-20
Selenium (Se)			<0.20		mg/kg		0.2	04-SEP-20
Silver (Ag)			<0.10		mg/kg		0.1	04-SEP-20
Thallium (Tl)			<0.050		mg/kg		0.05	04-SEP-20
Uranium (U)			<0.050		mg/kg		0.05	04-SEP-20
Vanadium (V)			<0.20		mg/kg		0.2	04-SEP-20
Zinc (Zn)			<2.0		mg/kg		2	04-SEP-20
MOISTURE-WT	**Soil**							
Batch R5208442								
WG3395489-3 DUP		**L2496016-1**						
% Moisture		11.2	10.7		%	4.4	20	01-SEP-20
WG3395489-2 LCS								
% Moisture			102.7		%		90-110	01-SEP-20
WG3395489-1 MB								
% Moisture			<0.25		%		0.25	01-SEP-20
PH-WT	**Soil**							
Batch R5207994								
WG3394517-1 DUP		**L2495967-2**						
pH		7.88	7.90	J	pH units	0.02	0.3	01-SEP-20
WG3395586-1 LCS								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Soil**							
Batch R5207994								
WG3395586-1 LCS								
pH			6.98		pH units		6.9-7.1	01-SEP-20
SAR-R511-WT	**Soil**							
Batch R5210656								
WG3398126-4 DUP		**WG3398126-3**						
Calcium (Ca)		9.22	9.68		mg/L	4.9	30	04-SEP-20
Sodium (Na)		4.41	4.56		mg/L	3.3	30	04-SEP-20
Magnesium (Mg)		10.2	10.7		mg/L	4.8	30	04-SEP-20
WG3398126-2 IRM		**WT SAR4**						
Calcium (Ca)			96.3		%		70-130	04-SEP-20
Sodium (Na)			101.1		%		70-130	04-SEP-20
Magnesium (Mg)			100.0		%		70-130	04-SEP-20
WG3398126-5 LCS								
Calcium (Ca)			105.7		%		80-120	04-SEP-20
Sodium (Na)			103.2		%		80-120	04-SEP-20
Magnesium (Mg)			102.0		%		80-120	04-SEP-20
WG3398126-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	04-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	04-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	04-SEP-20

Quality Control Report

Workorder: L2495925 Report Date: 05-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Yousr Hiweish

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2495925-COFC

COC Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Form	
Company:	Terraprobe Inc	Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Contact:	Yousr Hiweish	Quality Control (QC) Report with Report	☑ YES ☐ NO
Phone:	905-796-2650	☑ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Street:	11 Indell Lane	Email 1 or Fax	yhiweish@terraprobe.ca
City/Province:	Brampton, Ontario	Email 2	
Postal Code:	L6T 3Y3	Email 3	
Invoice To	Same as Report To ☐ YES ☑ NO	**Invoice Distribution**	
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Company:	Terraprobe Inc	Email 1 or Fax	lrossi@terraprobe.ca
Contact:	Lorena Rossi	Email 2	

Project Information

ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2495925 KH

ALS Contact: **Sampler:** YH

Turnaround Time (TAT) Options - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4-20%] ☐		1 Business day [E - 100%] ☐
	3 day [P3-25%] ☐		Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐
	2 day [P2-50%] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 108 SS5	28-Aug-20		Soil	1	✓						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				11° 7			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Yousr Hiweish	Aug 28/2020	11:00				KH	8-28-2020	1600

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

TERRAPROBE-BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 20-AUG-20
Report Date: 27-AUG-20 22:54 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2491701

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Comments: Report revised to compare to O. Reg 153 T2 RPI criteria (C/F) - E. Smith (28 Aug 2020).

Emily Smith
Account Manager

ANALYTICAL REPORT

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	Guideline

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)

(No parameter exceedances)

Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)

(No parameter exceedances)

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits			
Lab ID				L2491701-1	L2491701-2
Sample Date				18-AUG-20	18-AUG-20
Sample ID				BH109 SS1	BH109 SS2A
Analyte	**Unit**	**#1**	**#2**		
Conductivity	mS/cm	0.7	0.7	0.432	
% Moisture	%	-	-	11.5	15.6
pH	pH units	-	-	7.34	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2491701-1
			Sample Date	18-AUG-20
			Sample ID	BH109 SS1
Analyte	**Unit**	**Guide Limits #1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

			Lab ID	L2491701-1
			Sample Date	18-AUG-20
			Sample ID	BH109 SS1
Analyte	**Unit**	**Guide Limits #1**	**#2**	
SAR	SAR	5	5	0.84
Calcium (Ca)	mg/L	-	-	49.0
Magnesium (Mg)	mg/L	-	-	4.30
Sodium (Na)	mg/L	-	-	22.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2491701-1 Sample Date: 18-AUG-20 Sample ID: BH109 SS1
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	5.4
Barium (Ba)	ug/g	390	390	59.3
Beryllium (Be)	ug/g	4	5	0.60
Boron (B)	ug/g	120	120	8.1
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.52
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	18.4
Cobalt (Co)	ug/g	22	22	8.5
Copper (Cu)	ug/g	140	180	32.6
Lead (Pb)	ug/g	120	120	11.1
Mercury (Hg)	ug/g	0.27	1.8	0.0319
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	18.6
Selenium (Se)	ug/g	2.4	2.4	<1.0
Silver (Ag)	ug/g	20	25	<0.20
Thallium (Tl)	ug/g	1	1	<0.50
Uranium (U)	ug/g	23	23	<1.0
Vanadium (V)	ug/g	86	86	29.0
Zinc (Zn)	ug/g	340	340	51.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Speciated Metals - SOIL

			Lab ID	L2491701-1
			Sample Date	18-AUG-20
			Sample ID	BH109 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Chromium, Hexavalent	ug/g	8	10	0.50

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Volatile Organic Compounds - SOIL

				Lab ID	L2491701-2
				Sample Date	18-AUG-20
				Sample ID	BH109 SS2A
		Guide Limits			
Analyte	Unit	#1	#2		
Acetone	ug/g	16	28	<0.50	
Benzene	ug/g	0.21	0.17	<0.0068	
Bromodichloromethane	ug/g	1.5	1.9	<0.050	
Bromoform	ug/g	0.27	0.26	<0.050	
Bromomethane	ug/g	0.05	0.05	<0.050	
Carbon tetrachloride	ug/g	0.05	0.12	<0.050	
Chlorobenzene	ug/g	2.4	2.7	<0.050	
Dibromochloromethane	ug/g	2.3	2.9	<0.050	
Chloroform	ug/g	0.05	0.18	<0.050	
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050	
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050	
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050	
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050	
Dichlorodifluoromethane	ug/g	16	25	<0.050	
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050	
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050	
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050	
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050	
Methylene Chloride	ug/g	0.1	0.96	<0.050	
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050	
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042	
Ethylbenzene	ug/g	1.1	1.6	<0.018	
n-Hexane	ug/g	2.8	34	<0.050	
Methyl Ethyl Ketone	ug/g	16	44	<0.50	
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50	
MTBE	ug/g	0.75	1.4	<0.050	
Styrene	ug/g	0.7	2.2	<0.050	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

			Lab ID	L2491701-2
			Sample Date	18-AUG-20
			Sample ID	BH109 SS2A
		Guide Limits		
Analyte	Unit	#1	#2	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	86.1
Surrogate: 1,4-Difluorobenzene	%	-	-	100.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Hydrocarbons - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2491701-2
Sample Date				18-AUG-20
Sample ID				BH109 SS2A
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F3 (C16-C34)	ug/g	300	1300	<50
F4 (C34-C50)	ug/g	2800	5600	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	91.1
Surrogate: 3,4-Dichlorotoluene	%	-	-	79.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2491701-1
			Sample Date	18-AUG-20
			Sample ID	BH109 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046
Pyrene	ug/g	78	78	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	102.6
Surrogate: p-Terphenyl d14	%	-	-	117.0

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Polychlorinated Biphenyls - SOIL

			Lab ID	L2491701-1
			Sample Date	18-AUG-20
			Sample ID	BH109 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Aroclor 1242	ug/g	-	-	<0.010
Aroclor 1248	ug/g	-	-	<0.010
Aroclor 1254	ug/g	-	-	<0.010
Aroclor 1260	ug/g	-	-	<0.010
Total PCBs	ug/g	0.35	0.35	<0.020
Surrogate: d14-Terphenyl	%	-	-	117.8

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082

An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5198976								
WG3389403-4 DUP		**L2491911-1**						
Boron (B), Hot Water Ext.		6.4	5.9		ug/g	8.6	30	24-AUG-20
WG3389403-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			98.4		%		70-130	24-AUG-20
WG3389403-3 LCS								
Boron (B), Hot Water Ext.			102.0		%		70-130	24-AUG-20
WG3389403-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	24-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5198399								
WG3388118-3 DUP		**L2492019-2**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	24-AUG-20
WG3388118-2 LCS								
Cyanide, Weak Acid Diss			96.3		%		80-120	24-AUG-20
WG3388118-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	24-AUG-20
WG3388118-4 MS		**L2492019-2**						
Cyanide, Weak Acid Diss			115.6		%		70-130	24-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5198677								
WG3388114-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.6		%		70-130	24-AUG-20
WG3388114-3 DUP		**L2491976-6**						
Chromium, Hexavalent		0.53	0.55		ug/g	4.0	35	24-AUG-20
WG3388114-2 LCS								
Chromium, Hexavalent			101.0		%		80-120	24-AUG-20
WG3388114-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	24-AUG-20
EC-WT	**Soil**							
Batch R5198718								
WG3389405-4 DUP		**WG3389405-3**						
Conductivity		0.432	0.434		mS/cm	0.5	20	24-AUG-20
WG3389405-2 IRM		**WT SAR4**						
Conductivity			105.2		%		70-130	24-AUG-20
WG3389625-1 LCS								
Conductivity			100.3		%		90-110	24-AUG-20
WG3389405-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5198718								
WG3389405-1 MB								
Conductivity			<0.0040		mS/cm		0.004	24-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5199576								
WG3387307-4 DUP		**WG3387307-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	25-AUG-20
WG3387307-2 LCS								
F1 (C6-C10)			99.3		%		80-120	25-AUG-20
WG3387307-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	25-AUG-20
Surrogate: 3,4-Dichlorotoluene			90.1		%		60-140	25-AUG-20
WG3387307-6 MS		**L2491494-1**						
F1 (C6-C10)			102.5		%		60-140	25-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5199304								
WG3387994-17 DUP		**WG3387994-16**						
F2 (C10-C16)		24	26		ug/g	5.9	30	24-AUG-20
F3 (C16-C34)		65	67		ug/g	2.4	30	24-AUG-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	24-AUG-20
WG3387994-12 LCS								
F2 (C10-C16)			103.5		%		80-120	24-AUG-20
F3 (C16-C34)			110.7		%		80-120	24-AUG-20
F4 (C34-C50)			118.1		%		80-120	24-AUG-20
WG3387994-11 MB								
F2 (C10-C16)			<10		ug/g		10	24-AUG-20
F3 (C16-C34)			<50		ug/g		50	24-AUG-20
F4 (C34-C50)			<50		ug/g		50	24-AUG-20
Surrogate: 2-Bromobenzotrifluoride			92.1		%		60-140	24-AUG-20
WG3387994-18 MS		**WG3387994-16**						
F2 (C10-C16)			101.9		%		60-140	24-AUG-20
F3 (C16-C34)			104.1		%		60-140	24-AUG-20
F4 (C34-C50)			107.9		%		60-140	24-AUG-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5198667								
WG3388831-2 CRM		**WT-SS-2**						
Mercury (Hg)			113.7		%		70-130	24-AUG-20
WG3388831-6 DUP		**WG3388831-5**						
Mercury (Hg)		0.0137	0.0133		ug/g	2.9	40	24-AUG-20
WG3388831-3 LCS								
Mercury (Hg)			110.5		%		80-120	24-AUG-20
WG3388831-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	24-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5199536								
WG3388831-2 CRM		**WT-SS-2**						
Antimony (Sb)			91.8		%		70-130	24-AUG-20
Arsenic (As)			102.1		%		70-130	24-AUG-20
Barium (Ba)			110.9		%		70-130	24-AUG-20
Beryllium (Be)			99.8		%		70-130	24-AUG-20
Boron (B)			9.4		mg/kg		3.5-13.5	24-AUG-20
Cadmium (Cd)			101.8		%		70-130	24-AUG-20
Chromium (Cr)			97.6		%		70-130	24-AUG-20
Cobalt (Co)			99.7		%		70-130	24-AUG-20
Copper (Cu)			101.9		%		70-130	24-AUG-20
Lead (Pb)			103.6		%		70-130	24-AUG-20
Molybdenum (Mo)			106.0		%		70-130	24-AUG-20
Nickel (Ni)			100.2		%		70-130	24-AUG-20
Selenium (Se)			0.15		mg/kg		0-0.34	24-AUG-20
Silver (Ag)			84.2		%		70-130	24-AUG-20
Thallium (Tl)			0.067		mg/kg		0.029-0.129	24-AUG-20
Uranium (U)			83.8		%		70-130	24-AUG-20
Vanadium (V)			100.2		%		70-130	24-AUG-20
Zinc (Zn)			95.4		%		70-130	24-AUG-20
WG3388831-6 DUP		**WG3388831-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	24-AUG-20
Arsenic (As)		2.95	3.05		ug/g	3.2	30	24-AUG-20
Barium (Ba)		243	237		ug/g	2.2	40	24-AUG-20
Beryllium (Be)		0.82	0.81		ug/g	2.2	30	24-AUG-20
Boron (B)		8.9	8.6		ug/g	4.0	30	24-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5199536								
WG3388831-6 DUP		**WG3388831-5**						
Cadmium (Cd)		0.077	0.079		ug/g	2.6	30	24-AUG-20
Chromium (Cr)		40.1	39.9		ug/g	0.5	30	24-AUG-20
Cobalt (Co)		11.4	11.4		ug/g	0.3	30	24-AUG-20
Copper (Cu)		23.4	23.4		ug/g	0.2	30	24-AUG-20
Lead (Pb)		6.39	6.25		ug/g	2.1	40	24-AUG-20
Molybdenum (Mo)		0.22	0.23		ug/g	4.0	40	24-AUG-20
Nickel (Ni)		25.3	24.9		ug/g	1.7	30	24-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	24-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	24-AUG-20
Thallium (Tl)		0.223	0.225		ug/g	0.9	30	24-AUG-20
Uranium (U)		0.502	0.498		ug/g	0.7	30	24-AUG-20
Vanadium (V)		59.3	58.3		ug/g	1.6	30	24-AUG-20
Zinc (Zn)		65.2	64.8		ug/g	0.5	30	24-AUG-20
WG3388831-4 LCS								
Antimony (Sb)			109.5		%		80-120	24-AUG-20
Arsenic (As)			98.8		%		80-120	24-AUG-20
Barium (Ba)			98.8		%		80-120	24-AUG-20
Beryllium (Be)			101.5		%		80-120	24-AUG-20
Boron (B)			103.9		%		80-120	24-AUG-20
Cadmium (Cd)			97.6		%		80-120	24-AUG-20
Chromium (Cr)			98.8		%		80-120	24-AUG-20
Cobalt (Co)			97.0		%		80-120	24-AUG-20
Copper (Cu)			97.0		%		80-120	24-AUG-20
Lead (Pb)			97.1		%		80-120	24-AUG-20
Molybdenum (Mo)			100.3		%		80-120	24-AUG-20
Nickel (Ni)			97.6		%		80-120	24-AUG-20
Selenium (Se)			98.7		%		80-120	24-AUG-20
Silver (Ag)			94.5		%		80-120	24-AUG-20
Thallium (Tl)			94.3		%		80-120	24-AUG-20
Uranium (U)			91.8		%		80-120	24-AUG-20
Vanadium (V)			99.8		%		80-120	24-AUG-20
Zinc (Zn)			95.2		%		80-120	24-AUG-20
WG3388831-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5199536								
WG3388831-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	24-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	24-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	24-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	24-AUG-20
Boron (B)			<5.0		mg/kg		5	24-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	24-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	24-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	24-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	24-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	24-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	24-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	24-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	24-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	24-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	24-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	24-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	24-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	24-AUG-20
MOISTURE-WT	**Soil**							
Batch R5196616								
WG3388218-3 DUP		**L2491976-1**						
% Moisture		7.67	6.60		%	15	20	21-AUG-20
WG3388218-2 LCS								
% Moisture			102.3		%		90-110	21-AUG-20
WG3388218-1 MB								
% Moisture			<0.25		%		0.25	21-AUG-20
PAH-511-WT	**Soil**							
Batch R5199605								
WG3388120-3 DUP		**WG3388120-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5199605								
WG3388120-3 DUP		**WG3388120-5**						
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Naphthalene		0.018	<0.013	RPD-NA	ug/g	N/A	40	25-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	25-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
WG3388120-2 LCS								
1-Methylnaphthalene			79.5		%		50-140	25-AUG-20
2-Methylnaphthalene			75.8		%		50-140	25-AUG-20
Acenaphthene			82.4		%		50-140	25-AUG-20
Acenaphthylene			79.6		%		50-140	25-AUG-20
Anthracene			80.5		%		50-140	25-AUG-20
Benzo(a)anthracene			79.4		%		50-140	25-AUG-20
Benzo(a)pyrene			82.7		%		50-140	25-AUG-20
Benzo(b)fluoranthene			86.8		%		50-140	25-AUG-20
Benzo(g,h,i)perylene			82.4		%		50-140	25-AUG-20
Benzo(k)fluoranthene			79.2		%		50-140	25-AUG-20
Chrysene			89.4		%		50-140	25-AUG-20
Dibenzo(ah)anthracene			84.4		%		50-140	25-AUG-20
Fluoranthene			72.3		%		50-140	25-AUG-20
Fluorene			78.0		%		50-140	25-AUG-20
Indeno(1,2,3-cd)pyrene			79.6		%		50-140	25-AUG-20
Naphthalene			80.2		%		50-140	25-AUG-20
Phenanthrene			81.2		%		50-140	25-AUG-20
Pyrene			78.7		%		50-140	25-AUG-20
WG3388120-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5199605								
WG3388120-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	25-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	25-AUG-20
Acenaphthene			<0.050		ug/g		0.05	25-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	25-AUG-20
Anthracene			<0.050		ug/g		0.05	25-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	25-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	25-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	25-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	25-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	25-AUG-20
Chrysene			<0.050		ug/g		0.05	25-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	25-AUG-20
Fluoranthene			<0.050		ug/g		0.05	25-AUG-20
Fluorene			<0.050		ug/g		0.05	25-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	25-AUG-20
Naphthalene			<0.013		ug/g		0.013	25-AUG-20
Phenanthrene			<0.046		ug/g		0.046	25-AUG-20
Pyrene			<0.050		ug/g		0.05	25-AUG-20
Surrogate: 2-Fluorobiphenyl			83.9		%		50-140	25-AUG-20
Surrogate: p-Terphenyl d14			97.4		%		50-140	25-AUG-20
WG3388120-4 MS		**WG3388120-5**						
1-Methylnaphthalene			66.4		%		50-140	25-AUG-20
2-Methylnaphthalene			63.0		%		50-140	25-AUG-20
Acenaphthene			71.1		%		50-140	25-AUG-20
Acenaphthylene			68.9		%		50-140	25-AUG-20
Anthracene			69.0		%		50-140	25-AUG-20
Benzo(a)anthracene			69.6		%		50-140	25-AUG-20
Benzo(a)pyrene			70.4		%		50-140	25-AUG-20
Benzo(b)fluoranthene			72.3		%		50-140	25-AUG-20
Benzo(g,h,i)perylene			69.7		%		50-140	25-AUG-20
Benzo(k)fluoranthene			67.4		%		50-140	25-AUG-20
Chrysene			75.0		%		50-140	25-AUG-20
Dibenzo(ah)anthracene			71.0		%		50-140	25-AUG-20
Fluoranthene			63.5		%		50-140	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5199605								
WG3388120-4 MS		**WG3388120-5**						
Fluorene			67.6		%		50-140	25-AUG-20
Indeno(1,2,3-cd)pyrene			67.8		%		50-140	25-AUG-20
Naphthalene			66.8		%		50-140	25-AUG-20
Phenanthrene			68.7		%		50-140	25-AUG-20
Pyrene			68.9		%		50-140	25-AUG-20
PCB-511-WT	**Soil**							
Batch R5202559								
WG3388120-3 DUP		**WG3388120-5**						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-AUG-20
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-AUG-20
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-AUG-20
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	27-AUG-20
WG3388120-2 LCS								
Aroclor 1242			95.3		%		60-140	27-AUG-20
Aroclor 1248			89.6		%		60-140	27-AUG-20
Aroclor 1254			87.4		%		60-140	27-AUG-20
Aroclor 1260			99.6		%		60-140	27-AUG-20
WG3388120-1 MB								
Aroclor 1242			<0.010		ug/g		0.01	27-AUG-20
Aroclor 1248			<0.010		ug/g		0.01	27-AUG-20
Aroclor 1254			<0.010		ug/g		0.01	27-AUG-20
Aroclor 1260			<0.010		ug/g		0.01	27-AUG-20
Surrogate: d14-Terphenyl			96.4		%		60-140	27-AUG-20
WG3388120-4 MS		**WG3388120-5**						
Aroclor 1242			88.8		%		60-140	27-AUG-20
Aroclor 1254			79.2		%		60-140	27-AUG-20
Aroclor 1260			94.9		%		60-140	27-AUG-20
PH-WT	**Soil**							
Batch R5196160								
WG3388160-1 DUP		**L2491974-1**						
pH		7.90	7.96	J	pH units	0.06	0.3	21-AUG-20
WG3388715-1 LCS								
pH			6.98		pH units		6.9-7.1	21-AUG-20
SAR-R511-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	**Soil**							
Batch R5199037								
WG3389405-4 DUP		**WG3389405-3**						
Calcium (Ca)		49.3	49.0		mg/L	0.6	30	24-AUG-20
Sodium (Na)		23.3	22.8		mg/L	2.2	30	24-AUG-20
Magnesium (Mg)		4.30	4.30		mg/L	0.0	30	24-AUG-20
WG3389405-2 IRM		**WT SAR4**						
Calcium (Ca)			111.9		%		70-130	24-AUG-20
Sodium (Na)			94.7		%		70-130	24-AUG-20
Magnesium (Mg)			107.7		%		70-130	24-AUG-20
WG3389405-5 LCS								
Calcium (Ca)			100.3		%		80-120	24-AUG-20
Sodium (Na)			98.8		%		80-120	24-AUG-20
Magnesium (Mg)			96.8		%		80-120	24-AUG-20
WG3389405-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	24-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	24-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	24-AUG-20
VOC-511-HS-WT	**Soil**							
Batch R5199576								
WG3387307-4 DUP		**WG3387307-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	25-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	25-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5199576								
WG3387307-4 DUP		**WG3387307-3**						
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	25-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	25-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	25-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	25-AUG-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	25-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	25-AUG-20
Trichloroethylene		0.046	0.046		ug/g	0.0	40	25-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	25-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	25-AUG-20
WG3387307-2 LCS								
1,1,1,2-Tetrachloroethane			92.8		%		60-130	25-AUG-20
1,1,2,2-Tetrachloroethane			105.8		%		60-130	25-AUG-20
1,1,1-Trichloroethane			90.4		%		60-130	25-AUG-20
1,1,2-Trichloroethane			99.7		%		60-130	25-AUG-20
1,1-Dichloroethane			95.0		%		60-130	25-AUG-20
1,1-Dichloroethylene			84.1		%		60-130	25-AUG-20
1,2-Dibromoethane			99.1		%		70-130	25-AUG-20
1,2-Dichlorobenzene			97.2		%		70-130	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5199576								
WG3387307-2 LCS								
1,2-Dichloroethane			98.5		%		60-130	25-AUG-20
1,2-Dichloropropane			96.6		%		70-130	25-AUG-20
1,3-Dichlorobenzene			95.5		%		70-130	25-AUG-20
1,4-Dichlorobenzene			95.8		%		70-130	25-AUG-20
Acetone			113.0		%		60-140	25-AUG-20
Benzene			94.9		%		70-130	25-AUG-20
Bromodichloromethane			103.3		%		50-140	25-AUG-20
Bromoform			97.0		%		70-130	25-AUG-20
Bromomethane			110.1		%		50-140	25-AUG-20
Carbon tetrachloride			90.0		%		70-130	25-AUG-20
Chlorobenzene			96.1		%		70-130	25-AUG-20
Chloroform			95.1		%		70-130	25-AUG-20
cis-1,2-Dichloroethylene			92.8		%		70-130	25-AUG-20
cis-1,3-Dichloropropene			95.7		%		70-130	25-AUG-20
Dibromochloromethane			93.8		%		60-130	25-AUG-20
Dichlorodifluoromethane			58.3		%		50-140	25-AUG-20
Ethylbenzene			90.8		%		70-130	25-AUG-20
n-Hexane			84.3		%		70-130	25-AUG-20
Methylene Chloride			97.0		%		70-130	25-AUG-20
MTBE			98.3		%		70-130	25-AUG-20
m+p-Xylenes			91.4		%		70-130	25-AUG-20
Methyl Ethyl Ketone			111.3		%		60-140	25-AUG-20
Methyl Isobutyl Ketone			105.7		%		60-140	25-AUG-20
o-Xylene			98.9		%		70-130	25-AUG-20
Styrene			92.5		%		70-130	25-AUG-20
Tetrachloroethylene			91.4		%		60-130	25-AUG-20
Toluene			92.9		%		70-130	25-AUG-20
trans-1,2-Dichloroethylene			88.2		%		60-130	25-AUG-20
trans-1,3-Dichloropropene			101.9		%		70-130	25-AUG-20
Trichloroethylene			93.3		%		60-130	25-AUG-20
Trichlorofluoromethane			78.8		%		50-140	25-AUG-20
Vinyl chloride			87.4		%		60-140	25-AUG-20
WG3387307-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5199576								
WG3387307-1 MB								
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	25-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	25-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	25-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	25-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	25-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	25-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	25-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	25-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	25-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	25-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	25-AUG-20
Acetone			<0.50		ug/g		0.5	25-AUG-20
Benzene			<0.0068		ug/g		0.0068	25-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	25-AUG-20
Bromoform			<0.050		ug/g		0.05	25-AUG-20
Bromomethane			<0.050		ug/g		0.05	25-AUG-20
Carbon tetrachloride			<0.050		ug/g		0.05	25-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	25-AUG-20
Chloroform			<0.050		ug/g		0.05	25-AUG-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	25-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	25-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	25-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	25-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	25-AUG-20
n-Hexane			<0.050		ug/g		0.05	25-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	25-AUG-20
MTBE			<0.050		ug/g		0.05	25-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	25-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	25-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	25-AUG-20
o-Xylene			<0.020		ug/g		0.02	25-AUG-20
Styrene			<0.050		ug/g		0.05	25-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5199576								
WG3387307-1 MB								
Toluene			<0.080		ug/g		0.08	25-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	25-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	25-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	25-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	25-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	25-AUG-20
Surrogate: 1,4-Difluorobenzene			117.7		%		50-140	25-AUG-20
Surrogate: 4-Bromofluorobenzene			101.6		%		50-140	25-AUG-20
WG3387307-5 MS		**WG3387307-3**						
1,1,1,2-Tetrachloroethane			94.5		%		50-140	25-AUG-20
1,1,2,2-Tetrachloroethane			111.6		%		50-140	25-AUG-20
1,1,1-Trichloroethane			90.4		%		50-140	25-AUG-20
1,1,2-Trichloroethane			105.1		%		50-140	25-AUG-20
1,1-Dichloroethane			95.9		%		50-140	25-AUG-20
1,1-Dichloroethylene			83.6		%		50-140	25-AUG-20
1,2-Dibromoethane			105.2		%		50-140	25-AUG-20
1,2-Dichlorobenzene			97.2		%		50-140	25-AUG-20
1,2-Dichloroethane			103.5		%		50-140	25-AUG-20
1,2-Dichloropropane			99.0		%		50-140	25-AUG-20
1,3-Dichlorobenzene			93.1		%		50-140	25-AUG-20
1,4-Dichlorobenzene			93.4		%		50-140	25-AUG-20
Acetone			121.7		%		50-140	25-AUG-20
Benzene			95.8		%		50-140	25-AUG-20
Bromodichloromethane			106.5		%		50-140	25-AUG-20
Bromoform			102.0		%		50-140	25-AUG-20
Bromomethane			111.3		%		50-140	25-AUG-20
Carbon tetrachloride			89.3		%		50-140	25-AUG-20
Chlorobenzene			96.5		%		50-140	25-AUG-20
Chloroform			95.6		%		50-140	25-AUG-20
cis-1,2-Dichloroethylene			94.3		%		50-140	25-AUG-20
cis-1,3-Dichloropropene			96.9		%		50-140	25-AUG-20
Dibromochloromethane			98.2		%		50-140	25-AUG-20
Dichlorodifluoromethane			59.7		%		50-140	25-AUG-20
Ethylbenzene			89.8		%		50-140	25-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5199576								
WG3387307-5 MS		**WG3387307-3**						
n-Hexane			83.4		%		50-140	25-AUG-20
Methylene Chloride			99.5		%		50-140	25-AUG-20
MTBE			98.5		%		50-140	25-AUG-20
m+p-Xylenes			90.0		%		50-140	25-AUG-20
Methyl Ethyl Ketone			104.7		%		50-140	25-AUG-20
Methyl Isobutyl Ketone			115.0		%		50-140	25-AUG-20
o-Xylene			98.6		%		50-140	25-AUG-20
Styrene			92.5		%		50-140	25-AUG-20
Tetrachloroethylene			89.3		%		50-140	25-AUG-20
Toluene			92.5		%		50-140	25-AUG-20
trans-1,2-Dichloroethylene			87.0		%		50-140	25-AUG-20
trans-1,3-Dichloropropene			103.8		%		50-140	25-AUG-20
Trichloroethylene			91.8		%		50-140	25-AUG-20
Trichlorofluoromethane			78.4		%		50-140	25-AUG-20
Vinyl chloride			87.4		%		50-140	25-AUG-20

Quality Control Report

Workorder: L2491701 Report Date: 27-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

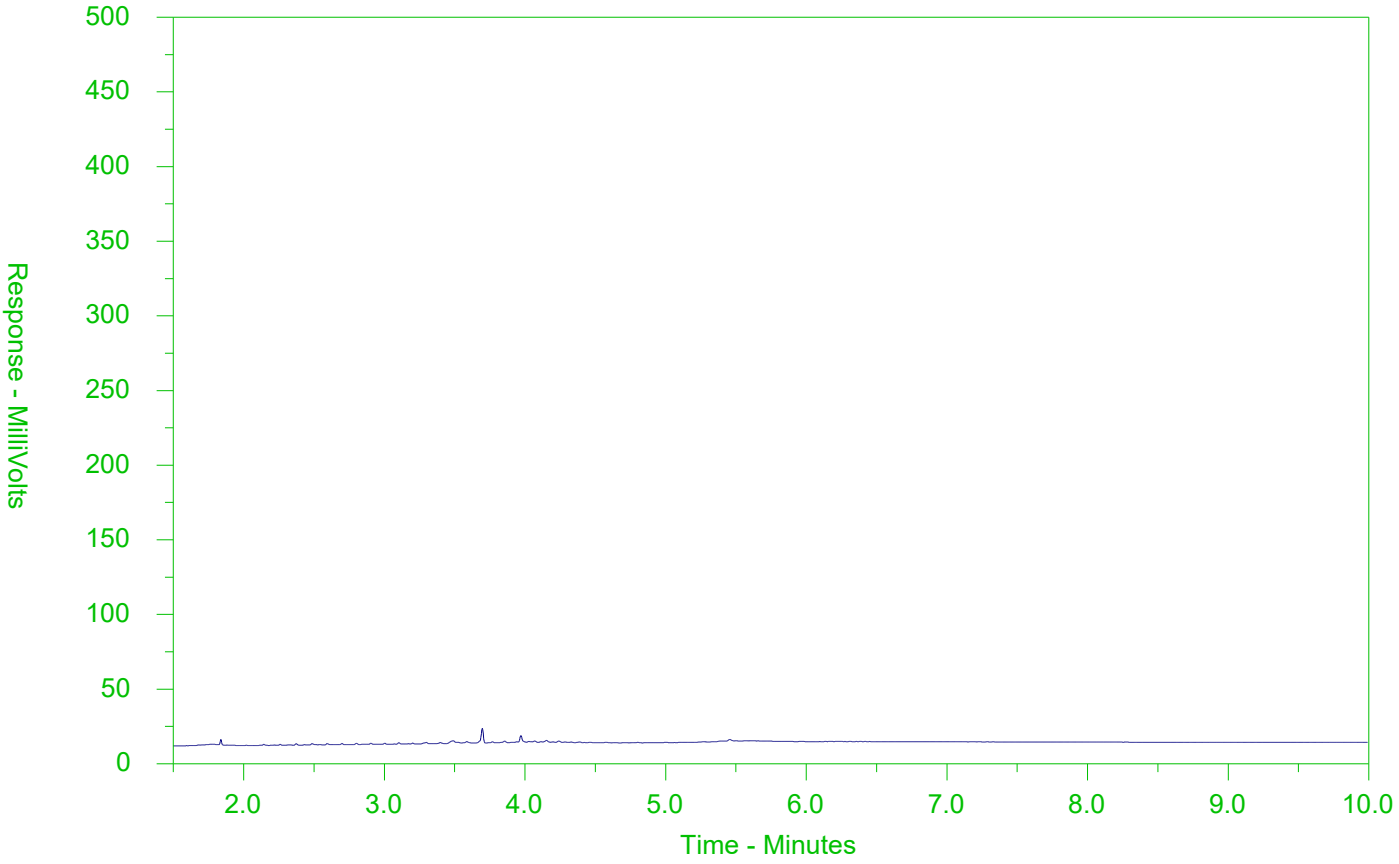
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2491701-2
Client Sample ID: BH109 SS2A



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2491701-COFC

Number: 17 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax yhiweish@terraprobe.ca
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax lrossi@terraprobe.ca
Email 2

Project Information

ALS Account # / Quote #: Q62481
Job #: 1-20-0249-42
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): LQ491701 R1
ALS Contact: Sampler: YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs										SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 109 SS1	18-Aug-20		Soil	3	✓	✓			✓			Limited Soil.								
	BH 109 SS2A	"		"	3			✓	✓												

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04

MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice Packs ☒ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
5.8				9.8			

SHIPMENT RELEASE (client use)

Released by: Yousr Hiweish | Date: Aug 19/20 | Time: 11:30

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: 20/8/20 | Time: 9:00

FINAL SHIPMENT RECEPTION (lab use only)

Received by: | Date: Aug 20 | Time: 17:05

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

TERRAPROBE - BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 12-AUG-20
Report Date: 19-AUG-20 14:23 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2487513

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2487513-1	BH110 SS1	Physical Tests	Conductivity	1.23	0.7	mS/cm
		Saturated Paste Extractables	SAR	42.2	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2487513-1	BH110 SS1	Physical Tests	Conductivity	1.23	0.7	mS/cm
		Saturated Paste Extractables	SAR	42.2	5	SAR

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits			
Lab ID				L2487513-1	L2487513-2
Sample Date				11-AUG-20	11-AUG-20
Sample ID				BH110 SS1	BH110 SS3
Analyte	**Unit**	**#1**	**#2**		
Conductivity	mS/cm	0.7	0.7	1.23	
% Moisture	%	-	-	9.82	13.5
pH	pH units	-	-	7.68	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

			Lab ID	L2487513-1
			Sample Date	11-AUG-20
			Sample ID	BH110 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

		Guide Limits			
				Lab ID	L2487513-1
				Sample Date	11-AUG-20
				Sample ID	BH110 SS1
Analyte	**Unit**	**#1**	**#2**		
SAR	SAR	5	5	42.2 SAR:M	
Calcium (Ca)	mg/L	-	-	2.88	
Magnesium (Mg)	mg/L	-	-	<0.50	
Sodium (Na)	mg/L	-	-	260	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Metals - SOIL

				Lab ID	L2487513-1
				Sample Date	11-AUG-20
				Sample ID	BH110 SS1
		Guide Limits			
Analyte	Unit	#1	#2		
Antimony (Sb)	ug/g	7.5	7.5	<1.0	
Arsenic (As)	ug/g	18	18	6.8	
Barium (Ba)	ug/g	390	390	156	
Beryllium (Be)	ug/g	4	5	0.64	
Boron (B)	ug/g	120	120	8.0	
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.35	
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	
Chromium (Cr)	ug/g	160	160	18.8	
Cobalt (Co)	ug/g	22	22	6.9	
Copper (Cu)	ug/g	140	180	32.3	
Lead (Pb)	ug/g	120	120	39.8	
Mercury (Hg)	ug/g	0.27	1.8	0.0981	
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	
Nickel (Ni)	ug/g	100	130	15.0	
Selenium (Se)	ug/g	2.4	2.4	<1.0	
Silver (Ag)	ug/g	20	25	<0.20	
Thallium (Tl)	ug/g	1	1	<0.50	
Uranium (U)	ug/g	23	23	<1.0	
Vanadium (V)	ug/g	86	86	25.6	
Zinc (Zn)	ug/g	340	340	62.7	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2487513-1 Sample Date: 11-AUG-20 Sample ID: BH110 SS1
Chromium, Hexavalent	ug/g	8	10	0.97

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2487513-2
			Sample Date	11-AUG-20
			Sample ID	BH110 SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	1.5	1.9	<0.050
Bromoform	ug/g	0.27	0.26	<0.050
Bromomethane	ug/g	0.05	0.05	<0.050
Carbon tetrachloride	ug/g	0.05	0.12	<0.050
Chlorobenzene	ug/g	2.4	2.7	<0.050
Dibromochloromethane	ug/g	2.3	2.9	<0.050
Chloroform	ug/g	0.05	0.18	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050
Dichlorodifluoromethane	ug/g	16	25	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050
Methylene Chloride	ug/g	0.1	0.96	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042
Ethylbenzene	ug/g	1.1	1.6	<0.018
n-Hexane	ug/g	2.8	34	<0.050
Methyl Ethyl Ketone	ug/g	16	44	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50
MTBE	ug/g	0.75	1.4	<0.050
Styrene	ug/g	0.7	2.2	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2487513-2
			Sample Date	11-AUG-20
			Sample ID	BH110 SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050
Tetrachloroethylene	ug/g	0.28	2.3	<0.050
Toluene	ug/g	2.3	6	<0.080
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050
Trichloroethylene	ug/g	0.061	0.52	<0.010
Trichlorofluoromethane	ug/g	4	5.8	<0.050
Vinyl chloride	ug/g	0.02	0.022	<0.020
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	75.4
Surrogate: 1,4-Difluorobenzene	%	-	-	99.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

			Lab ID	L2487513-2
			Sample Date	11-AUG-20
			Sample ID	BH110 SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F3 (C16-C34)	ug/g	300	1300	<50
F4 (C34-C50)	ug/g	2800	5600	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	73.2
Surrogate: 3,4-Dichlorotoluene	%	-	-	83.7

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2487513-1
			Sample Date	11-AUG-20
			Sample ID	BH110 SS1
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Acenaphthene	ug/g	7.9	29	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050
Anthracene	ug/g	0.67	0.74	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.095
Benzo(a)pyrene	ug/g	0.3	0.3	0.074
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.132
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050
Chrysene	ug/g	7	7.8	0.129
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050
Fluoranthene	ug/g	0.69	0.69	0.248
Fluorene	ug/g	62	69	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.117
1-Methylnaphthalene	ug/g	0.99	3.4	0.058
2-Methylnaphthalene	ug/g	0.99	3.4	0.059
Naphthalene	ug/g	0.6	0.75	0.037
Phenanthrene	ug/g	6.2	7.8	0.147
Pyrene	ug/g	78	78	0.202
Surrogate: 2-Fluorobiphenyl	%	-	-	93.5
Surrogate: p-Terphenyl d14	%	-	-	102.1

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT Soil ABN-Calculated Parameters SW846 8270

MOISTURE-WT Soil % Moisture CCME PHC in Soil - Tier 1 (mod)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2487513 Report Date: 19-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R5190990								
WG3385325-4 DUP		**L2487571-1**						
Boron (B), Hot Water Ext.		0.50	0.53		ug/g	4.7	30	18-AUG-20
WG3385325-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			110.4		%		70-130	18-AUG-20
WG3385325-3 LCS								
Boron (B), Hot Water Ext.			100.0		%		70-130	18-AUG-20
WG3385325-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	18-AUG-20
CN-WAD-R511-WT	**Soil**							
Batch R5189996								
WG3383377-3 DUP		**L2487044-2**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	17-AUG-20
WG3383377-2 LCS								
Cyanide, Weak Acid Diss			95.8		%		80-120	17-AUG-20
WG3383377-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	17-AUG-20
WG3383377-4 MS		**L2487044-2**						
Cyanide, Weak Acid Diss			106.6		%		70-130	17-AUG-20
CR-CR6-IC-WT	**Soil**							
Batch R5190080								
WG3383266-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			97.4		%		70-130	17-AUG-20
WG3383266-3 DUP		**L2487509-1**						
Chromium, Hexavalent		0.22	0.33	J	ug/g	0.11	0.4	17-AUG-20
WG3383266-2 LCS								
Chromium, Hexavalent			91.8		%		80-120	17-AUG-20
WG3383266-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	17-AUG-20
EC-WT	**Soil**							
Batch R5191059								
WG3385328-4 DUP		**WG3385328-3**						
Conductivity		0.181	0.178		mS/cm	2.0	20	18-AUG-20
WG3385328-2 IRM		**WT SAR4**						
Conductivity			100.6		%		70-130	18-AUG-20
WG3385598-1 LCS								
Conductivity			99.3		%		90-110	18-AUG-20
WG3385328-1 MB								

Quality Control Report

Workorder: L2487513 Report Date: 19-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Soil**							
Batch R5191059								
WG3385328-1 MB								
Conductivity			<0.0040		mS/cm		0.004	18-AUG-20
F1-HS-511-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	16-AUG-20
WG3382228-2 LCS								
F1 (C6-C10)			97.0		%		80-120	16-AUG-20
WG3382228-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	16-AUG-20
Surrogate: 3,4-Dichlorotoluene			91.5		%		60-140	16-AUG-20
WG3382228-6 MS		**L2487828-2**						
F1 (C6-C10)			78.7		%		60-140	16-AUG-20
F2-F4-511-WT	**Soil**							
Batch R5190735								
WG3383961-3 DUP		**WG3383961-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	18-AUG-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	18-AUG-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	18-AUG-20
WG3383961-2 LCS								
F2 (C10-C16)			104.1		%		80-120	18-AUG-20
F3 (C16-C34)			102.7		%		80-120	18-AUG-20
F4 (C34-C50)			102.2		%		80-120	18-AUG-20
WG3383961-1 MB								
F2 (C10-C16)			<10		ug/g		10	18-AUG-20
F3 (C16-C34)			<50		ug/g		50	18-AUG-20
F4 (C34-C50)			<50		ug/g		50	18-AUG-20
Surrogate: 2-Bromobenzotrifluoride			91.2		%		60-140	18-AUG-20
WG3383961-4 MS		**WG3383961-5**						
F2 (C10-C16)			101.7		%		60-140	18-AUG-20
F3 (C16-C34)			102.7		%		60-140	18-AUG-20
F4 (C34-C50)			105.0		%		60-140	18-AUG-20
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R5190682								
WG3385316-2 CRM		**WT-SS-2**						
Mercury (Hg)			116.5		%		70-130	18-AUG-20
WG3385316-6 DUP		**WG3385316-5**						
Mercury (Hg)		0.0391	0.0354		ug/g	9.8	40	18-AUG-20
WG3385316-3 LCS								
Mercury (Hg)			107.0		%		80-120	18-AUG-20
WG3385316-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	18-AUG-20
MET-200.2-CCMS-WT	**Soil**							
Batch R5191481								
WG3385316-2 CRM		**WT-SS-2**						
Antimony (Sb)			100.5		%		70-130	18-AUG-20
Arsenic (As)			97.0		%		70-130	18-AUG-20
Barium (Ba)			103.3		%		70-130	18-AUG-20
Beryllium (Be)			103.0		%		70-130	18-AUG-20
Boron (B)			10.2		mg/kg		3.5-13.5	18-AUG-20
Cadmium (Cd)			97.8		%		70-130	18-AUG-20
Chromium (Cr)			103.2		%		70-130	18-AUG-20
Cobalt (Co)			100.2		%		70-130	18-AUG-20
Copper (Cu)			101.8		%		70-130	18-AUG-20
Lead (Pb)			98.5		%		70-130	18-AUG-20
Molybdenum (Mo)			107.9		%		70-130	18-AUG-20
Nickel (Ni)			100.4		%		70-130	18-AUG-20
Selenium (Se)			0.13		mg/kg		0-0.34	18-AUG-20
Silver (Ag)			115.0		%		70-130	18-AUG-20
Thallium (Tl)			0.077		mg/kg		0.029-0.129	18-AUG-20
Uranium (U)			96.5		%		70-130	18-AUG-20
Vanadium (V)			102.3		%		70-130	18-AUG-20
Zinc (Zn)			93.7		%		70-130	18-AUG-20
WG3385316-6 DUP		**WG3385316-5**						
Antimony (Sb)		0.10	<0.10	RPD-NA	ug/g	N/A	30	18-AUG-20
Arsenic (As)		1.92	1.85		ug/g	4.1	30	18-AUG-20
Barium (Ba)		43.6	41.4		ug/g	5.0	40	18-AUG-20
Beryllium (Be)		0.51	0.45		ug/g	12	30	18-AUG-20
Boron (B)		7.2	6.9		ug/g	4.4	30	18-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5191481								
WG3385316-6 DUP		**WG3385316-5**						
Cadmium (Cd)		0.074	0.065		ug/g	13	30	18-AUG-20
Chromium (Cr)		10.2	9.90		ug/g	3.2	30	18-AUG-20
Cobalt (Co)		3.78	3.66		ug/g	3.2	30	18-AUG-20
Copper (Cu)		9.01	8.48		ug/g	6.1	30	18-AUG-20
Lead (Pb)		17.9	16.9		ug/g	5.9	40	18-AUG-20
Molybdenum (Mo)		0.34	0.27		ug/g	23	40	18-AUG-20
Nickel (Ni)		7.99	7.80		ug/g	2.4	30	18-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	18-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	18-AUG-20
Thallium (Tl)		0.058	0.059		ug/g	1.6	30	18-AUG-20
Uranium (U)		0.461	0.426		ug/g	7.8	30	18-AUG-20
Vanadium (V)		15.7	15.2		ug/g	3.7	30	18-AUG-20
Zinc (Zn)		35.4	31.2		ug/g	13	30	18-AUG-20
WG3385316-4 LCS								
Antimony (Sb)			103.4		%		80-120	18-AUG-20
Arsenic (As)			96.5		%		80-120	18-AUG-20
Barium (Ba)			99.6		%		80-120	18-AUG-20
Beryllium (Be)			99.3		%		80-120	18-AUG-20
Boron (B)			98.5		%		80-120	18-AUG-20
Cadmium (Cd)			97.1		%		80-120	18-AUG-20
Chromium (Cr)			95.7		%		80-120	18-AUG-20
Cobalt (Co)			95.6		%		80-120	18-AUG-20
Copper (Cu)			93.9		%		80-120	18-AUG-20
Lead (Pb)			95.2		%		80-120	18-AUG-20
Molybdenum (Mo)			102.0		%		80-120	18-AUG-20
Nickel (Ni)			95.4		%		80-120	18-AUG-20
Selenium (Se)			95.6		%		80-120	18-AUG-20
Silver (Ag)			99.5		%		80-120	18-AUG-20
Thallium (Tl)			96.3		%		80-120	18-AUG-20
Uranium (U)			93.7		%		80-120	18-AUG-20
Vanadium (V)			98.9		%		80-120	18-AUG-20
Zinc (Zn)			90.6		%		80-120	18-AUG-20
WG3385316-1 MB								
							0.1	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R5191481								
WG3385316-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	18-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	18-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	18-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	18-AUG-20
Boron (B)			<5.0		mg/kg		5	18-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	18-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	18-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	18-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	18-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	18-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	18-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	18-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	18-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	18-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	18-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	18-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	18-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	18-AUG-20
MOISTURE-WT	**Soil**							
Batch R5187182								
WG3383181-3 DUP		**L2487077-2**						
% Moisture		13.4	12.6		%	6.0	20	15-AUG-20
WG3383181-2 LCS								
% Moisture			100.0		%		90-110	15-AUG-20
WG3383181-1 MB								
% Moisture			<0.25		%		0.25	15-AUG-20
PAH-511-WT	**Soil**							
Batch R5190849								
WG3382759-3 DUP		**WG3382759-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	18-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5190849								
WG3382759-3 DUP		**WG3382759-5**						
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	18-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	18-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	18-AUG-20
WG3382759-2 LCS								
1-Methylnaphthalene			83.8		%		50-140	18-AUG-20
2-Methylnaphthalene			81.0		%		50-140	18-AUG-20
Acenaphthene			83.9		%		50-140	18-AUG-20
Acenaphthylene			79.7		%		50-140	18-AUG-20
Anthracene			78.9		%		50-140	18-AUG-20
Benzo(a)anthracene			79.7		%		50-140	18-AUG-20
Benzo(a)pyrene			83.5		%		50-140	18-AUG-20
Benzo(b)fluoranthene			83.0		%		50-140	18-AUG-20
Benzo(g,h,i)perylene			81.6		%		50-140	18-AUG-20
Benzo(k)fluoranthene			79.0		%		50-140	18-AUG-20
Chrysene			85.9		%		50-140	18-AUG-20
Dibenzo(ah)anthracene			80.6		%		50-140	18-AUG-20
Fluoranthene			77.5		%		50-140	18-AUG-20
Fluorene			79.9		%		50-140	18-AUG-20
Indeno(1,2,3-cd)pyrene			87.2		%		50-140	18-AUG-20
Naphthalene			81.1		%		50-140	18-AUG-20
Phenanthrene			79.5		%		50-140	18-AUG-20
Pyrene			77.8		%		50-140	18-AUG-20
WG3382759-1 MB								
							0.03	

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5190849								
WG3382759-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	18-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	18-AUG-20
Acenaphthene			<0.050		ug/g		0.05	18-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	18-AUG-20
Anthracene			<0.050		ug/g		0.05	18-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	18-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	18-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	18-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	18-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	18-AUG-20
Chrysene			<0.050		ug/g		0.05	18-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	18-AUG-20
Fluoranthene			<0.050		ug/g		0.05	18-AUG-20
Fluorene			<0.050		ug/g		0.05	18-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	18-AUG-20
Naphthalene			<0.013		ug/g		0.013	18-AUG-20
Phenanthrene			<0.046		ug/g		0.046	18-AUG-20
Pyrene			<0.050		ug/g		0.05	18-AUG-20
Surrogate: 2-Fluorobiphenyl			82.3		%		50-140	18-AUG-20
Surrogate: p-Terphenyl d14			86.3		%		50-140	18-AUG-20
WG3382759-4 MS		**WG3382759-5**						
1-Methylnaphthalene			90.4		%		50-140	18-AUG-20
2-Methylnaphthalene			86.9		%		50-140	18-AUG-20
Acenaphthene			91.5		%		50-140	18-AUG-20
Acenaphthylene			85.7		%		50-140	18-AUG-20
Anthracene			87.5		%		50-140	18-AUG-20
Benzo(a)anthracene			88.3		%		50-140	18-AUG-20
Benzo(a)pyrene			91.1		%		50-140	18-AUG-20
Benzo(b)fluoranthene			89.7		%		50-140	18-AUG-20
Benzo(g,h,i)perylene			85.0		%		50-140	18-AUG-20
Benzo(k)fluoranthene			85.8		%		50-140	18-AUG-20
Chrysene			93.2		%		50-140	18-AUG-20
Dibenzo(ah)anthracene			86.9		%		50-140	18-AUG-20
Fluoranthene			87.5		%		50-140	18-AUG-20

Quality Control Report

Workorder: L2487513 Report Date: 19-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R5190849								
WG3382759-4 MS		**WG3382759-5**						
Fluorene			86.5		%		50-140	18-AUG-20
Indeno(1,2,3-cd)pyrene			88.4		%		50-140	18-AUG-20
Naphthalene			87.1		%		50-140	18-AUG-20
Phenanthrene			88.3		%		50-140	18-AUG-20
Pyrene			87.4		%		50-140	18-AUG-20
PH-WT	**Soil**							
Batch R5189357								
WG3383249-1 DUP		**L2487077-1**						
pH		7.90	7.98	J	pH units	0.08	0.3	14-AUG-20
WG3383456-1 LCS								
pH			6.98		pH units		6.9-7.1	14-AUG-20
SAR-R511-WT	**Soil**							
Batch R5191026								
WG3385328-4 DUP		**WG3385328-3**						
Calcium (Ca)		17.5	18.4		mg/L	5.0	30	18-AUG-20
Sodium (Na)		15.4	12.9		mg/L	18	30	18-AUG-20
Magnesium (Mg)		4.60	4.90		mg/L	6.3	30	18-AUG-20
WG3385328-2 IRM		**WT SAR4**						
Calcium (Ca)			103.0		%		70-130	18-AUG-20
Sodium (Na)			91.6		%		70-130	18-AUG-20
Magnesium (Mg)			101.7		%		70-130	18-AUG-20
WG3385328-5 LCS								
Calcium (Ca)			102.3		%		80-120	18-AUG-20
Sodium (Na)			99.4		%		80-120	18-AUG-20
Magnesium (Mg)			98.2		%		80-120	18-AUG-20
WG3385328-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	18-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	18-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	18-AUG-20
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-AUG-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	16-AUG-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-AUG-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	16-AUG-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Methylene Chloride		0.057	0.056		ug/g	0.5	40	16-AUG-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-AUG-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-AUG-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-AUG-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-AUG-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	16-AUG-20
trans-1,2-Dichloroethylene		<0.050	<0.050		ug/g			16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-4 DUP		**WG3382228-3**						
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-AUG-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-AUG-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-AUG-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-AUG-20
WG3382228-2 LCS								
1,1,1,2-Tetrachloroethane			101.1		%		60-130	16-AUG-20
1,1,2,2-Tetrachloroethane			96.8		%		60-130	16-AUG-20
1,1,1-Trichloroethane			109.6		%		60-130	16-AUG-20
1,1,2-Trichloroethane			99.8		%		60-130	16-AUG-20
1,1-Dichloroethane			118.4		%		60-130	16-AUG-20
1,1-Dichloroethylene			105.2		%		60-130	16-AUG-20
1,2-Dibromoethane			94.1		%		70-130	16-AUG-20
1,2-Dichlorobenzene			108.3		%		70-130	16-AUG-20
1,2-Dichloroethane			110.6		%		60-130	16-AUG-20
1,2-Dichloropropane			108.2		%		70-130	16-AUG-20
1,3-Dichlorobenzene			113.5		%		70-130	16-AUG-20
1,4-Dichlorobenzene			116.3		%		70-130	16-AUG-20
Acetone			120.4		%		60-140	16-AUG-20
Benzene			111.9		%		70-130	16-AUG-20
Bromodichloromethane			122.6		%		50-140	16-AUG-20
Bromoform			103.2		%		70-130	16-AUG-20
Bromomethane			118.1		%		50-140	16-AUG-20
Carbon tetrachloride			113.1		%		70-130	16-AUG-20
Chlorobenzene			105.8		%		70-130	16-AUG-20
Chloroform			114.9		%		70-130	16-AUG-20
cis-1,2-Dichloroethylene			99.2		%		70-130	16-AUG-20
cis-1,3-Dichloropropene			99.3		%		70-130	16-AUG-20
Dibromochloromethane			99.9		%		60-130	16-AUG-20
Dichlorodifluoromethane			68.9		%		50-140	16-AUG-20
Ethylbenzene			106.6		%		70-130	16-AUG-20
n-Hexane			107.6		%		70-130	16-AUG-20
Methylene Chloride			115.5		%		70-130	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-2 LCS								
MTBE			105.5		%		70-130	16-AUG-20
m+p-Xylenes			108.8		%		70-130	16-AUG-20
Methyl Ethyl Ketone			102.3		%		60-140	16-AUG-20
Methyl Isobutyl Ketone			86.6		%		60-140	16-AUG-20
o-Xylene			112.5		%		70-130	16-AUG-20
Styrene			101.8		%		70-130	16-AUG-20
Tetrachloroethylene			106.8		%		60-130	16-AUG-20
Toluene			101.8		%		70-130	16-AUG-20
trans-1,2-Dichloroethylene			110.4		%		60-130	16-AUG-20
trans-1,3-Dichloropropene			94.8		%		70-130	16-AUG-20
Trichloroethylene			108.9		%		60-130	16-AUG-20
Trichlorofluoromethane			96.9		%		50-140	16-AUG-20
Vinyl chloride			102.7		%		60-140	16-AUG-20
WG3382228-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1-Dichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	16-AUG-20
1,2-Dibromoethane			<0.050		ug/g		0.05	16-AUG-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	16-AUG-20
1,2-Dichloroethane			<0.050		ug/g		0.05	16-AUG-20
1,2-Dichloropropane			<0.050		ug/g		0.05	16-AUG-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	16-AUG-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	16-AUG-20
Acetone			<0.50		ug/g		0.5	16-AUG-20
Benzene			<0.0068		ug/g		0.0068	16-AUG-20
Bromodichloromethane			<0.050		ug/g		0.05	16-AUG-20
Bromoform			<0.050		ug/g		0.05	16-AUG-20
Bromomethane			<0.050		ug/g		0.05	16-AUG-20
Carbon tetrachloride			<0.050		ug/g		0.05	16-AUG-20
Chlorobenzene			<0.050		ug/g		0.05	16-AUG-20
Chloroform			<0.050		ug/g		0.05	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	16-AUG-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	16-AUG-20
Dibromochloromethane			<0.050		ug/g		0.05	16-AUG-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	16-AUG-20
Ethylbenzene			<0.018		ug/g		0.018	16-AUG-20
n-Hexane			<0.050		ug/g		0.05	16-AUG-20
Methylene Chloride			<0.050		ug/g		0.05	16-AUG-20
MTBE			<0.050		ug/g		0.05	16-AUG-20
m+p-Xylenes			<0.030		ug/g		0.03	16-AUG-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	16-AUG-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	16-AUG-20
o-Xylene			<0.020		ug/g		0.02	16-AUG-20
Styrene			<0.050		ug/g		0.05	16-AUG-20
Tetrachloroethylene			<0.050		ug/g		0.05	16-AUG-20
Toluene			<0.080		ug/g		0.08	16-AUG-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	16-AUG-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	16-AUG-20
Trichloroethylene			<0.010		ug/g		0.01	16-AUG-20
Trichlorofluoromethane			<0.050		ug/g		0.05	16-AUG-20
Vinyl chloride			<0.020		ug/g		0.02	16-AUG-20
Surrogate: 1,4-Difluorobenzene			105.6		%		50-140	16-AUG-20
Surrogate: 4-Bromofluorobenzene			79.9		%		50-140	16-AUG-20
WG3382228-5 MS		**WG3382228-3**						
1,1,1,2-Tetrachloroethane			99.5		%		50-140	16-AUG-20
1,1,2,2-Tetrachloroethane			97.9		%		50-140	16-AUG-20
1,1,1-Trichloroethane			107.9		%		50-140	16-AUG-20
1,1,2-Trichloroethane			99.5		%		50-140	16-AUG-20
1,1-Dichloroethane			117.2		%		50-140	16-AUG-20
1,1-Dichloroethylene			104.2		%		50-140	16-AUG-20
1,2-Dibromoethane			94.1		%		50-140	16-AUG-20
1,2-Dichlorobenzene			100.3		%		50-140	16-AUG-20
1,2-Dichloroethane			108.5		%		50-140	16-AUG-20
1,2-Dichloropropane			105.8		%		50-140	16-AUG-20
1,3-Dichlorobenzene			101.2		%		50-140	16-AUG-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R5189787								
WG3382228-5 MS		**WG3382228-3**						
1,4-Dichlorobenzene			103.0		%		50-140	16-AUG-20
Acetone			119.6		%		50-140	16-AUG-20
Benzene			109.2		%		50-140	16-AUG-20
Bromodichloromethane			119.9		%		50-140	16-AUG-20
Bromoform			102.3		%		50-140	16-AUG-20
Bromomethane			116.7		%		50-140	16-AUG-20
Carbon tetrachloride			111.1		%		50-140	16-AUG-20
Chlorobenzene			102.6		%		50-140	16-AUG-20
Chloroform			112.8		%		50-140	16-AUG-20
cis-1,2-Dichloroethylene			95.4		%		50-140	16-AUG-20
cis-1,3-Dichloropropene			93.2		%		50-140	16-AUG-20
Dibromochloromethane			99.1		%		50-140	16-AUG-20
Dichlorodifluoromethane			76.4		%		50-140	16-AUG-20
Ethylbenzene			103.7		%		50-140	16-AUG-20
n-Hexane			107.5		%		50-140	16-AUG-20
Methylene Chloride			112.1		%		50-140	16-AUG-20
MTBE			103.2		%		50-140	16-AUG-20
m+p-Xylenes			104.3		%		50-140	16-AUG-20
Methyl Ethyl Ketone			87.0		%		50-140	16-AUG-20
Methyl Isobutyl Ketone			86.2		%		50-140	16-AUG-20
o-Xylene			108.8		%		50-140	16-AUG-20
Styrene			97.3		%		50-140	16-AUG-20
Tetrachloroethylene			103.0		%		50-140	16-AUG-20
Toluene			99.6		%		50-140	16-AUG-20
trans-1,2-Dichloroethylene			106.3		%		50-140	16-AUG-20
trans-1,3-Dichloropropene			91.8		%		50-140	16-AUG-20
Trichloroethylene			104.5		%		50-140	16-AUG-20
Trichlorofluoromethane			97.6		%		50-140	16-AUG-20
Vinyl chloride			103.8		%		50-140	16-AUG-20

Quality Control Report

Workorder: L2487513 Report Date: 19-AUG-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

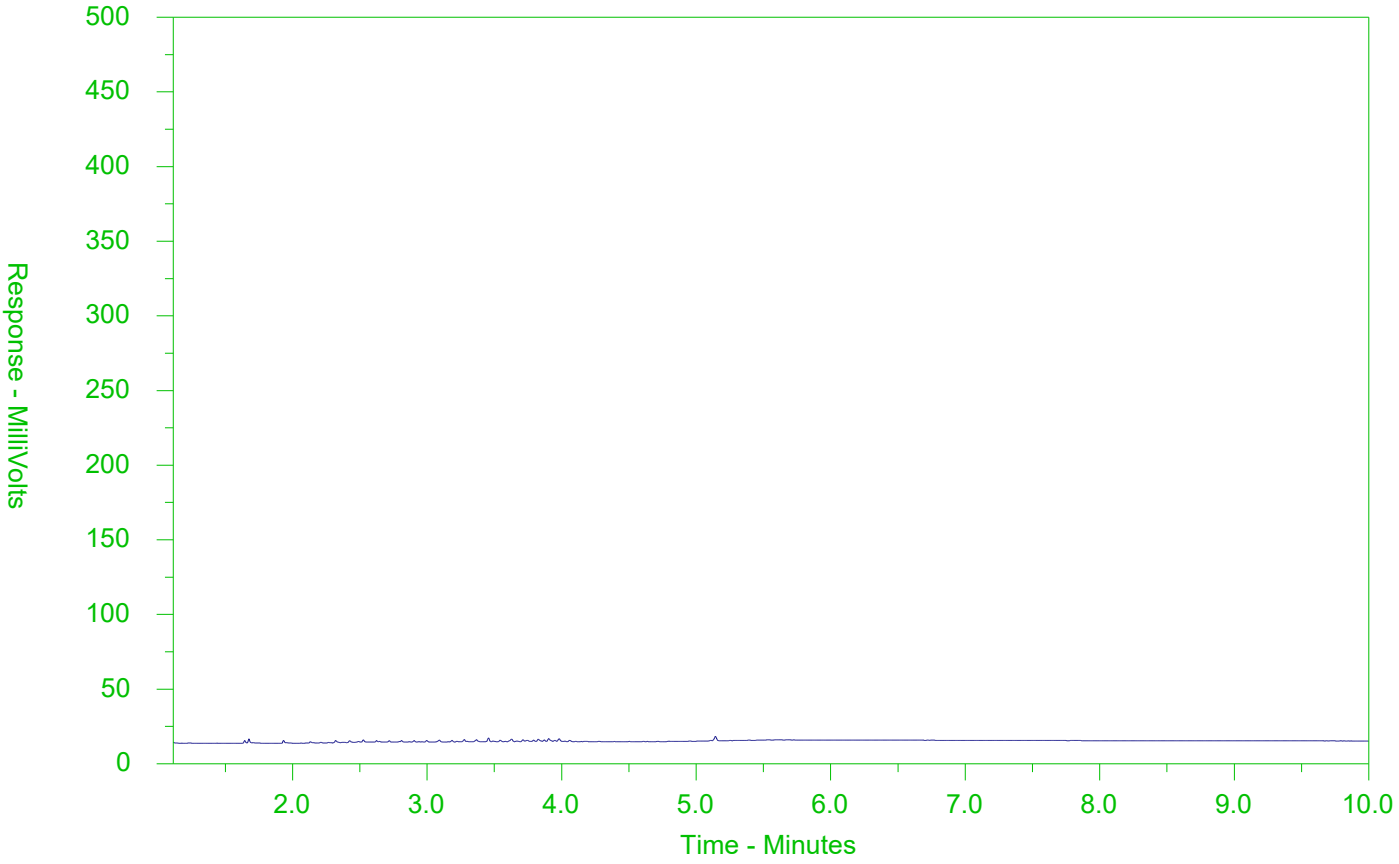
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2487513-2
Client Sample ID: BH110 SS3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytic Request Form

L2487513-COFC

COC Number: 17 -

Page of

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	Terraprobe Inc
Contact:	Yousr Hiweish
Phone:	905-796-2650
	Company address below will appear on the final report
Street:	11 Indell Lane
City/Province:	Brampton, Ontario
Postal Code:	L6T 3Y3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Terraprobe Inc
Contact:	Lorena Rossi

Report Format / Distribution	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	yhiweish@terraprobe.ca
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	lrossi@terraprobe.ca
Email 2	

Project Information	
ALS Account # / Quote #:	Q62481
Job #:	1-20-0249-42
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): L2487513

ALS Contact: Sampler: YH

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals & Inorganics	PAHs	VOCs (Icluding BTEX)	PHCs (F1 - F4)	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 110 SS1	11-Aug-20		Soil	2	✓	✓				
	BH110 SS3	11-Aug-20		Soil	3			✓	✓		

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	MECP Table 3 (R/P/I) - Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition O.Reg. 153/04
Are samples for human consumption/ use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8.9				13.4			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Yousr Hiweish	Date: Aug. 11/2020	Time: 7:00 PM	Received by:	Date: 12/8/20	Time: 8:30	Received by:	Date: 08/12/20	Time: 15:35

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

CERTIFICATES OF ANALYSIS

(GROUNDWATER)

TERRAPROBE INC.

TERRAPROBE - BRAMPTON
ATTN: YOUSR HIWEISH
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 23-SEP-20
Report Date: 30-SEP-20 14:19 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2507369

Project P.O. #: NOT SUBMITTED
Job Reference: 1-20-0249-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2507369-4	BH 110S	Anions and Nutrients	Chloride (Cl)	2620	790	mg/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use						
L2507369-4	BH 110S	Anions and Nutrients	Chloride (Cl)	2620	790	mg/L

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID	
				L2507369-1	L2507369-2	L2507369-3	L2507369-4
				23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20
				BH 105	BH 109	DUP	BH 110S
Conductivity	mS/cm	-	-	1.41	0.741	0.740	6.54
pH	pH units	-	-	7.89	8.08	8.07	7.51

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Anions and Nutrients - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID	
				L2507369-1	L2507369-2	L2507369-3	L2507369-4
				23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20
				BH 105	BH 109	DUP	BH 110S
Chloride (Cl)	mg/L	790	790	232 DLHC	57.8	57.6	2620 DLHC

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - WATER

		Guide Limits					
				Lab ID	L2507369-1	L2507369-2	L2507369-3	L2507369-4
				Sample Date	23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20
				Sample ID	BH 105	BH 109	DUP	BH 110S
Analyte	Unit	#1	#2					
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0	<2.0	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Dissolved Metals - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID L2507369-1 / Sample Date 23-SEP-20 / Sample ID BH 105	Lab ID L2507369-2 / Sample Date 23-SEP-20 / Sample ID BH 109	Lab ID L2507369-3 / Sample Date 23-SEP-20 / Sample ID DUP	Lab ID L2507369-4 / Sample Date 23-SEP-20 / Sample ID BH 110S
Dissolved Mercury Filtration Location		-	-	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	-	FIELD	FIELD	FIELD	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	0.26	0.22	0.22	<1.0 DLHC
Arsenic (As)-Dissolved	ug/L	25	25	0.76	0.46	0.46	<1.0 DLHC
Barium (Ba)-Dissolved	ug/L	1000	1000	78.2	104	103	385 DLHC
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10	<0.10	<0.10	<1.0 DLHC
Boron (B)-Dissolved	ug/L	5000	5000	420	64	67	580 DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.020 DLM	<0.020 DLM	<0.020 DLM	<0.050 DLHC
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50	<0.50	<0.50	<5.0 DLHC
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.67	0.37	0.37	2.0 DLHC
Copper (Cu)-Dissolved	ug/L	87	87	0.98	0.38	4.22	<2.0 DLHC
Lead (Pb)-Dissolved	ug/L	10	10	<0.050	<0.050	0.169	<0.50 DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum (Mo)-Dissolved	ug/L	70	70	30.2	44.6	42.5	7.31 DLHC
Nickel (Ni)-Dissolved	ug/L	100	100	2.24	0.77	0.74	<5.0 DLHC
Selenium (Se)-Dissolved	ug/L	10	10	0.314	0.079	0.072	<0.50 DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050	<0.050	<0.050	<0.50 DLHC
Sodium (Na)-Dissolved	ug/L	490000	490000	70100	21200	21100	272000 DLHC
Thallium (Tl)-Dissolved	ug/L	2	2	0.026	<0.010	0.010	<0.10 DLHC
Uranium (U)-Dissolved	ug/L	20	20	5.11	1.45	1.44	5.58 DLHC
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50	<0.50	<0.50	<5.0 DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	5.1	<1.0	2.6	<10 DLHC

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - WATER

		Guide Limits					
Lab ID				L2507369-1	L2507369-2	L2507369-3	L2507369-4
Sample Date				23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20
Sample ID				BH 105	BH 109	DUP	BH 110S
Analyte	**Unit**	**#1**	**#2**				
Chromium, Hexavalent	ug/L	25	25	<0.50	<0.50	<0.50	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID L2507369-1 / Sample Date 23-SEP-20 / Sample ID BH 105	Lab ID L2507369-2 / Sample Date 23-SEP-20 / Sample ID BH 109	Lab ID L2507369-3 / Sample Date 23-SEP-20 / Sample ID DUP	Lab ID L2507369-4 / Sample Date 23-SEP-20 / Sample ID BH 110S	Lab ID L2507369-5 / Sample Date 23-SEP-20 / Sample ID TRIP BLANK
Acetone	ug/L	2700	2700	<30 OWP	<30	<30	<30	<30
Benzene	ug/L	5	5	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	ug/L	16	16	<2.0 OWP	<2.0	<2.0	<2.0	<2.0
Bromoform	ug/L	25	25	<5.0 OWP	<5.0	<5.0	<5.0	<5.0
Bromomethane	ug/L	0.89	0.89	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	0.79	5	<0.20 OWP	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	30	30	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	25	25	<2.0 OWP	<2.0	<2.0	<2.0	<2.0
Chloroform	ug/L	2.4	22	<1.0 OWP	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2	<0.20 OWP	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	3	3	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	59	59	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	1	1	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	590	590	<2.0 OWP	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	ug/L	5	5	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	1.6	5	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	1.6	14	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	50	50	<5.0 OWP	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	ug/L	5	5	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30 OWP	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30 OWP	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	2.4	2.4	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
n-Hexane	ug/L	51	520	<0.50 OWP	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800	<20 OWP	<20	<20	<20	<20
Methyl Isobutyl Ketone	ug/L	640	640	<20 OWP	<20	<20	<20	<20
MTBE	ug/L	15	15	<2.0 OWP	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	5.4	5.4	<0.50 OWP	<0.50	<0.50	<0.50	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

				Lab ID	L2507369-1	L2507369-2	L2507369-3	L2507369-4	L2507369-5
				Sample Date	23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20
				Sample ID	BH 105	BH 109	DUP	BH 110S	TRIP BLANK
		Guide Limits							
Analyte	Unit	#1	#2						
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethylene	ug/L	1.6	17	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
Toluene	ug/L	24	24	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
1,1,1-Trichloroethane	ug/L	200	200	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
Trichloroethylene	ug/L	1.6	5	0.58 OWP	<0.50	<0.50	<0.50	<0.50	
Trichlorofluoromethane	ug/L	150	150	<5.0 OWP	<5.0	<5.0	<5.0	<5.0	
Vinyl chloride	ug/L	0.5	1.7	<0.50 OWP	<0.50	<0.50	<0.50	<0.50	
o-Xylene	ug/L	-	-	<0.30 OWP	<0.30	<0.30	<0.30	<0.30	
m+p-Xylenes	ug/L	-	-	<0.40 OWP	<0.40	<0.40	<0.40	<0.40	
Xylenes (Total)	ug/L	300	300	<0.50	<0.50	<0.50	<0.50	<0.50	
Surrogate: 4-Bromofluorobenzene	%	-	-	98.0	92.2	93.8	93.6	95.7	
Surrogate: 1,4-Difluorobenzene	%	-	-	99.4	99.6	99.4	99.0	97.2	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID		
				L2507369-1	L2507369-2	L2507369-3	L2507369-4	
				23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20	
				BH 105	BH 109	DUP	BH 110S	
F1 (C6-C10)	ug/L	750	750	<25 OWP	<25	<25	<25	
F1-BTEX	ug/L	750	750	<25	<25	<25	<25	
F2 (C10-C16)	ug/L	150	150	<100	<100	<100	<100	
F2-Naphth	ug/L	-	-	<100	<100	<100	<100	
F3 (C16-C34)	ug/L	500	500	<250	<250	<250	<250	
F3-PAH	ug/L	-	-	<250	<250	<250	<250	
F4 (C34-C50)	ug/L	500	500	<250	<250	<250	<250	
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	<370	<370	<370	
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	
Surrogate: 2-Bromobenzotrifluoride	%	-	-	72.2	72.6	67.9	65.5	
Surrogate: 3,4-Dichlorotoluene	%	-	-	96.1	90.6	96.4	90.5	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - WATER

		Guide Limits					
Lab ID				L2507369-1	L2507369-2	L2507369-3	L2507369-4
Sample Date				23-SEP-20	23-SEP-20	23-SEP-20	23-SEP-20
Sample ID				BH 105	BH 109	DUP	BH 110S
Analyte	**Unit**	**#1**	**#2**				
Acenaphthene	ug/L	4.1	4.1	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020
Anthracene	ug/L	2.4	2.4	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	ug/L	0.01	0.01	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020
Chrysene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020
Fluoranthene	ug/L	0.41	0.41	<0.020	<0.020	<0.020	<0.020
Fluorene	ug/L	120	120	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	ug/L	3.2	3.2	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	ug/L	3.2	3.2	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	ug/L	3.2	3.2	<0.020	<0.020	<0.020	<0.020
Naphthalene	ug/L	11	11	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020
Pyrene	ug/L	4.1	4.1	0.024	<0.020	<0.020	<0.020
Surrogate: d10-Acenaphthene	%	-	-	73.1	73.7	69.4	65.2
Surrogate: d12-Chrysene	%	-	-	77.0	78.2	70.5	66.2
Surrogate: d8-Naphthalene	%	-	-	68.1	70.7	67.4	61.4
Surrogate: d10-Phenanthrene	%	-	-	82.0	81.8	75.4	70.7

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comments
L2507369-1	Water	Note: DLM - Cd LOR increased due to potential interference from Mo	
L2507369-2	Water	Note: DLM - Cd LOR increased due to potential interference from Mo	
L2507369-3	Water	Note: DLM - Cd LOR increased due to potential interference from Mo	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of

Reference Information

sediment.

DLHC Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082

Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2507369 Report Date: 30-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT	**Water**							
Batch R5236677								
WG3411530-3 DUP		**L2507208-4**						
Chloride (Cl)		9.85	9.81		mg/L	0.4	20	24-SEP-20
WG3411530-2 LCS								
Chloride (Cl)			103.1		%		90-110	24-SEP-20
WG3411530-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	24-SEP-20
WG3411530-4 MS		**L2507208-4**						
Chloride (Cl)			103.5		%		75-125	24-SEP-20
CN-WAD-R511-WT	**Water**							
Batch R5235385								
WG3411513-8 DUP		**WG3411513-10**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	24-SEP-20
WG3411513-7 LCS								
Cyanide, Weak Acid Diss			102.0		%		80-120	24-SEP-20
WG3411513-6 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	24-SEP-20
WG3411513-9 MS		**WG3411513-10**						
Cyanide, Weak Acid Diss			101.7		%		75-125	24-SEP-20
CR-CR6-IC-R511-WT	**Water**							
Batch R5236043								
WG3411289-4 DUP		**WG3411289-3**						
Chromium, Hexavalent		53.2	48.2		ug/L	9.8	20	24-SEP-20
WG3411289-2 LCS								
Chromium, Hexavalent			101.1		%		80-120	24-SEP-20
WG3411289-1 MB								
Chromium, Hexavalent			<0.50		ug/L		0.5	24-SEP-20
WG3411289-5 MS		**WG3411289-3**						
Chromium, Hexavalent			N/A	MS-B	%		-	24-SEP-20
EC-R511-WT	**Water**							
Batch R5236314								
WG3411462-4 DUP		**WG3411462-3**						
Conductivity		0.857	0.858		mS/cm	0.1	10	24-SEP-20
WG3411462-2 LCS								
Conductivity			102.3		%		90-110	24-SEP-20
WG3411462-1 MB								
Conductivity			<0.0030		mS/cm		0.003	24-SEP-20
F1-HS-511-WT	**Water**							

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R5235856								
WG3411196-4 DUP		**WG3411196-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	25-SEP-20
WG3411196-1 LCS								
F1 (C6-C10)			98.5		%		80-120	25-SEP-20
WG3411196-2 MB								
F1 (C6-C10)			<25		ug/L		25	25-SEP-20
Surrogate: 3,4-Dichlorotoluene			108.6		%		60-140	25-SEP-20
WG3411196-5 MS		**WG3411196-3**						
F1 (C6-C10)			90.9		%		60-140	25-SEP-20
Batch R5237342								
WG3411986-4 DUP		**WG3411986-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	25-SEP-20
WG3411986-1 LCS								
F1 (C6-C10)			106.9		%		80-120	25-SEP-20
WG3411986-2 MB								
F1 (C6-C10)			<25		ug/L		25	25-SEP-20
Surrogate: 3,4-Dichlorotoluene			103.9		%		60-140	25-SEP-20
WG3411986-5 MS		**WG3411986-3**						
F1 (C6-C10)			97.6		%		60-140	25-SEP-20
F2-F4-511-WT	**Water**							
Batch R5235265								
WG3411123-2 LCS								
F2 (C10-C16)			91.3		%		70-130	24-SEP-20
F3 (C16-C34)			93.7		%		70-130	24-SEP-20
F4 (C34-C50)			110.2		%		70-130	24-SEP-20
WG3411123-1 MB								
F2 (C10-C16)			<100		ug/L		100	24-SEP-20
F3 (C16-C34)			<250		ug/L		250	24-SEP-20
F4 (C34-C50)			<250		ug/L		250	24-SEP-20
Surrogate: 2-Bromobenzotrifluoride			93.6		%		60-140	24-SEP-20
HG-D-UG/L-CVAA-WT	**Water**							
Batch R5234734								
WG3411298-4 DUP		**WG3411298-3**						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	24-SEP-20
WG3411298-2 LCS								
Mercury (Hg)-Dissolved			104.0		%		80-120	24-SEP-20
WG3411298-1 MB								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT	**Water**							
Batch R5234734								
WG3411298-1 MB								
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	24-SEP-20
WG3411298-6 MS		**WG3411298-5**						
Mercury (Hg)-Dissolved			101.1		%		70-130	24-SEP-20
MET-D-UG/L-MS-WT	**Water**							
Batch R5235327								
WG3411796-4 DUP		**WG3411796-3**						
Antimony (Sb)-Dissolved		0.28	0.28		ug/L	0.7	20	24-SEP-20
Arsenic (As)-Dissolved		0.17	0.18		ug/L	5.4	20	24-SEP-20
Barium (Ba)-Dissolved		43.1	42.8		ug/L	0.8	20	24-SEP-20
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	24-SEP-20
Boron (B)-Dissolved		90	93		ug/L	4.0	20	24-SEP-20
Cadmium (Cd)-Dissolved		0.0060	0.0091	J	ug/L	0.0031	0.01	24-SEP-20
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	24-SEP-20
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	24-SEP-20
Copper (Cu)-Dissolved		2.77	2.85		ug/L	2.7	20	24-SEP-20
Lead (Pb)-Dissolved		0.078	0.066		ug/L	17	20	24-SEP-20
Molybdenum (Mo)-Dissolved		0.329	0.322		ug/L	2.2	20	24-SEP-20
Nickel (Ni)-Dissolved		1.12	1.18		ug/L	5.2	20	24-SEP-20
Selenium (Se)-Dissolved		0.219	0.219		ug/L	0.1	20	24-SEP-20
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	24-SEP-20
Sodium (Na)-Dissolved		48900	48400		ug/L	1.0	20	24-SEP-20
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	24-SEP-20
Uranium (U)-Dissolved		0.497	0.499		ug/L	0.4	20	24-SEP-20
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	24-SEP-20
Zinc (Zn)-Dissolved		3.3	3.0		ug/L	8.5	20	24-SEP-20
WG3411796-2 LCS								
Antimony (Sb)-Dissolved			94.4		%		80-120	24-SEP-20
Arsenic (As)-Dissolved			96.7		%		80-120	24-SEP-20
Barium (Ba)-Dissolved			98.2		%		80-120	24-SEP-20
Beryllium (Be)-Dissolved			96.4		%		80-120	24-SEP-20
Boron (B)-Dissolved			95.9		%		80-120	24-SEP-20
Cadmium (Cd)-Dissolved			96.9		%		80-120	24-SEP-20
Chromium (Cr)-Dissolved			98.6		%		80-120	24-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R5235327								
WG3411796-2 LCS								
Cobalt (Co)-Dissolved			96.6		%		80-120	24-SEP-20
Copper (Cu)-Dissolved			96.5		%		80-120	24-SEP-20
Lead (Pb)-Dissolved			100.4		%		80-120	24-SEP-20
Molybdenum (Mo)-Dissolved			95.2		%		80-120	24-SEP-20
Nickel (Ni)-Dissolved			96.5		%		80-120	24-SEP-20
Selenium (Se)-Dissolved			98.4		%		80-120	24-SEP-20
Silver (Ag)-Dissolved			98.2		%		80-120	24-SEP-20
Sodium (Na)-Dissolved			104.8		%		80-120	24-SEP-20
Thallium (Tl)-Dissolved			101.5		%		80-120	24-SEP-20
Uranium (U)-Dissolved			101.6		%		80-120	24-SEP-20
Vanadium (V)-Dissolved			99.9		%		80-120	24-SEP-20
Zinc (Zn)-Dissolved			96.0		%		80-120	24-SEP-20
WG3411796-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	24-SEP-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	24-SEP-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	24-SEP-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	24-SEP-20
Boron (B)-Dissolved			<10		ug/L		10	24-SEP-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	24-SEP-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	24-SEP-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	24-SEP-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	24-SEP-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	24-SEP-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	24-SEP-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	24-SEP-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	24-SEP-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	24-SEP-20
Sodium (Na)-Dissolved			<50		ug/L		50	24-SEP-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	24-SEP-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	24-SEP-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	24-SEP-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	24-SEP-20
WG3411796-5 MS		**WG3411796-3**						
Antimony (Sb)-Dissolved			103.7		%		70-130	24-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R5235327								
WG3411796-5 MS		**WG3411796-3**						
Arsenic (As)-Dissolved			124.2		%		70-130	24-SEP-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	24-SEP-20
Beryllium (Be)-Dissolved			116.0		%		70-130	24-SEP-20
Boron (B)-Dissolved			N/A	MS-B	%		-	24-SEP-20
Cadmium (Cd)-Dissolved			117.0		%		70-130	24-SEP-20
Chromium (Cr)-Dissolved			114.7		%		70-130	24-SEP-20
Cobalt (Co)-Dissolved			111.0		%		70-130	24-SEP-20
Copper (Cu)-Dissolved			105.5		%		70-130	24-SEP-20
Lead (Pb)-Dissolved			102.7		%		70-130	24-SEP-20
Molybdenum (Mo)-Dissolved			108.3		%		70-130	24-SEP-20
Nickel (Ni)-Dissolved			108.2		%		70-130	24-SEP-20
Selenium (Se)-Dissolved			128.7		%		70-130	24-SEP-20
Silver (Ag)-Dissolved			103.6		%		70-130	24-SEP-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	24-SEP-20
Thallium (Tl)-Dissolved			103.5		%		70-130	24-SEP-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	24-SEP-20
Vanadium (V)-Dissolved			120.6		%		70-130	24-SEP-20
Zinc (Zn)-Dissolved			109.1		%		70-130	24-SEP-20
PAH-511-WT	**Water**							
Batch R5234879								
WG3411123-2 LCS								
1-Methylnaphthalene			88.5		%		50-140	24-SEP-20
2-Methylnaphthalene			85.4		%		50-140	24-SEP-20
Acenaphthene			97.8		%		50-140	24-SEP-20
Acenaphthylene			98.2		%		50-140	24-SEP-20
Anthracene			114.2		%		50-140	24-SEP-20
Benzo(a)anthracene			132.4		%		50-140	24-SEP-20
Benzo(a)pyrene			107.7		%		50-140	24-SEP-20
Benzo(b)fluoranthene			106.2		%		50-140	24-SEP-20
Benzo(g,h,i)perylene			101.5		%		50-140	24-SEP-20
Benzo(k)fluoranthene			98.1		%		50-140	24-SEP-20
Chrysene			100.7		%		50-140	24-SEP-20
Dibenzo(ah)anthracene			109.4		%		50-140	24-SEP-20
Fluoranthene			103.6		%		50-140	

Quality Control Report

Workorder: L2507369 Report Date: 30-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R5234879								
WG3411123-2 LCS								
Fluoranthene			103.6		%		50-140	24-SEP-20
Fluorene			101.8		%		50-140	24-SEP-20
Indeno(1,2,3-cd)pyrene			117.8		%		50-140	24-SEP-20
Naphthalene			90.8		%		50-140	24-SEP-20
Phenanthrene			111.5		%		50-140	24-SEP-20
Pyrene			112.1		%		50-140	24-SEP-20
WG3411123-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	24-SEP-20
2-Methylnaphthalene			<0.020		ug/L		0.02	24-SEP-20
Acenaphthene			<0.020		ug/L		0.02	24-SEP-20
Acenaphthylene			<0.020		ug/L		0.02	24-SEP-20
Anthracene			<0.020		ug/L		0.02	24-SEP-20
Benzo(a)anthracene			<0.020		ug/L		0.02	24-SEP-20
Benzo(a)pyrene			<0.010		ug/L		0.01	24-SEP-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	24-SEP-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	24-SEP-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	24-SEP-20
Chrysene			<0.020		ug/L		0.02	24-SEP-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	24-SEP-20
Fluoranthene			<0.020		ug/L		0.02	24-SEP-20
Fluorene			<0.020		ug/L		0.02	24-SEP-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	24-SEP-20
Naphthalene			<0.050		ug/L		0.05	24-SEP-20
Phenanthrene			<0.020		ug/L		0.02	24-SEP-20
Pyrene			<0.020		ug/L		0.02	24-SEP-20
Surrogate: d8-Naphthalene			87.3		%		60-140	24-SEP-20
Surrogate: d10-Phenanthrene			107.9		%		60-140	24-SEP-20
Surrogate: d12-Chrysene			101.9		%		60-140	24-SEP-20
Surrogate: d10-Acenaphthene			94.5		%		60-140	24-SEP-20
PH-WT	**Water**							
Batch R5236314								
WG3411462-4 DUP		**WG3411462-3**						
pH		8.31	8.31	J	pH units	0.00	0.2	24-SEP-20
WG3411462-2 LCS								

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5236314								
WG3411462-2 LCS								
pH			7.01		pH units		6.9-7.1	24-SEP-20
VOC-511-HS-WT	**Water**							
Batch R5235856								
WG3411196-4 DUP		**WG3411196-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	25-SEP-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	25-SEP-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Chloroform		1.3	1.3		ug/L	1.5	30	25-SEP-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	25-SEP-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5235856								
WG3411196-4 DUP		**WG3411196-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	25-SEP-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
WG3411196-1 LCS								
1,1,1,2-Tetrachloroethane			93.6		%		70-130	25-SEP-20
1,1,2,2-Tetrachloroethane			91.6		%		70-130	25-SEP-20
1,1,1-Trichloroethane			96.4		%		70-130	25-SEP-20
1,1,2-Trichloroethane			89.9		%		70-130	25-SEP-20
1,1-Dichloroethane			93.6		%		70-130	25-SEP-20
1,1-Dichloroethylene			100.4		%		70-130	25-SEP-20
1,2-Dibromoethane			88.9		%		70-130	25-SEP-20
1,2-Dichlorobenzene			97.3		%		70-130	25-SEP-20
1,2-Dichloroethane			87.6		%		70-130	25-SEP-20
1,2-Dichloropropane			91.6		%		70-130	25-SEP-20
1,3-Dichlorobenzene			101.7		%		70-130	25-SEP-20
1,4-Dichlorobenzene			100.4		%		70-130	25-SEP-20
Acetone			99.1		%		60-140	25-SEP-20
Benzene			94.5		%		70-130	25-SEP-20
Bromodichloromethane			101.2		%		70-130	25-SEP-20
Bromoform			94.9		%		70-130	25-SEP-20
Bromomethane			120.1		%		60-140	25-SEP-20
Carbon tetrachloride			98.4		%		70-130	25-SEP-20
Chlorobenzene			98.2		%		70-130	25-SEP-20
Chloroform			96.9		%		70-130	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5235856								
WG3411196-1 LCS								
cis-1,2-Dichloroethylene			98.7		%		70-130	25-SEP-20
cis-1,3-Dichloropropene			94.2		%		70-130	25-SEP-20
Dibromochloromethane			90.7		%		70-130	25-SEP-20
Dichlorodifluoromethane			110.0		%		50-140	25-SEP-20
Ethylbenzene			101.9		%		70-130	25-SEP-20
n-Hexane			106.0		%		70-130	25-SEP-20
m+p-Xylenes			102.3		%		70-130	25-SEP-20
Methyl Ethyl Ketone			79.6		%		60-140	25-SEP-20
Methyl Isobutyl Ketone			86.9		%		60-140	25-SEP-20
Methylene Chloride			96.1		%		70-130	25-SEP-20
MTBE			96.8		%		70-130	25-SEP-20
o-Xylene			108.8		%		70-130	25-SEP-20
Styrene			99.0		%		70-130	25-SEP-20
Tetrachloroethylene			105.4		%		70-130	25-SEP-20
Toluene			97.5		%		70-130	25-SEP-20
trans-1,2-Dichloroethylene			107.8		%		70-130	25-SEP-20
trans-1,3-Dichloropropene			95.3		%		70-130	25-SEP-20
Trichloroethylene			98.5		%		70-130	25-SEP-20
Trichlorofluoromethane			100.8		%		60-140	25-SEP-20
Vinyl chloride			114.4		%		60-140	25-SEP-20
WG3411196-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1-Dichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-20
1,2-Dibromoethane			<0.20		ug/L		0.2	25-SEP-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-20
1,2-Dichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,2-Dichloropropane			<0.50		ug/L		0.5	25-SEP-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-20
Acetone			<30		ug/L		30	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5235856								
WG3411196-2 MB								
Benzene			<0.50		ug/L		0.5	25-SEP-20
Bromodichloromethane			<2.0		ug/L		2	25-SEP-20
Bromoform			<5.0		ug/L		5	25-SEP-20
Bromomethane			<0.50		ug/L		0.5	25-SEP-20
Carbon tetrachloride			<0.20		ug/L		0.2	25-SEP-20
Chlorobenzene			<0.50		ug/L		0.5	25-SEP-20
Chloroform			<1.0		ug/L		1	25-SEP-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	25-SEP-20
Dibromochloromethane			<2.0		ug/L		2	25-SEP-20
Dichlorodifluoromethane			<2.0		ug/L		2	25-SEP-20
Ethylbenzene			<0.50		ug/L		0.5	25-SEP-20
n-Hexane			<0.50		ug/L		0.5	25-SEP-20
m+p-Xylenes			<0.40		ug/L		0.4	25-SEP-20
Methyl Ethyl Ketone			<20		ug/L		20	25-SEP-20
Methyl Isobutyl Ketone			<20		ug/L		20	25-SEP-20
Methylene Chloride			<5.0		ug/L		5	25-SEP-20
MTBE			<2.0		ug/L		2	25-SEP-20
o-Xylene			<0.30		ug/L		0.3	25-SEP-20
Styrene			<0.50		ug/L		0.5	25-SEP-20
Tetrachloroethylene			<0.50		ug/L		0.5	25-SEP-20
Toluene			<0.50		ug/L		0.5	25-SEP-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	25-SEP-20
Trichloroethylene			<0.50		ug/L		0.5	25-SEP-20
Trichlorofluoromethane			<5.0		ug/L		5	25-SEP-20
Vinyl chloride			<0.50		ug/L		0.5	25-SEP-20
Surrogate: 1,4-Difluorobenzene			99.7		%		70-130	25-SEP-20
Surrogate: 4-Bromofluorobenzene			100.9		%		70-130	25-SEP-20
WG3411196-5 MS		**WG3411196-3**						
1,1,1,2-Tetrachloroethane			95.0		%		50-140	25-SEP-20
1,1,2,2-Tetrachloroethane			95.7		%		50-140	25-SEP-20
1,1,1-Trichloroethane			99.9		%		50-140	25-SEP-20
1,1,2-Trichloroethane			93.3		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5235856								
WG3411196-5 MS		**WG3411196-3**						
1,1-Dichloroethane			96.8		%		50-140	25-SEP-20
1,1-Dichloroethylene			98.5		%		50-140	25-SEP-20
1,2-Dibromoethane			92.2		%		50-140	25-SEP-20
1,2-Dichlorobenzene			96.7		%		50-140	25-SEP-20
1,2-Dichloroethane			93.1		%		50-140	25-SEP-20
1,2-Dichloropropane			94.9		%		50-140	25-SEP-20
1,3-Dichlorobenzene			98.1		%		50-140	25-SEP-20
1,4-Dichlorobenzene			97.2		%		50-140	25-SEP-20
Acetone			113.7		%		50-140	25-SEP-20
Benzene			96.0		%		50-140	25-SEP-20
Bromodichloromethane			105.1		%		50-140	25-SEP-20
Bromoform			97.9		%		50-140	25-SEP-20
Bromomethane			114.8		%		50-140	25-SEP-20
Carbon tetrachloride			98.3		%		50-140	25-SEP-20
Chlorobenzene			97.7		%		50-140	25-SEP-20
Chloroform			100.2		%		50-140	25-SEP-20
cis-1,2-Dichloroethylene			99.8		%		50-140	25-SEP-20
cis-1,3-Dichloropropene			89.6		%		50-140	25-SEP-20
Dibromochloromethane			93.2		%		50-140	25-SEP-20
Dichlorodifluoromethane			99.3		%		50-140	25-SEP-20
Ethylbenzene			96.8		%		50-140	25-SEP-20
n-Hexane			91.1		%		50-140	25-SEP-20
m+p-Xylenes			98.0		%		50-140	25-SEP-20
Methyl Ethyl Ketone			90.0		%		50-140	25-SEP-20
Methyl Isobutyl Ketone			89.7		%		50-140	25-SEP-20
Methylene Chloride			91.9		%		50-140	25-SEP-20
MTBE			96.6		%		50-140	25-SEP-20
o-Xylene			103.5		%		50-140	25-SEP-20
Styrene			94.3		%		50-140	25-SEP-20
Tetrachloroethylene			99.8		%		50-140	25-SEP-20
Toluene			94.5		%		50-140	25-SEP-20
trans-1,2-Dichloroethylene			94.1		%		50-140	25-SEP-20
trans-1,3-Dichloropropene			88.8		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5235856								
WG3411196-5 MS		**WG3411196-3**						
Trichloroethylene			96.6		%		50-140	25-SEP-20
Trichlorofluoromethane			98.1		%		50-140	25-SEP-20
Vinyl chloride			109.1		%		50-140	25-SEP-20
Batch R5237342								
WG3411986-4 DUP		**WG3411986-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	25-SEP-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	25-SEP-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	25-SEP-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	25-SEP-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5237342								
WG3411986-4 DUP		**WG3411986-3**						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	25-SEP-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-20
WG3411986-1 LCS								
1,1,1,2-Tetrachloroethane			102.2		%		70-130	25-SEP-20
1,1,2,2-Tetrachloroethane			88.8		%		70-130	25-SEP-20
1,1,1-Trichloroethane			105.9		%		70-130	25-SEP-20
1,1,2-Trichloroethane			96.8		%		70-130	25-SEP-20
1,1-Dichloroethane			103.0		%		70-130	25-SEP-20
1,1-Dichloroethylene			100.3		%		70-130	25-SEP-20
1,2-Dibromoethane			95.6		%		70-130	25-SEP-20
1,2-Dichlorobenzene			103.6		%		70-130	25-SEP-20
1,2-Dichloroethane			96.7		%		70-130	25-SEP-20
1,2-Dichloropropane			101.8		%		70-130	25-SEP-20
1,3-Dichlorobenzene			106.4		%		70-130	25-SEP-20
1,4-Dichlorobenzene			107.7		%		70-130	25-SEP-20
Acetone			103.1		%		60-140	25-SEP-20
Benzene			105.6		%		70-130	25-SEP-20
Bromodichloromethane			108.2		%		70-130	25-SEP-20
Bromoform			100.1		%		70-130	25-SEP-20
Bromomethane			122.1		%		60-140	25-SEP-20
Carbon tetrachloride			106.6		%		70-130	25-SEP-20
Chlorobenzene			105.6		%		70-130	25-SEP-20
Chloroform			105.2		%		70-130	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5237342								
WG3411986-1 LCS								
cis-1,2-Dichloroethylene			104.5		%		70-130	25-SEP-20
cis-1,3-Dichloropropene			89.2		%		70-130	25-SEP-20
Dibromochloromethane			98.6		%		70-130	25-SEP-20
Dichlorodifluoromethane			109.3		%		50-140	25-SEP-20
Ethylbenzene			104.7		%		70-130	25-SEP-20
n-Hexane			104.8		%		70-130	25-SEP-20
m+p-Xylenes			107.0		%		70-130	25-SEP-20
Methyl Ethyl Ketone			89.1		%		60-140	25-SEP-20
Methyl Isobutyl Ketone			81.4		%		60-140	25-SEP-20
Methylene Chloride			102.7		%		70-130	25-SEP-20
MTBE			105.4		%		70-130	25-SEP-20
o-Xylene			112.0		%		70-130	25-SEP-20
Styrene			102.2		%		70-130	25-SEP-20
Tetrachloroethylene			107.8		%		70-130	25-SEP-20
Toluene			103.6		%		70-130	25-SEP-20
trans-1,2-Dichloroethylene			101.0		%		70-130	25-SEP-20
trans-1,3-Dichloropropene			91.4		%		70-130	25-SEP-20
Trichloroethylene			108.9		%		70-130	25-SEP-20
Trichlorofluoromethane			98.7		%		60-140	25-SEP-20
Vinyl chloride			116.3		%		60-140	25-SEP-20
WG3411986-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1-Dichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-20
1,2-Dibromoethane			<0.20		ug/L		0.2	25-SEP-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-20
1,2-Dichloroethane			<0.50		ug/L		0.5	25-SEP-20
1,2-Dichloropropane			<0.50		ug/L		0.5	25-SEP-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-20
Acetone			<30		ug/L		30	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5237342								
WG3411986-2 MB								
Benzene			<0.50		ug/L		0.5	25-SEP-20
Bromodichloromethane			<2.0		ug/L		2	25-SEP-20
Bromoform			<5.0		ug/L		5	25-SEP-20
Bromomethane			<0.50		ug/L		0.5	25-SEP-20
Carbon tetrachloride			<0.20		ug/L		0.2	25-SEP-20
Chlorobenzene			<0.50		ug/L		0.5	25-SEP-20
Chloroform			<1.0		ug/L		1	25-SEP-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	25-SEP-20
Dibromochloromethane			<2.0		ug/L		2	25-SEP-20
Dichlorodifluoromethane			<2.0		ug/L		2	25-SEP-20
Ethylbenzene			<0.50		ug/L		0.5	25-SEP-20
n-Hexane			<0.50		ug/L		0.5	25-SEP-20
m+p-Xylenes			<0.40		ug/L		0.4	25-SEP-20
Methyl Ethyl Ketone			<20		ug/L		20	25-SEP-20
Methyl Isobutyl Ketone			<20		ug/L		20	25-SEP-20
Methylene Chloride			<5.0		ug/L		5	25-SEP-20
MTBE			<2.0		ug/L		2	25-SEP-20
o-Xylene			<0.30		ug/L		0.3	25-SEP-20
Styrene			<0.50		ug/L		0.5	25-SEP-20
Tetrachloroethylene			<0.50		ug/L		0.5	25-SEP-20
Toluene			<0.50		ug/L		0.5	25-SEP-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	25-SEP-20
Trichloroethylene			<0.50		ug/L		0.5	25-SEP-20
Trichlorofluoromethane			<5.0		ug/L		5	25-SEP-20
Vinyl chloride			<0.50		ug/L		0.5	25-SEP-20
Surrogate: 1,4-Difluorobenzene			99.5		%		70-130	25-SEP-20
Surrogate: 4-Bromofluorobenzene			92.9		%		70-130	25-SEP-20
WG3411986-5 MS		**WG3411986-3**						
1,1,1,2-Tetrachloroethane			104.4		%		50-140	25-SEP-20
1,1,2,2-Tetrachloroethane			98.0		%		50-140	25-SEP-20
1,1,1-Trichloroethane			105.5		%		50-140	25-SEP-20
1,1,2-Trichloroethane			103.1		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5237342								
WG3411986-5 MS		**WG3411986-3**						
1,1-Dichloroethane			101.1		%		50-140	25-SEP-20
1,1-Dichloroethylene			95.1		%		50-140	25-SEP-20
1,2-Dibromoethane			102.5		%		50-140	25-SEP-20
1,2-Dichlorobenzene			104.1		%		50-140	25-SEP-20
1,2-Dichloroethane			108.7		%		50-140	25-SEP-20
1,2-Dichloropropane			107.3		%		50-140	25-SEP-20
1,3-Dichlorobenzene			103.3		%		50-140	25-SEP-20
1,4-Dichlorobenzene			104.9		%		50-140	25-SEP-20
Acetone			112.6		%		50-140	25-SEP-20
Benzene			105.3		%		50-140	25-SEP-20
Bromodichloromethane			115.4		%		50-140	25-SEP-20
Bromoform			108.5		%		50-140	25-SEP-20
Bromomethane			113.2		%		50-140	25-SEP-20
Carbon tetrachloride			104.1		%		50-140	25-SEP-20
Chlorobenzene			105.8		%		50-140	25-SEP-20
Chloroform			107.9		%		50-140	25-SEP-20
cis-1,2-Dichloroethylene			105.1		%		50-140	25-SEP-20
cis-1,3-Dichloropropene			91.5		%		50-140	25-SEP-20
Dibromochloromethane			103.3		%		50-140	25-SEP-20
Dichlorodifluoromethane			83.5		%		50-140	25-SEP-20
Ethylbenzene			101.4		%		50-140	25-SEP-20
n-Hexane			95.6		%		50-140	25-SEP-20
m+p-Xylenes			103.6		%		50-140	25-SEP-20
Methyl Ethyl Ketone			91.2		%		50-140	25-SEP-20
Methyl Isobutyl Ketone			91.7		%		50-140	25-SEP-20
Methylene Chloride			104.5		%		50-140	25-SEP-20
MTBE			106.6		%		50-140	25-SEP-20
o-Xylene			110.4		%		50-140	25-SEP-20
Styrene			101.2		%		50-140	25-SEP-20
Tetrachloroethylene			103.7		%		50-140	25-SEP-20
Toluene			103.5		%		50-140	25-SEP-20
trans-1,2-Dichloroethylene			95.9		%		50-140	25-SEP-20
trans-1,3-Dichloropropene			94.0		%		50-140	25-SEP-20

Quality Control Report

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R5237342								
WG3411986-5 MS		**WG3411986-3**						
Trichloroethylene			107.3		%		50-140	25-SEP-20
Trichlorofluoromethane			91.2		%		50-140	25-SEP-20
Vinyl chloride			101.0		%		50-140	25-SEP-20

Quality Control Report

Workorder: L2507369 Report Date: 30-SEP-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: YOUSR HIWEISH

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

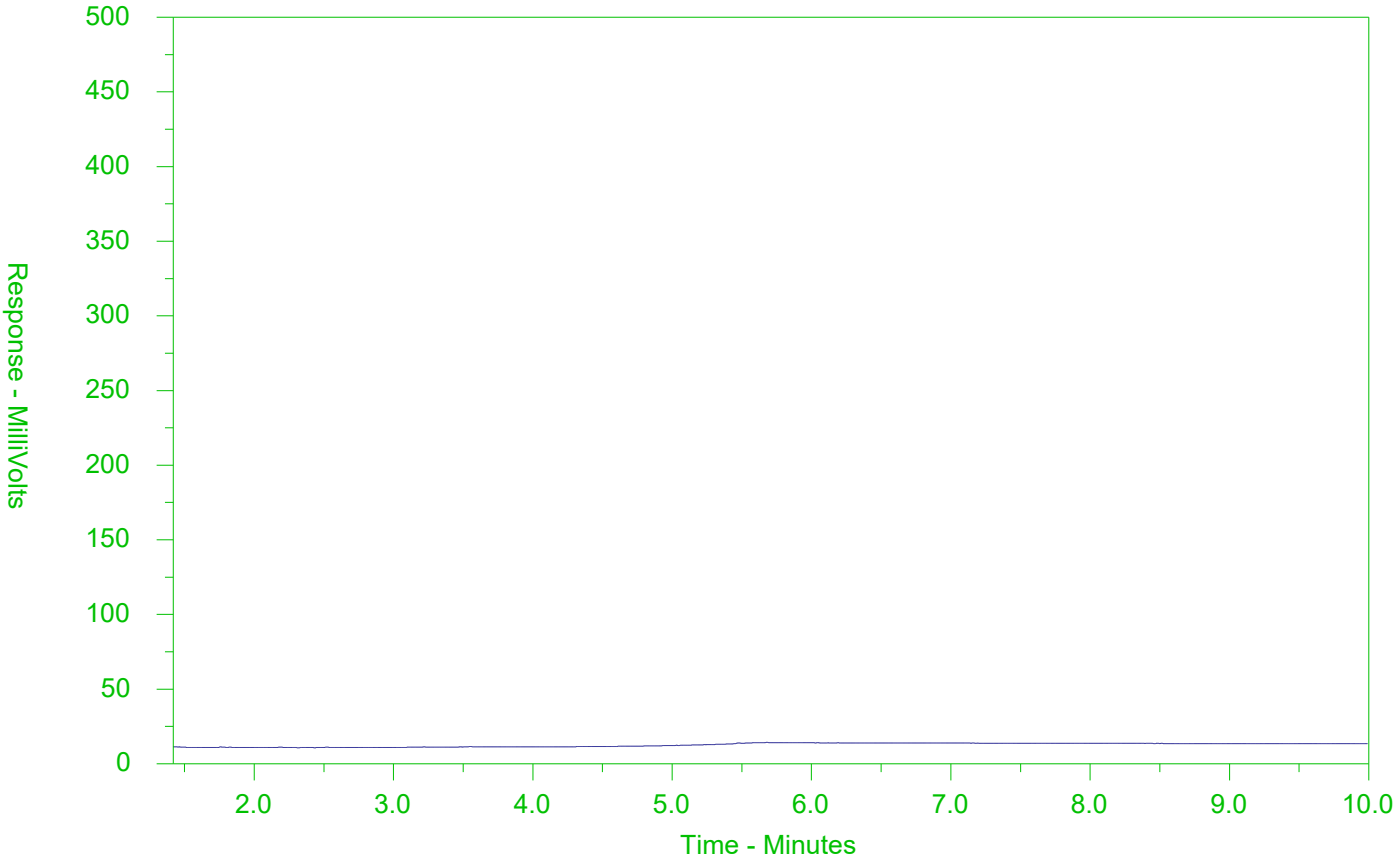
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2507369-1
Client Sample ID: BH 105



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

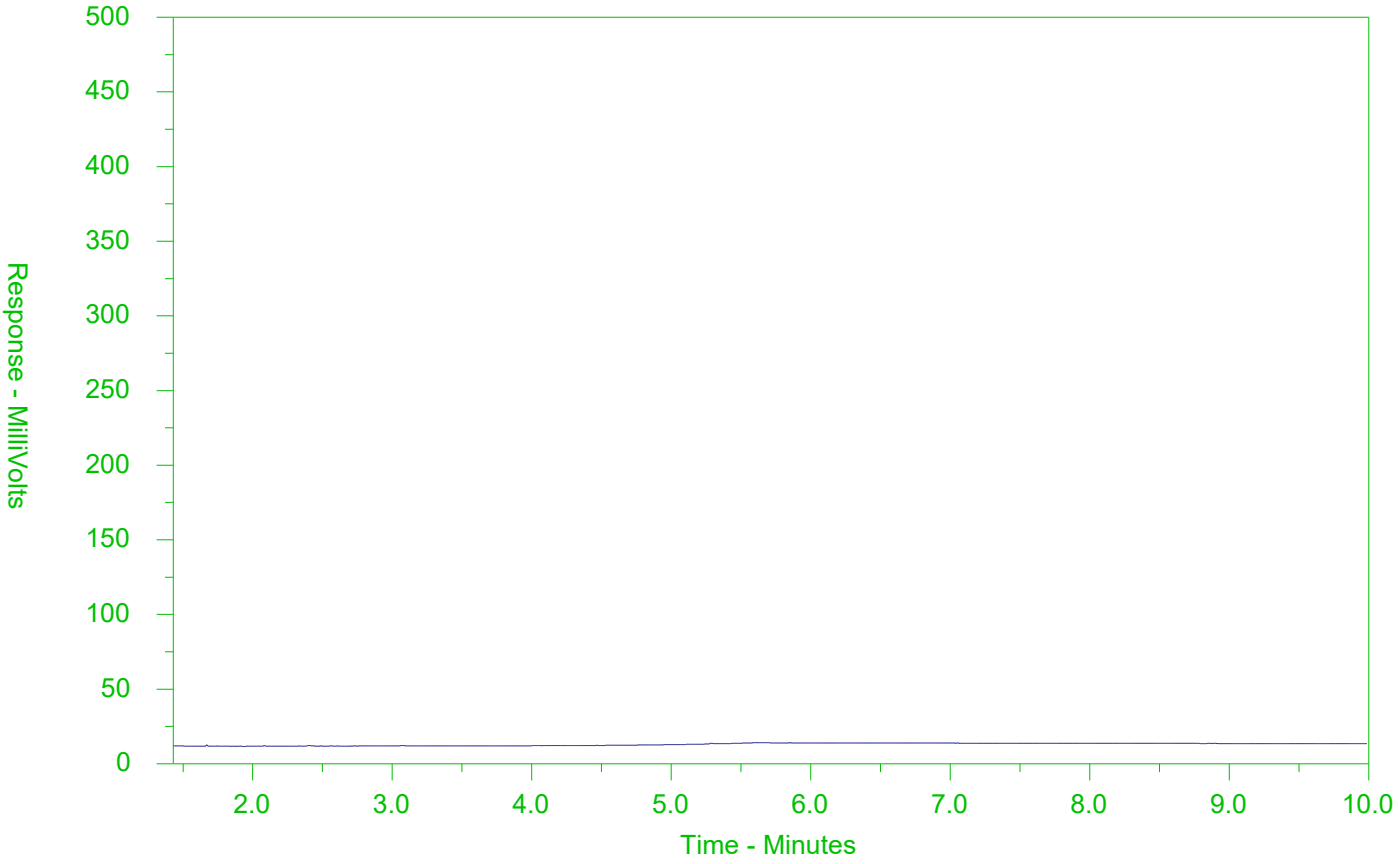
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2507369-2
Client Sample ID: BH 109



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

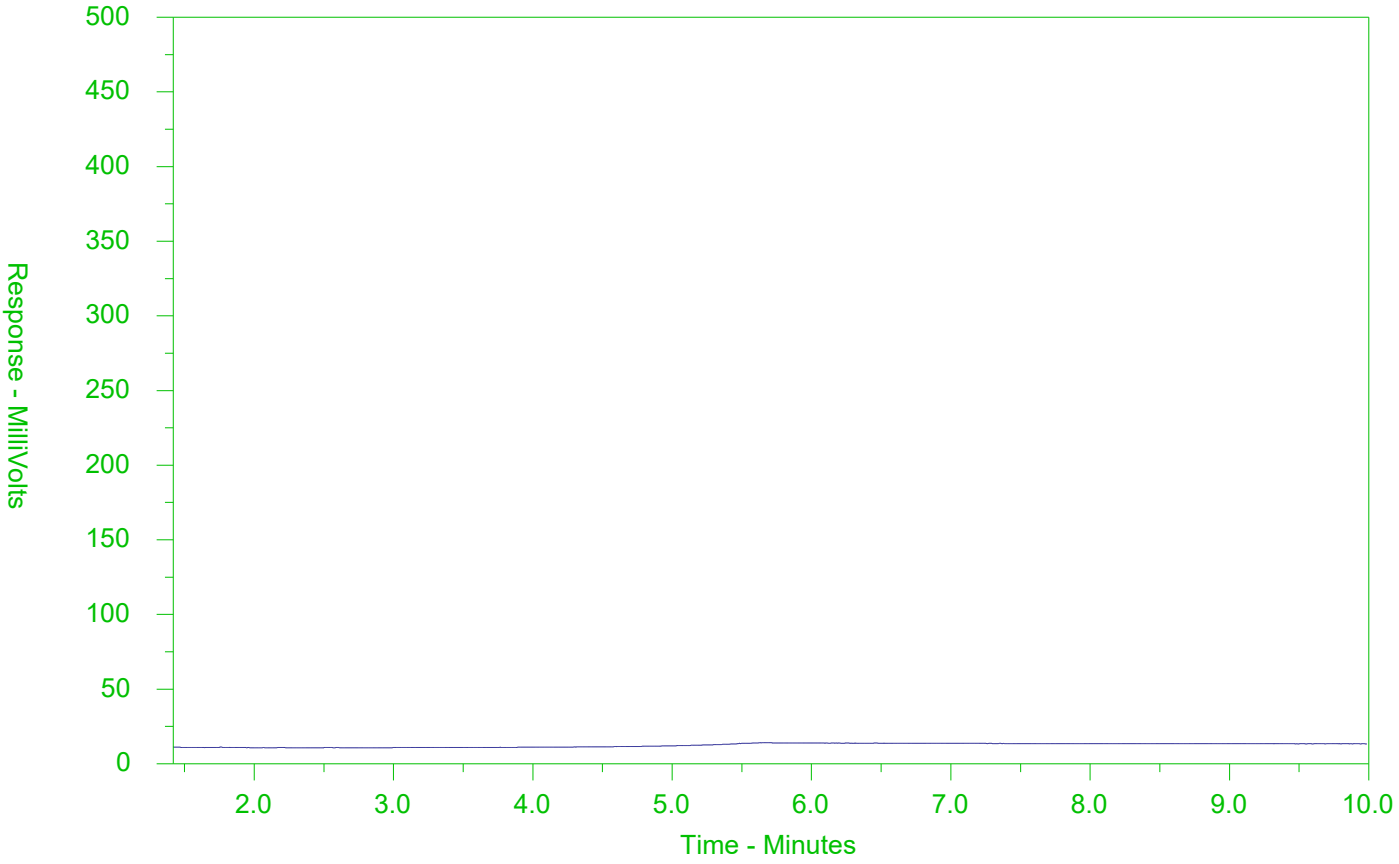
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2507369-3
Client Sample ID: DUP



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

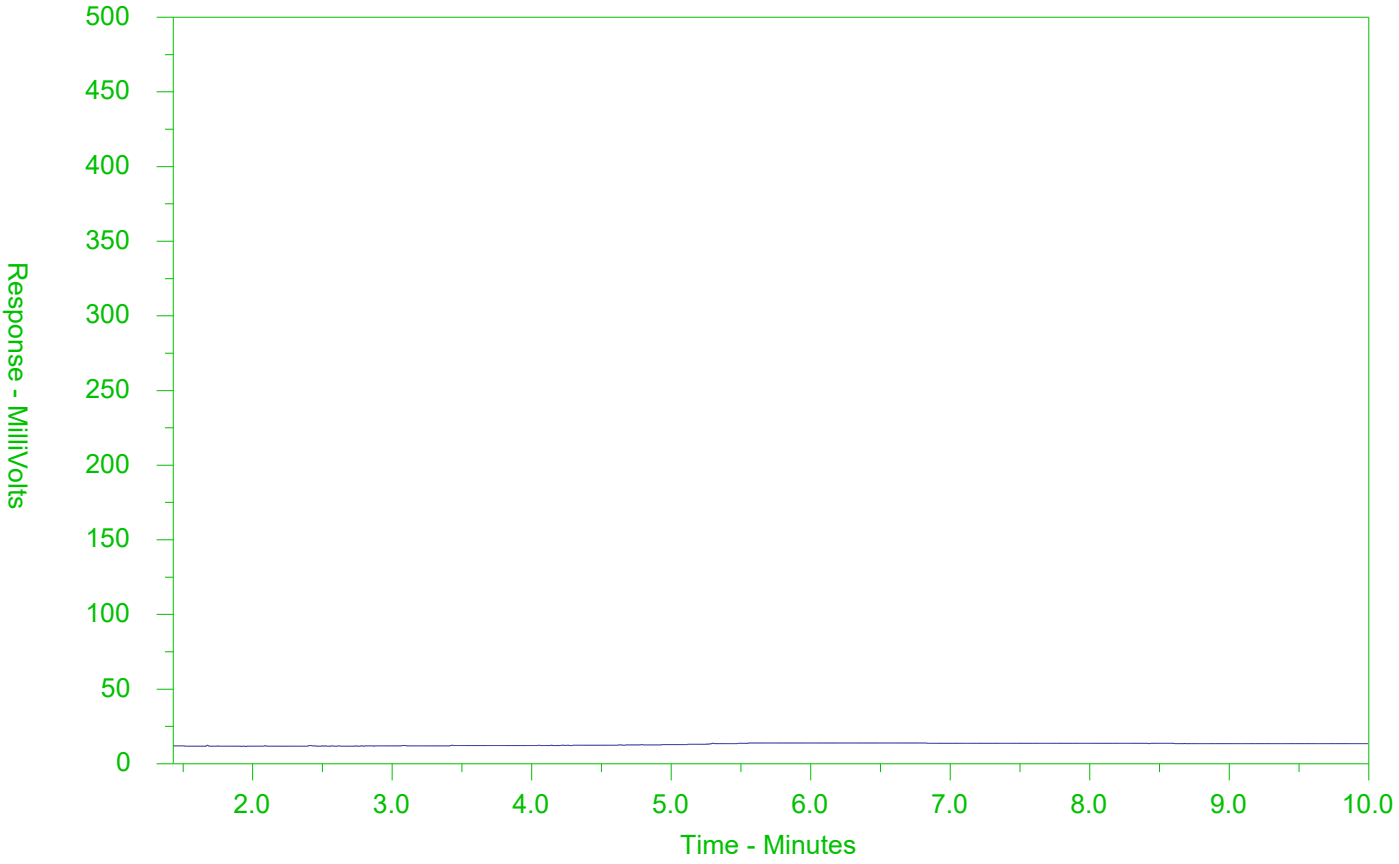
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2507369-4
Client Sample ID: BH 110S



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2507369-COFC

COC Number: 17 -

Page 1 of 1

84

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Terraprobe Inc	Select Report Format: ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Yousr Hiweish	Quality Control (QC) Report with Report ☑ ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐ — EMERGENCY: 1 Business day [E - 100%] ☐ / Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
Phone:	905-796-2650	☑ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:	11 Indell Lane	Email 1 or Fax yhiweish@terraprobe.ca	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:	Brampton, Ontario	Email 2	
Postal Code:	L6T 3Y3	Email 3	
Invoice To	Same as Report To ☐ ☑ NO	Invoice Distribution	
	Copy of Invoice with Report ☑ ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:	Terraprobe Inc	Email 1 or Fax lrossi@terraprobe.ca	
Contact:	Lorena Rossi	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q62481	AFE/Cost Center:	PO#
Job #:	1-20-0249-42	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2507369	ALS Contact:	Sampler: YH

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below: Metals & Inorganics	PAHs	VOCs (Including BTEX)	PHCs (F1 - F4)	PCBs	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH 105	23-Sep-20		GW	11	✓	✓	✓	✓			
	BH 109	"		GW	12	✓	✓	✓	✓	✓		
	DUP	"		GW	12	✓	✓	✓	✓	✓		
	BH 110S	"		GW	11	✓	✓	✓	✓			
	TRIP BLANK	"		GW	2			✓				

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	SAMPLE CONDITION AS RECEIVED (lab use only)
Are samples taken from a Regulated DW System? ☐ ☑ NO		Frozen ☐ SIF Observations Yes ☐ No ☐
Are samples for human consumption/ use? ☐ ☑ NO	MECP Table 2 (R/P/I) - Full Depth Generic Site Condition Standards in a Potable Ground Water Condition O.Reg. 153/04	Ice Packs ☐ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐
		Cooling Initiated ☐
		INITIAL COOLER TEMPERATURES °C: 1.4 — FINAL COOLER TEMPERATURES °C: 0.3

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Yousr Hiweish	Date: Sep. 23 / 2020	Time: 11:00	Received by:	Date: 9/23/2020	Time: 15:21	Received by:	Date: 9-23-20	Time: 1700

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

[1] If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.