



Terraprobe

*Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing*

**PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
1196 – 1210 YONGE STREET & 2 – 8 BIRCH AVENUE,
TORONTO, ONTARIO**

Prepared for: **BIRCH EQUITIES LIMITED**
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TABLE OF CONTENTS

SECTION	PAGE
1.0 EXECUTIVE SUMMARY	1
2.0 INTRODUCTION	4
2.1 Site Description.....	4
2.2 Property Ownership	5
2.3 Current and Proposed Future Uses	5
2.3.1 Current Property Use	5
2.4 Applicable Site Condition Standards	6
2.5 Objectives of Investigation	7
3.0 BACKGROUND INFORMATION	8
3.1 Physical Setting.....	8
3.1.1 Water Bodies, Wetlands and Areas of Natural Significance	8
3.1.2 Topography and Surface Water Drainage.....	9
3.2 Past Investigations	9
4.0 SCOPE OF THE INVESTIGATION	21
4.1 Overview of Site Investigation	21
4.2 Media Investigated.....	23
4.2.1 Rationale for Inclusion or Exclusion of Media.....	23
4.2.2 Overview of Field Investigation of Media.....	24
4.3 Deviations from Sampling and Analysis Plan	24
4.4 Impediments.....	24
5.0 INVESTIGATION METHOD.....	25
5.1 General.....	25
5.2 Drilling.....	25
5.3 Soil Sampling.....	26
5.3.1 Equipment Used.....	26
5.3.2 Geological Description of Soil	26
5.4 Field Screening Measurements	26
5.5 Ground Water Monitoring Well Installation.....	26
5.6 Field Measurement of Water Quality Parameters Ground Water: Sampling	27
5.7 Ground Water Sampling	27
5.8 Sediment Sampling	28
5.9 Analytical Testing.....	28
5.10 Residue Management Procedures	28
5.10.1 Soil Cuttings	28
5.10.2 Ground Water	28
5.10.3 Fluids from Equipment Cleaning.....	28
5.11 Elevation Surveying.....	28
5.12 Quality Assurance and Quality Control Measures.....	29
5.12.1 Containers, Labelling, Handling and Chain of Custody	29
5.12.2 Equipment Cleaning Procedures.....	30
5.12.3 Field Quality Control Measures.....	30
5.12.4 Deviations in the Quality Assurance and Quality Control Measures	30
6.0 REVIEW AND EVALUATION	31
6.1 Geology.....	31

6.1.1	Geological Unit Thicknesses (Estimated).....	31
6.1.2	Elevations of Geological Units	31
6.1.3	Material in Geological Units.....	31
6.1.4	Properties of Aquifers and Aquitards	33
6.1.5	Rationale for Choice of Aquifers and Aquitards Investigated.....	33
6.2	Ground Water Elevations and Flow Direction.....	33
6.2.1	Results of Interface Probe Measurements.....	33
6.2.2	Thickness of Free Flowing Product	33
6.2.3	Ground Water Elevations.....	33
6.2.4	Interpreted Direction of Ground Water Flow	33
6.2.5	Assessment of Temporal Variability	34
6.2.6	Influence of Buried Utilities	34
6.3	Ground Water Hydraulic Gradients and Hydraulic Conductivity.....	34
6.3.1	Horizontal Hydraulic Gradients	34
6.3.2	Vertical Hydraulic Gradient.....	34
6.3.3	Hydraulic Conductivity.....	34
6.4	Soil Texture.....	36
6.4.1	Rationale for Use of Coarse Soil Texture	36
6.5	Soil: Field Screening.....	36
6.6	Soil Quality	36
6.6.1	Location and Depth of Samples	36
6.6.2	Comparison to Applicable Standards (Soil)	38
6.6.3	Contaminants of Concern (Soil)	42
6.6.4	Contamination Impact on Other Media	43
6.6.5	Presence of Light or Dense Non-Aqueous Phase Liquids (In Soil).....	43
6.7	Ground Water Quality	43
6.7.1	Location and Depth of Sample Locations.....	43
6.7.2	Field Filtering	43
6.7.3	Comparison to Applicable Standards (Ground Water)	44
6.7.4	Contaminants of Concern (Ground Water).....	46
6.7.5	Chemical or Biological Transformations.....	46
6.7.6	Contamination Impact on Other Media	46
6.7.7	Presence of Light or Dense Non-Aqueous Phase Liquids (Ground Water).....	47
6.8	Quality Assurance and Quality Control Results	47
6.8.1	Types of Quality Control Samples Collected and Results.....	47
6.8.2	Samples Not Handled in Accordance with the Analytical Protocol	47
6.8.3	Subsection 47 (3) of the Regulation.....	47
6.8.4	Results Qualified by Laboratory	47
6.8.5	Overall Quality of Field Data	48
7.0	CONCLUSIONS	49
7.1	Signatures.....	51
8.0	REFERENCES	52
9.0	LIMITATIONS AND USE OF THE REPORT	53

FIGURES



Figure 1	Site Location Plan
Figure 2	PCA Locations
Figure 2A	Boreholes and Monitoring Well Location Plan With APEC Locations
Figure 3	Borehole/Monitoring Well Location Plan
Figure 4	Ground Water Flow Direction
Figure 5	Plan View Soil Exceedances – Metals
Figure 6	Plan View Soil Exceedance – VOCs
Figure 7	Plan View Soil Exceedance – PAHs
Figure 8	Plan View Soil Exceedance – EC
Figure 9	Plan View Soil Exceedance – SAR
Figure 10	Plan View Soil Exceedance – Mercury
Figure 11	Plan View Ground Water Exceedance - Chloride
Figure 12	Plan View Ground Water Exceedance - VOCs
Figure 13	Plan View Ground Water Exceedance - PAHs

TABLES

Table 1	Soil Quality – Metals and Inorganics
Table 2	Soil Quality – Petroleum Hydrocarbons
Table 3	Soil Quality – Volatile Organic Compounds I
Table 4	Soil Quality – Volatile Organic Compounds II (BTEX)
Table 5	Soil Quality – Polycyclic Aromatic Hydrocarbons
Table 6	Soil Quality – Polychlorinated Biphenyls
Table 7	Ground Water Quality – Metals and Inorganics
Table 8	Ground Water Quality – Petroleum Hydrocarbons
Table 9	Ground Water Quality – Volatile Organic Compounds
Table 10	Ground Water Quality – Volatile Organic Compounds II (BTEX)
Table 11	Ground Water Quality – Polycyclic Aromatic Hydrocarbons
Table 12	Ground Water Quality – Polychlorinated Biphenyls

APPENDICES

Appendix A	Phase One Conceptual Site Model
Appendix B	Site Survey
Appendix C	Aquifer Performance Test
Appendix D	Notification & Response regarding Use of Non-potable Ground Water Standards
Appendix E	Sampling and Analysis Plan
Appendix F	Standard Field Investigation Protocol
Appendix G	Borehole Logs
Appendix H	Grain Size Analyses
Appendix I	Ground Water Levels
Appendix J	Geological Units
Appendix K	Monitoring Well Construction Details
Appendix L	Laboratory Certificates of Analysis



1.0 EXECUTIVE SUMMARY

Birch Equities Limited retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Property located at 1196 – 1210 Yonge Street and 2 – 8 Birch Avenue, Toronto, 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 draft document entitled ‘*Phase One Environmental Site Assessment, 1196 – 1210 Yonge Street & 2 – 8 Birch Avenue, Toronto, Ontario*’ dated November 7, 2019 and it was noted that the conclusions of the Phase One ESA indicated twelve (12) 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 that have been identified on the Property. The Phase Two ESA was completed in general accordance with Ontario Regulation 153/04 (O.Reg. 153/04).

The designated Phase Two Property is approximately rectangular in shape and occupies an area of approximately 1,070 m² (0.107 hectares). The Property occupies 6 parcels of land and is currently developed with one (1) four-storey commercial-residential building located at 1196 – 1204 Yonge Street attached to one (1) three-storey residential building located at 2, 4 and 6 Birch Avenue, one (1) two-storey commercial-residential building located at 1206, 1208 and 1210 Yonge Street, and one (1) two-storey residential building located at 8 Birch Avenue. The Property is zoned as commercial-residential based on the City of Toronto By-law 569-2013 which was accessed on September 24, 2019. The Property is bounded by commercial-residential buildings to the north, Birch Avenue and utility land use to south, Yonge Street and commercial-residential buildings to the east, and residential properties to the west. Terraprobe understands that the existing buildings will be demolished and the Property will be developed with one (1) fifteen-storey (15) commercial-residential building with three (3) levels of underground parking.

The existing use of the Property would be considered commercial and residential, as defined by the Ministry of the Environment, Conservation and Parks (MECP), at 1196 – 1210 Yonge Street and residential at 2- 8 Birch Street. Section 14.6 of O.Reg. 153/04 states:

“**14.** A person shall not change the use of property for the purposes of clause 168.3.1 (1) (b) of the Act in any of the following manners:

6. If the property is used for a commercial use as well as any other type or types of property use, a change in the use of part or all of the property used for commercial use to any or all of the following types of property uses:
 - i. Agricultural or other use.
 - ii. Institutional use.
 - iii. Parkland use.
 - iv. Residential use.”

Provided that both the footprint and number of storeys currently used for commercial use remain unchanged under the proposed development, a Record of Site Condition (RSC) will not be required by the MECP; however, the City of Toronto may require an RSC as part of the planning process.

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 3 Standards for Residential/ Parkland/ Institutional Land Use with coarse textured soils (MECP Table 3 RPI Coarse Standards).
- An asphalt pavement structure, consisting of 50 mm thick asphaltic concrete underlain by 200 mm thick granular base course was encountered in Boreholes 1 and 3 at the ground surface. A 60 mm concrete paver underlain by 130 mm thick granular base course was encountered in Borehole 2 at the ground surface. A 600 mm thick gravel surface course was encountered in Borehole 4 at the ground surface. The earth fill layer consisted of clayey to sandy silt/ silty sand/ sand and gravel/silt, with trace amounts of organics. Silty sand till with varying amounts of clay (trace to some) and trace amounts of gravel was encountered beneath the earth fill zone. A sand and silt to silty sand unit with trace amounts of clay and gravel was encountered beneath the silty sand till in Boreholes 1, 2, 3, 4 and 6 and beneath the earth fill zone in Borehole 5 and extended to the full depth of investigation. Bedrock was not encountered.
- The MECP Table 3 RPI Coarse Standards were met in the earth fill soil located on the Property with the exception of the following:
 - Lead (Metals) in BH1-2006, BH3-2006 and BH6; Barium, Cadmium and Zinc in BH1-2006;
 - Electrical Conductivity (ORPs) in BH2-2006, BH2, BH3-2006, and BH4 (note: relevant from an excess soil management perspective only);
 - Sodium Adsorption Ratio (ORPs) in BH2, BH2-2006 and BH3-2006 (note: relevant from an excess soil management perspective only);
 - Mercury (ORPs) in BH1-2006 and BH3-2006;
 - Trichloroethylene (VOCs) in BH5 and BH6; and
 - PAHs in BH2, BH3, BH5, and BH6 for one or more of the following parameters:
 - Acenaphthylene;
 - Anthracene;
 - Benzo(a)anthracene;
 - Benzo(a)pyrene;
 - Benzo(b/j)fluoranthene;
 - Benzo(k)fluoranthene;
 - Chrysene;
 - Dibenzo(a,h)anthracene;



- Fluoranthene;
 - Indeno(1,2,3-cd)pyrene;
 - Naphthalene; and
 - Phenanthrene.
- The MECP Table 3 RPI Coarse Standards were met in the native material on the Property with the exception of the following:
 - Lead (Metals) in BH5;
 - Sodium Adsorption Ratio (ORPs) in BH2 and BH4 (note: relevant from an excess soil management perspective only); and
 - Trichloroethylene (VOCs) in BH4.
 - The MECP Table 3 Standards were met for all tested parameters in all ground water samples with the exception of the following:
 - cis-1,2-Dichloroethylene (VOCs) in BH5 and BH6;
 - Trichloroethylene (VOCs) in BH5 and BH6; and
 - PAHs in BH2, BH3, BH5, and BH6 for the following parameters:
 - Benzo(b)fluoranthene;
 - Benzo(g,h,i)perylene; and
 - Indeno(1,2,3-cd)pyrene.

In summary, exceedances of the applicable Site Condition Standards were noted in the earth fill and native soils on the Property. Additionally, exceedances of the applicable Site Condition Standards were noted in the ground water on the Property. As an RSC is not required by the MECP, it is Terraprobe's recommendation that additional investigations for vertical and horizontal delineation of the impacted material should be conducted in order to support a Risk Assessment on the Property and, if required by the City of Toronto, the filing of an RSC. A Risk Assessment will be required to assess the risks to human and ecological health resulting from the identified exceedances on the Property.



2.0 INTRODUCTION

Birch Equities Limited retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase One ESA) of the Property located at 1196 – 1210 Yonge Street and 2 – 8 Birch Avenue, Toronto, 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 draft document entitled *Phase One Environmental Site Assessment, 1196 – 1210 Yonge Street & 2 – 8 Birch Avenue, Toronto, Ontario* dated November 7, 2019 and it was noted that the conclusions of the Phase One ESA indicated twelve (12) 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 that have been identified on the Property.

2.1 Site Description

The designated Phase Two Property is approximately rectangular in shape and occupies an area of approximately 1,070 m² (0.107 hectares). The Property occupies 6 parcels of land and is currently developed with one (1) four-storey commercial-residential building located at 1196 – 1204 Yonge Street attached to one (1) three-storey residential building located at 2, 4 and 6 Birch Avenue, one (1) two-storey commercial-residential building located at 1206, 1208 and 1210 Yonge Street, and one (1) two-storey residential building located at 8 Birch Avenue. The Property is zoned as commercial-residential based on the City of Toronto By-law 569-2013 which was accessed on September 24, 2019. The Property is bounded by commercial-residential buildings to the north, Birch Avenue and utility land use to south, Yonge Street and commercial-residential buildings to the east, and residential properties to the west. Terraprobe understands that the existing buildings will be demolished and the Property will be developed with one (1) fifteen-storey (15) commercial-residential building with three (3) levels of underground parking.

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

The Property information is as follows:

Legal Description	Part of Lots 1 & 2, Registered Plan 308 Yorkville, City of Toronto
PIN(s)	PIN 21193-0524 (LT) (1210 Yonge Street); 21193-0525 (LT) (1208 Yonge Street); 21193-0526 (LT) (1206 Yonge Street); 21193-0136 (LT) (2, 4, 6 & 8 Birch Avenue and 1196, 1198, 1202 & 1204 Yonge Street)
Assessment Roll Number	Not provided
Municipal Address	1196, 1198, 1202, 1204, 1206, 1208 & 1210 Yonge Street and 2, 4, 6 & 8 Birch Avenue, Toronto, Ontario

Zoning	The Property is zoned as commercial residential based on the City of Toronto By-law 569-2013 as assessed on September 24, 2019 using the Zoning By-law Interactive Map.
Area	Approximately 1070 m ² (0.107 ha)
Zone Northing Easting	17T 43.681627 m E, -79.391769 m N
Persons, other than Property Owner, who engaged the Qualified Person to conduct the Phase Two ESA	Mr. Jeff Crossing, on behalf of Birch Equities Limited, engaged the Qualified Person to conduct the Phase One ESA. 1133 Yonge Street, Suite 601 Toronto, Ontario, M4T 2Y7 Tel: 416-361-5000 crossing@woodcliffe.ca

2.2 Property Ownership

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

Legal Description	Part of Lots 1 & 2, Registered Plan 308 Yorkville, City of Toronto
PIN(s)	PIN 21193-0524 (LT) (1210 Yonge Street); 21193-0525 (LT) (1208 Yonge Street); 21193-0526 (LT) (1206 Yonge Street); 21193-0136 (LT) (2, 4, 6 & 8 Birch Avenue and 1196, 1198, 1202 & 1204 Yonge Street)
Property Owner Information	Birch Equities Limited is the current Property Owner since 2006.

2.3 Current and Proposed Future Uses

2.3.1 Current Property Use

The Property occupies 6 parcels of land and is currently developed with one (1) four-storey commercial-residential building located at 1196 – 1204 Yonge Street attached to one (1) three-storey residential building located at 2, 4 and 6 Birch Avenue, one (1) two-storey commercial-residential building located at 1206, 1208 and 1210 Yonge Street, and one (1) two-storey residential building located at 8 Birch Avenue. The Property is zoned as commercial-residential based on the City of Toronto By-law 569-2013 which was accessed on September 24, 2019. The existing use of the Property would be considered commercial and residential, as defined by the Ministry of the Environment, Conservation and Parks (MECP), at 1196 – 1210 Yonge Street and residential at 2- 8 Birch Street. Future Property Use.

Terraprobe understands that the existing buildings would be demolished and the Property will be developed with one (1) fifteen-storey (15) commercial-residential building with three (3) levels of underground parking.

Section 14.6 of O.Reg. 153/04 states:

“14. A person shall not change the use of property for the purposes of clause 168.3.1 (1) (b) of the Act in any of the following manners:

6. If the property is used for a commercial use as well as any other type or types of property use, a change in the use of part or all of the property used for commercial use to any or all of the following types of property uses:
 - i. Agricultural or other use.
 - ii. Institutional use.
 - iii. Parkland use.
 - iv. Residential use.”

Provided that both the footprint and number of storeys currently used for commercial use remain unchanged under the proposed development, a Record of Site Condition (RSC) will not be required by the MECP; however, the City of Toronto may require an RSC as part of the planning process.

2.4 Applicable Site Condition Standards

The applicable soil and ground water Standards for the Property were determined to be those in Table 3 (non-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 3 RPI Coarse Standards). These are considered to be the applicable Standards for the following reasons:

- The intended use for the Property is mixed commercial-residential with residential being the most sensitive 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 in the City of Toronto. The Property and all properties within 250 m are serviced with municipal water drawn from surface water and there are no water supply wells at any of these properties. Terraprobe notified the City of Toronto on March 10, 2020 of the intention to use non-potable ground water standards and the City has 30 days to respond if they have an objection. A response was received from the City of Toronto on March 24, 2020 and it was indicated that the City of Toronto has no objection to the use of non-potable ground water standards

to be applied to the Property. The correspondence regarding the use of non-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)	<ul style="list-style-type: none"> No water bodies were identified on the Property.
Water Bodies (Study Area)	<ul style="list-style-type: none"> The nearest water body is an unnamed stream approximately 600 m east of the Property which drains into the Don River which is located approximately 2 km east of the Property.
Wetland (Property)	<p><u>Provincially Significant</u></p> <ul style="list-style-type: none"> No Provincially Significant wetlands were present on the Property. <p><u>Non-Provincially Significant</u></p> <ul style="list-style-type: none"> No Non-Provincially Significant wetlands were present on the Property. <p><u>Unevaluated</u></p> <ul style="list-style-type: none"> No Unevaluated wetlands were present on the Property.
Wetland (Study Area)	<p><u>Provincially Significant</u></p> <ul style="list-style-type: none"> No Provincially Significant wetlands were present in the Study Area. <p><u>Non-Provincially Significant</u></p> <ul style="list-style-type: none"> No Non-Provincially Significant wetlands were present in the Study Area. <p><u>Unevaluated</u></p> <ul style="list-style-type: none"> No Unevaluated wetlands were present in the Study Area.
ANSIs (Property)	<p><u>Provincially Significant Life Science ANSI</u></p> <ul style="list-style-type: none"> No Life Science ANSIs were identified on the Property. <p><u>Provincially Significant Earth Science ANSI</u></p> <ul style="list-style-type: none"> No Earth Science ANSIs were identified on the Property.

ANSIs (Study Area)	<p><u>Provincially Significant Life Science ANSI</u></p> <ul style="list-style-type: none"> No Life Science ANSIs were identified in the Study Area. <p><u>Provincially Significant Earth Science ANSI</u></p> <ul style="list-style-type: none"> No Earth Science ANSIs were identified in the Study Area.
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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 OBM, Toporama, MNR and Google Earth maps were reviewed and it was identified that the elevation of the Property was approximately 124 m above sea level (mASL).
Hydrogeology	The nearest water body is an unnamed stream approximately 600 m east of the Property which drains into the Don River which is located approximately 2 km east of the Property. Based on the Water Well Records and Terraprobe's previous investigations in the local area, the depth to ground water is expected to be approximately 4.6 to 11.6 mbgs. Ground water and surface water are expected to flow to south towards Lake Ontario according to the MECP's Great Lakes watershed locator.
Geology (overburden)	Based on published geology and Terraprobe's previous investigations, the overburden material is expected to consist of silt to sandy silt/silty sand with trace gravel.
Geology (bedrock)	The bedrock on the site is of the Georgian Bay Formation, which is comprised of shale, limestone, dolostone and siltstone.
Geology (depth to bedrock)	Based upon published geology, historic borehole information from the MNRF and Water Well Records in the vicinity from the MECP, the depth to bedrock in the area of the Property is expected to be approximately 40 mbgs.

3.2 Past Investigations

Previous environmental reports for the subject 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 concurrently with the Phase Two ESA is also summarized below:

Report Title	Phase I Environmental Site Assessment – 1196 – 1210 Yonge Street & 2 -8 Birch Avenue, Toronto, Ontario
Report Date	February 17, 2006
File/Project Number	1-06-1007
Prepared By	Terraprobe Limited
Prepared For	Woodcliffe Corporation

- Terraprobe was retained by Woodcliffe Corporation to conduct a Phase I Environmental Site Assessment (ESA) of the Property located at 1196-1210 Yonge Street and 2-8 Birch Avenue, Toronto, Ontario, to assess the environmental condition of the property prior to purchasing.
- The Phase I ESA was conducted in general accordance with the methodology described in CSA Standard Z768-01.
- The Property was occupied by two multi-use commercial-residential buildings.
- Based on the findings of the Phase I ESA and the nature of historical land use on the subject Property and surrounding properties, Terraprobe identified a number of potentially contaminating activities in the vicinity of the subject property including a former coal gasification plant, a former private incinerator, a former dry cleaner, seven (7) gasoline storage tanks, and an automobile service centre.
- Terraprobe concluded that based on the results of the Phase I ESA, the former land uses in the vicinity of the subject property may have impacted the soil and ground water at the site.
- A Phase II Environmental Site Assessment was recommended to determine if any environmental impact occurred.

Report Title	Phase II Environmental Site Assessment – 1196 – 1210 Yonge Street & 2 -8 Birch Avenue, Toronto, Ontario
Report Date	February 24, 2006
File/Project Number	1-06-1007
Prepared By	Terraprobe Limited
Prepared For	Woodcliffe Corporation

- Terraprobe was retained by Woodcliffe Corporation to conduct a Phase II Environmental Site Assessment (ESA) of the Property located at 1196-1210 Yonge Street and 2-8 Birch Avenue, Toronto, Ontario, based on the recommendations of a Phase I ESA completed on the subject property (see previous summary).
- The Phase II ESA consisted of drilling three (3) exploratory boreholes across the property to depths ranging from 2.7 m to 6.6 m below existing grades, installing and developing one (1) ground water monitoring well, analyzing three (3) soil samples for inorganic parameters (i.e. metals), three (3)

soil samples for volatile organic compounds (VOCs), one (1) soil sample for petroleum hydrocarbons (PHCs), and one (1) ground water samples for metals and VOCs.

- The Phase II ESA was completed to meet the standard requirements under Ontario Regulation 153/04 (O.Reg.153/04). The results of laboratory analysis for the soil and ground water samples were compared to the *Soil, Ground Water, and Sediment Standards* for use under *Part XV.I of the Environmental Protection Act of Ontario (2004)*.
- The results of the Phase II ESA indicated that the property was underlain by fill soils in the areas not covered by the building. The fill extended from the ground surface to approximate 1.2 – 1.5 m below grade and that native soil, comprising a mixture of sand and silt, was encountered beneath the fill soils. Bedrock was not encountered during drilling.
- The results of chemical analysis of selected soil samples indicated that all parameters analyzed met the Table 3 criteria of the *Soil, Ground Water, and Sediment Standards* for use under *Part XV.I of the Environmental Protection Act of Ontario*, with the exception of following exceedances encountered in the fill soils on site:

Borehole/Sample No. (Depth)	Parameter	Table 3 Standard (ug/g)	Result (ug/g)
BH 1/Sa 2 (0.3 m)	Lead	200	602
BH 2/Sa 1 (0.3 m)	Electrical Conductivity (EC)	0.7 mS/cm	0.998
	Sodium Absorption Ratio (SAR)	5	8.11
BH 3/Sa 2 (0.5 m)	Electrical Conductivity (EC)	0.7 mS/cm	1.23
	Sodium Absorption Ratio (SAR)	5	8.06

- Based on the results of the soil samples analyzed, it was concluded the EC and SAR exceedances are relevant to vegetation growth and not human health. The lead exceedance was isolated to one borehole location and it was concluded that the exceedance does not represent an immediate risk to human or ecological health.
- The results of chemical analysis of the ground water sample indicated that all parameters analyzed met the Table 3 criteria of the *Soil, Ground Water, and Sediment Standards* for use under *Part XV.I of the Environmental Protection Act of Ontario*. Based on these results it was concluded that no impact to the ground water occurred from neighbouring land uses.
- The report concluded that in the event of property redevelopment, the soils which do not meet the Table 3 Soil Standards will require removal and disposal at an appropriate facility. Confirmatory sampling and laboratory analysis should be conducted at the time of removal to ensure that no impacted soils remain on the site.

Report Title	Asbestos Management Plan – 1196 – 1210 Yonge Street & 2 -8 Birch Avenue, Toronto, Ontario
Report Date	November 23, 2007
File/Project Number	1-07-2295
Prepared By	Terraprobe Limited c/o Woodcliffe Corporation
Prepared For	Yonge & Birch Properties

- Terraprobe Limited was retained by the Woodcliffe Corporation to conduct an Asbestos Survey at the property identified as 1196-1210 Yonge Street and 2-8 Birch Avenue, Toronto, Ontario.
- The purpose of this study was to determine if any asbestos containing materials (ACM) are present at the site. In the event that any asbestos materials were encountered, an Asbestos Management Plan was to be developed in accordance with the requirements of Ontario Regulation 278/05 – *Asbestos on Construction Projects and in Buildings and Repair Operations*.
- The results of this investigation were based on a site inspection which was conducted by Terraprobe in January 2006. No laboratory analysis was conducted to confirm the asbestos content of any materials. Any materials which were considered likely to contain asbestos (based on the visual inspection) were assumed to be ACM for the purposes of this report.
- The report concluded that materials which were assumed to contain asbestos (vinyl floor tiles, acoustic ceiling tiles, and stucco) were all in good condition at the time of inspection. Provided that regular inspections (and repairs) of the material were conducted to ensure that the material did not become friable, it would not require removal. If desired, representative samples of these materials could be obtained for laboratory analysis to confirm whether they were asbestos containing.

Report Title	Asbestos Survey – 1196 – 1210 Yonge Street & 2 -8 Birch Avenue, Toronto, Ontario
Report Date	December 22, 2014
File/Project Number	13-14-4175
Prepared By	Terraprobe Inc.
Prepared For	Birch Equities Limited c/o Woodcliffe Corporation

- The report documented the results of an asbestos survey which was conducted at 1196 – 1210 Yonge Street & 2 -8 Birch Avenue, Toronto, Ontario based on a previously prepared Asbestos Management Plan conducted for the property and summarized in the report entitled “*Asbestos Management Plan – 1196 – 1210 Yonge Street & 2 -8 Birch Avenue, Toronto, Ontario*” prepared by Terraprobe Limited, dated November 23 2007 (Project No. 1-07-2295).
- A total of sixteen materials were identified inside the building which may be asbestos-containing. In accordance with the requirements of O.Reg. 278/05, three representative samples of each of these materials were obtained and submitted for laboratory analysis of asbestos content.
- Based on the results of laboratory analysis, and the observations made during the site inspection, it is concluded that two asbestos-containing materials were present at the subject property – one variety of vinyl floor tiles and one variety of linoleum flooring. The materials were considered non-friable asbestos-containing material (ACM).
- The Asbestos Management Plan made in November 2007 was to remain in effect if the ACM was not removed from the buildings.
- The report noted that if the ACM was to be removed, protective measures would be required for worker safety in keeping with Type 1, 2 and/or 3 Removal precautions.
- The report noted that the assessment was limited in that intrusive investigations were not conducted to examine/sample all portions of the buildings and that the assessment was not to be considered definitive for all building components.

- The report concluded that if future work on the buildings revealed previously hidden building components and new information regarding the composition of the subject buildings become available, Terraprobe Inc. should be notified to re-evaluate the findings of this assessment and provide amendments, as required.

Report Title	Phase One Environmental Site Assessment – 1196-1210 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario
Report Date	November 7, 2019
File/Project Number	1-19-0603
Prepared By	Terraprobe Inc.
Prepared For	Birch Equities Limited

- Terraprobe was retained by the Birch Equities Limited to conduct a Phase One Environmental Site Assessment (ESA) of a designated section of the property located at 1196 – 1210 Yonge Street and 2 – 8 Birch Avenue, Toronto, Ontario, to assess the environmental condition of the property prior to the construction of a new fifteen-storey (15) commercial-residential building with three (3) levels of underground parking.
- 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 Property occupies 6 parcels of land and is currently developed with one (1) four-storey commercial-residential building located at 1196 – 1204 Yonge Street attached to one (1) three-storey residential building located at 2, 4 and 6 Birch Avenue, one (1) two-storey commercial-residential building located at 1206, 1208 and 1210 Yonge Street, and one (1) two-storey residential building located at 8 Birch Avenue
- Based on the findings of the Phase One ESA Potentially Contaminating Activities (PCAs) were identified including but not limited to commercial auto body shops, fuel storage tanks, waste generators, operation of dry cleaning equipment, wood treating facility and coal storage. These activities resulted in the identification of twelve (12) Areas of Potential Environmental Concern.
- Terraprobe concluded that, based on the results of the Phase One ESA, 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.

Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 1: North portion of the Property	Off-Site 1212 Yonge Street	#10 – Commercial Autobody Shops	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 13 Alcorn Avenue			
	Off-Site 8 Shaftesbury Avenue			
	Off-Site 1240 Yonge Street			
	Off-Site 58-60 Alcorn Avenue			
	Off-Site 1262 Yonge Street			
	Off-Site 1218 Yonge Street	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	Soil and ground water
	Off-Site 1153 Yonge Street			
	Off-Site 4 Alcorn Avenue			



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 1: North portion of the Property	Off-Site 1224 Yonge Street	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	Soil and ground water
	Off-Site 1155 Yonge Street			
	Off-Site 1139 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 1143 Yonge Street			
	Off-Site 14 Shaftesbury Avenue			
	Off-Site 1228 Yonge Street			
	Off-Site 1161 Yonge Street			
	Off-Site 10 Alcorn Avenue			



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 1: North portion of the Property	Off-Site 1179 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 1240 Yonge Street			
	Off-Site 1246 Yonge Street			
	Off-Site 1230 Yonge Street	#33 – Metal Treatment, Coating, Plating and Fabrication	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 1234 Yonge Street			
	Off-Site 10 Alcorn Avenue	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biooils as soil conditioners.	Metals, Hydride Forming Metals, PHCs (F1-F4), VOCs, BTEX, PAHs, PCBs	Soil and ground water
	Off-Site Opposite 30 Shaftesbury Avenue	#NA ² – Ontario Spills	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site Yonge Street and Summerhill			
	Off-Site 1268 Yonge Street	#39 – Paint Manufacturing, Processing and Bulk Storage	Metals, VOCs	



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 2: West portion of the Property	Off-Site 10 Birch Avenue	#10 – Commercial Autobody Shops	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 24 Birch Avenue			
	Off-Site 10 Birch Avenue	#59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and ground water
	Off-Site 10 Birch Avenue	#33 – Metal Treatment, Coating, Plating and Finishing	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 24 Birch Avenue	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 22 Alcorn Avenue			
	Off-Site 32 Alcorn Avenue			
	Off-Site 43 Alcorn Avenue			



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 3: East section of the Property	Off-Site 1139 Yonge Street	#NA ³ – Coal storage	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and ground water
	Off-Site 25 Shaftesbury Avenue	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 35-37 Shaftesbury Avenue			
APEC 4 South Portion of the Property	Off-Site 11 Birch Avenue	#NA ¹ – Waste Generator	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 11 Birch Avenue	#18 – Electricity Generation, Transformation and Power Station	PCBs	Soil and ground water
	Off-Site 15-21 Birch Avenue	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 1176 Yonge Street			
	Off-Site 1119 Yonge Street			
Off-Site 1174 Yonge Street				



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 4 South Portion of the Property	Off-Site 1109 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 66 Birch Avenue			
	Off-Site 1119 Yonge Street	#8 – Chemical Manufacturing, Processing and Bulk Storage	Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 1121 Yonge Street			
	Off-Site 1111 Yonge Street			
	Off-Site 29 Birch Avenue	#10 – Commercial Autobody Shops	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
	Off-Site 31 Birch Avenue			
	Off-Site 1109 Yonge Street			
	Off-Site 1129 Yonge Street	#NA ³ – Coal storage	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and ground water
APEC 5: North-central section of Phase One Property	On-Site 1206 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
APEC 6: North-central section of Phase One Property	On Site 1206 Yonge Street	#NA ⁴ – Exceedance from previous investigation	Metals	Soil and ground water
APEC 7:	On Site 8 Birch Avenue	#NA ⁴ – Exceedance from previous investigation	EC, SAR	Soil



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
West section of Phase One Property			Na, Cl	Ground water
APEC 8: South-central portion of Phase One Property	On-Site Phase One Property	#NA ⁴ – Exceedance from previous investigation	EC, SAR	Soil
			Na, Cl	Ground water
APEC 9: North Section of Phase One Property	On-Site 1208 & 1210 Yonge Street	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	Soil and ground water
APEC 10: North Section of Phase One Property	On-Site 1208 Yonge Street	#39 – Paint Manufacturing, Processing and Bulk Storage	Metals, VOCs	Soil and ground water
APEC 11: East portion of Phase One Property	On-Site 1196 Yonge Street	#NA ¹ – Waste Generator	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and ground water
APEC 12: East portion of Phase One Property	On-Site 1196 Yonge Street	#59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and ground water

- A Phase Two Environmental Site Assessment is required to investigate the Areas of Potential Environmental Concern for the Contaminants of Potential Concern that have been identified on the Property.

The Phase One Conceptual Site Model is attached in Appendix A. Figure 2A 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 2019 and 2020, Terraprobe conducted the following subsurface work at the Property for a Phase Two Environmental Site Assessment:

- Drilling of a total of seven boreholes (BH1 – BH3, BH4S BH4D BH5 and BH6) to depths ranging from approximately 7.6 – 23 m below existing grades.
- Ground water monitoring wells were installed in all boreholes.
- Laboratory analysis of selected soil samples for parameters including:
 - Metals;
 - Hydride-Forming Metals (H-M; As, Sb, Se);
 - Other Regulated Parameters (ORPs):
 - Electrical Conductivity (EC);
 - Sodium Adsorption Ratio (SAR);
 - Boron, Hot Water Soluble (B-HWS);
 - Cyanide (CN⁻);
 - Mercury (Hg);
 - Hexavalent Chromium (Cr[VI]); and
 - pH.
 - 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;
 - Hydride-Forming Metals (H-M; As, Sb, Se);
 - Other Regulated Parameters (ORPs)
 - Chloride (Cl⁻)
 - Cyanide (CN⁻);
 - Mercury (Hg);
 - Hexavalent Chromium (Cr[VI]); and



- pH.
- Sodium (Na);
- Volatile Organic Compounds (VOCs);
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
- Petroleum Hydrocarbons (PHCs);
- Polycyclic Aromatic Hydrocarbons (PAHs); and
- Polychlorinated Biphenyls (PCBs).

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
October 23-28, 2019	<ul style="list-style-type: none"> • Drilled four (4) boreholes (BH3, BH4, BH5 & BH6) and sampled for soil • Installed monitoring wells in the four (4) boreholes (BH3, BH4, BH5 & BH6) 	<ul style="list-style-type: none"> • 10 Metals analyses • 10 H-M analyses • 9 PHC analyses • 9 VOC analyses • 9 BTEX analyses • 7 PAH analyses • 7 PCB analyses 	
November 19-20, 2019	<ul style="list-style-type: none"> • Water levels taken from monitoring wells (BH3, BH4, BH5 & BH6) • Monitoring wells developed for sampling (BH3, BH4, BH5 & BH6) • Sampled monitoring wells (BH3, BH4, BH5 & BH6) 		<ul style="list-style-type: none"> • 5 Metals analyses • 5 H-M analyses • 5 PHC analyses • 5 VOC analyses • 5 BTEX analyses • 5 PAH analyses • 4 PCB analyses
December 16, 2019	<ul style="list-style-type: none"> • Water levels taken from monitoring wells (BH3, BH4, BH5 & BH6) • Sampled monitoring wells (BH3, BH4, BH5 & BH6) 		<ul style="list-style-type: none"> • 6 Metals analyses • 6 H-M analyses • 6 PHC analyses • 6 VOC analyses • 6 BTEX analyses • 6 PAH analyses • 4 PCB analyses
January 6-16, 2020	<ul style="list-style-type: none"> • Drilled one (1) borehole (BH2) and sampled for soil • Installed monitoring well in the one (1) borehole (BH2) 	<ul style="list-style-type: none"> • 3 Metals analyses • 3 H-M analyses • 3 PHC analyses • 3 VOC analyses • 3 BTEX analyses • 3 PAH analyses • 3 PCB analyses 	

Date	Scope of Investigation	Scope of Soil Analysis	Scope of Ground Water Analysis
January 28, 2020	<ul style="list-style-type: none"> • Drilled one (1) borehole (BH1) and sampled for soil • Installed monitoring well in the one (1) borehole (BH1) 	<ul style="list-style-type: none"> • 2 Metals analyses • 2 H-M analyses • 2 PHC analyses • 2 VOC analyses • 2 BTEX analyses • 2 PAH analyses • 7 PCB analyses 	
February 4, 2020	<ul style="list-style-type: none"> • Water levels taken from monitoring wells (BH1 & BH2) • Monitoring wells developed for sampling (BH1 & BH2) • Sampled monitoring wells (BH1 & BH2) 		<ul style="list-style-type: none"> • 3 Metals analyses • 3 H-M analyses • 3 PHC analyses • 3 VOC analyses • 3 BTEX analyses • 3 PAH analyses • 3 PCB analyses
February 20, 2020	<ul style="list-style-type: none"> • Water levels taken from monitoring wells (BH1 & BH2) 		
February 27, 2020	<ul style="list-style-type: none"> • Water levels taken from monitoring wells (BH1 & BH2) • Sampled monitoring wells (BH1 & BH2) 		<ul style="list-style-type: none"> • 3 Metals analyses • 3 H-M analyses • 3 PHC analyses • 3 VOC analyses • 3 BTEX analyses • 3 PAH analyses • 3 PCB analyses
March 4, 2020	<ul style="list-style-type: none"> • Water levels taken from monitoring wells (BH1 & BH2) 		

Notes:

- ORPs (if any) for soil include B-HWS, CN-, EC, Cr(VI), Hg, pH, SAR
- ORPs (if any) for ground water include CN-, Cr(VI), Hg, pH, Chloride

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 select contaminants of potential 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.

Media	Included or Excluded	Rationale
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 during the investigation.

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.

Sampling methodology was consistent with the requirement of the MECP’s “*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*”, December 1996 (the “1996 Guideline”), “*Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04*”, May 2019 (the “Phase Two Guide”) and “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*”, March 09, 2004, amended July 01, 2011 (the “Analytical Protocol”), as applicable.

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	BH3, BH4, BH5 & BH6	BH2	BH1
Date of Work	October 23-28, 2019	January 6-16, 2020	January 28, 2020
Name of Contractor	Profile Drilling	Landshark Drilling	Strong Soil Search Inc.
Equipment Used	Truck-mounted drill rig, hollow stem augers, 2 inch split spoon sampling device	Limited access drill rig, hollow stem augers, 2 inch split spoon sampling device	Truck-mounted drill rig, hollow stem augers, 2 inch split spoon sampling device
Decontamination Measures	The split spoon sampling device was washed between each sample to minimize the potential for cross-contamination.	The split spoon sampling device was washed between each sample to minimize the potential for cross-contamination.	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.	Please refer to the borehole logs in Appendix G for the 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 Monitor

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 all boreholes. The monitoring wells were drilled by drilling sub-contractors on October 23-28, 2019, January 6-16, 2020 and January 28, 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.

As per Ontario Regulation 903, the monitoring wells were tagged. 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 YSI 63 Handheld System.

YSI 63 Hand-held System

Range

- pH 0.00 to 14.00 pH
- EC 0.0 to 200.0 mS/cm
- Salinity 0.0 to 80.0 ppt
- Temperature -5.0 to 75.0°C

Resolution

- pH 0.01 pH
- EC 0.1 mS/cm
- Salinity 0.1 ppt
- Temperature 0.1°C

Accuracy

- pH ± 0.1 pH within 10°C of calibration, pH ± 0.2 pH within 20°C
- EC $\pm 0.5\%$ F.S.
- Salinity $\pm 2\%$ or ± 0.1 ppt
- Temperature $\pm 0.1^\circ\text{C}$

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 $\pm 3\%$
- Temperature $\pm 3\%$
- 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 into 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 help 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 soil and 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 into 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 (Asphalt and Aggregate material) thickness was approximately 0.2 mbgs and was encountered in boreholes BH1, BH2, BH3, and BH4. The Earth Fill material thickness ranged from approximately 0.0 mbgs to 2.3 mbgs, with an average thickness of 1.5 mbgs and was encountered in all boreholes. The native soil thickness ranged from approximately 0.8 mbgs to 23.0 mbgs, with an average thickness of 13.4 mbgs 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 surficial layers started at approximately 124.3 mASL (ranging from 124.3 to 123.6 mASL) and extended to an elevation depth of approximately 124.01 mASL (ranging from 123.5 to 124.4 mASL). The elevation of the earth fill material started at approximately 124.1 (ranging from 122.9 to 124.7 mASL) and extended to an elevation depth of approximately 123.1 mASL (ranging from 122.1 to 123.9 mASL). The native soil elevation started where the earth fill ended at approximately 122.7 mASL (ranging from 122.1 to 123.4 mASL) and extended to an elevation of approximately 117.8 mASL (ranging from 110.4 to 122.2 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 mm thick asphaltic concrete underlain by 200 mm thick granular base course was encountered in Boreholes 1 and 3 at the ground surface.

A 60 mm concrete paver underlain by 130 mm thick granular base course was encountered in Borehole 2 at the ground surface.

A 600 mm thick gravel surface course was encountered in Borehole 4 at the ground surface.

The above gravel and pavement structure thicknesses were measured from the borehole drilling and are approximate. We recommend that a shallow test pit investigation be carried out to determine a precise pavement structure thickness present across the site for quantity estimation and costing purposes.

Earth Fill

Earth fill materials, consisting of clayey to sandy silt/ silty sand/ sand and gravel/silt, with trace amounts of organics were encountered beneath the surficial layer or at the ground surface in each borehole and extended to about 0.8 to 2.3 m depth below grade.

Standard Penetration Test results (N-values) obtained from the cohesionless earth fill zone ranged from 6 to 48 blows per 300 mm of penetration to 50 blows per 125 mm of penetration, indicating a loose to very dense relative density.

Standard Penetration Test results (N-values) obtained from the cohesive earth fill zone ranged from 2 to 5 blows per 300 mm of penetration, indicating a very soft to firm consistency.

The in-situ moisture contents of the earth fill samples ranged from 3 to 19 percent by mass, indicating a moist condition

Silty Sand Till

Silty sand till deposits with varying amounts of clay (trace to some) and trace amounts of gravel were encountered beneath the earth fill zone in Boreholes 1, 3, 4 and 6 and beneath the silty sand layer in Borehole 2 and extended to 4.6 and 6.1 m depth below grade.

N-values obtained from the undisturbed silty sand till deposits ranged from 24 to 89 blows per 300 mm of penetration to 50 blows per 25 and 150 mm of penetration, indicating a compact to very dense (typically very dense) relative density.

The in-situ moisture contents of the glacial till soil samples ranged from 5 to 18 percent by mass, indicating a moist condition.

Sand and Silt to Silty Sand

Sand and silt to silty sand deposit with trace amounts of clay and gravel were encountered beneath the silty sand till deposit in Boreholes 1, 2, 3, 4 and 6 and beneath the earth fill zone in Borehole 5 and extended to the full depth of investigation.

A sandy silt layer with some clay and trace amounts of gravel was encountered beneath the earth fill zone in Borehole 2.

N-values obtained from the sand and silt to silty sand deposit ranged from 14 to 86 blows per 300 mm of penetration to 50 blows per 75 and 150 mm of penetration, indicating a compact to very dense (typically very dense) relative density.



The in-situ moisture contents of the native sand and silt to silty sand samples ranged from 5 to 32 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 native soil consisting of layers of sandy silt/silt is considered to be an unconfined aquifer, i.e. the water table aquifer.

6.1.5 Rationale for Choice of Aquifers and Aquitards Investigated

The native soil aquifer was chosen for investigation. This stratum was chosen for investigation because of:

- the possibility of free ground water present
- the native soil aquifer is the first water-bearing zone

6.2 Ground Water Elevations and Flow Direction

6.2.1 Results of Interface Probe Measurements

No light non-aqueous phase liquids (LNAPL) or dense non-aqueous phase liquids (DNAPL) were detected.

6.2.2 Thickness of Free Flowing Product

No free flowing product was encountered on the Property.

6.2.3 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. Ground water elevations are presented in Appendix I.

6.2.4 Interpreted Direction of Ground Water Flow

The interpreted direction of ground water flow is to the east-northeast, based on wells completed approximately 14 m below grade, as indicated on Figure 4.

6.2.5 Assessment of Temporal Variability

Water level monitoring to date (Appendix I) indicates that water levels are relatively stable with variations of 0.15 m or less.

6.2.6 Influence of Buried Utilities

As the Property has municipal services from the City of Toronto, there is a potential that buried utilities are present. However, the utilities would be above the water table which is at a depth of approximately 5.0 mbgs to 7.4 mbgs. As such, they are not considered a significant concern to influence ground water flow and transport of on-Site or off-Site contaminants. The potential effect of the Yonge Street subway and possibly nearby construction dewatering systems are considered to be more significant.

6.3 Ground Water Hydraulic Gradients and Hydraulic Conductivity

6.3.1 Horizontal Hydraulic Gradients

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

The water table is within the native silt and sand to silty sand layer. Based on the current measured ground water levels, the horizontal hydraulic gradient of the ground water for the native silt and sand to silty sand layer at the Property on March 04, 2020 ranged from 0.06 east-northeast in the southwest to 0007 east-northeast in the north.

6.3.2 Vertical Hydraulic Gradient

The vertical hydraulic gradient was calculated using monitoring wells BH4-S and BH4-D using water levels from March 04, 2020 and, given that that both wells are screened in the same unit, by applying ground water elevations to the mid-points of the saturated portions of the screens. The vertical hydraulic gradient between the two nested wells was calculated to be 0.09 downwards.

6.3.3 Hydraulic Conductivity

The hydraulic conductivities from Terraprobe's monitoring wells BH1, BH2, BH3, BH4D, BH5 and BH6 were assessed through falling head ("slug") tests. Each monitoring well was equipped with a digital

transducer to record the fluctuation made to complete the SWRT. The results of the analysis are presented in Appendix C. The resulting hydraulic conductivities are as follow:

Well ID	Ground El. (mASL)	Monitoring Well Depth (mbgs)	Screen Interval	Screened Soil Strata	Hydraulic Conductivity (K)	Test Method
BH1	123.65	10.60	7.55 - 10.60	Sand and Silt to Silty Sand	8.99×10^{-6}	Falling Head Test
BH2	124.15	13.70	10.65 - 13.70	Sand and Silt to Silty Sand	1.60×10^{-6}	Rising Head Test
BH3	124.30	13.7	10.65 - 13.70	Sand and Silt to Silty Sand	9.77×10^{-6}	Falling Head Test
BH4D	124.41	22.86	19.81 - 22.86	Sand and Silt to Silty Sand	1.94×10^{-6}	Falling Head Test
BH5	124.58	13.70	10.65 - 13.70	Sand and Silt to Silty Sand	1.20×10^{-5}	Falling Head Test
BH6	124.66	13.75	10.70 - 13.75	Sand and Silt to Silty Sand	9.78×10^{-6}	Falling Head Test

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.

Monitoring Well ID	Soil Sample Depth (mbgs)	Soil Sample Elevation (mASL)	Soil Strata	Hydraulic Conductivity (m/sec.)
BH1	9.3 (SS9)	114.3	Sand and silt	4.0×10^{-6}
BH2	10.8 (SS10)	113.4	Silty sand	6.25×10^{-6}
BH3	3.3 (SS5)	121.0	Silty Sand, some gravel	1.0×10^{-6}
BH4	4.9 (SS7)	119.5	Silty sand	2.25×10^{-6}
BH6	10.9 (SS10)	113.8	Silty sand	1.0×10^{-6}



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 conductivity 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
- Clayey Silt 10^{-8} m/s to 10^{-10} 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 five (5) 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 of which more than 50% by weight consists of particles larger than 50 microns in size. The results of the grain size analysis indicated that four out of five native soil samples were coarse textured soil.

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 (depth measured from original ground surface):

Sample ID	Depth / Elev. (m) / (mASL)	Strata	Date Sampled	Soil							
				Metals	Hydride Forming Metals	PHCs (F1-F4)	BTEX	VOCs	PAHs	ORPs	PCBs
BH1-SS1	0.0-0.6 / 123.0-123.6	Fill	Jan 28, 2020	✓	✓				✓		✓
BH1-SS2	0.8-1.4 / 122.2-122.8	Native	Jan 28, 2020			✓	✓	✓			
BH1-SS3	1.5-2.1 / 121.5-122.1	Native	Jan 28, 2020	✓	✓				✓		✓
BH1-SS7	6.1-6.7 / 116.9-117.5	Native	Jan 28, 2020			✓	✓	✓			
BH2-SS2	0.8-1.4 / 122.8-123.4	Fill	Jan 07, 2020	✓	✓					✓	✓
BH2-SS3A	1.4-1.7 / 122.5-122.8	Native	Jan 07, 2020						✓		
BH2-SS3B	1.7-2.0 / 122.2-122.5	Native	Jan 07, 2020			✓	✓	✓			
BH2-SS5	2.7-3.0 / 121.1-121.4	Native	Jan 07, 2020	✓	✓				✓	✓	✓
BH2-SS6	4.6-4.9 / 119.3-119.6	Native	Jan 07, 2020			✓	✓	✓			
BH3-SS1	0.0-0.5 / 123.8-124.3	Fill	Oct 25, 2019	✓	✓				✓		✓
BH3-SS2	0.8-1.4 / 122.9-123.5	Fill	Oct 25, 2019			✓	✓	✓			
BH3-SS6	4.6-5.0 / 119.3-119.7	Native	Oct 25, 2019	✓	✓				✓		✓
BH3-SS8	7.6-8.1 / 116.2-116.7	Native	Oct 25, 2019			✓	✓	✓			
BH4-SS1	0.0-0.6 / 123.8-124.4	Fill	Oct 23, 2019	✓	✓	✓	✓	✓		✓	
BH4-SS2	0.8-1.4 / 123.0-123.6	Fill	Oct 23, 2019						✓		
BH4-SS3	1.5-2.1 / 122.3-122.9	Fill	Oct 23, 2019	✓	✓					✓	
BH4-SS5	3.0-3.4 / 121-121.4	Native	Oct 23, 2019			✓				✓	
BH4-SS7	4.6-5.2 / 119.2-119.8	Native	Oct 23, 2019				✓	✓		✓	
BH4-SS8	5.3-5.9 / 118.5-119.1	Native	Nov 12, 2019					✓			
BH4-SS9	6.1-6.7 / 117.7-118.3	Native	Nov 22, 2019							✓	
BH5-SS1	0.0-0.6 / 124-124.6	Fill	Oct 28, 2019	✓	✓				✓		✓
BH5-SS2	0.8-1.4 / 123.2-123.8	Fill	Oct 28, 2019			✓	✓	✓			
BH5-SS5	3.0-3.5 / 121.1-121.6	Native	Oct 28, 2019	✓	✓				✓		✓

Sample ID	Depth / Elev. (m) / (mASL)	Strata	Date Sampled	Soil							
				Metals	Hydride Forming Metals	PHCs (F1-F4)	BTEX	VOCs	PAHs	ORPs	PCBs
BH5-SS6	4.6-5.0/ 119.6-120.0	Native	Nov 12, 2019	✓							
BH5-SS7	6.1-6.5/ 118.1-118.5	Native	Oct 28, 2019			✓	✓	✓			
BH6-SS1	0.0-0.6/ 124.1-124.7	Fill	Oct 29, 2019	✓	✓				✓		✓
BH6-SS2	0.8-1.4/ 123.3-123.9	Fill	Oct 29, 2019			✓	✓	✓			
BH6-SS3	1.5-2.1/ 122.6-123.2	Native	Oct 29, 2019	✓	✓				✓		✓
BH6-SS7	6.1-6.5/ 118.2-118.6	Native	Oct 29, 2019			✓	✓	✓			

6.6.2 Comparison to Applicable Standards (Soil)

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

- Metals
- Hydride-Forming Metals (H-M; As, Sb, Se)
- Other Regulated Parameters (ORPs)
 - Electrical Conductivity (EC)
 - Sodium Adsorption Ratio (SAR)
 - Boron, Hot Water Soluble (B-HWS);
 - Cyanide (CN⁻);
 - Mercury (Hg);
 - Hexavalent Chromium (Cr[VI]); and
 - pH
- Volatile Organic Compounds (VOCs)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Petroleum Hydrocarbons (PHCs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Polychlorinated Biphenyls (PCBs)

The results of the analysis were compared to the MECP Table 3 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 in Soil

The following exceedances for Metals of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 3 RPI Coarse Soil Standards	BH5-SS1 Fill (0.0-0.6 mbgs)	BH5-SS5 Native (3.0-3.5 mbgs)	BH5-SS6 Native (4.6-5.0 mbgs)	BH6-SS1 Fill (0.0-0.6 mbgs)	BH6-SS3 Native (1.5-2.1 mbgs)	BH1-2006-SS1 Fill (0.0-0.6 mbgs)	BH3-2006-SS1 Fill (0.0-0.6 mbgs)
Lead	µg/g	120	3.3	338	1.9	139	4.1	602	160
Barium	µg/g	390	21.7	3.6	14	73.1	50.8	423	126
Cadmium	µg/g	1.2	<0.5	0.64	<0.5	0.5	<0.5	1.7	<0.5
Zinc	µg/g	340	13.8	202	9.8	107	20.5	716	102

Notes: **RED** values exceed the applicable MECP Table 3 RPI Coarse Standards
BLUE values meet the applicable MECP Table 3 RPI Coarse Standards

All other samples analyzed met the MECP Table 3 RPI Coarse Standards for Metals. The results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L. The sample exceeding for Metals as noted above is shown on Figure 5.

Hydride-Forming Metals in Soil

No Petroleum Hydride Forming Metals exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L.

Other Regulated Parameters in Soil

The following apparent exceedances for ORPs of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 3 RPI Coarse Soil Standards	BH2-SS2 Fill (0.8-1.4 mbgs)	DUP3 (BH2-SS2) Fill (0.8-1.4 mbgs)	BH2-SS5 Native (2.7-3.0 mbgs)	BH4-SS1 Fill (0.0-0.6 mbgs)	BH4-SS3 Native (1.5-2.1 mbgs)	BH4-SS5 Native (3.0-3.4 mbgs)	BH4-SS7 Native (0.0-0.6 mbgs)	BH4-SS9 Native (6.1-6.7 mbgs)	BH1-2006-SS1 Fill (0.0-0.6 mbgs)	BH2-2006-SS1 Fill (0.0-0.6 mbgs)	BH3-2006-SS1 Fill (0.0-0.6 mbgs)
Electrical Conductivity	µg/g	0.7	1.56	1.16	0.366	0.74	0.519	-	-	-	0.156	0.998	1.23
Sodium Adsorption Ratio	µg/g	5.0	7.85	6.56	4.64	4.1	5.51	32.9	12.3	1.66	0.496	8.11	8.6
Mercury	µg/g	0.27	0.0263	0.0184	<0.005	0.0178	<0.005	-	-	-	2.31	0.269	0.875

Notes: **RED** values exceed the applicable MECP Table 3 RPI Coarse Standards
BLUE values meet the applicable MECP Table 3 RPI Coarse Standards

All other samples analyzed met the MECP Table 3 RPI Standards for ORPs. The results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L. The samples apparently exceeding for ORPs as noted above are shown on Figures 6 and 7.

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 Petroleum Hydrocarbon exceedances of the MECP Table 3 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

The following exceedances by VOCs of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 3 RPI Coarse Soil Standards	BH4-SS1 Fill (0.0-0.6 mbgs)	BH4-SS7 Fill (4.6-5.2 mbgs)	BH4-SS8 Fill (5.3-5.9 mbgs)	BH5-SS2 Fill (0.8-1.4 mbgs)	BH5-SS7 Native (6.1-6.5 mbgs)
Trichloroethylene	µg/g	0.061	<0.01	0.077	0.04	0.17	0.02

Notes: **RED** values exceed the applicable MECP Table 3 RPI Coarse Standards
BLUE values meet the applicable MECP Table 3 RPI Coarse Standards

All other samples analyzed met the MECP Table 3 RPI Standards for VOCs. The results are summarized in Table 3 and the laboratory certificates of analysis are provided in Appendix L. The samples exceeding for VOCs as noted above are shown on Figure 8.

Benzene, Toluene, Ethylbenzene, and Xylenes in Soil

No BTEX exceedances of the MECP Table 3 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 3 RPI Coarse Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 3 RPI Coarse Soil Standards	BH2-SS3A Fill (1.4-1.7 mbgs)	DUP4 (BH2-SS3A) Fill (1.4-1.7 mbgs)	BH2-SS5 Native (2.7-3.0 mbgs)	BH3-SS1 Fill (0.0-0.5 mbgs)	BH3-SS6 Native (4.6-5.0 mbgs)	DUP1 (BH3-SS6) Native (4.6-5.0 mbgs)
Acenaphthylene	µg/g	0.15	<0.05	<u>0.3</u>	<0.05	<u>1.03</u>	<0.05	<0.05
Anthracene	µg/g	0.67	0.091	0.124	<0.05	<u>5.6</u>	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.5	0.27	0.341	<0.05	<u>11.5</u>	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.219	<u>0.516</u>	<0.05	<u>9.26</u>	<0.05	<0.05
Benzo(b/j)fluoranthene	µg/g	0.78	0.318	0.626	<0.05	<u>10.7</u>	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.088	0.181	<0.05	<u>4.63</u>	<0.05	<0.05
Chrysene	µg/g	7	0.298	0.632	<0.05	<u>11.5</u>	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/g	0.1	<0.05	0.065	<0.05	<u>1.64</u>	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.677	<u>2.08</u>	0.05	<u>25.5</u>	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.148	0.373	<0.05	<u>5.75</u>	<0.05	<0.05
Naphthalene	µg/g	0.6	0.016	0.205	<0.013	<u>0.704</u>	<0.013	<0.013
Phenanthrene	µg/g	6.2	0.441	2.9	<0.046	<u>23.5</u>	<0.046	<0.046

Contaminants of Concern	Units	MECP Table 3 RPI Coarse Soil Standards	BH5-SS1 Fill (0.0-1.6 mbgs)	BH5-SS5 Native (3.0-3.5 mbgs)	BH6-SS1 Fill (2.7-3.0 mbgs)	BH6-SS3 Native (1.5-2.1 mbgs)
Acenaphthylene	µg/g	0.15	0.094	<0.05	0.07	<0.05
Anthracene	µg/g	0.67	0.341	<0.05	0.263	<0.05
Benzo(a)anthracene	µg/g	0.5	<u>0.959</u>	<0.05	<u>0.703</u>	<0.05
Benzo(a)pyrene	µg/g	0.3	<u>0.808</u>	<0.05	<u>0.583</u>	<0.05
Benzo(b/j)fluoranthene	µg/g	0.78	<u>1.04</u>	<0.05	0.683	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.429	<0.05	0.28	<0.05
Chrysene	µg/g	7	1.14	<0.05	0.712	<0.05
Dibenzo(a,h)anthracene	µg/g	0.1	<u>0.147</u>	<0.05	<u>0.101</u>	<0.05
Fluoranthene	µg/g	0.69	<u>2.51</u>	<0.05	<u>0.143</u>	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	<u>0.5</u>	<0.05	0.351	<0.05
Naphthalene	µg/g	0.6	0.068	<0.05	0.028	<0.015
Phenanthrene	µg/g	6.2	2.07	<0.046	<0.05	<0.046

Notes: **RED** values exceed the applicable MECP Table 3 RPI Coarse Standards
BLUE values meet the applicable MECP Table 3 RPI Coarse Standards

All other samples analyzed met the MECP Table 3 RPI 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 9.

Polychlorinated Biphenyls in Soil

No PCBs exceedances of the MECP Table 3 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.

6.6.3 Contaminants of Concern (Soil)

The Contaminants of Concern associated with the earth fill on the Property are:

- Metals
 - Lead
 - Barium
 - Cadmium
 - Zinc
- Other Regulated Parameters (ORPs)
 - Electrical Conductivity (relevant from an excess soil management perspective only); and
 - Sodium Adsorption Ratio (relevant from an excess soil management perspective only).
 - Mercury
- VOCs
 - Trichloroethylene.
- PAHs
 - Acenaphthylene;
 - Anthracene;
 - Benzo(a)anthracene;
 - Benzo(a)pyrene;
 - Benzo(b/j)fluoranthene;
 - Benzo(k)fluoranthene;
 - Chrysene;
 - Dibenzo(a,h)anthracene;
 - Fluoranthene;
 - Indeno(1,2,3-cd)pyrene;
 - Naphthalene; and
 - Phenanthrene.

The Contaminants of Concern associated with the native soils on the Property are:

- Metals



- Lead.
- Other Regulated Parameters (ORPs)
 - Sodium Adsorption Ratio (relevant from an excess soil management perspective only).
- VOCs
 - Trichloroethylene.

6.6.4 Contamination Impact on Other Media

Elevated concentrations of VOCs and/or PAHs in ground water indicate that ground water quality may be impacted by soil/fill quality.

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 two (2) events. Ground water samples were analysed for parameters including Metals, Hydride-Forming Metals (H-M), ORPs, PHCs, BTEX, VOCs, PAHs and PCBs. The laboratory certificates of analysis are provided in Appendix L.

Monitoring Well	Screen/Sample Elevation (mASL)	Metals	H-M	ORPs	PHCs (F1-F4)	BTEX	VOCs	PAHs	PCBs
BH1	113.0-116.0	✓	✓	✓	✓	✓	✓	✓	✓
BH2	110.5-113.5	✓	✓	✓	✓	✓	✓	✓	✓
BH3	110.6-113.6	✓	✓		✓	✓	✓	✓	✓
BH4-s	116.8-119.8	✓	✓	✓	✓	✓	✓	✓	
BH4-D	101.6-104.6	✓	✓	✓	✓	✓	✓	✓	
BH5	110.9-113.9	✓	✓		✓	✓	✓	✓	✓
BH6	111.0-114.0	✓	✓		✓	✓	✓	✓	✓

Notes: ORPs (if any) analyzed include Chromium VI, Cyanide, Chloride, and Mercury. H-M= Hydride-Forming Metals

X – 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
- Hydride-Forming Metals (As Se and Sb)
- Select ORPs including Chloride, Cyanide, Mercury, Hexavalent Chromium, PH
- Sodium (Na)
- Volatile Organic Compounds (VOCs)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Petroleum Hydrocarbons (PHCs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Polychlorinated Biphenyls (PCBs)

The results of the analysis were compared to the applicable MECP site condition standard for the Property (MECP Table 3 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 12.

Metals in Ground Water

No Metals exceedances of the MECP Table 3 Standards were noted in the samples analyzed. The results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix L.

Hydride-Forming Metals in Ground Water

No hydride-forming metal exceedances of the MECP Table 3 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.

ORPs in Ground Water

The following apparent exceedances for ORPs of the MECP Table 3 Standards were noted in the samples analyzed:

MECP Table 3 Standards (µg/L)		Chloride
Sample ID	Date	2300000
BH1	4-Feb-20	2070000
BH1	27-Feb-20	<u>2790000</u>
BH2	4-Feb-20	1440000
DUP4 (BH2)	4-Feb-20	1580000
BH2	27-Feb-20	<u>2680000</u>

MECP Table 3 Standards (µg/L)		Chloride
DUP5 (BH2)	27-Feb-20	2900000
BH4-S	20-Nov-19	3840000
BH4-S	16-Dec-19	3560000

Notes: **RED** values exceed the applicable MECP Table 3 RPI Standards
BLUE values meet the applicable MECP Table 3 RPI Standards

All other samples analyzed met the MECP Table 3 Standards for ORPs. The results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix L. The Qualified Person attributes the elevated chloride in ground water to the use of de-icing salt and deems the associated Standard not to be exceeded.

Petroleum Hydrocarbons in Ground Water

No PHCs exceedances of the MECP Table 3 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

The following exceedances for VOCs of the MECP Table 3 Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 3 Standards	BH5 20-Nov-19 113.9-110.9 mASL	BH5 16-Dec-19 113.9-110.9 mASL	BH6 16-Dec-19 114.0-111.0 mASL	BH5 16-Dec-19 114.0-111.0 mASL
Cis-1,2 Dichloroethylene	µg/g	1.6	4.89	2.79	4.61	4.97
Trichloroethylene	µg/g	1.6	5.59	28.8	23.9	3.81

Notes: **RED** values exceed the applicable MECP Table 3 RPI Standards
BLUE values meet the applicable MECP Table 3 RPI Standards

All other samples analyzed met the MECP Table 3 Standards for VOCs. The results are summarized in Table 9 and the laboratory certificates of analysis are provided in Appendix L. The samples exceeding for VOCs as noted above are shown on Figure 11.

Benzene, Toluene, Ethylbenzene, and Xylenes in Ground Water

No BTEX exceedances of the MECP Table 3 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

The following exceedances for PAHs of the MECP Table 3 Standards were noted in the samples analyzed:

Contaminants of Concern	Units	MECP Table 3 Standards	BH5 20-Nov-19 113.9-110.9 mASL	BH5 16-Dec-19 113.9-110.9 mASL
-------------------------	-------	------------------------	--------------------------------	--------------------------------



Benzo(b)fluoranthene	µg/g	0.75	<0.02	<u>0.87</u>
Benzo(g,h,i)perylene	µg/g	0.2	<0.02	<u>0.386</u>
Indeno(1,2,3-cd)pyrene	µg/g	0.2	<0.02	<u>0.465</u>

Notes: **RED** values exceed the applicable MECP Table 3 RPI Standards
BLUE values meet the applicable MECP Table 3 RPI Standards

All other samples analyzed met the MECP Table 3 Standards for PAHs. The results are summarized in Table 11 and the laboratory certificates of analysis are provided in Appendix L. The sample exceeding for PAHs as noted above is shown on Figure 12.

Polychlorinated Biphenyls in Ground Water

No PCBs exceedances of the MECP Table 3 Standards were noted in the samples analyzed. All results are summarized in Table 12 and the laboratory certificates of analysis are provided in Appendix L.

6.7.4 Contaminants of Concern (Ground Water)

The Contaminants of Concern associated with the ground water (GW Unit 1) on the Property are as follows:

- ORPs
 - Chloride
- VOCs
 - cis-1,2-Dichloroethylene (cis-1,2-DCE); and
 - Trichloroethylene (TCE).
- PAHs
 - Benzo(b)fluoranthene;
 - Benzo(g,h,i)perylene; and
 - Indeno(1,2,3-cd)pyrene.

6.7.5 Chemical or Biological Transformations

As cis-1,2-DCE is normally encountered as a decay product of TCE or tetrachloroethylene (PCE) and was accompanied by TCE, its presence is taken as an indication of the transformation of TCE via reductive dechlorination.

6.7.6 Contamination Impact on Other Media

The Table 3 RPI Coarse Standards for TCE and cis-1,2-DCE in ground water were established on the basis of possible decay to vinyl chloride. As such, the recommended risk assessment should assess the potential for soil vapour intrusion.

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 3 Standards for Residential/ Parkland/ Institutional Land Use with coarse textured soils (MECP Table 3 RPI Coarse Standards).
- An asphalt pavement structure, consisting of 50 mm thick asphaltic concrete underlain by 200 mm thick granular base course was encountered in Boreholes 1 and 3 at the ground surface. A 60 mm concrete paver underlain by 130 mm thick granular base course was encountered in Borehole 2 at the ground surface. A 600 mm thick gravel surface course was encountered in Borehole 4 at the ground surface. The earth fill layer consisted of clayey to sandy silt/ silty sand/ sand and gravel/silt, with trace amounts of organics. Silty sand till with varying amounts of clay (trace to some) and trace amounts of gravel was encountered beneath the earth fill zone. A sand and silt to silty sand unit with trace amounts of clay and gravel was encountered beneath the silty sand till in Boreholes 1, 2, 3, 4 and 6 and beneath the earth fill zone in Borehole 5 and extended to the full depth of investigation. Bedrock was not encountered.
- The MECP Table 3 RPI Coarse Standards were met in the earth fill soil located on the Property with the exception of the following:
 - Lead (Metals) in BH1-2006, BH3-2006 and BH6; Barium, Cadmium and Zinc in BH1-2006;
 - Electrical Conductivity (ORPs) in BH2-2006, BH2, BH3-2006, and BH4 (note: relevant from an excess soil management perspective only);
 - Sodium Adsorption Ratio (ORPs) in BH2, BH2-2006 and BH3-2006 (note: relevant from an excess soil management perspective only);
 - Mercury (ORPs) in BH1-2006 and BH3-2006;
 - Trichloroethylene (VOCs) in BH5 and BH6; and
 - PAHs in BH2, BH3, BH5, and BH6 for one or more of the following parameters:
 - Acenaphthylene;
 - Anthracene;
 - Benzo(a)anthracene;
 - Benzo(a)pyrene;
 - Benzo(b/j)fluoranthene;
 - Benzo(k)fluoranthene;
 - Chrysene;
 - Dibenzo(a,h)anthracene;
 - Fluoranthene;
 - Indeno(1,2,3-cd)pyrene;



- Naphthalene; and
- Phenanthrene.
- The MECP Table 3 RPI Coarse Standards were met in the native material on the Property with the exception of the following:
 - Lead (Metals) in BH5;
 - Sodium Adsorption Ratio (ORPs) in BH2 and BH4 (note: relevant from an excess soil management perspective only); and
 - Trichloroethylene (VOCs) in BH4.
- The MECP Table 3 Standards were met for all tested parameters in all ground water samples with the exception of the following:
 - cis-1,2-Dichloroethylene (VOCs) in BH5 and BH6;
 - Trichloroethylene (VOCs) in BH5 and BH6; and
 - PAHs in BH2, BH3, BH5, and BH6 for the following parameters:
 - Benzo(b)fluoranthene;
 - Benzo(g,h,i)perylene; and
 - Indeno(1,2,3-cd)pyrene.

In summary, exceedances of the applicable Site Condition Standards were noted in the earth fill and native soils on the Property. Additionally, exceedances of the applicable Site Condition Standards were noted in the ground water on the Property. As an RSC is not required by the MECP, it is Terraprobe's recommendation that additional investigations for vertical and horizontal delineation of the impacted material should be conducted in order to support a Risk Assessment on the Property and, if required by the City of Toronto, the filing of an RSC. A Risk Assessment will be required to assess the risks to human and ecological health resulting from the identified exceedances on the Property.

7.1 Signatures

The Phase Two Environmental Site Assessment has been completed by Kossay Makhzoumi B.A.Sc., E.I.T., under the direction and supervision of R. Baker Wohayeb, M.A.Sc., P.Eng, QP_{RA}. 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.



Kossay Makhzoumi B.A.Sc., E.I.T.
Project Manager



R. Baker Wohayeb, M.A.Sc., P.Eng, QP_{RA}
Principal

Brampton Office



8.0 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.1 of 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. Terraprobe Inc. "Phase One Environmental Site Assessment, 1196 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario" DRAFT report dated November 7, 2019.
9. Terraprobe, "Phase I Environmental Site Assessment, 1196-1210 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario," dated February 17, 2006.
10. Terraprobe, "Phase II Environmental Site Assessment, 1196-1210 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario," dated February 14, 2006.
11. Terraprobe, "Asbestos Management Plan, 1196-1210 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario," dated November 23, 2007.
12. Terraprobe, "Asbestos Survey, 1196-1210 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario," dated December 22, 2014.

9.0 LIMITATIONS AND USE OF THE REPORT

This report was prepared for the exclusive use of Birch Equities Limited (Property Owner) and is intended to provide an assessment of the environmental condition on the property located at 1196 Yonge Street and 2-8 Birch Avenue in Toronto, 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.

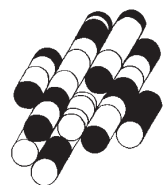
The assessment should not be considered a comprehensive audit that eliminates all risks of encountering environmental problems. The information presented in this report is based on information collected during the completion of the subsurface investigation conducted by Terraprobe Inc. It is based on 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:
Toronto Maps V2

Notes:

Legend:

- Phase Two Property Boundary

Project Title:
Phase Two Environmental Site Assessment

Site Location:
1196-1210 Yonge Street and
2-8 Birch Avenue, Toronto, Ontario

Figure Title:
PHASE TWO PROPERTY LOCATION

Designed By: AD	File No.: 1-19-0603-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 1
Date: March 2020	

C:\Users\mpj\OneDrive\1-19-0603-42_Env_Site\1-19-0603-42_Phase Two EIS\Map_1.mxd

Notes:
 PCA - Potentially Contaminating Activity
 #00 PCA Causing APEC
 #00 PCA Not Causing APEC

Legend:

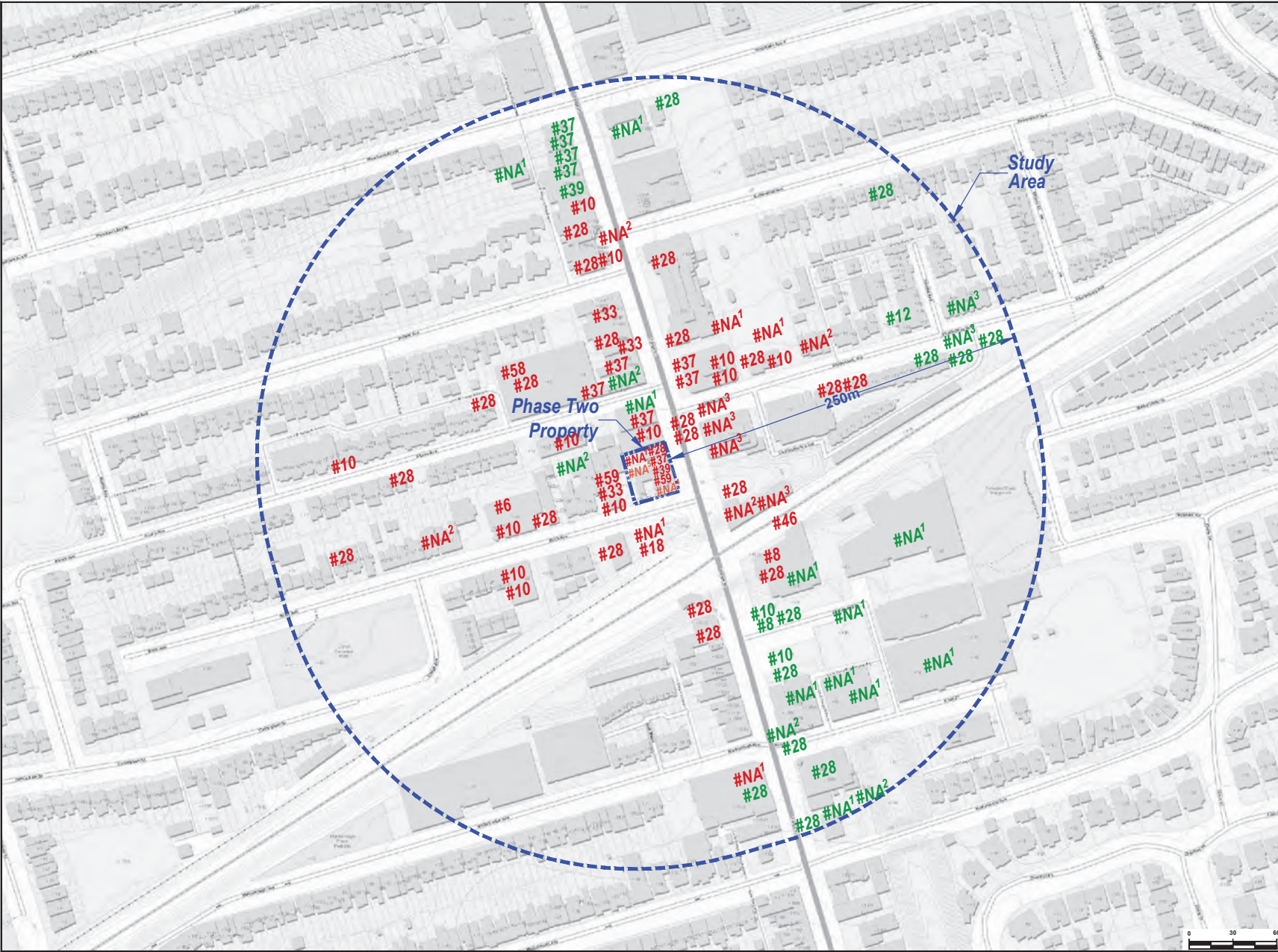
	Phase Two Property Boundary
	Phase Two Study Area, 250m
#6	Battery Manufacturing, Recycling and Bulk Storage
#8	Chemical Manufacturing, Processing and Bulk Storage
#10	Commercial Body Shops
#12	Concrete, Cement and Lime Manufacturing
#18	Electric Generation, Transformation and Power Stations
#28	Gasoline and Associated Products Storage in Fixed Tanks
#33	Metal Treatment, Coating, Plating and Finishing
#37	Operation of Dry Cleaning Equipment (where chemicals are used)
#39	Paints Manufacturing, Processing and Bulk Storage
#46	Rail Yards, Tracks and Spurs
#58	Waste Disposal and Waste Management, including thermal treatment, landfiling and transfer of waste, other than use of biosolids as soil conditioners
#59	Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products
#NA ¹	Waste Generator
#NA ²	Ontario Spills
#NA ³	Coal Storage
#NA ⁴	De-Icing Activities
#NA ⁵	Exceedance From Previous Investigation

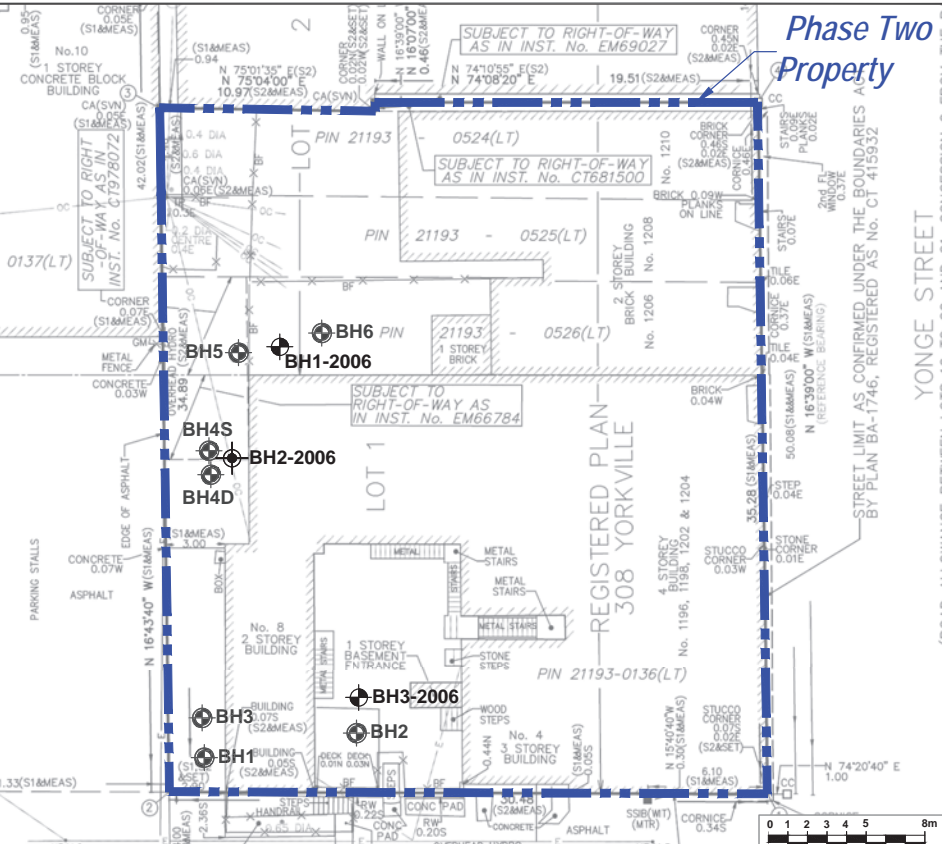
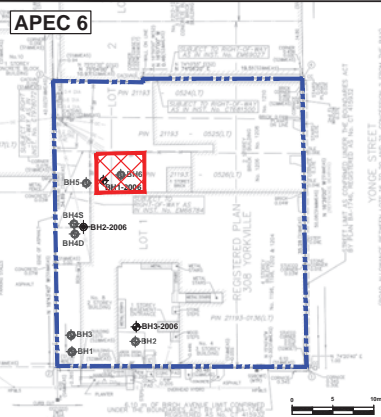
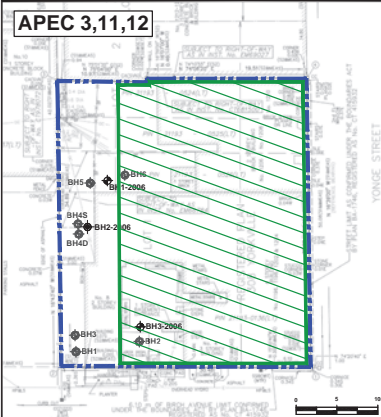
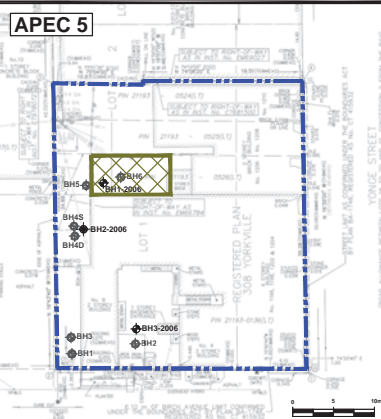
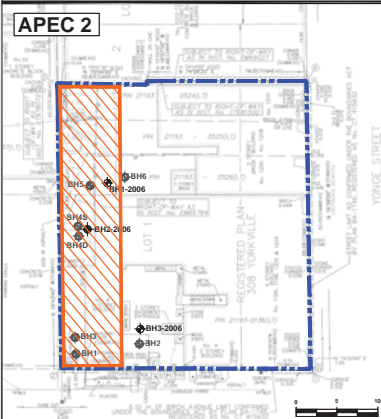
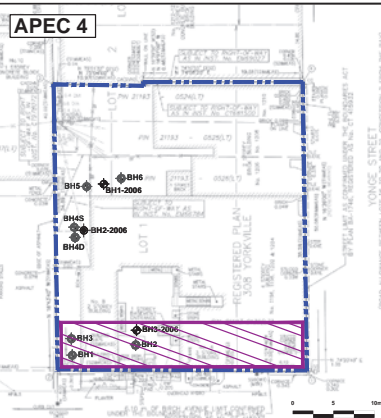
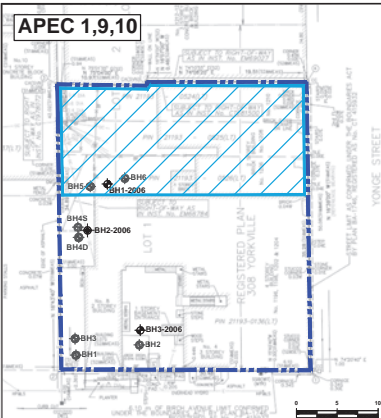
Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge Street and
 2-8 Birch Avenue, Toronto, Ontario

Figure Title:
 PCA LOCATIONS

Designed By: AD	File No.: 1-19-0603-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 2
Date: March 2020	





Terraprobe Inc.
 Consulting Geotechnical & Environmental Engineering
 Construction Materials, Inspection & Testing
 11 Indell Lane • Brampton Ontario L6T 3Y3 (905) 796-2656

Reference:
 Part of Lots 1 And 2
 Registered Plan 308 Yorkville, City of Toronto
 Ref No: 91-22-856-09
 Dated: September 19, 2019
 JD BARNES Survey

Notes:
 APEC - Area of Potential Environmental Concern

Legend:

- Phase Two Property Boundary
- Approximate Borehole Location (2006)
- Approximate Monitoring Well Location (2019-2020)
- Approximate Monitoring Well Location (2019-2020)
- APEC 1,9,10
- APEC 2
- APEC 3,11,12
- APEC 4
- APEC 5
- APEC 6
- APEC 7
- APEC 8

Project Title: Phase Two Environmental Site Assessment	
Site Location: 1196-1210 Yonge Street and 2-8 Birch Avenue, Toronto, Ontario	
Figure Title: MONITORING WELL LOCATION PLAN WITH APEC LOCATIONS	
Designed By: MT	File No.: 1-19-0603-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 2A
Date: March 2020	

Notes:

- Legend:**
- Phase Two Property Boundary
 - Approximate Borehole Location (2006)
 - Approximate Monitoring Well Location (2006)
 - Approximate Monitoring Well Location (2019-2020)

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge Street and
 2-8 Birch Avenue, Toronto, Ontario

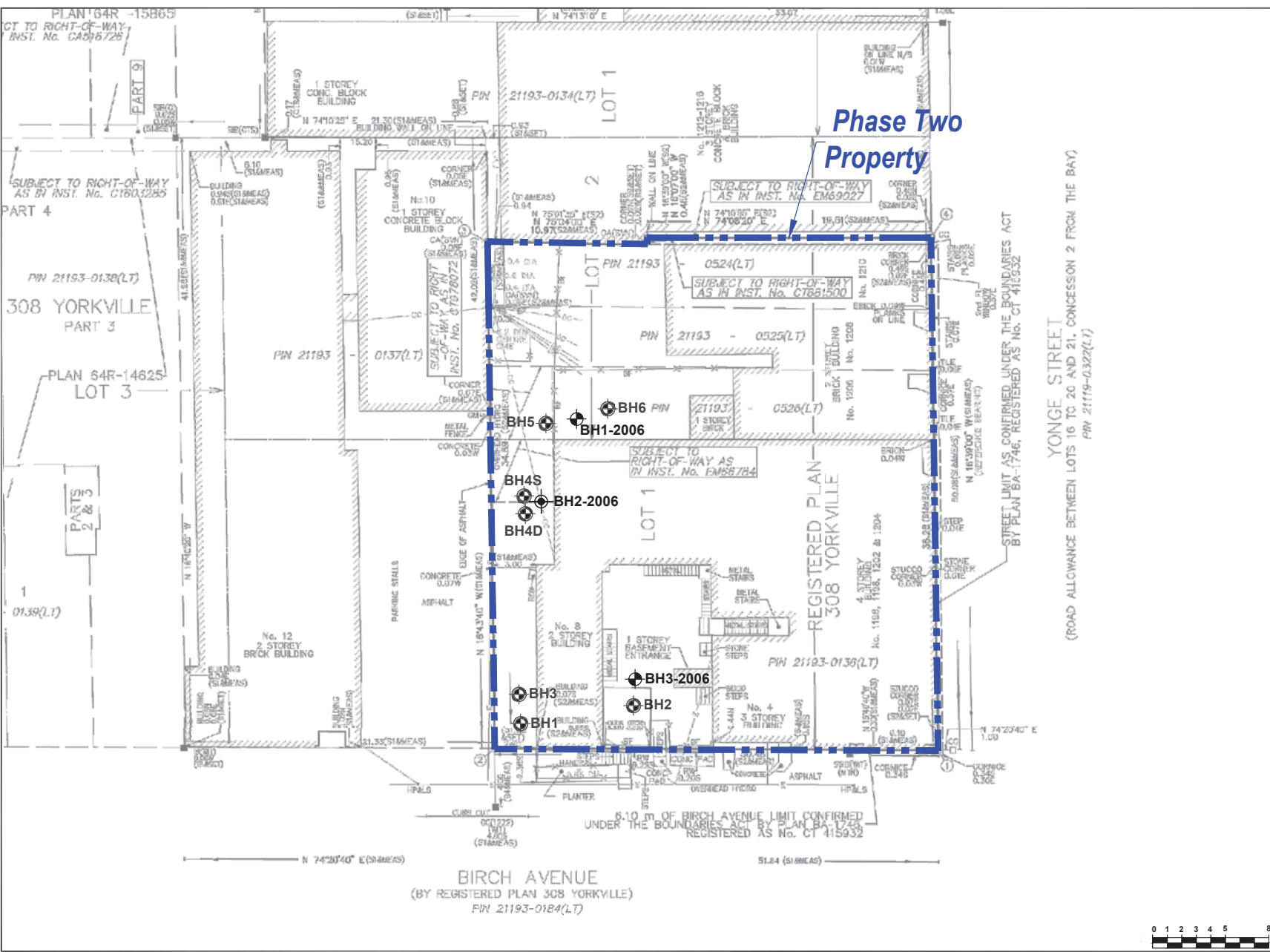
Figure Title:
 BOREHOLE/ MONITORING WELL
 LOCATION PLAN

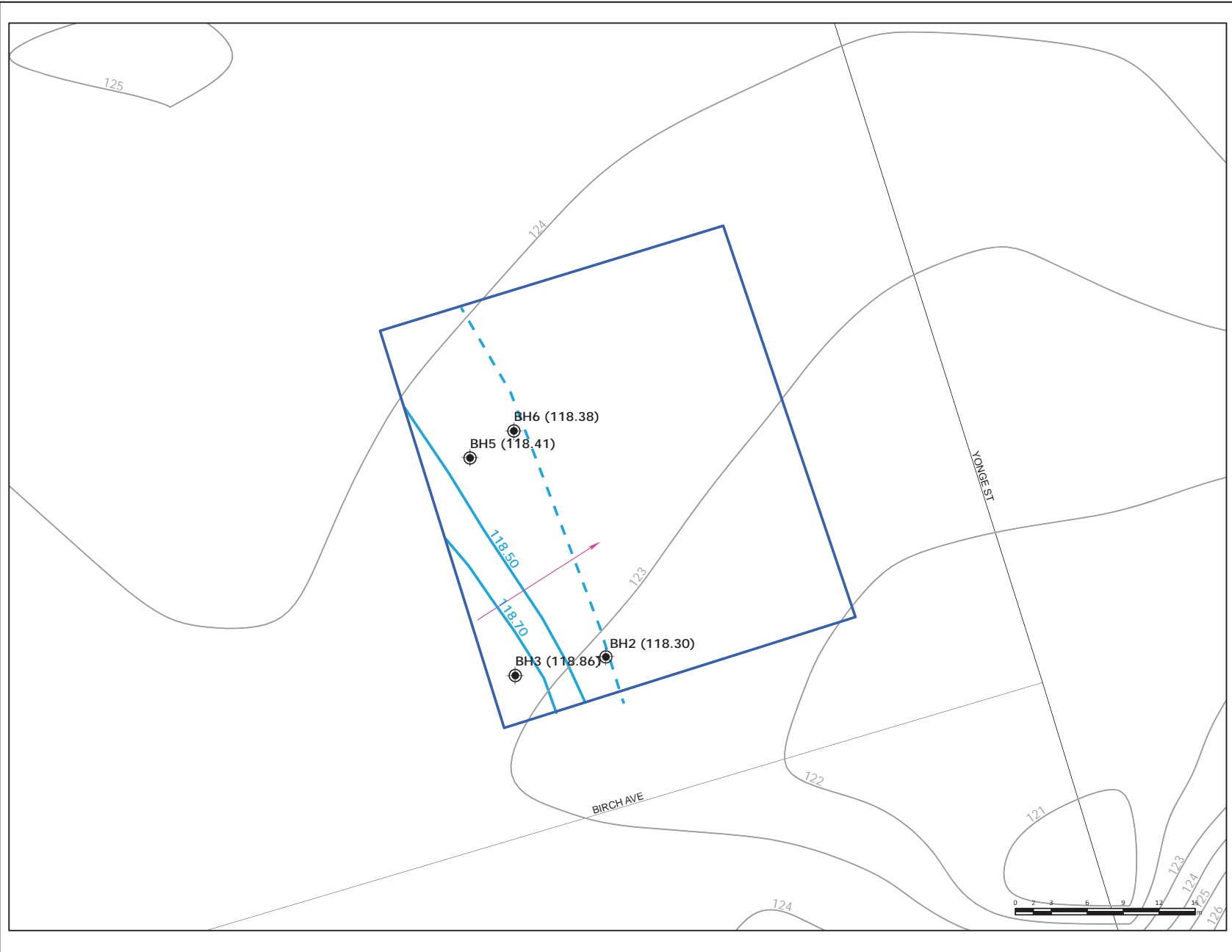
Designed By: MT **File No.:** 1-19-0603-42

Drawn By: SSK **Scale:** As Shown

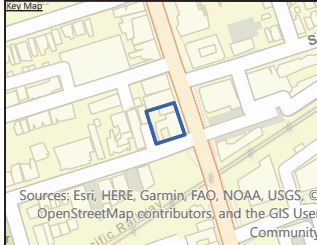
Reviewed By: BW **Figure No.:** 3

Date: March 2020





References:
 Service Layer Credits: © Photography Map was Produced by Terraprobe Inc. under license from the Ministry of Health Development and Welfare (MHWL). Copyright (c) is held by the Queen's Printer for Ontario. Physiography of Southern Ontario Districts, 2002. Ontario Geological Survey, Miscellaneous Release - DM 224



Notes:

- Legend:**
- Approximate Site Location
 - City of Toronto, Topographic Contours
 - Approximate Monitoring Well Location
 - Interpreted Ground Water Flow Direction
 - Inferred Ground Water Contours
 - Interpreted Ground Water Contours
 - Collector
 - Local / Street

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge St, 2-8 Birch Ave, Toronto

Figure Title:
 Groundwater Flow Direction

Designed By: NA	File No.: 1-19-0603-42
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Drawn By: SSK	Scale: As Shown
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Reviewed By: BW	Figure No.: 4
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Date: March 2020	
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Notes:
 Red - Sample Exceed Parameters
 Blue - Sample Meet Parameters

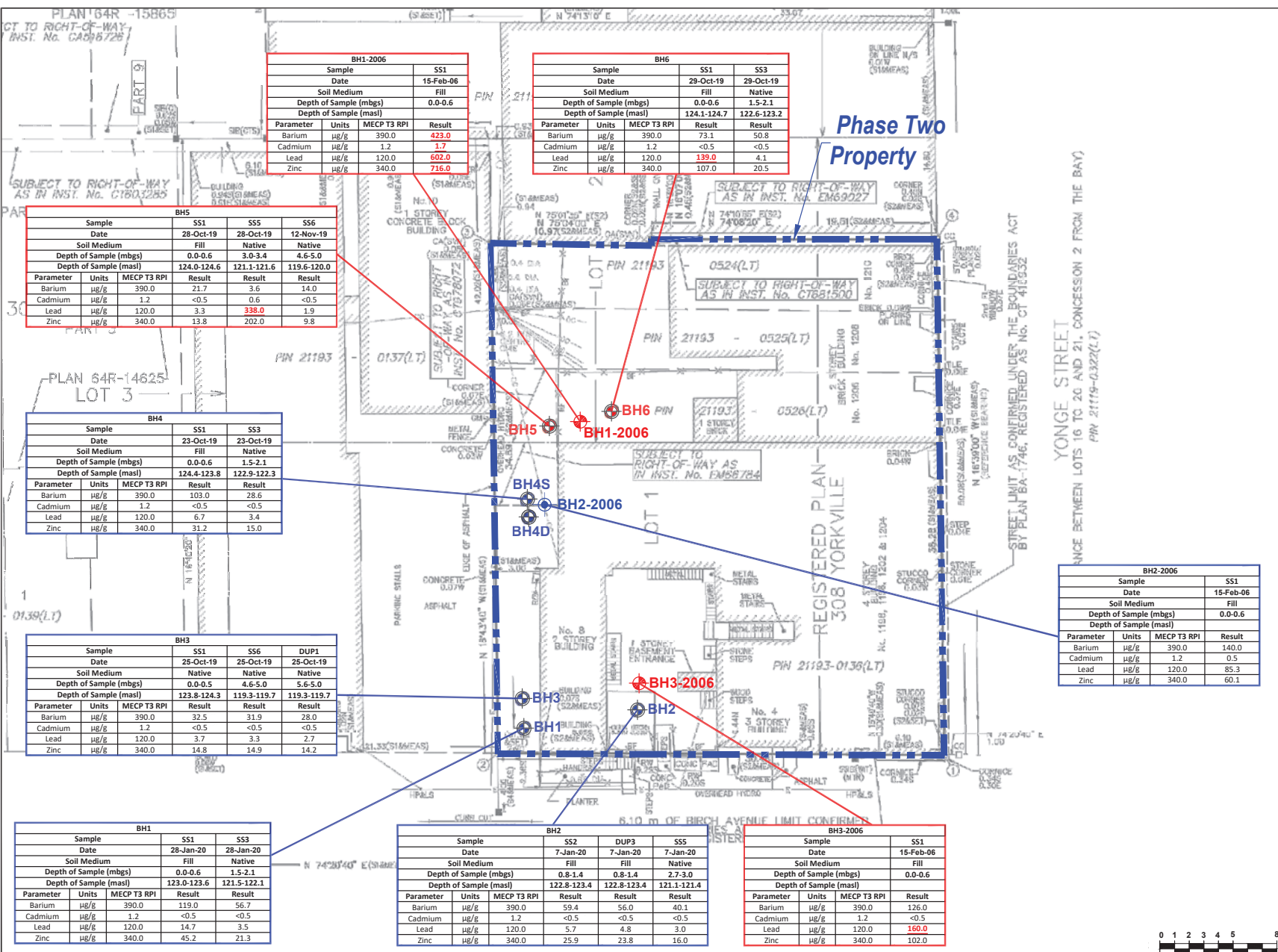
Legend:
 --- Phase Two Property Boundary
 ● Approximate Borehole Location (2006)
 ● Approximate Monitoring Well Location (2006)
 ● Approximate Monitoring Well Location (2019-2020)
 ● Sample Exceed Parameters
 ● Sample Meet Parameters

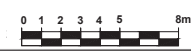
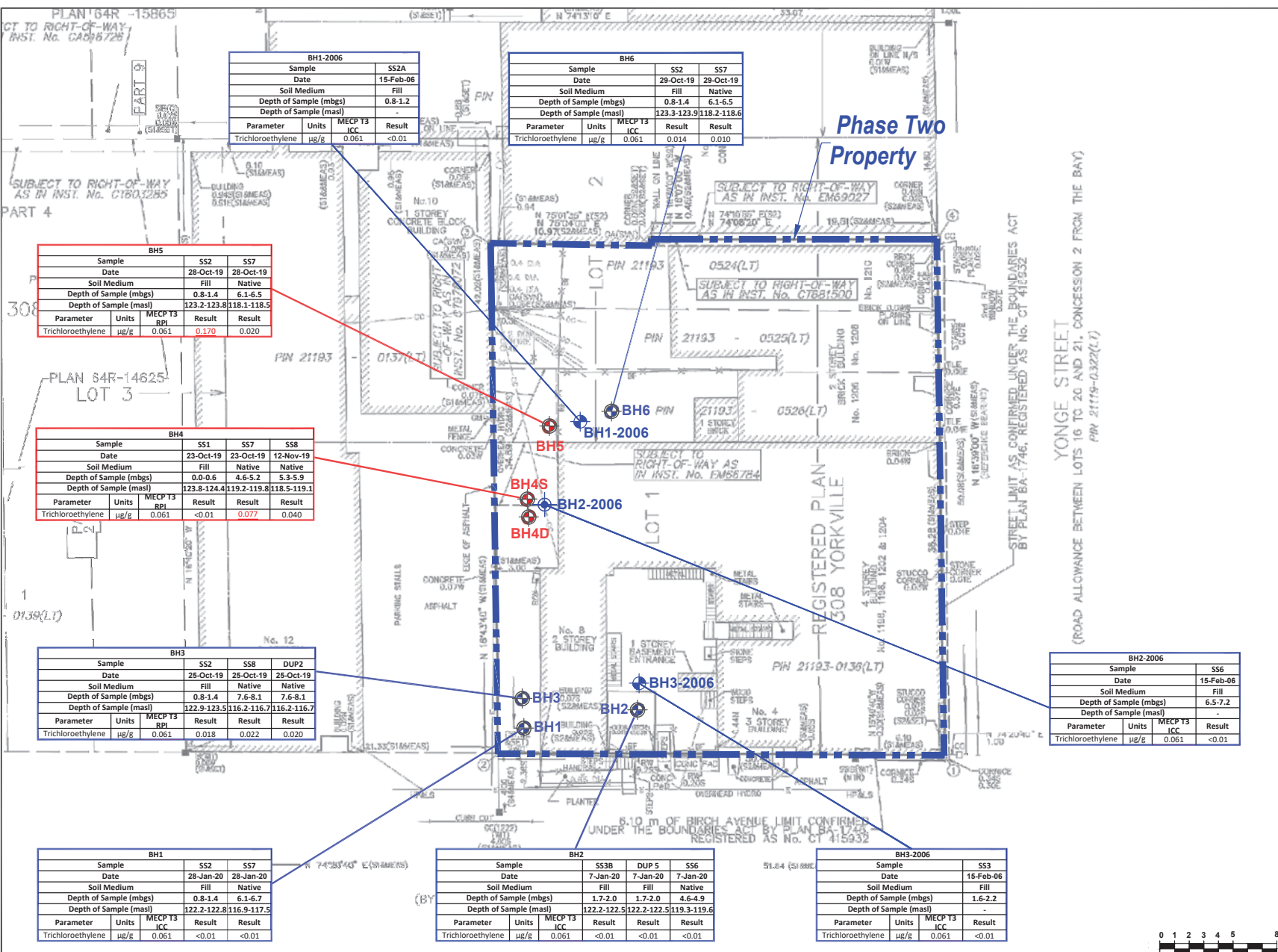
Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge Street and
 2-8 Birch Avenue, Toronto, Ontario

Figure Title:
 PLAN VIEW SOIL EXCEEDANCES-
 METALS

Designed By: MT	File No.: 1-19-0603-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 5
Date: March 2020	





PLAN 15865
 CT TO RIGHT-OF-WAY
 INST. No. C4586728

Sample BH5				
Sample	SS1	SS5		
Date	28-Oct-19	28-Oct-19		
Soil Medium	Fill	Native		
Depth of Sample (mbs)	0.0-0.6	3.0-3.5		
Depth of Sample (masl)	124.0-124.6	121.1-121.6		
Parameter	Units	MECP T3 RPI	Result	Result
Acenaphthylene	µg/g	0.150	0.094	<0.05
Anthracene	µg/g	0.670	0.341	<0.05
Benzo(a)anthracene	µg/g	0.500	0.959	<0.05
Benzo(a)pyrene	µg/g	0.300	0.808	<0.05
Benzo(b)fluoranthene	µg/g	0.780	1.040	<0.05
Benzo(k)fluoranthene	µg/g	0.780	0.429	<0.05
Chrysene	µg/g	7.000	1.140	<0.05
Dibenz(a,h)anthracene	µg/g	0.100	0.147	<0.05
Fluoranthene	µg/g	0.690	2.510	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.380	0.500	<0.05
Naphthalene	µg/g	0.600	0.068	<0.013
Phenanthrene	µg/g	6.200	2.070	<0.046

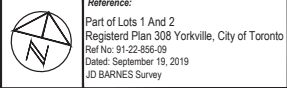
Sample BH4			
Sample	SS2		
Date	23-Oct-19		
Soil Medium	Fill		
Depth of Sample (mbs)	0.8-1.4		
Depth of Sample (masl)			
Parameter	Units	MECP T3 RPI	Result
Acenaphthylene	µg/g	0.150	<0.05
Anthracene	µg/g	0.670	<0.05
Benzo(a)anthracene	µg/g	0.500	<0.05
Benzo(a)pyrene	µg/g	0.300	<0.05
Benzo(b)fluoranthene	µg/g	0.780	<0.05
Benzo(k)fluoranthene	µg/g	0.780	<0.05
Chrysene	µg/g	7.000	<0.05
Dibenz(a,h)anthracene	µg/g	0.100	<0.05
Fluoranthene	µg/g	0.690	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.380	<0.05
Naphthalene	µg/g	0.600	<0.013
Phenanthrene	µg/g	6.200	<0.046

Sample BH3				
Sample	SS1	SS6	DUP1	
Date	25-Oct-19	25-Oct-19	25-Oct-19	
Soil Medium	Native	Native	Native	
Depth of Sample (mbs)	0.0-0.5	4.6-5.0	5.6-5.0	
Depth of Sample (masl)	123.8-124.3	119.3-119.7	119.3-119.7	
Parameter	Units	MECP T3 RPI	Result	Result
Acenaphthylene	µg/g	0.150	1.030	<0.05
Anthracene	µg/g	0.670	5.600	<0.05
Benzo(a)anthracene	µg/g	0.500	11.500	<0.05
Benzo(a)pyrene	µg/g	0.300	9.260	<0.05
Benzo(b)fluoranthene	µg/g	0.780	10.700	<0.05
Benzo(k)fluoranthene	µg/g	0.780	4.630	<0.05
Chrysene	µg/g	7.000	11.500	<0.05
Dibenz(a,h)anthracene	µg/g	0.100	1.640	<0.05
Fluoranthene	µg/g	0.690	25.500	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.380	3.760	<0.05
Naphthalene	µg/g	0.600	0.704	<0.013
Phenanthrene	µg/g	6.200	23.500	<0.046

Table Lead - BH1				
BH1				
Sample	SS1	SS3		
Date	28-Jan-20	28-Jan-20		
Soil Medium	Fill	Native		
Depth of Sample (mbs)	0.0-0.6	1.5-2.1		
Depth of Sample (masl)	123.0-123.6	121.5-122.1		
Parameter	Units	MECP T3 RPI	Result	Result
Acenaphthylene	µg/g	0.150	<0.05	<0.05
Anthracene	µg/g	0.670	0.150	<0.05
Benzo(a)anthracene	µg/g	0.500	0.275	<0.05
Benzo(a)pyrene	µg/g	0.300	0.217	<0.05
Benzo(b)fluoranthene	µg/g	0.780	0.267	<0.05
Benzo(k)fluoranthene	µg/g	0.780	0.084	<0.05
Chrysene	µg/g	7.000	0.264	<0.05
Dibenz(a,h)anthracene	µg/g	0.100	<0.05	<0.05
Fluoranthene	µg/g	0.690	0.615	0.050
Indeno(1,2,3-cd)pyrene	µg/g	0.380	0.134	<0.05
Naphthalene	µg/g	0.600	0.026	<0.013
Phenanthrene	µg/g	6.200	0.567	<0.046

Sample BH6					
Sample	SS1	SS3			
Date	29-Oct-19	29-Oct-19			
Soil Medium	Fill	Native			
Depth of Sample (mbs)	0.0-0.6	1.5-2.1			
Depth of Sample (masl)	124.1-124.7	122.6-123.2			
Parameter	Units	MECP T3 RPI	Result	Result	Result
Acenaphthylene	µg/g	0.150	0.070	<0.05	<0.05
Anthracene	µg/g	0.670	0.630	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.500	0.703	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.300	0.583	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.780	0.683	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.780	0.280	<0.05	<0.05
Chrysene	µg/g	7.000	0.712	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.100	0.101	<0.05	<0.05
Fluoranthene	µg/g	0.690	1.430	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.380	0.351	<0.05	<0.05
Naphthalene	µg/g	0.600	0.028	<0.013	<0.013
Phenanthrene	µg/g	6.200	1.060	<0.046	<0.046

Sample BH2					
Sample	SS3A	DUP4	SS5		
Date	7-Jan-20	7-Jan-20	7-Jan-20		
Soil Medium	Fill	Native	Native		
Depth of Sample (mbs)	1.4-1.7	1.4-1.7	2.7-3.0		
Depth of Sample (masl)	122.5-122.8	122.5-122.8	121.1-121.4		
Parameter	Units	MECP T3 RPI	Result	Result	Result
Acenaphthylene	µg/g	0.150	<0.05	0.300	<0.05
Anthracene	µg/g	0.670	0.091	1.374	<0.05
Benzo(a)anthracene	µg/g	0.500	0.270	0.341	<0.05
Benzo(a)pyrene	µg/g	0.300	0.219	0.516	<0.05
Benzo(b)fluoranthene	µg/g	0.780	0.318	0.626	<0.05
Benzo(k)fluoranthene	µg/g	0.780	0.088	0.181	<0.05
Chrysene	µg/g	7.000	0.298	0.632	<0.05
Dibenz(a,h)anthracene	µg/g	0.100	<0.05	0.065	<0.05
Fluoranthene	µg/g	0.690	0.677	2.080	0.050
Indeno(1,2,3-cd)pyrene	µg/g	0.380	0.148	0.373	<0.05
Naphthalene	µg/g	0.600	0.016	0.205	<0.013
Phenanthrene	µg/g	6.200	0.441	2.900	<0.046



Notes:
 Red - Sample Exceed Parameters
 Blue - Sample Meet Parameters

- Legend:
- Phase Two Property Boundary
 - ◆ Approximate Borehole Location (2006)
 - ◆ Approximate Monitoring Well Location (2006)
 - ◆ Approximate Monitoring Well Location
 - ◆ Sample Exceed Parameters
 - ◆ Sample Meet Parameters
 - ◆ Sample Not Tested

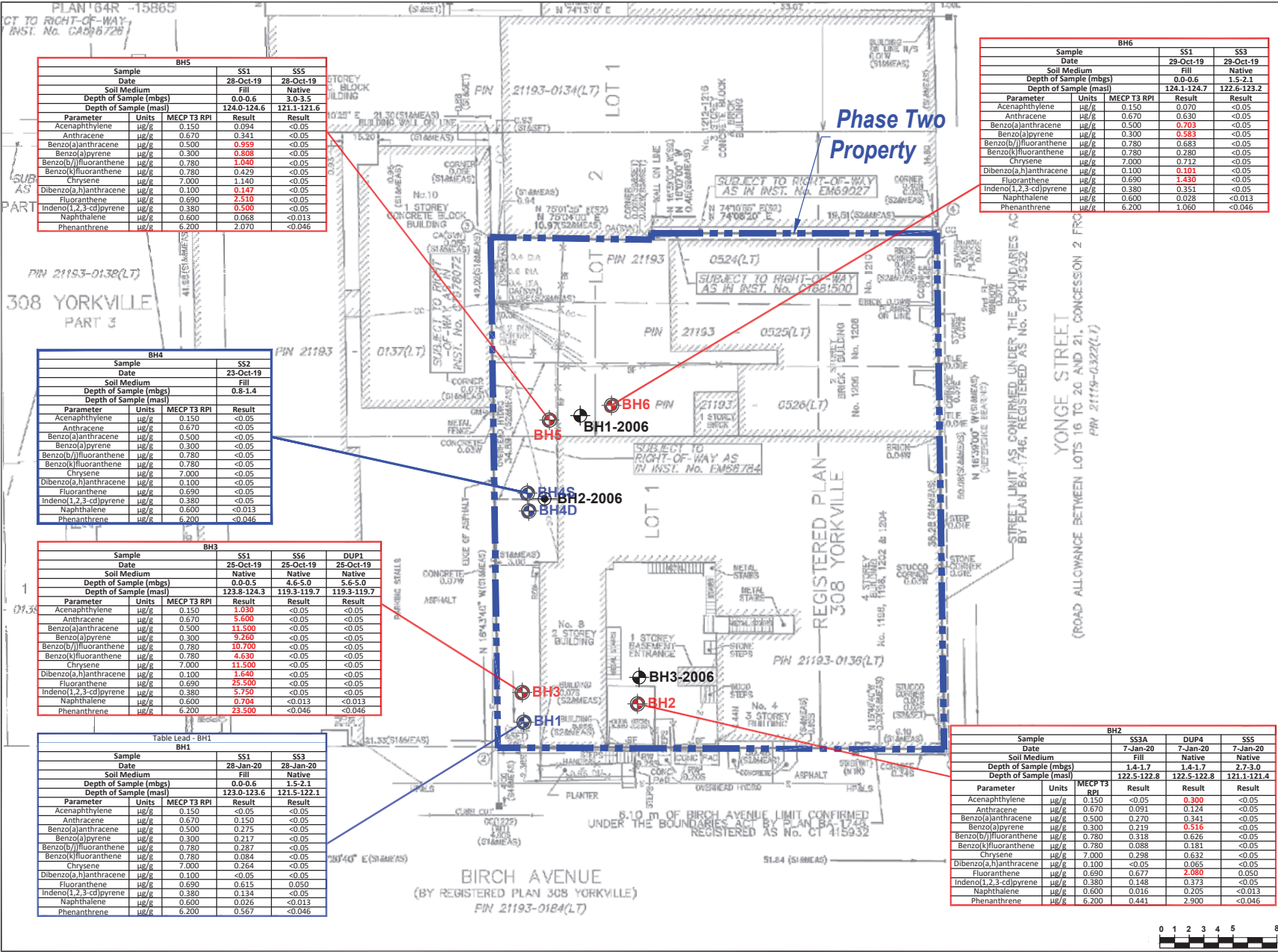
Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge Street and
 2-8 Birch Avenue, Toronto, Ontario

Figure Title:
 PLAN VIEW SOIL EXCEEDANCES-
 PAHS

Designed By: MT
 Drawn By: SSK
 Reviewed By: BW
 Date: March 2020

File No.: 1-19-0603-42
 Scale: As Shown
 Figure No.: 7



Notes:
 Red - Sample Exceed Parameters
 Blue - Sample Meet Parameters

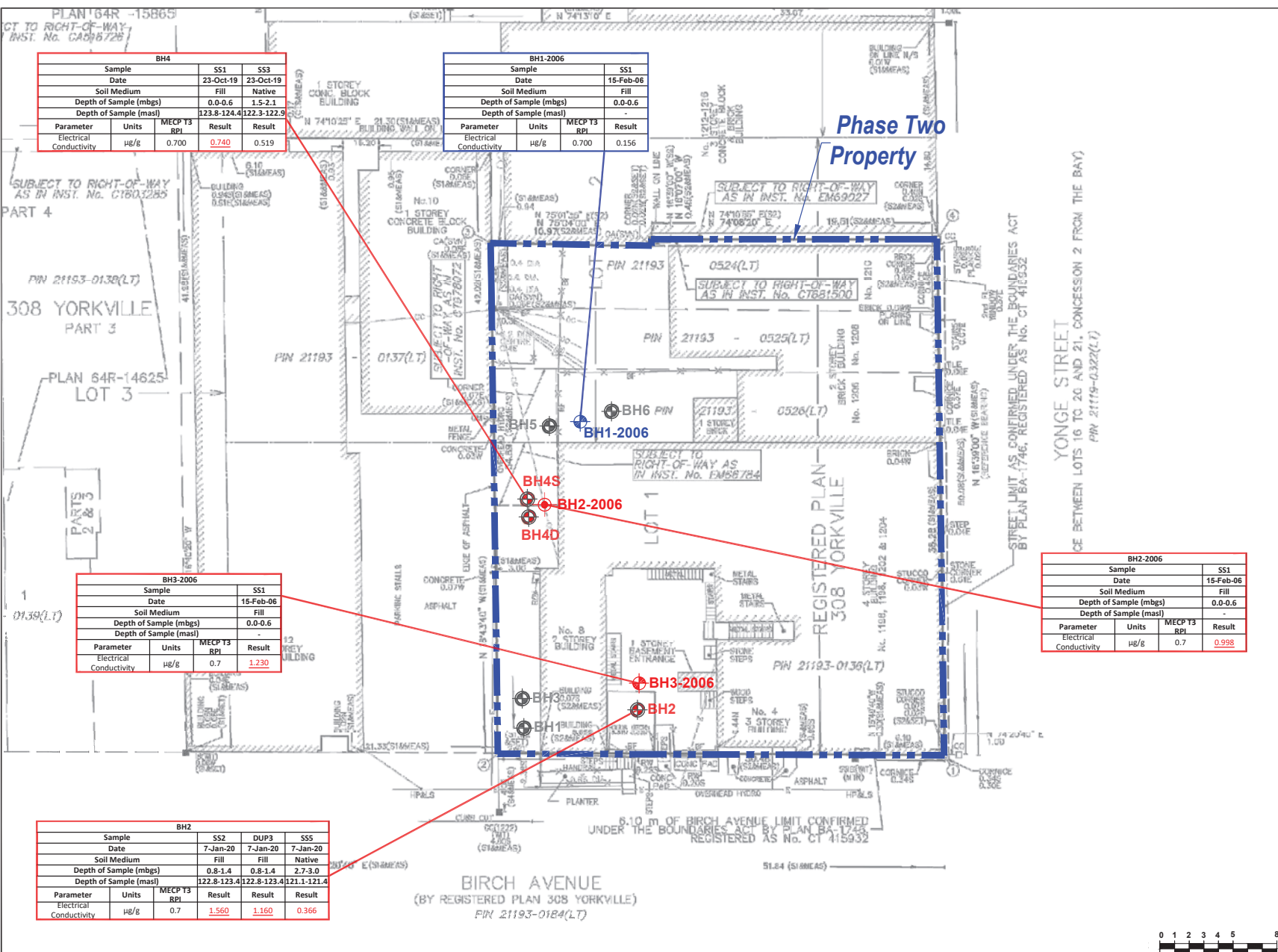
- Legend:**
- Phase Two Property Boundary
 - ⊕ Approximate Borehole Location (2006)
 - ⊕ Approximate Monitoring Well Location (2006)
 - ⊕ Approximate Monitoring Well Location (2019-2020)
 - ⊕ Sample Exceed Parameters
 - ⊕ Sample Meet Parameters
 - ⊕ Sample Not Tested

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge Street and
 2-8 Birch Avenue, Toronto, Ontario

Figure Title:
 PLAN VIEW SOIL EXCEEDANCES-
 EC

Designed By: MT	File No.: 1-19-0603-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 8
Date: March 2020	



BH4			
Sample	SS1	SS3	
Date	23-Oct-19	23-Oct-19	
Soil Medium	Fill	Native	
Depth of Sample (mbs)	0.0-0.6	1.5-2.1	
Depth of Sample (mas)	123.8-124.4	122.3-122.9	
Parameter	Units	MECP T3 RPI	Result
Electrical Conductivity	µS/cm	0.700	0.740
			0.519

BH1-2006			
Sample	SS1		
Date	15-Feb-06		
Soil Medium	Fill		
Depth of Sample (mbs)	0.0-0.6		
Depth of Sample (mas)			
Parameter	Units	MECP T3 RPI	Result
Electrical Conductivity	µS/cm	0.700	0.156

BH3-2006			
Sample	SS1		
Date	15-Feb-06		
Soil Medium	Fill		
Depth of Sample (mbs)	0.0-0.6		
Depth of Sample (mas)			
Parameter	Units	MECP T3 RPI	Result
Electrical Conductivity	µS/cm	0.7	1.230

BH2-2006			
Sample	SS1		
Date	15-Feb-06		
Soil Medium	Fill		
Depth of Sample (mbs)	0.0-0.6		
Depth of Sample (mas)			
Parameter	Units	MECP T3 RPI	Result
Electrical Conductivity	µS/cm	0.7	0.998

BH2					
Sample	SS2	DUP3	SS5		
Date	7-Jan-20	7-Jan-20	7-Jan-20		
Soil Medium	Fill	Fill	Native		
Depth of Sample (mbs)	0.8-1.4	0.8-1.4	2.7-3.0		
Depth of Sample (mas)	122.8-123.4	122.8-123.4	121.1-121.4		
Parameter	Units	MECP T3 RPI	Result	Result	Result
Electrical Conductivity	µS/cm	0.7	1.560	1.160	0.366



Notes:
 Red- Sample Exceed Parameters
 Blue- Sample Meet Parameters

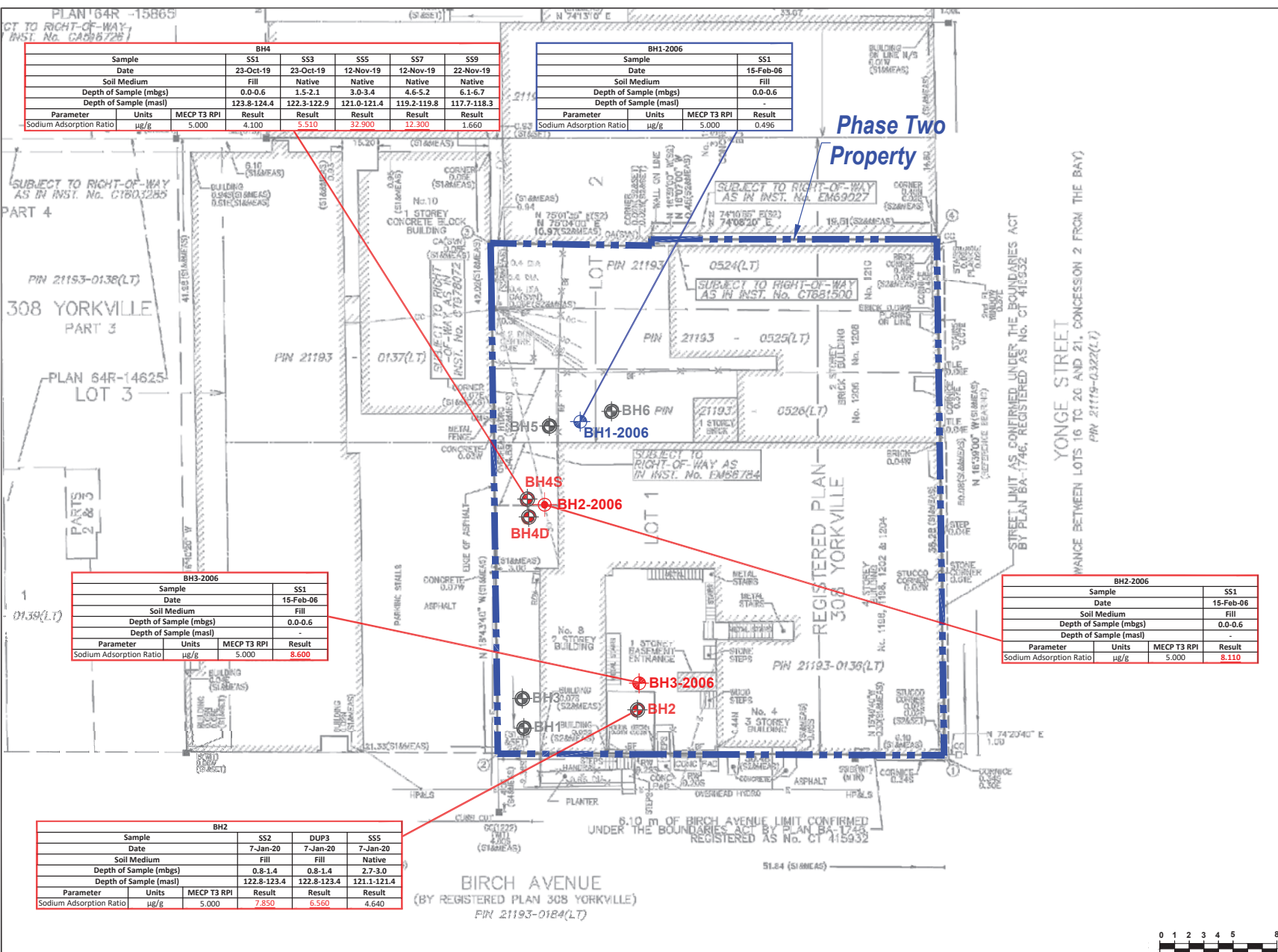
- Legend:**
- Phase Two Property Boundary
 - ⊕ Approximate Borehole Location (2006)
 - ⊕ Approximate Monitoring Well Location (2006)
 - ⊕ Approximate Monitoring Well Location (2019-2020)
 - ⊕ Sample Exceed Parameters
 - ⊕ Sample Meet Parameters
 - ⊕ Sample Not Tested

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 1196-1210 Yonge Street and
 2-8 Birch Avenue, Toronto, Ontario

Figure Title:
 PLAN VIEW SOIL EXCEEDANCES-
 SAR

Designed By: MT	File No.: 1-19-0603-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 9
Date: March 2020	



BH4						
Sample	SS1	SS3	SS5	SS7	SS9	
Date	23-Oct-19	23-Oct-19	12-Nov-19	12-Nov-19	22-Nov-19	
Soil Medium	Fill	Native	Native	Native	Native	
Depth of Sample (mbgs)	0.0-0.6	1.5-2.1	3.0-3.4	4.6-5.2	6.1-6.7	
Depth of Sample (masl)	123.8-124.4	122.3-122.9	121.0-121.4	119.2-119.8	117.7-118.3	
Parameter	Units	MECP T3 RPI	Result	Result	Result	Result
Sodium Adsorption Ratio	µg/g	5,000	4.100	5.510	32.900	12.300
						1.660

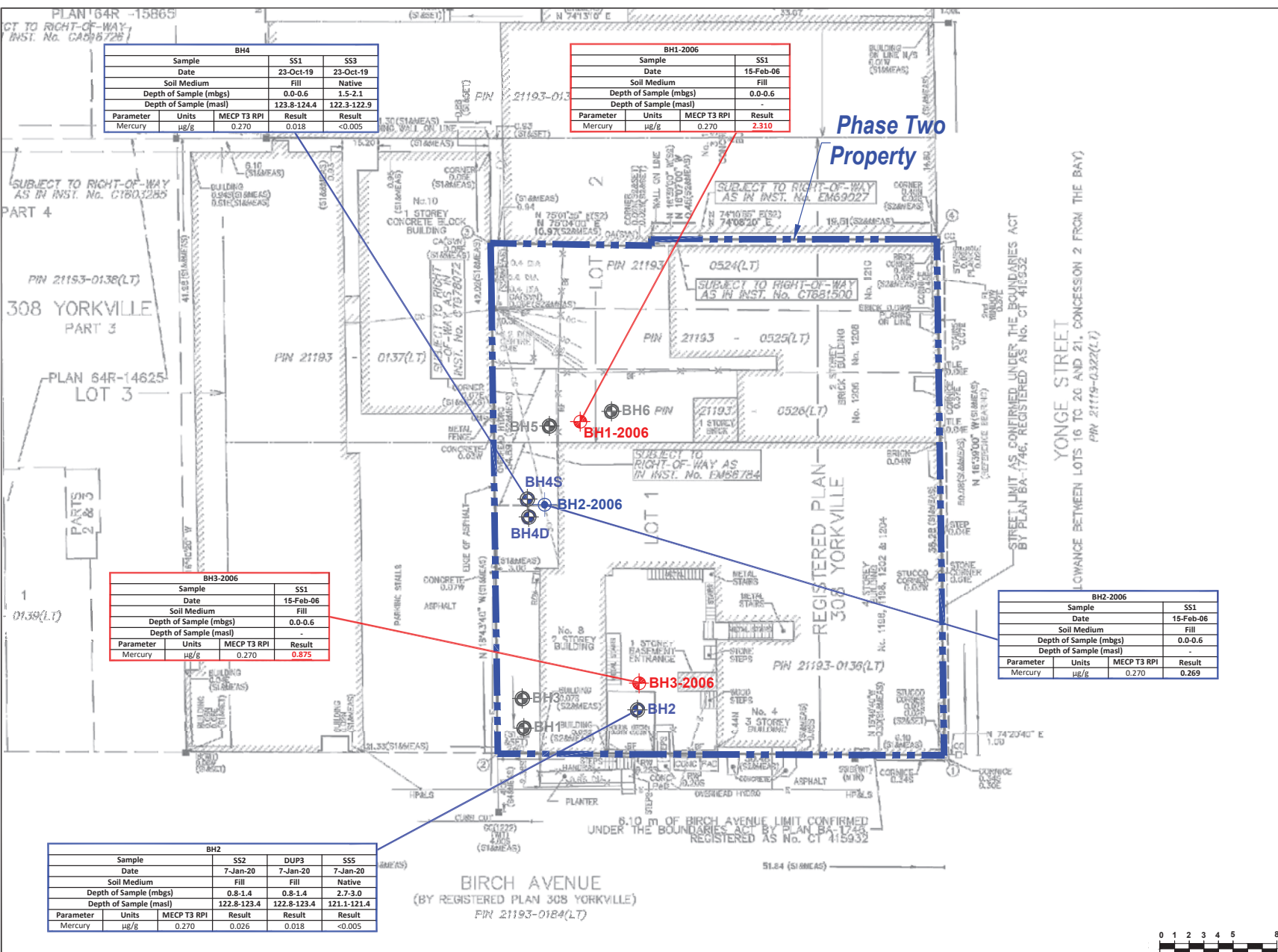
BH1-2006			
Sample	SS1		
Date	15-Feb-06		
Soil Medium	Fill		
Depth of Sample (mbgs)	0.0-0.6		
Depth of Sample (masl)	-		
Parameter	Units	MECP T3 RPI	Result
Sodium Adsorption Ratio	µg/g	5,000	0.496

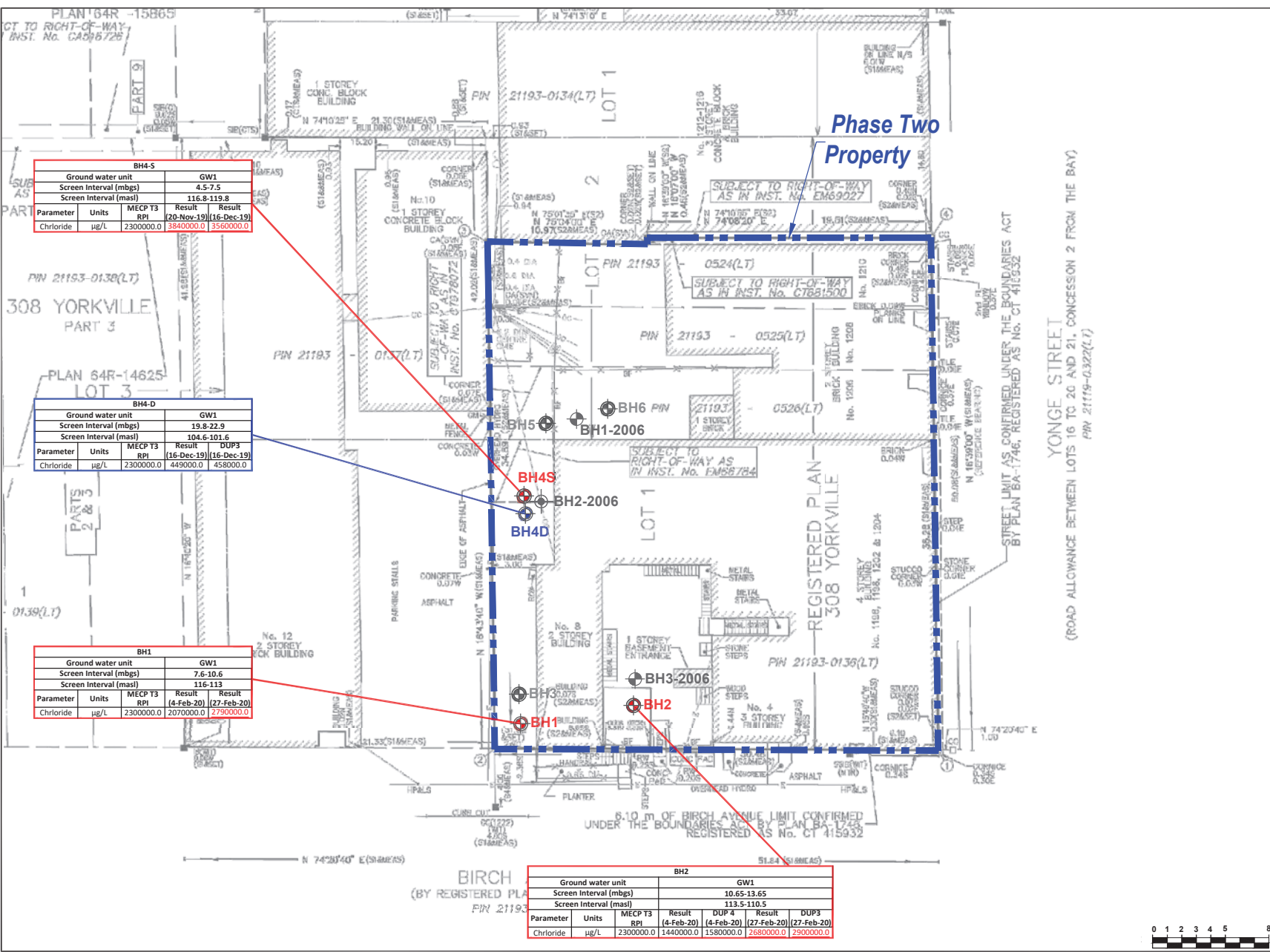
BH3-2006			
Sample	SS1		
Date	15-Feb-06		
Soil Medium	Fill		
Depth of Sample (mbgs)	0.0-0.6		
Depth of Sample (masl)	-		
Parameter	Units	MECP T3 RPI	Result
Sodium Adsorption Ratio	µg/g	5,000	8.600

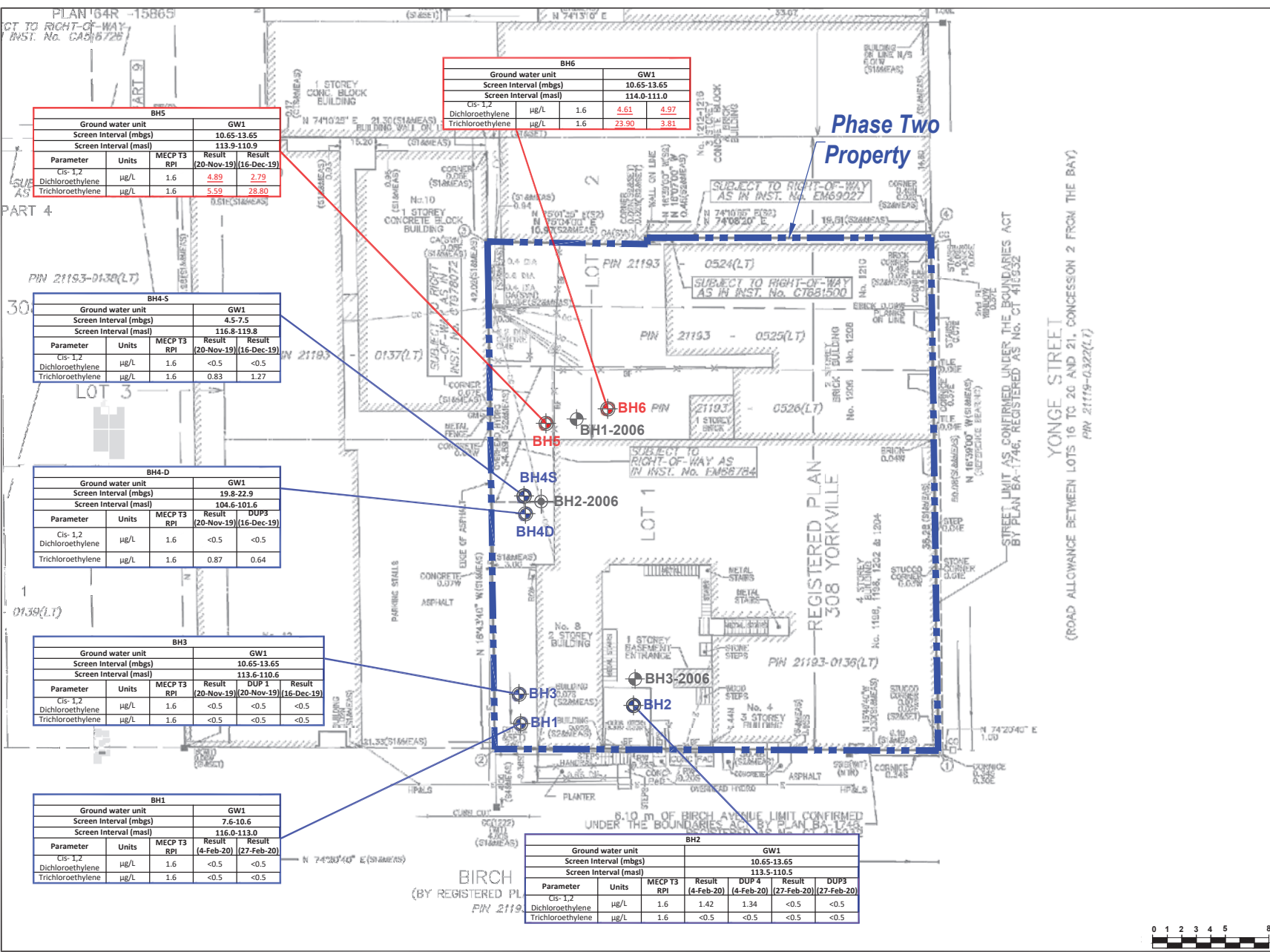
BH2-2006			
Sample	SS1		
Date	15-Feb-06		
Soil Medium	Fill		
Depth of Sample (mbgs)	0.0-0.6		
Depth of Sample (masl)	-		
Parameter	Units	MECP T3 RPI	Result
Sodium Adsorption Ratio	µg/g	5,000	8.110

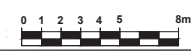
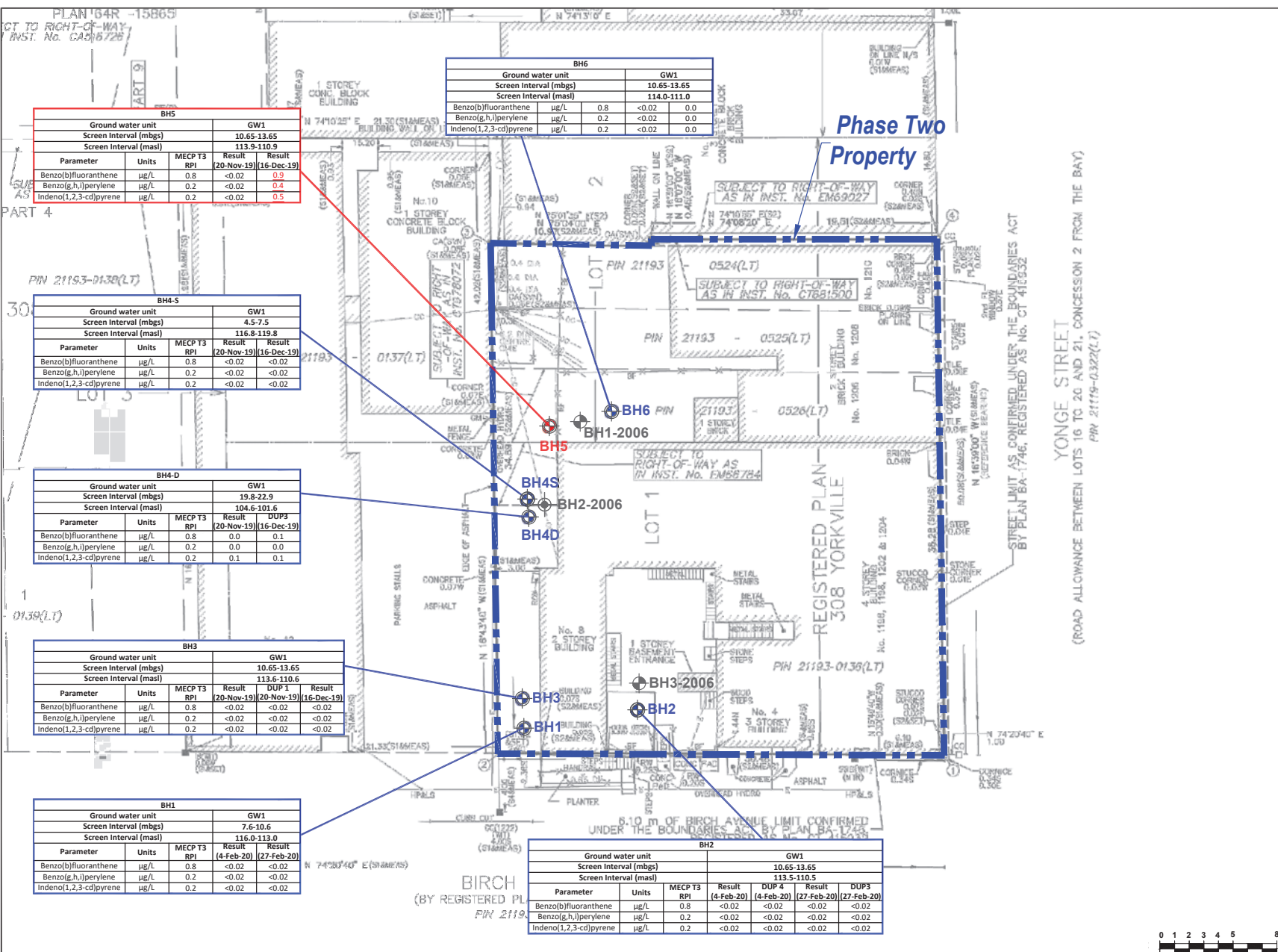
BH2				
Sample	SS2	DUP3	SS5	
Date	7-Jan-20	7-Jan-20	7-Jan-20	
Soil Medium	Fill	Fill	Native	
Depth of Sample (mbgs)	0.8-1.4	0.8-1.4	2.7-3.0	
Depth of Sample (masl)	122.8-123.4	122.8-123.4	121.1-121.4	
Parameter	Units	MECP T3 RPI	Result	Result
Sodium Adsorption Ratio	µg/g	5,000	7.850	6.560
				4.640











TABLES

TERRAPROBE INC.

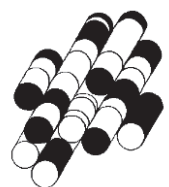


TABLE 1
SOIL QUALITY ANALYSIS
METALS & INORGANIC
1196-1210 Yonge & 2-8 Birch Avenue
TORONTO, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbgl) Sample Medium Parameter	MECP Table 3 Criteria Coarse RPH	Maximum	Units	BH1-SS1 L2412344-1 28-Jan-20 0-0.6 Fill	BH1-SS3 L2412344-3 28-Jan-20 1.5-2.1 Native	BH1-2006-SS1 15-Feb-06 Fill	BH2-SS2 L2404777-1 7-Jan-20 0.8-1.4 Fill	DUP3 L2404776-1 7-Jan-20 0.8-1.4 Fill (BH2-SS2)	BH2-SS5 L2404777-4 7-Jan-20 2.7-3.0 Native	BH2-2006-SS1 15-Feb-06 Fill	BH3-SS1 L2375323-1 25-Oct-19 0-0.5 Fill	BH3-SS6 L2375323-3 25-Oct-19 4.6-5 Native	DUP1 L2375299-1 25-Oct-19 4.6-5 Native (BH3-SS6)	BH3-2006-SS1 15-Feb-06 0-0.6 Fill	BH4-SS1 L2375316-1 23-Oct-19 0.0 - 0.6 Fill	BH4-SS3 L2375316-3 23-Oct-19 1.5-2.1 Native	BH4-SS5 L2381674-1 12-Nov-19 3.0-3.4 Native	BH4-SS7 L2381676-1 12-Nov-19 4.6-5.2 Native	BH4-SS9 L2390458-1 12-Nov-19 6.1-6.7 Native	BH5-SS1 L2375311-1 28-Oct-19 0-0.6 Fill	BH5-SS5 L2375311-3 28-Oct-19 3-3.5 Native	BH5-SS6 L2381679-1 12-Nov-19 4.6-5 Native	BH6-SS1 L2375305-1 29-Oct-19 0-0.6 Fill	BH6-SS3 L2375305-3 29-Oct-19 1.5-2.1 Native		
Metals																										
Barium	390	423	µg/g	119	56.7	423	59.5	56	40.1	140	32.5	31.9	28	126	103	28.6					21.7	3.6	14	73.1	50.8	
Beryllium	4	0.75	µg/g	0.75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Boron	120	6.8	µg/g	6.8	< 5	N/A	5.4	5.6	< 5	N/A	< 5	< 5	< 5	N/A	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
Cadmium	1.2	1.7	µg/g	< 0.5	< 0.5	1.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Chromium	160	26	µg/g	22.8	11.7	26	16.5	14.6	10	14	8.6	8.6	7.7	16.2	19.3	8.5					7.4	14	5.3	11	10.8	
Cobalt	22	7.4	µg/g	5.8	3.7	5	5	5	3.1	6.6	2.9	2.8	2.4	5.6	7.4	2.6					2.3	4.2	1.5	2.8	3.5	
Copper	140	78.8	µg/g	15.3	7	78.8	10.1	8.6	5.8	17.4	5.8	5.7	4.6	19.7	8.7	4.6					4.6	35.1	3.1	9.8	6.6	
Lead	120	602	µg/g	14.7	3.5	602	5.7	4.6	3	85.3	3.7	3.3	2.7	160	6.7	3.4					3.3	339	1.9	159	4.1	
Molybdenum	6.9	3.7	µg/g	< 1	< 1	< 1	< 1	< 1	< 1	3.7	< 1	< 1	< 1	< 1	< 0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	
Nickel	100	19.9	µg/g	12.5	7.1	19.9	10.8	9.6	6	15.8	5.4	5.3	4.8	14.8	14.9	5.1					4.4	11.8	2.8	6.2	7	
Silver	20	0.5	µg/g	< 0.2	< 0.2	0.5	< 0.2	< 0.2	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	
Thallium	1	0.5	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Uranium	23	< 1.0	µg/g	< 1	< 1	N/A	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	< 1	< 1					< 1	< 1	< 1	< 1	< 1	
Vanadium	86	35.4	µg/g	35.4	20.6	17.3	30.7	27.7	20.3	29.5	16.8	16.6	16.6	23.4	34.7	16.3					18.4	21.3	11.1	17.5	19	
Zinc	340	716	µg/g	45.2	21.3	716	25.9	23.8	16	60.1	14.8	14.9	14.2	102	31.2	15					13.8	202	9.8	107	20.5	
Hydride Metals																										
Arsine	7.5	< 3.6	µg/g	< 1	< 1	2.4	< 1	< 1	< 1	1.6	< 1	< 1	< 1	1.6	< 1	< 1					< 1	3.6	< 1	1.4	< 1	
Arsenic	18	11.8	µg/g	2.9	1.5	6.8	2.4	2.4	1.2	11.8	1.3	1.2	1.2	3.2	3	1.2					1.1	5.2	< 1	3.3	2.5	
Selenium	2.4	< 1.4	µg/g	< 1	< 1	< 1	< 1	< 1	< 1	1.4	< 1	< 1	< 1	< 1	< 1	< 1					< 1	< 1	< 1	< 1	< 1	
Other Regulated Parameters																										
Boron (Hot Water Soluble)	1.5	0.658	µg/g				0.596	0.28	< 0.1	0.509					0.658	0.24	0.1									
Chromium, Hexavalent	8	0.382	µg/g				< 0.382	0.33	< 0.2	< 0.382					< 0.382	0.34	< 0.2									
Cyanide, Free	0.051	< 4	µg/g				< 1.6	< 0.05	< 0.05	< 4					< 1.6	< 0.05	< 0.05									
Mercury	0.27	2.31	µg/g				2.31	0.0283	0.0184	< 0.005	0.269				0.875	0.0178	< 0.005									
Electrical Conductivity	0.7	1.56	mS/cm				0.156	1.56	1.16	0.366	0.999				1.25	0.74	0.519									
Sodium Adsorption Ratio	5	32.9	no units				0.496	7.85	6.56	4.64	8.11				6.6	4.1	5.51	32.9	12.3	1.66						
pH	-	8.8	pH	7.97	8.09	7.6	7.4	7.85	7.88	8.06					8.8	7.76	7.77									

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 2
SOIL QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
1196-1210 Yonge & 2-8 Birch Avenue
TORONTO, ONTARIO

Sample Name	MECP ALS Lab ID#	Table 3 Criteria	Maximum	Units	BH1-SS2 L2412344-2 28-Jan-20 0.8-1.4 Fill	BH1-SS7 L2412344-4 28-Jan-20 6.1-6.7 Native	BH2-SS3B L2404777-3 7-Jan-20 1.7-2.0 Fill	DUPS L2404774-1 7-Jan-20 1.7-2.0 Fill (BH2-SS3B)	BH2-SS6 L2404777-5 7-Jan-20 4.6-4.9 Native	BH2-2006-SS6 15-Feb-06 6.5-7.2 Native	BH3-SS2 L2375323-2 25-Oct-19 0.8-1.4 Fill	BH3-SS8 L2375323-4 25-Oct-19 7.6-8.1 Native	DUP2 L2375394-1 25-Oct-19 7.6-8.1 Native (BH3-SS8)	BH4-SS1 L2375316-1 23-Oct-19 0-0.6 Fill	BH4-SS5 L2375316-4 23-Oct-19 3.0-3.4 Native	BH5-SS2 L2375311-2 28-Oct-19 0.8-1.4 Fill	BH5-SS7 L2375311-4 28-Oct-19 6.1-6.5 Native	BH6-SS2 L2375305-2 29-Oct-19 0.8-1.4 Fill	BH6-SS7 L2375305-4 29-Oct-19 6.1-6.5 Native	
Parameter	R/P/A																			
F1 (C6 to C10)	NV	< 5		µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
F1 (C6 to C10) minus BTEX	55	< 5		µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
F2 (C10 to C16)	98	< 10		µg/g	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F3 (C16 to C34)	300	< 50		µg/g	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
F4 (C34 to C50)	2800	< 50		µg/g	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Gravimetric Heavy Hydrocarbons	-	< 72		µg/g	< 72	< 72	< 72	< 72	< 72	N/A	ND	ND	< 72	< 72	< 72	< 72	< 72	< 72	< 72	< 72
Chrom. To baseline at nC50	-	NA	-	YES	YES	YES	YES	YES	YES	YES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Moisture Content	-	16.2	%		9.05	9.92	10.2	12	7.72	8.1	13.7	9.62	10.5	14.6	7.98	8.65	16.2	12.2	12.2	15.4

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
1196-1210 Yonge & 2-8 Birch Avenue
TORONTO, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbl) Sample Medium Parameter	MECP Table 3 Criteria Coarse Maximum Units	BH1-552 L2412344-2 0.8-1.4 Fill	BH1-557 L2412344-4 28-Jan-20 6.1-6.7 Native	BH1-2006-552A 15-Feb-06 0.8-1.2 Fill	BH2-553B L2404777-3 7-Jan-20 1.7-2.0 Fill	DUP5 L2404774-1 7-Jan-20 1.7-2.0 Fill (BH2-553B)	BH2-556 L2404777-5 7-Jan-20 4.6-4.9 Native	BH2-2006-556 15-Feb-06 6.5-7.2 Native	BH3-552 L2375323-2 25-Oct-19 0.8-1.4 Fill	BH3-558 L2375323-4 25-Oct-19 7.6-8.1 Native	DUP2 L2375294-1 25-Oct-19 7.6-8.1 Native (BH3-558)	BH3-2006-553 15-Feb-06 1.6-2.2 Native	BH4-551 L2375316-1 23-Oct-19 0-0.6 Fill	BH4-557 L237516-5 23-Oct-19 4.6-5.2 Native	BH4-558 L237516-5 12-Nov-19 5.3-5.9 Native	BH5-552 L2375311-2 28-Oct-19 0.8-1.4 Fill	BH5-557 L2375311-4 28-Oct-19 6.1-6.5 Native	BH6-552 L2375305-2 29-Oct-19 0.8-1.4 Fill	BH6-557 L2375305-4 29-Oct-19 6.1-6.5 Native	
Acetone	16	< 0.50	< 0.50	< 0.50	0.17	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.07	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bromodichloromethane	13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromofom	0.27	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromomethane	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon Tetrachloride	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	2.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloromethane	9.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chloroform	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylene Dibromide (1,2-Dibromethane)	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	4.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	0.83	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane	16	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	3.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethylene	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cis-1,2-Dichloroethylene	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trans-1,2-Dichloroethylene	0.084	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichloropropane	0.05	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methyl Ethyl Ketone	16	< 0.50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl Isobutyl Ketone	1.7	< 0.50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl tert-butyl Ether (MTBE)	0.75	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	0.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	0.058	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	0.28	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	0.38	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethylene	0.041	0.041	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.018	0.022	0.02	< 0.01	< 0.01	0.047	0.04	0.04	< 0.05	< 0.05	0.02	0.014
Trichlorofluoromethane	4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Vinyl Chloride	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

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)
 1196-1210 Yonge & 2-8 Birch Avenue
 TORONTO, ONTARIO

Sample Name	MECP Table 3 Criteria Coarse Parameter	Maximum	Units	BH1-SS2 L2412344-2 28-Jan-20	BH1-SS7 L2412344-4 28-Jan-20	BH1-2006-SS2A 15-Feb-06 0.8-1.2 Fill	BH2-SS3B L2404777-3 7-Jan-20 1.7-2.0 Fill	DUP5 L2404774-1 7-Jan-20 1.7-2.0 Fill	BH2-SS6 L2404777-5 7-Jan-20 4.6-4.9 Native	BH2-2006-SS6 8.5-7.2 Native	BH3-SS2 L2375323-2 25-Oct-19 0.8-1.4 Fill	BH3-SS8 L2375323-4 25-Oct-19 7.6-8.1 Native	DUP2 L2375294-1 25-Oct-19 7.6-8.1 Native	BH3-2006-SS3 15-Feb-06 1.6-2.2 Native	BH4-SS1 L2375316-1 23-Oct-19 0-0.6 Fill	BH4-SS5 L2375316-4 23-Oct-19 2.3-2.8 Native	BH4-SS5 L2375316-4 23-Oct-19 3.0-3.4 Native	BH4-SS8 L2381634-1 12-Nov-19 5.3-5.9 Native	BH5-SS2 L2375311-2 28-Oct-19 0.8-1.4 Fill	BH5-SS7 L2375311-4 28-Oct-19 6.1-6.5 Native	BH6-SS2 L2375305-2 29-Oct-19 0.6-1.4 Fill	BH6-SS7 L2375305-4 29-Oct-19 6.1-6.5 Native	
Benzene	0.32	< 0.0068	µg/g	< 0.0068	< 0.0068	< 0.004	< 0.0068	< 0.0068	< 0.0068	< 0.004	< 0.0068	< 0.0068	< 0.0068	< 0.004	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068	< 0.0068
Toluene	66	< 0.06	µg/g	< 0.06	< 0.06	< 0.02	< 0.06	< 0.06	< 0.06	< 0.02	< 0.06	< 0.06	< 0.06	< 0.02	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Ethylbenzene	9.5	< 0.018	µg/g	< 0.018	< 0.018	< 0.003	< 0.018	< 0.018	< 0.018	< 0.003	< 0.018	< 0.018	< 0.018	< 0.003	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018
m & p-Xylene	-	< 0.03	µg/g	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
o-Xylene	-	< 0.02	µg/g	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Xylene Mixture	28	< 0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

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
 NA = No value
 NA = Not assessed

TABLE 5
SOIL QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
1196-1210 Yonge & 2-8 Birch Avenue
TORONTO, ONTARIO

Sample Name ALS Lab ID# Date Depth of Sample (mbgl) Sample Medium Parameter	MECP Table 3 Criteria Coarse R/P/I	Maximum	Units	BH1-SS1 L2412344-1 28-Jan-20 0-0.6	BH1-SS3 L2412344-3 28-Jan-20 1.5-2.1	BH2-SS3A L2404777-2 7-Jan-20 1.4-1.7 Fill	DUP4 L2404775-1 7-Jan-20 1.4-1.7 Fill (BH2-SS3A)	BH2-SS5 L2404777-4 7-Jan-20 2.7-3.0 Native	BH3-SS1 L2375323-1 25-Oct-19 0-0.5 Fill	BH3-SS6 L2375323-3 25-Oct-19 4.6-5.0 Native	DUP1 L2375299-1 25-Oct-19 4.6-5.0 Native (BH3-SS6)	BH4-SS2 L2375316-2 23-Oct-19 0.8-1.4 Fill	BH5-SS1 L2375311-1 28-Oct-19 0-0.6 Fill	BH5-SS5 L2375311-3 28-Oct-19 3.0-3.5 Native	BH6-SS1 L2375305-1 29-Oct-19 0-0.6 Fill	BH6-SS3 L2375305-3 29-Oct-19 1.5-2.1 Native
Aceraphthene	7.9	< 2.3	µg/g	0.068	< 0.05	< 0.05	0.068	< 0.05	2.3	< 0.05	< 0.05	< 0.05	0.146	< 0.05	0.081	< 0.05
Aceraphthylene	0.15	< 1.03	µg/g	< 0.05	< 0.05	< 0.05	0.3	< 0.05	1.03	< 0.05	< 0.05	< 0.05	0.094	< 0.05	0.07	< 0.05
Anthracene	0.67	< 5.6	µg/g	0.15	< 0.05	0.091	0.124	< 0.05	5.6	< 0.05	< 0.05	< 0.05	0.341	< 0.05	0.263	< 0.05
Benzo(a)anthracene	0.5	< 11.5	µg/g	0.275	< 0.05	0.27	0.341	< 0.05	11.5	< 0.05	< 0.05	< 0.05	0.959	< 0.05	0.703	< 0.05
Benzo(a)pyrene	0.3	< 9.26	µg/g	0.217	< 0.05	0.219	0.516	< 0.05	9.26	< 0.05	< 0.05	< 0.05	0.808	< 0.05	0.583	< 0.05
Benzo(b)fluoranthene	0.78	< 10.7	µg/g	0.287	< 0.05	0.318	0.626	< 0.05	10.7	< 0.05	< 0.05	< 0.05	1.04	< 0.05	0.683	< 0.05
Benzo(e)fluoranthene	6.6	< 6.13	µg/g	0.133	< 0.05	0.171	0.535	< 0.05	6.13	< 0.05	< 0.05	< 0.05	0.524	< 0.05	0.35	< 0.05
Benzo(k)fluoranthene	0.78	< 4.63	µg/g	0.084	< 0.05	0.088	0.181	< 0.05	4.63	< 0.05	< 0.05	< 0.05	0.429	< 0.05	0.28	< 0.05
Chrysene	7	< 11.5	µg/g	0.264	< 0.05	0.298	0.632	< 0.05	11.5	< 0.05	< 0.05	< 0.05	1.14	< 0.05	0.712	< 0.05
Dibenzo(a,h)anthracene	0.1	< 1.64	µg/g	< 0.05	< 0.05	< 0.05	0.065	< 0.05	1.64	< 0.05	< 0.05	< 0.05	0.147	< 0.05	0.101	< 0.05
Fluoranthene	0.69	< 25.5	µg/g	0.615	< 0.05	0.677	2.08	< 0.05	25.5	< 0.05	< 0.05	< 0.05	2.51	< 0.05	1.43	< 0.05
Fluorene	62	< 2.41	µg/g	0.069	< 0.05	< 0.05	0.252	< 0.05	2.41	< 0.05	< 0.05	< 0.05	0.151	< 0.05	0.095	< 0.05
Indeno(1,2,3-cd)pyrene	0.38	< 5.75	µg/g	0.134	< 0.05	0.148	0.373	< 0.05	5.75	< 0.05	< 0.05	< 0.05	0.5	< 0.05	0.351	< 0.05
2-and 1-methyl Naphthalene	0.99	< 0.988	µg/g	< 0.042	< 0.042	< 0.042	0.178	< 0.042	0.988	< 0.05	< 0.05	< 0.05	0.133	< 0.05	< 0.042	< 0.05
Naphthalene	0.6	< 0.704	µg/g	0.026	< 0.013	0.016	0.205	< 0.013	0.704	< 0.05	< 0.05	< 0.05	0.068	< 0.05	0.028	< 0.05
Phenanthrene	6.2	< 23.5	µg/g	0.567	< 0.046	0.441	2.9	< 0.046	23.5	< 0.05	< 0.05	< 0.05	2.07	< 0.05	1.06	< 0.05
Pyrene	78	< 20.9	µg/g	0.488	< 0.05	0.628	2.21	< 0.05	20.9	< 0.05	< 0.05	< 0.05	2.05	< 0.05	1.18	< 0.05

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 6
SOIL QUALITY ANALYSIS
POLYCHLORINATED BIPHENYLS
1196-1210 Yonge & 2-8 Birch Avenue
Toronto, ONTARIO

Sample Name	MECP Table 3 Criteria Coarse	Maximum	Units	BH1-SS1 L2412344-1 28-Jan-20 0-0.6 Fill	BH1-SS3 L2412344-3 28-Jan-20 1.5-2.1 Native	BH2-SS2 L2404777-1 7-Jan-20 0.8-1.4 Fill	DUP3 L2404776-1 7-Jan-20 0.8-1.4 Fill (BH2-SS2)	BH2-SS5 L2404777-4 7-Jan-20 2.7-3.0 Native	BH3-SS1 L2375323-1 25-Oct-19 0-0.5 Fill	BH3-SS6 L2375323-3 25-Oct-19 4.6-5.0 Native	DUP1 L2375299-1 25-Oct-19 4.6-5.0 Native (BH3-SS6)	BH5-SS1 L2375311-1 28-Oct-19 0-0.6 Fill	BH5-SS5 L2375311-3 28-Oct-19 0.8-1.4 Native	BH6-SS1 L2375305-1 29-Oct-19 0-0.6 Fill	BH6-SS3 L2375305-3 29-Oct-19 1.5-2.1 Native
ALS Lab ID#	R/P/I														
Date															
Depth of Sample (mbgl)															
Sample Medium															
Parameter															
Aroclor 1016	NV	NV	µg/g	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Aroclor 1242	NV	< 0.02	µg/g	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.02	< 0.01	< 0.01
Aroclor 1248	NV	< 0.02	µg/g	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.02	< 0.01	< 0.01
Aroclor 1254	NV	< 0.02	µg/g	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.02	< 0.01	< 0.01
Aroclor 1260	NV	< 0.02	µg/g	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.015	< 0.02	< 0.01	< 0.02	< 0.01	< 0.01
Polychlorinated Biphenyls	0.35	< 0.023	µg/g	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Decachlorobiphenol			%	62.0	84.0	92.4	93.8	98.9	73.0	114.0	120.0	114.0	120.0	114.0	120.0

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

NV = No value

TABLE 7
GROUND WATER QUALITY ANALYSIS
METALS AND INORGANICS
1196-1210 Yonge & 2-8 Birch Avenue
Toronto, ONTARIO

Sample Name	MECP			BH1	BH1	BH2	DUP4	BH2	DUP5	BH3	BH3	DUP1	BH4-S	BH4-S	BH4-D	DUP3	BH5	BH5	BH6	BH6
ALS Lab ID#	2011 Criteria	Maximum	Units	L241328-1	L242349-1	L241324-1	L241325-1	L242349-1	L242349-1	L239673-1	L2396104-1	L239616-1	L239660-1	L239613-1	L239620-1	L2396126-1	L2396649-1	L2396134-1	L2396644-1	L2396115-1
Date				4-Feb-20	27-Feb-20	4-Feb-20	4-Feb-20	27-Feb-20	27-Feb-20	20-Nov-19	16-Dec-19	20-Nov-19	20-Nov-19	16-Dec-19	16-Dec-19	16-Dec-19	20-Nov-19	16-Dec-19	20-Nov-19	16-Dec-19
Screened (mg/s)				7.6-10.6	7.6-10.6	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	4.5-7.5	4.5-7.5	19.8-22.9	19.8-22.9	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65
Parameter	All Property Use																			
Metals																				
Bismuth	29000	365	µg/L	82.4	79.7	78.7	80.7	102	102	44.9	48.4	44.9	52.6	67.4	45.4	45.2	355	50.6	44.3	58.1
Beryllium	87	< 1	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Boron	49000	210	µg/L	140	140	130	130	100	100	190	210	180	140	150	160	100	140	210	190	130
Chromium	2.7	< 0.137	µg/L	0.081	0.084	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.081	0.137	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chromium VI	810	< 5	µg/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Cobalt	65	3.7	µg/L	3.4	3.5	< 1	< 1	< 1	< 1	2.9	2.9	2.9	2.9	3.7	< 1	< 1	< 1	< 1	< 1	< 1
Copper	57	< 2	µg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Lead	25	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Manganese	9200	8.13	µg/L	1.45	0.64	7.74	8.13	6.91	5.76	1.98	1.11	2.1	0.98	0.64	2.34	2.51	1	0.65	2.42	0.63
Nickel	490	15.6	µg/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	15.3	< 5	12.9	15.6	< 5	< 5	< 5	8.4	< 5	5.2
Silver	1.5	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Thallium	210	< 0.27	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.27	0.27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Uranium	490	13.6	µg/L	8.2	8.62	0.91	0.93	1.69	1.61	6.97	6.45	7.04	13.6	13.3	2.3	2.34	1.76	0.45	1.8	1.02
Vanadium	200	< 5	µg/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Zinc	11500	< 10	µg/L	12	15	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Metal Hydrides																				
Antimony	20000	< 1	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	1900	< 1	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Selenium	63	< 6.38	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	6.38	4.28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Other Regulated Parameters																				
Sodium	2300000	1370000	µg/L	687000	946000	656000	672000	1300000	1320000	909000	992000	920000	1170000	1370000	283000	286000	460000	812000	686000	524000
Mercury	0.29	< 0.005	µg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chromium VI	140	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoride	65	< 2	µg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride	2300000	3840000	µg/L	2070000	2790000	1440000	1580000	2680000	2560000				3840000	3560000	449000	458000				
Electrical Conductivity	NV	10.6	mS/cm	6.53	7.64	5.46	5.46	7.85	7.85	7.85	7.85	7.85	10.1	10.6	2.32	2.31				
pH	NV	7.85	pH Units	7.52	7.64	7.88	7.86	7.17	7.26				7.06	7.11	7.53	7.4				

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

TABLE 8
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
1196-1210 Yonge & 2-8 Birch Avenue
Toronto, ONTARIO

Sample Name ALS Lab ID# Date Screened (mg/kg)	MECP Table 3 2011 Criteria	Maximum	Units	BH1 L2413928-1 4-Feb-20 7.6-10.6	BH1 L2422407-1 27-Feb-20 7.6-10.6	BH2 L2413924-1 4-Feb-20 10.65-13.65	DUP4 L2413925-1 4-Feb-20 10.65-13.65 (BH2)	BH5 L2422401-1 27-Feb-20 10.65-13.65	DUP5 L2422396-1 27-Feb-20 10.65-13.65 (BH2)	BH3 L2386573-1 20-Nov-19 10.65-13.65	BH3 L2398104-1 16-Dec-19 10.65-13.65	DUP1 L2386573-1 20-Nov-19 10.65-13.65	BH4-S L2386508-1 20-Nov-19 4.5-7.5	BH4-S L2398131-1 16-Dec-19 4.5-7.5	BH4-D L2398120-1 16-Dec-19 19.8-22.9	DUP3 L2398126-1 16-Dec-19 19.8-22.9 (BH4-D)	BH6 L2386499-1 20-Nov-19 10.65-13.65	BH5 L2398134-1 16-Dec-19 10.65-13.65	BH6 L2386645-1 20-Nov-19 10.65-13.65	BH6 L2398115-1 16-Dec-19 10.65-13.65	
All Property Use																					
F1 (C6 to C10)	750	< 25	µg/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F1 (C6 to C10) minus BTEX	750	< 25	µg/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
F2 (C10 to C16)	150	< 100	µg/L	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F2 (C10 to C16) minus Naphthalene	150	< 100	µg/L	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
F3 (C16 to C34)	500	< 250	µg/L	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
F3 (C16 to C34) minus PAHs	500	< 250	µg/L	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
F4 (C34 to C50)	500	< 250	µg/L	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250	< 250
Equivalent Heavy Hydrocarbons	500	< 370	µg/L	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370	< 370

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 19
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS (BTEX)
1156-1161 Yonge St. 2nd Birch Avenue
Toronto, ONTARIO

Sample Name	MCCP			BR1	BR1	BR2	DDP4	BR2	DUPS	BR3	BR3	BR4-S	BR4-S	BR4-D	DUPS	BR5	BR5	BR6	TRP BLANK	TRP BLANK	TRP BLANK	TRP BLANK	
ALS Lab ID#	Table 3	Maximum	Units	L2413925-1	L2422407-1	L2413924-1	L2413925-1	L2422401-1	L2422396-1	L2398104-1	L2398104-1	L2398608-1	L2398131-1	L2398120-1	L2398126-1	L2398134-1	L2398645-1	L2398115-1	L2398581-1	L2398981-1	L2413931-1	L2422343-1	
Date	2011 Criteria			4-Feb-20	27-Feb-20	4-Feb-20	4-Feb-20	27-Feb-20	27-Feb-20	20-Nov-19	16-Dec-19	30-Nov-19	16-Dec-19	16-Dec-19	18-Dec-19	20-Nov-19	16-Dec-19	20-Nov-19	16-Dec-19	20-Nov-19	16-Dec-19	4-Feb-20	28-Feb-20
Screened (mlpg)				7.6-10.6	7.6-10.6	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	10.65-13.65	4.5-7.5	4.5-7.5	19.8-22.8	19.8-22.9	10.65-13.65	10.65-13.65	10.65-13.65					
Parameter	All Property Use						(BOD)		(BOD)					(BOD)									
Benzene	0.5	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	2500	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylenes	NV	< 0.4	µg/L	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
p-Xylenes	NV	< 0.3	µg/L	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
o,p-Dichlorobenzene	4200	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

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
 NI = Not Infile
 NA = Not Assessed

TABLE 11
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
1196-1210 Yonge & 2-8 Birch Avenue
Toronto, ONTARIO

Sample Name Eurofins ID# Date Screened (mbgs) Parameter	MECP Table 3 2011 Criteria Coarse	Maximum	Units	BH1 L2413928-1 4-Feb-20 7.6-10.6	BH1 L2422407-1 27-Feb-20 7.6-10.6	BH2 L2413924-1 4-Feb-20 10.65-13.65	DUP4 L2413925-1 4-Feb-20 10.65-13.65 (BH2)	BH2 L2422401-1 27-Feb-20 10.65-13.65	DUP5 L2422396-1 27-Feb-20 10.65-13.65 (BH2)	BH3 L2386573-1 20-Nov-19 10.65-13.65	DUP1 L2386616-1 20-Nov-19 10.65-13.65 (BH3)	BH3 L2398104-1 16-Dec-19 10.65-13.65
Acenaphthene	600	< 0.067	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Acenaphthylene	1.8	< 0.037	µg/L	< 0.02	< 0.02	< 0.029	< 0.032	< 0.037	< 0.026	< 0.02	< 0.02	< 0.02
Anthracene	2.4	< 0.178	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(a)anthracene	4.7	< 0.802	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(a)pyrene	0.81	< 0.011	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.011
Benzo(b)fluoranthene	0.75	< 0.87	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(g,h,i)perylene	0.2	< 0.386	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(k)fluoranthene	0.4	< 0.348	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chrysene	1	< 0.831	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibenzo(a,h)anthracene	0.52	< 0.101	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fluoranthene	130	< 1.38	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.023	< 0.02	< 0.02	0.035
Fluorene	400	< 0.05	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Indeno(1,2,3-cd)pyrene	0.2	< 0.465	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
2-and 1-methyl Naphthalene	1800	< 0.088	µg/L	< 0.028	< 0.028	< 0.028	< 0.028	0.088	0.082	< 0.028	< 0.028	< 0.028
Naphthalene	1400	< 0.05	µg/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	580	< 0.612	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.028	< 0.02	< 0.02	0.033
Pyrene	68	< 1.2	µg/L	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.023	< 0.02	< 0.02	0.033

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 12
GROUNDWATER QUALITY ANALYSIS
POLYCHLORINATED BIPHENYLS
1196-1210 Yonge & 2-8 Birch Avenue
Toronto, ONTARIO

Sample Name	MECP Table 3 Criteria Coarse	Maximum	Units	BH1 L2413928-1 4-Feb-20 7.6-10.6	BH1 L2422407-1 27-Feb-20 7.6-10.6	DUP4 L2413925-1 4-Feb-20 10.65-13.65 (BH2)	BH2 L2422401-1 27-Feb-20 10.65-13.65	DUP5 L2422396-1 27-Feb-20 10.65-13.65 (BH2)	BH3 L2386573-1 20-Nov-19 10.65-13.65	DUP1 L2386573-1 20-Nov-19 10.65-13.65	BH3 L2398104-1 16-Dec-19 10.65-13.65	DUP2 L2398138-1 16-Dec-19 10.65-13.65 (BH3)	BH5 L2386649-1 20-Nov-19 10.65-13.65	BH5 L2398134-1 16-Dec-19 10.65-13.65	BH6 L2386645-1 20-Nov-19 10.65-13.65	BH6 L2398115-1 16-Dec-19 10.65-13.65
Parameter	R/P/N/C/C															
Aroclor 1016	NV	NV	µg/L	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Aroclor 1242	NV	< 0.04	µg/L	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02
Aroclor 1248	NV	< 0.04	µg/L	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02
Aroclor 1254	NV	< 0.04	µg/L	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02
Aroclor 1260	NV	< 0.04	µg/L	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02	< 0.02	< 0.02	< 0.02	< 0.04	< 0.02	< 0.04	< 0.02
Polychlorinated Biphenyls	7.8	< 0.08	µg/L	< 0.04	< 0.04	< 0.08	< 0.04	< 0.08	< 0.04	< 0.04	< 0.04	< 0.04	< 0.08	< 0.04	< 0.08	< 0.04
Decachlorobiphenol			%	60.3	86.1	40.8	90.4	94.0	52.3	49.1	55.9	58.8	43.9	52.5	46.5	54.3

Notes

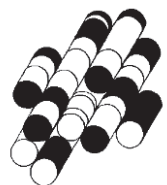
Value highlighted in red indicate exceedances above the applicable criteria

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

NV = No value

APPENDIX A

TERRAPROBE INC.



PHASE ONE CONCEPTUAL SITE MODEL

1196-1210 Yonge Street & 2-8 Birch Avenue, Toronto, Ontario

Phase One CSM	Information Pertaining to Property
<i>Figures of the Phase One Study Area are provided that:</i>	
i. Show any existing buildings and structures	At the time of the site inspection, there was one (1) four-storey commercial-residential building located at 1196 – 1204 Yonge Street attached to one (1) three-storey residential building located at 2, 4 and 6 Birch Avenue, one (1) two-storey commercial-residential building located at 1206, 1208 and 1210 Yonge Street, and one (1) two-storey residential building located at 8 Birch Avenue. The subject Property consists of six (6) parcels of land with a legal description of Part of Lots 1 & 2, Registered Plan 308 Yorkville, City of Toronto identified under PIN 21193-0524 (LT) for 1210 Yonge Street, 21193-0525 (LT) for 1208 Yonge Street, 21193-0526 (LT) for 1206 Yonge Street, 21193-0136 (LT) for 1196, 1198, 1202 & 1204 Yonge Street and 2, 4, 6 & 8 Birch Avenue.
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 an unnamed stream approximately 600 m east of the Property which drains into the Don River which is located approximately 2 km east 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 NHIC database for natural area listings. 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 commercial-residential buildings to the north, Birch Avenue and utility land use to south, Yonge Street and commercial-residential buildings to the east, and residential properties to the west. 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	<p>Twelve (12) Areas of Potential Environmental Concern (APECs) and associated Contaminants of Potential Concern are described on the Table of Areas of Potential Environmental Concern.</p> <p>The locations of the APECs on the Phase One Property are shown on Figure 6.</p>

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	<p>1196 Yonge Street (Phase One Property)</p> <ul style="list-style-type: none"> • #NA¹ – Waste Generator • #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products <p>1206 Yonge Street (Phase One Property)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>1208 Yonge Street (Phase One Property)</p> <ul style="list-style-type: none"> • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) • #39 – Paint Manufacturing, Processing and Bulk Storage <p>1210 Yonge Street (Phase One Property)</p> <ul style="list-style-type: none"> • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) <p>1196-1210 Yonge Street & 2-8 Birch Avenue (Phase One Property)</p> <ul style="list-style-type: none"> • #NA⁴ – Exceedance from previous investigation <p>10 Birch Avenue (4 m West)</p> <ul style="list-style-type: none"> • #10 – Commercial Autobody Shops • #59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products • #33 – Metal Treatment, Coating, Plating and Finishing <p>1212 Yonge Street (5 m North)</p> <ul style="list-style-type: none"> • #10 – Commercial Autobody Shops <p>1218 Yonge Street (14 m North)</p> <ul style="list-style-type: none"> • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) <p>11 Birch Avenue (19 m Southwest)</p> <ul style="list-style-type: none"> • #NA¹ – Waste Generator
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Phase One CSM	Information Pertaining to Property
	<ul style="list-style-type: none"> • #18 – Electricity Generation, Transformation and Power Stations South of 11 Birch Avenue (20 m South) • #46 – Rail Yards, Tracks and Spurs 1139 Yonge Street (24 m Northeast) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 1143 Yonge Street (25 m Northeast) • #NA³ – Coal Storage • #28 – Gasoline and Associated Products Storage in Fixed Tanks 13 Alcorn Avenue (31 m Northwest) • #10 – Commercial Autobody Shops 15-21 Birch Avenue (35 m Southwest) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 1153 Yonge Street (42 m Northeast) • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) 1139 Yonge Street (42 m East) • #NA³ – Coal Storage 4 Alcorn Avenue (48 m North) • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) 1129 Yonge Street (49 m Southeast) • #NA³ – Coal Storage 1224 Yonge Street (50 m North) • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) 24 Birch Avenue (59 m West) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 1155 Yonge Street (60 m Northeast) • #37 – Operation of Dry Cleaning Equipment (where chemicals are used) 8 Shaftesbury Avenue (60 m Northeast) • #10 – Commercial Autobody Shops



Phase One CSM	Information Pertaining to Property
	<p>14 Shaftesbury Avenue (60 m Northeast)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>24 Birch Avenue (61 m West)</p> <ul style="list-style-type: none"> • #10 – Commercial Autobody Shops <p>1228 Yonge Street (67 m Northwest)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>1161 Yonge Street (70 m North)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>1230 Yonge Street (71 m North)</p> <ul style="list-style-type: none"> • #33 – Metal Treatment, Coating, Plating and Fabrication <p>10 Alcorn Avenue (71 m Northwest)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks • #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biooils as soil conditioners <p>16 Shaftesbury Avenue (88 m Northeast)</p> <ul style="list-style-type: none"> • #NA¹ – Waste Generator <p>1176 Yonge Street (90 m Southeast)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>1234 Yonge Street (90 m North)</p> <ul style="list-style-type: none"> • #33 – Metal Treatment, Coating, Plating and Fabrication <p>22 Alcorn Avenue (96 m West)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>29 Birch Avenue (97 m Southwest)</p> <ul style="list-style-type: none"> • #10 – Commercial Autobody Shops <p>1119 Yonge Street (99 m Southeast)</p> <ul style="list-style-type: none"> • #8 – Chemical Manufacturing, Processing and Bulk Storage • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>31 Birch Avenue (100 m Southwest)</p>



Phase One CSM	Information Pertaining to Property
	<ul style="list-style-type: none"> • #10 – Commercial Autobody Shops 1174 Yonge Street (102 m South) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 1179 Yonge Street (117 m Northeast) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 25 Shaftesbury Avenue (118 m East) • #28 – Gasoline and Associated Products Storage in Fixed Tanks Opposite 30 Shaftesbury Avenue (120 m Northeast) • #NA² – Ontario Spills 32 Alcorn Avenue (126 m West) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 1240 Yonge Street (130 m North) • #28 – Gasoline and Associated Products Storage in Fixed Tanks • #10 – Commercial Autobody Shops 43 Alcorn Avenue (133 m West) • #28 – Gasoline and Associated Products Storage in Fixed Tanks Yonge Street and Summerhill (143 m North) • #NA² – Ontario Spill 1246 Yonge Street (146 m Northwest) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 35-37 Shaftesbury Avenue (150 m East) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 58-60 Alcorn Avenue (170 m Northwest) • #10 – Commercial Autobody Shops 1262 Yonge Street (184 m North) • #10 – Commercial Autobody Shops 47 Shaftesbury Avenue 189 m East • #NA³ – Coal Storage • #28 – Gasoline and Associated Products Storage in Fixed Tanks



Phase One CSM	Information Pertaining to Property
	<p>66 Birch Avenue (201 m West)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks <p>47 Summerhill Avenue (224 m Northeast)</p> <ul style="list-style-type: none"> • #28 – Gasoline and Associated Products Storage in Fixed Tanks
<p>ii. Any contaminants of potential concern</p>	<p>Contaminants of Potential Concern (CoPCs) identified the Property include:</p> <ul style="list-style-type: none"> • Metals in soil and groundwater • Hydride Forming Metals in soil and groundwater • VOCs in soil and groundwater • PHCs in soil and groundwater • BTEX in soil and groundwater • PAHs in soil and groundwater • PCBs in soil and groundwater • EC, SAR in soil • Na, Cl in groundwater
<p>iii. The potential for underground utilities, if any present, to affect contaminant distribution and transport</p>	<p>During the site inspection, connections for hydro, natural gas and communications were observed indicating underground utility connections. As such, there may be potential for underground utilities to affect the horizontal distribution or transport of contaminants.</p>



Phase One CSM	Information Pertaining to Property
<p>iv. Available regional or site specific geological and hydrogeological information</p>	<p>Topography</p> <ul style="list-style-type: none"> The OBM, Toporama, MNR and Google Earth maps were reviewed and it was identified that the elevation of the Property was approximately 124 m above sea level (masl). The Property flat lying with a gentle slope towards the south. <p>Hydrogeology</p> <ul style="list-style-type: none"> The nearest water body is an unnamed stream approximately 600 m east of the Property which drains into the Don River which is located approximately 2 km east of the Property. Based on the Water Well Records and Terraprobe's previous investigations in the local area, the depth to groundwater is expected to be approximately 4.6 to 11.6 mbgs. Groundwater and surface water are expected to flow to south towards Lake Ontario according to the MECP's Great Lakes watershed locator. <p>Geology (overburden)</p> <ul style="list-style-type: none"> Based on published geology and Terraprobe's previous investigations, the overburden material is expected to consist of silt to sandy silt/silty sand with trace gravel. <p>Geology (bedrock)</p> <ul style="list-style-type: none"> The bedrock on the site is of the Georgian Bay formation, which is comprised of shale, limestone, dolostone and siltstone. <p>Geology (depth to bedrock)</p> <ul style="list-style-type: none"> Based upon published geology, historic borehole information from the MNRF and Water Well Records in the vicinity from the MECP, the depth to bedrock in the area of the Property is approximately 40 mbgs.
<p>v. How any uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model</p>	<p>No uncertainty was encountered while conducting the Phase One ESA that could affect the validity of the model.</p>

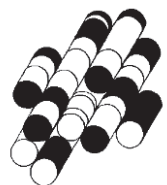
Figures:

- 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



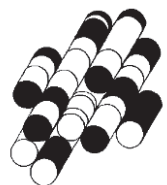
APPENDIX B

TERRAPROBE INC.



APPENDIX C

TERRAPROBE INC.





Hydraulic Conductivity Test Analysis Report

Project Reference No. 1-19-0603-46

Client: Birch Equities Limited

Location: 1196-1210 Yonge Street, 2-8 Birch Avenue, Toronto

Monitoring Well: BH1

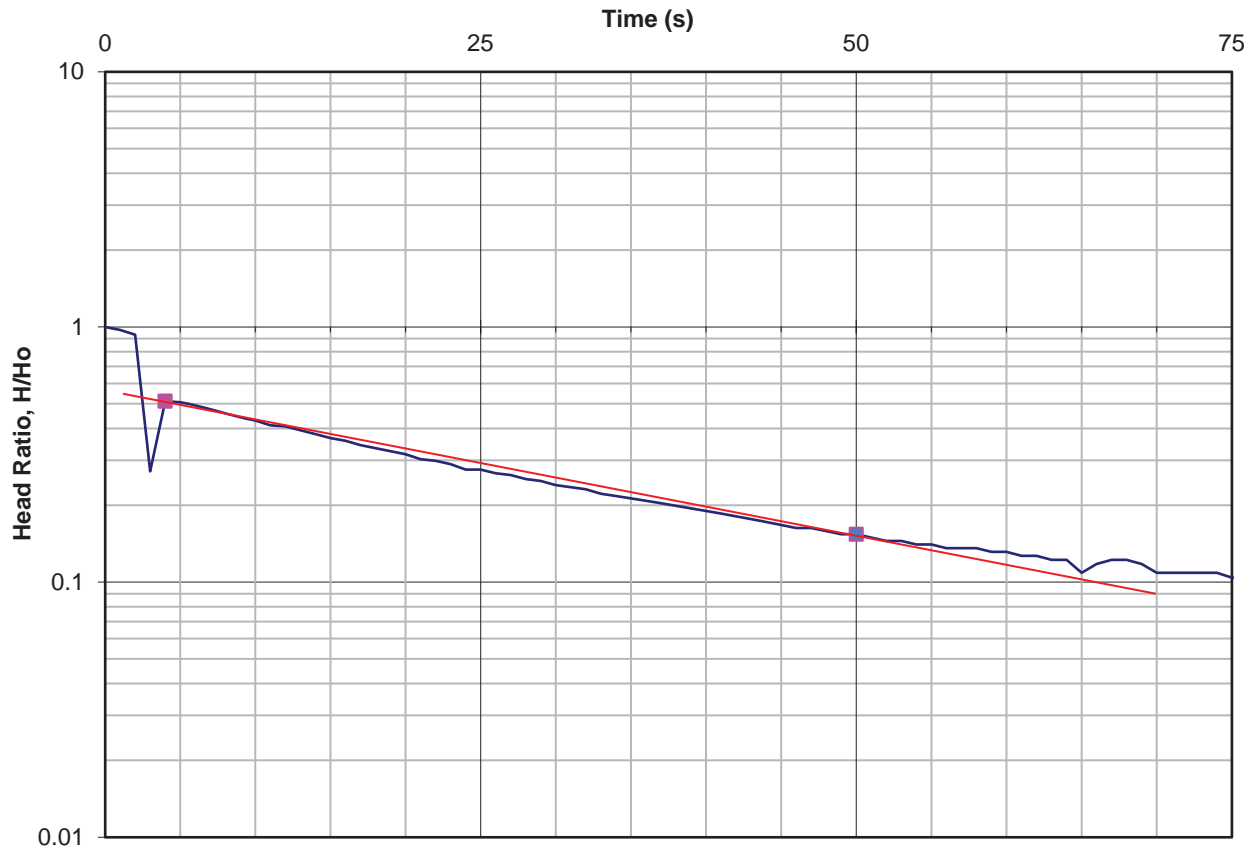
Test Conducted by: JB

Test Date: February 7, 2020

Analysis Performed by: NA

FHT

Aquifer Thickness: At least 6.3 m



Calculation using Bouwer and Rice, 1976

Observation Well	Hydraulic Conductivity (m/s)	Soil
BH1	8.99E-06	Silt and Sand to Silty Sand

FHT: Falling Head Test



Hydraulic Conductivity Test Analysis Report

Project Reference No. 1-19-0603-46

Client: Birch Equities Limited

Location: 1196-1210 Yonge Street, 2-8 Birch Avenue, Toronto

Monitoring Well: BH2

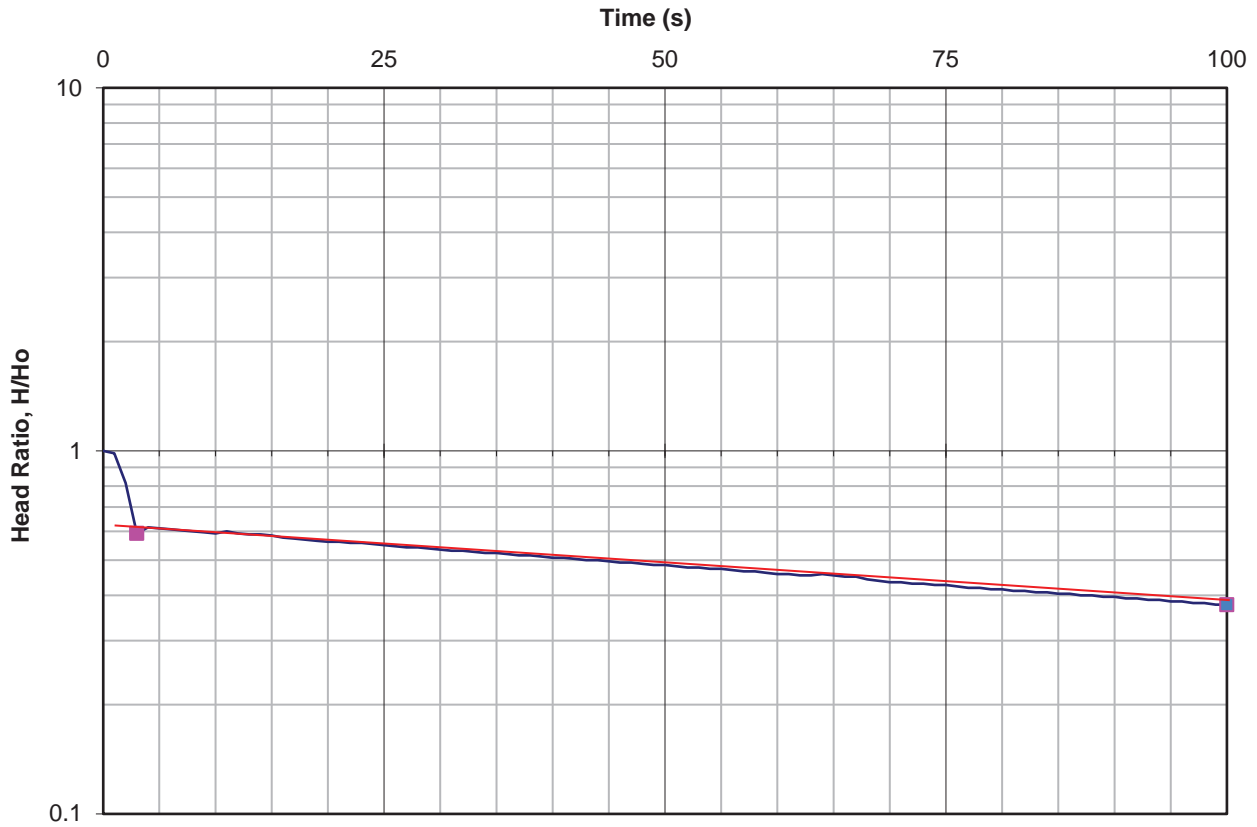
Test Conducted by: JB

Test Date: February 7, 2020

Analysis Performed by: NA

FHT

Aquifer Thickness: At least 7.7 m



Calculation using Bouwer and Rice, 1976

Observation Well	Hydraulic Conductivity (m/s)	Soil
BH2	1.60E-06	Silt and Sand to Silty Sand

FHT: Falling Head Test



Hydraulic Conductivity Test Analysis Report

Project Reference No. 1-19-0603-46

Client: Birch Equities Limited

Location: 1196-1210 Yonge Street, 2-8 Birch Avenue, Toronto

Monitoring Well: BH3

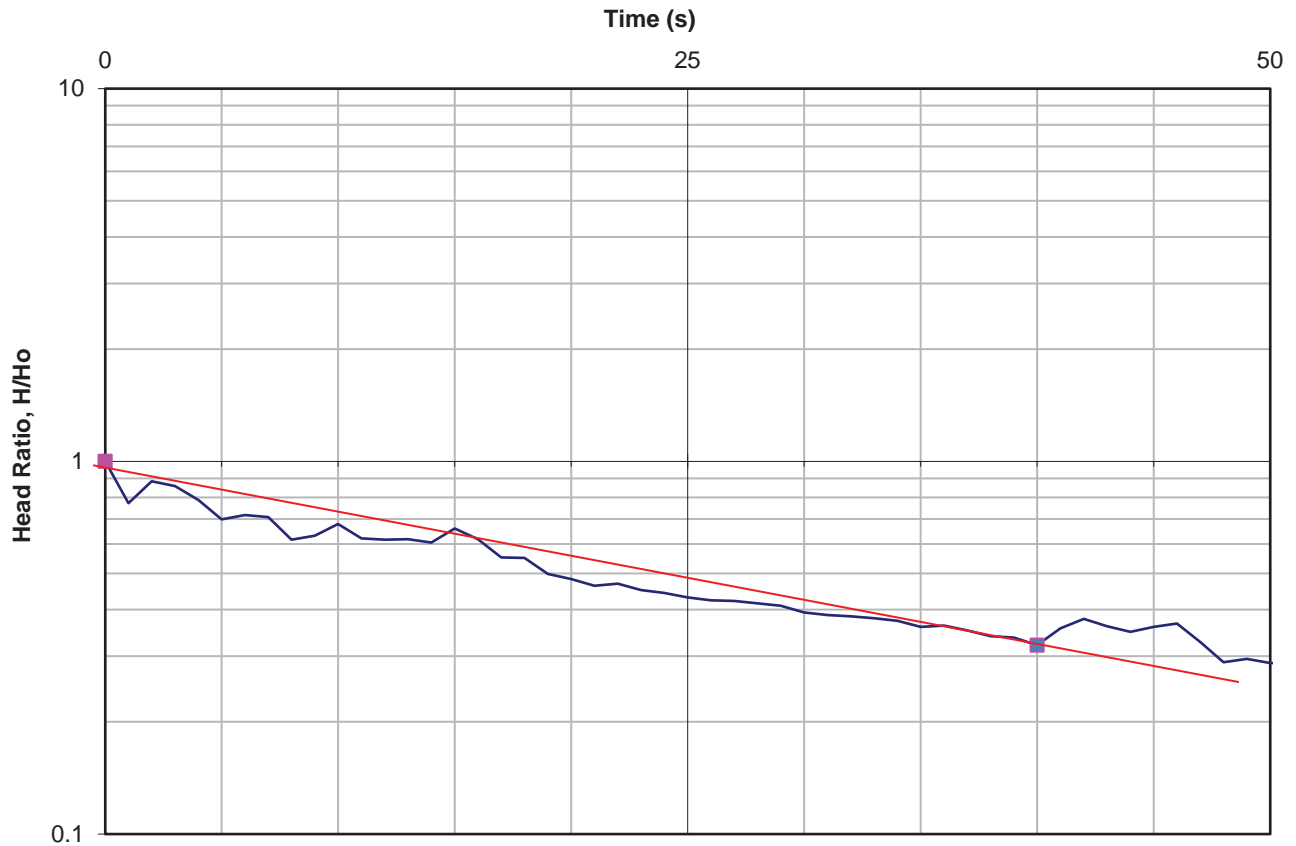
Test Conducted by: H.H

Test Date: November, 10, 2019

Analysis Performed by: NA

FHT

Aquifer Thickness: At least 7.9 m



Calculation using Bouwer and Rice, 1976

Observation Well	Hydraulic Conductivity (m/s)	Soil
BH3	9.77E-06	Silt and Sand to Silty Sand

FHT: Falling Head Test



Hydraulic Conductivity Test Analysis Report

Project Reference No. 1-19-0603-46

Client: Birch Equities Limited

Location: 1196-1210 Yonge Street, 2-8 Birch Avenue, Toronto

Monitoring Well: BH4D

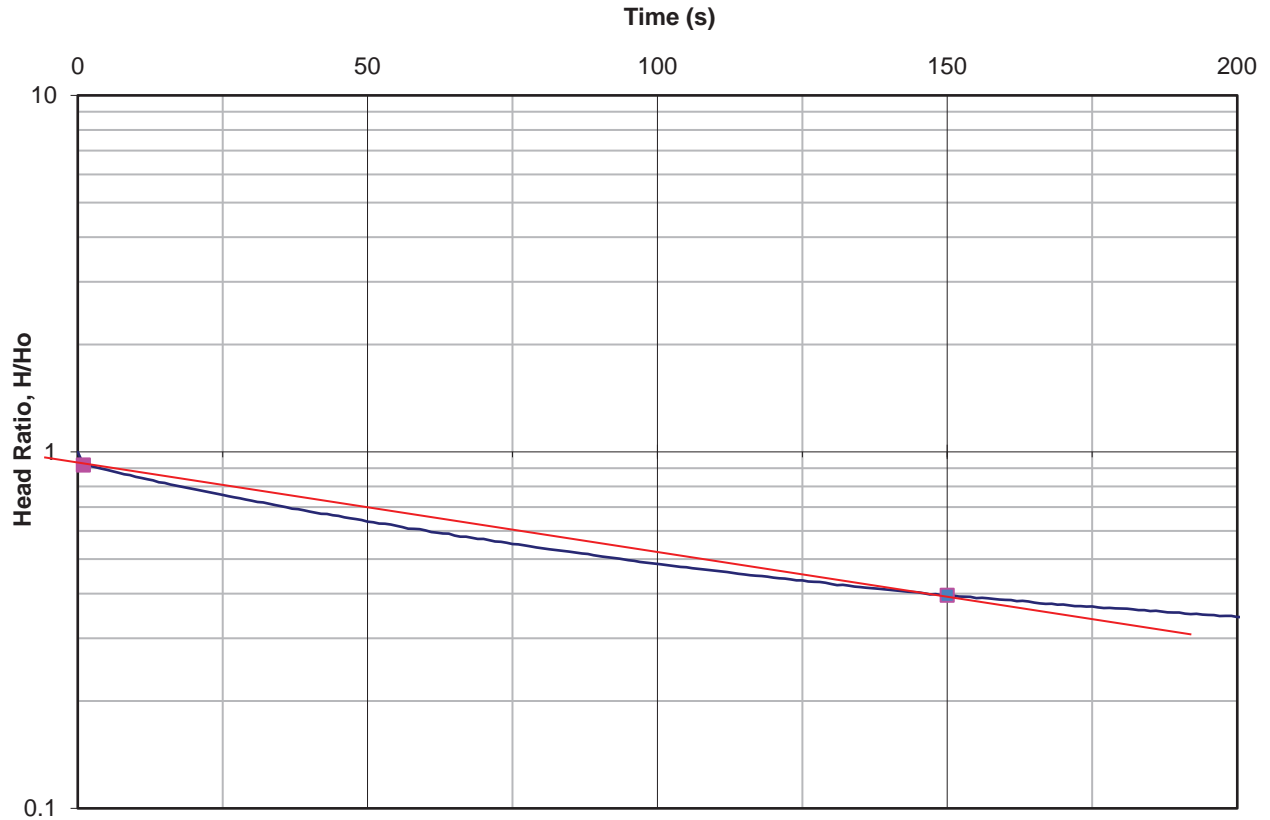
Test Conducted by: H.H

Test Date: November, 10, 2019

Analysis Performed by: NA

FHT

Aquifer Thickness: At least 16.9 m



Calculation using Bouwer and Rice, 1976

Observation Well	Hydraulic Conductivity (m/s)	Soil
BH4D	1.94E-06	Silt and Sand to Silty Sand

FHT: Falling Head Test



Hydraulic Conductivity Test Analysis Report

Project Reference No. 1-19-0603-46

Client: Birch Equities Limited

Location: 1196-1210 Yonge Street, 2-8 Birch Avenue, Toronto

Monitoring Well: BH5

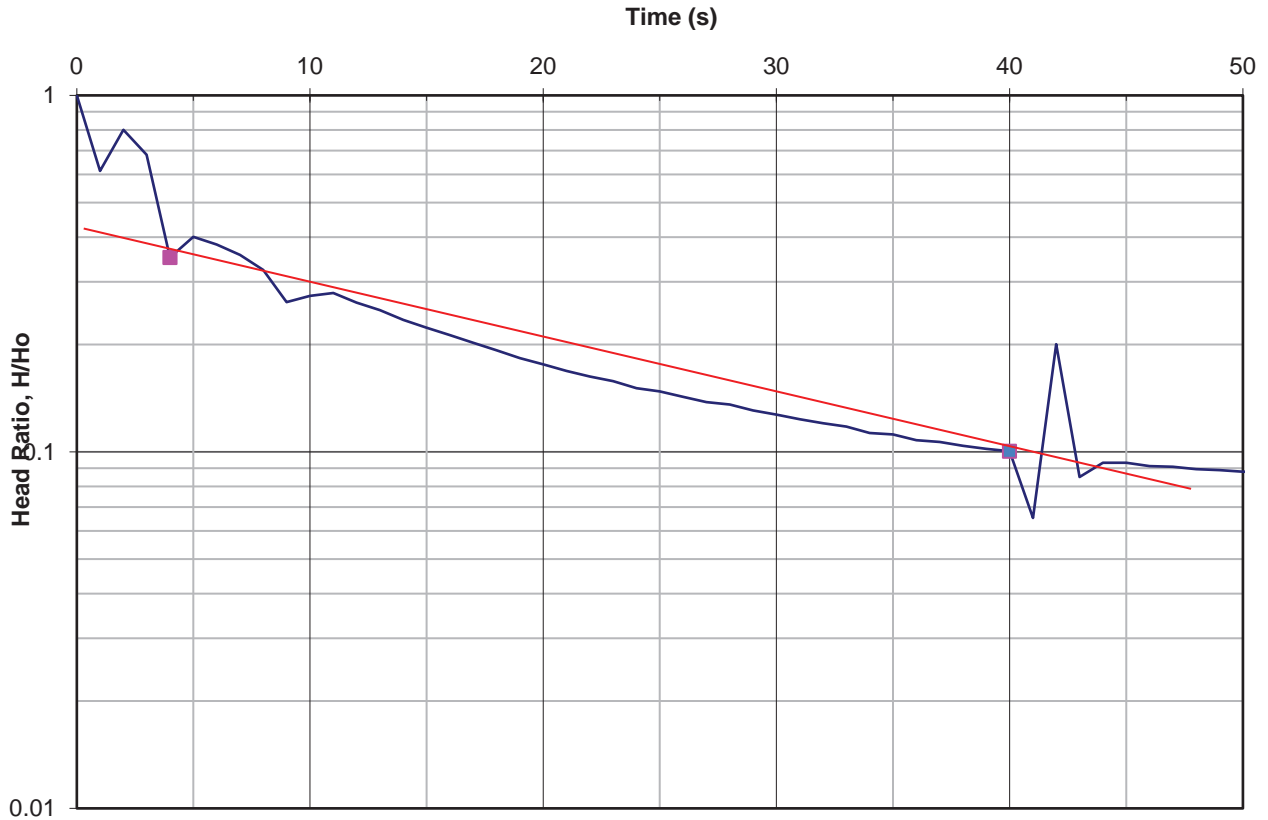
Test Conducted by: H.H

Test Date: November, 10, 2019

Analysis Performed by: NA

FHT

Aquifer Thickness: At least 11.9 m



Calculation using Bouwer and Rice, 1976

Observation Well	Hydraulic Conductivity (m/s)	Soil
BH5	1.20E-05	Silt and Sand to Silty Sand

FHT: Falling Head Test



Hydraulic Conductivity Test Analysis Report

Project Reference No. 1-19-0603-46

Client: Birch Equities Limited

Location: 1196-1210 Yonge Street, 2-8 Birch Avenue, Toronto

Monitoring Well: BH6

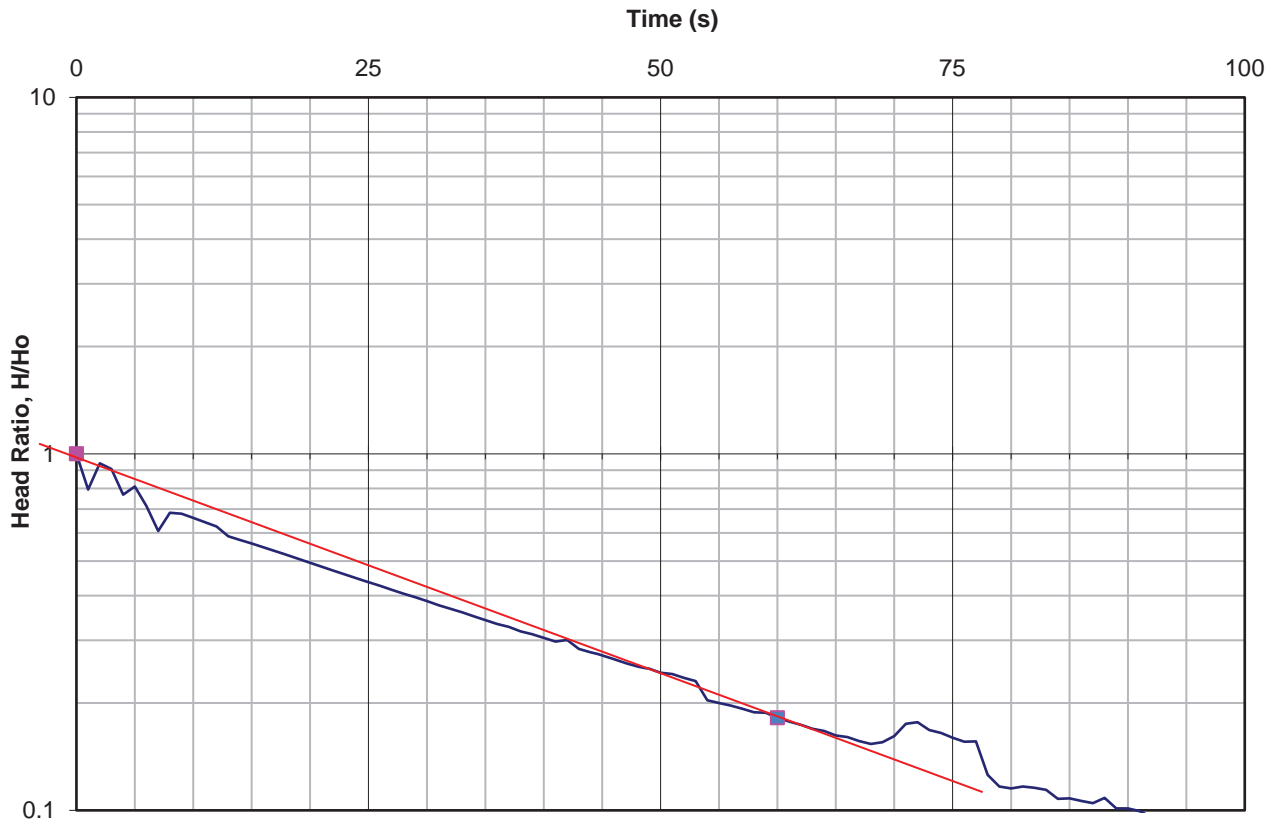
Test Conducted by: H.H

Test Date: November, 11, 2019

Analysis Performed by: NA

FHT

Aquifer Thickness: At least 8.1 m



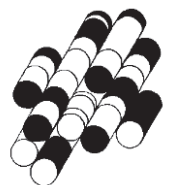
Calculation using Bouwer and Rice, 1976

Observation Well	Hydraulic Conductivity (m/s)	soil
BH6	9.78E-06	Silt and Sand to Silty Sand

FHT: Falling Head Test

APPENDIX D

TERRAPROBE INC.



March 24, 2020

Terrabrobe Inc.
11 Indell Lane
Brampton, Ontario
L6T 3Y3

File No: 1-19-0603

Attention: Kossay Makhzoumi

Dear Sir/Madam:

Re: 1196, 1198, 1202, 1204, 1206, 1208 & 1210 Yonge Street and 2, 4, 6, 8 Birch Avenue, Toronto, Ontario

Your Notice of Intention dated March 10, 2020 pursuant to Section 35(3)(d) of Ontario Regulation 153/04 to apply non-potable ground water site condition standards.

Please be advised that we have no objection to non-potable ground water site condition standards being applied in the preparation of a Record of Site Condition for the subject property.

Yours truly,

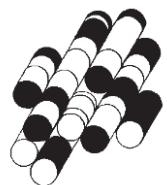
A handwritten signature in blue ink, consisting of a stylized, cursive name followed by a long horizontal line extending to the right.

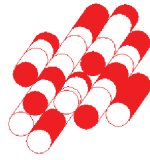
for
Avi Bachar, PMP, P.Eng.
Manager, Development Engineering,
Toronto & East York District

AV/aw

APPENDIX E

TERRAPROBE INC.





Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

File No. 1-19-0603-42

Brampton Office

**RE: SAMPLING AND ANALYSIS PLAN (SAP)
1196-1210 YONGE STREET & 2-8 BIRCH AVENUE
TORONTO, 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 1196-1210 Yonge Street & 2-8 Birch Avenue, in the City of Toronto, 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.

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Northern Ontario

1012 Kelly Lake Rd., Unit 1
Sudbury, Ontario P3E 5P4
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www.terraprobe.ca

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 E. 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:

- Excavating; and,
- 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 potential off-site sources which include commercial auto body shops located at multiple locations in the study area, as well as dry cleaning businesses at 1218 Yonge Street, 1153 Yonge Street, 4 Alcorn Street, and 1224 Yonge Street, multiple fuel storage tanks in the study area, metal treatment and fabrication at 1230 & 1234 Yonge Street, a paint manufacturing facility at 1268 Yonge Street, and a waste disposal facility at 10 Alcon Avenue. The APEC covers the north portion of the Property. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs), polychlorinated Biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.
2. APEC 2 is the result of potential off-site sources which include multiple commercial auto body shops, a wood and metal manufacturing facility, former fuel storage tanks at 24 Birch Avenue and 24 & 43 Alcorn Avenue. The APEC includes the west portion of the Property. COPCs are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.
3. APEC 3 is the result of potential off-site sources which include bulk storage of coal and fuel storage tanks at 47 Shaftsbury Avenue and multiple fuel storage tanks at 35-37 Shaftsbury



Avenue. The APEC includes the east portion of the Property. COPCs are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.

4. APEC 4 is the result of potential off-site sources which include multiple fuel storage tanks, multiple commercial auto body shops, storage of chemicals at 1119 Yonge Street and bulk storage of coal at 1129 Yonge Street. The APEC includes the south portion of the Property. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs), polychlorinated Biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil and ground water.
5. APEC 5 is the result of a potential onsite source consisting of an above ground fuel storage tanks located at 1206 Yonge Street. The APEC includes the north-central portion of the Property. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
6. APEC 6 is the result of a potential onsite source consisting of a lead exceedance identified in a previous investigation on the Property. The APEC includes the north-central portion of the Property. Contaminants of Potential Concern (COPCs) are metals. The COPCs may have impacted the soil and ground water.
7. APEC 7 is the result of a potential onsite source consisting of an exceedance identified in a previous investigation on the Property. The APEC includes the western portion of the Property. Contaminants of Potential Concern (COPCs) are Electric Conductivity, Sodium Adsorption Ratio, Sodium, and Chloride. The COPCs may have impacted the soil and ground water.
8. APEC 8 is the result of a potential onsite source consisting of an exceedance identified in a previous investigation on the Property. The APEC includes the south-central portion of the Property. Contaminants of Potential Concern (COPCs) are Electric Conductivity, Sodium Adsorption Ratio, Sodium, and Chloride. The COPCs may have impacted the soil and ground water.
9. APEC 9 is the result of a potential onsite source consisting of dry cleaners located at 1208 Yonge Street. The APEC includes the northern portion of the Property. Contaminants of Potential Concern (COPCs) are volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
10. APEC 10 is the result of a potential onsite source consisting of bulk storage of paints identified at 1208 Yonge Street. The APEC includes the northern portion of the Property. Contaminants of Potential Concern (COPCs) are metals and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
11. APEC 11 is the result of a potential onsite source consisting of a former waste generator identified at 1196 Yonge Street. The APEC includes the eastern portion of the Property. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
12. APEC 12 is the result of a potential onsite source consisting of a former wood treatment facility identified at 1196 Yonge Street. The APEC includes the eastern portion of the Property. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile



organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs). 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 note book. 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 will be developed using a Waterra™ 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 YSI Multi-Probe 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

An elevation survey is conducted to obtain vertical control of the monitoring well locations at the Property. The elevation at the borehole locations within the underground parking garage and the finished ground surface elevation were derived from the drawings provided by Cushman and Wakefield. (*Plan Garage Level "C" and Plot Plan*, prepared by John B. Parkin Associate, dated June 25, 1985). 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, hydride forming metals, sodium, ORPs, PHCs, VOCs 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 and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 1: North portion of the Property	Off-Site 1212 Yonge Street	#10 – Commercial Autobody Shops	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	BH5 BH6
	Off-Site 13 Alcorn Avenue				
	Off-Site 8 Shaftesbury Avenue				
	Off-Site 1240 Yonge Street				



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 1: North portion of the Property	Off-Site 58-60 Alcorn Avenue				BH5 BH6
	Off-Site 1262 Yonge Street				
	Off-Site 1218 Yonge Street	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	Soil and groundwater	
	Off-Site 1153 Yonge Street				
	Off-Site 4 Alcorn Avenue				
	Off-Site 1224 Yonge Street	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	Soil and groundwater	
	Off-Site 1155 Yonge Street				
	Off-Site 1139 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 1143 Yonge Street				



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 1: North portion of the Property	Off-Site 14 Shaftesbury Avenue				BH5 BH6
	Off-Site 1228 Yonge Street				
	Off-Site 1161 Yonge Street				
	Off-Site 10 Alcorn Avenue				
	Off-Site 1179 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 1240 Yonge Street				
	Off-Site 1246 Yonge Street				
	Off-Site 1230 Yonge Street	#33 – Metal Treatment, Coating, Plating and Fabrication	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 1234 Yonge Street				



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 1: North portion of the Property	Off-Site 10 Alcorn Avenue	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biooils as soil conditioners.	Metals, Hydride Forming Metals, PHCs (F1-F4), VOCs, BTEX, PAHs, PCBs	Soil and groundwater	BH5 BH6
	Off-Site Opposite 30 Shaftesbury Avenue	#NA ² – Ontario Spills	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site Yonge Street and Summerhill				
	Off-Site 1268 Yonge Street	#39 – Paint Manufacturing, Processing and Bulk Storage	Metals, VOCs		
APEC 2: West portion of the Property	Off-Site 10 Birch Avenue	#10 – Commercial Autobody Shops	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	BH1 BH3 BH4 BH5
	Off-Site 24 Birch Avenue				
	Off-Site 10 Birch Avenue	#59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and groundwater	
	Off-Site 10 Birch Avenue	#33 – Metal Treatment, Coating, Plating and Finishing	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 24 Birch Avenue	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 2: West portion of the Property	Off-Site 22 Alcorn Avenue				BH1 BH3 BH4 BH5
	Off-Site 32 Alcorn Avenue				
	Off-Site 43 Alcorn Avenue				
APEC 3: East section of the Property	Off-Site 1139 Yonge Street	#NA ³ – Coal storage	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and groundwater	BH2 BH6
	Off-Site 25 Shaftesbury Avenue	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 35-37 Shaftesbury Avenue				
APEC 4 South Portion of the Property	Off-Site 11 Birch Avenue	#NA ¹ – Waste Generator	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	BH1 BH2 BH3
	Off-Site 11 Birch Avenue	#18 – Electricity Generation, Transformation and Power Station	PCBs	Soil and groundwater	



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 4 South Portion of the Property	Off-Site 15-21 Birch Avenue	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	BH1 BH2 BH3
	Off-Site 1176 Yonge Street				
	Off-Site 1119 Yonge Street				
	Off-Site 1174 Yonge Street				
	Off-Site 1109 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 66 Birch Avenue				
	Off-Site 1119 Yonge Street	#8 – Chemical Manufacturing, Processing and Bulk Storage	Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 1121 Yonge Street				
	Off-Site 1111 Yonge Street				
	Off-Site 29 Birch Avenue	#10 – Commercial Autobody Shops	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	
	Off-Site 31 Birch Avenue				
	Off-Site 1109 Yonge Street				
	Off-Site 1129 Yonge Street	#NA ³ – Coal storage	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and groundwater	



Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)	Borehole / Monitoring Well for Sampling
APEC 5: North-central section of Phase One Property	On-Site 1206 Yonge Street	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	BH6
APEC 6: North-central section of Phase One Property	On Site 1206 Yonge Street	#NA ⁴ – Exceedance from previous investigation	Metals	Soil and groundwater	BH6
APEC 7: West section of Phase One Property	On Site 8 Birch Avenue	#NA ⁴ – Exceedance from previous investigation	EC, SAR	Soil	BH4
			Na, Cl	Groundwater	
APEC 8: South-central portion of Phase One Property	On-Site Phase One Property	#NA ⁴ – Exceedance from previous investigation	EC, SAR	Soil	BH2
			Na, Cl	Groundwater	
APEC 9: North Section of Phase One Property	On-Site 1208 & 1210 Yonge Street	#37 – Operation of Dry Cleaning Equipment (where chemicals are used)	VOCs	Soil and groundwater	BH5 BH6
APEC 10: North Section of Phase One Property	On-Site 1208 Yonge Street	#39 – Paint Manufacturing, Processing and Bulk Storage	Metals, VOCs	Soil and groundwater	BH5 BH6
APEC 11: East portion of Phase One Property	On-Site 1196 Yonge Street	#NA ¹ – Waste Generator	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX	Soil and groundwater	BH2 BH6
APEC 12: East portion of Phase One Property	On-Site 1196 Yonge Street	#59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	Metals, Hydride Forming Metals, VOCs, PHCs (F1-F4), BTEX, PAHs	Soil and groundwater	BH2 BH6



7.1 Plan of Implementation

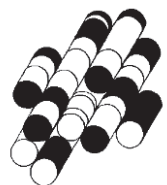
Borehole	Rationale	APEC	Chemical Analyses	
			Soil	GW
BH1	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	<i>APEC 2</i> <i>APEC 4</i>	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB
BH2	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.	<i>APEC 4</i> <i>APEC 3</i> <i>APEC 8</i> <i>APEC 11</i> <i>APEC 12</i>	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB
BH3	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.	<i>APEC 2</i> <i>APEC 4</i>	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB
BH4	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.	<i>APEC 2</i> <i>APEC 7</i>	2 Metals 2 H-M 2 PHCs 3 VOCs 2 BTEX 1 PAH	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH
BH5	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.	<i>APEC 1</i> <i>APEC 2</i> <i>APEC 9</i> <i>APEC 10</i>	3 Metals 3 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB

Borehole	Rationale	APEC	Chemical Analyses	
			Soil	GW
BH6	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.	<i>APEC 1</i> <i>APEC 3</i> <i>APEC 5</i> <i>APEC 6</i> <i>APEC 9</i> <i>APEC 10</i> <i>APEC 11</i> <i>APEC 12</i>	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH 2 PCB



APPENDIX F

TERRAPROBE INC.





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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.

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- 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 (hand 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



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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.

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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.*



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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)
- Controller 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

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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



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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 Calibration

- 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)

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- 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.*



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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.

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- 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 $\frac{1}{4}$ casing volume). If the purge volume is large, measurements taken every $\frac{1}{2}$ to 1 casing volume may be sufficient.
 - b. Stabilization occurs when:
 - i. Conductivity ($\pm 3\%$),
 - ii. Temperature ($\pm 3\%$),
 - 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



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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.

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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 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 ($\pm 10\%$ for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Dissolved Oxygen ($\pm 10\%$ 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 ($\pm 3\%$),
 - iv. Temperature ($\pm 3\%$),
 - 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 Parameters 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



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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.

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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*



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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.

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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



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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

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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.

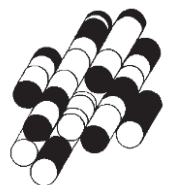
7. Open the monitoring well and take initial readings (ie; head space air monitor readings, water level, well depth) and record in the field notebook.
8. Organize equipment.
9. Bailing the monitoring well:
 - a. Calculate casing volume to determine the ideal amount to be purged (three casing volumes).
 - 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 contaminants 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 ($\pm 10\%$ for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Conductivity ($\pm 3\%$),
 - iii. Temperature ($\pm 3\%$),
 - iv. pH (± 0.1 unit),
 - d. Dispose of purged water in barrels if known or suspected contaminants 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, 1999*

APPENDIX G

TERRAPROBE INC.



Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SM

Date started : January 28, 2020

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 2

Location : Toronto, Ontario

Checked by : SZ

Position : E: 629619, N: 4837747 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Truck-mounted

Drilling Method : Hollow stem augers



Depth Scale (m)	SOIL PROFILE		SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments UNSTABILIZED WATER LEVEL GRAIN SIZE DISTRIBUTION (%) (MT) GR SA SI CL
	Elev Depth (m)	Description	Graphic Log	Number	Type			SPT 'N' Value	Plastic Limit	Natural Water Content			
0	123.6	GROUND SURFACE											
0.2	123.4	50mm ASPHALTIC CONCRETE											
		200mm AGGREGATE											
		FILL, sandy silt, some clay, trace gravel, compact, brown, moist		1	SS	12					PID: 0 FID: 0		SS1 Analysis: Metals, PAH, PCB, .pH
1	122.8	SILTY SAND, trace to some clay, trace gravel, dense to very dense, brown, moist (GLACIAL TILL)		2	SS	36					PID: 0 FID: 0		SS2 Analysis: VOC, PHC
2				3	SS	85					PID: 30 FID: 1		SS3 Analysis: Metals, PAH, PCB, .pH
				4	SS	89 / 275mm					PID: 5 FID: 0		
				5	SS	63					PID: 0 FID: 0		
5	119.0	SILT AND SAND to SILTY SAND, trace gravel, trace clay, very dense, grey, wet		6	SS	50 / 125mm					PID: 0 FID: 0		
6		...some gravel		7	SS	79					PID: 10 FID: 1		SS7 Analysis: VOC, PHC
8				8	SS	50 / 150mm					PID: 0 FID: 1		
9				9	SS	50 / 125mm					PID: 0 FID: 1		0 59 38 3

file: 1-19-0603-01 bh logs.gpj

(continued next page)

Project No. : 1-19-0603-01 Client : Birch Equities Limited Originated by : SM
 Date started : January 28, 2020 Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue Compiled by : AR
 Sheet No. : 2 of 2 Location : Toronto, Ontario Checked by : SZ

Position : E: 629619, N: 4837747 (UTM 17T) Elevation Datum : Geodetic
 Rig type : Truck-mounted Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE		SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type			SPT 'N' Value	Plastic Limit	Natural Water Content			
10	(continued)												
112.7	SILT AND SAND to SILTY SAND , trace gravel, trace clay, very dense, grey, wet (continued)		10	SS	50 / 125mm	113							
10.9													

END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Feb 7, 2020	5.0	118.6
Feb 20, 2020	5.0	118.6
Mar 4, 2020	5.0	118.7

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SM

Date started : January 6, 2020

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 2

Location : Toronto, Ontario

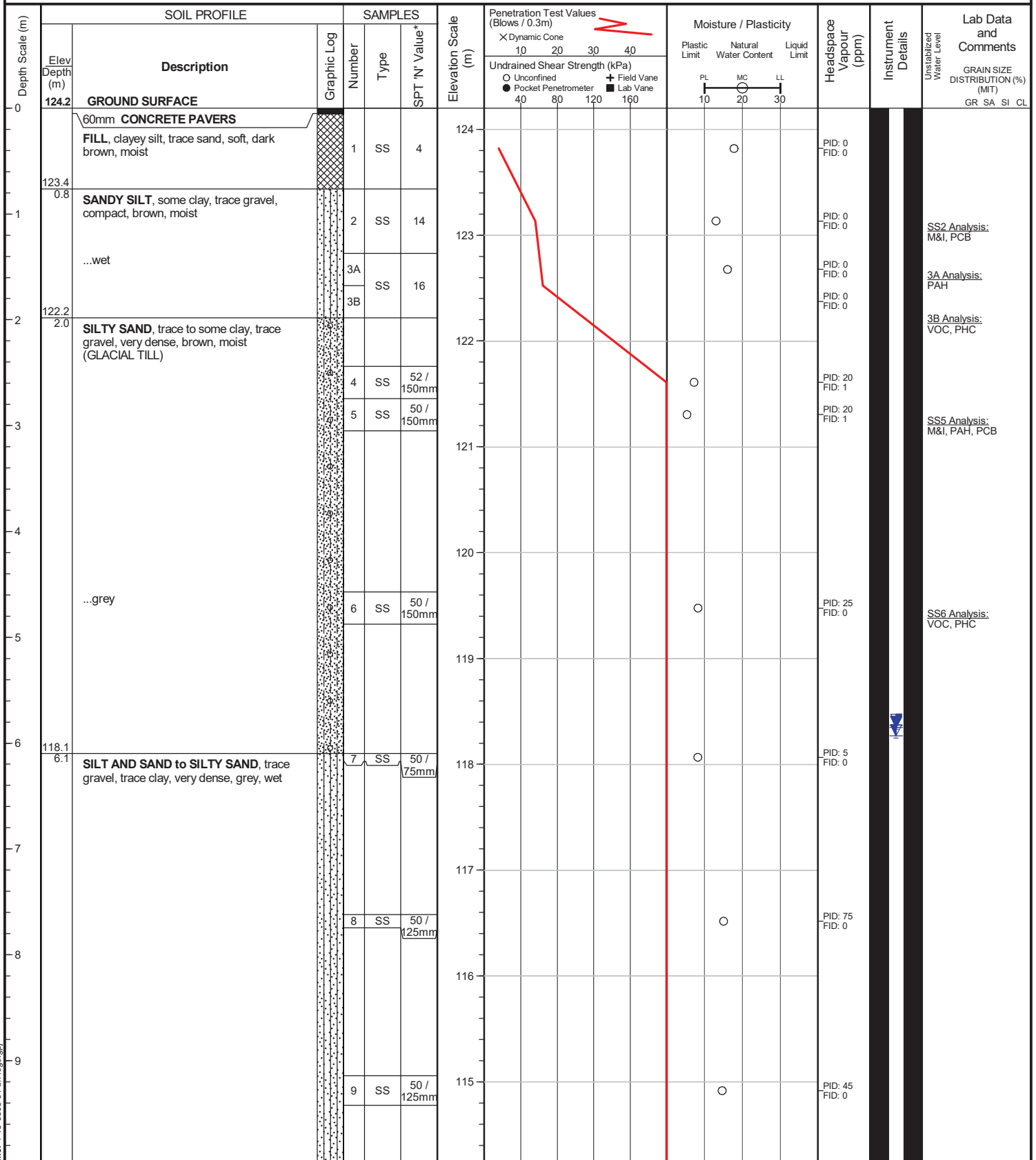
Checked by : SZ

Position : E: 629626, N: 4837750 (UTM 17T)

Elevation Datum : Geodetic

Rig type : LAR drill rig w/ 70lb hammer

Drilling Method : Tri-cone (mud rotary)



file: 1-19-0603-01 bh logs.gpj

(continued next page)

* SPT N-values corrected based on energy of 32 kg hammer dropped 760 mm

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SM

Date started : January 6, 2020

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 2 of 2

Location : Toronto, Ontario

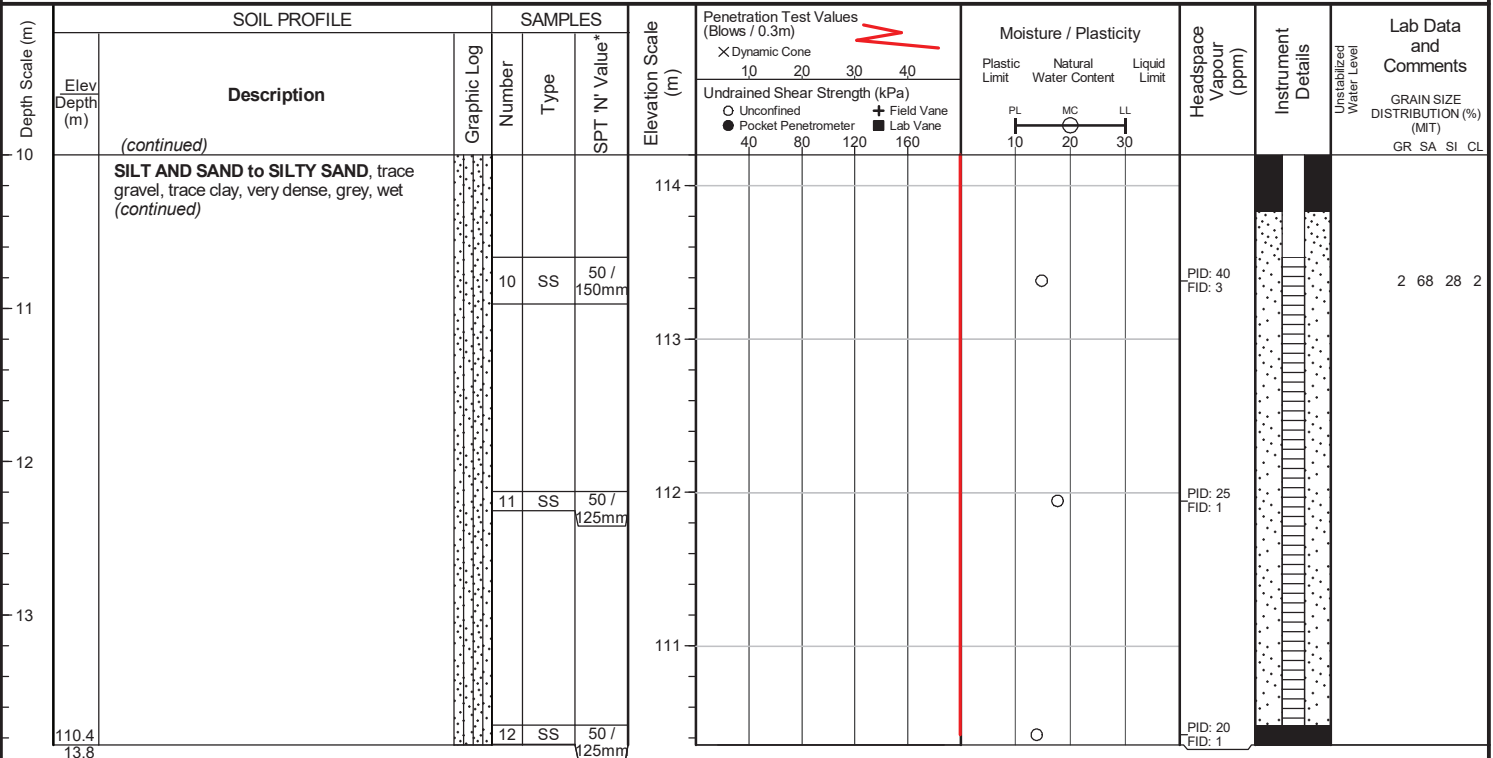
Checked by : SZ

Position : E: 629626, N: 4837750 (UTM 17T)

Elevation Datum : Geodetic

Rig type : LAR drill rig w/ 70lb hammer

Drilling Method : Tri-cone (mud rotary)


END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Feb 7, 2020	5.9	118.3
Feb 20, 2020	5.8	118.4
Mar 4, 2020	5.9	118.4

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : DH

Date started : October 24, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 2

Location : Toronto, Ontario

Checked by : SZ

Position : E: 629619, N: 4837749 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE		SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments Unstabilized Water Level GRAIN SIZE DISTRIBUTION (%) (MT) GR SA SI CL
	Elev Depth (m)	Description	Graphic Log	Number	Type			SPT 'N' Value	Plastic Limit	Natural Water Content			
0	124.3	GROUND SURFACE											
0.3	124.0	50mm ASPHALTIC CONCRETE											
0.3	124.0	200mm AGGREGATE											
0.8	123.5	FILL, silt, some sand, trace brick fragments, loose, dark brown, moist											SS1 Analysis: Metals, PAH, PCB
0.8	123.5	FILL, sandy silt, some gravel, trace clay, compact to dense, brown, moist											SS2 Analysis: VOC, PHC
		...stone fragments											
2.1	122.2	SILTY SAND, trace to some clay, trace gravel, very dense, grey, moist (GLACIAL TILL)											
		...some gravel											11 55 27 7
			4	SS	50 / 25mm								
			5	SS	71								
			6	SS	84 / 275mm								SS6 Analysis: Metals, PAH, PCB
6.1	118.2	SILT AND SAND to SILTY SAND, trace gravel, trace clay, dense to very dense, brown, moist											
		...wet below											wet sampler
			7	SS	72								SS8 Analysis: VOC, PHC
			8	SS	73								
			9	SS	41								

file: 1-19-0603-01 bh logs.gpj

(continued next page)

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : DH

Date started : October 24, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 2 of 2

Location : Toronto, Ontario

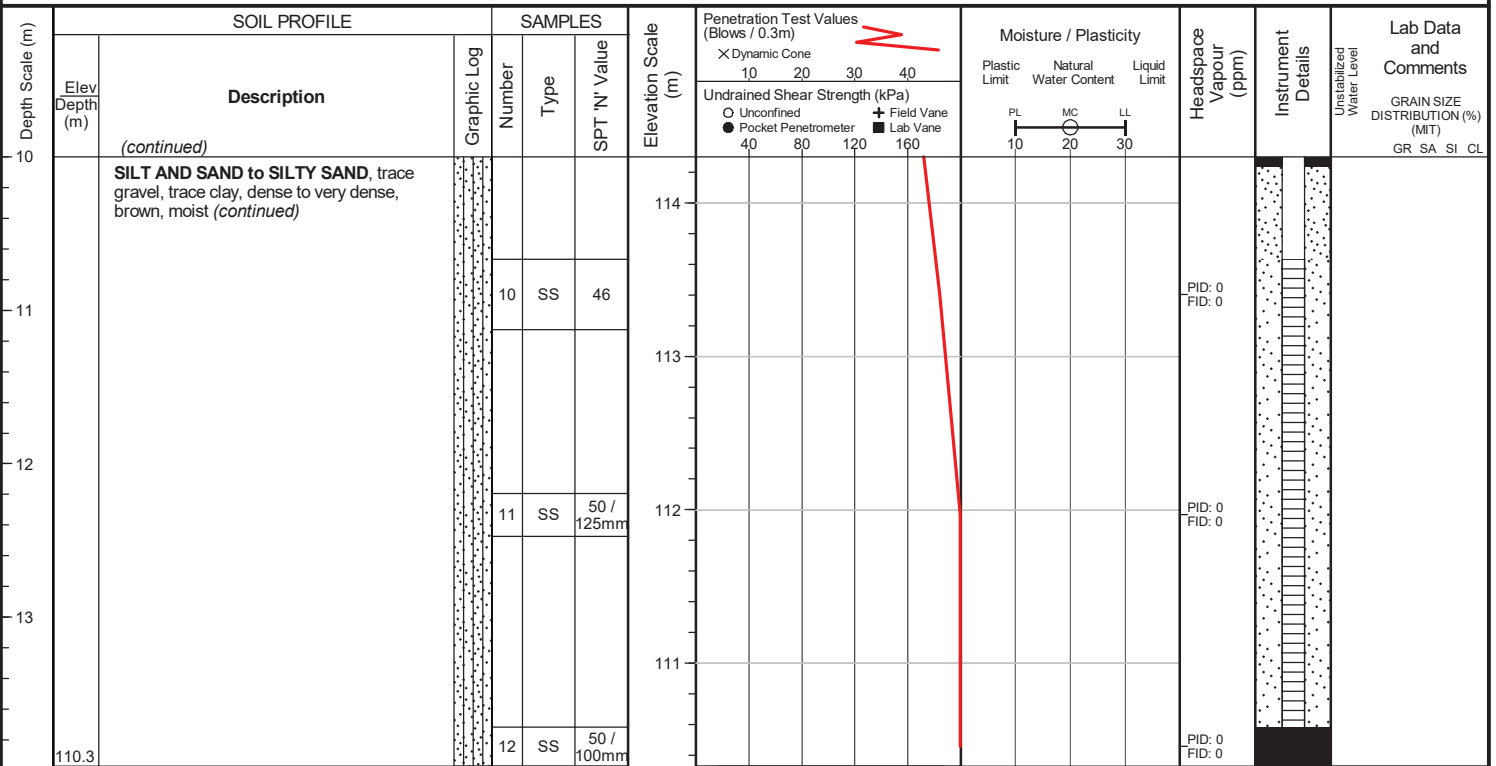
Checked by : SZ

Position : E: 629619, N: 4837749 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers


END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Dec 10, 2019	5.7	118.6
Feb 7, 2020	5.5	118.8
Feb 20, 2020	5.4	118.9
Mar 4, 2020	5.4	118.9

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : NK

Date started : October 23, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 3

Location : Toronto, Ontario














Checked by : SZ

Position : E: 629616, N: 4837760 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments Unstabilized Water Level GRAIN SIZE DISTRIBUTION (%) (MT) GR SA SI CL	
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value			Plastic Limit	Natural Water Content	Liquid Limit				
0	124.4	GROUND SURFACE													
		600mm AGGREGATE		1	SS	9	124					PID: 0 FID: 0			SS1 Analysis: M&I, VOC, PHC
0.6	123.8	FILL, clayey silt, some sand, trace gravel, very soft, brown, moist		2	SS	2	123.8					PID: 0 FID: 0			SS2 Analysis: PAH
1.5	122.9	FILL, silty sand, trace clay, trace gravel, compact, brown, moist		3	SS	18	123					PID: 0 FID: 0			SS3 Analysis: Metals
2.3	122.1	SILTY SAND, trace to some clay, trace gravel, very dense, greyish brown, moist (GLACIAL TILL)		4	SS	59	122.1					PID: 0 FID: 0			
				5	SS	97 / 225mm	121					PID: 5 FID: 1			SS5 Analysis: PHC, EC/SAR
				6	SS	81 / 275mm	120					PID: 5 FID: 0			
				7	SS	85	119					PID: 0 FID: 0			7 66 23 4 SS7 Analysis: VOC, EC/SAR
				8	SS	75	119					PID: 5 FID: 0			SS8 Analysis: VOC
6.1	118.3	SILT AND SAND to SILTY SAND, trace gravel, trace clay, dense to very dense, greyish brown, wet		9	SS	66	118.3					PID: 0 FID: 0			SS9 Analysis: EC/SAR
				10	SS	52	117					PID: 0 FID: 0			
				11	SS	47	116					PID: 0 FID: 0			
				12	SS	39	115					PID: 0 FID: 0			
				13	SS	79 / 275mm	115					PID: 0 FID: 0			

file: 1-19-0603-01 bh logs.gpj

(continued next page)

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : NK

Date started : October 23, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 2 of 3

Location : Toronto, Ontario

Checked by : SZ

Position : E: 629616, N: 4837760 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments UNSTABILIZED WATER LEVEL GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL	
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value			Plastic Limit	Natural Water Content	Liquid Limit				
10	(continued)														
	SILT AND SAND to SILTY SAND, trace gravel, trace clay, dense to very dense, greyish brown, wet (continued)														
11	...at 10.8 m, grey below														
12				14	SS	34	114								
13				15	SS	38	113								
14				16	SS	46	112								
15				17	SS	45	112								
16				18	SS	50 / 125mm	110								
17				19	SS	50 / 125mm	109								
18				20	SS	89 / 150mm	107								
19				21	SS	50 / 75mm	106								
20				22	SS	50 /	105								

file: 1-19-0603-01 bh logs.gpj

(continued next page)

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : NK

Date started : October 23, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 3 of 3

Location : Toronto, Ontario

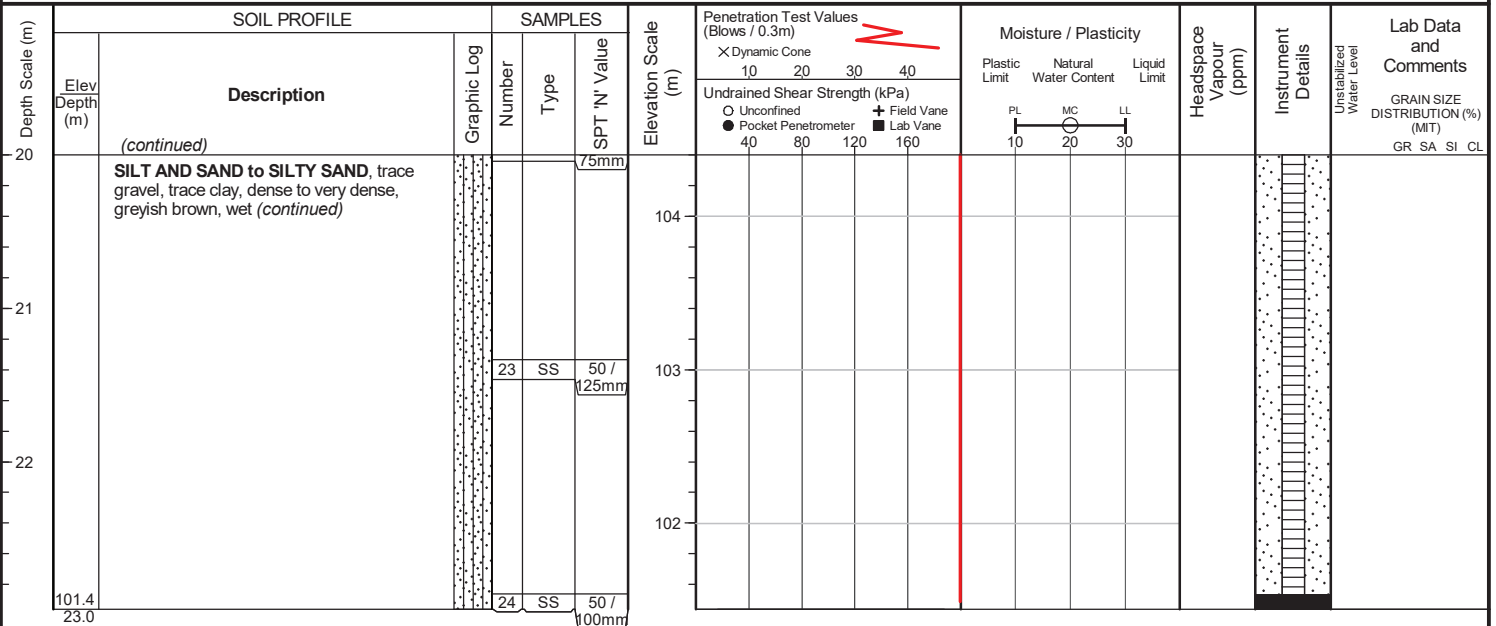
Checked by : SZ

Position : E: 629616, N: 4837760 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers


END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Dec 10, 2019	7.4	117.0
Feb 7, 2020	7.0	117.4
Feb 20, 2020	6.9	117.5
Mar 4, 2020	7.0	117.5

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : NK

Date started : October 23, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 1

Location : Toronto, Ontario

Checked by : SZ

Position : E: 629615, N: 4837762 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE		SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
	Elev Depth (m)	Description	Graphic Log	Number	Type			SPT 'N' Value	Plastic Limit	Natural Water Content			
0	124.4	GROUND SURFACE											
0		Augered to 7.6m below ground surface without sampling.											
1													
2													
3													
4													
5													
6													
7													
	116.8												
	7.6												

END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Dec 10, 2019	5.9	118.5
Feb 7, 2020	5.7	118.7
Feb 27, 2020	5.7	118.7
Mar 4, 2020	5.6	118.8

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SD

Date started : October 25, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 2

Location : Toronto, Ontario




Checked by : SZ

Position : E: 629615, N: 4837767 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) ○ Unconfined + Field Vane ● Pocket Penetrometer ■ Lab Vane 40 80 120 160	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments Unstabilized Water Level GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL	
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value			Plastic Limit	Natural Water Content	Liquid Limit				
0	124.6	GROUND SURFACE													
		FILL, sand and gravel, some silt, trace clay, loose, brown, moist		1	SS	8	124		○			PID: 0 FID: 0			SS1 Analysis: Metals, PAH, PCB
1		...stone fragments		2	SS	9	123		○			PID: 0 FID: 0			SS2 Analysis: VOC, PHC
2	122.3	SILT AND SAND to SILTY SAND , trace gravel, trace clay, very dense, brown, moist		3	SS	50 / 125mm	123		○			PID: 0 FID: 0			SS5 Analysis: Metals, PAH, PCB
3	2.3			4	SS	76	122		○			PID: 0 FID: 0			
4				5	SS	87 / 275mm	121		○			PID: 0 FID: 0			
5				6	SS	84 / 275mm	120		○			PID: 0 FID: 0			SS6 Analysis: Metals
6		...wet below		7	SS	77 / 275mm	119		○			PID: 0 FID: 0			SS7 Analysis: VOC, PHC
7				8	SS	83 / 275mm	118		○			PID: 0 FID: 0			
8		...grey below		9	SS	91 / 250mm	117		○			PID: 0 FID: 0			
9							116					PID: 0 FID: 0			
							115					PID: 0 FID: 0			

file: 1-19-0603-01 bh logs.gpj

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Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SD

Date started : October 25, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 2 of 2

Location : Toronto, Ontario

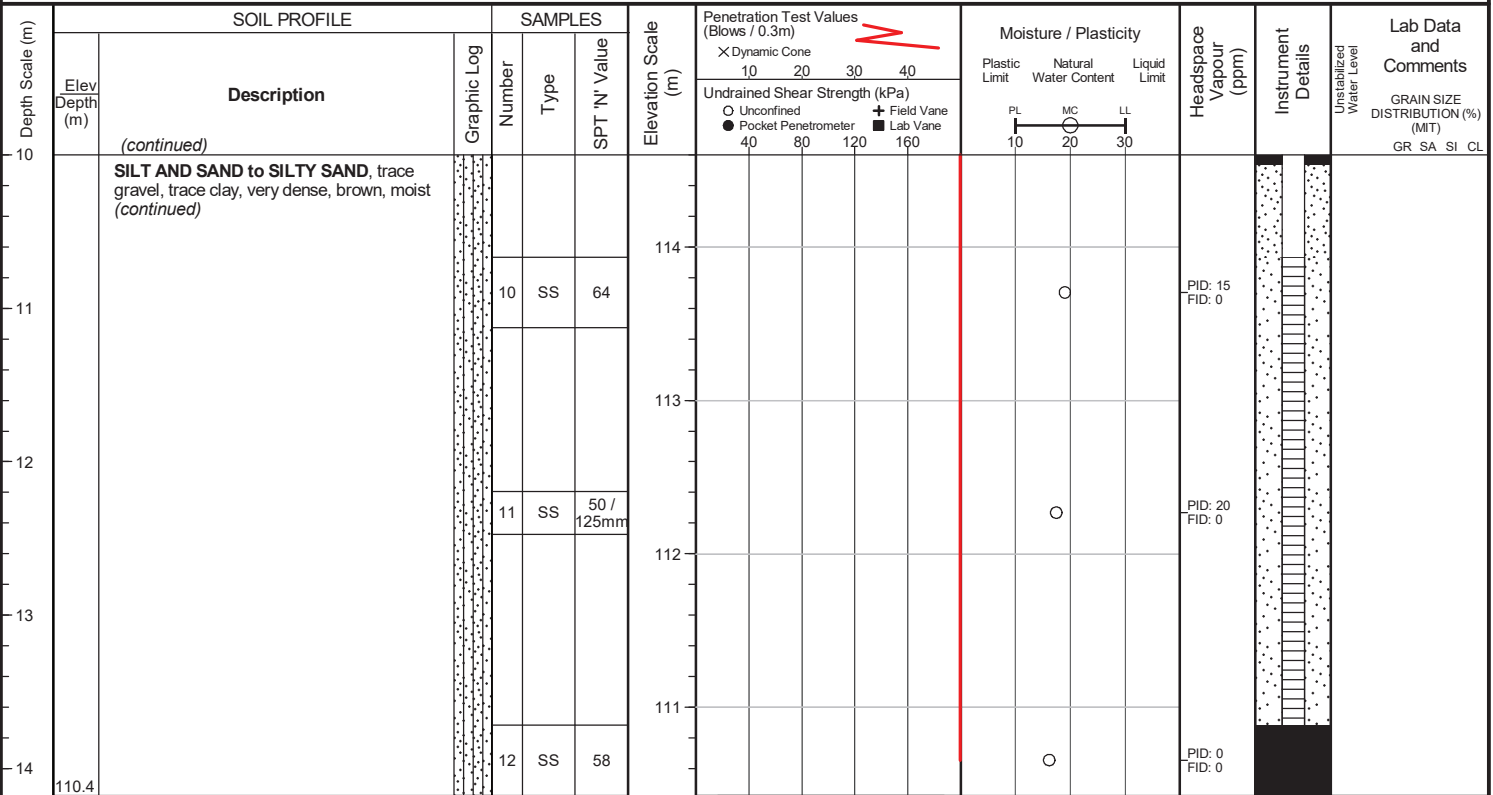
Checked by : SZ

Position : E: 629615, N: 4837767 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers


END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Dec 10, 2019	6.4	118.2
Feb 27, 2020	6.3	118.3
Mar 4, 2020	6.2	118.4

Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SD

Date started : October 28, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 1 of 2

Location : Toronto, Ontario

Checked by : SZ

Position : E: 629619, N: 4837769 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments	
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value			Plastic Limit	Natural Water Content	Liquid Limit				
0	124.7	GROUND SURFACE													
0.8	123.9	FILL, clayey silt, sandy, trace rootlets, firm, dark brown, moist	[Cross-hatched pattern]	1	SS	5	124					PID: 15 FID: 0		SS1 Analysis: Metals, PAH, PCB	
1.5	123.2	FILL, sandy silt, trace clay, trace gravel, loose, brown, moist	[Cross-hatched pattern]	2	SS	6	124					PID: 0 FID: 0		SS2 Analysis: VOC, PHC	
1.5	123.2	SILTY SAND, trace to some clay, trace gravel, compact to very dense, greyish brown, moist (GLACIAL TILL)	[Dotted pattern]	3	SS	24	123					PID: 0 FID: 0		SS3 Analysis: Metals, PAH, PCB	
				4	SS	72	122						PID: 0 FID: 0		
				5	SS	89	121						PID: 0 FID: 0		
				6	SS	76	120						PID: 5 FID: 0		
6.1	118.6	SILT AND SAND to SILTY SAND, trace gravel, trace clay, very dense, grey, wet	[Vertical line pattern]	7	SS	55	119					PID: 5 FID: 0		SS7 Analysis: VOC, PHC	
				8	SS	65	117					PID: 0 FID: 0			
				9	SS	65	115					PID: 0 FID: 0			

file: 1-19-0603-01 bh logs.gpj

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Project No. : 1-19-0603-01

Client : Birch Equities Limited

Originated by : SD

Date started : October 28, 2019

Project : 1196 - 1210 Yonge St & 2 - 8 Birch Avenue

Compiled by : AR

Sheet No. : 2 of 2

Location : Toronto, Ontario

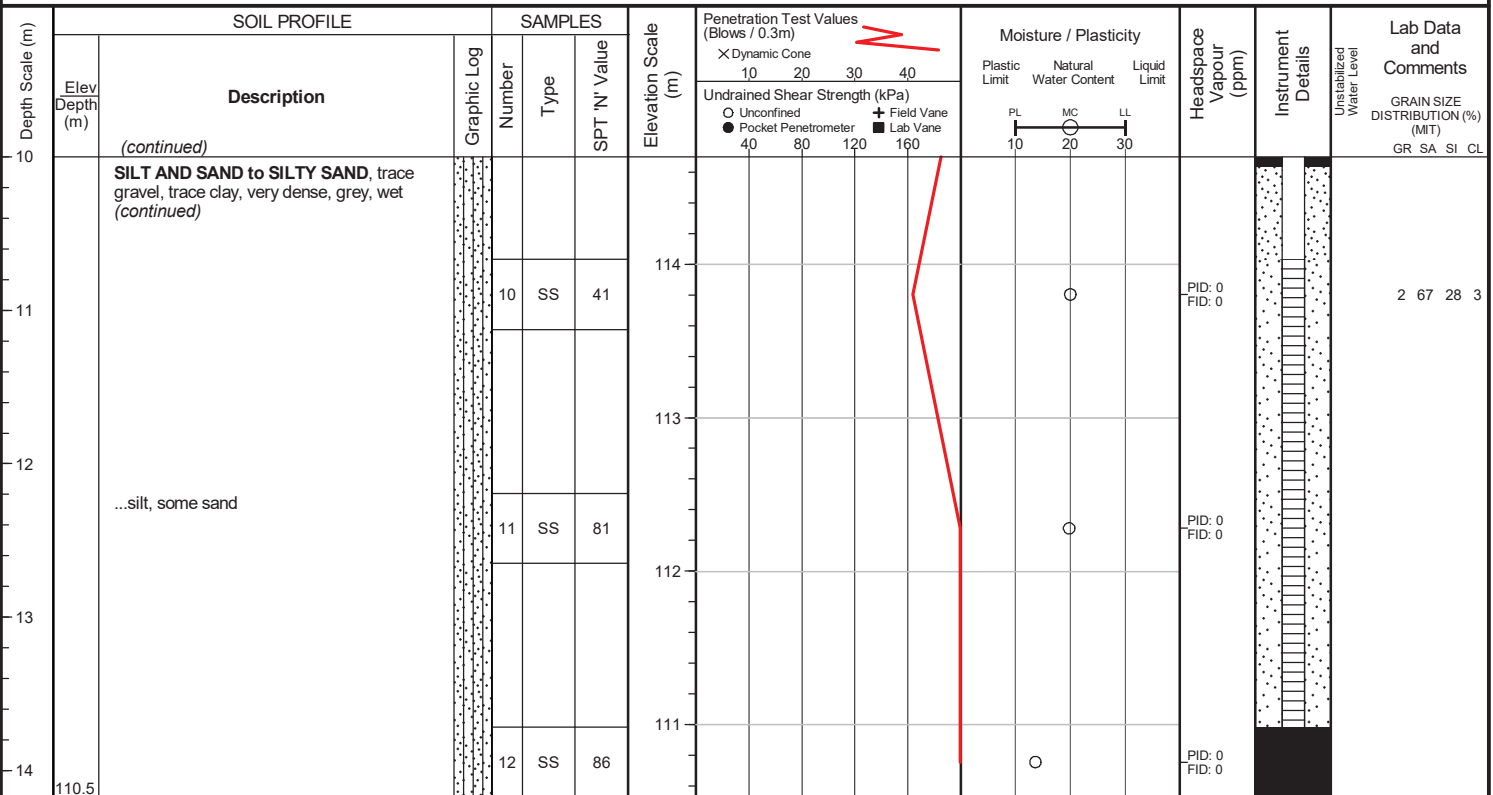
Checked by : SZ

Position : E: 629619, N: 4837769 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method : Hollow stem augers


END OF BOREHOLE

Borehole contained drill water upon completion of drilling. Unstabilized water level and cave not measured.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Dec 10, 2019	6.5	118.2
Feb 27, 2020	6.2	118.5
Mar 4, 2020	6.3	118.4



Terraprobe

LOG OF BOREHOLE 1

PROJECT: 1196-1210 Yonge Street / 2-8 Birch Street

DATE: 15 February 2006

LOCATION: Toronto, Ontario

EQUIPMENT: Pionjar

CLIENT: Woodcliffe Corporation

ELEVATION DATUM: n/a

FILE: 1-06-1007

ELEV DEPTH	SOIL PROFILE			STRAT PLOT	SAMPLES			ELEVATION SCALE	PENETRATION RESISTANCE PLOT					ORGANIC VAPOUR (ppm)	STANDPIPE INSTALLATION OR REMARKS												
					NUMBER	TYPE	"N" VALUES		SHEAR STRENGTH kPa							WATER CONTENT (%)											
	DESCRIPTION							20 40 60 80 100					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT														
								○ UNCONFINED + FIELD VANE ● POCKET PEN. × LAB VANE					W _p W W _L 10 20 30														
0.0	Ground Surface Loose Dark Brown moist			[Cross-hatched pattern]	1	SS	5	[Penetration resistance plot showing values around 20-30 kPa]																			
	FILL - Sand and Organics, trace brick fragments																										
0.8	Compact Dark Brown moist FILL - Sandy Silt, some organics ---- some coal fragments			[Cross-hatched pattern]	2	SS	10																				
1.2	Compact Brown moist SILT some sand, trace clay, TO SANDY SILT (native)			[Vertical lines pattern]	3	SS	30																				
2.7	End of Borehole																										

NOTES:
Borehole was open and dry upon completion of drilling.



Terraprobe

LOG OF BOREHOLE 2

PROJECT: 1196-1210 Yonge Street / 2-8 Birch Street

DATE: 15 February 2006

LOCATION: Toronto, Ontario

EQUIPMENT: Pionjar

CLIENT: Woodcliffe Corporation

ELEVATION DATUM: n/a

FILE: 1-06-1007

ELEV DEPTH	SOIL PROFILE			STRAT PLOT	SAMPLES		ELEVATION SCALE	PENETRATION RESISTANCE PLOT		PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT	ORGANIC VAPOUR (ppm)	STANDPIPE INSTALLATION OR REMARKS
	DESCRIPTION	NUMBER	TYPE		"N" VALUES	20		40	60			
0.0	Loose Black moist				1	SS	5					
	FILL - Silty Sand, with coal and brick fragments											
0.8	Compact Brown moist				2	SS	10					
	FILL - Silty Sand, trace organics											
1.5	Compact Brown moist				3	SS	30					
	SILT AND FINE SAND some gravel (native)											
					4	SS	>30					
3.0	Compact Brown moist											
	SILTY SAND trace fine gravel											
					5	SS	>30					
5.8	Dense Brown very moist											
	FINE SAND trace silt											
6.6	End of Borehole											

NOTES:

Borehole was open and dry upon completion of drilling.



Terraprobe

LOG OF BOREHOLE 3

PROJECT: 1196-1210 Yonge Street / 2-8 Birch Street

DATE: 15 February 2006

LOCATION: Toronto, Ontario

EQUIPMENT: Pionjar

CLIENT: Woodcliffe Corporation

ELEVATION DATUM: n/a

FILE: 1-06-1007

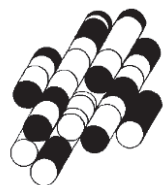
SOIL PROFILE			SAMPLES		PENETRATION RESISTANCE PLOT	PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT	WATER CONTENT (%)	ORGANIC VAPOUR (ppm)	STANDPIPE INSTALLATION OR REMARKS
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE					
0.0	Ground Surface								
0.1	50mm PATIO STONES 300mm GRANULAR 'A'								
0.4	CONCRETE SLAB		1	SS	5				ND
0.5	Loose Dark Brown moist FILL - Silt and Organics								
0.8	Loose to Compact Brown moist SILT - some sand, trace gravel (native)		2	SS	10				ND
1.5	Compact Brown moist SANDY SILT TO SILT AND SAND trace to some gravel		3	SS	30				ND
			4	SS	30				ND
3.0	End of Borehole								

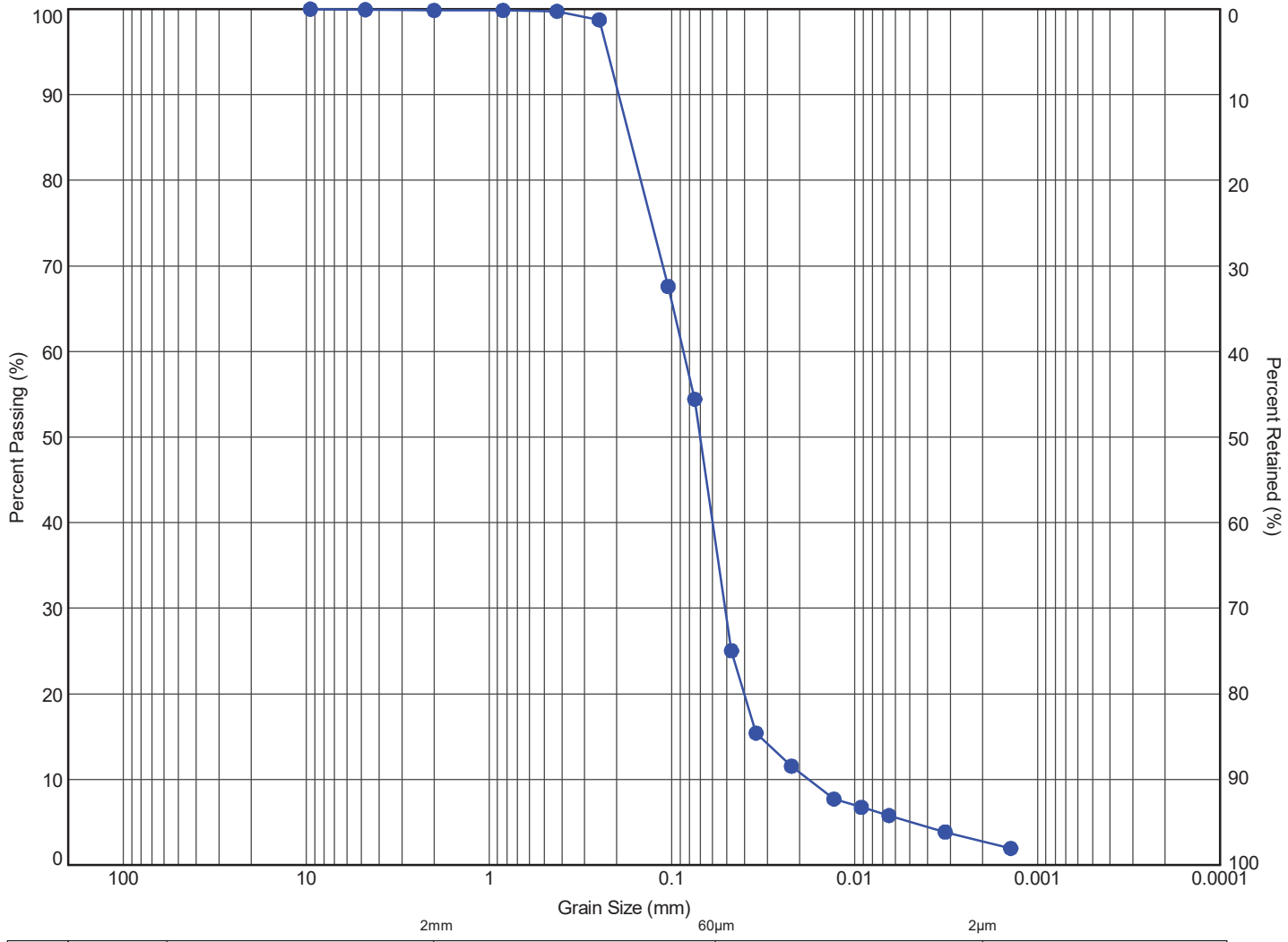
NOTES:

Borehole was open and dry upon completion of drilling.

APPENDIX H

TERRAPROBE INC.





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

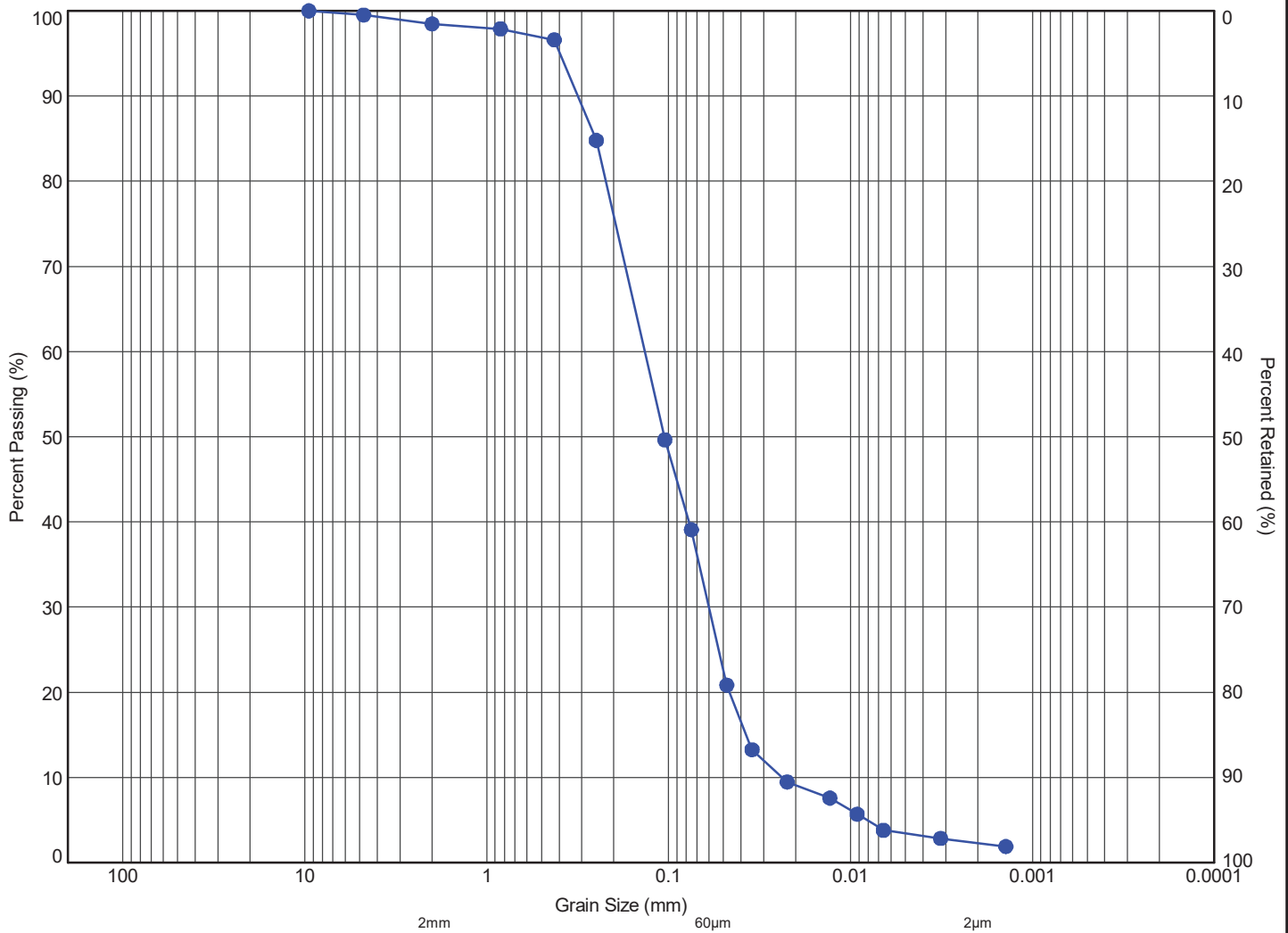
MIT SYSTEM

Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)
● 1	SS9	9.3	114.3	0	59	38	3	



Title: **GRAIN SIZE DISTRIBUTION SAND AND SILT, TRACE CLAY**

File No.: **1-19-0603-01**



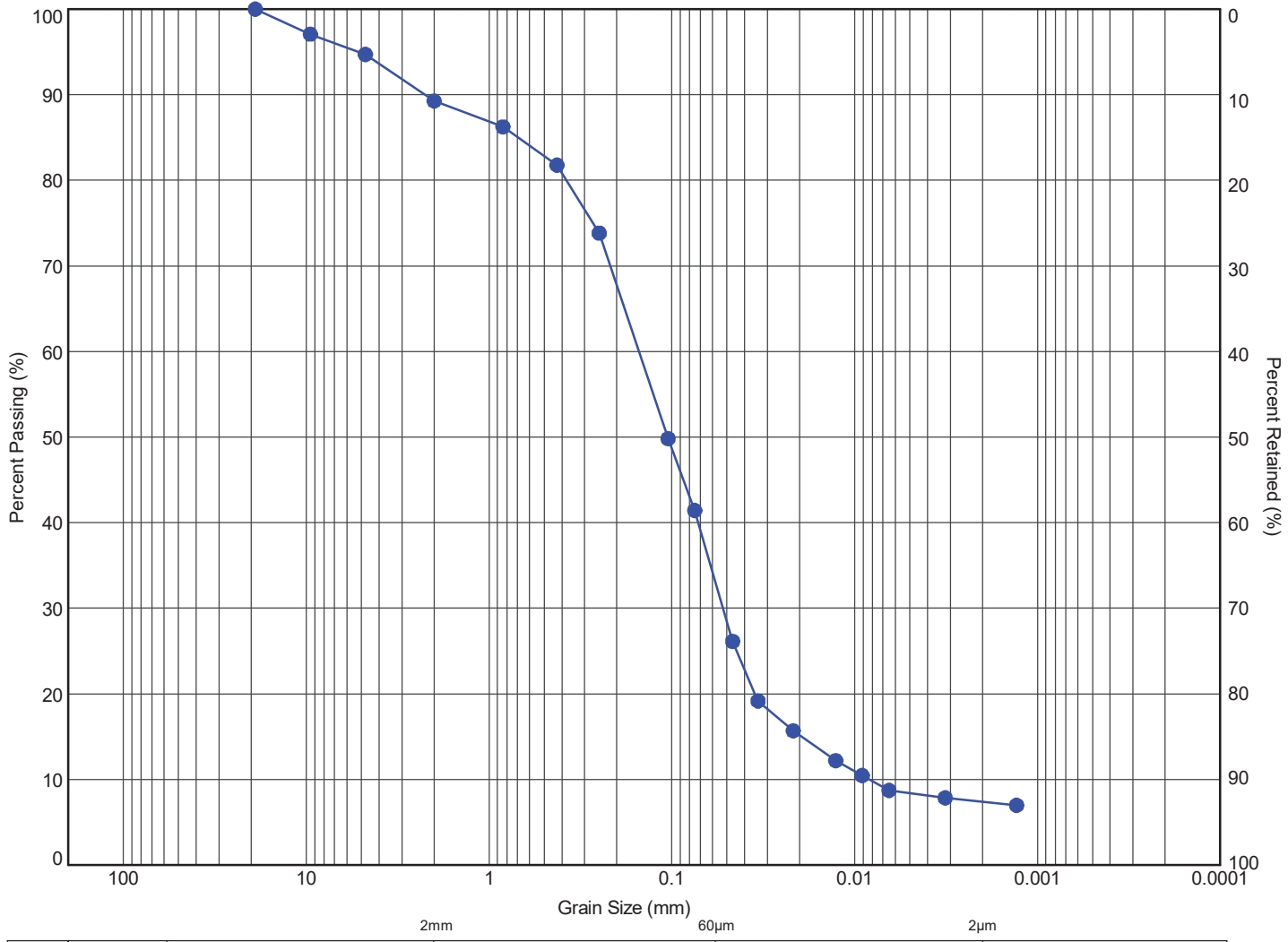
MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM									
Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)	
● 2	SS10	10.8	113.4	2	68	28	2		



Title: **GRAIN SIZE DISTRIBUTION**
SILTY SAND, TRACE CLAY, TRACE GRAVEL

File No.: **1-19-0603-01**



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

MIT SYSTEM

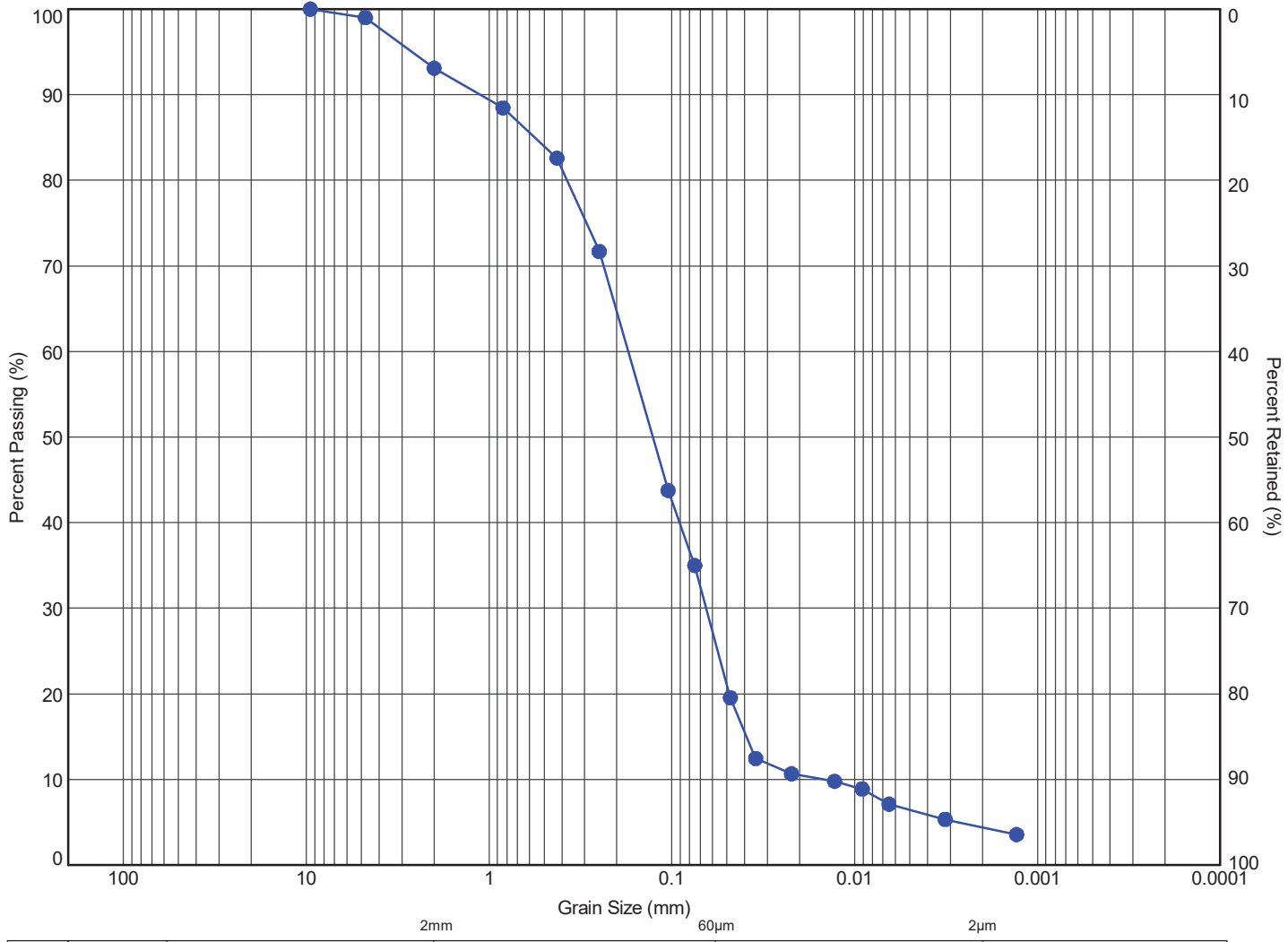
Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)
● 3	SS5	3.3	121.0	11	55	27	7	



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

Title: **GRAIN SIZE DISTRIBUTION**
SILTY SAND, SOME GRAVEL, TRACE CLAY

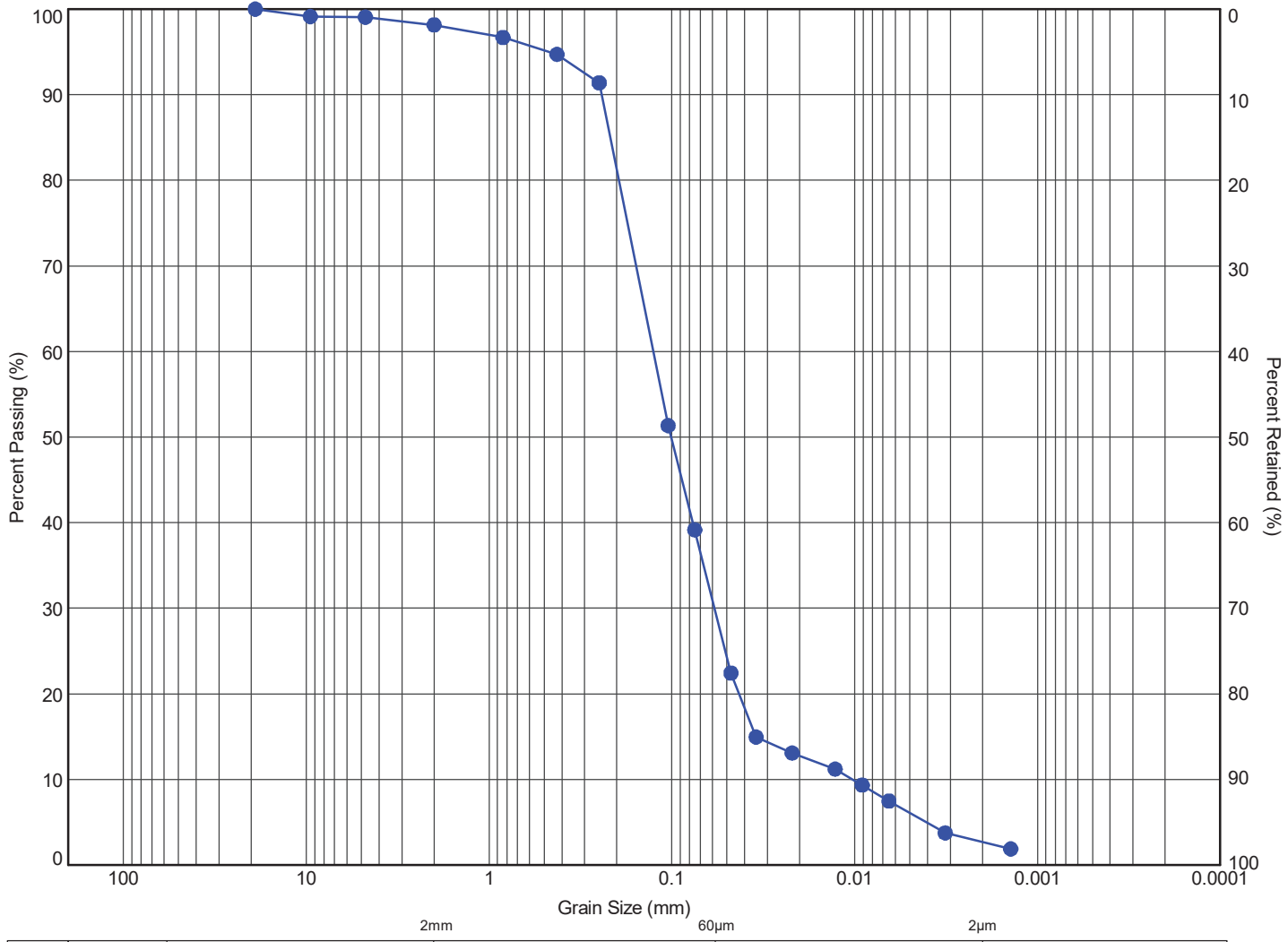
File No.: **1-19-0603-01**



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, %)
● 4	SS7	4.9	119.5	7	66	23	4	



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, %)
● 6	SS10	10.9	113.8	2	67	28	3	



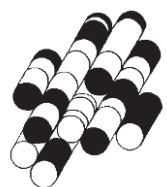
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title: **GRAIN SIZE DISTRIBUTION**
SILTY SAND, TRACE CLAY, TRACE GRAVEL

File No.: **1-19-0603-01**

APPENDIX I

TERRAPROBE INC.



1196-1210 Yonge Street and 2-8 Birch Avenue, Toronto**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	2nd GW Monitoring Event	3rd GW Monitoring Event	4th GW Monitoring Event	5th GW Monitoring Event	6th GW Monitoring Event
					Depth to water December 10, 2019 (mbgs)	Depth to water February 7, 2020 (mbgs)	Depth to water February 20, 2020 (mbgs)	Depth to water March 4, 2020 (mbgs)	ongoing	ongoing	ongoing
BH1	123.65	0.00	10.60	7.55	WNI	4.99	4.96	4.95			
BH2	124.15	0.00	13.70	10.65	WNI	5.93	5.83	5.85			
BH3	124.30	0.00	13.70	10.65	5.66	5.51	5.44	5.44			
BH4D	124.41	0.00	22.86	19.81	7.44	6.99	6.94	6.95			
BH4S	124.40	0.00	7.60	4.55	5.87	5.66	5.67*	5.63			
BH5	124.58	0.00	13.70	10.65	6.39	NA	6.31*	6.17			
BH6	124.66	0.00	13.75	10.70	6.50	6.26	6.23*	6.28			

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	2nd GW Monitoring Event	3rd GW Monitoring Event	4th GW Monitoring Event	5th GW Monitoring Event	6th GW Monitoring Event
					Groundwater Level Elevation December 10, 2019 (masl)	Groundwater Level Elevation February 7, 2020 (masl)	Groundwater Level Elevation February 20, 2020 (masl)	Groundwater Level Elevation March 4, 2020 (masl)	ongoing	ongoing	ongoing
BH1	123.65	123.65	113.05	116.10	WNI	118.66	118.69	118.70			
BH2	124.15	124.15	110.45	113.50	WNI	118.22	118.32	118.30			
BH3	124.30	124.30	101.44	113.65	118.64	118.79	118.86	118.86			
BH4D	124.41	124.41	101.55	104.60	124.41	117.42	117.47	117.46			
BH4S	124.40	124.40	116.80	119.85	118.53	118.74	118.73	118.77			
BH5	124.58	124.58	110.88	113.93	118.19	NA	118.27	118.41			
BH6	124.66	124.66	110.91	113.96	118.16	118.40	118.43	118.38			

Note: mbgs - meters below ground surface

masl - meters above sea level

NA - not available (Covered by Ice and Snow)

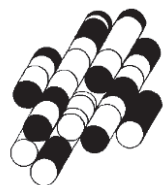
NM - not measured

WNI - well not installed

*groundwater level was measured on February 27, 2020 due to snow cover

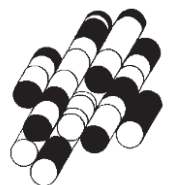
APPENDIX J

TERRAPROBE INC.



APPENDIX K

TERRAPROBE INC.

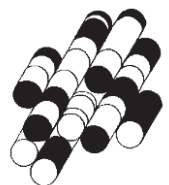


MONITORING WELL CONSTRUCTION
1196 -1210 Yonge, 2-8 Birch Avenue
TORONTO, ONTARIO
PROJECT # 1-19-0603-42

Well ID	BH1		BH2		BH3		BH4-S		BH4-D		BH5		BH6	
Stick Up (m)	Flush Mount		Flush Mount		Flush Mount		Flush Mount		Flush Mount		Flush Mount		Flush Mount	
Ground Elev. (masl)	123.60		124.20		124.30		124.40		124.40		124.60		124.70	
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)	Depth (m)	Elev. (masl)
Bentonite - Top	0.00	123.60	0.00	124.20	0.00	124.30	0.00	107.25	0.00	107.25	0.00	124.60	0.00	124.70
Bentonite - Bottom	7.01	116.59	10.36	113.84	10.06	114.24	3.96	120.44	19.20	105.20	10.06	114.54	10.06	114.64
Sand - Top	7.01	116.59	10.36	113.84	10.06	114.24	3.96	120.44	19.20	105.20	10.06	114.54	10.06	114.64
Screen - Top	7.62	115.98	10.63	113.57	10.67	113.63	4.57	119.83	19.81	104.59	10.67	113.93	10.67	114.03
Screen - Bottom	10.67	112.93	13.72	110.48	13.72	110.58	7.62	116.78	22.86	101.54	13.72	110.88	13.72	110.98
Sand - Bottom	10.95	112.65	13.84	110.36	13.97	110.33	7.62	116.78	22.96	101.44	14.17	110.43	14.17	110.53

APPENDIX L

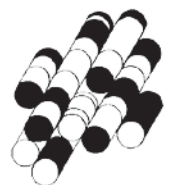
TERRAPROBE INC.



CERTIFICATE OF ANALYSIS

(SOIL)

TERRAPROBE INC.





TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 03-FEB-20
Report Date: 06-FEB-20 14:28 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2412344
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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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 - T3-Soil-Res/Park/Inst. Property Use (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)							
(No parameter exceedances)							

ANALYTICAL REPORT

Physical Tests - SOIL

	Lab ID				
		L2412344-1	L2412344-2	L2412344-3	L2412344-4
	Sample Date	28-JAN-20	28-JAN-20	28-JAN-20	28-JAN-20
	Sample ID	BH1-SS1	BH1-SS2	BH1-SS3	BH1-SS7
Guide Limits					
Analyte	Unit	#1	#2		
% Moisture	%	-	-	24.7	9.05
pH	pH units	-	-	7.97	8.09

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2412344-1	L2412344-3
Sample Date	28-JAN-20	28-JAN-20
Sample ID	BH1-SS1	BH1-SS3

Analyte	Unit	Guide Limits			
		#1	#2	#1	#2
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0
Arsenic (As)	ug/g	18	18	2.9	1.5
Barium (Ba)	ug/g	390	390	119	56.7
Beryllium (Be)	ug/g	4	5	0.75	<0.50
Boron (B)	ug/g	120	120	6.8	<5.0
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50
Chromium (Cr)	ug/g	160	160	22.8	11.7
Cobalt (Co)	ug/g	22	22	5.8	3.7
Copper (Cu)	ug/g	140	180	15.3	7.0
Lead (Pb)	ug/g	120	120	14.7	3.5
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	12.5	7.1
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	35.4	20.6
Zinc (Zn)	ug/g	340	340	45.2	21.3

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Lab ID	
		#1	#2	L2412344-2	L2412344-4
				Sample Date	28-JAN-20
				Sample ID	BH1-SS2
				Sample Date	28-JAN-20
				Sample ID	BH1-SS7
Acetone	ug/g	16	28	<0.50	<0.50
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

Lab ID	L2412344-2	L2412344-4
Sample Date	28-JAN-20	28-JAN-20
Sample ID	BH1-SS2	BH1-SS7

Analyte	Unit	Guide Limits			
		#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	%	-	-	91.5	87.5
Surrogate: 1,4-Difluorobenzene	%	-	-	106.9	102.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2412344-2	L2412344-4
Sample Date	28-JAN-20	28-JAN-20
Sample ID	BH1-SS2	BH1-SS7

Analyte	Unit	Guide Limits		<5.0	<5.0
		#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	%	-	-	80.9	83.3
Surrogate: 3,4-Dichlorotoluene	%	-	-	90.6	89.5

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2412344-1	L2412344-3	
		Sample Date	28-JAN-20	28-JAN-20	
		Sample ID	BH1-SS1	BH1-SS3	
Acenaphthene	ug/g	7.9	58	0.068	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050
Anthracene	ug/g	0.67	0.74	0.150	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.275	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	0.217	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.287	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.133	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.084	<0.050
Chrysene	ug/g	7	7.8	0.264	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.69	0.615	<0.050
Fluorene	ug/g	62	69	0.069	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.134	<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	0.026	<0.013
Phenanthrene	ug/g	6.2	7.8	0.567	<0.046
Pyrene	ug/g	78	78	0.488	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	92.2	89.8
Surrogate: p-Terphenyl d14	%	-	-	95.9	91.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID	L2412344-1	L2412344-3
Sample Date	28-JAN-20	28-JAN-20
Sample ID	BH1-SS1	BH1-SS3

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	%	-	-	103.2	98.1

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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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.

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).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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 technique is 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
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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
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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).

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
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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: L2412344

Report Date: 06-FEB-20

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R4989388							
WG3268877-4	DUP	WG3268877-3						
F1 (C6-C10)		35.6	34.5		ug/g	3.0	30	05-FEB-20
WG3268877-2	LCS							
F1 (C6-C10)			99.0		%		80-120	05-FEB-20
WG3268877-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	05-FEB-20
Surrogate: 3,4-Dichlorotoluene			102.5		%		60-140	05-FEB-20
WG3268877-6	MS	L2412336-3						
F1 (C6-C10)			88.7		%		60-140	05-FEB-20
F2-F4-511-WT		Soil						
Batch	R4990954							
WG3268945-3	DUP	WG3268945-3						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	05-FEB-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	05-FEB-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	05-FEB-20
WG3268945-2	LCS							
F2 (C10-C16)			108.3		%		80-120	05-FEB-20
F3 (C16-C34)			109.4		%		80-120	05-FEB-20
F4 (C34-C50)			109.0		%		80-120	05-FEB-20
WG3268945-1	MB							
F2 (C10-C16)			<10		ug/g		10	05-FEB-20
F3 (C16-C34)			<50		ug/g		50	05-FEB-20
F4 (C34-C50)			<50		ug/g		50	05-FEB-20
Surrogate: 2-Bromobenzotrifluoride			76.2		%		60-140	05-FEB-20
WG3268945-4	MS	WG3268945-5						
F2 (C10-C16)			105.5		%		60-140	05-FEB-20
F3 (C16-C34)			106.2		%		60-140	05-FEB-20
F4 (C34-C50)			106.0		%		60-140	05-FEB-20
MET-200.2-CCMS-WT		Soil						
Batch	R4990303							
WG3269606-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			88.0		%		70-130	05-FEB-20
Arsenic (As)			96.8		%		70-130	05-FEB-20
Barium (Ba)			100.3		%		70-130	05-FEB-20
Beryllium (Be)			91.1		%		70-130	05-FEB-20
Boron (B)			3.1		mg/kg		0-8.6	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4990303							
WG3269606-2	CRM	WT-CANMET-TILL2						
Cadmium (Cd)			88.7		%		70-130	05-FEB-20
Chromium (Cr)			97.1		%		70-130	05-FEB-20
Cobalt (Co)			95.4		%		70-130	05-FEB-20
Copper (Cu)			98.0		%		70-130	05-FEB-20
Lead (Pb)			95.0		%		70-130	05-FEB-20
Molybdenum (Mo)			93.8		%		70-130	05-FEB-20
Nickel (Ni)			97.3		%		70-130	05-FEB-20
Selenium (Se)			0.33		mg/kg		0.15-0.55	05-FEB-20
Silver (Ag)			0.24		mg/kg		0.16-0.36	05-FEB-20
Thallium (Tl)			93.9		%		70-130	05-FEB-20
Uranium (U)			92.8		%		70-130	05-FEB-20
Vanadium (V)			96.5		%		70-130	05-FEB-20
Zinc (Zn)			91.5		%		70-130	05-FEB-20
WG3269606-6	DUP	WG3269606-5						
Antimony (Sb)		0.39	0.38		ug/g	3.2	30	05-FEB-20
Arsenic (As)		5.22	5.35		ug/g	2.5	30	05-FEB-20
Barium (Ba)		115	117		ug/g	1.9	40	05-FEB-20
Beryllium (Be)		0.72	0.73		ug/g	0.9	30	05-FEB-20
Boron (B)		13.1	13.9		ug/g	6.1	30	05-FEB-20
Cadmium (Cd)		0.374	0.500		ug/g	29	30	05-FEB-20
Chromium (Cr)		25.4	26.1		ug/g	2.6	30	05-FEB-20
Cobalt (Co)		9.48	9.81		ug/g	3.4	30	05-FEB-20
Copper (Cu)		28.5	29.1		ug/g	2.2	30	05-FEB-20
Lead (Pb)		45.8	48.0		ug/g	4.6	40	05-FEB-20
Molybdenum (Mo)		0.76	0.79		ug/g	3.8	40	05-FEB-20
Nickel (Ni)		21.7	22.6		ug/g	3.9	30	05-FEB-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	05-FEB-20
Silver (Ag)		0.12	0.13		ug/g	2.6	40	05-FEB-20
Thallium (Tl)		0.135	0.135		ug/g	0.6	30	05-FEB-20
Uranium (U)		0.672	0.696		ug/g	3.5	30	05-FEB-20
Vanadium (V)		31.0	32.2		ug/g	3.5	30	05-FEB-20
Zinc (Zn)		133	168		ug/g	23	30	05-FEB-20
WG3269606-4	LCS							



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4990303							
WG3269606-4	LCS							
Antimony (Sb)			100.1		%		80-120	05-FEB-20
Arsenic (As)			97.0		%		80-120	05-FEB-20
Barium (Ba)			101.9		%		80-120	05-FEB-20
Beryllium (Be)			94.2		%		80-120	05-FEB-20
Boron (B)			93.2		%		80-120	05-FEB-20
Cadmium (Cd)			91.7		%		80-120	05-FEB-20
Chromium (Cr)			98.8		%		80-120	05-FEB-20
Cobalt (Co)			97.2		%		80-120	05-FEB-20
Copper (Cu)			96.0		%		80-120	05-FEB-20
Lead (Pb)			95.2		%		80-120	05-FEB-20
Molybdenum (Mo)			101.4		%		80-120	05-FEB-20
Nickel (Ni)			96.8		%		80-120	05-FEB-20
Selenium (Se)			94.2		%		80-120	05-FEB-20
Silver (Ag)			95.2		%		80-120	05-FEB-20
Thallium (Tl)			96.9		%		80-120	05-FEB-20
Uranium (U)			92.0		%		80-120	05-FEB-20
Vanadium (V)			100.9		%		80-120	05-FEB-20
Zinc (Zn)			93.2		%		80-120	05-FEB-20
WG3269606-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-20
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-20
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-20
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-20
Boron (B)			<5.0		mg/kg		5	05-FEB-20
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-20
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-20
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-20
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-20
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-20
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-20
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-20
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-20
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4990303							
WG3269606-1	MB							
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-20
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-20
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-20
MOISTURE-WT		Soil						
Batch	R4988087							
WG3268987-3	DUP	L2412347-7						
% Moisture		22.6	22.0		%	2.8	20	04-FEB-20
WG3268987-2	LCS							
% Moisture			100.6		%		90-110	04-FEB-20
WG3268987-1	MB							
% Moisture			<0.25		%		0.25	04-FEB-20
PAH-511-WT		Soil						
Batch	R4990130							
WG3268303-3	DUP	WG3268303-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-FEB-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-FEB-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	05-FEB-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	05-FEB-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
WG3268303-2	LCS							
1-Methylnaphthalene			89.7		%		50-140	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R4990130							
WG3268303-2	LCS							
2-Methylnaphthalene			85.3		%		50-140	05-FEB-20
Acenaphthene			90.3		%		50-140	05-FEB-20
Acenaphthylene			93.6		%		50-140	05-FEB-20
Anthracene			90.7		%		50-140	05-FEB-20
Benzo(a)anthracene			95.2		%		50-140	05-FEB-20
Benzo(a)pyrene			90.9		%		50-140	05-FEB-20
Benzo(b)fluoranthene			92.9		%		50-140	05-FEB-20
Benzo(g,h,i)perylene			92.5		%		50-140	05-FEB-20
Benzo(k)fluoranthene			88.0		%		50-140	05-FEB-20
Chrysene			98.3		%		50-140	05-FEB-20
Dibenzo(ah)anthracene			94.6		%		50-140	05-FEB-20
Fluoranthene			88.2		%		50-140	05-FEB-20
Fluorene			89.5		%		50-140	05-FEB-20
Indeno(1,2,3-cd)pyrene			101.9		%		50-140	05-FEB-20
Naphthalene			87.9		%		50-140	05-FEB-20
Phenanthrene			89.8		%		50-140	05-FEB-20
Pyrene			88.2		%		50-140	05-FEB-20
WG3268303-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	05-FEB-20
2-Methylnaphthalene			<0.030		ug/g		0.03	05-FEB-20
Acenaphthene			<0.050		ug/g		0.05	05-FEB-20
Acenaphthylene			<0.050		ug/g		0.05	05-FEB-20
Anthracene			<0.050		ug/g		0.05	05-FEB-20
Benzo(a)anthracene			<0.050		ug/g		0.05	05-FEB-20
Benzo(a)pyrene			<0.050		ug/g		0.05	05-FEB-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	05-FEB-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	05-FEB-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	05-FEB-20
Chrysene			<0.050		ug/g		0.05	05-FEB-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	05-FEB-20
Fluoranthene			<0.050		ug/g		0.05	05-FEB-20
Fluorene			<0.050		ug/g		0.05	05-FEB-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	05-FEB-20
Naphthalene			<0.013		ug/g		0.013	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PAH-511-WT		Soil							
Batch	R4990130								
WG3268303-1	MB								
Phenanthrene			<0.046		ug/g		0.046	05-FEB-20	
Pyrene			<0.050		ug/g		0.05	05-FEB-20	
Surrogate: 2-Fluorobiphenyl			89.1		%		50-140	05-FEB-20	
Surrogate: p-Terphenyl d14			90.1		%		50-140	05-FEB-20	
WG3268303-4	MS	WG3268303-5							
1-Methylnaphthalene			90.8		%		50-140	05-FEB-20	
2-Methylnaphthalene			86.2		%		50-140	05-FEB-20	
Acenaphthene			95.3		%		50-140	05-FEB-20	
Acenaphthylene			95.9		%		50-140	05-FEB-20	
Anthracene			95.4		%		50-140	05-FEB-20	
Benzo(a)anthracene			100.7		%		50-140	05-FEB-20	
Benzo(a)pyrene			96.7		%		50-140	05-FEB-20	
Benzo(b)fluoranthene			98.8		%		50-140	05-FEB-20	
Benzo(g,h,i)perylene			97.2		%		50-140	05-FEB-20	
Benzo(k)fluoranthene			94.8		%		50-140	05-FEB-20	
Chrysene			103.8		%		50-140	05-FEB-20	
Dibenzo(ah)anthracene			100.8		%		50-140	05-FEB-20	
Fluoranthene			93.7		%		50-140	05-FEB-20	
Fluorene			94.2		%		50-140	05-FEB-20	
Indeno(1,2,3-cd)pyrene			107.8		%		50-140	05-FEB-20	
Naphthalene			89.6		%		50-140	05-FEB-20	
Phenanthrene			93.6		%		50-140	05-FEB-20	
Pyrene			93.3		%		50-140	05-FEB-20	
PCB-511-WT		Soil							
Batch	R4990759								
WG3268303-3	DUP	WG3268303-5							
Aroclor 1242			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-20
Aroclor 1248			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-20
Aroclor 1254			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-20
Aroclor 1260			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-20
WG3268303-2	LCS								
Aroclor 1242			93.7		%		60-140	06-FEB-20	
Aroclor 1248			96.0		%		60-140	06-FEB-20	
Aroclor 1254			94.5		%		60-140	06-FEB-20	



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT		Soil						
Batch	R4990759							
WG3268303-2	LCS							
Aroclor 1260			104.2		%		60-140	06-FEB-20
WG3268303-1	MB							
Aroclor 1242			<0.010		ug/g		0.01	06-FEB-20
Aroclor 1248			<0.010		ug/g		0.01	06-FEB-20
Aroclor 1254			<0.010		ug/g		0.01	06-FEB-20
Aroclor 1260			<0.010		ug/g		0.01	06-FEB-20
Surrogate: d14-Terphenyl			97.9		%		60-140	06-FEB-20
WG3268303-4	MS	WG3268303-5						
Aroclor 1242			99.1		%		60-140	06-FEB-20
Aroclor 1254			104.2		%		60-140	06-FEB-20
Aroclor 1260			115.2		%		60-140	06-FEB-20
PH-WT		Soil						
Batch	R4988650							
WG3268276-1	DUP	L2412028-1						
pH		7.83	7.81	J	pH units	0.02	0.3	04-FEB-20
WG3268751-1	LCS							
pH			6.99		pH units		6.9-7.1	04-FEB-20
Batch	R4988652							
WG3268996-1	DUP	L2412347-2						
pH		7.95	8.01	J	pH units	0.06	0.3	04-FEB-20
WG3269371-1	LCS							
pH			7.00		pH units		6.9-7.1	04-FEB-20
VOC-511-HS-WT		Soil						
Batch	R4989388							
WG3268877-4	DUP	WG3268877-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,1,1,2,2-Tetrachloroethane		0.437	0.382		ug/g	14	40	05-FEB-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,2-Dichloropropane		<0.050	<0.050					



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4989388							
WG3268877-4	DUP	WG3268877-3						
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	05-FEB-20
Benzene		0.611	0.604		ug/g	1.1	40	05-FEB-20
Bromodichloromethane		<0.10	<0.10	RPD-NA	ug/g	N/A	40	05-FEB-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
cis-1,2-Dichloroethylene		0.061	0.058		ug/g	3.8	40	05-FEB-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-FEB-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Ethylbenzene		0.201	0.198		ug/g	1.6	40	05-FEB-20
n-Hexane		0.096	0.096		ug/g	0.5	40	05-FEB-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
m+p-Xylenes		0.543	0.537		ug/g	1.0	40	05-FEB-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	05-FEB-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	05-FEB-20
o-Xylene		0.166	0.163		ug/g	1.9	40	05-FEB-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Tetrachloroethylene		0.053	0.052		ug/g	0.9	40	05-FEB-20
Toluene		0.258	0.256		ug/g	1.1	40	05-FEB-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-FEB-20
Trichloroethylene		0.056	0.057		ug/g	2.4	40	05-FEB-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-FEB-20
Vinyl chloride		0.052	0.052		ug/g	0.9	40	06-FEB-20
WG3268877-2	LCS							
1,1,1,2-Tetrachloroethane			102.7		%		60-130	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4989388							
WG3268877-2	LCS							
1,1,2,2-Tetrachloroethane			101.8		%		60-130	05-FEB-20
1,1,1-Trichloroethane			106.5		%		60-130	05-FEB-20
1,1,2-Trichloroethane			104.7		%		60-130	05-FEB-20
1,1-Dichloroethane			114.5		%		60-130	05-FEB-20
1,1-Dichloroethylene			106.8		%		60-130	05-FEB-20
1,2-Dibromoethane			102.2		%		70-130	05-FEB-20
1,2-Dichlorobenzene			103.1		%		70-130	05-FEB-20
1,2-Dichloroethane			105.7		%		60-130	05-FEB-20
1,2-Dichloropropane			111.0		%		70-130	05-FEB-20
1,3-Dichlorobenzene			105.6		%		70-130	05-FEB-20
1,4-Dichlorobenzene			105.0		%		70-130	05-FEB-20
Acetone			105.6		%		60-140	05-FEB-20
Benzene			112.6		%		70-130	05-FEB-20
Bromodichloromethane			106.4		%		50-140	05-FEB-20
Bromoform			95.1		%		70-130	05-FEB-20
Bromomethane			103.0		%		50-140	05-FEB-20
Carbon tetrachloride			106.7		%		70-130	05-FEB-20
Chlorobenzene			104.4		%		70-130	05-FEB-20
Chloroform			109.3		%		70-130	05-FEB-20
cis-1,2-Dichloroethylene			106.4		%		70-130	05-FEB-20
cis-1,3-Dichloropropene			110.1		%		70-130	05-FEB-20
Dibromochloromethane			100.6		%		60-130	05-FEB-20
Dichlorodifluoromethane			101.7		%		50-140	05-FEB-20
Ethylbenzene			107.9		%		70-130	05-FEB-20
n-Hexane			108.8		%		70-130	05-FEB-20
Methylene Chloride			110.5		%		70-130	05-FEB-20
MTBE			105.0		%		70-130	05-FEB-20
m+p-Xylenes			104.2		%		70-130	05-FEB-20
Methyl Ethyl Ketone			105.9		%		60-140	05-FEB-20
Methyl Isobutyl Ketone			100.7		%		60-140	05-FEB-20
o-Xylene			103.0		%		70-130	05-FEB-20
Styrene			100.4		%		70-130	05-FEB-20
Tetrachloroethylene			107.9		%		60-130	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4989388							
WG3268877-2	LCS							
Toluene			109.7		%		70-130	05-FEB-20
trans-1,2-Dichloroethylene			110.9		%		60-130	05-FEB-20
trans-1,3-Dichloropropene			109.7		%		70-130	05-FEB-20
Trichloroethylene			106.4		%		60-130	05-FEB-20
Trichlorofluoromethane			108.1		%		50-140	05-FEB-20
Vinyl chloride			119.3		%		60-140	05-FEB-20
WG3268877-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	05-FEB-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	05-FEB-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	05-FEB-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	05-FEB-20
1,1-Dichloroethane			<0.050		ug/g		0.05	05-FEB-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	05-FEB-20
1,2-Dibromoethane			<0.050		ug/g		0.05	05-FEB-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	05-FEB-20
1,2-Dichloroethane			<0.050		ug/g		0.05	05-FEB-20
1,2-Dichloropropane			<0.050		ug/g		0.05	05-FEB-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	05-FEB-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	05-FEB-20
Acetone			<0.50		ug/g		0.5	05-FEB-20
Benzene			<0.0068		ug/g		0.0068	05-FEB-20
Bromodichloromethane			<0.050		ug/g		0.05	05-FEB-20
Bromoform			<0.050		ug/g		0.05	05-FEB-20
Bromomethane			<0.050		ug/g		0.05	05-FEB-20
Carbon tetrachloride			<0.050		ug/g		0.05	05-FEB-20
Chlorobenzene			<0.050		ug/g		0.05	05-FEB-20
Chloroform			<0.050		ug/g		0.05	05-FEB-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	05-FEB-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	05-FEB-20
Dibromochloromethane			<0.050		ug/g		0.05	05-FEB-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	05-FEB-20
Ethylbenzene			<0.018		ug/g		0.018	05-FEB-20
n-Hexane			<0.050		ug/g		0.05	05-FEB-20
Methylene Chloride			<0.050		ug/g		0.05	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4989388							
WG3268877-1 MB								
MTBE			<0.050		ug/g		0.05	05-FEB-20
m+p-Xylenes			<0.030		ug/g		0.03	05-FEB-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	05-FEB-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	05-FEB-20
o-Xylene			<0.020		ug/g		0.02	05-FEB-20
Styrene			<0.050		ug/g		0.05	05-FEB-20
Tetrachloroethylene			<0.050		ug/g		0.05	05-FEB-20
Toluene			<0.080		ug/g		0.08	05-FEB-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	05-FEB-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	05-FEB-20
Trichloroethylene			<0.010		ug/g		0.01	05-FEB-20
Trichlorofluoromethane			<0.050		ug/g		0.05	05-FEB-20
Vinyl chloride			<0.020		ug/g		0.02	05-FEB-20
Surrogate: 1,4-Difluorobenzene			114.9		%		50-140	05-FEB-20
Surrogate: 4-Bromofluorobenzene			96.9		%		50-140	05-FEB-20
WG3268877-5 MS		L2412336-1						
1,1,1,2-Tetrachloroethane			100.3		%		50-140	05-FEB-20
1,1,2,2-Tetrachloroethane			114.6		%		50-140	05-FEB-20
1,1,1-Trichloroethane			104.6		%		50-140	05-FEB-20
1,1,2-Trichloroethane			102.7		%		50-140	05-FEB-20
1,1-Dichloroethane			110.0		%		50-140	05-FEB-20
1,1-Dichloroethylene			105.0		%		50-140	05-FEB-20
1,2-Dibromoethane			98.4		%		50-140	05-FEB-20
1,2-Dichlorobenzene			76.4		%		50-140	06-FEB-20
1,2-Dichloroethane			101.8		%		50-140	05-FEB-20
1,2-Dichloropropane			107.7		%		50-140	05-FEB-20
1,3-Dichlorobenzene			75.3		%		50-140	06-FEB-20
1,4-Dichlorobenzene			75.6		%		50-140	06-FEB-20
Acetone			109.5		%		50-140	05-FEB-20
Benzene			117.0		%		50-140	05-FEB-20
Bromodichloromethane			105.2		%		50-140	05-FEB-20
Bromoform			90.4		%		50-140	05-FEB-20
Bromomethane			99.6		%		50-140	05-FEB-20
Carbon tetrachloride			104.5		%		50-140	05-FEB-20



Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4989388							
WG3268877-5 MS		L2412336-1						
Chlorobenzene			101.6		%		50-140	05-FEB-20
Chloroform			107.0		%		50-140	05-FEB-20
cis-1,2-Dichloroethylene			104.5		%		50-140	05-FEB-20
cis-1,3-Dichloropropene			103.6		%		50-140	05-FEB-20
Dibromochloromethane			98.3		%		50-140	05-FEB-20
Dichlorodifluoromethane			103.9		%		50-140	05-FEB-20
Ethylbenzene			108.8		%		50-140	05-FEB-20
n-Hexane			105.3		%		50-140	05-FEB-20
Methylene Chloride			108.3		%		50-140	05-FEB-20
MTBE			103.6		%		50-140	05-FEB-20
m+p-Xylenes			106.5		%		50-140	05-FEB-20
Methyl Ethyl Ketone			107.2		%		50-140	05-FEB-20
Methyl Isobutyl Ketone			94.5		%		50-140	05-FEB-20
o-Xylene			103.0		%		50-140	05-FEB-20
Styrene			95.2		%		50-140	05-FEB-20
Tetrachloroethylene			106.4		%		50-140	05-FEB-20
Toluene			113.3		%		50-140	05-FEB-20
trans-1,2-Dichloroethylene			108.2		%		50-140	05-FEB-20
trans-1,3-Dichloropropene			105.5		%		50-140	05-FEB-20
Trichloroethylene			104.7		%		50-140	05-FEB-20
Trichlorofluoromethane			107.8		%		50-140	05-FEB-20
Vinyl chloride			118.9		%		50-140	05-FEB-20

Quality Control Report

Workorder: L2412344

Report Date: 06-FEB-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

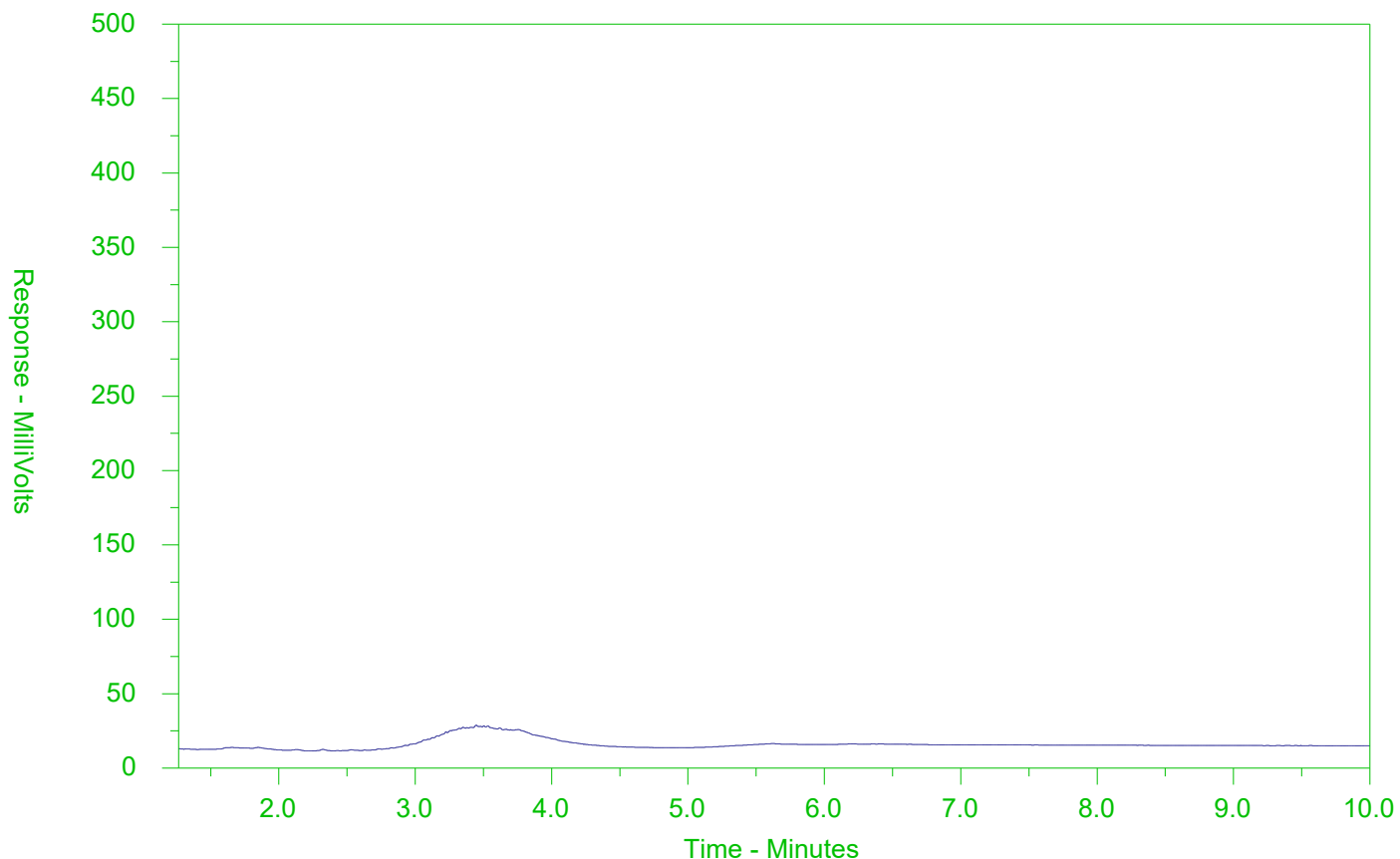
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2412344-2
 Client Sample ID: BH1-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.

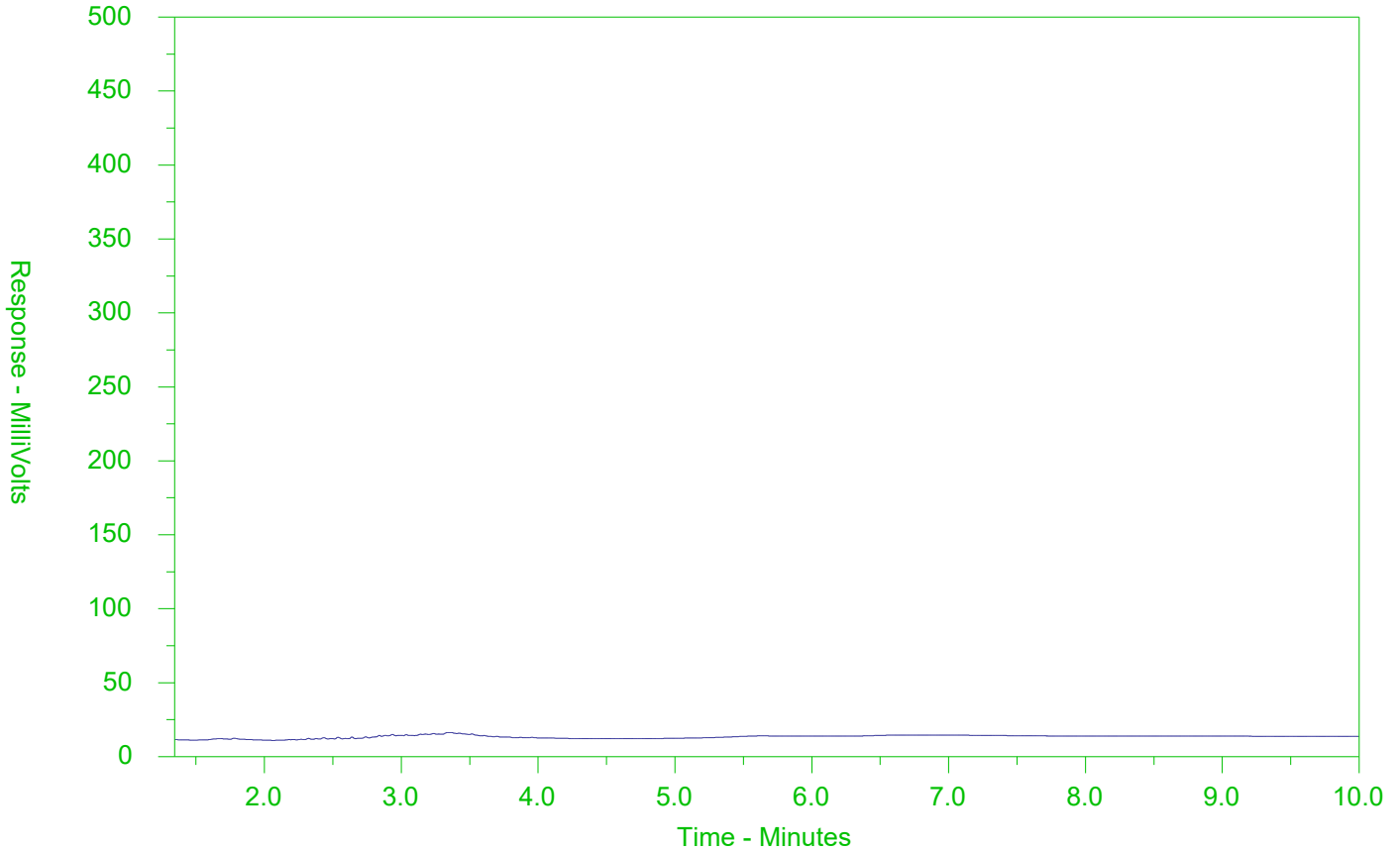
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2412344-4
 Client Sample ID: BH1-SS7



← 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.



L2412344-COFC

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																							
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																							
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>																	
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																	
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:																							
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																							
City/Province:	Brampton	Email 2			Analysis Request																							
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below																							
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	PH	Number of Containers												
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																										
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca																										
Contact:	Lorena Rossi	Email 2																										
Project Information		Oil and Gas Required Fields (client use)																										
ALS Account # / Quote #:	Q64281	AFE/Cost Center:		PO#																								
Job #:	1-19-0603-42	Major/Minor Code:		Routing Code:																								
PO / AFE:		Requisitioner:																										
LSD:		Location:																										
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:																								
	L2412344																											
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																								
	BA1-SS1	28-01-20		Soil		X				X				X	X	2												
	BA1-SS2	28-01-20		Soil						X	X					3												
	BA1-SS3	28-01-20		Soil	X				X				X	X		2												
	BA1-SS7	28-01-20		Soil						X	X					3												
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																							
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																							
					Cooling Initiated <input type="checkbox"/>																							
					INITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES °C																	
					3.9						4.5																	
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)																				
Released by: Kossay Makhzoumi	Date: 31-01-2020	Time:	Received by:	Date: FEB 3/20	Time: 9am	Received by:	Date: Feb 2/20	Time: 3																				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-JAN-20
Report Date: 20-JAN-20 11:05 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2404777
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2404777-1	BH2-SS2	Physical Tests	Conductivity	1.56	0.7	mS/cm
		Saturated Paste Extractables	SAR	7.85	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2404777-1	BH2-SS2	Physical Tests	Conductivity	1.56	0.7	mS/cm
		Saturated Paste Extractables	SAR	7.85	5	SAR

Physical Tests - SOIL

Analyte	Unit	Guide Limits						
		#1	#2					
Conductivity	mS/cm	0.7	0.7	1.56		0.366		
% Moisture	%	-	-	14.3	13.8	10.2	7.67	7.72
pH	pH units	-	-	7.40			7.88	

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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


Lab ID	L2404777-1	L2404777-4
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS2	BH2-SS5

Analyte	Unit	Guide Limits			
		#1	#2		
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050	<0.050

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2404777-1	L2404777-4
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS2	BH2-SS5

Analyte	Unit	Guide Limits		7.85	4.64
		#1	#2		
SAR	SAR	5	5	7.85	4.64
Calcium (Ca)	mg/L	-	-	50.7	7.95
Magnesium (Mg)	mg/L	-	-	10.5	1.95
Sodium (Na)	mg/L	-	-	235	56.3

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2404777-1	L2404777-4
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS2	BH2-SS5

Analyte	Unit	Guide Limits			
		#1	#2	#1	#2
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0
Arsenic (As)	ug/g	18	18	2.4	1.2
Barium (Ba)	ug/g	390	390	59.5	40.1
Beryllium (Be)	ug/g	4	5	<0.50	<0.50
Boron (B)	ug/g	120	120	5.4	<5.0
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.28	<0.10
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50
Chromium (Cr)	ug/g	160	160	16.5	10.0
Cobalt (Co)	ug/g	22	22	5.0	3.1
Copper (Cu)	ug/g	140	180	10.1	5.8
Lead (Pb)	ug/g	120	120	5.7	3.0
Mercury (Hg)	ug/g	0.27	1.8	0.0263	<0.0050
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	10.8	6.0
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	30.7	20.3
Zinc (Zn)	ug/g	340	340	25.9	16.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.


Speciated Metals - SOIL


	Lab ID	L2404777-1	L2404777-4
Sample Date		07-JAN-20	07-JAN-20
Sample ID		BH2-SS2	BH2-SS5

Analyte	Unit	Guide Limits		0.33	<0.20
		#1	#2		
Chromium, Hexavalent	ug/g	8	10	0.33	<0.20

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2404777-3	L2404777-5	
		Sample Date	07-JAN-20	07-JAN-20	
		Sample ID	BH2-SS3B	BH2-SS6	
Acetone	ug/g	16	28	<0.50	<0.50
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

Lab ID	L2404777-3	L2404777-5
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS3B	BH2-SS6

Analyte	Unit	Guide Limits			
		#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	%	-	-	97.1	89.1
Surrogate: 1,4-Difluorobenzene	%	-	-	107.4	99.5

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2404777-3	L2404777-5
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS3B	BH2-SS6

Analyte	Unit	Guide Limits			
		#1	#2	#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	%	-	-	97.9	99.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	77.9	72.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2404777-2	L2404777-4
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS3A	BH2-SS5

Analyte	Unit	Guide Limits			
		#1	#2		
Acenaphthene	ug/g	7.9	58	<0.050	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050
Anthracene	ug/g	0.67	0.74	0.091	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	0.270	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	0.219	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.318	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.171	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.088	<0.050
Chrysene	ug/g	7	7.8	0.298	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.69	0.677	<0.050
Fluorene	ug/g	62	69	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.148	<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	0.016	<0.013
Phenanthrene	ug/g	6.2	7.8	0.441	<0.046
Pyrene	ug/g	78	78	0.628	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	90.3	93.7
Surrogate: p-Terphenyl d14	%	-	-	89.3	87.1

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID	L2404777-1	L2404777-4
Sample Date	07-JAN-20	07-JAN-20
Sample ID	BH2-SS2	BH2-SS5

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	%	-	-	92.4	98.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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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
<p>Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.</p> <p>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).</p>			
F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1
<p>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.</p> <p>Notes:</p> <ol style="list-style-type: none"> 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. <p>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).</p>			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
<p>Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.</p> <p>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).</p>			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
<p>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.</p> <p>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.</p> <p>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).</p>			
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 technique is 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
<p>An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.</p> <p>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).</p>			
PH-WT	Soil	pH	MOEE E3137A
<p>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.</p> <p>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).</p>			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
<p>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.</p> <p>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).</p>			
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)
<p>Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.</p> <p>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).</p>			
XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			

**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: L2404777

Report Date: 20-JAN-20

Page 1 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT		Soil						
Batch R4967899								
WG3257128-4	DUP	L2404327-5						
Boron (B), Hot Water Ext.		0.19	0.19		ug/g	2.3	30	14-JAN-20
WG3257128-2	IRM	WT SAR3						
Boron (B), Hot Water Ext.			88.2		%		70-130	14-JAN-20
WG3257128-3	LCS							
Boron (B), Hot Water Ext.			101.0		%		70-130	14-JAN-20
WG3257128-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	14-JAN-20
Batch R4972407								
WG3258778-4	DUP	L2405982-14						
Boron (B), Hot Water Ext.		<0.10	0.11	RPD-NA	ug/g	N/A	30	17-JAN-20
WG3258778-2	IRM	WT SAR3						
Boron (B), Hot Water Ext.			96.3		%		70-130	17-JAN-20
WG3258778-3	LCS							
Boron (B), Hot Water Ext.			97.5		%		70-130	17-JAN-20
WG3258778-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	17-JAN-20
CN-WAD-R511-WT		Soil						
Batch R4971817								
WG3257747-3	DUP	L2405419-1						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	15-JAN-20
WG3257747-2	LCS							
Cyanide, Weak Acid Diss			97.9		%		80-120	15-JAN-20
WG3257747-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	15-JAN-20
WG3257747-4	MS	L2405419-1						
Cyanide, Weak Acid Diss			101.6		%		70-130	15-JAN-20
CR-CR6-IC-WT		Soil						
Batch R4972127								
WG3257862-4	CRM	WT-SQC012						
Chromium, Hexavalent			77.3		%		70-130	16-JAN-20
WG3257862-3	DUP	L2405419-1						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	16-JAN-20
WG3257862-2	LCS							
Chromium, Hexavalent			92.3		%		80-120	16-JAN-20
WG3257862-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	16-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 2 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT		Soil						
Batch	R4971994							
WG3257760-4	DUP	WG3257760-3						
Conductivity		0.496	0.495		mS/cm	0.2	20	16-JAN-20
WG3257760-2	IRM	WT SAR3						
Conductivity			105.8		%		70-130	16-JAN-20
WG3258040-1	LCS							
Conductivity			101.5		%		90-110	16-JAN-20
WG3257760-1	MB							
Conductivity			<0.0040		mS/cm		0.004	16-JAN-20
F1-HS-511-WT		Soil						
Batch	R4967653							
WG3256989-4	DUP	WG3256989-3						
F1 (C6-C10)		750	690		ug/g	8.5	30	15-JAN-20
WG3256989-2	LCS							
F1 (C6-C10)			92.6		%		80-120	14-JAN-20
WG3256989-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	14-JAN-20
Surrogate: 3,4-Dichlorotoluene			87.0		%		60-140	14-JAN-20
WG3256989-6	MS	L2404724-6						
F1 (C6-C10)			N/A	MS-B	%		-	14-JAN-20
F2-F4-511-WT		Soil						
Batch	R4968029							
WG3256710-3	DUP	WG3256710-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	13-JAN-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	13-JAN-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	13-JAN-20
WG3256710-2	LCS							
F2 (C10-C16)			92.8		%		80-120	13-JAN-20
F3 (C16-C34)			95.3		%		80-120	13-JAN-20
F4 (C34-C50)			95.1		%		80-120	13-JAN-20
WG3256710-1	MB							
F2 (C10-C16)			<10		ug/g		10	13-JAN-20
F3 (C16-C34)			<50		ug/g		50	13-JAN-20
F4 (C34-C50)			<50		ug/g		50	13-JAN-20
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	13-JAN-20
WG3256710-4	MS	WG3256710-5						
F2 (C10-C16)			106.2		%		60-140	13-JAN-20
F3 (C16-C34)			107.2		%		60-140	13-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 3 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
Batch	R4968029							
WG3256710-4 MS		WG3256710-5						
F3 (C16-C34)			107.2		%		60-140	13-JAN-20
F4 (C34-C50)			106.5		%		60-140	13-JAN-20
HG-200.2-CVAA-WT	Soil							
Batch	R4969586							
WG3257746-2 CRM		WT-CANMET-TILL2						
Mercury (Hg)			123.1		%		70-130	15-JAN-20
WG3257746-6 DUP		WG3257746-5						
Mercury (Hg)		0.0804	0.0782		ug/g	2.8	40	15-JAN-20
WG3257746-3 LCS								
Mercury (Hg)			111.5		%		80-120	15-JAN-20
WG3257746-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	15-JAN-20
MET-200.2-CCMS-WT	Soil							
Batch	R4969787							
WG3257746-2 CRM		WT-CANMET-TILL2						
Antimony (Sb)			106.7		%		70-130	15-JAN-20
Arsenic (As)			94.8		%		70-130	15-JAN-20
Barium (Ba)			93.6		%		70-130	15-JAN-20
Beryllium (Be)			93.5		%		70-130	15-JAN-20
Boron (B)			3.4		mg/kg		0-8.6	15-JAN-20
Cadmium (Cd)			92.2		%		70-130	15-JAN-20
Chromium (Cr)			92.6		%		70-130	15-JAN-20
Cobalt (Co)			92.6		%		70-130	15-JAN-20
Copper (Cu)			92.3		%		70-130	15-JAN-20
Lead (Pb)			94.8		%		70-130	15-JAN-20
Molybdenum (Mo)			96.2		%		70-130	15-JAN-20
Nickel (Ni)			94.1		%		70-130	15-JAN-20
Selenium (Se)			0.38		mg/kg		0.15-0.55	15-JAN-20
Silver (Ag)			0.26		mg/kg		0.16-0.36	15-JAN-20
Thallium (Tl)			92.2		%		70-130	15-JAN-20
Uranium (U)			89.6		%		70-130	15-JAN-20
Vanadium (V)			94.3		%		70-130	15-JAN-20
Zinc (Zn)			87.1		%		70-130	15-JAN-20
WG3257746-6 DUP		WG3257746-5						
Antimony (Sb)		0.12	0.12		ug/g			15-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 4 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4969787							
WG3257746-6	DUP	WG3257746-5						
Antimony (Sb)		0.12	0.12		ug/g	0.5	30	15-JAN-20
Arsenic (As)		10.9	10.7		ug/g	1.7	30	15-JAN-20
Barium (Ba)		123	124		ug/g	0.4	40	15-JAN-20
Beryllium (Be)		1.09	1.08		ug/g	0.6	30	15-JAN-20
Boron (B)		13.9	13.1		ug/g	6.0	30	15-JAN-20
Cadmium (Cd)		2.38	2.24		ug/g	6.1	30	15-JAN-20
Chromium (Cr)		24.5	24.5		ug/g	0.1	30	15-JAN-20
Cobalt (Co)		8.52	8.58		ug/g	0.7	30	15-JAN-20
Copper (Cu)		23.8	23.5		ug/g	1.2	30	15-JAN-20
Lead (Pb)		440	446		ug/g	1.3	40	15-JAN-20
Molybdenum (Mo)		0.51	0.54		ug/g	4.9	40	15-JAN-20
Nickel (Ni)		28.9	28.4		ug/g	1.9	30	15-JAN-20
Selenium (Se)		0.26	0.26		ug/g	0.2	30	15-JAN-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	15-JAN-20
Thallium (Tl)		0.181	0.189		ug/g	4.0	30	15-JAN-20
Uranium (U)		0.718	0.737		ug/g	2.5	30	15-JAN-20
Vanadium (V)		33.9	33.1		ug/g	2.4	30	15-JAN-20
Zinc (Zn)		884	847		ug/g	4.3	30	15-JAN-20
WG3257746-4	LCS							
Antimony (Sb)			106.7		%		80-120	15-JAN-20
Arsenic (As)			100.8		%		80-120	15-JAN-20
Barium (Ba)			101.7		%		80-120	15-JAN-20
Beryllium (Be)			101.5		%		80-120	15-JAN-20
Boron (B)			96.2		%		80-120	15-JAN-20
Cadmium (Cd)			98.4		%		80-120	15-JAN-20
Chromium (Cr)			100.2		%		80-120	15-JAN-20
Cobalt (Co)			101.6		%		80-120	15-JAN-20
Copper (Cu)			98.8		%		80-120	15-JAN-20
Lead (Pb)			98.9		%		80-120	15-JAN-20
Molybdenum (Mo)			103.2		%		80-120	15-JAN-20
Nickel (Ni)			99.8		%		80-120	15-JAN-20
Selenium (Se)			98.9		%		80-120	15-JAN-20
Silver (Ag)			101.9		%		80-120	15-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 5 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R4969787							
WG3257746-4	LCS							
Thallium (Tl)			95.5		%		80-120	15-JAN-20
Uranium (U)			99.6		%		80-120	15-JAN-20
Vanadium (V)			104.2		%		80-120	15-JAN-20
Zinc (Zn)			92.8		%		80-120	15-JAN-20
WG3257746-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	15-JAN-20
Arsenic (As)			<0.10		mg/kg		0.1	15-JAN-20
Barium (Ba)			<0.50		mg/kg		0.5	15-JAN-20
Beryllium (Be)			<0.10		mg/kg		0.1	15-JAN-20
Boron (B)			<5.0		mg/kg		5	15-JAN-20
Cadmium (Cd)			<0.020		mg/kg		0.02	15-JAN-20
Chromium (Cr)			<0.50		mg/kg		0.5	15-JAN-20
Cobalt (Co)			<0.10		mg/kg		0.1	15-JAN-20
Copper (Cu)			<0.50		mg/kg		0.5	15-JAN-20
Lead (Pb)			<0.50		mg/kg		0.5	15-JAN-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	15-JAN-20
Nickel (Ni)			<0.50		mg/kg		0.5	15-JAN-20
Selenium (Se)			<0.20		mg/kg		0.2	15-JAN-20
Silver (Ag)			<0.10		mg/kg		0.1	15-JAN-20
Thallium (Tl)			<0.050		mg/kg		0.05	15-JAN-20
Uranium (U)			<0.050		mg/kg		0.05	15-JAN-20
Vanadium (V)			<0.20		mg/kg		0.2	15-JAN-20
Zinc (Zn)			<2.0		mg/kg		2	15-JAN-20
MOISTURE-WT								
	Soil							
Batch	R4969413							
WG3257814-3	DUP	L2404718-1						
% Moisture		12.4	13.4		%	7.6	20	15-JAN-20
WG3257814-2	LCS							
% Moisture			101.0		%		90-110	15-JAN-20
WG3257814-1	MB							
% Moisture			<0.25		%		0.25	15-JAN-20
Batch	R4969746							
WG3257949-3	DUP	L2404777-5						
% Moisture		7.72	7.67		%	0.6	20	15-JAN-20
WG3257949-2	LCS							



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 6 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R4969746							
WG3257949-2	LCS							
% Moisture			100.2		%		90-110	15-JAN-20
WG3257949-1	MB							
% Moisture			<0.25		%		0.25	15-JAN-20
PAH-511-WT		Soil						
Batch	R4968999							
WG3257515-3	DUP	WG3257515-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-JAN-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-JAN-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	15-JAN-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	15-JAN-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
WG3257515-2	LCS							
1-Methylnaphthalene			89.0		%		50-140	15-JAN-20
2-Methylnaphthalene			83.6		%		50-140	15-JAN-20
Acenaphthene			89.3		%		50-140	15-JAN-20
Acenaphthylene			89.9		%		50-140	15-JAN-20
Anthracene			89.1		%		50-140	15-JAN-20
Benzo(a)anthracene			90.0		%		50-140	15-JAN-20
Benzo(a)pyrene			87.6		%		50-140	15-JAN-20
Benzo(b)fluoranthene			87.4		%		50-140	15-JAN-20
Benzo(g,h,i)perylene			86.0		%		50-140	15-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 7 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch	R4968999							
WG3257515-2 LCS								
Benzo(g,h,i)perylene			86.0		%		50-140	15-JAN-20
Benzo(k)fluoranthene			91.0		%		50-140	15-JAN-20
Chrysene			100.4		%		50-140	15-JAN-20
Dibenzo(ah)anthracene			79.9		%		50-140	15-JAN-20
Fluoranthene			87.1		%		50-140	15-JAN-20
Fluorene			87.2		%		50-140	15-JAN-20
Indeno(1,2,3-cd)pyrene			79.8		%		50-140	15-JAN-20
Naphthalene			87.6		%		50-140	15-JAN-20
Phenanthrene			90.3		%		50-140	15-JAN-20
Pyrene			87.3		%		50-140	15-JAN-20
WG3257515-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	15-JAN-20
2-Methylnaphthalene			<0.030		ug/g		0.03	15-JAN-20
Acenaphthene			<0.050		ug/g		0.05	15-JAN-20
Acenaphthylene			<0.050		ug/g		0.05	15-JAN-20
Anthracene			<0.050		ug/g		0.05	15-JAN-20
Benzo(a)anthracene			<0.050		ug/g		0.05	15-JAN-20
Benzo(a)pyrene			<0.050		ug/g		0.05	15-JAN-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	15-JAN-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	15-JAN-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	15-JAN-20
Chrysene			<0.050		ug/g		0.05	15-JAN-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	15-JAN-20
Fluoranthene			<0.050		ug/g		0.05	15-JAN-20
Fluorene			<0.050		ug/g		0.05	15-JAN-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	15-JAN-20
Naphthalene			<0.013		ug/g		0.013	15-JAN-20
Phenanthrene			<0.046		ug/g		0.046	15-JAN-20
Pyrene			<0.050		ug/g		0.05	15-JAN-20
Surrogate: 2-Fluorobiphenyl			91.0		%		50-140	15-JAN-20
Surrogate: p-Terphenyl d14			84.8		%		50-140	15-JAN-20
WG3257515-4 MS		WG3257515-5						
1-Methylnaphthalene			88.5		%		50-140	15-JAN-20
2-Methylnaphthalene			84.1		%		50-140	15-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 8 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PAH-511-WT		Soil							
Batch	R4968999								
WG3257515-4	MS	WG3257515-5							
Acenaphthene			89.1		%		50-140	15-JAN-20	
Acenaphthylene			88.8		%		50-140	15-JAN-20	
Anthracene			88.6		%		50-140	15-JAN-20	
Benzo(a)anthracene			88.9		%		50-140	15-JAN-20	
Benzo(a)pyrene			86.8		%		50-140	15-JAN-20	
Benzo(b)fluoranthene			86.6		%		50-140	15-JAN-20	
Benzo(g,h,i)perylene			83.3		%		50-140	15-JAN-20	
Benzo(k)fluoranthene			90.0		%		50-140	15-JAN-20	
Chrysene			99.8		%		50-140	15-JAN-20	
Dibenzo(ah)anthracene			76.3		%		50-140	15-JAN-20	
Fluoranthene			86.3		%		50-140	15-JAN-20	
Fluorene			87.0		%		50-140	15-JAN-20	
Indeno(1,2,3-cd)pyrene			78.4		%		50-140	15-JAN-20	
Naphthalene			86.8		%		50-140	15-JAN-20	
Phenanthrene			89.7		%		50-140	15-JAN-20	
Pyrene			86.4		%		50-140	15-JAN-20	
PCB-511-WT		Soil							
Batch	R4969411								
WG3257515-3	DUP	WG3257515-5							
Aroclor 1242			<0.010	<0.010	RPD-NA	ug/g	N/A	40	15-JAN-20
Aroclor 1248			<0.010	<0.010	RPD-NA	ug/g	N/A	40	15-JAN-20
Aroclor 1254			<0.010	<0.010	RPD-NA	ug/g	N/A	40	15-JAN-20
Aroclor 1260			<0.010	<0.010	RPD-NA	ug/g	N/A	40	15-JAN-20
WG3257515-2	LCS								
Aroclor 1242			97.7		%		60-140	15-JAN-20	
Aroclor 1248			83.7		%		60-140	15-JAN-20	
Aroclor 1254			98.6		%		60-140	15-JAN-20	
Aroclor 1260			103.3		%		60-140	15-JAN-20	
WG3257515-1	MB								
Aroclor 1242			<0.010		ug/g		0.01	15-JAN-20	
Aroclor 1248			<0.010		ug/g		0.01	15-JAN-20	
Aroclor 1254			<0.010		ug/g		0.01	15-JAN-20	
Aroclor 1260			<0.010		ug/g		0.01	15-JAN-20	
Surrogate: d14-Terphenyl			96.9		%		60-140	15-JAN-20	



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 9 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT								
	Soil							
Batch	R4969411							
WG3257515-4	MS	WG3257515-5						
Aroclor 1242			94.4		%		60-140	15-JAN-20
Aroclor 1254			96.4		%		60-140	15-JAN-20
Aroclor 1260			99.5		%		60-140	15-JAN-20
Batch	R4971067							
WG3257833-3	DUP	WG3257833-5						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
WG3257833-2	LCS							
Aroclor 1242			97.7		%		60-140	16-JAN-20
Aroclor 1248			88.8		%		60-140	16-JAN-20
Aroclor 1254			100.2		%		60-140	16-JAN-20
Aroclor 1260			104.2		%		60-140	16-JAN-20
WG3257833-1	MB							
Aroclor 1242			<0.010		ug/g		0.01	16-JAN-20
Aroclor 1248			<0.010		ug/g		0.01	16-JAN-20
Aroclor 1254			<0.010		ug/g		0.01	16-JAN-20
Aroclor 1260			<0.010		ug/g		0.01	16-JAN-20
Surrogate: d14-Terphenyl			88.4		%		60-140	16-JAN-20
WG3257833-4	MS	WG3257833-5						
Aroclor 1242			100.8		%		60-140	16-JAN-20
Aroclor 1254			108.1		%		60-140	16-JAN-20
Aroclor 1260			120.0		%		60-140	16-JAN-20
PH-WT								
	Soil							
Batch	R4970278							
WG3256754-1	DUP	L2399471-16						
pH		7.60	7.59	J	pH units	0.01	0.3	15-JAN-20
WG3257214-1	LCS							
pH			6.95		pH units		6.9-7.1	15-JAN-20
SAR-R511-WT								
	Soil							
Batch	R4969489							
WG3257760-4	DUP	WG3257760-3						
Calcium (Ca)		36.7	37.0		mg/L	0.8	30	15-JAN-20
Sodium (Na)		30.7	30.4		mg/L	1.0	30	15-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 10 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT		Soil						
Batch	R4969489							
WG3257760-4	DUP	WG3257760-3						
Magnesium (Mg)		14.5	14.7		mg/L	1.4	30	15-JAN-20
WG3257760-2	IRM	WT SAR3						
Calcium (Ca)			110.1		%		70-130	15-JAN-20
Sodium (Na)			101.7		%		70-130	15-JAN-20
Magnesium (Mg)			110.1		%		70-130	15-JAN-20
WG3257760-5	LCS							
Calcium (Ca)			103.0		%		80-120	15-JAN-20
Sodium (Na)			100.8		%		80-120	15-JAN-20
Magnesium (Mg)			101.6		%		80-120	15-JAN-20
WG3257760-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	15-JAN-20
Sodium (Na)			<0.50		mg/L		0.5	15-JAN-20
Magnesium (Mg)			<0.50		mg/L		0.5	15-JAN-20
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-4	DUP	WG3256989-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
1,1,2,2-Tetrachloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	14-JAN-20
1,1,1-Trichloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,1,2-Trichloroethane		<1.3	<1.3	RPD-NA	ug/g	N/A	40	14-JAN-20
1,1-Dichloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,1-Dichloroethylene		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,2-Dibromoethane		<0.30	<0.30	RPD-NA	ug/g	N/A	40	14-JAN-20
1,2-Dichlorobenzene		<20	<20	RPD-NA	ug/g	N/A	40	16-JAN-20
1,2-Dichloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,2-Dichloropropane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,3-Dichlorobenzene		<20	<20	RPD-NA	ug/g	N/A	40	16-JAN-20
1,4-Dichlorobenzene		<20	<20	RPD-NA	ug/g	N/A	40	16-JAN-20
Acetone		<20	<20	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzene		<0.27	<0.27	RPD-NA	ug/g	N/A	40	15-JAN-20
Bromodichloromethane		<5.0	<5.7	RPD-NA	ug/g	N/A	40	15-JAN-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Bromomethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Carbon tetrachloride		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 11 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4967653							
WG3256989-4	DUP	WG3256989-3						
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Chloroform		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
cis-1,2-Dichloroethylene		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
cis-1,3-Dichloropropene		<1.2	<1.2	RPD-NA	ug/g	N/A	40	15-JAN-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Ethylbenzene		2.61	2.47		ug/g	5.3	40	14-JAN-20
n-Hexane		6.7	6.8		ug/g	1.5	40	15-JAN-20
Methylene Chloride		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
m+p-Xylenes		2.80	2.66		ug/g	5.3	40	14-JAN-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/g	N/A	40	15-JAN-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/g	N/A	40	15-JAN-20
o-Xylene		0.480	0.464		ug/g	3.4	40	14-JAN-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	14-JAN-20
trans-1,2-Dichloroethylene		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-JAN-20
Trichloroethylene		<0.40	<0.40	RPD-NA	ug/g	N/A	40	15-JAN-20
Trichlorofluoromethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Vinyl chloride		<0.80	<0.80	RPD-NA	ug/g	N/A	40	15-JAN-20
WG3256989-2	LCS							
1,1,1,2-Tetrachloroethane			95.3		%		60-130	14-JAN-20
1,1,2,2-Tetrachloroethane			89.7		%		60-130	14-JAN-20
1,1,1-Trichloroethane			96.2		%		60-130	14-JAN-20
1,1,2-Trichloroethane			91.7		%		60-130	14-JAN-20
1,1-Dichloroethane			94.4		%		60-130	14-JAN-20
1,1-Dichloroethylene			91.9		%		60-130	14-JAN-20
1,2-Dibromoethane			89.8		%		70-130	14-JAN-20
1,2-Dichlorobenzene			98.3		%		70-130	14-JAN-20
1,2-Dichloroethane			90.7		%		60-130	14-JAN-20
1,2-Dichloropropane			94.2		%		70-130	14-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 12 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-2	LCS							
1,3-Dichlorobenzene			100.4		%		70-130	14-JAN-20
1,4-Dichlorobenzene			99.4		%		70-130	14-JAN-20
Acetone			90.3		%		60-140	14-JAN-20
Benzene			98.5		%		70-130	14-JAN-20
Bromodichloromethane			92.9		%		50-140	14-JAN-20
Bromoform			89.0		%		70-130	14-JAN-20
Bromomethane			83.9		%		50-140	14-JAN-20
Carbon tetrachloride			96.9		%		70-130	14-JAN-20
Chlorobenzene			97.8		%		70-130	14-JAN-20
Chloroform			95.6		%		70-130	14-JAN-20
cis-1,2-Dichloroethylene			91.3		%		70-130	14-JAN-20
cis-1,3-Dichloropropene			98.0		%		70-130	14-JAN-20
Dibromochloromethane			91.2		%		60-130	14-JAN-20
Dichlorodifluoromethane			67.6		%		50-140	14-JAN-20
Ethylbenzene			100.2		%		70-130	14-JAN-20
n-Hexane			89.8		%		70-130	14-JAN-20
Methylene Chloride			89.8		%		70-130	14-JAN-20
MTBE			96.1		%		70-130	14-JAN-20
m+p-Xylenes			100.9		%		70-130	14-JAN-20
Methyl Ethyl Ketone			82.9		%		60-140	14-JAN-20
Methyl Isobutyl Ketone			81.3		%		60-140	14-JAN-20
o-Xylene			98.3		%		70-130	14-JAN-20
Styrene			95.7		%		70-130	14-JAN-20
Tetrachloroethylene			100.3		%		60-130	14-JAN-20
Toluene			100.0		%		70-130	14-JAN-20
trans-1,2-Dichloroethylene			93.3		%		60-130	14-JAN-20
trans-1,3-Dichloropropene			100.1		%		70-130	14-JAN-20
Trichloroethylene			95.8		%		60-130	14-JAN-20
Trichlorofluoromethane			92.5		%		50-140	14-JAN-20
Vinyl chloride			97.4		%		60-140	14-JAN-20
WG3256989-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	14-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 13 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-1 MB								
1,1,2-Trichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1-Dichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	14-JAN-20
1,2-Dibromoethane			<0.050		ug/g		0.05	14-JAN-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	14-JAN-20
1,2-Dichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,2-Dichloropropane			<0.050		ug/g		0.05	14-JAN-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	14-JAN-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	14-JAN-20
Acetone			<0.50		ug/g		0.5	14-JAN-20
Benzene			<0.0068		ug/g		0.0068	14-JAN-20
Bromodichloromethane			<0.050		ug/g		0.05	14-JAN-20
Bromoform			<0.050		ug/g		0.05	14-JAN-20
Bromomethane			<0.050		ug/g		0.05	14-JAN-20
Carbon tetrachloride			<0.050		ug/g		0.05	14-JAN-20
Chlorobenzene			<0.050		ug/g		0.05	14-JAN-20
Chloroform			<0.050		ug/g		0.05	14-JAN-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	14-JAN-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	14-JAN-20
Dibromochloromethane			<0.050		ug/g		0.05	14-JAN-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	14-JAN-20
Ethylbenzene			<0.018		ug/g		0.018	14-JAN-20
n-Hexane			<0.050		ug/g		0.05	14-JAN-20
Methylene Chloride			<0.050		ug/g		0.05	14-JAN-20
MTBE			<0.050		ug/g		0.05	14-JAN-20
m+p-Xylenes			<0.030		ug/g		0.03	14-JAN-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	14-JAN-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	14-JAN-20
o-Xylene			<0.020		ug/g		0.02	14-JAN-20
Styrene			<0.050		ug/g		0.05	14-JAN-20
Tetrachloroethylene			<0.050		ug/g		0.05	14-JAN-20
Toluene			<0.080		ug/g		0.08	14-JAN-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	14-JAN-20



Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Page 14 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-1	MB							
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	14-JAN-20
Trichloroethylene			<0.010		ug/g		0.01	14-JAN-20
Trichlorofluoromethane			<0.050		ug/g		0.05	14-JAN-20
Vinyl chloride			<0.020		ug/g		0.02	14-JAN-20
Surrogate: 1,4-Difluorobenzene			117.4		%		50-140	14-JAN-20
Surrogate: 4-Bromofluorobenzene			103.8		%		50-140	14-JAN-20

Quality Control Report

Workorder: L2404777

Report Date: 20-JAN-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Kossay Makhzoumi

Page 15 of 15

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
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLI	Detection Limit Raised: Dilution required to address Internal Standard response problems caused by matrix interference.
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
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.

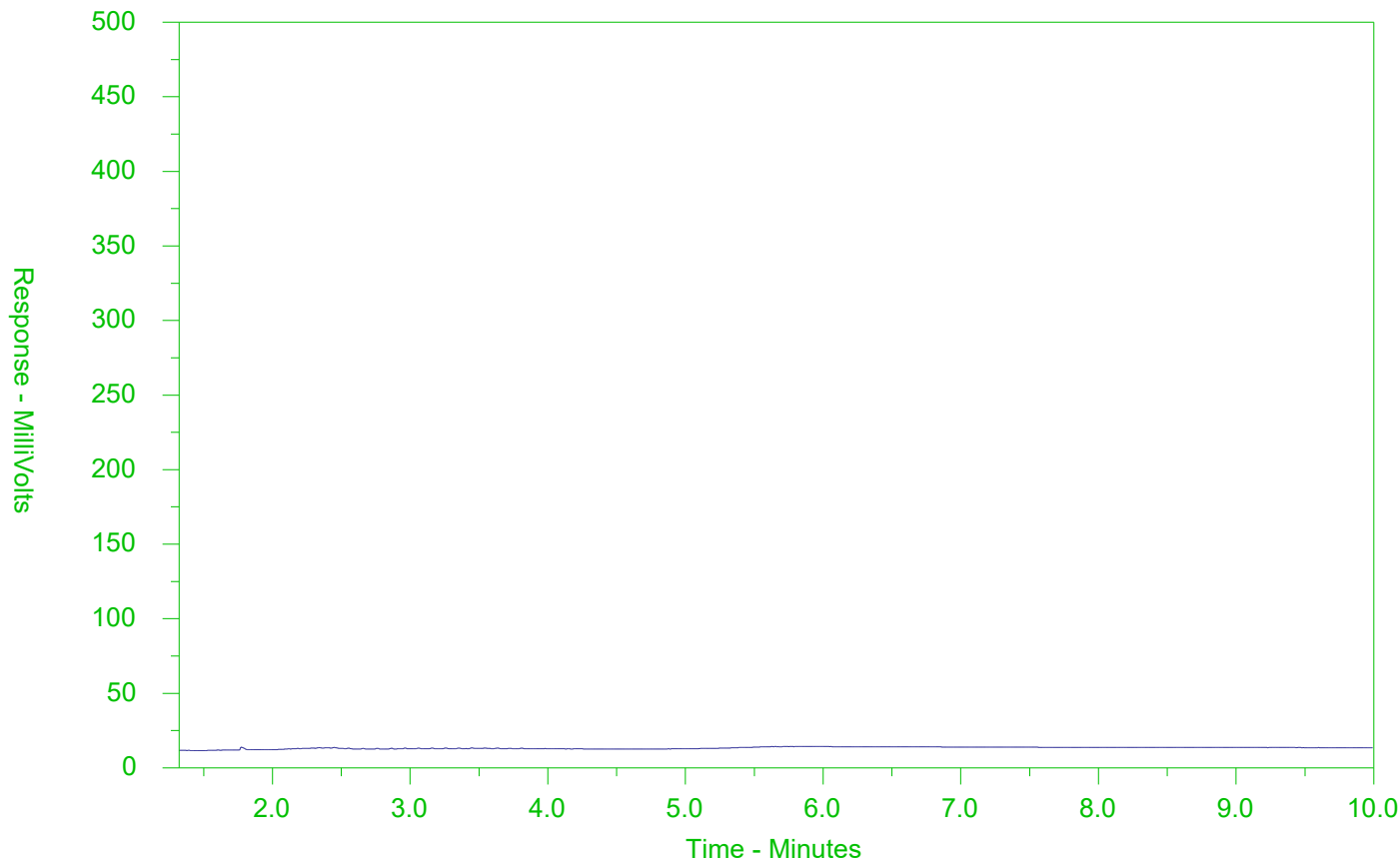
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2404777-3
 Client Sample ID: BH2-SS3B



← 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.

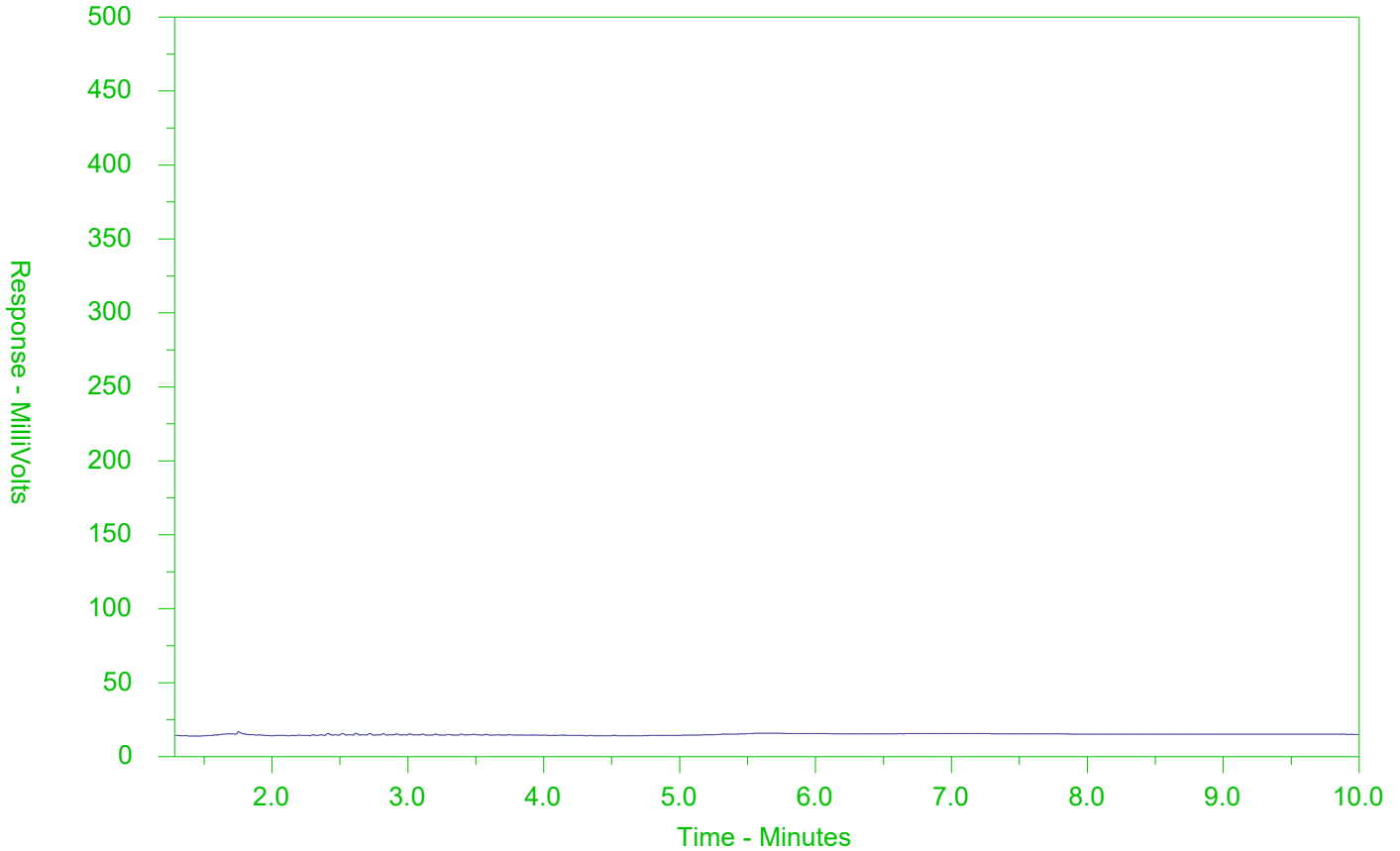
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2404777-5
 Client Sample ID: BH2-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.



ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2404777-COFC

COC Number: 15 -

Page 1 of 1

Report To Contact and company name below will appear on the final report		Report For		Confirm all E&P TATs with your AM - surcharges will apply												
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply												
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		PRIORITY (Business Days)			EMERGENCY									
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		4 day [P4] <input type="checkbox"/>			1 Business day [E1] <input type="checkbox"/>									
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		3 day [P3] <input type="checkbox"/>			Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>									
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca		Date and Time Required for all E&P TATs:												
City/Province:	Brampton	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.												
Postal Code:	L6T 3Y3	Email 3		Analysis Request												
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below												
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca														
Contact:	Lorena Rossi	Email 2														
Project Information		Oil and Gas Required Fields (client use)														
ALS Account # / Quote #:	Q64281	AFE/Cost Center:	PO#													
Job #:	1-19-0603-42	Major/Minor Code:	Routing Code:													
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2404777 R5		ALS Contact:	Sampler:												
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
	BH2-SS2	07-01-20		Soil	X									X	2	
	BH2-SS3A	07-01-20		Soil						X					1	
	BH2-SS3B	07-01-20		Soil							X	X			3	
	BH2-SS5	07-01-20		Soil	X					X				X	2	
	BH2-SS6	07-01-20		Soil							X	X			3	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>										
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO						Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>										
						Cooling Initiated <input type="checkbox"/>										
						INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C					
						4.4					3.6					
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Kossay Makhzoumi	Date: 10-01-20	Time:	Received by: [Signature]	Date: Jan 13/2020	Time: 10am	Received by: [Signature]	Date: 13-JAN-20	Time: 1430								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 31-OCT-19
Report Date: 06-NOV-19 13:06 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2375323
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2375323-1	BH3-SS1	Polycyclic Aromatic Hydrocarbons	Acenaphthylene	1.03	0.15	ug/g
			Anthracene	5.60	0.67	ug/g
			Benzo(a)anthracene	11.5	0.5	ug/g
			Benzo(a)pyrene	9.26	0.3	ug/g
			Benzo(b)fluoranthene	10.7	0.78	ug/g
			Benzo(k)fluoranthene	4.63	0.78	ug/g
			Chrysene	11.5	7	ug/g
			Dibenzo(ah)anthracene	1.64	0.1	ug/g
			Fluoranthene	25.5	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	5.75	0.38	ug/g
			Naphthalene	0.704	0.6	ug/g
			Phenanthrene	23.5	6.2	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2375323-1	BH3-SS1	Polycyclic Aromatic Hydrocarbons	Acenaphthylene	1.03	0.17	ug/g
			Anthracene	5.60	0.74	ug/g
			Benzo(a)anthracene	11.5	0.63	ug/g
			Benzo(a)pyrene	9.26	0.3	ug/g
			Benzo(b)fluoranthene	10.7	0.78	ug/g
			Benzo(k)fluoranthene	4.63	0.78	ug/g
			Chrysene	11.5	7.8	ug/g
			Dibenzo(ah)anthracene	1.64	0.1	ug/g
			Fluoranthene	25.5	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	5.75	0.48	ug/g
			Phenanthrene	23.5	7.8	ug/g

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

Physical Tests - SOIL

	Lab ID						
	L2375323-1	L2375323-2	L2375323-3	L2375323-4			
	Sample Date						
	25-OCT-19	25-OCT-19	25-OCT-19	25-OCT-19			
	Sample ID						
	BH3-SS1	BH3-SS2	BH3-SS6	BH3-SS8			
	Guide Limits						
Analyte	Unit	#1	#2				
% Moisture	%	-	-	7.17	13.7	5.95	9.62

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375323-1	L2375323-3
Sample Date	25-OCT-19	25-OCT-19
Sample ID	BH3-SS1	BH3-SS6

Analyte	Unit	Guide Limits			
		#1	#2		
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0
Arsenic (As)	ug/g	18	18	1.3	1.2
Barium (Ba)	ug/g	390	390	32.5	31.9
Beryllium (Be)	ug/g	4	5	<0.50	<0.50
Boron (B)	ug/g	120	120	<5.0	<5.0
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50
Chromium (Cr)	ug/g	160	160	8.6	8.6
Cobalt (Co)	ug/g	22	22	2.9	2.8
Copper (Cu)	ug/g	140	180	5.8	5.7
Lead (Pb)	ug/g	120	120	3.7	3.3
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	5.4	5.3
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	18.8	18.6
Zinc (Zn)	ug/g	340	340	14.8	14.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Lab ID	
		#1	#2	L2375323-2	L2375323-4
				Sample Date	25-OCT-19
				Sample ID	BH3-SS2
				Sample Date	25-OCT-19
				Sample ID	BH3-SS8
Acetone	ug/g	16	28	<0.50	<0.50
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375323-2	L2375323-4
Sample Date	25-OCT-19	25-OCT-19
Sample ID	BH3-SS2	BH3-SS8

Analyte	Unit	Guide Limits			
		#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	0.018	0.022
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	%	-	-	94.7	93.1
Surrogate: 1,4-Difluorobenzene	%	-	-	95.2	94.7

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375323-2	L2375323-4
Sample Date	25-OCT-19	25-OCT-19
Sample ID	BH3-SS2	BH3-SS8

Analyte	Unit	Guide Limits			
		#1	#2	#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	%	-	-	100.9	90.3
Surrogate: 3,4-Dichlorotoluene	%	-	-	74.0	73.6

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Result	
		#1	#2	Value	Limit
				Lab ID	L2375323-1 L2375323-3
				Sample Date	25-OCT-19 25-OCT-19
				Sample ID	BH3-SS1 BH3-SS6
Acenaphthene	ug/g	7.9	58	2.38	<0.050
Acenaphthylene	ug/g	0.15	0.17	1.03	<0.050
Anthracene	ug/g	0.67	0.74	5.60	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	11.5	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	9.26	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	10.7	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	6.13	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	4.63	<0.050
Chrysene	ug/g	7	7.8	11.5	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	1.64	<0.050
Fluoranthene	ug/g	0.69	0.69	25.5	<0.050
Fluorene	ug/g	62	69	2.41	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	5.75	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.988	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	0.508 ^{DLM}	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	0.480 ^{DLM}	<0.030
Naphthalene	ug/g	0.6	0.75	0.704 ^{DLM}	<0.013
Phenanthrene	ug/g	6.2	7.8	23.5	<0.046
Pyrene	ug/g	78	78	20.9	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	89.3	91.5
Surrogate: p-Terphenyl d14	%	-	-	78.7	82.1

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID	L2375323-1	L2375323-3
Sample Date	25-OCT-19	25-OCT-19
Sample ID	BH3-SS1	BH3-SS6

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	-	-	<0.0150 ^{OLM}	<0.010
Total PCBs	ug/g	0.35	0.35	<0.0230 ^{OLM}	<0.020
Surrogate: d14-Terphenyl	%	-	-	108.1	87.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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
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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**
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F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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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.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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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
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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.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>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).</p>			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
<p>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.</p>			
<p>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.</p>			
<p>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).</p>			
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
<p>A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is 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.</p>			
<p>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).</p>			
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
<p>An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.</p>			
<p>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).</p>			
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)
<p>Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.</p>			
<p>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).</p>			
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
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WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
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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: L2375323

Report Date: 06-NOV-19

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R4898484							
WG3209434-4	DUP	WG3209434-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	05-NOV-19
WG3209434-2	LCS							
F1 (C6-C10)			102.2		%		80-120	05-NOV-19
WG3209434-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	05-NOV-19
Surrogate: 3,4-Dichlorotoluene			100.0		%		60-140	05-NOV-19
WG3209434-6	MS	L2373024-10						
F1 (C6-C10)			96.6		%		60-140	05-NOV-19
F2-F4-511-WT		Soil						
Batch	R4899263							
WG3209407-3	DUP	WG3209407-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	05-NOV-19
F3 (C16-C34)		51	<50	RPD-NA	ug/g	N/A	30	05-NOV-19
F4 (C34-C50)		92	<50	RPD-NA	ug/g	N/A	30	05-NOV-19
WG3209407-2	LCS							
F2 (C10-C16)			114.3		%		80-120	05-NOV-19
F3 (C16-C34)			112.9		%		80-120	05-NOV-19
F4 (C34-C50)			114.6		%		80-120	05-NOV-19
WG3209407-1	MB							
F2 (C10-C16)			<10		ug/g		10	05-NOV-19
F3 (C16-C34)			<50		ug/g		50	05-NOV-19
F4 (C34-C50)			<50		ug/g		50	05-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.6		%		60-140	05-NOV-19
WG3209407-4	MS	WG3209407-5						
F2 (C10-C16)			134.5		%		60-140	05-NOV-19
F3 (C16-C34)			120.8		%		60-140	05-NOV-19
F4 (C34-C50)			109.5		%		60-140	05-NOV-19
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			103.6		%		70-130	05-NOV-19
Arsenic (As)			105.0		%		70-130	05-NOV-19
Barium (Ba)			102.7		%		70-130	05-NOV-19
Beryllium (Be)			93.9		%		70-130	05-NOV-19
Boron (B)			3.5		mg/kg		0-8.6	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-2	CRM	WT-CANMET-TILL2						
Cadmium (Cd)			100.9		%		70-130	05-NOV-19
Chromium (Cr)			104.0		%		70-130	05-NOV-19
Cobalt (Co)			102.4		%		70-130	05-NOV-19
Copper (Cu)			104.4		%		70-130	05-NOV-19
Lead (Pb)			103.4		%		70-130	05-NOV-19
Molybdenum (Mo)			102.4		%		70-130	05-NOV-19
Nickel (Ni)			103.9		%		70-130	05-NOV-19
Selenium (Se)			0.40		mg/kg		0.15-0.55	05-NOV-19
Silver (Ag)			0.28		mg/kg		0.16-0.36	05-NOV-19
Thallium (Tl)			102.9		%		70-130	05-NOV-19
Uranium (U)			102.4		%		70-130	05-NOV-19
Vanadium (V)			103.9		%		70-130	05-NOV-19
Zinc (Zn)			98.3		%		70-130	05-NOV-19
WG3210315-4	DUP	L2375323-3						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Arsenic (As)		1.2	1.2		ug/g	0.2	30	05-NOV-19
Barium (Ba)		31.9	30.3		ug/g	5.4	40	05-NOV-19
Beryllium (Be)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Chromium (Cr)		8.6	8.5		ug/g	1.4	30	05-NOV-19
Cobalt (Co)		2.8	2.6		ug/g	8.8	30	05-NOV-19
Copper (Cu)		5.7	5.3		ug/g	6.4	30	05-NOV-19
Lead (Pb)		3.3	3.3		ug/g	1.6	40	05-NOV-19
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	05-NOV-19
Nickel (Ni)		5.3	5.2		ug/g	1.2	30	05-NOV-19
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	05-NOV-19
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Vanadium (V)		18.6	18.4		ug/g	0.9	30	05-NOV-19
Zinc (Zn)		14.9	14.3		ug/g	3.9	30	05-NOV-19
WG3210315-3	LCS							



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-3	LCS							
Antimony (Sb)			102.0		%		80-120	05-NOV-19
Arsenic (As)			95.1		%		80-120	05-NOV-19
Barium (Ba)			94.9		%		80-120	05-NOV-19
Beryllium (Be)			87.8		%		80-120	05-NOV-19
Boron (B)			88.6		%		80-120	05-NOV-19
Cadmium (Cd)			93.8		%		80-120	05-NOV-19
Chromium (Cr)			94.6		%		80-120	05-NOV-19
Cobalt (Co)			93.6		%		80-120	05-NOV-19
Copper (Cu)			92.8		%		80-120	05-NOV-19
Lead (Pb)			96.9		%		80-120	05-NOV-19
Molybdenum (Mo)			99.9		%		80-120	05-NOV-19
Nickel (Ni)			94.0		%		80-120	05-NOV-19
Selenium (Se)			91.4		%		80-120	05-NOV-19
Silver (Ag)			93.0		%		80-120	05-NOV-19
Thallium (Tl)			95.2		%		80-120	05-NOV-19
Uranium (U)			97.3		%		80-120	05-NOV-19
Vanadium (V)			96.4		%		80-120	05-NOV-19
Zinc (Zn)			90.9		%		80-120	05-NOV-19
WG3210315-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	05-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	05-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	05-NOV-19
Boron (B)			<5.0		mg/kg		5	05-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	05-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	05-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	05-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	05-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	05-NOV-19
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	05-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	05-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	05-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R4899932								
WG3210315-1	MB							
Uranium (U)			<0.050		mg/kg		0.05	05-NOV-19
Vanadium (V)			<0.20		mg/kg		0.2	05-NOV-19
Zinc (Zn)			<2.0		mg/kg		2	05-NOV-19
MOISTURE-WT		Soil						
Batch R4895778								
WG3207864-3	DUP	L2375263-1						
% Moisture		5.86	5.70		%	2.8	20	01-NOV-19
WG3207864-2	LCS							
% Moisture			101.5		%		90-110	01-NOV-19
WG3207864-1	MB							
% Moisture			<0.25		%		0.25	01-NOV-19
PAH-511-WT		Soil						
Batch R4897642								
WG3207515-3	DUP	WG3207515-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	04-NOV-19
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	04-NOV-19
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
WG3207515-2	LCS							
1-Methylnaphthalene			86.6		%		50-140	04-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R4897642							
WG3207515-2	LCS							
2-Methylnaphthalene			82.2		%		50-140	04-NOV-19
Acenaphthene			88.2		%		50-140	04-NOV-19
Acenaphthylene			89.7		%		50-140	04-NOV-19
Anthracene			87.6		%		50-140	04-NOV-19
Benzo(a)anthracene			88.8		%		50-140	04-NOV-19
Benzo(a)pyrene			82.1		%		50-140	04-NOV-19
Benzo(b)fluoranthene			75.3		%		50-140	04-NOV-19
Benzo(g,h,i)perylene			84.2		%		50-140	04-NOV-19
Benzo(k)fluoranthene			89.8		%		50-140	04-NOV-19
Chrysene			95.2		%		50-140	04-NOV-19
Dibenzo(ah)anthracene			87.8		%		50-140	04-NOV-19
Fluoranthene			85.4		%		50-140	04-NOV-19
Fluorene			85.9		%		50-140	04-NOV-19
Indeno(1,2,3-cd)pyrene			89.6		%		50-140	04-NOV-19
Naphthalene			84.0		%		50-140	04-NOV-19
Phenanthrene			86.8		%		50-140	04-NOV-19
Pyrene			85.3		%		50-140	04-NOV-19
WG3207515-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
2-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
Acenaphthene			<0.050		ug/g		0.05	04-NOV-19
Acenaphthylene			<0.050		ug/g		0.05	04-NOV-19
Anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)pyrene			<0.050		ug/g		0.05	04-NOV-19
Benzo(b)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	04-NOV-19
Benzo(k)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Chrysene			<0.050		ug/g		0.05	04-NOV-19
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	04-NOV-19
Fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Fluorene			<0.050		ug/g		0.05	04-NOV-19
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	04-NOV-19
Naphthalene			<0.013		ug/g		0.013	04-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PAH-511-WT		Soil							
Batch	R4897642								
WG3207515-1	MB								
Phenanthrene			<0.046		ug/g		0.046	04-NOV-19	
Pyrene			<0.050		ug/g		0.05	04-NOV-19	
Surrogate: 2-Fluorobiphenyl			95.6		%		50-140	04-NOV-19	
Surrogate: p-Terphenyl d14			86.6		%		50-140	04-NOV-19	
WG3207515-4	MS	WG3207515-5							
1-Methylnaphthalene			89.3		%		50-140	04-NOV-19	
2-Methylnaphthalene			84.7		%		50-140	04-NOV-19	
Acenaphthene			91.1		%		50-140	04-NOV-19	
Acenaphthylene			94.0		%		50-140	04-NOV-19	
Anthracene			90.1		%		50-140	04-NOV-19	
Benzo(a)anthracene			91.0		%		50-140	04-NOV-19	
Benzo(a)pyrene			84.3		%		50-140	04-NOV-19	
Benzo(b)fluoranthene			77.7		%		50-140	04-NOV-19	
Benzo(g,h,i)perylene			84.6		%		50-140	04-NOV-19	
Benzo(k)fluoranthene			90.3		%		50-140	04-NOV-19	
Chrysene			96.1		%		50-140	04-NOV-19	
Dibenzo(ah)anthracene			88.2		%		50-140	04-NOV-19	
Fluoranthene			87.0		%		50-140	04-NOV-19	
Fluorene			89.7		%		50-140	04-NOV-19	
Indeno(1,2,3-cd)pyrene			92.1		%		50-140	04-NOV-19	
Naphthalene			85.8		%		50-140	04-NOV-19	
Phenanthrene			87.0		%		50-140	04-NOV-19	
Pyrene			87.0		%		50-140	04-NOV-19	
PCB-511-WT		Soil							
Batch	R4898984								
WG3207515-3	DUP	WG3207515-5							
Aroclor 1242			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1248			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1254			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1260			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
WG3207515-2	LCS								
Aroclor 1242			109.3		%		60-140	05-NOV-19	
Aroclor 1248			101.5		%		60-140	05-NOV-19	
Aroclor 1254			105.2		%		60-140	05-NOV-19	



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PCB-511-WT		Soil							
Batch	R4898984								
WG3207515-2	LCS								
Aroclor 1260			101.4		%		60-140	05-NOV-19	
WG3207515-1	MB								
Aroclor 1242			<0.010		ug/g		0.01	05-NOV-19	
Aroclor 1248			<0.010		ug/g		0.01	05-NOV-19	
Aroclor 1254			<0.010		ug/g		0.01	05-NOV-19	
Aroclor 1260			<0.010		ug/g		0.01	05-NOV-19	
Surrogate: d14-Terphenyl			88.3		%		60-140	05-NOV-19	
WG3207515-4	MS	WG3207515-5							
Aroclor 1242			91.8		%		60-140	05-NOV-19	
Aroclor 1254			89.7		%		60-140	05-NOV-19	
Aroclor 1260			86.6		%		60-140	05-NOV-19	
VOC-511-HS-WT		Soil							
Batch	R4898484								
WG3209434-4	DUP	WG3209434-3							
1,1,1,2-Tetrachloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,1,2,2-Tetrachloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,1,1-Trichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,1,2-Trichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,1-Dichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,1-Dichloroethylene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,2-Dibromoethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,2-Dichlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,2-Dichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,2-Dichloropropane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,3-Dichlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
1,4-Dichlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Acetone			<0.50	<0.50	RPD-NA	ug/g	N/A	40	05-NOV-19
Benzene			<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	05-NOV-19
Bromodichloromethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Bromoform			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Bromomethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Carbon tetrachloride			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Chlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4898484							
WG3209434-4	DUP	WG3209434-3						
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-NOV-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	05-NOV-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-NOV-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	05-NOV-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	05-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-NOV-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	05-NOV-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-NOV-19
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-NOV-19
WG3209434-2	LCS							
1,1,1,2-Tetrachloroethane			105.6		%		60-130	05-NOV-19
1,1,2,2-Tetrachloroethane			113.2		%		60-130	05-NOV-19
1,1,1-Trichloroethane			97.4		%		60-130	05-NOV-19
1,1,2-Trichloroethane			114.6		%		60-130	05-NOV-19
1,1-Dichloroethane			103.6		%		60-130	05-NOV-19
1,1-Dichloroethylene			91.8		%		60-130	05-NOV-19
1,2-Dibromoethane			116.3		%		70-130	05-NOV-19
1,2-Dichlorobenzene			108.5		%		70-130	05-NOV-19
1,2-Dichloroethane			102.4		%		60-130	05-NOV-19
1,2-Dichloropropane			110.8		%		70-130	05-NOV-19
1,3-Dichlorobenzene			104.9		%		70-130	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4898484							
WG3209434-2	LCS							
1,4-Dichlorobenzene			104.8		%		70-130	05-NOV-19
Acetone			110.7		%		60-140	05-NOV-19
Benzene			109.1		%		70-130	05-NOV-19
Bromodichloromethane			106.7		%		50-140	05-NOV-19
Bromoform			111.0		%		70-130	05-NOV-19
Bromomethane			97.9		%		50-140	05-NOV-19
Carbon tetrachloride			96.7		%		70-130	05-NOV-19
Chlorobenzene			104.8		%		70-130	05-NOV-19
Chloroform			104.7		%		70-130	05-NOV-19
cis-1,2-Dichloroethylene			107.1		%		70-130	05-NOV-19
cis-1,3-Dichloropropene			113.7		%		70-130	05-NOV-19
Dibromochloromethane			108.6		%		60-130	05-NOV-19
Dichlorodifluoromethane			66.8		%		50-140	05-NOV-19
Ethylbenzene			101.1		%		70-130	05-NOV-19
n-Hexane			90.9		%		70-130	05-NOV-19
Methylene Chloride			110.1		%		70-130	05-NOV-19
MTBE			104.1		%		70-130	05-NOV-19
m+p-Xylenes			101.1		%		70-130	05-NOV-19
Methyl Ethyl Ketone			121.4		%		60-140	05-NOV-19
Methyl Isobutyl Ketone			110.3		%		60-140	05-NOV-19
o-Xylene			100.6		%		70-130	05-NOV-19
Styrene			103.7		%		70-130	05-NOV-19
Tetrachloroethylene			103.4		%		60-130	05-NOV-19
Toluene			104.5		%		70-130	05-NOV-19
trans-1,2-Dichloroethylene			99.3		%		60-130	05-NOV-19
trans-1,3-Dichloropropene			116.0		%		70-130	05-NOV-19
Trichloroethylene			105.7		%		60-130	05-NOV-19
Trichlorofluoromethane			90.9		%		50-140	05-NOV-19
Vinyl chloride			104.2		%		60-140	05-NOV-19
WG3209434-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	05-NOV-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	05-NOV-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	05-NOV-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4898484							
WG3209434-1 MB								
1,1-Dichloroethane			<0.050		ug/g		0.05	05-NOV-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	05-NOV-19
1,2-Dibromoethane			<0.050		ug/g		0.05	05-NOV-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	05-NOV-19
1,2-Dichloroethane			<0.050		ug/g		0.05	05-NOV-19
1,2-Dichloropropane			<0.050		ug/g		0.05	05-NOV-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	05-NOV-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	05-NOV-19
Acetone			<0.50		ug/g		0.5	05-NOV-19
Benzene			<0.0068		ug/g		0.0068	05-NOV-19
Bromodichloromethane			<0.050		ug/g		0.05	05-NOV-19
Bromoform			<0.050		ug/g		0.05	05-NOV-19
Bromomethane			<0.050		ug/g		0.05	05-NOV-19
Carbon tetrachloride			<0.050		ug/g		0.05	05-NOV-19
Chlorobenzene			<0.050		ug/g		0.05	05-NOV-19
Chloroform			<0.050		ug/g		0.05	05-NOV-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	05-NOV-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	05-NOV-19
Dibromochloromethane			<0.050		ug/g		0.05	05-NOV-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	05-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	05-NOV-19
n-Hexane			<0.050		ug/g		0.05	05-NOV-19
Methylene Chloride			<0.050		ug/g		0.05	05-NOV-19
MTBE			<0.050		ug/g		0.05	05-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	05-NOV-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	05-NOV-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	05-NOV-19
o-Xylene			<0.020		ug/g		0.02	05-NOV-19
Styrene			<0.050		ug/g		0.05	05-NOV-19
Tetrachloroethylene			<0.050		ug/g		0.05	05-NOV-19
Toluene			<0.080		ug/g		0.08	05-NOV-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	05-NOV-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4898484							
WG3209434-1	MB							
Trichloroethylene			<0.010		ug/g		0.01	05-NOV-19
Trichlorofluoromethane			<0.050		ug/g		0.05	05-NOV-19
Vinyl chloride			<0.020		ug/g		0.02	05-NOV-19
Surrogate: 1,4-Difluorobenzene			100.0		%		50-140	05-NOV-19
Surrogate: 4-Bromofluorobenzene			100.0		%		50-140	05-NOV-19
WG3209434-5	MS	L2373024-1						
1,1,1,2-Tetrachloroethane			107.6		%		50-140	05-NOV-19
1,1,1,2-Tetrachloroethane			105.0		%		50-140	05-NOV-19
1,1,1-Trichloroethane			99.0		%		50-140	05-NOV-19
1,1,2-Trichloroethane			108.8		%		50-140	05-NOV-19
1,1-Dichloroethane			102.6		%		50-140	05-NOV-19
1,1-Dichloroethylene			94.2		%		50-140	05-NOV-19
1,2-Dibromoethane			109.1		%		50-140	05-NOV-19
1,2-Dichlorobenzene			104.0		%		50-140	05-NOV-19
1,2-Dichloroethane			93.9		%		50-140	05-NOV-19
1,2-Dichloropropane			105.6		%		50-140	05-NOV-19
1,3-Dichlorobenzene			103.2		%		50-140	05-NOV-19
1,4-Dichlorobenzene			103.0		%		50-140	05-NOV-19
Acetone			100.9		%		50-140	05-NOV-19
Benzene			107.6		%		50-140	05-NOV-19
Bromodichloromethane			101.0		%		50-140	05-NOV-19
Bromoform			105.4		%		50-140	05-NOV-19
Bromomethane			94.9		%		50-140	05-NOV-19
Carbon tetrachloride			99.7		%		50-140	05-NOV-19
Chlorobenzene			106.8		%		50-140	05-NOV-19
Chloroform			102.8		%		50-140	05-NOV-19
cis-1,2-Dichloroethylene			102.9		%		50-140	05-NOV-19
cis-1,3-Dichloropropene			104.9		%		50-140	05-NOV-19
Dibromochloromethane			106.2		%		50-140	05-NOV-19
Dichlorodifluoromethane			75.4		%		50-140	05-NOV-19
Ethylbenzene			106.9		%		50-140	05-NOV-19
n-Hexane			97.5		%		50-140	05-NOV-19
Methylene Chloride			104.9		%		50-140	05-NOV-19
MTBE			105.1		%		50-140	05-NOV-19



Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R4898484							
WG3209434-5 MS		L2373024-1						
m+p-Xylenes			106.3		%		50-140	05-NOV-19
Methyl Ethyl Ketone			104.6		%		50-140	05-NOV-19
Methyl Isobutyl Ketone			95.8		%		50-140	05-NOV-19
o-Xylene			105.1		%		50-140	05-NOV-19
Styrene			105.7		%		50-140	05-NOV-19
Tetrachloroethylene			110.4		%		50-140	05-NOV-19
Toluene			108.9		%		50-140	05-NOV-19
trans-1,2-Dichloroethylene			99.3		%		50-140	05-NOV-19
trans-1,3-Dichloropropene			108.6		%		50-140	05-NOV-19
Trichloroethylene			106.5		%		50-140	05-NOV-19
Trichlorofluoromethane			95.7		%		50-140	05-NOV-19
Vinyl chloride			108.1		%		50-140	05-NOV-19

Quality Control Report

Workorder: L2375323

Report Date: 06-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

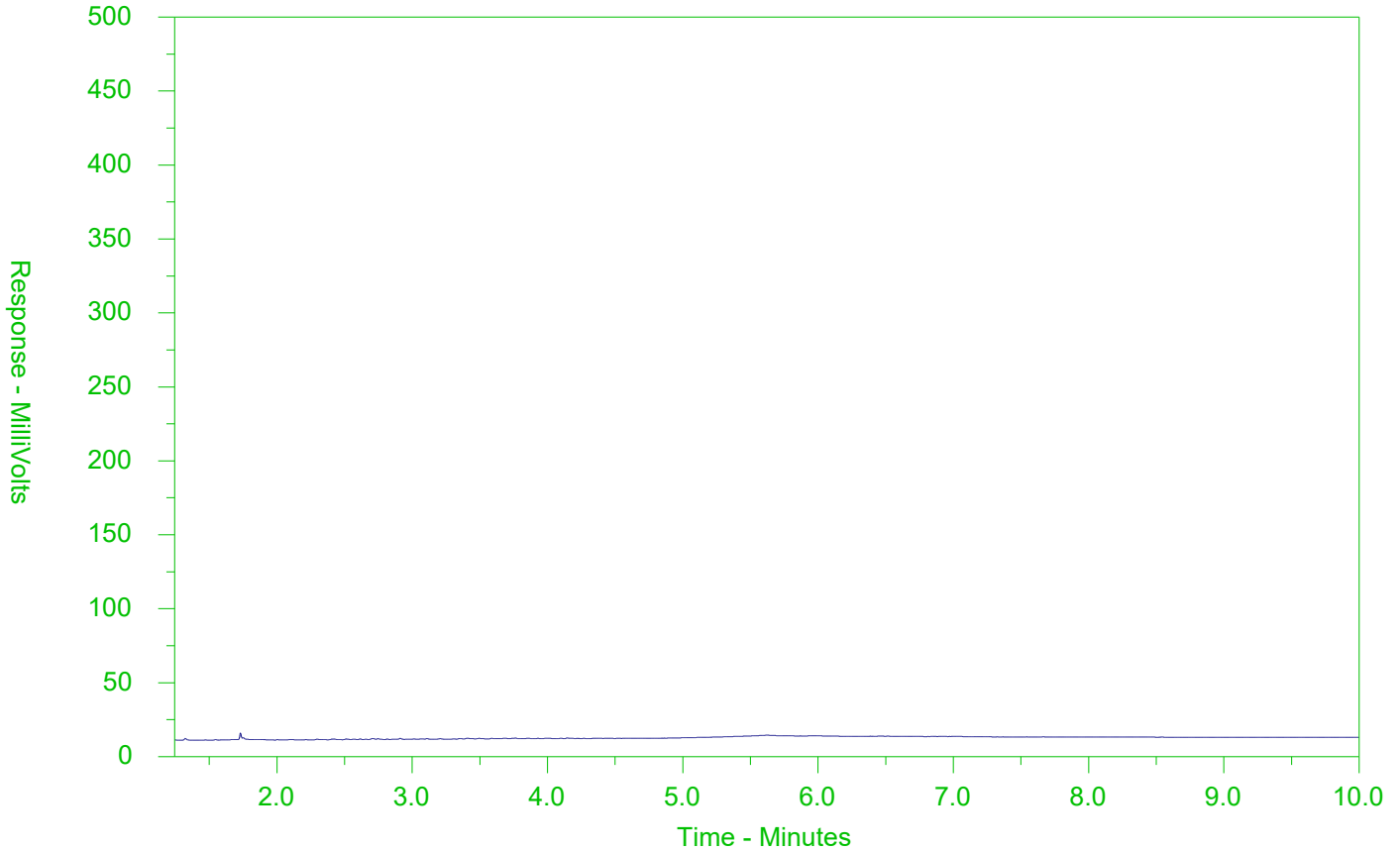
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2375323-2
 Client Sample ID: BH3-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.

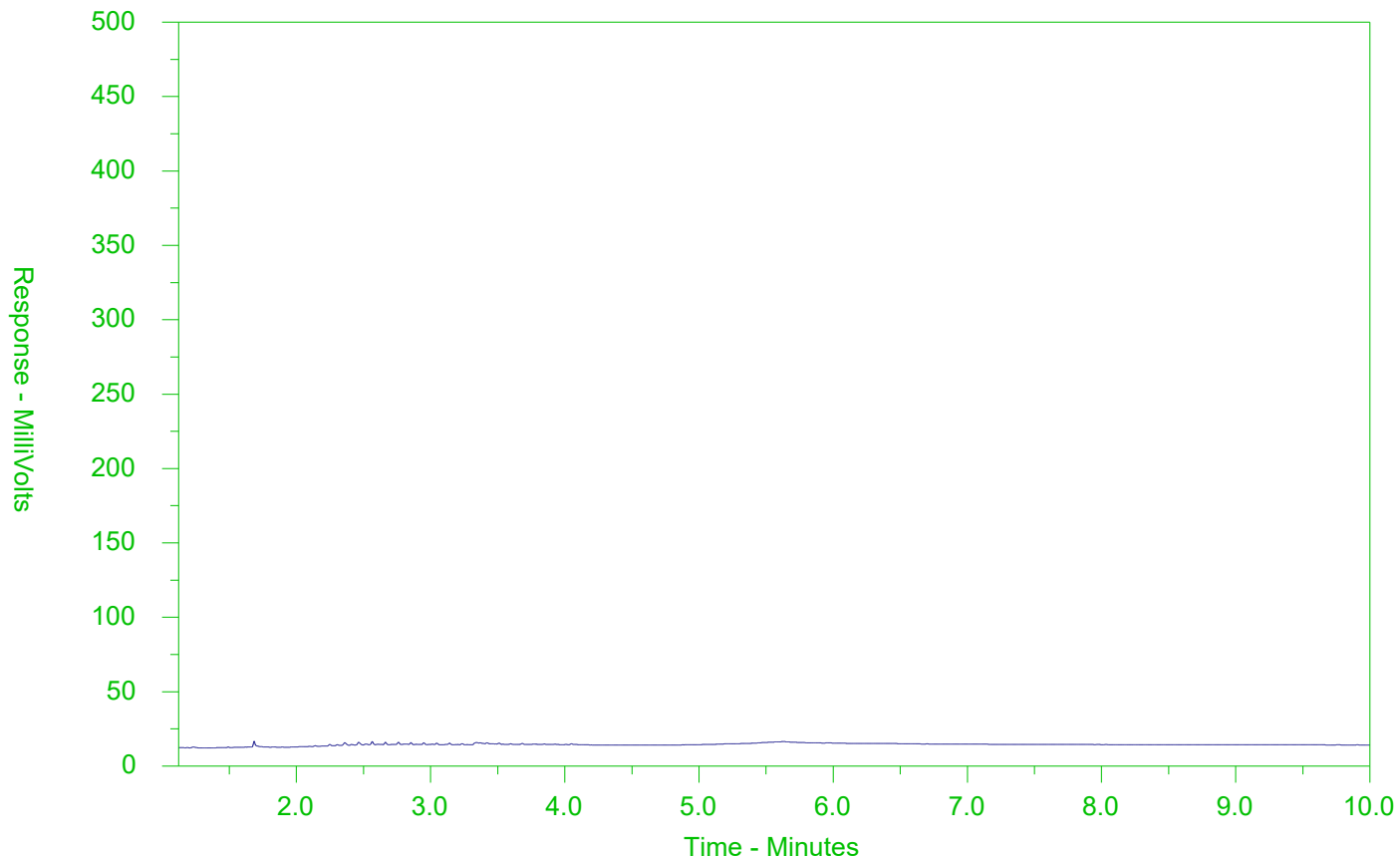
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2375323-4
 Client Sample ID: BH3-SS8



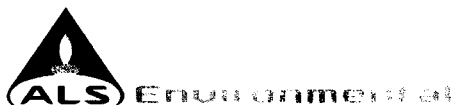
← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

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

Canada Toll Free: 1 800 668 9878



L2375323-COFC

DOC Number: 15 -

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distrib.			Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>					
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		3 day [P3] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>								
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			2 day [P2] <input type="checkbox"/>										
Street:	11 Indell Lane	Email 1 or Fax	kmakhzoumi@terraprobe.ca		Date and Time Required for all E&P TATs:											
City/Province:	Brampton	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.											
Postal Code:	L6T 3Y3	Email 3			Analysis Request											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
Company:	Terraprobe	Email 1 or Fax	lrossi@terraprobe.ca													
Contact:	Lorena Rossi	Email 2														
Project Information		Oil and Gas Required Fields (client use)														
ALS Account # / Quote #:	Q64281	AFE/Cost Center:	PO#													
Job #:	1-19-0603-42	Major/Minor Code:	Routing Code:													
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2375323	ALS Contact:	ES													
		Sampler:														
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												
	BH3-SS1	25-10-19		Soil		X				X					2	
	BH3-SS2	25-10-19		Soil						X	X				3	
	BH3-SS6	25-10-19		Soil		X				X			X		2	
	BH3-SS8	25-10-19		Soil						X	X				3	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RP1			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>						
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C	
					6.0					5.7						
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by:	Kossay Makhzoumi	Date:		Received by:	RR	Date:	Oct 31/19	Received by:	UW	Date:	31-10-19	Time:	1830			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 31-OCT-19
Report Date: 07-NOV-19 14:40 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2375316
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)							
L2375316-1		BH4-SS1	Physical Tests	Conductivity	0.740	0.7	mS/cm
L2375316-3		BH4-SS3	Saturated Paste Extractables	SAR	5.51	5	SAR
L2375316-5		BH4-SS7	Volatile Organic Compounds	Trichloroethylene	0.077	0.061	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)							
L2375316-1		BH4-SS1	Physical Tests	Conductivity	0.740	0.7	mS/cm
L2375316-3		BH4-SS3	Saturated Paste Extractables	SAR	5.51	5	SAR

Physical Tests - SOIL

Analyte	Unit	Guide Limits						
		#1	#2					
Conductivity	mS/cm	0.7	0.7	0.740	0.519			
% Moisture	%	-	-	14.6	9.91	6.77	7.98	9.20
pH	pH units	-	-	7.76	7.77			

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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


Lab ID	L2375316-1	L2375316-3
Sample Date	23-OCT-19	23-OCT-19
Sample ID	BH4-SS1	BH4-SS3


Analyte	Unit	Guide Limits	
		#1	#2

Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050	<0.050
-------------------------	------	-------	-------	--------	--------

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375316-1	L2375316-3
Sample Date	23-OCT-19	23-OCT-19
Sample ID	BH4-SS1	BH4-SS3

Analyte	Unit	Guide Limits			
		#1	#2		
SAR	SAR	5	5	4.10	5.51
Calcium (Ca)	mg/L	-	-	30.6	11.1
Magnesium (Mg)	mg/L	-	-	82.5	10.6
Sodium (Na)	mg/L	-	-	192	107

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375316-1	L2375316-3
	Sample Date	23-OCT-19	23-OCT-19
	Sample ID	BH4-SS1	BH4-SS3

Analyte	Unit	Guide Limits			
		#1	#2		
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0
Arsenic (As)	ug/g	18	18	3.0	1.2
Barium (Ba)	ug/g	390	390	103	28.6
Beryllium (Be)	ug/g	4	5	<0.50	<0.50
Boron (B)	ug/g	120	120	6.0	<5.0
Boron (B), Hot Water Ext.	ug/g	1.5	1.5	0.24	0.10
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50
Chromium (Cr)	ug/g	160	160	19.3	8.5
Cobalt (Co)	ug/g	22	22	7.4	2.6
Copper (Cu)	ug/g	140	180	8.7	4.6
Lead (Pb)	ug/g	120	120	6.7	3.4
Mercury (Hg)	ug/g	0.27	1.8	0.0178	<0.0050
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	14.9	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	34.7	18.3
Zinc (Zn)	ug/g	340	340	31.2	15.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.


Speciated Metals - SOIL


Lab ID	L2375316-1	L2375316-3
Sample Date	23-OCT-19	23-OCT-19
Sample ID	BH4-SS1	BH4-SS3

Analyte	Unit	Guide Limits		0.34	<0.20
		#1	#2		
Chromium, Hexavalent	ug/g	8	10	0.34	<0.20

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID
		#1	#2	L2375316-1	L2375316-4	L2375316-5
Acetone	ug/g	16	28		23-OCT-19	BH4-SS1
Benzene	ug/g	0.21	0.17	<0.0068	23-OCT-19	BH4-SS5
Bromodichloromethane	ug/g	13	13	<0.050		BH4-SS7
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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042		
Ethylbenzene	ug/g	2	15	<0.018	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits		Sample Data		
		#1	#2	Lab ID	Sample Date	Sample ID
				L2375316-1	23-OCT-19	BH4-SS1
				L2375316-4	23-OCT-19	BH4-SS5
				L2375316-5	23-OCT-19	BH4-SS7
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	<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		0.077
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	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	3.1	25	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	87.7	97.0	90.9
Surrogate: 1,4-Difluorobenzene	%	-	-	106.0	110.2	111.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375316-1	L2375316-4
Sample Date	23-OCT-19	23-OCT-19
Sample ID	BH4-SS1	BH4-SS5

Analyte	Unit	Guide Limits			
		#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	%	-	-	103.1	97.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	92.0	101.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2375316-2
Sample Date 23-OCT-19
Sample ID BH4-SS2

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/g	7.9	58	<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	%	-	-	92.5
Surrogate: p-Terphenyl d14	%	-	-	82.4

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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
<p>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.</p> <p>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).</p>			
BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260
<p>BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.</p> <p>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).</p>			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
<p>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.</p> <p>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).</p>			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
<p>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.</p> <p>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).</p>			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
<p>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.</p> <p>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).</p>			
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**
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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 200.2/6020A (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
<p>A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is 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.</p> <p>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).</p>			
PH-WT	Soil	pH	MOEE E3137A
<p>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.</p> <p>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).</p>			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
<p>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.</p> <p>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).</p>			
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)
<p>Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.</p> <p>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).</p>			
XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			
<p>**ALS test methods may incorporate modifications from specified reference methods to improve performance.</p>			
<p>Chain of Custody Numbers:</p>			
<p><i>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:</i></p>			
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: L2375316

Report Date: 07-NOV-19

Page 1 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT		Soil						
Batch	R4898647							
WG3210360-4	DUP	L2375371-13						
Boron (B), Hot Water Ext.		0.69	0.69		ug/g	0.7	30	05-NOV-19
WG3210360-2	IRM	WT SAR3						
Boron (B), Hot Water Ext.			102.0		%		70-130	05-NOV-19
WG3210360-3	LCS							
Boron (B), Hot Water Ext.			101.0		%		70-130	05-NOV-19
WG3210360-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	05-NOV-19
BTX-511-HS-WT		Soil						
Batch	R4901464							
WG3212421-4	DUP	WG3212421-3						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	07-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	07-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-NOV-19
WG3212421-2	LCS							
Benzene			101.1		%		70-130	07-NOV-19
Ethylbenzene			97.5		%		70-130	07-NOV-19
m+p-Xylenes			95.4		%		70-130	07-NOV-19
o-Xylene			97.9		%		70-130	07-NOV-19
Toluene			97.1		%		70-130	07-NOV-19
WG3212421-1	MB							
Benzene			<0.0068		ug/g		0.0068	07-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	07-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	07-NOV-19
o-Xylene			<0.020		ug/g		0.02	07-NOV-19
Toluene			<0.080		ug/g		0.08	07-NOV-19
Surrogate: 1,4-Difluorobenzene			102.2		%		50-140	07-NOV-19
Surrogate: 4-Bromofluorobenzene			90.6		%		50-140	07-NOV-19
WG3212421-5	MS	L2378191-1						
Benzene			100.8		%		60-140	07-NOV-19
Ethylbenzene			98.0		%		60-140	07-NOV-19
m+p-Xylenes			95.5		%		60-140	07-NOV-19
o-Xylene			98.0		%		60-140	07-NOV-19
Toluene			98.2		%		60-140	07-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 2 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT								
	Soil							
Batch	R4897615							
WG3208374-3	DUP	L2375738-5						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	04-NOV-19
WG3208374-2	LCS							
Cyanide, Weak Acid Diss			99.8		%		80-120	04-NOV-19
WG3208374-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	04-NOV-19
WG3208374-4	MS	L2375738-5						
Cyanide, Weak Acid Diss			106.0		%		70-130	04-NOV-19
CR-CR6-IC-WT								
	Soil							
Batch	R4898409							
WG3207904-4	CRM	WT-SQC012						
Chromium, Hexavalent			88.9		%		70-130	04-NOV-19
WG3207904-3	DUP	L2375263-1						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	04-NOV-19
WG3207904-2	LCS							
Chromium, Hexavalent			94.6		%		80-120	04-NOV-19
WG3207904-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	04-NOV-19
EC-WT								
	Soil							
Batch	R4898873							
WG3210366-4	DUP	WG3210366-3						
Conductivity		1.13	1.12		mS/cm	0.9	20	05-NOV-19
WG3210366-2	IRM	WT SAR3						
Conductivity			88.5		%		70-130	05-NOV-19
WG3210588-1	LCS							
Conductivity			98.8		%		90-110	05-NOV-19
WG3210366-1	MB							
Conductivity			<0.0040		mS/cm		0.004	05-NOV-19
F1-HS-511-WT								
	Soil							
Batch	R4901464							
WG3212421-4	DUP	WG3212421-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	07-NOV-19
WG3212421-2	LCS							
F1 (C6-C10)			108.0		%		80-120	07-NOV-19
WG3212421-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	07-NOV-19
Surrogate: 3,4-Dichlorotoluene			92.9		%		60-140	07-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 3 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT								
	Soil							
Batch	R4901464							
WG3212421-6	MS	L2378191-2						
F1 (C6-C10)			101.9		%		60-140	07-NOV-19
Batch	R4902278							
WG3211513-4	DUP	WG3211513-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	07-NOV-19
WG3211513-2	LCS		108.2		%		80-120	07-NOV-19
F1 (C6-C10)								
WG3211513-1	MB		<5.0		ug/g		5	07-NOV-19
F1 (C6-C10)								
Surrogate: 3,4-Dichlorotoluene			103.0		%		60-140	07-NOV-19
WG3211513-6	MS	L2375371-2						
F1 (C6-C10)			107.4		%		60-140	07-NOV-19
F2-F4-511-WT								
	Soil							
Batch	R4897606							
WG3209036-3	DUP	WG3209036-5						
F2 (C10-C16)		659	523		ug/g	23	30	04-NOV-19
F3 (C16-C34)		81	<50	RPD-NA	ug/g	N/A	30	04-NOV-19
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	04-NOV-19
WG3209036-2	LCS		105.5		%		80-120	04-NOV-19
F2 (C10-C16)								
F3 (C16-C34)			101.2		%		80-120	04-NOV-19
F4 (C34-C50)			107.0		%		80-120	04-NOV-19
WG3209036-1	MB		<10		ug/g		10	04-NOV-19
F2 (C10-C16)								
F3 (C16-C34)			<50		ug/g		50	04-NOV-19
F4 (C34-C50)			<50		ug/g		50	04-NOV-19
Surrogate: 2-Bromobenzotrifluoride			95.7		%		60-140	04-NOV-19
WG3209036-4	MS	WG3209036-5						
F2 (C10-C16)			N/A	MS-B	%		-	04-NOV-19
F3 (C16-C34)			100.1		%		60-140	04-NOV-19
F4 (C34-C50)			95.4		%		60-140	04-NOV-19
HG-200.2-CVAA-WT								
	Soil							
Batch	R4898467							
WG3210338-2	CRM	WT-CANMET-TILL2						
Mercury (Hg)			114.4		%		70-130	05-NOV-19
WG3210338-6	DUP	WG3210338-5						



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 4 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R4898467							
WG3210338-6	DUP	WG3210338-5						
Mercury (Hg)		0.119	0.112		ug/g	6.1	40	05-NOV-19
WG3210338-3	LCS							
Mercury (Hg)			105.0		%		80-120	05-NOV-19
WG3210338-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	05-NOV-19
MET-200.2-CCMS-WT		Soil						
Batch	R4899121							
WG3210338-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			100.3		%		70-130	05-NOV-19
Arsenic (As)			95.8		%		70-130	05-NOV-19
Barium (Ba)			93.2		%		70-130	05-NOV-19
Beryllium (Be)			84.7		%		70-130	05-NOV-19
Boron (B)			2.7		mg/kg		0-8.6	05-NOV-19
Cadmium (Cd)			87.9		%		70-130	05-NOV-19
Chromium (Cr)			90.8		%		70-130	05-NOV-19
Cobalt (Co)			91.8		%		70-130	05-NOV-19
Copper (Cu)			91.4		%		70-130	05-NOV-19
Lead (Pb)			96.8		%		70-130	05-NOV-19
Molybdenum (Mo)			98.6		%		70-130	05-NOV-19
Nickel (Ni)			93.4		%		70-130	05-NOV-19
Selenium (Se)			0.32		mg/kg		0.15-0.55	05-NOV-19
Silver (Ag)			0.24		mg/kg		0.16-0.36	05-NOV-19
Thallium (Tl)			93.6		%		70-130	05-NOV-19
Uranium (U)			91.3		%		70-130	05-NOV-19
Vanadium (V)			93.1		%		70-130	05-NOV-19
Zinc (Zn)			88.3		%		70-130	05-NOV-19
WG3210338-6	DUP	WG3210338-5						
Antimony (Sb)		0.39	0.38		ug/g	1.3	30	05-NOV-19
Arsenic (As)		11.7	10.8		ug/g	7.8	30	05-NOV-19
Barium (Ba)		50.5	45.9		ug/g	9.6	40	05-NOV-19
Beryllium (Be)		0.29	0.26		ug/g	8.4	30	05-NOV-19
Boron (B)		6.3	5.8		ug/g	8.5	30	05-NOV-19
Cadmium (Cd)		0.354	0.385		ug/g	8.6	30	05-NOV-19
Chromium (Cr)		13.5	11.7		ug/g	14	30	05-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 5 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4899121							
WG3210338-6	DUP	WG3210338-5						
Cobalt (Co)		4.71	4.35		ug/g	8.0	30	05-NOV-19
Copper (Cu)		28.7	26.1		ug/g	9.5	30	05-NOV-19
Lead (Pb)		109	98.1		ug/g	10	40	05-NOV-19
Molybdenum (Mo)		1.04	0.93		ug/g	11	40	05-NOV-19
Nickel (Ni)		10.9	10.0		ug/g	8.5	30	05-NOV-19
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	05-NOV-19
Silver (Ag)		0.42	0.40		ug/g	4.9	40	05-NOV-19
Thallium (Tl)		0.079	0.068		ug/g	16	30	05-NOV-19
Uranium (U)		0.447	0.403		ug/g	10	30	05-NOV-19
Vanadium (V)		20.5	18.8		ug/g	8.4	30	05-NOV-19
Zinc (Zn)		65.8	78.2		ug/g	17	30	05-NOV-19
WG3210338-4	LCS							
Antimony (Sb)			103.5		%		80-120	05-NOV-19
Arsenic (As)			96.0		%		80-120	05-NOV-19
Barium (Ba)			98.9		%		80-120	05-NOV-19
Beryllium (Be)			89.0		%		80-120	05-NOV-19
Boron (B)			88.5		%		80-120	05-NOV-19
Cadmium (Cd)			90.9		%		80-120	05-NOV-19
Chromium (Cr)			95.9		%		80-120	05-NOV-19
Cobalt (Co)			93.2		%		80-120	05-NOV-19
Copper (Cu)			90.2		%		80-120	05-NOV-19
Lead (Pb)			97.2		%		80-120	05-NOV-19
Molybdenum (Mo)			101.9		%		80-120	05-NOV-19
Nickel (Ni)			92.8		%		80-120	05-NOV-19
Selenium (Se)			87.5		%		80-120	05-NOV-19
Silver (Ag)			95.7		%		80-120	05-NOV-19
Thallium (Tl)			96.2		%		80-120	05-NOV-19
Uranium (U)			95.6		%		80-120	05-NOV-19
Vanadium (V)			98.3		%		80-120	05-NOV-19
Zinc (Zn)			89.7		%		80-120	05-NOV-19
WG3210338-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	05-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 6 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R4899121							
WG3210338-1	MB							
Barium (Ba)			<0.50		mg/kg		0.5	05-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	05-NOV-19
Boron (B)			<5.0		mg/kg		5	05-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	05-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	05-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	05-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	05-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	05-NOV-19
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	05-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	05-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	05-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	05-NOV-19
Uranium (U)			<0.050		mg/kg		0.05	05-NOV-19
Vanadium (V)			<0.20		mg/kg		0.2	05-NOV-19
Zinc (Zn)			<2.0		mg/kg		2	05-NOV-19
MOISTURE-WT								
	Soil							
Batch	R4895777							
WG3207805-3	DUP	L2374962-4						
% Moisture		21.6	21.2		%	1.8	20	01-NOV-19
WG3207805-2	LCS							
% Moisture			100.5		%		90-110	01-NOV-19
WG3207805-1	MB							
% Moisture			<0.25		%		0.25	01-NOV-19
PAH-511-WT								
	Soil							
Batch	R4897642							
WG3207515-3	DUP	WG3207515-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19

Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 7 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R4897642							
WG3207515-3	DUP	WG3207515-5						
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	04-NOV-19
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	04-NOV-19
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
WG3207515-2	LCS							
1-Methylnaphthalene			86.6		%		50-140	04-NOV-19
2-Methylnaphthalene			82.2		%		50-140	04-NOV-19
Acenaphthene			88.2		%		50-140	04-NOV-19
Acenaphthylene			89.7		%		50-140	04-NOV-19
Anthracene			87.6		%		50-140	04-NOV-19
Benzo(a)anthracene			88.8		%		50-140	04-NOV-19
Benzo(a)pyrene			82.1		%		50-140	04-NOV-19
Benzo(b)fluoranthene			75.3		%		50-140	04-NOV-19
Benzo(g,h,i)perylene			84.2		%		50-140	04-NOV-19
Benzo(k)fluoranthene			89.8		%		50-140	04-NOV-19
Chrysene			95.2		%		50-140	04-NOV-19
Dibenzo(ah)anthracene			87.8		%		50-140	04-NOV-19
Fluoranthene			85.4		%		50-140	04-NOV-19
Fluorene			85.9		%		50-140	04-NOV-19
Indeno(1,2,3-cd)pyrene			89.6		%		50-140	04-NOV-19
Naphthalene			84.0		%		50-140	04-NOV-19
Phenanthrene			86.8		%		50-140	04-NOV-19
Pyrene			85.3		%		50-140	04-NOV-19
WG3207515-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
2-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
Acenaphthene			<0.050		ug/g		0.05	



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 8 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch	R4897642							
WG3207515-1 MB								
Acenaphthene			<0.050		ug/g		0.05	04-NOV-19
Acenaphthylene			<0.050		ug/g		0.05	04-NOV-19
Anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)pyrene			<0.050		ug/g		0.05	04-NOV-19
Benzo(b)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	04-NOV-19
Benzo(k)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Chrysene			<0.050		ug/g		0.05	04-NOV-19
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	04-NOV-19
Fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Fluorene			<0.050		ug/g		0.05	04-NOV-19
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	04-NOV-19
Naphthalene			<0.013		ug/g		0.013	04-NOV-19
Phenanthrene			<0.046		ug/g		0.046	04-NOV-19
Pyrene			<0.050		ug/g		0.05	04-NOV-19
Surrogate: 2-Fluorobiphenyl			95.6		%		50-140	04-NOV-19
Surrogate: p-Terphenyl d14			86.6		%		50-140	04-NOV-19
WG3207515-4 MS		WG3207515-5						
1-Methylnaphthalene			89.3		%		50-140	04-NOV-19
2-Methylnaphthalene			84.7		%		50-140	04-NOV-19
Acenaphthene			91.1		%		50-140	04-NOV-19
Acenaphthylene			94.0		%		50-140	04-NOV-19
Anthracene			90.1		%		50-140	04-NOV-19
Benzo(a)anthracene			91.0		%		50-140	04-NOV-19
Benzo(a)pyrene			84.3		%		50-140	04-NOV-19
Benzo(b)fluoranthene			77.7		%		50-140	04-NOV-19
Benzo(g,h,i)perylene			84.6		%		50-140	04-NOV-19
Benzo(k)fluoranthene			90.3		%		50-140	04-NOV-19
Chrysene			96.1		%		50-140	04-NOV-19
Dibenzo(ah)anthracene			88.2		%		50-140	04-NOV-19
Fluoranthene			87.0		%		50-140	04-NOV-19
Fluorene			89.7		%		50-140	04-NOV-19
Indeno(1,2,3-cd)pyrene			92.1		%		50-140	04-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 9 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R4897642							
WG3207515-4	MS	WG3207515-5						
Naphthalene			85.8		%		50-140	04-NOV-19
Phenanthrene			87.0		%		50-140	04-NOV-19
Pyrene			87.0		%		50-140	04-NOV-19
PH-WT		Soil						
Batch	R4897790							
WG3207511-1	DUP	L2375316-1						
pH		7.76	7.84	J	pH units	0.08	0.3	04-NOV-19
WG3209569-1	LCS							
pH			6.93		pH units		6.9-7.1	04-NOV-19
SAR-R511-WT		Soil						
Batch	R4898808							
WG3210366-4	DUP	WG3210366-3						
Calcium (Ca)		24.5	24.4		mg/L	0.4	30	05-NOV-19
Sodium (Na)		194	198		mg/L	2.0	30	05-NOV-19
Magnesium (Mg)		2.48	2.45		mg/L	1.2	30	05-NOV-19
WG3210366-2	IRM	WT SAR3						
Calcium (Ca)			76.4		%		70-130	05-NOV-19
Sodium (Na)			97.8		%		70-130	05-NOV-19
Magnesium (Mg)			87.1		%		70-130	05-NOV-19
WG3210366-5	LCS							
Calcium (Ca)			103.7		%		70-130	05-NOV-19
Sodium (Na)			100.6		%		70-130	05-NOV-19
Magnesium (Mg)			101.0		%		70-130	05-NOV-19
WG3210366-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	05-NOV-19
Sodium (Na)			<0.50		mg/L		0.5	05-NOV-19
Magnesium (Mg)			<0.50		mg/L		0.5	05-NOV-19
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-4	DUP	WG3211513-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethane		<0.050	<0.050					



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 10 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-4	DUP	WG3211513-3						
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	07-NOV-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,3-Dichloropropene		<0.030	<0.030		ug/g			07-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 11 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-4	DUP	WG3211513-3						
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Trichloroethylene		0.170	0.168		ug/g	1.2	40	07-NOV-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
WG3211513-2	LCS							
1,1,1,2-Tetrachloroethane			103.2		%		60-130	07-NOV-19
1,1,1,2,2-Tetrachloroethane			116.0		%		60-130	07-NOV-19
1,1,1-Trichloroethane			104.2		%		60-130	07-NOV-19
1,1,2-Trichloroethane			107.4		%		60-130	07-NOV-19
1,1-Dichloroethane			109.9		%		60-130	07-NOV-19
1,1-Dichloroethylene			100.1		%		60-130	07-NOV-19
1,2-Dibromoethane			108.4		%		70-130	07-NOV-19
1,2-Dichlorobenzene			111.6		%		70-130	07-NOV-19
1,2-Dichloroethane			108.8		%		60-130	07-NOV-19
1,2-Dichloropropane			109.5		%		70-130	07-NOV-19
1,3-Dichlorobenzene			110.8		%		70-130	07-NOV-19
1,4-Dichlorobenzene			112.3		%		70-130	07-NOV-19
Acetone			116.6		%		60-140	07-NOV-19
Benzene			110.7		%		70-130	07-NOV-19
Bromodichloromethane			107.3		%		50-140	07-NOV-19
Bromoform			108.7		%		70-130	07-NOV-19
Bromomethane			97.0		%		50-140	07-NOV-19
Carbon tetrachloride			104.9		%		70-130	07-NOV-19
Chlorobenzene			106.0		%		70-130	07-NOV-19
Chloroform			109.0		%		70-130	07-NOV-19
cis-1,2-Dichloroethylene			106.4		%		70-130	07-NOV-19
cis-1,3-Dichloropropene			114.5		%		70-130	07-NOV-19
Dibromochloromethane			104.2		%		60-130	07-NOV-19
Dichlorodifluoromethane			61.6		%		50-140	07-NOV-19
Ethylbenzene			103.9		%		70-130	07-NOV-19
n-Hexane			97.2		%		70-130	07-NOV-19
Methylene Chloride			109.7		%		70-130	07-NOV-19
MTBE			106.0		%		70-130	07-NOV-19
m+p-Xylenes			103.1				70-130	



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 12 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-2	LCS							
m+p-Xylenes			103.1		%		70-130	07-NOV-19
Methyl Ethyl Ketone			116.8		%		60-140	07-NOV-19
Methyl Isobutyl Ketone			111.1		%		60-140	07-NOV-19
o-Xylene			102.5		%		70-130	07-NOV-19
Styrene			100.2		%		70-130	07-NOV-19
Tetrachloroethylene			108.3		%		60-130	07-NOV-19
Toluene			106.4		%		70-130	07-NOV-19
trans-1,2-Dichloroethylene			108.4		%		60-130	07-NOV-19
trans-1,3-Dichloropropene			112.4		%		70-130	07-NOV-19
Trichloroethylene			107.4		%		60-130	07-NOV-19
Trichlorofluoromethane			98.5		%		50-140	07-NOV-19
Vinyl chloride			104.7		%		60-140	07-NOV-19
WG3211513-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dibromoethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloropropane			<0.050		ug/g		0.05	07-NOV-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Acetone			<0.50		ug/g		0.5	07-NOV-19
Benzene			<0.0068		ug/g		0.0068	07-NOV-19
Bromodichloromethane			<0.050		ug/g		0.05	07-NOV-19
Bromoform			<0.050		ug/g		0.05	07-NOV-19
Bromomethane			<0.050		ug/g		0.05	07-NOV-19
Carbon tetrachloride			<0.050		ug/g		0.05	07-NOV-19
Chlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Chloroform			<0.050		ug/g		0.05	07-NOV-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 13 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4902278							
WG3211513-1 MB								
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Dibromochloromethane			<0.050		ug/g		0.05	07-NOV-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	07-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	07-NOV-19
n-Hexane			<0.050		ug/g		0.05	07-NOV-19
Methylene Chloride			<0.050		ug/g		0.05	07-NOV-19
MTBE			<0.050		ug/g		0.05	07-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	07-NOV-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	07-NOV-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	07-NOV-19
o-Xylene			<0.020		ug/g		0.02	07-NOV-19
Styrene			<0.050		ug/g		0.05	07-NOV-19
Tetrachloroethylene			<0.050		ug/g		0.05	07-NOV-19
Toluene			<0.080		ug/g		0.08	07-NOV-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Trichloroethylene			<0.010		ug/g		0.01	07-NOV-19
Trichlorofluoromethane			<0.050		ug/g		0.05	07-NOV-19
Vinyl chloride			<0.020		ug/g		0.02	07-NOV-19
Surrogate: 1,4-Difluorobenzene			113.7		%		50-140	07-NOV-19
Surrogate: 4-Bromofluorobenzene			94.3		%		50-140	07-NOV-19
WG3211513-5 MS		L2375311-2						
1,1,1,2-Tetrachloroethane			105.8		%		50-140	07-NOV-19
1,1,2,2-Tetrachloroethane			116.1		%		50-140	07-NOV-19
1,1,1-Trichloroethane			107.3		%		50-140	07-NOV-19
1,1,2-Trichloroethane			109.3		%		50-140	07-NOV-19
1,1-Dichloroethane			112.3		%		50-140	07-NOV-19
1,1-Dichloroethylene			103.7		%		50-140	07-NOV-19
1,2-Dibromoethane			109.3		%		50-140	07-NOV-19
1,2-Dichlorobenzene			113.8		%		50-140	07-NOV-19
1,2-Dichloroethane			108.5		%		50-140	07-NOV-19
1,2-Dichloropropane			111.0		%		50-140	07-NOV-19
1,3-Dichlorobenzene			112.0		%		50-140	07-NOV-19
1,4-Dichlorobenzene			114.0		%		50-140	07-NOV-19



Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Page 14 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R4902278							
WG3211513-5 MS		L2375311-2						
Acetone			119.8		%		50-140	07-NOV-19
Benzene			113.2		%		50-140	07-NOV-19
Bromodichloromethane			108.3		%		50-140	07-NOV-19
Bromoform			109.5		%		50-140	07-NOV-19
Bromomethane			99.5		%		50-140	07-NOV-19
Carbon tetrachloride			108.0		%		50-140	07-NOV-19
Chlorobenzene			108.3		%		50-140	07-NOV-19
Chloroform			111.0		%		50-140	07-NOV-19
cis-1,2-Dichloroethylene			108.5		%		50-140	07-NOV-19
cis-1,3-Dichloropropene			114.8		%		50-140	07-NOV-19
Dibromochloromethane			106.3		%		50-140	07-NOV-19
Dichlorodifluoromethane			70.2		%		50-140	07-NOV-19
Ethylbenzene			106.9		%		50-140	07-NOV-19
n-Hexane			102.4		%		50-140	07-NOV-19
Methylene Chloride			111.2		%		50-140	07-NOV-19
MTBE			108.3		%		50-140	07-NOV-19
m+p-Xylenes			105.7		%		50-140	07-NOV-19
Methyl Ethyl Ketone			108.6		%		50-140	07-NOV-19
Methyl Isobutyl Ketone			110.2		%		50-140	07-NOV-19
o-Xylene			104.9		%		50-140	07-NOV-19
Styrene			101.8		%		50-140	07-NOV-19
Tetrachloroethylene			111.7		%		50-140	07-NOV-19
Toluene			110.0		%		50-140	07-NOV-19
trans-1,2-Dichloroethylene			110.8		%		50-140	07-NOV-19
trans-1,3-Dichloropropene			114.1		%		50-140	07-NOV-19
Trichloroethylene			104.9		%		50-140	07-NOV-19
Trichlorofluoromethane			103.7		%		50-140	07-NOV-19
Vinyl chloride			109.9		%		50-140	07-NOV-19

Quality Control Report

Workorder: L2375316

Report Date: 07-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: Kossay Makhzoumi

Page 15 of 15

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.

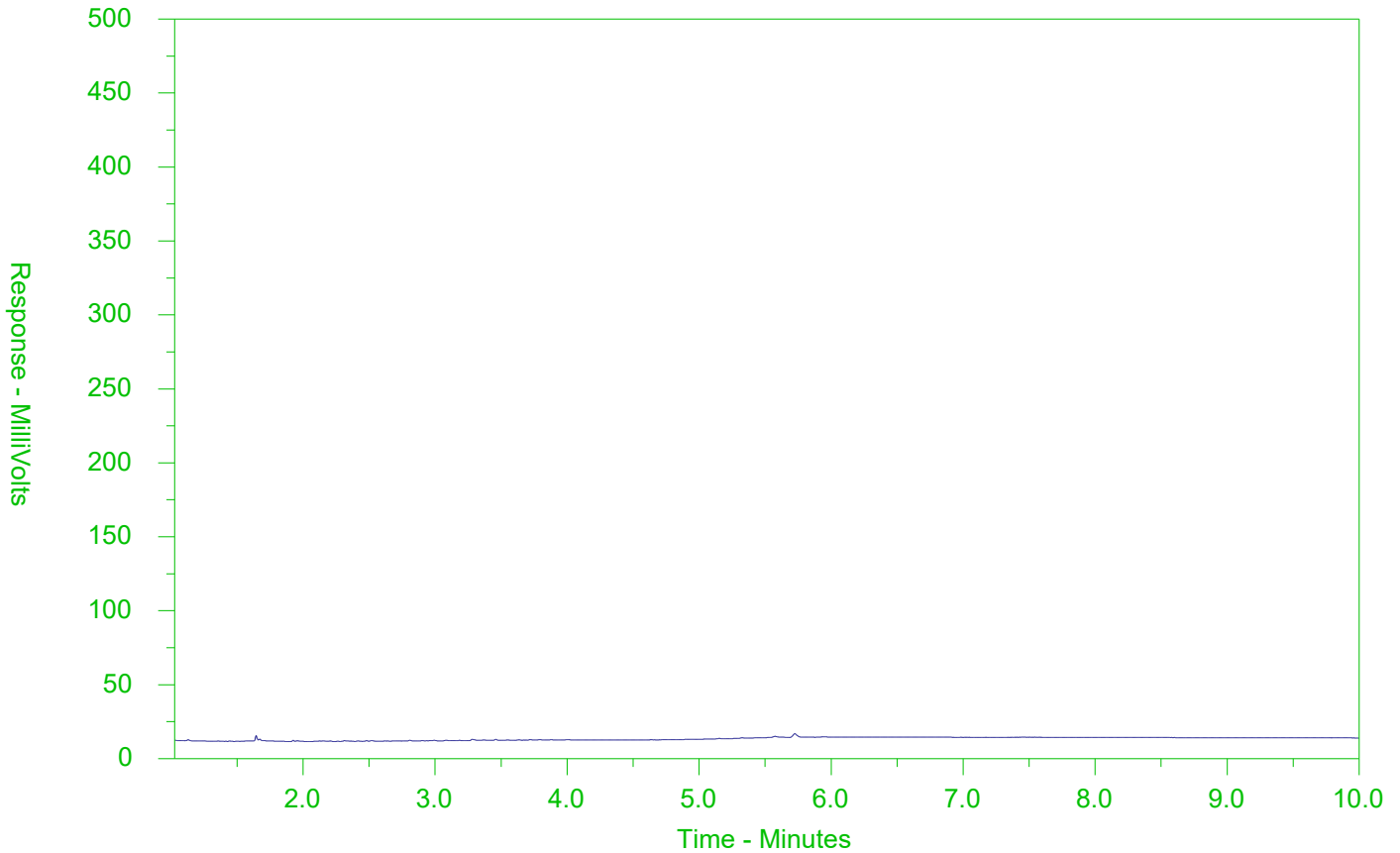
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2375316-1
 Client Sample ID: BH4-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.

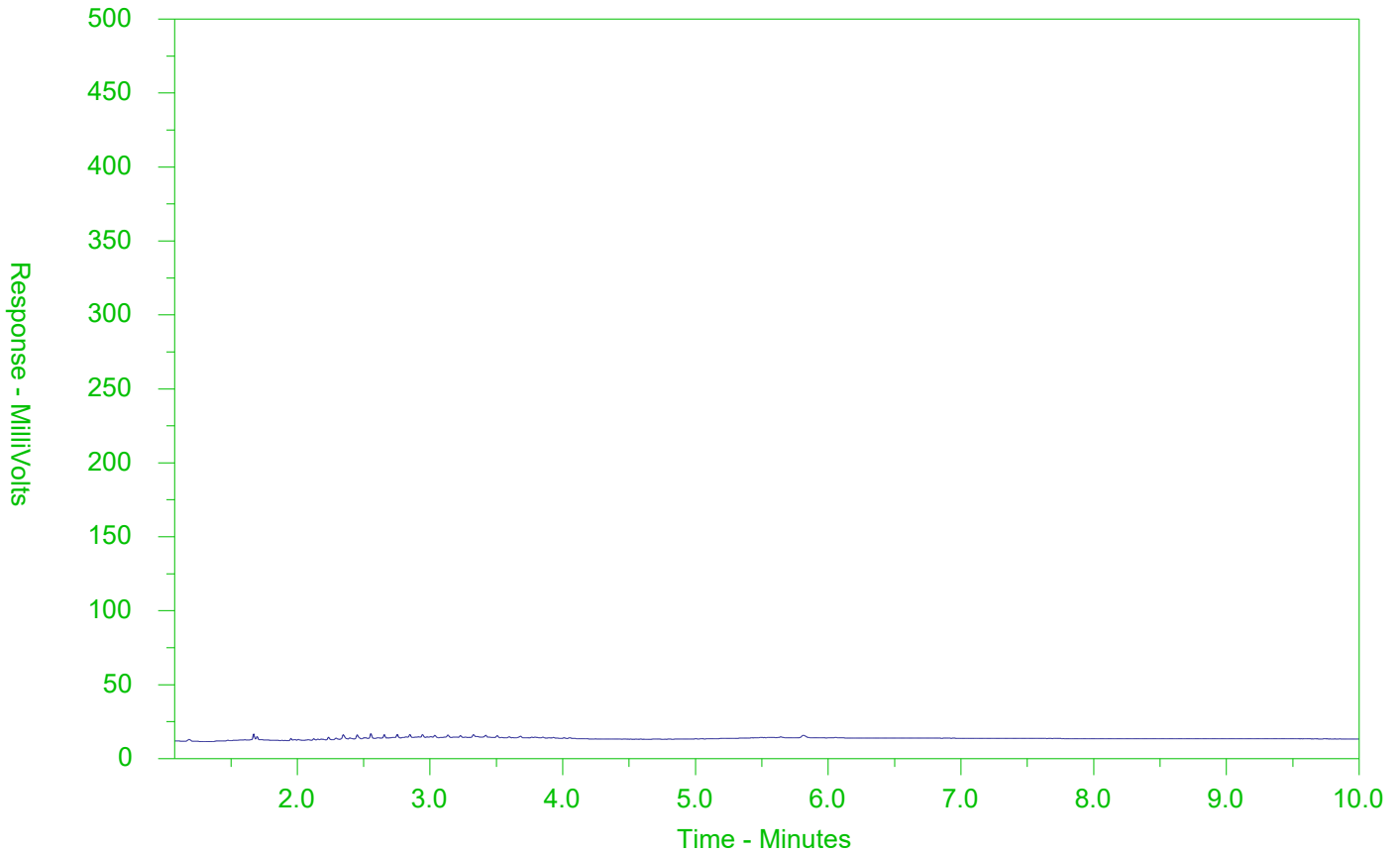
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2375316-4
 Client Sample ID: BH4-SS5



← 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.



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2375316-COFC

IC Number: 15 -

Page 1 of 1

Handwritten mark

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>					
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>					
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province:	Brampton	Email 2			Analysis Request											
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:	Routing Code:													
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2375316	ALS Contact:	ES	Sampler:												
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												
	BH4-SS1	23-10-19		Soil	X						X	X			4	
	BH4-SS2	23-10-19		Soil						X					1	
	BH4-SS3	23-10-19		Soil	X										1	
	BH4-SS5	23-10-19		Soil								X			3	
	BH4-SS7	23-10-19		Soil							X				3	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI.			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
		Cooling Initiated <input type="checkbox"/>														
		INITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES °C								
		6.0						5.7								
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:								
			[Signature]	Oct 31/19	12:37	[Signature]	31-10-19	15:30								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION. WHITE - LABORATORY COPY. YELLOW - CLIENT COPY. OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-NOV-19
Report Date: 16-NOV-19 11:48 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2381674
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2381674-1	BH4-SS5	Saturated Paste Extractables	SAR	32.9	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2381674-1	BH4-SS5	Saturated Paste Extractables	SAR	32.9	5	SAR

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

Saturated Paste Extractables - SOIL

Lab ID L2381674-1
Sample Date 12-NOV-19
Sample ID BH4-SS5

Analyte	Unit	Guide Limits		
		#1	#2	
SAR	SAR	5	5	32.9 <small>SAR:M</small>
Calcium (Ca)	mg/L	-	-	1.37
Magnesium (Mg)	mg/L	-	-	<0.50
Sodium (Na)	mg/L	-	-	140

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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: L2381674

Report Date: 16-NOV-19

Page 1 of 2

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R4906853							
WG3218165-4	DUP	WG3218165-3						
Calcium (Ca)		14.0	13.6		mg/L	2.9	30	14-NOV-19
Sodium (Na)		1.15	1.12		mg/L	2.6	30	14-NOV-19
Magnesium (Mg)		1.17	1.11		mg/L	5.3	30	14-NOV-19
WG3218165-2	IRM	WT SAR3						
Calcium (Ca)			107.5		%		70-130	14-NOV-19
Sodium (Na)			104.0		%		70-130	14-NOV-19
Magnesium (Mg)			115.6		%		70-130	14-NOV-19
WG3218165-5	LCS							
Calcium (Ca)			103.0		%		70-130	14-NOV-19
Sodium (Na)			100.4		%		70-130	14-NOV-19
Magnesium (Mg)			101.2		%		70-130	14-NOV-19
WG3218165-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	14-NOV-19
Sodium (Na)			<0.50		mg/L		0.5	14-NOV-19
Magnesium (Mg)			<0.50		mg/L		0.5	14-NOV-19

Quality Control Report

Workorder: L2381674

Report Date: 16-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 2 of 2

Contact: Kossay Makhzoumi

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

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



COC Number: 15 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

L2381674-COFC

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)		4 day [P4] <input type="checkbox"/>		EMERGENCY		1 Business day [E1] <input type="checkbox"/>					
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		2 day [P2] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>							
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province:	Brampton	Email 2			Analysis Request											
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution														
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca														
Contact:	Lorena Rossi	Email 2														
Project Information		Oil and Gas Required Fields (client use)														
ALS Account # / Quote #:	Q64281	AFE/Cost Center:		PO#												
Job #:	1-19-0603-42	Major/Minor Code:		Routing Code:												
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2381674/K	ALS Contact: E.S.		Sampler:												
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
	BH4 - SS5	12-11-19		Soil					X						1	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECPT3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
					Cooling Initiated <input type="checkbox"/>											
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C						
					5.2					6.0						
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Kossay Makhzoumi		Date:	Time:	Received by: <i>[Signature]</i>		Date:	Time:	Received by: <i>[Signature]</i>		Date:	Time:	Received by: <i>[Signature]</i>		Date:	Time:	
				Nov 13/19			9am	11-13-19			1409					

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-NOV-19
Report Date: 16-NOV-19 11:49 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2381676
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2381676-1	BH4-SS7	Saturated Paste Extractables	SAR	12.3	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2381676-1	BH4-SS7	Saturated Paste Extractables	SAR	12.3	5	SAR

Saturated Paste Extractables - SOIL

Lab ID L2381676-1
Sample Date 12-NOV-19
Sample ID BH4-SS7

Analyte	Unit	Guide Limits		
		#1	#2	
SAR	SAR	5	5	12.3
Calcium (Ca)	mg/L	-	-	15.3
Magnesium (Mg)	mg/L	-	-	2.37
Sodium (Na)	mg/L	-	-	196

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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: L2381676

Report Date: 16-NOV-19

Page 1 of 2

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R4906853							
WG3218165-4	DUP	WG3218165-3						
Calcium (Ca)		14.0	13.6		mg/L	2.9	30	14-NOV-19
Sodium (Na)		1.15	1.12		mg/L	2.6	30	14-NOV-19
Magnesium (Mg)		1.17	1.11		mg/L	5.3	30	14-NOV-19
WG3218165-2	IRM	WT SAR3						
Calcium (Ca)			107.5		%		70-130	14-NOV-19
Sodium (Na)			104.0		%		70-130	14-NOV-19
Magnesium (Mg)			115.6		%		70-130	14-NOV-19
WG3218165-5	LCS							
Calcium (Ca)			103.0		%		70-130	14-NOV-19
Sodium (Na)			100.4		%		70-130	14-NOV-19
Magnesium (Mg)			101.2		%		70-130	14-NOV-19
WG3218165-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	14-NOV-19
Sodium (Na)			<0.50		mg/L		0.5	14-NOV-19
Magnesium (Mg)			<0.50		mg/L		0.5	14-NOV-19

Quality Control Report

Workorder: L2381676

Report Date: 16-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 2 of 2

Contact: Kossay Makhzoumi

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

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.



ALS Environmental

Chain of Custody (COC) / Analytical Request Form



L2381676-COFC

COC Number: 15 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To		Report Format / Distribution				Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)				Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>				Number of Containers						
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked					3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>										
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX					2 day [P2] <input type="checkbox"/>															
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca				Date and Time Required for all E&P TATs:																
City/Province:	Brampton	Email 2				For tests that can not be performed according to the service level selected, you will be contacted.																
Postal Code:	L6T 3Y3	Email 3				Analysis Request																
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																				
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca																				
Contact:	Lorena Rossi	Email 2																				
Project Information		Oil and Gas Required Fields (client use)																				
ALS Account # / Quote #:	Q64281	AFE/Cost Center:		PO#																		
Job #:	1-19-0603-42	Major/Minor Code:		Routing Code:																		
PO / AFE:		Requisitioner:																				
LSD:		Location:																				
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:																		
	L2381676 K																					
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers							
	BH4-SS7	12-11-19		Soil					X						1							
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? <input type="checkbox"/> YES <input type="checkbox"/> NO		Please put on hold MCP T3 RPI				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO						Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																
						Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES °C					
						5.2					6.0											
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)														
Released by: Kossay Makhzoumi		Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:													
				KR	11-13-19	9am	KL	11-13-19	1409													

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-NOV-19
Report Date: 20-NOV-19 12:55 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2381634
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine) (No parameter exceedances)							

Physical Tests - SOIL


Lab ID L2381634-1
Sample Date 12-NOV-19
Sample ID BH4-SS8

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
% Moisture	%	-	-	11.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2381634-1
Sample Date 12-NOV-19
Sample ID BH4-SS8

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

Lab ID L2381634-1
Sample Date 12-NOV-19
Sample ID BH4-SS8

Analyte	Unit	Guide Limits		
		#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	0.040
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	%	-	-	78.8
Surrogate: 1,4-Difluorobenzene	%	-	-	96.6

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
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
----	---

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.

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Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Page 1 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R4906258							
WG3217868-3	DUP	L2381720-1						
% Moisture		13.0	12.5		%	4.2	20	14-NOV-19
WG3217868-2	LCS							
% Moisture			101.0		%		90-110	14-NOV-19
WG3217868-1	MB							
% Moisture			<0.25		%		0.25	14-NOV-19
VOC-511-HS-WT		Soil						
Batch	R4916835							
WG3221627-4	DUP	WG3221627-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	20-NOV-19
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	20-NOV-19
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	20-NOV-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	20-NOV-19



Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4916835							
WG3221627-4	DUP	WG3221627-3						
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	20-NOV-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	20-NOV-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	20-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	20-NOV-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	20-NOV-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	20-NOV-19
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	20-NOV-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	20-NOV-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	20-NOV-19
WG3221627-2	LCS							
1,1,1,2-Tetrachloroethane			97.2		%		60-130	20-NOV-19
1,1,2,2-Tetrachloroethane			113.6		%		60-130	20-NOV-19
1,1,1-Trichloroethane			94.9		%		60-130	20-NOV-19
1,1,2-Trichloroethane			104.4		%		60-130	20-NOV-19
1,1-Dichloroethane			102.8		%		60-130	20-NOV-19
1,1-Dichloroethylene			92.9		%		60-130	20-NOV-19
1,2-Dibromoethane			103.5		%		70-130	20-NOV-19
1,2-Dichlorobenzene			111.3		%		70-130	20-NOV-19
1,2-Dichloroethane			101.3		%		60-130	20-NOV-19
1,2-Dichloropropane			102.7		%		70-130	20-NOV-19
1,3-Dichlorobenzene			109.7		%		70-130	20-NOV-19
1,4-Dichlorobenzene			112.3		%		70-130	20-NOV-19
Acetone			113.6		%		60-140	20-NOV-19
Benzene			104.3		%		70-130	20-NOV-19
Bromodichloromethane			98.8		%		50-140	20-NOV-19
Bromoform			102.4		%		70-130	20-NOV-19
Bromomethane			90.6		%		50-140	20-NOV-19



Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4916835							
WG3221627-2	LCS							
Carbon tetrachloride			94.7		%		70-130	20-NOV-19
Chlorobenzene			102.7		%		70-130	20-NOV-19
Chloroform			101.2		%		70-130	20-NOV-19
cis-1,2-Dichloroethylene			99.0		%		70-130	20-NOV-19
cis-1,3-Dichloropropene			104.9		%		70-130	20-NOV-19
Dibromochloromethane			98.5		%		60-130	20-NOV-19
Dichlorodifluoromethane			57.6		%		50-140	20-NOV-19
Ethylbenzene			98.7		%		70-130	20-NOV-19
n-Hexane			90.2		%		70-130	20-NOV-19
Methylene Chloride			103.1		%		70-130	20-NOV-19
MTBE			88.5		%		70-130	20-NOV-19
m+p-Xylenes			98.9		%		70-130	20-NOV-19
Methyl Ethyl Ketone			107.7		%		60-140	20-NOV-19
Methyl Isobutyl Ketone			101.9		%		60-140	20-NOV-19
o-Xylene			96.7		%		70-130	20-NOV-19
Styrene			93.3		%		70-130	20-NOV-19
Tetrachloroethylene			102.7		%		60-130	20-NOV-19
Toluene			102.3		%		70-130	20-NOV-19
trans-1,2-Dichloroethylene			100.3		%		60-130	20-NOV-19
trans-1,3-Dichloropropene			106.6		%		70-130	20-NOV-19
Trichloroethylene			97.6		%		60-130	20-NOV-19
Trichlorofluoromethane			89.6		%		50-140	20-NOV-19
Vinyl chloride			97.6		%		60-140	20-NOV-19
WG3221627-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	20-NOV-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	20-NOV-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	20-NOV-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	20-NOV-19
1,1-Dichloroethane			<0.050		ug/g		0.05	20-NOV-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	20-NOV-19
1,2-Dibromoethane			<0.050		ug/g		0.05	20-NOV-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	20-NOV-19
1,2-Dichloroethane			<0.050		ug/g		0.05	20-NOV-19
1,2-Dichloropropane			<0.050		ug/g		0.05	20-NOV-19



Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Page 4 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4916835							
WG3221627-1 MB								
1,3-Dichlorobenzene			<0.050		ug/g		0.05	20-NOV-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	20-NOV-19
Acetone			<0.50		ug/g		0.5	20-NOV-19
Benzene			<0.0068		ug/g		0.0068	20-NOV-19
Bromodichloromethane			<0.050		ug/g		0.05	20-NOV-19
Bromoform			<0.050		ug/g		0.05	20-NOV-19
Bromomethane			<0.050		ug/g		0.05	20-NOV-19
Carbon tetrachloride			<0.050		ug/g		0.05	20-NOV-19
Chlorobenzene			<0.050		ug/g		0.05	20-NOV-19
Chloroform			<0.050		ug/g		0.05	20-NOV-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	20-NOV-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	20-NOV-19
Dibromochloromethane			<0.050		ug/g		0.05	20-NOV-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	20-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	20-NOV-19
n-Hexane			<0.050		ug/g		0.05	20-NOV-19
Methylene Chloride			<0.050		ug/g		0.05	20-NOV-19
MTBE			<0.050		ug/g		0.05	20-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	20-NOV-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	20-NOV-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	20-NOV-19
o-Xylene			<0.020		ug/g		0.02	20-NOV-19
Styrene			<0.050		ug/g		0.05	20-NOV-19
Tetrachloroethylene			<0.050		ug/g		0.05	20-NOV-19
Toluene			<0.080		ug/g		0.08	20-NOV-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	20-NOV-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	20-NOV-19
Trichloroethylene			<0.010		ug/g		0.01	20-NOV-19
Trichlorofluoromethane			<0.050		ug/g		0.05	20-NOV-19
Vinyl chloride			<0.020		ug/g		0.02	20-NOV-19
Surrogate: 1,4-Difluorobenzene			109.8		%		50-140	20-NOV-19
Surrogate: 4-Bromofluorobenzene			90.7		%		50-140	20-NOV-19
WG3221627-5 MS		L2382750-7						
1,1,1,2-Tetrachloroethane			106.7		%		50-140	20-NOV-19



Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Page 5 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4916835							
WG3221627-5 MS		L2382750-7						
1,1,2,2-Tetrachloroethane			115.5		%		50-140	20-NOV-19
1,1,1-Trichloroethane			107.4		%		50-140	20-NOV-19
1,1,2-Trichloroethane			109.6		%		50-140	20-NOV-19
1,1-Dichloroethane			112.5		%		50-140	20-NOV-19
1,1-Dichloroethylene			105.1		%		50-140	20-NOV-19
1,2-Dibromoethane			107.1		%		50-140	20-NOV-19
1,2-Dichlorobenzene			121.2		%		50-140	20-NOV-19
1,2-Dichloroethane			105.2		%		50-140	20-NOV-19
1,2-Dichloropropane			110.3		%		50-140	20-NOV-19
1,3-Dichlorobenzene			120.2		%		50-140	20-NOV-19
1,4-Dichlorobenzene			121.7		%		50-140	20-NOV-19
Acetone			119.2		%		50-140	20-NOV-19
Benzene			115.0		%		50-140	20-NOV-19
Bromodichloromethane			105.9		%		50-140	20-NOV-19
Bromoform			106.1		%		50-140	20-NOV-19
Bromomethane			97.5		%		50-140	20-NOV-19
Carbon tetrachloride			107.8		%		50-140	20-NOV-19
Chlorobenzene			112.5		%		50-140	20-NOV-19
Chloroform			110.8		%		50-140	20-NOV-19
cis-1,2-Dichloroethylene			107.8		%		50-140	20-NOV-19
cis-1,3-Dichloropropene			104.2		%		50-140	20-NOV-19
Dibromochloromethane			104.8		%		50-140	20-NOV-19
Dichlorodifluoromethane			71.8		%		50-140	20-NOV-19
Ethylbenzene			110.1		%		50-140	20-NOV-19
n-Hexane			104.7		%		50-140	20-NOV-19
Methylene Chloride			110.7		%		50-140	20-NOV-19
MTBE			95.7		%		50-140	20-NOV-19
m+p-Xylenes			109.8		%		50-140	20-NOV-19
Methyl Ethyl Ketone			102.3		%		50-140	20-NOV-19
Methyl Isobutyl Ketone			97.2		%		50-140	20-NOV-19
o-Xylene			107.1		%		50-140	20-NOV-19
Styrene			101.1		%		50-140	20-NOV-19
Tetrachloroethylene			113.8		%		50-140	20-NOV-19



Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Page 6 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4916835							
WG3221627-5 MS		L2382750-7						
Toluene			115.5		%		50-140	20-NOV-19
trans-1,2-Dichloroethylene			109.0		%		50-140	20-NOV-19
trans-1,3-Dichloropropene			103.6		%		50-140	20-NOV-19
Trichloroethylene			107.9		%		50-140	20-NOV-19
Trichlorofluoromethane			104.0		%		50-140	20-NOV-19
Vinyl chloride			111.0		%		50-140	20-NOV-19

Quality Control Report

Workorder: L2381634

Report Date: 20-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 7 of 7

Contact: Kossay Makhzoumi

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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 02-DEC-19
Report Date: 03-DEC-19 14:38 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2390458
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine) (No parameter exceedances)							

Saturated Paste Extractables - SOIL

Lab ID L2390458-1
Sample Date 22-NOV-19
Sample ID BH4-SS9

Analyte	Unit	Guide Limits		
		#1	#2	
SAR	SAR	5	5	1.66
Calcium (Ca)	mg/L	-	-	17.3
Magnesium (Mg)	mg/L	-	-	6.14
Sodium (Na)	mg/L	-	-	31.5

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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: L2390458

Report Date: 03-DEC-19

Page 1 of 2

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R4931390							
WG3233510-4	DUP	WG3233510-3						
Calcium (Ca)		5.59	5.40		mg/L	3.5	30	03-DEC-19
Sodium (Na)		10.1	9.76		mg/L	3.4	30	03-DEC-19
Magnesium (Mg)		1.84	1.77		mg/L	3.9	30	03-DEC-19
WG3233510-2	IRM	WT SAR3						
Calcium (Ca)			109.6		%		70-130	03-DEC-19
Sodium (Na)			104.8		%		70-130	03-DEC-19
Magnesium (Mg)			112.3		%		70-130	03-DEC-19
WG3233510-5	LCS							
Calcium (Ca)			98.3		%		80-120	03-DEC-19
Sodium (Na)			97.2		%		80-120	03-DEC-19
Magnesium (Mg)			97.2		%		80-120	03-DEC-19
WG3233510-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	03-DEC-19
Sodium (Na)			<0.50		mg/L		0.5	03-DEC-19
Magnesium (Mg)			<0.50		mg/L		0.5	03-DEC-19

Quality Control Report

Workorder: L2390458

Report Date: 03-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 2 of 2

Contact: Kossay Makhzoumi

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

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

Canada Toll Free: 1 800 668 9878



L2390458-COFC

COC Number: 15 -

8

Page 1 of 1

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Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																				
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																				
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>			EMERGENCY	1 Business day [E1] <input type="checkbox"/>															
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>															
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:																				
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																				
City/Province:	Brampton	Email 2			Analysis Request																				
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																				
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers										
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																							
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:		Routing Code:																					
PO / AFE:		Requisitioner:																							
LSD:		Location:																							
ALS Lab Work Order # (lab use only)	L2390458	ALS Contact:		Sampler:																					
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																					
	B44-SS9	22-11-19		Soil					X					1											
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MCCP T3 RPI			Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>															
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/>					Ice Cubes <input checked="" type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>										
					Cooling Initiated <input type="checkbox"/>																				
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C															
					2.9					5.3															
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																				
Released by: Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:											
			[Signature]	DEC 2/19	9am	[Signature]	Dec 2/19		[Signature]					2:30											

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2016 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 31-OCT-19
Report Date: 07-NOV-19 14:35 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2375311
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2375311-1	BH5-SS1	Polycyclic Aromatic Hydrocarbons	Benzo(a)anthracene	0.959	0.5	ug/g
			Benzo(a)pyrene	0.808	0.3	ug/g
			Benzo(b)fluoranthene	1.04	0.78	ug/g
			Dibenzo(ah)anthracene	0.147	0.1	ug/g
			Fluoranthene	2.51	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	0.500	0.38	ug/g
L2375311-2	BH5-SS2	Volatile Organic Compounds	Trichloroethylene	0.170	0.061	ug/g
L2375311-3	BH5-SS5	Metals	Lead (Pb)	338	120	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2375311-1	BH5-SS1	Polycyclic Aromatic Hydrocarbons	Benzo(a)anthracene	0.959	0.63	ug/g
			Benzo(a)pyrene	0.808	0.3	ug/g
			Benzo(b)fluoranthene	1.04	0.78	ug/g
			Dibenzo(ah)anthracene	0.147	0.1	ug/g
			Fluoranthene	2.51	0.69	ug/g
			Indeno(1,2,3-cd)pyrene	0.500	0.48	ug/g
L2375311-3	BH5-SS5	Metals	Lead (Pb)	338	120	ug/g

ANALYTICAL REPORT

Physical Tests - SOIL

	Lab ID						
	L2375311-1	L2375311-2	L2375311-3	L2375311-4			
	Sample Date						
	28-OCT-19	28-OCT-19	28-OCT-19	28-OCT-19			
	Sample ID						
	BH5-SS1	BH5-SS2	BH5-SS5	BH5-SS7			
Guide Limits							
Analyte	Unit	#1	#2				
% Moisture	%	-	-	4.38	8.65	6.48	16.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375311-1	L2375311-3
Sample Date	28-OCT-19	28-OCT-19
Sample ID	BH5-SS1	BH5-SS5

Analyte	Unit	Guide Limits			
		#1	#2		
Antimony (Sb)	ug/g	7.5	7.5	<1.0	3.6
Arsenic (As)	ug/g	18	18	1.1	5.2
Barium (Ba)	ug/g	390	390	21.7	179
Beryllium (Be)	ug/g	4	5	<0.50	<0.50
Boron (B)	ug/g	120	120	<5.0	5.8
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	0.64
Chromium (Cr)	ug/g	160	160	7.4	14.0
Cobalt (Co)	ug/g	22	22	2.3	4.2
Copper (Cu)	ug/g	140	180	4.6	35.1
Lead (Pb)	ug/g	120	120	3.3	338
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	4.4	11.8
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	18.4	21.3
Zinc (Zn)	ug/g	340	340	13.8	202

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Sample Data	
		#1	#2	Lab ID	Sample Date
				L2375311-2	28-OCT-19
				L2375311-4	28-OCT-19
				BH5-SS2	BH5-SS7
Acetone	ug/g	16	28	<0.50	<0.50
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

Lab ID	L2375311-2	L2375311-4
Sample Date	28-OCT-19	28-OCT-19
Sample ID	BH5-SS2	BH5-SS7

Analyte	Unit	Guide Limits			
		#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	0.170	0.020
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	%	-	-	86.5	89.4
Surrogate: 1,4-Difluorobenzene	%	-	-	104.0	107.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375311-2	L2375311-4
Sample Date	28-OCT-19	28-OCT-19
Sample ID	BH5-SS2	BH5-SS7

Analyte	Unit	Guide Limits			
		#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	%	-	-	113.0	94.7
Surrogate: 3,4-Dichlorotoluene	%	-	-	94.9	97.4

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	
		#1	#2	L2375311-1	L2375311-3	28-OCT-19	28-OCT-19
Acenaphthene	ug/g	7.9	58	0.146	<0.050		
Acenaphthylene	ug/g	0.15	0.17	0.094	<0.050		
Anthracene	ug/g	0.67	0.74	0.341	<0.050		
Benzo(a)anthracene	ug/g	0.5	0.63	0.959	<0.050		
Benzo(a)pyrene	ug/g	0.3	0.3	0.808	<0.050		
Benzo(b)fluoranthene	ug/g	0.78	0.78	1.04	<0.050		
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.524	<0.050		
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.429	<0.050		
Chrysene	ug/g	7	7.8	1.14	<0.050		
Dibenzo(ah)anthracene	ug/g	0.1	0.1	0.147	<0.050		
Fluoranthene	ug/g	0.69	0.69	2.51	<0.050		
Fluorene	ug/g	62	69	0.151	<0.050		
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.500	<0.050		
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.133	<0.042		
1-Methylnaphthalene	ug/g	0.99	3.4	0.070	<0.030		
2-Methylnaphthalene	ug/g	0.99	3.4	0.063	<0.030		
Naphthalene	ug/g	0.6	0.75	0.068	<0.013		
Phenanthrene	ug/g	6.2	7.8	2.07	<0.046		
Pyrene	ug/g	78	78	2.05	<0.050		
Surrogate: 2-Fluorobiphenyl	%	-	-	87.7	85.6		
Surrogate: p-Terphenyl d14	%	-	-	73.9	75.2		

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID	L2375311-1	L2375311-3
Sample Date	28-OCT-19	28-OCT-19
Sample ID	BH5-SS1	BH5-SS5

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	%	-	-	86.9	85.6

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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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.

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).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
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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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.</p> <p>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.</p> <p>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).</p>			
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
<p>A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is 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.</p> <p>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).</p>			
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
<p>An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.</p> <p>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).</p>			
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)
<p>Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.</p> <p>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).</p>			
XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			
<p>**ALS test methods may incorporate modifications from specified reference methods to improve performance.</p>			
<p>Chain of Custody Numbers:</p> <p><i>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:</i></p>			
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: L2375311

Report Date: 07-NOV-19

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R4902278							
WG3211513-4	DUP	WG3211513-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	07-NOV-19
WG3211513-2	LCS							
F1 (C6-C10)			108.2		%		80-120	07-NOV-19
WG3211513-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	07-NOV-19
Surrogate: 3,4-Dichlorotoluene			103.0		%		60-140	07-NOV-19
WG3211513-6	MS	L2375371-2						
F1 (C6-C10)			107.4		%		60-140	07-NOV-19
F2-F4-511-WT		Soil						
Batch	R4899263							
WG3209407-3	DUP	WG3209407-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	05-NOV-19
F3 (C16-C34)		51	<50	RPD-NA	ug/g	N/A	30	05-NOV-19
F4 (C34-C50)		92	<50	RPD-NA	ug/g	N/A	30	05-NOV-19
WG3209407-2	LCS							
F2 (C10-C16)			114.3		%		80-120	05-NOV-19
F3 (C16-C34)			112.9		%		80-120	05-NOV-19
F4 (C34-C50)			114.6		%		80-120	05-NOV-19
WG3209407-1	MB							
F2 (C10-C16)			<10		ug/g		10	05-NOV-19
F3 (C16-C34)			<50		ug/g		50	05-NOV-19
F4 (C34-C50)			<50		ug/g		50	05-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.6		%		60-140	05-NOV-19
WG3209407-4	MS	WG3209407-5						
F2 (C10-C16)			134.5		%		60-140	05-NOV-19
F3 (C16-C34)			120.8		%		60-140	05-NOV-19
F4 (C34-C50)			109.5		%		60-140	05-NOV-19
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			103.6		%		70-130	05-NOV-19
Arsenic (As)			105.0		%		70-130	05-NOV-19
Barium (Ba)			102.7		%		70-130	05-NOV-19
Beryllium (Be)			93.9		%		70-130	05-NOV-19
Boron (B)			3.5		mg/kg		0-8.6	05-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-2	CRM	WT-CANMET-TILL2						
Cadmium (Cd)			100.9		%		70-130	05-NOV-19
Chromium (Cr)			104.0		%		70-130	05-NOV-19
Cobalt (Co)			102.4		%		70-130	05-NOV-19
Copper (Cu)			104.4		%		70-130	05-NOV-19
Lead (Pb)			103.4		%		70-130	05-NOV-19
Molybdenum (Mo)			102.4		%		70-130	05-NOV-19
Nickel (Ni)			103.9		%		70-130	05-NOV-19
Selenium (Se)			0.40		mg/kg		0.15-0.55	05-NOV-19
Silver (Ag)			0.28		mg/kg		0.16-0.36	05-NOV-19
Thallium (Tl)			102.9		%		70-130	05-NOV-19
Uranium (U)			102.4		%		70-130	05-NOV-19
Vanadium (V)			103.9		%		70-130	05-NOV-19
Zinc (Zn)			98.3		%		70-130	05-NOV-19
WG3210315-4	DUP	L2375323-3						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Arsenic (As)		1.2	1.2		ug/g	0.2	30	05-NOV-19
Barium (Ba)		31.9	30.3		ug/g	5.4	40	05-NOV-19
Beryllium (Be)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Chromium (Cr)		8.6	8.5		ug/g	1.4	30	05-NOV-19
Cobalt (Co)		2.8	2.6		ug/g	8.8	30	05-NOV-19
Copper (Cu)		5.7	5.3		ug/g	6.4	30	05-NOV-19
Lead (Pb)		3.3	3.3		ug/g	1.6	40	05-NOV-19
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	05-NOV-19
Nickel (Ni)		5.3	5.2		ug/g	1.2	30	05-NOV-19
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	05-NOV-19
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Vanadium (V)		18.6	18.4		ug/g	0.9	30	05-NOV-19
Zinc (Zn)		14.9	14.3		ug/g	3.9	30	05-NOV-19
WG3210315-3	LCS							



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-3	LCS							
Antimony (Sb)			102.0		%		80-120	05-NOV-19
Arsenic (As)			95.1		%		80-120	05-NOV-19
Barium (Ba)			94.9		%		80-120	05-NOV-19
Beryllium (Be)			87.8		%		80-120	05-NOV-19
Boron (B)			88.6		%		80-120	05-NOV-19
Cadmium (Cd)			93.8		%		80-120	05-NOV-19
Chromium (Cr)			94.6		%		80-120	05-NOV-19
Cobalt (Co)			93.6		%		80-120	05-NOV-19
Copper (Cu)			92.8		%		80-120	05-NOV-19
Lead (Pb)			96.9		%		80-120	05-NOV-19
Molybdenum (Mo)			99.9		%		80-120	05-NOV-19
Nickel (Ni)			94.0		%		80-120	05-NOV-19
Selenium (Se)			91.4		%		80-120	05-NOV-19
Silver (Ag)			93.0		%		80-120	05-NOV-19
Thallium (Tl)			95.2		%		80-120	05-NOV-19
Uranium (U)			97.3		%		80-120	05-NOV-19
Vanadium (V)			96.4		%		80-120	05-NOV-19
Zinc (Zn)			90.9		%		80-120	05-NOV-19
WG3210315-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	05-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	05-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	05-NOV-19
Boron (B)			<5.0		mg/kg		5	05-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	05-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	05-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	05-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	05-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	05-NOV-19
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	05-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	05-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	05-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	05-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4899932							
WG3210315-1	MB							
Uranium (U)			<0.050		mg/kg		0.05	05-NOV-19
Vanadium (V)			<0.20		mg/kg		0.2	05-NOV-19
Zinc (Zn)			<2.0		mg/kg		2	05-NOV-19
MOISTURE-WT		Soil						
Batch	R4895778							
WG3207864-3	DUP	L2375263-1						
% Moisture		5.86	5.70		%	2.8	20	01-NOV-19
WG3207864-2	LCS							
% Moisture			101.5		%		90-110	01-NOV-19
WG3207864-1	MB							
% Moisture			<0.25		%		0.25	01-NOV-19
PAH-511-WT		Soil						
Batch	R4899156							
WG3207464-3	DUP	WG3207464-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-NOV-19
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-NOV-19
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	05-NOV-19
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	05-NOV-19
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-NOV-19
WG3207464-2	LCS							
1-Methylnaphthalene			90.2		%		50-140	05-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R4899156							
WG3207464-2	LCS							
2-Methylnaphthalene			85.1		%		50-140	05-NOV-19
Acenaphthene			91.4		%		50-140	05-NOV-19
Acenaphthylene			92.2		%		50-140	05-NOV-19
Anthracene			90.7		%		50-140	05-NOV-19
Benzo(a)anthracene			89.8		%		50-140	05-NOV-19
Benzo(a)pyrene			84.4		%		50-140	05-NOV-19
Benzo(b)fluoranthene			78.2		%		50-140	05-NOV-19
Benzo(g,h,i)perylene			85.1		%		50-140	05-NOV-19
Benzo(k)fluoranthene			93.4		%		50-140	05-NOV-19
Chrysene			99.9		%		50-140	05-NOV-19
Dibenzo(ah)anthracene			87.1		%		50-140	05-NOV-19
Fluoranthene			88.6		%		50-140	05-NOV-19
Fluorene			89.5		%		50-140	05-NOV-19
Indeno(1,2,3-cd)pyrene			90.1		%		50-140	05-NOV-19
Naphthalene			87.2		%		50-140	05-NOV-19
Phenanthrene			89.8		%		50-140	05-NOV-19
Pyrene			88.7		%		50-140	05-NOV-19
WG3207464-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	05-NOV-19
2-Methylnaphthalene			<0.030		ug/g		0.03	05-NOV-19
Acenaphthene			<0.050		ug/g		0.05	05-NOV-19
Acenaphthylene			<0.050		ug/g		0.05	05-NOV-19
Anthracene			<0.050		ug/g		0.05	05-NOV-19
Benzo(a)anthracene			<0.050		ug/g		0.05	05-NOV-19
Benzo(a)pyrene			<0.050		ug/g		0.05	05-NOV-19
Benzo(b)fluoranthene			<0.050		ug/g		0.05	05-NOV-19
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	05-NOV-19
Benzo(k)fluoranthene			<0.050		ug/g		0.05	05-NOV-19
Chrysene			<0.050		ug/g		0.05	05-NOV-19
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	05-NOV-19
Fluoranthene			<0.050		ug/g		0.05	05-NOV-19
Fluorene			<0.050		ug/g		0.05	05-NOV-19
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	05-NOV-19
Naphthalene			<0.013		ug/g		0.013	05-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PAH-511-WT									
	Soil								
Batch	R4899156								
WG3207464-1	MB								
Phenanthrene			<0.046		ug/g		0.046	05-NOV-19	
Pyrene			<0.050		ug/g		0.05	05-NOV-19	
Surrogate: 2-Fluorobiphenyl			94.9		%		50-140	05-NOV-19	
Surrogate: p-Terphenyl d14			82.0		%		50-140	05-NOV-19	
WG3207464-4	MS	WG3207464-5							
1-Methylnaphthalene			86.0		%		50-140	05-NOV-19	
2-Methylnaphthalene			80.9		%		50-140	05-NOV-19	
Acenaphthene			86.7		%		50-140	05-NOV-19	
Acenaphthylene			87.8		%		50-140	05-NOV-19	
Anthracene			85.9		%		50-140	05-NOV-19	
Benzo(a)anthracene			86.4		%		50-140	05-NOV-19	
Benzo(a)pyrene			81.2		%		50-140	05-NOV-19	
Benzo(b)fluoranthene			75.8		%		50-140	05-NOV-19	
Benzo(g,h,i)perylene			81.6		%		50-140	05-NOV-19	
Benzo(k)fluoranthene			89.6		%		50-140	05-NOV-19	
Chrysene			95.5		%		50-140	05-NOV-19	
Dibenzo(ah)anthracene			83.7		%		50-140	05-NOV-19	
Fluoranthene			84.4		%		50-140	05-NOV-19	
Fluorene			84.9		%		50-140	05-NOV-19	
Indeno(1,2,3-cd)pyrene			81.5		%		50-140	05-NOV-19	
Naphthalene			82.7		%		50-140	05-NOV-19	
Phenanthrene			85.8		%		50-140	05-NOV-19	
Pyrene			84.4		%		50-140	05-NOV-19	
PCB-511-WT									
	Soil								
Batch	R4900247								
WG3207464-3	DUP	WG3207464-5							
Aroclor 1242			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-19
Aroclor 1248			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-19
Aroclor 1254			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-19
Aroclor 1260			<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-NOV-19
WG3207464-2	LCS								
Aroclor 1242			99.1		%		60-140	06-NOV-19	
Aroclor 1248			99.3		%		60-140	06-NOV-19	
Aroclor 1254			100.4		%		60-140	06-NOV-19	



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PCB-511-WT		Soil							
Batch	R4900247								
WG3207464-2	LCS								
Aroclor 1260			106.5		%		60-140	06-NOV-19	
WG3207464-1	MB								
Aroclor 1242			<0.010		ug/g		0.01	06-NOV-19	
Aroclor 1248			<0.010		ug/g		0.01	06-NOV-19	
Aroclor 1254			<0.010		ug/g		0.01	06-NOV-19	
Aroclor 1260			<0.010		ug/g		0.01	06-NOV-19	
Surrogate: d14-Terphenyl			88.5		%		60-140	06-NOV-19	
WG3207464-4	MS	WG3207464-5							
Aroclor 1242			94.5		%		60-140	06-NOV-19	
Aroclor 1254			95.8		%		60-140	06-NOV-19	
Aroclor 1260			100.8		%		60-140	06-NOV-19	
VOC-511-HS-WT		Soil							
Batch	R4902278								
WG3211513-4	DUP	WG3211513-3							
1,1,1,2-Tetrachloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2,2-Tetrachloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,1-Trichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2-Trichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethylene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dibromoethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloroethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloropropane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,3-Dichlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,4-Dichlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Acetone			<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Benzene			<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromodichloromethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromoform			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromomethane			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Carbon tetrachloride			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chlorobenzene			<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-4	DUP	WG3211513-3						
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	07-NOV-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Trichloroethylene		0.170	0.168		ug/g	1.2	40	07-NOV-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
WG3211513-2	LCS							
1,1,1,2-Tetrachloroethane			103.2		%		60-130	07-NOV-19
1,1,2,2-Tetrachloroethane			116.0		%		60-130	07-NOV-19
1,1,1-Trichloroethane			104.2		%		60-130	07-NOV-19
1,1,2-Trichloroethane			107.4		%		60-130	07-NOV-19
1,1-Dichloroethane			109.9		%		60-130	07-NOV-19
1,1-Dichloroethylene			100.1		%		60-130	07-NOV-19
1,2-Dibromoethane			108.4		%		70-130	07-NOV-19
1,2-Dichlorobenzene			111.6		%		70-130	07-NOV-19
1,2-Dichloroethane			108.8		%		60-130	07-NOV-19
1,2-Dichloropropane			109.5		%		70-130	07-NOV-19
1,3-Dichlorobenzene			110.8		%		70-130	07-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-2	LCS							
1,4-Dichlorobenzene			112.3		%		70-130	07-NOV-19
Acetone			116.6		%		60-140	07-NOV-19
Benzene			110.7		%		70-130	07-NOV-19
Bromodichloromethane			107.3		%		50-140	07-NOV-19
Bromoform			108.7		%		70-130	07-NOV-19
Bromomethane			97.0		%		50-140	07-NOV-19
Carbon tetrachloride			104.9		%		70-130	07-NOV-19
Chlorobenzene			106.0		%		70-130	07-NOV-19
Chloroform			109.0		%		70-130	07-NOV-19
cis-1,2-Dichloroethylene			106.4		%		70-130	07-NOV-19
cis-1,3-Dichloropropene			114.5		%		70-130	07-NOV-19
Dibromochloromethane			104.2		%		60-130	07-NOV-19
Dichlorodifluoromethane			61.6		%		50-140	07-NOV-19
Ethylbenzene			103.9		%		70-130	07-NOV-19
n-Hexane			97.2		%		70-130	07-NOV-19
Methylene Chloride			109.7		%		70-130	07-NOV-19
MTBE			106.0		%		70-130	07-NOV-19
m+p-Xylenes			103.1		%		70-130	07-NOV-19
Methyl Ethyl Ketone			116.8		%		60-140	07-NOV-19
Methyl Isobutyl Ketone			111.1		%		60-140	07-NOV-19
o-Xylene			102.5		%		70-130	07-NOV-19
Styrene			100.2		%		70-130	07-NOV-19
Tetrachloroethylene			108.3		%		60-130	07-NOV-19
Toluene			106.4		%		70-130	07-NOV-19
trans-1,2-Dichloroethylene			108.4		%		60-130	07-NOV-19
trans-1,3-Dichloropropene			112.4		%		70-130	07-NOV-19
Trichloroethylene			107.4		%		60-130	07-NOV-19
Trichlorofluoromethane			98.5		%		50-140	07-NOV-19
Vinyl chloride			104.7		%		60-140	07-NOV-19
WG3211513-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902278							
WG3211513-1 MB								
1,1-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dibromoethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloropropane			<0.050		ug/g		0.05	07-NOV-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Acetone			<0.50		ug/g		0.5	07-NOV-19
Benzene			<0.0068		ug/g		0.0068	07-NOV-19
Bromodichloromethane			<0.050		ug/g		0.05	07-NOV-19
Bromoform			<0.050		ug/g		0.05	07-NOV-19
Bromomethane			<0.050		ug/g		0.05	07-NOV-19
Carbon tetrachloride			<0.050		ug/g		0.05	07-NOV-19
Chlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Chloroform			<0.050		ug/g		0.05	07-NOV-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Dibromochloromethane			<0.050		ug/g		0.05	07-NOV-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	07-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	07-NOV-19
n-Hexane			<0.050		ug/g		0.05	07-NOV-19
Methylene Chloride			<0.050		ug/g		0.05	07-NOV-19
MTBE			<0.050		ug/g		0.05	07-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	07-NOV-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	07-NOV-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	07-NOV-19
o-Xylene			<0.020		ug/g		0.02	07-NOV-19
Styrene			<0.050		ug/g		0.05	07-NOV-19
Tetrachloroethylene			<0.050		ug/g		0.05	07-NOV-19
Toluene			<0.080		ug/g		0.08	07-NOV-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4902278							
WG3211513-1 MB								
Trichloroethylene			<0.010		ug/g		0.01	07-NOV-19
Trichlorofluoromethane			<0.050		ug/g		0.05	07-NOV-19
Vinyl chloride			<0.020		ug/g		0.02	07-NOV-19
Surrogate: 1,4-Difluorobenzene			113.7		%		50-140	07-NOV-19
Surrogate: 4-Bromofluorobenzene			94.3		%		50-140	07-NOV-19
WG3211513-5 MS		L2375311-2						
1,1,1,2-Tetrachloroethane			105.8		%		50-140	07-NOV-19
1,1,1,2-Tetrachloroethane			116.1		%		50-140	07-NOV-19
1,1,1-Trichloroethane			107.3		%		50-140	07-NOV-19
1,1,2-Trichloroethane			109.3		%		50-140	07-NOV-19
1,1-Dichloroethane			112.3		%		50-140	07-NOV-19
1,1-Dichloroethylene			103.7		%		50-140	07-NOV-19
1,2-Dibromoethane			109.3		%		50-140	07-NOV-19
1,2-Dichlorobenzene			113.8		%		50-140	07-NOV-19
1,2-Dichloroethane			108.5		%		50-140	07-NOV-19
1,2-Dichloropropane			111.0		%		50-140	07-NOV-19
1,3-Dichlorobenzene			112.0		%		50-140	07-NOV-19
1,4-Dichlorobenzene			114.0		%		50-140	07-NOV-19
Acetone			119.8		%		50-140	07-NOV-19
Benzene			113.2		%		50-140	07-NOV-19
Bromodichloromethane			108.3		%		50-140	07-NOV-19
Bromoform			109.5		%		50-140	07-NOV-19
Bromomethane			99.5		%		50-140	07-NOV-19
Carbon tetrachloride			108.0		%		50-140	07-NOV-19
Chlorobenzene			108.3		%		50-140	07-NOV-19
Chloroform			111.0		%		50-140	07-NOV-19
cis-1,2-Dichloroethylene			108.5		%		50-140	07-NOV-19
cis-1,3-Dichloropropene			114.8		%		50-140	07-NOV-19
Dibromochloromethane			106.3		%		50-140	07-NOV-19
Dichlorodifluoromethane			70.2		%		50-140	07-NOV-19
Ethylbenzene			106.9		%		50-140	07-NOV-19
n-Hexane			102.4		%		50-140	07-NOV-19
Methylene Chloride			111.2		%		50-140	07-NOV-19
MTBE			108.3		%		50-140	07-NOV-19



Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R4902278							
WG3211513-5 MS		L2375311-2						
m+p-Xylenes			105.7		%		50-140	07-NOV-19
Methyl Ethyl Ketone			108.6		%		50-140	07-NOV-19
Methyl Isobutyl Ketone			110.2		%		50-140	07-NOV-19
o-Xylene			104.9		%		50-140	07-NOV-19
Styrene			101.8		%		50-140	07-NOV-19
Tetrachloroethylene			111.7		%		50-140	07-NOV-19
Toluene			110.0		%		50-140	07-NOV-19
trans-1,2-Dichloroethylene			110.8		%		50-140	07-NOV-19
trans-1,3-Dichloropropene			114.1		%		50-140	07-NOV-19
Trichloroethylene			104.9		%		50-140	07-NOV-19
Trichlorofluoromethane			103.7		%		50-140	07-NOV-19
Vinyl chloride			109.9		%		50-140	07-NOV-19

Quality Control Report

Workorder: L2375311

Report Date: 07-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

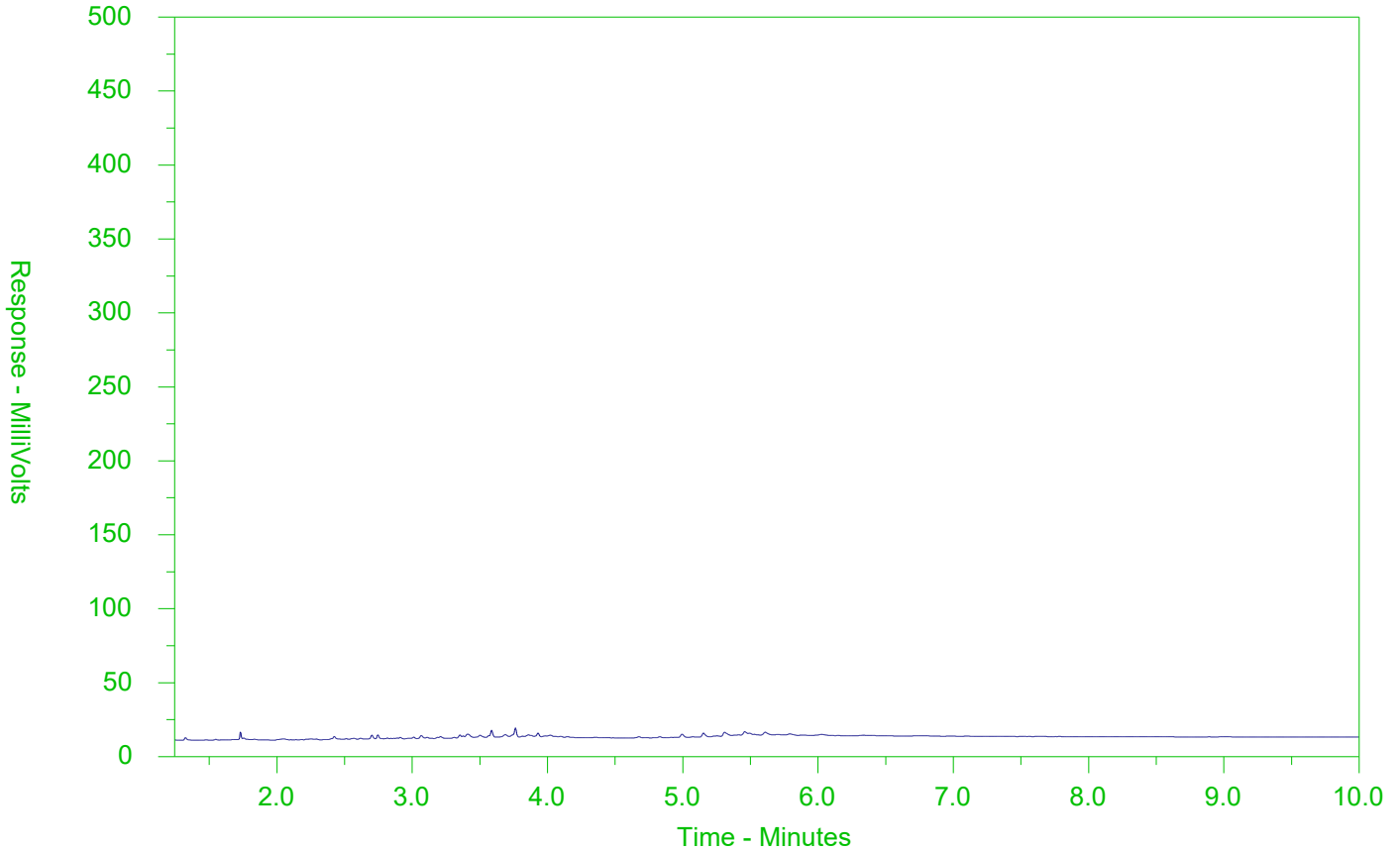
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2375311-2
 Client Sample ID: BH5-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.

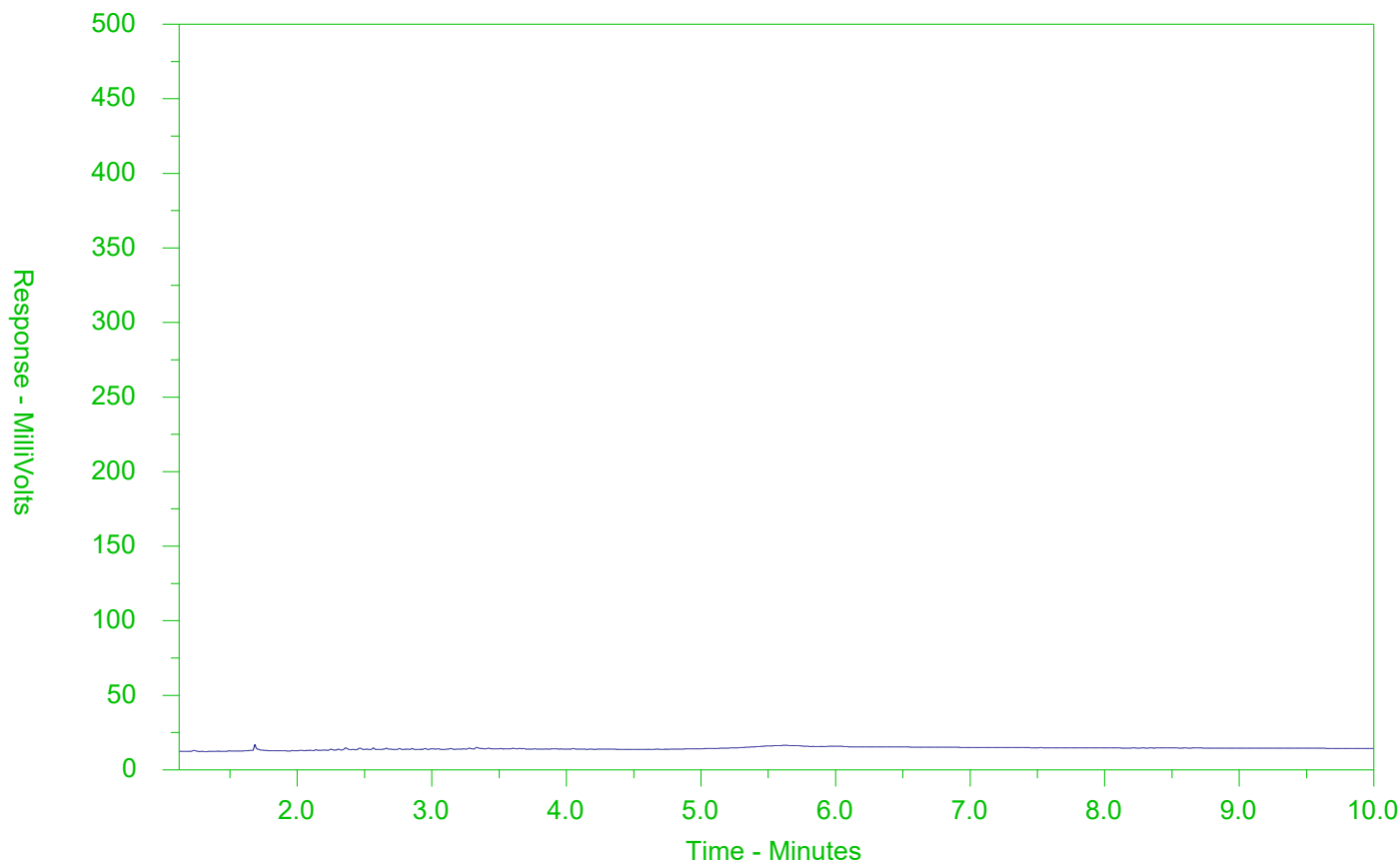
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2375311-4
 Client Sample ID: BH5-SS7



← 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



L2375311-COFC

COC Number: 15 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					EMERGENCY											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>			EMERGENCY		3 day [P3] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>						
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				2 day [P2] <input type="checkbox"/>															
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				Date and Time Required for all E&P TATs:															
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																
City/Province:	Brampton	Email 2			Analysis Request																
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Number of Containers																
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																			
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca																			
Contact:	Lorena Rossi	Email 2																			
Project Information		Oil and Gas Required Fields (client use)			Number of Containers																
ALS Account # / Quote #:	Q62481	AFE/Cost Center:		PO#																	
Job #:	1-19-0603 -42	Major/Minor Code:		Routing Code:																	
PO / AFE:		Requisitioner:																			
LSD:		Location:																			
ALS Lab Work Order # (lab use only) L2375311		ALS Contact: ES		Sampler:																	
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs							
	BH5 - SS1	28-10-19		Soil		X				X				X							2
	BH5 - SS2	28-10-19		Soil							X	X									3
	BH5 - SS5	28-10-19		Soil		X				X				X							2
	BH5 - SS7	28-10-19		Soil							X	X									3
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
		Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C									
							6.0					5.7									
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)													
Released by: Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	
				09/31/19	1237		31-10-19	1530													

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-NOV-19
Report Date: 20-NOV-19 07:23 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2381679
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine) (No parameter exceedances)							

Metals - SOIL

Lab ID L2381679-1
Sample Date 12-NOV-19
Sample ID BH5-SS6

Analyte	Unit	Guide Limits		
		#1	#2	
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	<1.0
Barium (Ba)	ug/g	390	390	14.0
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	<5.0
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	5.3
Cobalt (Co)	ug/g	22	22	1.5
Copper (Cu)	ug/g	140	180	3.1
Lead (Pb)	ug/g	120	120	1.9
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	2.8
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	11.1
Zinc (Zn)	ug/g	340	340	9.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (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).

**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: L2381679

Report Date: 20-NOV-19

Page 1 of 4

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4914307							
WG3219263-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			103.3		%		70-130	18-NOV-19
Arsenic (As)			97.3		%		70-130	18-NOV-19
Barium (Ba)			96.5		%		70-130	18-NOV-19
Beryllium (Be)			89.7		%		70-130	18-NOV-19
Boron (B)			3.2		mg/kg		0-8.6	18-NOV-19
Cadmium (Cd)			92.0		%		70-130	18-NOV-19
Chromium (Cr)			97.3		%		70-130	18-NOV-19
Cobalt (Co)			96.0		%		70-130	18-NOV-19
Copper (Cu)			96.7		%		70-130	18-NOV-19
Lead (Pb)			98.5		%		70-130	18-NOV-19
Molybdenum (Mo)			95.2		%		70-130	18-NOV-19
Nickel (Ni)			98.1		%		70-130	18-NOV-19
Selenium (Se)			0.34		mg/kg		0.15-0.55	18-NOV-19
Silver (Ag)			0.26		mg/kg		0.16-0.36	18-NOV-19
Thallium (Tl)			98.6		%		70-130	18-NOV-19
Uranium (U)			97.9		%		70-130	18-NOV-19
Vanadium (V)			97.4		%		70-130	18-NOV-19
Zinc (Zn)			91.2		%		70-130	18-NOV-19
WG3219263-6	DUP	WG3219263-5						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	18-NOV-19
Arsenic (As)		2.14	2.08		ug/g	2.7	30	18-NOV-19
Barium (Ba)		67.2	64.4		ug/g	4.3	40	18-NOV-19
Beryllium (Be)		0.36	0.35		ug/g	2.0	30	18-NOV-19
Boron (B)		5.9	5.8		ug/g	3.1	30	18-NOV-19
Cadmium (Cd)		0.065	0.055		ug/g	17	30	18-NOV-19
Chromium (Cr)		14.6	13.8		ug/g	6.2	30	18-NOV-19
Cobalt (Co)		5.23	5.08		ug/g	2.8	30	18-NOV-19
Copper (Cu)		9.82	9.58		ug/g	2.5	30	18-NOV-19
Lead (Pb)		4.55	4.44		ug/g	2.5	40	18-NOV-19
Molybdenum (Mo)		0.19	0.19		ug/g	0.9	40	18-NOV-19
Nickel (Ni)		10.2	10.1		ug/g	1.8	30	18-NOV-19
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	18-NOV-19
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	18-NOV-19



Quality Control Report

Workorder: L2381679

Report Date: 20-NOV-19

Page 2 of 4

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R4914307							
WG3219263-6	DUP	WG3219263-5						
Thallium (Tl)		0.077	0.075		ug/g	2.7	30	18-NOV-19
Uranium (U)		0.435	0.408		ug/g	6.5	30	18-NOV-19
Vanadium (V)		25.9	25.3		ug/g	2.4	30	18-NOV-19
Zinc (Zn)		21.9	21.5		ug/g	1.6	30	18-NOV-19
WG3219263-4	LCS							
Antimony (Sb)			105.9		%		80-120	18-NOV-19
Arsenic (As)			96.1		%		80-120	18-NOV-19
Barium (Ba)			98.5		%		80-120	18-NOV-19
Beryllium (Be)			93.1		%		80-120	18-NOV-19
Boron (B)			89.8		%		80-120	18-NOV-19
Cadmium (Cd)			94.1		%		80-120	18-NOV-19
Chromium (Cr)			96.0		%		80-120	18-NOV-19
Cobalt (Co)			95.3		%		80-120	18-NOV-19
Copper (Cu)			93.9		%		80-120	18-NOV-19
Lead (Pb)			99.0		%		80-120	18-NOV-19
Molybdenum (Mo)			100.6		%		80-120	18-NOV-19
Nickel (Ni)			95.0		%		80-120	18-NOV-19
Selenium (Se)			98.8		%		80-120	18-NOV-19
Silver (Ag)			101.4		%		80-120	18-NOV-19
Thallium (Tl)			98.5		%		80-120	18-NOV-19
Uranium (U)			100.0		%		80-120	18-NOV-19
Vanadium (V)			98.3		%		80-120	18-NOV-19
Zinc (Zn)			90.1		%		80-120	18-NOV-19
WG3219263-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	18-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	18-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	18-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	18-NOV-19
Boron (B)			<5.0		mg/kg		5	18-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	18-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	18-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	18-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	18-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	18-NOV-19



Quality Control Report

Workorder: L2381679

Report Date: 20-NOV-19

Page 3 of 4

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	Soil							
Batch	R4914307							
WG3219263-1 MB								
Molybdenum (Mo)			<0.10		mg/kg		0.1	18-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	18-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	18-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	18-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	18-NOV-19
Uranium (U)			<0.050		mg/kg		0.05	18-NOV-19
Vanadium (V)			<0.20		mg/kg		0.2	18-NOV-19
Zinc (Zn)			<2.0		mg/kg		2	18-NOV-19

Quality Control Report

Workorder: L2381679

Report Date: 20-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 4 of 4

Contact: Kossay Makhzoumi

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



COC Number: 15 -

Canada Toll Free: 1 800 668 9878

L2381679-COFC

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>					
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>					
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province:	Brampton	Email 2			Analysis Request											
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
Invoice To		Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
Same as Report To	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Copy of Invoice with Report	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Email 1 or Fax lrossi@terraprobe.ca														
Company:		Email 2														
Contact:																
Project Information		Oil and Gas Required Fields (client use)														
ALS Account # / Quote #: Q64281		AFE/Cost Center:		PO#												
Job #: 1-19-0603-42		Major/Minor Code:		Routing Code:												
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only) L2381679		ALS Contact:		Sampler:												
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												
	BHS-SSG	12-11-19		Soil		X									1	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
		Cooling Initiated <input type="checkbox"/>														
		INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C									
		5.2					6.0									
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)											
Released by: Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:		
			[Signature]	Nov 13/19	9am	[Signature]	11-13-19	1409								

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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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 31-OCT-19
Report Date: 07-NOV-19 14:33 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2375305
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2375305-1	BH6-SS1	Metals	Lead (Pb)	139	120	ug/g
		Polycyclic Aromatic Hydrocarbons	Benzo(a)anthracene	0.703	0.5	ug/g
			Benzo(a)pyrene	0.583	0.3	ug/g
			Dibenzo(ah)anthracene	0.101	0.1	ug/g
			Fluoranthene	1.43	0.69	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2375305-1	BH6-SS1	Metals	Lead (Pb)	139	120	ug/g
		Polycyclic Aromatic Hydrocarbons	Benzo(a)anthracene	0.703	0.63	ug/g
			Benzo(a)pyrene	0.583	0.3	ug/g
			Dibenzo(ah)anthracene	0.101	0.1	ug/g
			Fluoranthene	1.43	0.69	ug/g

Physical Tests - SOIL

	Lab ID						
	L2375305-1	L2375305-2	L2375305-3	L2375305-4			
	Sample Date						
	29-OCT-19	29-OCT-19	29-OCT-19	29-OCT-19			
	Sample ID						
	BH6-SS1	BH6-SS2	BH6-SS3	BH6-SS7			
	Guide Limits						
Analyte	Unit	#1	#2				
% Moisture	%	-	-	9.49	12.2	7.63	15.4

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375305-1	L2375305-3
Sample Date	29-OCT-19	29-OCT-19
Sample ID	BH6-SS1	BH6-SS3

Analyte	Unit	Guide Limits			
		#1	#2		
Antimony (Sb)	ug/g	7.5	7.5	1.4	<1.0
Arsenic (As)	ug/g	18	18	3.3	2.5
Barium (Ba)	ug/g	390	390	73.1	50.8
Beryllium (Be)	ug/g	4	5	<0.50	<0.50
Boron (B)	ug/g	120	120	<5.0	<5.0
Cadmium (Cd)	ug/g	1.2	1.2	0.50	<0.50
Chromium (Cr)	ug/g	160	160	11.0	10.8
Cobalt (Co)	ug/g	22	22	2.8	3.5
Copper (Cu)	ug/g	140	180	9.8	6.6
Lead (Pb)	ug/g	120	120	139	4.1
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0
Nickel (Ni)	ug/g	100	130	6.2	7.0
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	17.5	19.0
Zinc (Zn)	ug/g	340	340	107	20.5

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Lab ID	
		#1	#2	L2375305-2	L2375305-4
				Sample Date	29-OCT-19
				Sample ID	BH6-SS2
				Sample Date	29-OCT-19
				Sample ID	BH6-SS7
Acetone	ug/g	16	28	<0.50	<0.50
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)

Volatile Organic Compounds - SOIL

Lab ID	L2375305-2	L2375305-4
Sample Date	29-OCT-19	29-OCT-19
Sample ID	BH6-SS2	BH6-SS7

Analyte	Unit	Guide Limits			
		#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	0.014	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	%	-	-	88.8	88.3
Surrogate: 1,4-Difluorobenzene	%	-	-	108.4	109.3

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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	L2375305-2	L2375305-4
Sample Date	29-OCT-19	29-OCT-19
Sample ID	BH6-SS2	BH6-SS7

Analyte	Unit	Guide Limits			
		#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	%	-	-	102.6	83.6
Surrogate: 3,4-Dichlorotoluene	%	-	-	91.0	84.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	
		#1	#2	L2375305-1	L2375305-3	29-OCT-19	29-OCT-19
Acenaphthene	ug/g	7.9	58	0.081	<0.050		
Acenaphthylene	ug/g	0.15	0.17	0.070	<0.050		
Anthracene	ug/g	0.67	0.74	0.263	<0.050		
Benzo(a)anthracene	ug/g	0.5	0.63	0.703	<0.050		
Benzo(a)pyrene	ug/g	0.3	0.3	0.583	<0.050		
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.683	<0.050		
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.350	<0.050		
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.280	<0.050		
Chrysene	ug/g	7	7.8	0.712	<0.050		
Dibenzo(ah)anthracene	ug/g	0.1	0.1	0.101	<0.050		
Fluoranthene	ug/g	0.69	0.69	1.43	<0.050		
Fluorene	ug/g	62	69	0.095	<0.050		
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.351	<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	0.028	<0.013		
Phenanthrene	ug/g	6.2	7.8	1.06	<0.046		
Pyrene	ug/g	78	78	1.18	<0.050		
Surrogate: 2-Fluorobiphenyl	%	-	-	88.1	89.7		
Surrogate: p-Terphenyl d14	%	-	-	77.2	80.0		

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID	L2375305-1	L2375305-3
Sample Date	29-OCT-19	29-OCT-19
Sample ID	BH6-SS1	BH6-SS3

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	%	-	-	90.7	84.6

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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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.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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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
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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).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
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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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.</p> <p>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.</p> <p>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).</p>			
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
<p>A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is 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.</p> <p>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).</p>			
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
<p>An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.</p> <p>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).</p>			
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)
<p>Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.</p> <p>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).</p>			
XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			
<p>**ALS test methods may incorporate modifications from specified reference methods to improve performance.</p>			
<p>Chain of Custody Numbers:</p> <p><i>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:</i></p>			
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: L2375305

Report Date: 07-NOV-19

Page 1 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R4901631							
WG3212302-4	DUP	WG3212302-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	07-NOV-19
WG3212302-2	LCS							
F1 (C6-C10)			110.3		%		80-120	07-NOV-19
WG3212302-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	07-NOV-19
Surrogate: 3,4-Dichlorotoluene			86.3		%		60-140	07-NOV-19
WG3212302-6	MS	L2375703-10						
F1 (C6-C10)			96.2		%		60-140	07-NOV-19
F2-F4-511-WT		Soil						
Batch	R4899263							
WG3209407-3	DUP	WG3209407-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	05-NOV-19
F3 (C16-C34)		51	<50	RPD-NA	ug/g	N/A	30	05-NOV-19
F4 (C34-C50)		92	<50	RPD-NA	ug/g	N/A	30	05-NOV-19
WG3209407-2	LCS							
F2 (C10-C16)			114.3		%		80-120	05-NOV-19
F3 (C16-C34)			112.9		%		80-120	05-NOV-19
F4 (C34-C50)			114.6		%		80-120	05-NOV-19
WG3209407-1	MB							
F2 (C10-C16)			<10		ug/g		10	05-NOV-19
F3 (C16-C34)			<50		ug/g		50	05-NOV-19
F4 (C34-C50)			<50		ug/g		50	05-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.6		%		60-140	05-NOV-19
WG3209407-4	MS	WG3209407-5						
F2 (C10-C16)			134.5		%		60-140	05-NOV-19
F3 (C16-C34)			120.8		%		60-140	05-NOV-19
F4 (C34-C50)			109.5		%		60-140	05-NOV-19
MET-200.2-CCMS-WT		Soil						
Batch	R4898914							
WG3210336-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			101.6		%		70-130	05-NOV-19
Arsenic (As)			97.5		%		70-130	05-NOV-19
Barium (Ba)			94.8		%		70-130	05-NOV-19
Beryllium (Be)			87.3		%		70-130	05-NOV-19
Boron (B)			3.0		mg/kg		0-8.6	05-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 2 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4898914							
WG3210336-2	CRM	WT-CANMET-TILL2						
Cadmium (Cd)			90.9		%		70-130	05-NOV-19
Chromium (Cr)			95.2		%		70-130	05-NOV-19
Cobalt (Co)			94.4		%		70-130	05-NOV-19
Copper (Cu)			94.1		%		70-130	05-NOV-19
Lead (Pb)			99.3		%		70-130	05-NOV-19
Molybdenum (Mo)			102.2		%		70-130	05-NOV-19
Nickel (Ni)			95.9		%		70-130	05-NOV-19
Selenium (Se)			0.32		mg/kg		0.15-0.55	05-NOV-19
Silver (Ag)			0.25		mg/kg		0.16-0.36	05-NOV-19
Thallium (Tl)			96.3		%		70-130	05-NOV-19
Uranium (U)			97.1		%		70-130	05-NOV-19
Vanadium (V)			94.7		%		70-130	05-NOV-19
Zinc (Zn)			90.1		%		70-130	05-NOV-19
WG3210336-4	DUP	L2375305-1						
Antimony (Sb)		1.4	1.3		ug/g	4.2	30	05-NOV-19
Arsenic (As)		3.3	3.2		ug/g	3.3	30	05-NOV-19
Barium (Ba)		73.1	73.6		ug/g	0.6	40	05-NOV-19
Beryllium (Be)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Cadmium (Cd)		0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Chromium (Cr)		11.0	11.1		ug/g	0.6	30	05-NOV-19
Cobalt (Co)		2.8	2.7		ug/g	4.7	30	05-NOV-19
Copper (Cu)		9.8	9.4		ug/g	3.8	30	05-NOV-19
Lead (Pb)		139	138		ug/g	0.5	40	05-NOV-19
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	05-NOV-19
Nickel (Ni)		6.2	6.3		ug/g	1.3	30	05-NOV-19
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	05-NOV-19
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-NOV-19
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-NOV-19
Vanadium (V)		17.5	16.5		ug/g	5.5	30	05-NOV-19
Zinc (Zn)		107	106		ug/g	1.3	30	05-NOV-19
WG3210336-3	LCS							



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 3 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4898914							
WG3210336-3	LCS							
Antimony (Sb)			98.8		%		80-120	05-NOV-19
Arsenic (As)			91.2		%		80-120	05-NOV-19
Barium (Ba)			92.7		%		80-120	05-NOV-19
Beryllium (Be)			84.2		%		80-120	05-NOV-19
Boron (B)			82.0		%		80-120	05-NOV-19
Cadmium (Cd)			88.5		%		80-120	05-NOV-19
Chromium (Cr)			90.6		%		80-120	05-NOV-19
Cobalt (Co)			89.6		%		80-120	05-NOV-19
Copper (Cu)			87.8		%		80-120	05-NOV-19
Lead (Pb)			93.1		%		80-120	05-NOV-19
Molybdenum (Mo)			97.6		%		80-120	05-NOV-19
Nickel (Ni)			89.6		%		80-120	05-NOV-19
Selenium (Se)			84.3		%		80-120	05-NOV-19
Silver (Ag)			91.6		%		80-120	05-NOV-19
Thallium (Tl)			92.7		%		80-120	05-NOV-19
Uranium (U)			92.1		%		80-120	05-NOV-19
Vanadium (V)			94.5		%		80-120	05-NOV-19
Zinc (Zn)			86.2		%		80-120	05-NOV-19
WG3210336-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	05-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	05-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	05-NOV-19
Boron (B)			<5.0		mg/kg		5	05-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	05-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	05-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	05-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	05-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	05-NOV-19
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	05-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	05-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	05-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	05-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 4 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
Soil								
Batch R4898914								
WG3210336-1 MB								
			<0.050		mg/kg		0.05	05-NOV-19
			<0.20		mg/kg		0.2	05-NOV-19
			<2.0		mg/kg		2	05-NOV-19
Batch R4900589								
WG3211479-2 CRM								
WT-CANMET-TILL2								
			97.2		%		70-130	06-NOV-19
			99.3		%		70-130	06-NOV-19
			99.9		%		70-130	06-NOV-19
			93.4		%		70-130	06-NOV-19
			3.5		mg/kg		0-8.6	06-NOV-19
			94.8		%		70-130	06-NOV-19
			100.3		%		70-130	06-NOV-19
			98.9		%		70-130	06-NOV-19
			98.1		%		70-130	06-NOV-19
			96.6		%		70-130	06-NOV-19
			99.8		%		70-130	06-NOV-19
			99.4		%		70-130	06-NOV-19
			0.32		mg/kg		0.15-0.55	06-NOV-19
			0.25		mg/kg		0.16-0.36	06-NOV-19
			95.3		%		70-130	06-NOV-19
			94.7		%		70-130	06-NOV-19
			99.8		%		70-130	06-NOV-19
			94.3		%		70-130	06-NOV-19
WG3211479-6 DUP								
WG3211479-5								
		<0.10	<0.10	RPD-NA	ug/g	N/A	30	06-NOV-19
		1.51	1.62		ug/g	7.2	30	06-NOV-19
		42.3	39.6		ug/g	6.6	40	06-NOV-19
		0.18	0.18		ug/g	4.0	30	06-NOV-19
		<5.0	<5.0	RPD-NA	ug/g	N/A	30	06-NOV-19
		0.082	0.075		ug/g	8.2	30	06-NOV-19
		10.1	9.64		ug/g	4.8	30	06-NOV-19
		3.69	3.62		ug/g	2.1	30	06-NOV-19
		8.57	8.47		ug/g	1.2	30	06-NOV-19
		3.62	3.74		ug/g	3.4	40	06-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 5 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4900589							
WG3211479-6	DUP	WG3211479-5						
Molybdenum (Mo)		0.38	0.37		ug/g	2.3	40	06-NOV-19
Nickel (Ni)		7.00	6.75		ug/g	3.7	30	06-NOV-19
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	06-NOV-19
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	06-NOV-19
Thallium (Tl)		0.105	0.098		ug/g	7.4	30	06-NOV-19
Uranium (U)		0.463	0.472		ug/g	1.9	30	06-NOV-19
Vanadium (V)		22.6	22.0		ug/g	2.6	30	06-NOV-19
Zinc (Zn)		38.5	38.1		ug/g	0.9	30	06-NOV-19
WG3211479-4	LCS							
Antimony (Sb)			103.9		%		80-120	06-NOV-19
Arsenic (As)			97.3		%		80-120	06-NOV-19
Barium (Ba)			98.5		%		80-120	06-NOV-19
Beryllium (Be)			98.6		%		80-120	06-NOV-19
Boron (B)			93.0		%		80-120	06-NOV-19
Cadmium (Cd)			96.0		%		80-120	06-NOV-19
Chromium (Cr)			96.3		%		80-120	06-NOV-19
Cobalt (Co)			95.1		%		80-120	06-NOV-19
Copper (Cu)			93.5		%		80-120	06-NOV-19
Lead (Pb)			97.6		%		80-120	06-NOV-19
Molybdenum (Mo)			101.5		%		80-120	06-NOV-19
Nickel (Ni)			94.0		%		80-120	06-NOV-19
Selenium (Se)			97.3		%		80-120	06-NOV-19
Silver (Ag)			17.6	RRQC	%		80-120	06-NOV-19
Thallium (Tl)			97.5		%		80-120	06-NOV-19
Uranium (U)			95.9		%		80-120	06-NOV-19
Vanadium (V)			98.5		%		80-120	06-NOV-19
Zinc (Zn)			93.6		%		80-120	06-NOV-19
<p>COMMENTS: RRQC: Silver in LCS is outside of ALS DQOs due to issue with standard. CRM values were within acceptable DQO. Reported Silver data is not effected.</p>								
WG3211479-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	06-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	06-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	06-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	06-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 6 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R4900589							
WG3211479-1	MB							
Boron (B)			<5.0		mg/kg		5	06-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	06-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	06-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	06-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	06-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	06-NOV-19
Molybdenum (Mo)			<0.10		mg/kg		0.1	06-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	06-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	06-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	06-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	06-NOV-19
Uranium (U)			<0.050		mg/kg		0.05	06-NOV-19
Vanadium (V)			<0.20		mg/kg		0.2	06-NOV-19
Zinc (Zn)			<2.0		mg/kg		2	06-NOV-19
MOISTURE-WT								
	Soil							
Batch	R4895778							
WG3207864-3	DUP	L2375263-1						
% Moisture		5.86	5.70		%	2.8	20	01-NOV-19
WG3207864-2	LCS							
% Moisture			101.5		%		90-110	01-NOV-19
WG3207864-1	MB							
% Moisture			<0.25		%		0.25	01-NOV-19
PAH-511-WT								
	Soil							
Batch	R4897642							
WG3207515-3	DUP	WG3207515-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19

Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 7 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R4897642							
WG3207515-3	DUP	WG3207515-5						
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	04-NOV-19
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	04-NOV-19
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
WG3207515-2	LCS							
1-Methylnaphthalene			86.6		%		50-140	04-NOV-19
2-Methylnaphthalene			82.2		%		50-140	04-NOV-19
Acenaphthene			88.2		%		50-140	04-NOV-19
Acenaphthylene			89.7		%		50-140	04-NOV-19
Anthracene			87.6		%		50-140	04-NOV-19
Benzo(a)anthracene			88.8		%		50-140	04-NOV-19
Benzo(a)pyrene			82.1		%		50-140	04-NOV-19
Benzo(b)fluoranthene			75.3		%		50-140	04-NOV-19
Benzo(g,h,i)perylene			84.2		%		50-140	04-NOV-19
Benzo(k)fluoranthene			89.8		%		50-140	04-NOV-19
Chrysene			95.2		%		50-140	04-NOV-19
Dibenzo(ah)anthracene			87.8		%		50-140	04-NOV-19
Fluoranthene			85.4		%		50-140	04-NOV-19
Fluorene			85.9		%		50-140	04-NOV-19
Indeno(1,2,3-cd)pyrene			89.6		%		50-140	04-NOV-19
Naphthalene			84.0		%		50-140	04-NOV-19
Phenanthrene			86.8		%		50-140	04-NOV-19
Pyrene			85.3		%		50-140	04-NOV-19
WG3207515-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
2-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
Acenaphthene			<0.050		ug/g		0.05	04-NOV-19
Acenaphthylene			<0.050		ug/g		0.05	04-NOV-19
Anthracene			<0.050		ug/g		0.05	04-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 8 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch	R4897642							
WG3207515-1 MB								
Benzo(a)anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)pyrene			<0.050		ug/g		0.05	04-NOV-19
Benzo(b)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	04-NOV-19
Benzo(k)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Chrysene			<0.050		ug/g		0.05	04-NOV-19
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	04-NOV-19
Fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Fluorene			<0.050		ug/g		0.05	04-NOV-19
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	04-NOV-19
Naphthalene			<0.013		ug/g		0.013	04-NOV-19
Phenanthrene			<0.046		ug/g		0.046	04-NOV-19
Pyrene			<0.050		ug/g		0.05	04-NOV-19
Surrogate: 2-Fluorobiphenyl			95.6		%		50-140	04-NOV-19
Surrogate: p-Terphenyl d14			86.6		%		50-140	04-NOV-19
WG3207515-4 MS		WG3207515-5						
1-Methylnaphthalene			89.3		%		50-140	04-NOV-19
2-Methylnaphthalene			84.7		%		50-140	04-NOV-19
Acenaphthene			91.1		%		50-140	04-NOV-19
Acenaphthylene			94.0		%		50-140	04-NOV-19
Anthracene			90.1		%		50-140	04-NOV-19
Benzo(a)anthracene			91.0		%		50-140	04-NOV-19
Benzo(a)pyrene			84.3		%		50-140	04-NOV-19
Benzo(b)fluoranthene			77.7		%		50-140	04-NOV-19
Benzo(g,h,i)perylene			84.6		%		50-140	04-NOV-19
Benzo(k)fluoranthene			90.3		%		50-140	04-NOV-19
Chrysene			96.1		%		50-140	04-NOV-19
Dibenzo(ah)anthracene			88.2		%		50-140	04-NOV-19
Fluoranthene			87.0		%		50-140	04-NOV-19
Fluorene			89.7		%		50-140	04-NOV-19
Indeno(1,2,3-cd)pyrene			92.1		%		50-140	04-NOV-19
Naphthalene			85.8		%		50-140	04-NOV-19
Phenanthrene			87.0		%		50-140	04-NOV-19
Pyrene			87.0		%		50-140	04-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 9 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT		Soil						
Batch	R4898984							
WG3207515-3	DUP	WG3207515-5						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
WG3207515-2	LCS							
Aroclor 1242			109.3		%		60-140	05-NOV-19
Aroclor 1248			101.5		%		60-140	05-NOV-19
Aroclor 1254			105.2		%		60-140	05-NOV-19
Aroclor 1260			101.4		%		60-140	05-NOV-19
WG3207515-1	MB							
Aroclor 1242			<0.010		ug/g		0.01	05-NOV-19
Aroclor 1248			<0.010		ug/g		0.01	05-NOV-19
Aroclor 1254			<0.010		ug/g		0.01	05-NOV-19
Aroclor 1260			<0.010		ug/g		0.01	05-NOV-19
Surrogate: d14-Terphenyl			88.3		%		60-140	05-NOV-19
WG3207515-4	MS	WG3207515-5						
Aroclor 1242			91.8		%		60-140	05-NOV-19
Aroclor 1254			89.7		%		60-140	05-NOV-19
Aroclor 1260			86.6		%		60-140	05-NOV-19
VOC-511-HS-WT		Soil						
Batch	R4901631							
WG3212302-4	DUP	WG3212302-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 10 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4901631							
WG3212302-4	DUP	WG3212302-3						
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	07-NOV-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-NOV-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
WG3212302-2	LCS							
1,1,1,2-Tetrachloroethane			106.6		%		60-130	07-NOV-19
1,1,2,2-Tetrachloroethane			128.3		%		60-130	07-NOV-19
1,1,1-Trichloroethane			103.8		%		60-130	07-NOV-19
1,1,2-Trichloroethane			115.6		%		60-130	07-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 11 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R4901631							
WG3212302-2 LCS								
1,1-Dichloroethane			113.3		%		60-130	07-NOV-19
1,1-Dichloroethylene			97.1		%		60-130	07-NOV-19
1,2-Dibromoethane			113.8		%		70-130	07-NOV-19
1,2-Dichlorobenzene			103.8		%		70-130	07-NOV-19
1,2-Dichloroethane			121.8		%		60-130	07-NOV-19
1,2-Dichloropropane			119.8		%		70-130	07-NOV-19
1,3-Dichlorobenzene			99.3		%		70-130	07-NOV-19
1,4-Dichlorobenzene			100.8		%		70-130	07-NOV-19
Acetone			132.5		%		60-140	07-NOV-19
Benzene			113.9		%		70-130	07-NOV-19
Bromodichloromethane			110.7		%		50-140	07-NOV-19
Bromoform			112.4		%		70-130	07-NOV-19
Bromomethane			97.3		%		50-140	07-NOV-19
Carbon tetrachloride			104.2		%		70-130	07-NOV-19
Chlorobenzene			109.4		%		70-130	07-NOV-19
Chloroform			113.3		%		70-130	07-NOV-19
cis-1,2-Dichloroethylene			110.0		%		70-130	07-NOV-19
cis-1,3-Dichloropropene			112.6		%		70-130	07-NOV-19
Dibromochloromethane			106.4		%		60-130	07-NOV-19
Dichlorodifluoromethane			65.1		%		50-140	07-NOV-19
Ethylbenzene			97.6		%		70-130	07-NOV-19
n-Hexane			94.6		%		70-130	07-NOV-19
Methylene Chloride			110.0		%		70-130	07-NOV-19
MTBE			106.1		%		70-130	07-NOV-19
m+p-Xylenes			98.4		%		70-130	07-NOV-19
Methyl Ethyl Ketone			122.6		%		60-140	07-NOV-19
Methyl Isobutyl Ketone			115.4		%		60-140	07-NOV-19
o-Xylene			97.2		%		70-130	07-NOV-19
Styrene			95.8		%		70-130	07-NOV-19
Tetrachloroethylene			101.7		%		60-130	07-NOV-19
Toluene			102.4		%		70-130	07-NOV-19
trans-1,2-Dichloroethylene			107.3		%		60-130	07-NOV-19
trans-1,3-Dichloropropene			110.3		%		70-130	07-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 12 of 15

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4901631							
WG3212302-2	LCS							
Trichloroethylene			108.6		%		60-130	07-NOV-19
Trichlorofluoromethane			93.7		%		50-140	07-NOV-19
Vinyl chloride			102.4		%		60-140	07-NOV-19
WG3212302-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dibromoethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloropropane			<0.050		ug/g		0.05	07-NOV-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Acetone			<0.50		ug/g		0.5	07-NOV-19
Benzene			<0.0068		ug/g		0.0068	07-NOV-19
Bromodichloromethane			<0.050		ug/g		0.05	07-NOV-19
Bromoform			<0.050		ug/g		0.05	07-NOV-19
Bromomethane			<0.050		ug/g		0.05	07-NOV-19
Carbon tetrachloride			<0.050		ug/g		0.05	07-NOV-19
Chlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Chloroform			<0.050		ug/g		0.05	07-NOV-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Dibromochloromethane			<0.050		ug/g		0.05	07-NOV-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	07-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	07-NOV-19
n-Hexane			<0.050		ug/g		0.05	07-NOV-19
Methylene Chloride			<0.050		ug/g		0.05	07-NOV-19
MTBE			<0.050		ug/g		0.05	07-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	07-NOV-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	07-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 13 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4901631							
WG3212302-1	MB							
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	07-NOV-19
o-Xylene			<0.020		ug/g		0.02	07-NOV-19
Styrene			<0.050		ug/g		0.05	07-NOV-19
Tetrachloroethylene			<0.050		ug/g		0.05	07-NOV-19
Toluene			<0.080		ug/g		0.08	07-NOV-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Trichloroethylene			<0.010		ug/g		0.01	07-NOV-19
Trichlorofluoromethane			<0.050		ug/g		0.05	07-NOV-19
Vinyl chloride			<0.020		ug/g		0.02	07-NOV-19
Surrogate: 1,4-Difluorobenzene			118.3		%		50-140	07-NOV-19
Surrogate: 4-Bromofluorobenzene			96.1		%		50-140	07-NOV-19
WG3212302-5	MS	L2375212-4						
1,1,1,2-Tetrachloroethane			103.1		%		50-140	07-NOV-19
1,1,2,2-Tetrachloroethane			113.6		%		50-140	07-NOV-19
1,1,1-Trichloroethane			105.5		%		50-140	07-NOV-19
1,1,2-Trichloroethane			107.5		%		50-140	07-NOV-19
1,1-Dichloroethane			110.6		%		50-140	07-NOV-19
1,1-Dichloroethylene			102.9		%		50-140	07-NOV-19
1,2-Dibromoethane			107.5		%		50-140	07-NOV-19
1,2-Dichlorobenzene			112.3		%		50-140	07-NOV-19
1,2-Dichloroethane			107.5		%		50-140	07-NOV-19
1,2-Dichloropropane			109.0		%		50-140	07-NOV-19
1,3-Dichlorobenzene			111.7		%		50-140	07-NOV-19
1,4-Dichlorobenzene			114.0		%		50-140	07-NOV-19
Acetone			119.0		%		50-140	07-NOV-19
Benzene			111.8		%		50-140	07-NOV-19
Bromodichloromethane			106.5		%		50-140	07-NOV-19
Bromoform			106.8		%		50-140	07-NOV-19
Bromomethane			99.6		%		50-140	07-NOV-19
Carbon tetrachloride			106.0		%		50-140	07-NOV-19
Chlorobenzene			107.1		%		50-140	07-NOV-19
Chloroform			109.1		%		50-140	07-NOV-19
cis-1,2-Dichloroethylene			107.1		%		50-140	07-NOV-19



Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Page 14 of 15

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R4901631							
WG3212302-5 MS		L2375212-4						
cis-1,3-Dichloropropene			112.4		%		50-140	07-NOV-19
Dibromochloromethane			103.7		%		50-140	07-NOV-19
Dichlorodifluoromethane			77.2		%		50-140	07-NOV-19
Ethylbenzene			105.3		%		50-140	07-NOV-19
n-Hexane			102.0		%		50-140	07-NOV-19
Methylene Chloride			110.5		%		50-140	07-NOV-19
MTBE			107.2		%		50-140	07-NOV-19
m+p-Xylenes			104.7		%		50-140	07-NOV-19
Methyl Ethyl Ketone			108.9		%		50-140	07-NOV-19
Methyl Isobutyl Ketone			107.0		%		50-140	07-NOV-19
o-Xylene			103.2		%		50-140	07-NOV-19
Styrene			100.2		%		50-140	07-NOV-19
Tetrachloroethylene			109.8		%		50-140	07-NOV-19
Toluene			108.7		%		50-140	07-NOV-19
trans-1,2-Dichloroethylene			110.0		%		50-140	07-NOV-19
trans-1,3-Dichloropropene			110.1		%		50-140	07-NOV-19
Trichloroethylene			107.8		%		50-140	07-NOV-19
Trichlorofluoromethane			102.6		%		50-140	07-NOV-19
Vinyl chloride			111.5		%		50-140	07-NOV-19

Quality Control Report

Workorder: L2375305

Report Date: 07-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 15 of 15

Contact: Kossay Makhzoumi

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.
RRQC	Refer to report remarks for information regarding this QC result.

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.

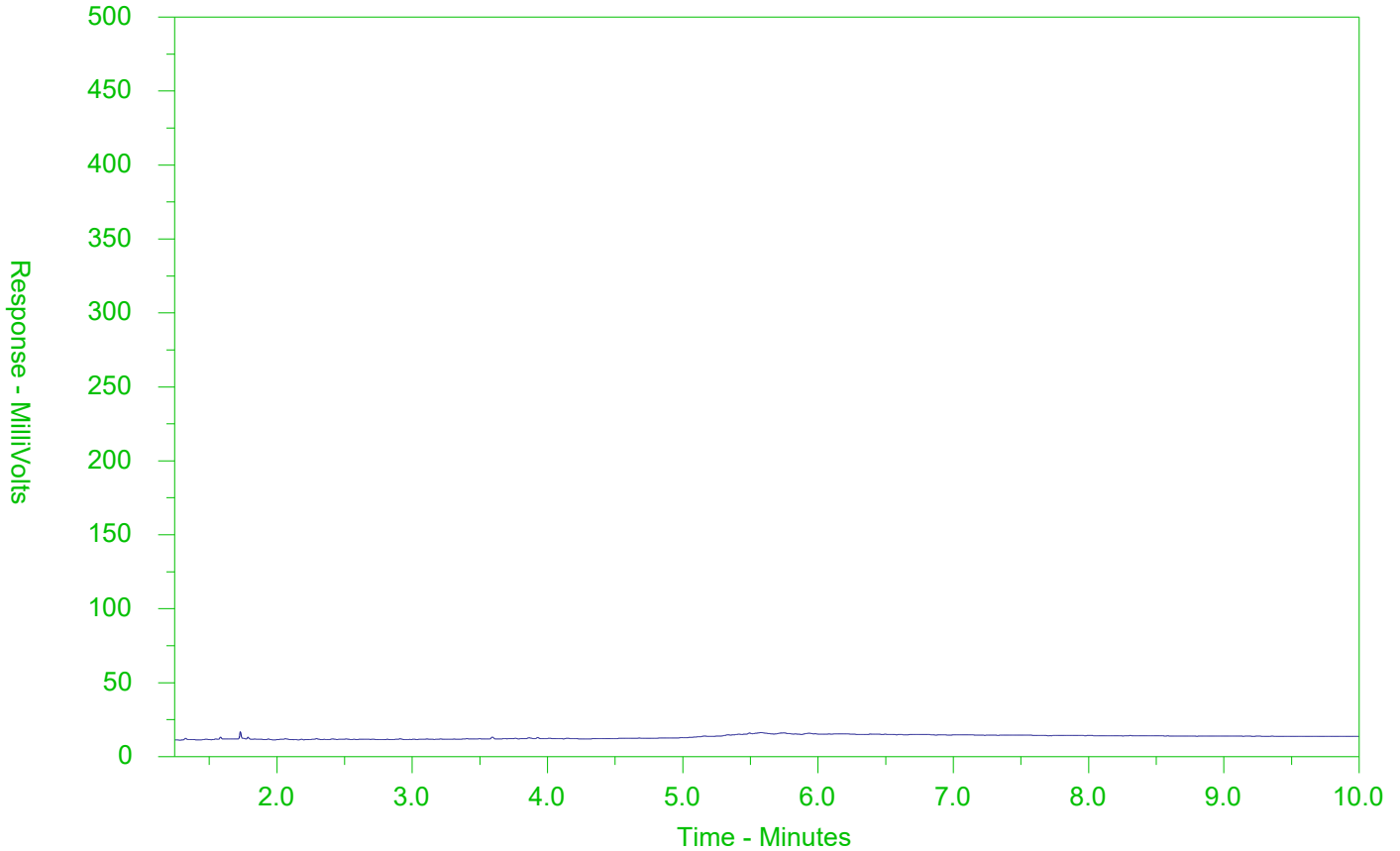
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2375305-2
 Client Sample ID: BH6-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.

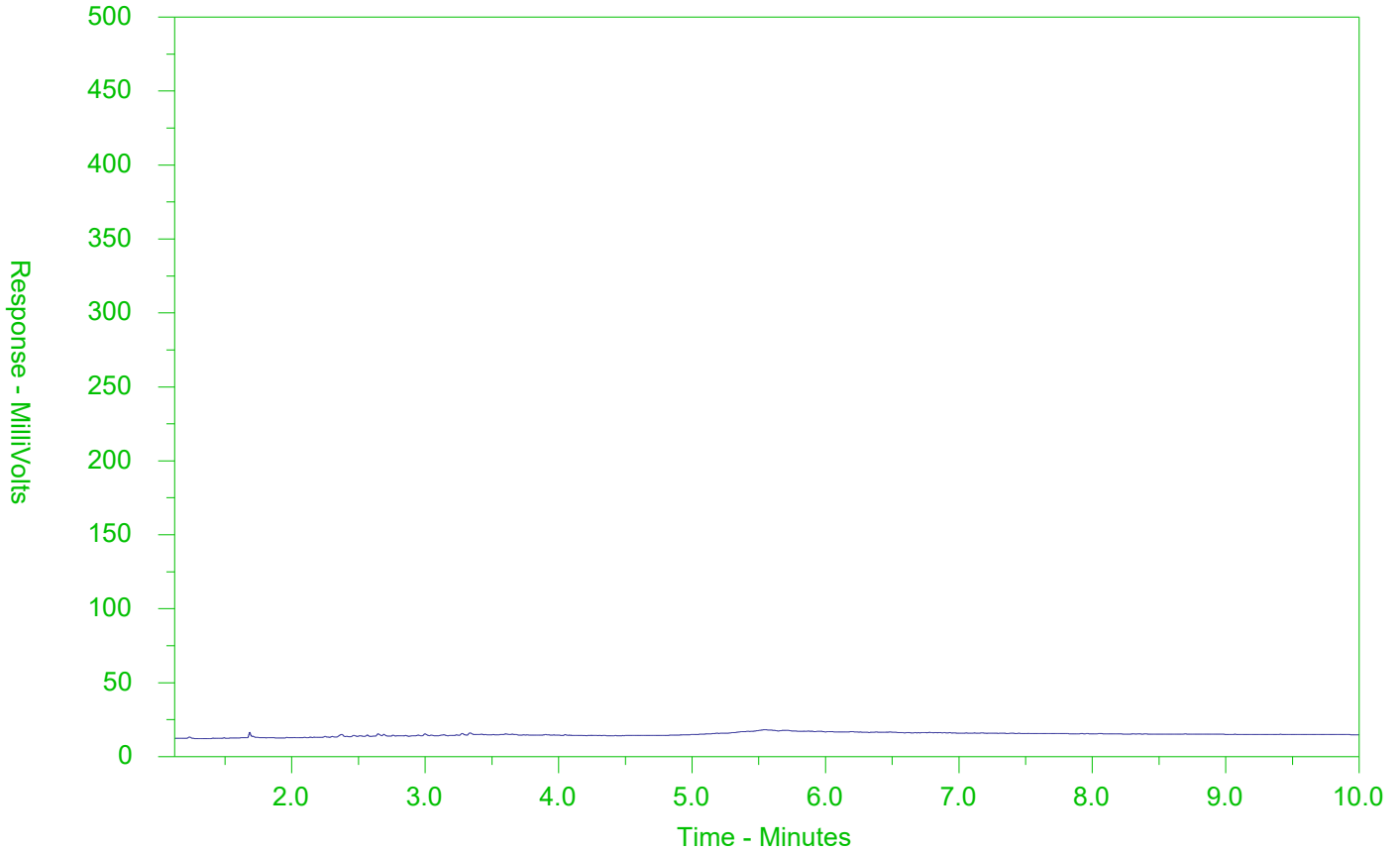
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2375305-4
 Client Sample ID: BH6-SS7



← 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.


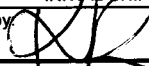
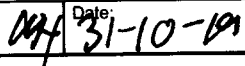
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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.




www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company: Terraprobe		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact: Kossay Makhzoumi		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)		4 day [P4] <input type="checkbox"/>		EMERGENCY		1 Business day [E1] <input type="checkbox"/>					
Phone: 905-796-2650		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		2 day [P2] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>							
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street: 11 Indell Lane		Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province: Brampton		Email 2			Analysis Request											
Postal Code: L6T 3Y3		Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
Invoice To		Invoice Distribution			Number of Containers											
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Email 1 or Fax krossi@terraprobe.ca														
Company: Terraprobe		Email 2														
Contact: Lorena Rossi		Oil and Gas Required Fields (client use)														
Project Information		AFE/Cost Center: PO#														
ALS Account # / Quote #: Q62481		Major/Minor Code: Routing Code:														
Job #: 1-19-0603-42		Requisitioner:														
PO / AFE:		Location:														
LSD:		ALS Contact: 														
ALS Lab Work Order # (lab use only) L2375305		Sampler:														
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs		
	BH6-SS1	29-10-19		Soil		X				X				X		2
	BA6-SS2	29-10-19		Soil							X	X				3
	BH6-SS3	29-10-19		Soil		X				X				X		2
	BA6-SS7	29-10-19		Soil							X	X				3
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
					Cooling Initiated <input type="checkbox"/>											
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C						
					6.0					5.7						
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Kossay Makhzoumi		Date:		Received by: 		Date: 001 31/19		Received by: 		Date: 31-10-19		Time: 1830				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2016 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-JAN-20
Report Date: 20-JAN-20 08:19 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2404776
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2404776-1	DUP 3	Physical Tests	Conductivity	1.16	0.7	mS/cm
		Saturated Paste Extractables	SAR	6.56	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2404776-1	DUP 3	Physical Tests	Conductivity	1.16	0.7	mS/cm
		Saturated Paste Extractables	SAR	6.56	5	SAR


Physical Tests - SOIL


Lab ID L2404776-1
Sample Date 07-JAN-20
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	0.7	0.7	1.16
% Moisture	%	-	-	15.8
pH	pH units	-	-	7.85

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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


Lab ID L2404776-1
Sample Date 07-JAN-20
Sample ID DUP 3


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/g	0.051	0.051	<0.050

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2404776-1
Sample Date 07-JAN-20
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
SAR	SAR	5	5	6.56
Calcium (Ca)	mg/L	-	-	38.6
Magnesium (Mg)	mg/L	-	-	8.18
Sodium (Na)	mg/L	-	-	172

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2404776-1
Sample Date 07-JAN-20
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	2.4
Barium (Ba)	ug/g	390	390	56.0
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	5.5
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	14.6
Cobalt (Co)	ug/g	22	22	5.0
Copper (Cu)	ug/g	140	180	8.6
Lead (Pb)	ug/g	120	120	4.8
Mercury (Hg)	ug/g	0.27	1.8	0.0184
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	9.6
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	27.7
Zinc (Zn)	ug/g	340	340	23.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.


Speciated Metals - SOIL


Lab ID L2404776-1
Sample Date 07-JAN-20
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/g	8	10	0.24

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID L2404776-1
Sample Date 07-JAN-20
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#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	%	-	-	93.8

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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
<p>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.</p> <p>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).</p>			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
<p>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.</p> <p>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).</p>			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
<p>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.</p> <p>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).</p>			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
<p>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.</p> <p>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).</p>			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
<p>Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.</p> <p>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).</p>			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
<p>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.</p> <p>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.</p> <p>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).</p>			
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
<p>An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.</p> <p>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).</p>			

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).			

**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: L2404776

Report Date: 20-JAN-20

Page 1 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT								
	Soil							
Batch	R4972407							
WG3258778-4	DUP	L2405982-14						
Boron (B), Hot Water Ext.		<0.10	0.11	RPD-NA	ug/g	N/A	30	17-JAN-20
WG3258778-2	IRM	WT SAR3						
Boron (B), Hot Water Ext.			96.3		%		70-130	17-JAN-20
WG3258778-3	LCS							
Boron (B), Hot Water Ext.			97.5		%		70-130	17-JAN-20
WG3258778-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	17-JAN-20
CN-WAD-R511-WT								
	Soil							
Batch	R4971817							
WG3257747-3	DUP	L2405419-1						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	15-JAN-20
WG3257747-2	LCS							
Cyanide, Weak Acid Diss			97.9		%		80-120	15-JAN-20
WG3257747-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	15-JAN-20
WG3257747-4	MS	L2405419-1						
Cyanide, Weak Acid Diss			101.6		%		70-130	15-JAN-20
CR-CR6-IC-WT								
	Soil							
Batch	R4972127							
WG3257862-4	CRM	WT-SQC012						
Chromium, Hexavalent			77.3		%		70-130	16-JAN-20
WG3257862-3	DUP	L2405419-1						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	16-JAN-20
WG3257862-2	LCS							
Chromium, Hexavalent			92.3		%		80-120	16-JAN-20
WG3257862-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	16-JAN-20
EC-WT								
	Soil							
Batch	R4971994							
WG3257760-4	DUP	WG3257760-3						
Conductivity		0.496	0.495		mS/cm	0.2	20	16-JAN-20
WG3257760-2	IRM	WT SAR3						
Conductivity			105.8		%		70-130	16-JAN-20
WG3258040-1	LCS							
Conductivity			101.5		%		90-110	16-JAN-20
WG3257760-1	MB							



Quality Control Report

Workorder: L2404776

Report Date: 20-JAN-20

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	Soil							
Batch	R4971994							
WG3257760-1	MB							
Conductivity			<0.0040		mS/cm		0.004	16-JAN-20
HG-200.2-CVAA-WT	Soil							
Batch	R4969586							
WG3257746-2	CRM	WT-CANMET-TILL2						
Mercury (Hg)			123.1		%		70-130	15-JAN-20
WG3257746-6	DUP	WG3257746-5						
Mercury (Hg)		0.0804	0.0782		ug/g	2.8	40	15-JAN-20
WG3257746-3	LCS							
Mercury (Hg)			111.5		%		80-120	15-JAN-20
WG3257746-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	15-JAN-20
MET-200.2-CCMS-WT	Soil							
Batch	R4969787							
WG3257746-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			106.7		%		70-130	15-JAN-20
Arsenic (As)			94.8		%		70-130	15-JAN-20
Barium (Ba)			93.6		%		70-130	15-JAN-20
Beryllium (Be)			93.5		%		70-130	15-JAN-20
Boron (B)			3.4		mg/kg		0-8.6	15-JAN-20
Cadmium (Cd)			92.2		%		70-130	15-JAN-20
Chromium (Cr)			92.6		%		70-130	15-JAN-20
Cobalt (Co)			92.6		%		70-130	15-JAN-20
Copper (Cu)			92.3		%		70-130	15-JAN-20
Lead (Pb)			94.8		%		70-130	15-JAN-20
Molybdenum (Mo)			96.2		%		70-130	15-JAN-20
Nickel (Ni)			94.1		%		70-130	15-JAN-20
Selenium (Se)			0.38		mg/kg		0.15-0.55	15-JAN-20
Silver (Ag)			0.26		mg/kg		0.16-0.36	15-JAN-20
Thallium (Tl)			92.2		%		70-130	15-JAN-20
Uranium (U)			89.6		%		70-130	15-JAN-20
Vanadium (V)			94.3		%		70-130	15-JAN-20
Zinc (Zn)			87.1		%		70-130	15-JAN-20
WG3257746-6	DUP	WG3257746-5						
Antimony (Sb)		0.12	0.12		ug/g	0.5	30	15-JAN-20



Quality Control Report

Workorder: L2404776

Report Date: 20-JAN-20

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4969787							
WG3257746-6	DUP	WG3257746-5						
Arsenic (As)		10.9	10.7		ug/g	1.7	30	15-JAN-20
Barium (Ba)		123	124		ug/g	0.4	40	15-JAN-20
Beryllium (Be)		1.09	1.08		ug/g	0.6	30	15-JAN-20
Boron (B)		13.9	13.1		ug/g	6.0	30	15-JAN-20
Cadmium (Cd)		2.38	2.24		ug/g	6.1	30	15-JAN-20
Chromium (Cr)		24.5	24.5		ug/g	0.1	30	15-JAN-20
Cobalt (Co)		8.52	8.58		ug/g	0.7	30	15-JAN-20
Copper (Cu)		23.8	23.5		ug/g	1.2	30	15-JAN-20
Lead (Pb)		440	446		ug/g	1.3	40	15-JAN-20
Molybdenum (Mo)		0.51	0.54		ug/g	4.9	40	15-JAN-20
Nickel (Ni)		28.9	28.4		ug/g	1.9	30	15-JAN-20
Selenium (Se)		0.26	0.26		ug/g	0.2	30	15-JAN-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	15-JAN-20
Thallium (Tl)		0.181	0.189		ug/g	4.0	30	15-JAN-20
Uranium (U)		0.718	0.737		ug/g	2.5	30	15-JAN-20
Vanadium (V)		33.9	33.1		ug/g	2.4	30	15-JAN-20
Zinc (Zn)		884	847		ug/g	4.3	30	15-JAN-20
WG3257746-4	LCS							
Antimony (Sb)			106.7		%		80-120	15-JAN-20
Arsenic (As)			100.8		%		80-120	15-JAN-20
Barium (Ba)			101.7		%		80-120	15-JAN-20
Beryllium (Be)			101.5		%		80-120	15-JAN-20
Boron (B)			96.2		%		80-120	15-JAN-20
Cadmium (Cd)			98.4		%		80-120	15-JAN-20
Chromium (Cr)			100.2		%		80-120	15-JAN-20
Cobalt (Co)			101.6		%		80-120	15-JAN-20
Copper (Cu)			98.8		%		80-120	15-JAN-20
Lead (Pb)			98.9		%		80-120	15-JAN-20
Molybdenum (Mo)			103.2		%		80-120	15-JAN-20
Nickel (Ni)			99.8		%		80-120	15-JAN-20
Selenium (Se)			98.9		%		80-120	15-JAN-20
Silver (Ag)			101.9		%		80-120	15-JAN-20
Thallium (Tl)			95.5		%		80-120	15-JAN-20



Quality Control Report

Workorder: L2404776

Report Date: 20-JAN-20

Page 4 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R4969787							
WG3257746-4	LCS							
Uranium (U)			99.6		%		80-120	15-JAN-20
Vanadium (V)			104.2		%		80-120	15-JAN-20
Zinc (Zn)			92.8		%		80-120	15-JAN-20
WG3257746-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	15-JAN-20
Arsenic (As)			<0.10		mg/kg		0.1	15-JAN-20
Barium (Ba)			<0.50		mg/kg		0.5	15-JAN-20
Beryllium (Be)			<0.10		mg/kg		0.1	15-JAN-20
Boron (B)			<5.0		mg/kg		5	15-JAN-20
Cadmium (Cd)			<0.020		mg/kg		0.02	15-JAN-20
Chromium (Cr)			<0.50		mg/kg		0.5	15-JAN-20
Cobalt (Co)			<0.10		mg/kg		0.1	15-JAN-20
Copper (Cu)			<0.50		mg/kg		0.5	15-JAN-20
Lead (Pb)			<0.50		mg/kg		0.5	15-JAN-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	15-JAN-20
Nickel (Ni)			<0.50		mg/kg		0.5	15-JAN-20
Selenium (Se)			<0.20		mg/kg		0.2	15-JAN-20
Silver (Ag)			<0.10		mg/kg		0.1	15-JAN-20
Thallium (Tl)			<0.050		mg/kg		0.05	15-JAN-20
Uranium (U)			<0.050		mg/kg		0.05	15-JAN-20
Vanadium (V)			<0.20		mg/kg		0.2	15-JAN-20
Zinc (Zn)			<2.0		mg/kg		2	15-JAN-20
MOISTURE-WT								
	Soil							
Batch	R4969413							
WG3257814-3	DUP	L2404718-1						
% Moisture		12.4	13.4		%	7.6	20	15-JAN-20
WG3257814-2	LCS							
% Moisture			101.0		%		90-110	15-JAN-20
WG3257814-1	MB							
% Moisture			<0.25		%		0.25	15-JAN-20
PCB-511-WT								
	Soil							
Batch	R4971067							
WG3257833-3	DUP	WG3257833-5						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20



Quality Control Report

Workorder: L2404776

Report Date: 20-JAN-20

Page 5 of 7

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT								
	Soil							
Batch	R4971067							
WG3257833-3	DUP	WG3257833-5						
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-JAN-20
WG3257833-2	LCS							
Aroclor 1242			97.7		%		60-140	16-JAN-20
Aroclor 1248			88.8		%		60-140	16-JAN-20
Aroclor 1254			100.2		%		60-140	16-JAN-20
Aroclor 1260			104.2		%		60-140	16-JAN-20
WG3257833-1	MB							
Aroclor 1242			<0.010		ug/g		0.01	16-JAN-20
Aroclor 1248			<0.010		ug/g		0.01	16-JAN-20
Aroclor 1254			<0.010		ug/g		0.01	16-JAN-20
Aroclor 1260			<0.010		ug/g		0.01	16-JAN-20
Surrogate: d14-Terphenyl			88.4		%		60-140	16-JAN-20
WG3257833-4	MS	WG3257833-5						
Aroclor 1242			100.8		%		60-140	16-JAN-20
Aroclor 1254			108.1		%		60-140	16-JAN-20
Aroclor 1260			120.0		%		60-140	16-JAN-20
PH-WT								
	Soil							
Batch	R4970278							
WG3256754-1	DUP	L2399471-16						
pH		7.60	7.59	J	pH units	0.01	0.3	15-JAN-20
WG3257214-1	LCS							
pH			6.95		pH units		6.9-7.1	15-JAN-20
SAR-R511-WT								
	Soil							
Batch	R4969489							
WG3257760-4	DUP	WG3257760-3						
Calcium (Ca)		36.7	37.0		mg/L	0.8	30	15-JAN-20
Sodium (Na)		30.7	30.4		mg/L	1.0	30	15-JAN-20
Magnesium (Mg)		14.5	14.7		mg/L	1.4	30	15-JAN-20
WG3257760-2	IRM	WT SAR3						
Calcium (Ca)			110.1		%		70-130	15-JAN-20
Sodium (Na)			101.7		%		70-130	15-JAN-20
Magnesium (Mg)			110.1		%		70-130	15-JAN-20
WG3257760-5	LCS							



Quality Control Report

Workorder: L2404776

Report Date: 20-JAN-20

Page 6 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R4969489							
WG3257760-5	LCS							
Calcium (Ca)			103.0		%		80-120	15-JAN-20
Sodium (Na)			100.8		%		80-120	15-JAN-20
Magnesium (Mg)			101.6		%		80-120	15-JAN-20
WG3257760-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	15-JAN-20
Sodium (Na)			<0.50		mg/L		0.5	15-JAN-20
Magnesium (Mg)			<0.50		mg/L		0.5	15-JAN-20

Quality Control Report

Workorder: L2404776

Report Date: 20-JAN-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 7 of 7

Contact: Kossay Makhzoumi

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

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2404776-COFC

COC Number: 15 -

Page 1 of 1

Report To Contact and company name below will appear on the final report		Report Form			Service Level below - Please confirm all E&P TATs with your AM - surcharges will apply														
Company:	Terraprobe	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply		4 day [P4] <input type="checkbox"/>		3 day [P3] <input type="checkbox"/>		2 day [P2] <input type="checkbox"/>		EMERGENCY		1 Business day [E1] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>			
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked															
Phone:	905-796-2650	Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Date and Time Required for all E&P TATs:															
Company address below will appear on the final report		Email 1 or Fax	kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.													
Street:	11 Indell Lane	Email 2				Analysis Request													
City/Province:	Brampton	Email 3				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
Postal Code:	L6T 3Y3	Invoice To			Invoice Distribution														
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution:			<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Email 1 or Fax			lrossi@terraprobe.ca														
Company: Terraprobe		Email 2																	
Contact: Lorena Rossi																			
Project Information				Oil and Gas Required Fields (client use)															
ALS Account # / Quote #:		Q64281		AFE/Cost Center:		PO#													
Job #:		1-19-0603-42		Major/Minor Code:		Routing Code:													
PO / AFE:				Requisitioner:															
LSD:				Location:															
ALS Lab Work Order # (lab use only)		L2404776 PD		ALS Contact:		Sampler:													
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers				
	Dup 3	07-01-20		Soil	X									X		2			
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI				Frozen <input type="checkbox"/>		SIF Observations		Yes <input type="checkbox"/> No <input type="checkbox"/>		Ice Packs <input type="checkbox"/>		Ice Cubes <input checked="" type="checkbox"/>		Custody seal intact		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO						Cooling Initiated <input type="checkbox"/>		INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C									
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)													
Released by: Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:											
				Jan 13/20	10am				14		3.6						14:30		



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-JAN-20
Report Date: 15-JAN-20 13:26 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2404775
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2404775-1	DUP 4	Polycyclic Aromatic Hydrocarbons	Acenaphthylene	0.300	0.15	ug/g
			Benzo(a)pyrene	0.516	0.3	ug/g
			Fluoranthene	2.08	0.69	ug/g
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)						
L2404775-1	DUP 4	Polycyclic Aromatic Hydrocarbons	Acenaphthylene	0.300	0.17	ug/g
			Benzo(a)pyrene	0.516	0.3	ug/g
			Fluoranthene	2.08	0.69	ug/g

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

Physical Tests - SOIL


Lab ID L2404775-1
Sample Date 07-JAN-20
Sample ID DUP 4


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
% Moisture	%	-	-	13.9

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2404775-1
Sample Date 07-JAN-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/g	7.9	58	0.068
Acenaphthylene	ug/g	0.15	0.17	0.300
Anthracene	ug/g	0.67	0.74	0.124
Benzo(a)anthracene	ug/g	0.5	0.63	0.341 ^R
Benzo(a)pyrene	ug/g	0.3	0.3	0.516
Benzo(b)fluoranthene	ug/g	0.78	0.78	0.626
Benzo(g,h,i)perylene	ug/g	6.6	7.8	0.535
Benzo(k)fluoranthene	ug/g	0.78	0.78	0.181
Chrysene	ug/g	7	7.8	0.632
Dibenzo(ah)anthracene	ug/g	0.1	0.1	0.065
Fluoranthene	ug/g	0.69	0.69	2.08
Fluorene	ug/g	62	69	0.252
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	0.373
1+2-Methylnaphthalenes	ug/g	0.99	3.4	0.178
1-Methylnaphthalene	ug/g	0.99	3.4	0.091
2-Methylnaphthalene	ug/g	0.99	3.4	0.087
Naphthalene	ug/g	0.6	0.75	0.205
Phenanthrene	ug/g	6.2	7.8	2.90
Pyrene	ug/g	78	78	2.21
Surrogate: 2-Fluorobiphenyl	%	-	-	90.7
Surrogate: p-Terphenyl d14	%	-	-	86.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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
-----------	-------------

R The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.

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 technique is 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: L2404775

Report Date: 15-JAN-20

Page 1 of 4

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R4969413							
WG3257814-3	DUP	L2404718-1						
% Moisture		12.4	13.4		%	7.6	20	15-JAN-20
WG3257814-2	LCS							
% Moisture			101.0		%		90-110	15-JAN-20
WG3257814-1	MB							
% Moisture			<0.25		%		0.25	15-JAN-20
PAH-511-WT		Soil						
Batch	R4968999							
WG3257515-3	DUP	WG3257515-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-JAN-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-JAN-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	15-JAN-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	15-JAN-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-JAN-20
WG3257515-2	LCS							
1-Methylnaphthalene			89.0		%		50-140	15-JAN-20
2-Methylnaphthalene			83.6		%		50-140	15-JAN-20
Acenaphthene			89.3		%		50-140	15-JAN-20
Acenaphthylene			89.9		%		50-140	15-JAN-20
Anthracene			89.1		%		50-140	15-JAN-20
Benzo(a)anthracene			90.0		%		50-140	15-JAN-20
Benzo(a)pyrene			87.6		%		50-140	15-JAN-20



Quality Control Report

Workorder: L2404775

Report Date: 15-JAN-20

Page 2 of 4

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch	R4968999							
WG3257515-2 LCS								
Benzo(b)fluoranthene			87.4		%		50-140	15-JAN-20
Benzo(g,h,i)perylene			86.0		%		50-140	15-JAN-20
Benzo(k)fluoranthene			91.0		%		50-140	15-JAN-20
Chrysene			100.4		%		50-140	15-JAN-20
Dibenzo(ah)anthracene			79.9		%		50-140	15-JAN-20
Fluoranthene			87.1		%		50-140	15-JAN-20
Fluorene			87.2		%		50-140	15-JAN-20
Indeno(1,2,3-cd)pyrene			79.8		%		50-140	15-JAN-20
Naphthalene			87.6		%		50-140	15-JAN-20
Phenanthrene			90.3		%		50-140	15-JAN-20
Pyrene			87.3		%		50-140	15-JAN-20
WG3257515-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	15-JAN-20
2-Methylnaphthalene			<0.030		ug/g		0.03	15-JAN-20
Acenaphthene			<0.050		ug/g		0.05	15-JAN-20
Acenaphthylene			<0.050		ug/g		0.05	15-JAN-20
Anthracene			<0.050		ug/g		0.05	15-JAN-20
Benzo(a)anthracene			<0.050		ug/g		0.05	15-JAN-20
Benzo(a)pyrene			<0.050		ug/g		0.05	15-JAN-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	15-JAN-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	15-JAN-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	15-JAN-20
Chrysene			<0.050		ug/g		0.05	15-JAN-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	15-JAN-20
Fluoranthene			<0.050		ug/g		0.05	15-JAN-20
Fluorene			<0.050		ug/g		0.05	15-JAN-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	15-JAN-20
Naphthalene			<0.013		ug/g		0.013	15-JAN-20
Phenanthrene			<0.046		ug/g		0.046	15-JAN-20
Pyrene			<0.050		ug/g		0.05	15-JAN-20
Surrogate: 2-Fluorobiphenyl			91.0		%		50-140	15-JAN-20
Surrogate: p-Terphenyl d14			84.8		%		50-140	15-JAN-20
WG3257515-4 MS		WG3257515-5						
1-Methylnaphthalene			88.5		%		50-140	15-JAN-20



Quality Control Report

Workorder: L2404775

Report Date: 15-JAN-20

Page 3 of 4

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch	R4968999							
WG3257515-4 MS		WG3257515-5						
2-Methylnaphthalene			84.1		%		50-140	15-JAN-20
Acenaphthene			89.1		%		50-140	15-JAN-20
Acenaphthylene			88.8		%		50-140	15-JAN-20
Anthracene			88.6		%		50-140	15-JAN-20
Benzo(a)anthracene			88.9		%		50-140	15-JAN-20
Benzo(a)pyrene			86.8		%		50-140	15-JAN-20
Benzo(b)fluoranthene			86.6		%		50-140	15-JAN-20
Benzo(g,h,i)perylene			83.3		%		50-140	15-JAN-20
Benzo(k)fluoranthene			90.0		%		50-140	15-JAN-20
Chrysene			99.8		%		50-140	15-JAN-20
Dibenzo(ah)anthracene			76.3		%		50-140	15-JAN-20
Fluoranthene			86.3		%		50-140	15-JAN-20
Fluorene			87.0		%		50-140	15-JAN-20
Indeno(1,2,3-cd)pyrene			78.4		%		50-140	15-JAN-20
Naphthalene			86.8		%		50-140	15-JAN-20
Phenanthrene			89.7		%		50-140	15-JAN-20
Pyrene			86.4		%		50-140	15-JAN-20

Quality Control Report

Workorder: L2404775

Report Date: 15-JAN-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 4 of 4

Contact: Kossay Makhzoumi

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

Canada Toll Free: 1 800 668 9878



COC Number: 15 -

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			all E&P TATs with your AM - surcharges will apply												
Company:	Terraprobe	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/> 3 day [P3] <input type="checkbox"/> 2 day [P2] <input type="checkbox"/>					EMERGENCY	1 Business day [E1] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>				
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked															
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Street:	11 Indell Lane	Email 1 or Fax	kmakhzoumi@terraprobe.ca			Date and Time Required for all E&P TATs:											
City/Province:	Brampton	Email 2				For tests that can not be performed according to the service level selected, you will be contacted.											
Postal Code:	L6T 3Y3	Email 3				Analysis Request											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	Email 1 or Fax	lrossi@terraprobe.ca			Number of Containers											
Contact:	Lorena Rossi	Email 2															
Project Information		Oil and Gas Required Fields (client use)															
ALS Account # / Quote #:	Q64281	AFE/Cost Center:	PO#														
Job #:	1-19-0603-42	Major/Minor Code:	Routing Code:														
PO / AFE:		Requisitioner:															
LSD:		Location:															
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:														
L2404775 (handwritten)																	
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs			
	Dup 4	07-01-20		Soil						X							
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/>												
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C							
		4.4					3.6										
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)												
Released by:	Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:								
				(handwritten)	Jan 13/20	0am	AP	13-Jan-20	4:30								



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 13-JAN-20
Report Date: 15-JAN-20 13:23 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2404774
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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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 - T3-Soil-Res/Park/Inst. Property Use (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine)							
(No parameter exceedances)							

Physical Tests - SOIL


Lab ID L2404774-1
Sample Date 07-JAN-20
Sample ID DUP 5

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
% Moisture	%	-	-	12.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2404774-1
Sample Date 07-JAN-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)


Volatile Organic Compounds - SOIL


Lab ID L2404774-1
 Sample Date 07-JAN-20
 Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#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	%	-	-	106.4
Surrogate: 1,4-Difluorobenzene	%	-	-	119.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2404774-1
Sample Date 07-JAN-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#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	%	-	-	102.5
Surrogate: 3,4-Dichlorotoluene	%	-	-	85.1

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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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.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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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).

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
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VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
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Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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

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: L2404774

Report Date: 15-JAN-20

Page 1 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R4967653							
WG3256989-4	DUP	WG3256989-3						
F1 (C6-C10)		750	690		ug/g	8.5	30	15-JAN-20
WG3256989-2	LCS							
F1 (C6-C10)			92.6		%		80-120	14-JAN-20
WG3256989-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	14-JAN-20
Surrogate: 3,4-Dichlorotoluene			87.0		%		60-140	14-JAN-20
WG3256989-6	MS	L2404724-6						
F1 (C6-C10)			N/A	MS-B	%		-	14-JAN-20
F2-F4-511-WT		Soil						
Batch	R4968029							
WG3256710-3	DUP	WG3256710-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	13-JAN-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	13-JAN-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	13-JAN-20
WG3256710-2	LCS							
F2 (C10-C16)			92.8		%		80-120	13-JAN-20
F3 (C16-C34)			95.3		%		80-120	13-JAN-20
F4 (C34-C50)			95.1		%		80-120	13-JAN-20
WG3256710-1	MB							
F2 (C10-C16)			<10		ug/g		10	13-JAN-20
F3 (C16-C34)			<50		ug/g		50	13-JAN-20
F4 (C34-C50)			<50		ug/g		50	13-JAN-20
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	13-JAN-20
WG3256710-4	MS	WG3256710-5						
F2 (C10-C16)			106.2		%		60-140	13-JAN-20
F3 (C16-C34)			107.2		%		60-140	13-JAN-20
F4 (C34-C50)			106.5		%		60-140	13-JAN-20
MOISTURE-WT		Soil						
Batch	R4969413							
WG3257814-3	DUP	L2404718-1						
% Moisture		12.4	13.4		%	7.6	20	15-JAN-20
WG3257814-2	LCS							
% Moisture			101.0		%		90-110	15-JAN-20
WG3257814-1	MB							
% Moisture			<0.25		%		0.25	15-JAN-20



Quality Control Report

Workorder: L2404774

Report Date: 15-JAN-20

Page 2 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-4	DUP	WG3256989-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
1,1,2,2-Tetrachloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	14-JAN-20
1,1,1-Trichloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,1,2-Trichloroethane		<1.3	<1.3	RPD-NA	ug/g	N/A	40	14-JAN-20
1,1-Dichloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,1-Dichloroethylene		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,2-Dibromoethane		<0.30	<0.30	RPD-NA	ug/g	N/A	40	14-JAN-20
1,2-Dichloroethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
1,2-Dichloropropane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Acetone		<20	<20	RPD-NA	ug/g	N/A	40	15-JAN-20
Benzene		<0.27	<0.27	RPD-NA	ug/g	N/A	40	15-JAN-20
Bromodichloromethane		<5.0	<5.7	RPD-NA	ug/g	N/A	40	15-JAN-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Bromomethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Carbon tetrachloride		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Chloroform		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
cis-1,2-Dichloroethylene		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
cis-1,3-Dichloropropene		<1.2	<1.2	RPD-NA	ug/g	N/A	40	15-JAN-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Ethylbenzene		2.61	2.47		ug/g	5.3	40	14-JAN-20
n-Hexane		6.7	6.8		ug/g	1.5	40	15-JAN-20
Methylene Chloride		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
m+p-Xylenes		2.80	2.66		ug/g	5.3	40	14-JAN-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/g	N/A	40	15-JAN-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/g	N/A	40	15-JAN-20
o-Xylene		0.480	0.464		ug/g	3.4	40	14-JAN-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-JAN-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	14-JAN-20
trans-1,2-Dichloroethylene		<2.0	<2.0		ug/g			15-JAN-20



Quality Control Report

Workorder: L2404774

Report Date: 15-JAN-20

Page 3 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-4	DUP	WG3256989-3						
trans-1,2-Dichloroethylene		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-JAN-20
Trichloroethylene		<0.40	<0.40	RPD-NA	ug/g	N/A	40	15-JAN-20
Trichlorofluoromethane		<2.0	<2.0	RPD-NA	ug/g	N/A	40	15-JAN-20
Vinyl chloride		<0.80	<0.80	RPD-NA	ug/g	N/A	40	15-JAN-20
WG3256989-2	LCS							
1,1,1,2-Tetrachloroethane			95.3		%		60-130	14-JAN-20
1,1,2,2-Tetrachloroethane			89.7		%		60-130	14-JAN-20
1,1,1-Trichloroethane			96.2		%		60-130	14-JAN-20
1,1,2-Trichloroethane			91.7		%		60-130	14-JAN-20
1,1-Dichloroethane			94.4		%		60-130	14-JAN-20
1,1-Dichloroethylene			91.9		%		60-130	14-JAN-20
1,2-Dibromoethane			89.8		%		70-130	14-JAN-20
1,2-Dichlorobenzene			98.3		%		70-130	14-JAN-20
1,2-Dichloroethane			90.7		%		60-130	14-JAN-20
1,2-Dichloropropane			94.2		%		70-130	14-JAN-20
1,3-Dichlorobenzene			100.4		%		70-130	14-JAN-20
1,4-Dichlorobenzene			99.4		%		70-130	14-JAN-20
Acetone			90.3		%		60-140	14-JAN-20
Benzene			98.5		%		70-130	14-JAN-20
Bromodichloromethane			92.9		%		50-140	14-JAN-20
Bromoform			89.0		%		70-130	14-JAN-20
Bromomethane			83.9		%		50-140	14-JAN-20
Carbon tetrachloride			96.9		%		70-130	14-JAN-20
Chlorobenzene			97.8		%		70-130	14-JAN-20
Chloroform			95.6		%		70-130	14-JAN-20
cis-1,2-Dichloroethylene			91.3		%		70-130	14-JAN-20
cis-1,3-Dichloropropene			98.0		%		70-130	14-JAN-20
Dibromochloromethane			91.2		%		60-130	14-JAN-20
Dichlorodifluoromethane			67.6		%		50-140	14-JAN-20
Ethylbenzene			100.2		%		70-130	14-JAN-20
n-Hexane			89.8		%		70-130	14-JAN-20
Methylene Chloride			89.8		%		70-130	14-JAN-20



Quality Control Report

Workorder: L2404774

Report Date: 15-JAN-20

Page 4 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4967653							
WG3256989-2	LCS							
MTBE			96.1		%		70-130	14-JAN-20
m+p-Xylenes			100.9		%		70-130	14-JAN-20
Methyl Ethyl Ketone			82.9		%		60-140	14-JAN-20
Methyl Isobutyl Ketone			81.3		%		60-140	14-JAN-20
o-Xylene			98.3		%		70-130	14-JAN-20
Styrene			95.7		%		70-130	14-JAN-20
Tetrachloroethylene			100.3		%		60-130	14-JAN-20
Toluene			100.0		%		70-130	14-JAN-20
trans-1,2-Dichloroethylene			93.3		%		60-130	14-JAN-20
trans-1,3-Dichloropropene			100.1		%		70-130	14-JAN-20
Trichloroethylene			95.8		%		60-130	14-JAN-20
Trichlorofluoromethane			92.5		%		50-140	14-JAN-20
Vinyl chloride			97.4		%		60-140	14-JAN-20
WG3256989-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1-Dichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	14-JAN-20
1,2-Dibromoethane			<0.050		ug/g		0.05	14-JAN-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	14-JAN-20
1,2-Dichloroethane			<0.050		ug/g		0.05	14-JAN-20
1,2-Dichloropropane			<0.050		ug/g		0.05	14-JAN-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	14-JAN-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	14-JAN-20
Acetone			<0.50		ug/g		0.5	14-JAN-20
Benzene			<0.0068		ug/g		0.0068	14-JAN-20
Bromodichloromethane			<0.050		ug/g		0.05	14-JAN-20
Bromoform			<0.050		ug/g		0.05	14-JAN-20
Bromomethane			<0.050		ug/g		0.05	14-JAN-20
Carbon tetrachloride			<0.050		ug/g		0.05	14-JAN-20
Chlorobenzene			<0.050		ug/g		0.05	14-JAN-20
Chloroform			<0.050		ug/g		0.05	14-JAN-20



Quality Control Report

Workorder: L2404774

Report Date: 15-JAN-20

Page 5 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R4967653							
WG3256989-1 MB								
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	14-JAN-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	14-JAN-20
Dibromochloromethane			<0.050		ug/g		0.05	14-JAN-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	14-JAN-20
Ethylbenzene			<0.018		ug/g		0.018	14-JAN-20
n-Hexane			<0.050		ug/g		0.05	14-JAN-20
Methylene Chloride			<0.050		ug/g		0.05	14-JAN-20
MTBE			<0.050		ug/g		0.05	14-JAN-20
m+p-Xylenes			<0.030		ug/g		0.03	14-JAN-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	14-JAN-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	14-JAN-20
o-Xylene			<0.020		ug/g		0.02	14-JAN-20
Styrene			<0.050		ug/g		0.05	14-JAN-20
Tetrachloroethylene			<0.050		ug/g		0.05	14-JAN-20
Toluene			<0.080		ug/g		0.08	14-JAN-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	14-JAN-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	14-JAN-20
Trichloroethylene			<0.010		ug/g		0.01	14-JAN-20
Trichlorofluoromethane			<0.050		ug/g		0.05	14-JAN-20
Vinyl chloride			<0.020		ug/g		0.02	14-JAN-20
Surrogate: 1,4-Difluorobenzene			117.4		%		50-140	14-JAN-20
Surrogate: 4-Bromofluorobenzene			103.8		%		50-140	14-JAN-20

Quality Control Report

Workorder: L2404774

Report Date: 15-JAN-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 6 of 6

Contact: Kossay Makhzoumi

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
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLI	Detection Limit Raised: Dilution required to address Internal Standard response problems caused by matrix interference.
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a determination of whether VOC analyte is present or absent (above/below regular detection limits).
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.

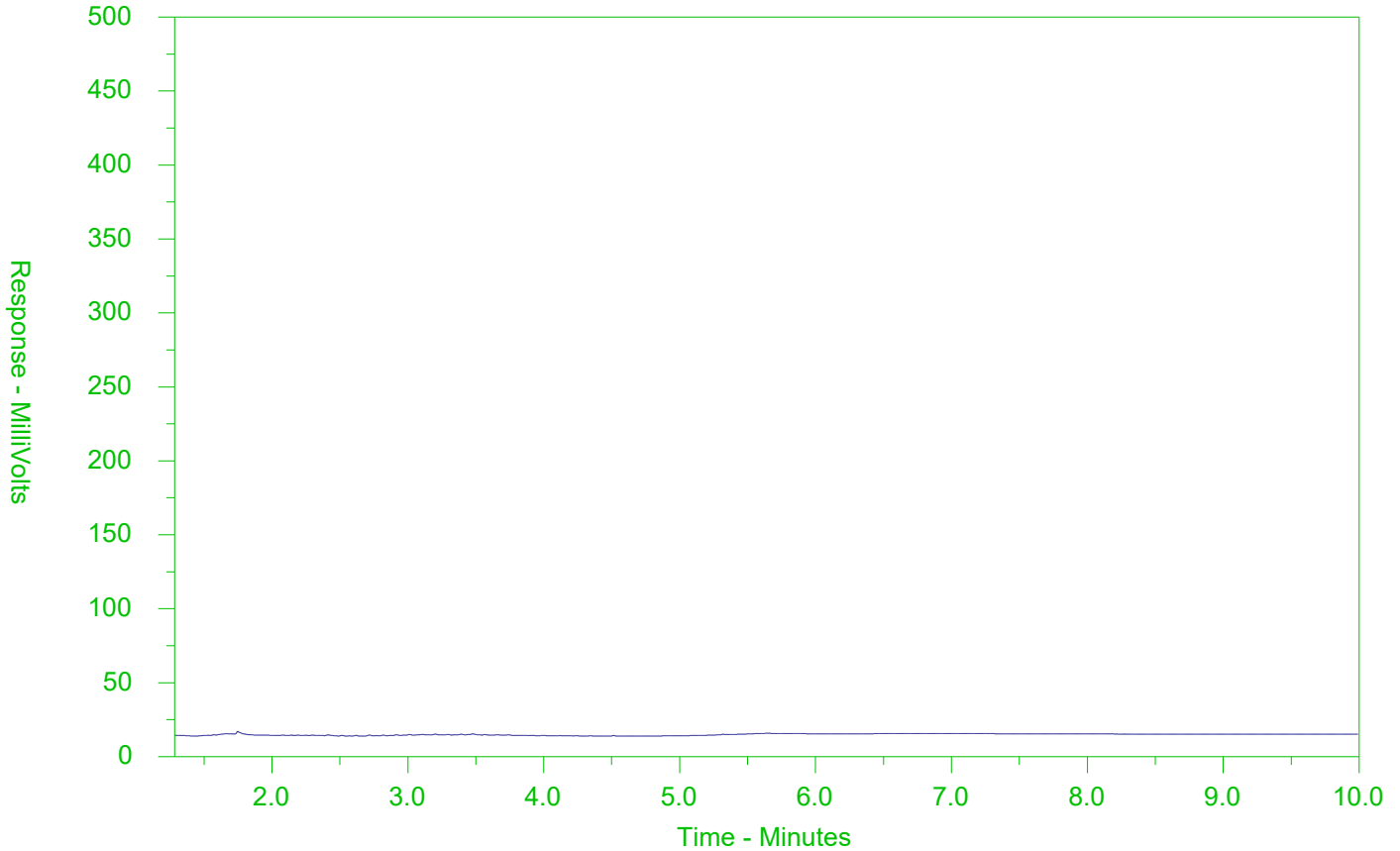
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2404774-1
 Client Sample ID: DUP 5



← 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.



Report To Contact and company name below will appear on the final report				Report Format / Distribution				In all E&P TATs with your AM - surcharges will apply									
Company: Terraprobe		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply		4 day [P4] <input type="checkbox"/>		EMERGENCY <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>					
Contact: Kossay Makhzoumi		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		3 day [P3] <input type="checkbox"/>		2 day [P2] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>							
Phone: 905-796-2650		Company address below will appear on the final report		Street: 11 Indell Lane		Email 1 or Fax kmakhzoumi@terraprobe.ca		Date and Time Required for all E&P TATs:									
City/Province: Brampton		Email 2		Postal Code: L6T 3Y3		Email 3		For tests that can not be performed according to the service level selected, you will be contacted.									
Invoice To Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Invoice Distribution		Project Information		Oil and Gas Required Fields (client use)		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below				Number of Containers					
Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		Company: Terraprobe		Email 1 or Fax lrossi@terraprobe.ca											
Contact: Lorena Rossi		Email 2		ALS Account # / Quote #: Q64281		AFE/Cost Center: PO#											
Job #: 1-19-0603-42		Major/Minor Code: Routing Code:		PO / AFE:		Requisitioner:											
LSD:		Location:		ALS Lab Work Order # (lab use only) L2404774 PD		ALS Contact:		Sampler:									
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBS	
	Dup 5			07-01-20		Soil							X	X			3
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO				NECP T3 RPI				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>									
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO								Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>									
								Cooling Initiated <input type="checkbox"/>									
								INITIAL COOLER TEMPERATURES °C									
								FINAL COOLER TEMPERATURES °C									
								4A									
								3.6									
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)									
Released by: Kossay Makhzoumi		Date:		Time:		Received by:		Date:		Time:		Received by:		Date:		Time:	
						AP		13-JAN-20		9am		AP		13-JAN-20		4:30	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 31-OCT-19
Report Date: 06-NOV-19 13:00 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2375299
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine) (No parameter exceedances)							

Physical Tests - SOIL


Lab ID L2375299-1
Sample Date 25-OCT-19
Sample ID DUP1

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
% Moisture	%	-	-	6.83

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2375299-1
Sample Date 25-OCT-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#1	#2	
Antimony (Sb)	ug/g	7.5	7.5	<1.0
Arsenic (As)	ug/g	18	18	1.2
Barium (Ba)	ug/g	390	390	28.0
Beryllium (Be)	ug/g	4	5	<0.50
Boron (B)	ug/g	120	120	<5.0
Cadmium (Cd)	ug/g	1.2	1.2	<0.50
Chromium (Cr)	ug/g	160	160	7.7
Cobalt (Co)	ug/g	22	22	2.4
Copper (Cu)	ug/g	140	180	4.6
Lead (Pb)	ug/g	120	120	2.7
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0
Nickel (Ni)	ug/g	100	130	4.8
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	16.6
Zinc (Zn)	ug/g	340	340	14.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2375299-1
Sample Date 25-OCT-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/g	7.9	58	<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	%	-	-	84.5
Surrogate: p-Terphenyl d14	%	-	-	76.4

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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.

Polychlorinated Biphenyls - SOIL

Lab ID L2375299-1
Sample Date 25-OCT-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#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	%	-	-	83.5

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
<p>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.</p> <p>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.</p> <p>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).</p>			
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
<p>A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is 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.</p> <p>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).</p>			
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
<p>An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.</p> <p>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).</p>			

**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: L2375299

Report Date: 06-NOV-19

Page 1 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R4897226							
WG3209410-2	CRM	WT-CANMET-TILL2						
Antimony (Sb)			104.8		%		70-130	04-NOV-19
Arsenic (As)			97.5		%		70-130	04-NOV-19
Barium (Ba)			98.1		%		70-130	04-NOV-19
Beryllium (Be)			85.1		%		70-130	04-NOV-19
Boron (B)			3.0		mg/kg		0-8.6	04-NOV-19
Cadmium (Cd)			92.9		%		70-130	04-NOV-19
Chromium (Cr)			96.7		%		70-130	04-NOV-19
Cobalt (Co)			94.9		%		70-130	04-NOV-19
Copper (Cu)			94.5		%		70-130	04-NOV-19
Lead (Pb)			97.2		%		70-130	04-NOV-19
Molybdenum (Mo)			97.3		%		70-130	04-NOV-19
Nickel (Ni)			94.8		%		70-130	04-NOV-19
Selenium (Se)			0.35		mg/kg		0.15-0.55	04-NOV-19
Silver (Ag)			0.25		mg/kg		0.16-0.36	04-NOV-19
Thallium (Tl)			95.0		%		70-130	04-NOV-19
Uranium (U)			93.8		%		70-130	04-NOV-19
Vanadium (V)			96.5		%		70-130	04-NOV-19
Zinc (Zn)			91.4		%		70-130	04-NOV-19
WG3209410-6	DUP	WG3209410-5						
Antimony (Sb)		0.17	0.13		ug/g	29	30	04-NOV-19
Arsenic (As)		2.11	2.25		ug/g	6.2	30	04-NOV-19
Barium (Ba)		55.8	54.2		ug/g	3.0	40	04-NOV-19
Beryllium (Be)		0.27	0.28		ug/g	0.7	30	04-NOV-19
Boron (B)		5.9	6.2		ug/g	4.7	30	04-NOV-19
Cadmium (Cd)		0.046	0.054		ug/g	17	30	04-NOV-19
Chromium (Cr)		13.1	13.0		ug/g	0.7	30	04-NOV-19
Cobalt (Co)		4.57	4.52		ug/g	1.1	30	04-NOV-19
Copper (Cu)		9.45	9.26		ug/g	2.1	30	04-NOV-19
Lead (Pb)		5.34	5.12		ug/g	4.2	40	04-NOV-19
Molybdenum (Mo)		0.32	0.31		ug/g	3.4	40	04-NOV-19
Nickel (Ni)		9.69	10.2		ug/g	5.6	30	04-NOV-19
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	04-NOV-19
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	04-NOV-19



Quality Control Report

Workorder: L2375299

Report Date: 06-NOV-19

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT Soil								
Batch	R4897226							
WG3209410-6	DUP	WG3209410-5						
Thallium (Tl)		0.077	0.075		ug/g	3.2	30	04-NOV-19
Uranium (U)		0.548	0.547		ug/g	0.2	30	04-NOV-19
Vanadium (V)		23.8	23.8		ug/g	0.1	30	04-NOV-19
Zinc (Zn)		23.1	24.1		ug/g	4.5	30	04-NOV-19
WG3209410-4	LCS							
Antimony (Sb)			103.8		%		80-120	04-NOV-19
Arsenic (As)			97.2		%		80-120	04-NOV-19
Barium (Ba)			103.9		%		80-120	04-NOV-19
Beryllium (Be)			85.2		%		80-120	04-NOV-19
Boron (B)			84.6		%		80-120	04-NOV-19
Cadmium (Cd)			95.5		%		80-120	04-NOV-19
Chromium (Cr)			97.5		%		80-120	04-NOV-19
Cobalt (Co)			95.1		%		80-120	04-NOV-19
Copper (Cu)			93.2		%		80-120	04-NOV-19
Lead (Pb)			97.6		%		80-120	04-NOV-19
Molybdenum (Mo)			100.7		%		80-120	04-NOV-19
Nickel (Ni)			94.5		%		80-120	04-NOV-19
Selenium (Se)			95.6		%		80-120	04-NOV-19
Silver (Ag)			98.5		%		80-120	04-NOV-19
Thallium (Tl)			96.6		%		80-120	04-NOV-19
Uranium (U)			95.7		%		80-120	04-NOV-19
Vanadium (V)			99.5		%		80-120	04-NOV-19
Zinc (Zn)			91.5		%		80-120	04-NOV-19
WG3209410-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	04-NOV-19
Arsenic (As)			<0.10		mg/kg		0.1	04-NOV-19
Barium (Ba)			<0.50		mg/kg		0.5	04-NOV-19
Beryllium (Be)			<0.10		mg/kg		0.1	04-NOV-19
Boron (B)			<5.0		mg/kg		5	04-NOV-19
Cadmium (Cd)			<0.020		mg/kg		0.02	04-NOV-19
Chromium (Cr)			<0.50		mg/kg		0.5	04-NOV-19
Cobalt (Co)			<0.10		mg/kg		0.1	04-NOV-19
Copper (Cu)			<0.50		mg/kg		0.5	04-NOV-19
Lead (Pb)			<0.50		mg/kg		0.5	04-NOV-19



Quality Control Report

Workorder: L2375299

Report Date: 06-NOV-19

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R4897226							
WG3209410-1 MB								
Molybdenum (Mo)			<0.10		mg/kg		0.1	04-NOV-19
Nickel (Ni)			<0.50		mg/kg		0.5	04-NOV-19
Selenium (Se)			<0.20		mg/kg		0.2	04-NOV-19
Silver (Ag)			<0.10		mg/kg		0.1	04-NOV-19
Thallium (Tl)			<0.050		mg/kg		0.05	04-NOV-19
Uranium (U)			<0.050		mg/kg		0.05	04-NOV-19
Vanadium (V)			<0.20		mg/kg		0.2	04-NOV-19
Zinc (Zn)			<2.0		mg/kg		2	04-NOV-19
MOISTURE-WT								
	Soil							
Batch	R4895777							
WG3207805-3 DUP		L2374962-4						
% Moisture		21.6	21.2		%	1.8	20	01-NOV-19
WG3207805-2 LCS								
% Moisture			100.5		%		90-110	01-NOV-19
WG3207805-1 MB								
% Moisture			<0.25		%		0.25	01-NOV-19
PAH-511-WT								
	Soil							
Batch	R4897642							
WG3207515-3 DUP		WG3207515-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19



Quality Control Report

Workorder: L2375299

Report Date: 06-NOV-19

Page 4 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT								
	Soil							
Batch	R4897642							
WG3207515-3	DUP	WG3207515-5						
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	04-NOV-19
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	04-NOV-19
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-NOV-19
WG3207515-2	LCS							
1-Methylnaphthalene			86.6		%		50-140	04-NOV-19
2-Methylnaphthalene			82.2		%		50-140	04-NOV-19
Acenaphthene			88.2		%		50-140	04-NOV-19
Acenaphthylene			89.7		%		50-140	04-NOV-19
Anthracene			87.6		%		50-140	04-NOV-19
Benzo(a)anthracene			88.8		%		50-140	04-NOV-19
Benzo(a)pyrene			82.1		%		50-140	04-NOV-19
Benzo(b)fluoranthene			75.3		%		50-140	04-NOV-19
Benzo(g,h,i)perylene			84.2		%		50-140	04-NOV-19
Benzo(k)fluoranthene			89.8		%		50-140	04-NOV-19
Chrysene			95.2		%		50-140	04-NOV-19
Dibenzo(ah)anthracene			87.8		%		50-140	04-NOV-19
Fluoranthene			85.4		%		50-140	04-NOV-19
Fluorene			85.9		%		50-140	04-NOV-19
Indeno(1,2,3-cd)pyrene			89.6		%		50-140	04-NOV-19
Naphthalene			84.0		%		50-140	04-NOV-19
Phenanthrene			86.8		%		50-140	04-NOV-19
Pyrene			85.3		%		50-140	04-NOV-19
WG3207515-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
2-Methylnaphthalene			<0.030		ug/g		0.03	04-NOV-19
Acenaphthene			<0.050		ug/g		0.05	04-NOV-19
Acenaphthylene			<0.050		ug/g		0.05	04-NOV-19
Anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)anthracene			<0.050		ug/g		0.05	04-NOV-19
Benzo(a)pyrene			<0.050		ug/g		0.05	04-NOV-19
Benzo(b)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	04-NOV-19
Benzo(k)fluoranthene			<0.050		ug/g		0.05	04-NOV-19
Chrysene			<0.050		ug/g		0.05	04-NOV-19



Quality Control Report

Workorder: L2375299

Report Date: 06-NOV-19

Page 5 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PAH-511-WT									
	Soil								
Batch	R4897642								
WG3207515-1 MB									
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	04-NOV-19	
Fluoranthene			<0.050		ug/g		0.05	04-NOV-19	
Fluorene			<0.050		ug/g		0.05	04-NOV-19	
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	04-NOV-19	
Naphthalene			<0.013		ug/g		0.013	04-NOV-19	
Phenanthrene			<0.046		ug/g		0.046	04-NOV-19	
Pyrene			<0.050		ug/g		0.05	04-NOV-19	
Surrogate: 2-Fluorobiphenyl			95.6		%		50-140	04-NOV-19	
Surrogate: p-Terphenyl d14			86.6		%		50-140	04-NOV-19	
WG3207515-4 MS		WG3207515-5							
1-Methylnaphthalene			89.3		%		50-140	04-NOV-19	
2-Methylnaphthalene			84.7		%		50-140	04-NOV-19	
Acenaphthene			91.1		%		50-140	04-NOV-19	
Acenaphthylene			94.0		%		50-140	04-NOV-19	
Anthracene			90.1		%		50-140	04-NOV-19	
Benzo(a)anthracene			91.0		%		50-140	04-NOV-19	
Benzo(a)pyrene			84.3		%		50-140	04-NOV-19	
Benzo(b)fluoranthene			77.7		%		50-140	04-NOV-19	
Benzo(g,h,i)perylene			84.6		%		50-140	04-NOV-19	
Benzo(k)fluoranthene			90.3		%		50-140	04-NOV-19	
Chrysene			96.1		%		50-140	04-NOV-19	
Dibenzo(ah)anthracene			88.2		%		50-140	04-NOV-19	
Fluoranthene			87.0		%		50-140	04-NOV-19	
Fluorene			89.7		%		50-140	04-NOV-19	
Indeno(1,2,3-cd)pyrene			92.1		%		50-140	04-NOV-19	
Naphthalene			85.8		%		50-140	04-NOV-19	
Phenanthrene			87.0		%		50-140	04-NOV-19	
Pyrene			87.0		%		50-140	04-NOV-19	
PCB-511-WT									
	Soil								
Batch	R4898984								
WG3207515-3 DUP		WG3207515-5							
Aroclor 1242			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1248			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
Aroclor 1254			<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19



Quality Control Report

Workorder: L2375299

Report Date: 06-NOV-19

Page 6 of 7

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT								
	Soil							
Batch	R4898984							
WG3207515-3	DUP	WG3207515-5						
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-NOV-19
WG3207515-2	LCS							
Aroclor 1242			109.3		%		60-140	05-NOV-19
Aroclor 1248			101.5		%		60-140	05-NOV-19
Aroclor 1254			105.2		%		60-140	05-NOV-19
Aroclor 1260			101.4		%		60-140	05-NOV-19
WG3207515-1	MB							
Aroclor 1242			<0.010		ug/g		0.01	05-NOV-19
Aroclor 1248			<0.010		ug/g		0.01	05-NOV-19
Aroclor 1254			<0.010		ug/g		0.01	05-NOV-19
Aroclor 1260			<0.010		ug/g		0.01	05-NOV-19
Surrogate: d14-Terphenyl			88.3		%		60-140	05-NOV-19
WG3207515-4	MS	WG3207515-5						
Aroclor 1242			91.8		%		60-140	05-NOV-19
Aroclor 1254			89.7		%		60-140	05-NOV-19
Aroclor 1260			86.6		%		60-140	05-NOV-19

Quality Control Report

Workorder: L2375299

Report Date: 06-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 7 of 7

Contact: Kossay Makhzoumi

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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 31-OCT-19
Report Date: 07-NOV-19 14:28 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2375294
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Fine) (No parameter exceedances)							

Physical Tests - SOIL


Lab ID L2375294-1
Sample Date 25-OCT-19
Sample ID DUP 2


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
% Moisture	%	-	-	10.5

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2375294-1
Sample Date 25-OCT-19
Sample ID DUP 2

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/g	16	28	<0.50
Benzene	ug/g	0.21	0.17	<0.0068
Bromodichloromethane	ug/g	13	13	<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	9.4	9.4	<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	3.4	4.3	<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	3.5	11	<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	3.4	30	<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	0.083	<0.042
Ethylbenzene	ug/g	2	15	<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: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-Soil-Res/Park/Inst. Property Use (Fine)


Volatile Organic Compounds - SOIL


Lab ID L2375294-1
Sample Date 25-OCT-19
Sample ID DUP 2

Analyte	Unit	Guide Limits		
		#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	0.020
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	%	-	-	93.2
Surrogate: 1,4-Difluorobenzene	%	-	-	107.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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 L2375294-1
Sample Date 25-OCT-19
Sample ID DUP 2

Analyte	Unit	Guide Limits		
		#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	%	-	-	94.4
Surrogate: 3,4-Dichlorotoluene	%	-	-	96.7

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T3-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**
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F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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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.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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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).

MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
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VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
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Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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

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: L2375294

Report Date: 07-NOV-19

Page 1 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R4902189							
WG3212071-4	DUP	WG3212071-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	07-NOV-19
WG3212071-2	LCS							
F1 (C6-C10)			113.5		%		80-120	07-NOV-19
WG3212071-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	07-NOV-19
Surrogate: 3,4-Dichlorotoluene			108.0		%		60-140	07-NOV-19
WG3212071-6	MS	L2375107-3						
F1 (C6-C10)			110.0		%		60-140	07-NOV-19
F2-F4-511-WT		Soil						
Batch	R4897606							
WG3209036-3	DUP	WG3209036-5						
F2 (C10-C16)		659	523		ug/g	23	30	04-NOV-19
F3 (C16-C34)		81	<50	RPD-NA	ug/g	N/A	30	04-NOV-19
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	04-NOV-19
WG3209036-2	LCS							
F2 (C10-C16)			105.5		%		80-120	04-NOV-19
F3 (C16-C34)			101.2		%		80-120	04-NOV-19
F4 (C34-C50)			107.0		%		80-120	04-NOV-19
WG3209036-1	MB							
F2 (C10-C16)			<10		ug/g		10	04-NOV-19
F3 (C16-C34)			<50		ug/g		50	04-NOV-19
F4 (C34-C50)			<50		ug/g		50	04-NOV-19
Surrogate: 2-Bromobenzotrifluoride			95.7		%		60-140	04-NOV-19
WG3209036-4	MS	WG3209036-5						
F2 (C10-C16)			N/A	MS-B	%		-	04-NOV-19
F3 (C16-C34)			100.1		%		60-140	04-NOV-19
F4 (C34-C50)			95.4		%		60-140	04-NOV-19
MOISTURE-WT		Soil						
Batch	R4895777							
WG3207805-3	DUP	L2374962-4						
% Moisture		21.6	21.2		%	1.8	20	01-NOV-19
WG3207805-2	LCS							
% Moisture			100.5		%		90-110	01-NOV-19
WG3207805-1	MB							
% Moisture			<0.25		%		0.25	01-NOV-19



Quality Control Report

Workorder: L2375294

Report Date: 07-NOV-19

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902189							
WG3212071-4	DUP	WG3212071-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloroethane		0.059	0.054	RPD-NA	ug/g	N/A	40	07-NOV-19
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	07-NOV-19
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	07-NOV-19
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
Styrene		<0.050	<0.050		ug/g			07-NOV-19



Quality Control Report

Workorder: L2375294

Report Date: 07-NOV-19

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902189							
WG3212071-4	DUP	WG3212071-3						
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	07-NOV-19
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-NOV-19
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	07-NOV-19
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-NOV-19
WG3212071-2	LCS							
1,1,1,2-Tetrachloroethane			104.1		%		60-130	07-NOV-19
1,1,1,2-Tetrachloroethane			118.8		%		60-130	07-NOV-19
1,1,1-Trichloroethane			97.7		%		60-130	07-NOV-19
1,1,2-Trichloroethane			110.3		%		60-130	07-NOV-19
1,1-Dichloroethane			102.3		%		60-130	07-NOV-19
1,1-Dichloroethylene			91.9		%		60-130	07-NOV-19
1,2-Dibromoethane			114.4		%		70-130	07-NOV-19
1,2-Dichlorobenzene			106.5		%		70-130	07-NOV-19
1,2-Dichloroethane			111.1		%		60-130	07-NOV-19
1,2-Dichloropropane			107.7		%		70-130	07-NOV-19
1,3-Dichlorobenzene			104.2		%		70-130	07-NOV-19
1,4-Dichlorobenzene			104.7		%		70-130	07-NOV-19
Acetone			129.2		%		60-140	07-NOV-19
Benzene			105.5		%		70-130	07-NOV-19
Bromodichloromethane			107.1		%		50-140	07-NOV-19
Bromoform			116.8		%		70-130	07-NOV-19
Bromomethane			91.1		%		50-140	07-NOV-19
Carbon tetrachloride			96.5		%		70-130	07-NOV-19
Chlorobenzene			104.2		%		70-130	07-NOV-19
Chloroform			104.1		%		70-130	07-NOV-19
cis-1,2-Dichloroethylene			101.2		%		70-130	07-NOV-19
cis-1,3-Dichloropropene			111.1		%		70-130	07-NOV-19
Dibromochloromethane			110.4		%		60-130	07-NOV-19
Dichlorodifluoromethane			73.7		%		50-140	07-NOV-19



Quality Control Report

Workorder: L2375294

Report Date: 07-NOV-19

Page 4 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R4902189							
WG3212071-2	LCS							
Ethylbenzene			98.9		%		70-130	07-NOV-19
n-Hexane			88.2		%		70-130	07-NOV-19
Methylene Chloride			103.5		%		70-130	07-NOV-19
MTBE			100.6		%		70-130	07-NOV-19
m+p-Xylenes			99.5		%		70-130	07-NOV-19
Methyl Ethyl Ketone			124.8		%		60-140	07-NOV-19
Methyl Isobutyl Ketone			125.1		%		60-140	07-NOV-19
o-Xylene			100.3		%		70-130	07-NOV-19
Styrene			103.1		%		70-130	07-NOV-19
Tetrachloroethylene			99.3		%		60-130	07-NOV-19
Toluene			101.3		%		70-130	07-NOV-19
trans-1,2-Dichloroethylene			97.8		%		60-130	07-NOV-19
trans-1,3-Dichloropropene			112.3		%		70-130	07-NOV-19
Trichloroethylene			100.8		%		60-130	07-NOV-19
Trichlorofluoromethane			91.6		%		50-140	07-NOV-19
Vinyl chloride			102.7		%		60-140	07-NOV-19
WG3212071-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,1-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1,2-Trichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,1-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dibromoethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloroethane			<0.050		ug/g		0.05	07-NOV-19
1,2-Dichloropropane			<0.050		ug/g		0.05	07-NOV-19
1,3-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
1,4-Dichlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Acetone			<0.50		ug/g		0.5	07-NOV-19
Benzene			<0.0068		ug/g		0.0068	07-NOV-19
Bromodichloromethane			<0.050		ug/g		0.05	07-NOV-19
Bromoform			<0.050		ug/g		0.05	07-NOV-19
Bromomethane			<0.050		ug/g		0.05	07-NOV-19



Quality Control Report

Workorder: L2375294

Report Date: 07-NOV-19

Page 5 of 7

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4902189							
WG3212071-1 MB								
Carbon tetrachloride			<0.050		ug/g		0.05	07-NOV-19
Chlorobenzene			<0.050		ug/g		0.05	07-NOV-19
Chloroform			<0.050		ug/g		0.05	07-NOV-19
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Dibromochloromethane			<0.050		ug/g		0.05	07-NOV-19
Dichlorodifluoromethane			<0.050		ug/g		0.05	07-NOV-19
Ethylbenzene			<0.018		ug/g		0.018	07-NOV-19
n-Hexane			<0.050		ug/g		0.05	07-NOV-19
Methylene Chloride			<0.050		ug/g		0.05	07-NOV-19
MTBE			<0.050		ug/g		0.05	07-NOV-19
m+p-Xylenes			<0.030		ug/g		0.03	07-NOV-19
Methyl Ethyl Ketone			<0.50		ug/g		0.5	07-NOV-19
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	07-NOV-19
o-Xylene			<0.020		ug/g		0.02	07-NOV-19
Styrene			<0.050		ug/g		0.05	07-NOV-19
Tetrachloroethylene			<0.050		ug/g		0.05	07-NOV-19
Toluene			<0.080		ug/g		0.08	07-NOV-19
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	07-NOV-19
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	07-NOV-19
Trichloroethylene			<0.010		ug/g		0.01	07-NOV-19
Trichlorofluoromethane			<0.050		ug/g		0.05	07-NOV-19
Vinyl chloride			<0.020		ug/g		0.02	07-NOV-19
Surrogate: 1,4-Difluorobenzene			117.2		%		50-140	07-NOV-19
Surrogate: 4-Bromofluorobenzene			101.0		%		50-140	07-NOV-19
WG3212071-5 MS		WG3212071-3						
1,1,1,2-Tetrachloroethane			107.3		%		50-140	07-NOV-19
1,1,1,2,2-Tetrachloroethane			111.9		%		50-140	07-NOV-19
1,1,1-Trichloroethane			102.3		%		50-140	07-NOV-19
1,1,2-Trichloroethane			110.6		%		50-140	07-NOV-19
1,1-Dichloroethane			105.7		%		50-140	07-NOV-19
1,1-Dichloroethylene			98.2		%		50-140	07-NOV-19
1,2-Dibromoethane			109.4		%		50-140	07-NOV-19
1,2-Dichlorobenzene			108.0		%		50-140	07-NOV-19



Quality Control Report

Workorder: L2375294

Report Date: 07-NOV-19

Page 6 of 7

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R4902189							
WG3212071-5 MS		WG3212071-3						
1,2-Dichloroethane			101.6		%		50-140	07-NOV-19
1,2-Dichloropropane			105.7		%		50-140	07-NOV-19
1,3-Dichlorobenzene			107.0		%		50-140	07-NOV-19
1,4-Dichlorobenzene			106.7		%		50-140	07-NOV-19
Acetone			109.6		%		50-140	07-NOV-19
Benzene			107.9		%		50-140	07-NOV-19
Bromodichloromethane			105.8		%		50-140	07-NOV-19
Bromoform			108.9		%		50-140	07-NOV-19
Bromomethane			91.6		%		50-140	07-NOV-19
Carbon tetrachloride			103.2		%		50-140	07-NOV-19
Chlorobenzene			107.3		%		50-140	07-NOV-19
Chloroform			105.4		%		50-140	07-NOV-19
cis-1,2-Dichloroethylene			102.5		%		50-140	07-NOV-19
cis-1,3-Dichloropropene			105.3		%		50-140	07-NOV-19
Dibromochloromethane			108.9		%		50-140	07-NOV-19
Dichlorodifluoromethane			83.4		%		50-140	07-NOV-19
Ethylbenzene			105.7		%		50-140	07-NOV-19
n-Hexane			95.7		%		50-140	07-NOV-19
Methylene Chloride			102.3		%		50-140	07-NOV-19
MTBE			101.2		%		50-140	07-NOV-19
m+p-Xylenes			106.3		%		50-140	07-NOV-19
Methyl Ethyl Ketone			102.7		%		50-140	07-NOV-19
Methyl Isobutyl Ketone			105.8		%		50-140	07-NOV-19
o-Xylene			106.2		%		50-140	07-NOV-19
Styrene			107.1		%		50-140	07-NOV-19
Tetrachloroethylene			108.3		%		50-140	07-NOV-19
Toluene			108.2		%		50-140	07-NOV-19
trans-1,2-Dichloroethylene			100.5		%		50-140	07-NOV-19
trans-1,3-Dichloropropene			106.2		%		50-140	07-NOV-19
Trichloroethylene			104.5		%		50-140	07-NOV-19
Trichlorofluoromethane			99.3		%		50-140	07-NOV-19
Vinyl chloride			108.2		%		50-140	07-NOV-19

Quality Control Report

Workorder: L2375294

Report Date: 07-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 7 of 7

Contact: Kossay Makhzoumi

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
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.

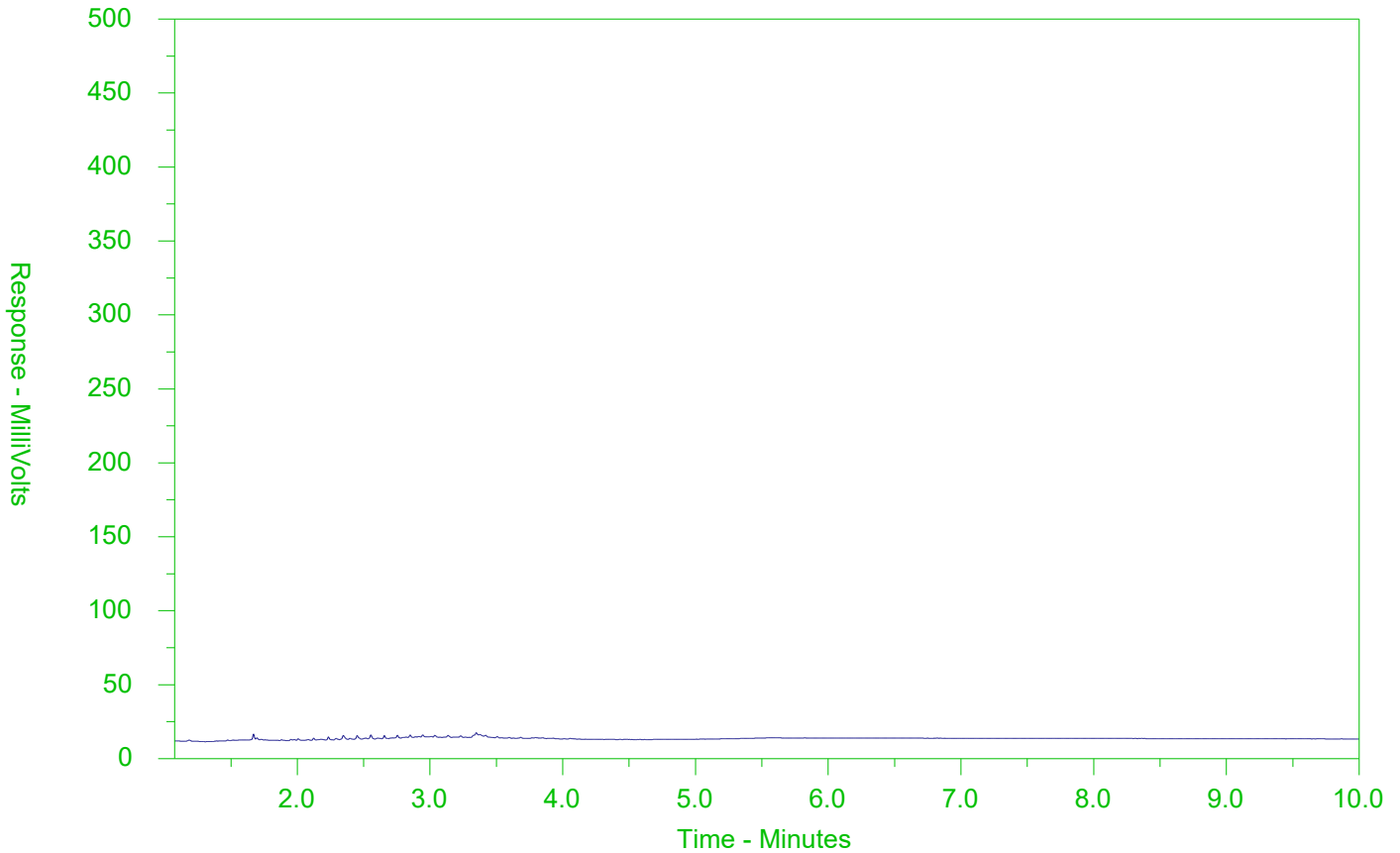
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2375294-1
 Client Sample ID: DUP 2



← 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.



Environmental

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2375294-COFC

COC Number: 15 -

88

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply												
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply												
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>					EMERGENCY	1 Business day [E1] <input type="checkbox"/>					
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>						Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>					
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				2 day [P2] <input type="checkbox"/>											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			Date and Time Required for all E&P TATs:												
City/Province:	Brampton	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.												
Postal Code:	L6T 3Y3	Email 3			Analysis Request												
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX															
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers		
Contact:	Lorena Rossi	Email 2															
Project Information		Oil and Gas Required Fields (client use)															
ALS Account # / Quote #:	Q62481	AFE/Cost Center:		PO#													
Job #:	1-19-0603 - 42	Major/Minor Code:		Routing Code:													
PO / AFE:		Requisitioner:															
LSD:		Location:															
ALS Lab Work Order # (lab use only)	12375294	ALS Contact:	ES	Sampler:													
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													
	Dwg 2	25-10-19		Soil													
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>							
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>							
		Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C					
							0.0					9.7					
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)									
Released by: Kossay Makhzoumi		Date:		Time:		Received by:		Date:		Time:		Received by:		Date:		Time:	
						[Signature]		04/31/19		1237		[Signature]		31-10-19		1530	

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.



Certificate of Analysis

AGAT WORK ORDER: 06T157160
PROJECT NO: 1-06-1007

CLIENT NAME: TERRAPROBE LIMITED

ATTENTION TO: Serena Oyama

		O. Reg. 153 Metals & Inorganics in Soil					
DATE SAMPLED:	February 15 2006	DATE RECEIVED:	February 16 2006	DATE REPORTED:	February 20 2006	SAMPLE TYPE:	Soil
		BH 1:Sa 1 497628	M.D.L.	BH 2:Sa 1 497629	M.D.L.	BH 3:Sa 1B 497630	
Unit	G / S	M.D.L.		M.D.L.			
Antimony	13	1.6	1.6	<1.6	1.6	<1.6	
Arsenic	20	0.6	0.6	11.8	0.6	3.2	
Barium	750	0.3	0.3	140	0.3	126	
Beryllium	1.2	0.4	0.4	0.5	0.4	0.5	
Boron (Hot Water Extractable)	1.5	0.032	0.032	0.509	0.032	0.658	
Cadmium	12	0.4	0.4	<0.4	0.4	<0.4	
Chromium	750	0.6	0.6	14.0	0.6	16.2	
Cobalt	40	0.3	0.3	6.6	0.3	5.6	
Copper	225	0.3	0.3	17.4	0.3	19.7	
Lead	200	0.5	0.5	85.3	0.5	160	
Molybdenum	40	0.5	0.5	3.7	0.5	<0.5	
Nickel	150	0.6	0.6	15.6	0.6	14.6	
Selenium	10	0.8	0.8	1.4	0.8	<0.8	
Silver	20	0.4	0.4	<0.4	0.4	<0.4	
Thallium	4.1	0.4	0.4	<0.4	0.4	<0.4	
Vanadium	200	0.4	0.4	28.5	0.4	23.4	
Zinc	600	0.4	0.4	60.1	0.4	102	
Chromium, Hexavalent	8	0.382	0.382	<0.382	0.382	<0.382	
Cyanide, Free	100	1.6	4.0	<4.0	1.6	<1.6	
Mercury	10	0.011	0.011	0.269	0.011	0.875	
Electrical Conductivity (2:1)	0.7	0.002	0.002	0.998	0.002	1.23	
Sodium Adsorption Ratio	N/A	N/A	N/A	8.11	N/A	8.06	
pH 2:1 Water:Soil Extraction	N/A	N/A	N/A	8.06	N/A	8.80	

Comments: M.D.L. - Method Detection Limit; G / S - Guideline / Standard; Refers to T3(RPI)

497629 Note: Sample extract was dark. Dilution 2.5x for Free Cyanide analysis was necessary to see the end point of the reaction. Reported Detection Limit has been raised to reflect the dilution.

Elizabeth Potokowska

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 06T157160

PROJECT NO: 1-06-1007

CLIENT NAME: TERRAPROBE LIMITED

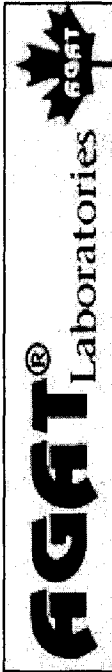
ATTENTION TO: Serena Oyama

O. Reg 153 - Volatile Organic Compounds in Soil

DATE SAMPLED: February 15 2006	DATE RECEIVED: February 16 2006	DATE REPORTED: February 20 2006	SAMPLE TYPE: Soil		
Unit	G / S	M.D.L.	BH 2:Sa 6 497631	BH 1:Sa 2A 497632	BH 3:Sa 3 497633
Chloromethane		0.010	<0.010	<0.010	<0.010
Vinyl Chloride	0.003	0.003	<0.003	<0.003	<0.003
Bromomethane	0.061	0.009	<0.009	<0.009	<0.009
Chloroethane		0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane		0.003	<0.003	<0.003	<0.003
Acetone	3.8	0.074	<0.074	0.17	<0.074
1,1-Dichloroethylene	0.0024	0.002	<0.002	<0.002	<0.002
Methylene Chloride	120	0.007	<0.007	<0.007	<0.007
TRANS-1,2-Dichloroethylene	4.1	0.005	<0.005	<0.005	<0.005
Methyl tert-butyl Ether	100	0.005	<0.005	<0.005	<0.005
1,1-Dichloroethane	22	0.006	<0.006	<0.006	<0.006
Methyl Ethyl Ketone	38	0.044	<0.044	<0.044	<0.044
CIS 1,2-Dichloroethylene	2.3	0.006	<0.006	<0.006	<0.006
Chloroform	0.79	0.009	<0.009	<0.009	<0.009
1,2-Dichloroethane	0.022	0.003	<0.003	<0.003	<0.003
1,1,1-Trichloroethane	26	0.003	<0.003	<0.003	<0.003
Carbon Tetrachloride	0.1	0.004	<0.004	<0.004	<0.004
Benzene	5.3	0.004	<0.004	<0.004	<0.004
1,2-Dichloropropane	0.019	0.004	<0.004	<0.004	<0.004
Trichloroethylene	1.1	0.005	<0.005	<0.005	<0.005
Bromodichloromethane	14	0.004	<0.004	<0.004	<0.004
CIS-1,3-Dichloropropene	0.0066	0.004	<0.004	<0.004	<0.004
Methyl Isobutyl Ketone	58	0.018	<0.018	<0.018	<0.018
TRANS-1,3-Dichloropropene	0.0066	0.002	<0.002	<0.002	<0.002
1,1,2-Trichloroethane	2.3	0.005	<0.005	<0.005	<0.005
Toluene	34	0.002	0.005	<0.002	0.003
2-Hexanone		0.021	<0.021	<0.021	<0.021
Dibromochloromethane	10	0.004	<0.004	<0.004	<0.004
Ethylene Dibromide	0.0056	0.004	<0.004	<0.004	<0.004
Tetrachloroethylene	0.45	0.004	<0.004	<0.004	<0.004
1,1,1,2-Tetrachloroethane	0.019	0.004	<0.004	<0.004	<0.004

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Certified By:



Certificate of Analysis

AGAT WORK ORDER: 06T157160

PROJECT NO: 1-06-1007

CLIENT NAME: TERRAPROBE LIMITED

ATTENTION TO: Serena Oyama

O. Reg 153 - Volatile Organic Compounds in Soil						
DATE SAMPLED:	February 15 2006	DATE RECEIVED:	February 16 2006	DATE REPORTED:	February 20 2006	SAMPLE TYPE:
						Soil
Unit	G / S	M.D.L.	BH 2:Sa 6 497631	BH 1:Sa 2A 497632	BH 3:Sa 3 497633	
Chlorobenzene	8	0.004	<0.004	<0.004	<0.004	
Ethylbenzene	290	0.003	<0.003	<0.003	<0.003	
m & p-Xylene		0.002	0.002	<0.002	<0.002	
Bromoforn	2.3	0.004	<0.004	<0.004	<0.004	
Styrene	1.2	0.002	<0.002	<0.002	<0.002	
1,1,2,2- Tetrachloroethane	0.037	0.002	<0.002	<0.002	<0.002	
o-Xylene		0.002	<0.002	<0.002	<0.002	
1,3-Dichlorobenzene	30	0.004	<0.004	<0.004	<0.004	
1,4-Dichlorobenzene	30	0.005	<0.005	<0.005	<0.005	
1,2-Dichlorobenzene	30	0.004	<0.004	<0.004	<0.004	
1,2,4-Trichlorobenzene	30	0.007	<0.007	<0.007	<0.007	
1,3-Dichloropropene (Cis + Trans)	0.0066	0.004	<0.004	<0.004	<0.004	
Xylenes (Total)	34	0.002	0.002	<0.002	<0.002	

Comments: M.D.L. - Method Detection Limit; G / S - Guideline / Standard; Refers to T3(RP)

497631

Toluene-d8 Surrogate Recovery: 90%
4-Bromofluorobenzene Surrogate Recovery: 86%
Results are based on the dry weight of the soil.
Percent Moisture = 8.1 %.

Results relate only to the items tested.

497632

Toluene-d8 Surrogate Recovery: 78%
4-Bromofluorobenzene Surrogate Recovery: 87%
Results are based on the dry weight of the soil.
Percent Moisture = 15.4 %.

Results relate only to the items tested.

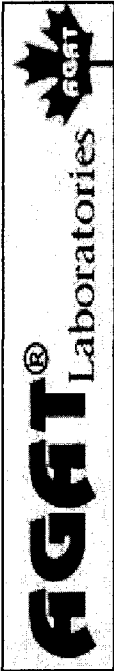
497633

Toluene-d8 Surrogate Recovery: 84%
4-Bromofluorobenzene Surrogate Recovery: 91%
Results are based on the dry weight of the soil.
Percent Moisture = 7.7 %.

Results relate only to the items tested.

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Certified By:



Certificate of Analysis

AGAT WORK ORDER: 06T157160

PROJECT NO: 1-06-1007

CLIENT NAME: TERRAPROBE LIMITED

ATTENTION TO: Serena Oyama

O. Reg. 153 - Petroleum Hydrocarbons F1 - F4 (C6 - C50) in Soil			
DATE SAMPLED:	DATE RECEIVED:	DATE REPORTED:	SAMPLE TYPE:
February 15 2006	February 16 2006	February 20 2006	Soil
	BH 2:Sa 6 497631		
	Unit	G / S	M.D.L.
C6 - C10 (F1)	µg/g		<5
C6 - C10 (F1 minus BTEX)	µg/g	30	<5
C>10 - C16 (F2)	µg/g	150	<10
C>16 - C34 (F3)	µg/g	400	<50
C>34 - C50 (F4)	µg/g	2800	<50
Gravimetric Heavy Hydrocarbons	µg/g		50
Moisture Content	%		1
			8.1

Comments: M.D.L. - Method Detection Limit; G / S - Guideline / Standard; Refers to T3(RP1)

497631

Results are based on sample dry weight.

The C6-C10 fraction is calculated using toluene response factor.

The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.

Total C6 - C50 results are corrected for BTEX and PAH contributions.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

nC6 and nC10 response factors are within 30% of Toluene response factor.

nC10, nC16 and nC34 response factors are within 10% of their average.

C50 response factor is within 70% of nC10 + nC16 + nC34 average.

Linearity is within 15%.

Extraction and holding times were met for this sample.

Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

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Certificate of Analysis
 AGAT WORK ORDER: 06T15777
 PROJECT NO: 1-06-1007

ATTENTION TO: Serena Oyama

CLIENT NAME: TERRAPROBE LIMITED

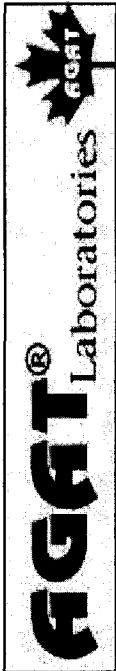
O. Regulation 153 - Volatile Organic Compounds in Water

DATE SAMPLED: February 21 2006 DATE RECEIVED: February 22 2006 DATE REPORTED: February 23 2006 SAMPLE TYPE: Water

	Unit	G / S	M. D. L.	MWZ 498500
Chloromethane	µg/L		0.4	<0.4
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	3.7	0.2	<0.2
Chloroethane	µg/L		0.2	<0.2
Trichlorofluoromethane	µg/L		0.4	<0.4
Acetone	µg/L	3300	0.5	<0.5
1,1 Dichloroethene	µg/L	0.66	0.2	<0.2
Methylene Chloride	µg/L	50000	0.3	<0.3
trans- 1,2-dichloroethylene	µg/L	100	0.2	<0.2
Methyl tert-butyl ether	µg/L	50000	0.2	<0.2
1,1-Dichloroethane	µg/L	9000	0.3	<0.3
Methyl Ethyl Ketone	µg/L	50000	0.9	<0.9
cis- 1,2-Dichloroethylene	µg/L	70	0.2	<0.2
Chloroform	µg/L	430	0.2	<0.2
1,2 - Dichloroethane	µg/L	17	0.2	<0.2
1,1,1-Trichloroethane	µg/L	200	0.3	<0.3
Carbon Tetrachloride	µg/L	17	0.2	<0.2
Benzene	µg/L	1900	0.2	<0.2
1,2-Dichloropropane	µg/L	9.3	0.2	<0.2
Trichloroethylene	µg/L	50	0.2	0.58
Bromodichloromethane	µg/L	50000	0.2	<0.2
cis-1,3-Dichloropropene	µg/L		0.2	<0.2
Methyl Isobutyl Ketone	µg/L	50000	0.3	<0.3
trans-1,3-Dichloropropene	µg/L		0.3	<0.3
1,1,2-Trichloroethane	µg/L	16000	0.2	<0.2
Toluene	µg/L	5900	0.2	<0.2
2-Hexanone	µg/L		0.3	<0.3
Dibromochloromethane	µg/L	50000	0.1	<0.1
Ethylene Dibromide	µg/L	3.3	0.2	<0.2
Tetrachloroethene	µg/L	5.0	0.1	<0.1
1,1,1,2-Tetrachloroethane	µg/L	6.0	0.1	<0.1

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Certified By:



Certificate of Analysis

AGAT WORK ORDER: 06T15777

PROJECT NO: 1-06-1007

ATTENTION TO: Serena Oyama

CLIENT NAME: TERRAPROBE LIMITED

O. Regulation 153 - Volatile Organic Compounds in Water						
DATE SAMPLED:	February 21 2006	DATE RECEIVED:	February 22 2006	DATE REPORTED:	February 23 2006	SAMPLE TYPE:
						Water
	Unit	G / S	M.D.L.	MWZ		
Chlorobenzene	µg/L	500	0.1	498500		<0.1
Ethylbenzene	µg/L	28000	0.1			<0.1
m & p-Xylene	µg/L		0.2			<0.2
Bromoform	µg/L	840	0.1			<0.1
Styrene	µg/L	940	0.1			<0.1
1,1,2,2-Tetrachloroethane	µg/L	22	0.1			<0.1
o-Xylene	µg/L		0.1			<0.1
1,3-Dichlorobenzene	µg/L	7600	0.1			<0.1
1,4-Dichlorobenzene	µg/L	7600	0.1			<0.1
1,2-Dichlorobenzene	µg/L	7600	0.1			<0.1
1,2,4-Trichlorobenzene	µg/L	500	0.3			<0.3
Xylenes (Total)	µg/L	5600	0.2			<0.2

Comments: M.D.L. - Method Detection Limit; G / S - Guideline / Standard; Refers to T3(NPGW)

498500 Results relate only to the items tested.
 Surrogate Recovery for Toluene-d8: 105%
 Surrogate Recovery for 4-Bromofluorobenzene: 92%

Certified By: _____



Certificate of Analysis
 AGAT WORK ORDER: 06T157777
 PROJECT NO: 1-06-1007

CLIENT NAME: TERRAPROBE LIMITED

ATTENTION TO: Serena Oyama

		O. Reg 153 Metals in Water					
DATE SAMPLED:	February 21 2006	DATE RECEIVED:	February 22 2006	DATE REPORTED:	February 23 2006	SAMPLE TYPE:	Water
Unit	G / S	M.D.L.	MW2				
Antimony	16000	1.00	498500				
Arsenic	480	0.60	<1.00				
Barium	230000	0.50	3.11				
Beryllium	53	1.00	46.5				
Boron	50000	10.0	<1.00				
Cadmium	11	0.50	75.1				
Chromium	2000	0.60	0.93				
Cobalt	100	0.50	44.6				
Copper	23	0.80	6.23				
Lead	32	0.50	18.3				
Molybdenum	7300	0.50	126				
Nickel	1600	0.60	3.92				
Selenium	50	0.80	11.8				
Silver	1.2	0.50	1.58				
Thallium	400	0.50	<0.50				
Vanadium	200	0.40	<0.50				
Zinc	1100	1.00	10.1				
			303				

Comments: M.D.L. - Method Detection Limit; G / S - Guideline / Standard; Refers to T3(NPCGW)

Elizabeth Rokonska

Certified By:



Certificate of Analysis
 AGAT WORK ORDER: 06T158158
 PROJECT NO: 1-06-1007

ATTENTION TO: Serena Oyama

CLIENT NAME: TERRAPROBE LIMITED

		O. Reg 153 Metals in water	
DATE SAMPLED:	February 24 2006	DATE RECEIVED:	February 24 2006
DATE REPORTED:	February 24 2006	DATE REPORTED:	February 24 2006
SAMPLE TYPE:	Water		
	Unit	G / S	M.D.L.
			MW2 498834
Antimony	ug/L	16000	<1.00
Arsenic	ug/L	480	1.33
Barium	ug/L	23000	39.3
Beryllium	ug/L	53	<1.00
Boron	ug/L	50000	99.2
Cadmium	ug/L	11.0	<0.50
Chromium	ug/L	2000	7.20
Cobalt	ug/L	100	2.92
Copper	ug/L	23	18.4
Lead	ug/L	32	4.17
Molybdenum	ug/L	7300	9.67
Nickel	ug/L	1600	14.4
Selenium	ug/L	50	2.99
Silver	ug/L	1.2	<0.50
Thallium	ug/L	400	<0.50
Vanadium	ug/L	200	2.90
Zinc	ug/L	1100	34.8

Comments: M.D.L. - Method Detection Limit; G / S - Guideline / Standard; Refers to T3(NFGW,MFT)

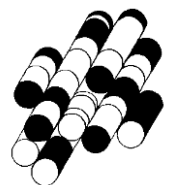
Jonby Takemshi

Certified By:

CERTIFICATES OF ANALYSIS

(GROUNDWATER)

TERRAPROBE INC.





TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 06-FEB-20
Report Date: 13-FEB-20 15:01 (MT)
Version: FINAL REV. 3

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2413928
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Comments: ES/WT - Cyanide result updated to reflect correct dilution factor

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

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


Physical Tests - WATER


Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	6.53
pH	pH units	-	-	7.52

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER

Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	2070 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Guide Limits

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<20 ^{DLM}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

		Lab ID	L2413928-1		
		Sample Date	04-FEB-20		
		Sample ID	BH1		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Mercury Filtration Location		-	-	-	FIELD
Dissolved Metals Filtration Location		-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	82.4	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	140	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	0.061	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	3.4	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050	
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	1.45	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000	2300000	687000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	8.20	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	12	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2413928-1		
		Sample Date	04-FEB-20		
		Sample ID	BH1		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	98.6
Surrogate: 1,4-Difluorobenzene	%	-	-	101.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100 ^{OWP}
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250 ^{OWP}
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250 ^{OWP}
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	92.6
Surrogate: 3,4-Dichlorotoluene	%	-	-	62.9

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2413928-1 Sample Date 04-FEB-20 Sample ID BH1				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	102.7
Surrogate: d12-Chrysene	%	-	-	101.5
Surrogate: d8-Naphthalene	%	-	-	98.3
Surrogate: d10-Phenanthrene	%	-	-	111.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2413928-1
Sample Date 04-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	60.3
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	68.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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).
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**
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CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
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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
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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
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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
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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
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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
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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**
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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 EPA 1631E (mod)
(ug/L)

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

L2413928 CONT'D....
Job Reference: 1-19-0603-42
PAGE 16 of 16
13-FEB-20 15:01 (MT)

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
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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: L2413928

Report Date: 13-FEB-20

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4992573							
WG3271551-4	DUP	WG3271551-3						
Chloride (Cl)		29.5	29.5		mg/L	0.1	20	07-FEB-20
WG3271551-2	LCS							
Chloride (Cl)			101.6		%		90-110	07-FEB-20
WG3271551-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	07-FEB-20
WG3271551-5	MS	WG3271551-3						
Chloride (Cl)			101.2		%		75-125	07-FEB-20
CN-WAD-R511-WT		Water						
Batch	R4993874							
WG3273181-3	DUP	L2414685-7						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	10-FEB-20
WG3273181-2	LCS							
Cyanide, Weak Acid Diss			98.6		%		80-120	10-FEB-20
WG3273181-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	10-FEB-20
WG3273181-4	MS	L2414685-7						
Cyanide, Weak Acid Diss			100.1		%		75-125	10-FEB-20
CR-CR6-IC-R511-WT		Water						
Batch	R4992361							
WG3271691-4	DUP	WG3271691-3						
Chromium, Hexavalent		8.96	9.07		ug/L	1.2	20	07-FEB-20
WG3271691-2	LCS							
Chromium, Hexavalent			101.8		%		80-120	07-FEB-20
WG3271691-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	07-FEB-20
WG3271691-5	MS	WG3271691-3						
Chromium, Hexavalent			99.1		%		70-130	07-FEB-20
EC-R511-WT		Water						
Batch	R4991439							
WG3271394-4	DUP	WG3271394-3						
Conductivity		2.29	2.24		mS/cm	2.2	10	07-FEB-20
WG3271394-2	LCS							
Conductivity			103.7		%		90-110	07-FEB-20
WG3271394-1	MB							
Conductivity			<0.0030		mS/cm		0.003	07-FEB-20
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4991356							
WG3269741-4	DUP	WG3269741-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	07-FEB-20
WG3269741-1	LCS							
F1 (C6-C10)			91.9		%		80-120	07-FEB-20
WG3269741-2	MB							
F1 (C6-C10)			<25		ug/L		25	07-FEB-20
Surrogate: 3,4-Dichlorotoluene			77.1		%		60-140	07-FEB-20
WG3269741-5	MS	WG3269741-3						
F1 (C6-C10)			69.7		%		60-140	07-FEB-20
F2-F4-511-WT		Water						
Batch	R4991613							
WG3270985-2	LCS							
F2 (C10-C16)			105.6		%		70-130	07-FEB-20
F3 (C16-C34)			107.2		%		70-130	07-FEB-20
F4 (C34-C50)			107.4		%		70-130	07-FEB-20
WG3270985-1	MB							
F2 (C10-C16)			<100		ug/L		100	07-FEB-20
F3 (C16-C34)			<250		ug/L		250	07-FEB-20
F4 (C34-C50)			<250		ug/L		250	07-FEB-20
Surrogate: 2-Bromobenzotrifluoride			139.5		%		60-140	07-FEB-20
HG-D-UG/L-CVAA-WT		Water						
Batch	R4991543							
WG3271392-3	DUP	L2414257-6						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	07-FEB-20
WG3271392-2	LCS							
Mercury (Hg)-Dissolved			107.0		%		80-120	07-FEB-20
WG3271392-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	07-FEB-20
WG3271392-4	MS	L2413924-1						
Mercury (Hg)-Dissolved			101.3		%		70-130	07-FEB-20
MET-D-UG/L-MS-WT		Water						
Batch	R4991876							
WG3271317-4	DUP	WG3271317-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Barium (Ba)-Dissolved		337	343		ug/L	1.9	20	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R4991876							
WG3271317-4	DUP	WG3271317-3						
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	07-FEB-20
Cadmium (Cd)-Dissolved		0.071	0.081		ug/L	14	20	07-FEB-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-FEB-20
Molybdenum (Mo)-Dissolved		3.24	3.32		ug/L	2.4	20	07-FEB-20
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Selenium (Se)-Dissolved		1.00	0.93		ug/L	7.9	20	07-FEB-20
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-FEB-20
Sodium (Na)-Dissolved		1200000	1220000		ug/L	1.9	20	07-FEB-20
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	07-FEB-20
Uranium (U)-Dissolved		2.89	2.86		ug/L	1.0	20	07-FEB-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	07-FEB-20
WG3271317-2	LCS							
Antimony (Sb)-Dissolved			99.1		%		80-120	07-FEB-20
Arsenic (As)-Dissolved			93.9		%		80-120	07-FEB-20
Barium (Ba)-Dissolved			100.1		%		80-120	07-FEB-20
Beryllium (Be)-Dissolved			92.3		%		80-120	07-FEB-20
Boron (B)-Dissolved			90.3		%		80-120	07-FEB-20
Cadmium (Cd)-Dissolved			92.7		%		80-120	07-FEB-20
Chromium (Cr)-Dissolved			93.4		%		80-120	07-FEB-20
Cobalt (Co)-Dissolved			91.8		%		80-120	07-FEB-20
Copper (Cu)-Dissolved			89.5		%		80-120	07-FEB-20
Lead (Pb)-Dissolved			97.1		%		80-120	07-FEB-20
Molybdenum (Mo)-Dissolved			95.5		%		80-120	07-FEB-20
Nickel (Ni)-Dissolved			90.7		%		80-120	07-FEB-20
Selenium (Se)-Dissolved			93.3		%		80-120	07-FEB-20
Silver (Ag)-Dissolved			98.7		%		80-120	07-FEB-20
Sodium (Na)-Dissolved			95.3		%		80-120	07-FEB-20
Thallium (Tl)-Dissolved			95.3		%		80-120	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4991876							
WG3271317-2	LCS							
Uranium (U)-Dissolved			93.0		%		80-120	07-FEB-20
Vanadium (V)-Dissolved			95.9		%		80-120	07-FEB-20
Zinc (Zn)-Dissolved			92.7		%		80-120	07-FEB-20
WG3271317-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Boron (B)-Dissolved			<10		ug/L		10	07-FEB-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	07-FEB-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	07-FEB-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Sodium (Na)-Dissolved			<50		ug/L		50	07-FEB-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	07-FEB-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	07-FEB-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	07-FEB-20
WG3271317-5	MS	WG3271317-6						
Antimony (Sb)-Dissolved			101.4		%		70-130	07-FEB-20
Arsenic (As)-Dissolved			96.3		%		70-130	07-FEB-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Beryllium (Be)-Dissolved			94.5		%		70-130	07-FEB-20
Boron (B)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Cadmium (Cd)-Dissolved			92.4		%		70-130	07-FEB-20
Chromium (Cr)-Dissolved			73.6		%		70-130	07-FEB-20
Cobalt (Co)-Dissolved			88.6		%		70-130	07-FEB-20
Copper (Cu)-Dissolved			70.9		%		70-130	07-FEB-20
Lead (Pb)-Dissolved			93.8		%		70-130	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4991876							
WG3271317-5 MS		WG3271317-6						
Molybdenum (Mo)-Dissolved			91.4		%		70-130	07-FEB-20
Nickel (Ni)-Dissolved			83.9		%		70-130	07-FEB-20
Selenium (Se)-Dissolved			90.5		%		70-130	07-FEB-20
Silver (Ag)-Dissolved			96.7		%		70-130	07-FEB-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Thallium (Tl)-Dissolved			92.7		%		70-130	07-FEB-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Vanadium (V)-Dissolved			99.5		%		70-130	07-FEB-20
PAH-511-WT								
	Water							
Batch	R4991387							
WG3270985-2 LCS								
1-Methylnaphthalene			108.6		%		50-140	07-FEB-20
2-Methylnaphthalene			106.9		%		50-140	07-FEB-20
Acenaphthene			118.6		%		50-140	07-FEB-20
Acenaphthylene			107.6		%		50-140	07-FEB-20
Anthracene			103.8		%		50-140	07-FEB-20
Benzo(a)anthracene			115.4		%		50-140	07-FEB-20
Benzo(a)pyrene			114.7		%		50-140	07-FEB-20
Benzo(b)fluoranthene			103.6		%		50-140	07-FEB-20
Benzo(g,h,i)perylene			115.0		%		50-140	07-FEB-20
Benzo(k)fluoranthene			102.4		%		50-140	07-FEB-20
Chrysene			108.9		%		50-140	07-FEB-20
Dibenzo(ah)anthracene			115.4		%		50-140	07-FEB-20
Fluoranthene			116.6		%		50-140	07-FEB-20
Fluorene			112.7		%		50-140	07-FEB-20
Indeno(1,2,3-cd)pyrene			129.4		%		50-140	07-FEB-20
Naphthalene			111.3		%		50-140	07-FEB-20
Phenanthrene			118.0		%		50-140	07-FEB-20
Pyrene			116.6		%		50-140	07-FEB-20
WG3270985-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	07-FEB-20
2-Methylnaphthalene			<0.020		ug/L		0.02	07-FEB-20
Acenaphthene			<0.020		ug/L		0.02	07-FEB-20
Acenaphthylene			<0.020		ug/L		0.02	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4991387							
WG3270985-1	MB							
Anthracene			<0.020		ug/L		0.02	07-FEB-20
Benzo(a)anthracene			<0.020		ug/L		0.02	07-FEB-20
Benzo(a)pyrene			<0.010		ug/L		0.01	07-FEB-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	07-FEB-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Chrysene			<0.020		ug/L		0.02	07-FEB-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	07-FEB-20
Fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Fluorene			<0.020		ug/L		0.02	07-FEB-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	07-FEB-20
Naphthalene			<0.050		ug/L		0.05	07-FEB-20
Phenanthrene			<0.020		ug/L		0.02	07-FEB-20
Pyrene			<0.020		ug/L		0.02	07-FEB-20
Surrogate: d8-Naphthalene			98.1		%		60-140	07-FEB-20
Surrogate: d10-Phenanthrene			97.1		%		60-140	07-FEB-20
Surrogate: d12-Chrysene			92.1		%		60-140	07-FEB-20
Surrogate: d10-Acenaphthene			98.7		%		60-140	07-FEB-20
PCB-511-WT		Water						
Batch	R4995272							
WG3271397-2	LCS							
Aroclor 1242			96.6		%		60-140	12-FEB-20
Aroclor 1248			106.0		%		60-140	12-FEB-20
Aroclor 1254			107.1		%		60-140	12-FEB-20
Aroclor 1260			118.0		%		60-140	12-FEB-20
WG3271397-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	12-FEB-20
Aroclor 1248			<0.020		ug/L		0.02	12-FEB-20
Aroclor 1254			<0.020		ug/L		0.02	12-FEB-20
Aroclor 1260			<0.020		ug/L		0.02	12-FEB-20
Surrogate: Decachlorobiphenyl			83.0		%		50-150	12-FEB-20
Surrogate: Tetrachloro-m-xylene			68.3		%		50-150	12-FEB-20

PH-WT **Water**



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT		Water						
Batch	R4991439							
WG3271394-4	DUP	WG3271394-3						
pH		8.11	8.11	J	pH units	0.00	0.2	07-FEB-20
WG3271394-2	LCS							
pH			7.04		pH units		6.9-7.1	07-FEB-20
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-4	DUP	WG3269741-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	07-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	07-FEB-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-4	DUP	WG3269741-3						
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-FEB-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-FEB-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
WG3269741-1	LCS							
1,1,1,2-Tetrachloroethane			106.0		%		70-130	07-FEB-20
1,1,1,2-Tetrachloroethane			99.4		%		70-130	07-FEB-20
1,1,1-Trichloroethane			113.4		%		70-130	07-FEB-20
1,1,2-Trichloroethane			102.7		%		70-130	07-FEB-20
1,1-Dichloroethane			110.5		%		70-130	07-FEB-20
1,1-Dichloroethylene			110.1		%		70-130	07-FEB-20
1,2-Dibromoethane			101.2		%		70-130	07-FEB-20
1,2-Dichlorobenzene			106.7		%		70-130	07-FEB-20
1,2-Dichloroethane			101.1		%		70-130	07-FEB-20
1,2-Dichloropropane			108.7		%		70-130	07-FEB-20
1,3-Dichlorobenzene			109.9		%		70-130	07-FEB-20
1,4-Dichlorobenzene			109.4		%		70-130	07-FEB-20
Acetone			93.1		%		60-140	07-FEB-20
Benzene			112.2		%		70-130	07-FEB-20
Bromodichloromethane			105.3		%		70-130	07-FEB-20
Bromoform			100.6		%		70-130	07-FEB-20
Bromomethane			110.9		%		60-140	07-FEB-20
Carbon tetrachloride			117.2		%		70-130	07-FEB-20
Chlorobenzene			109.0		%		70-130	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-1	LCS							
Chloroform			112.0		%		70-130	07-FEB-20
cis-1,2-Dichloroethylene			110.8		%		70-130	07-FEB-20
cis-1,3-Dichloropropene			111.9		%		70-130	07-FEB-20
Dibromochloromethane			100.9		%		70-130	07-FEB-20
Dichlorodifluoromethane			139.1		%		50-140	07-FEB-20
Ethylbenzene			108.8		%		70-130	07-FEB-20
n-Hexane			111.3		%		70-130	07-FEB-20
m+p-Xylenes			108.7		%		70-130	07-FEB-20
Methyl Ethyl Ketone			90.9		%		60-140	07-FEB-20
Methyl Isobutyl Ketone			78.1		%		60-140	07-FEB-20
Methylene Chloride			109.9		%		70-130	07-FEB-20
MTBE			111.4		%		70-130	07-FEB-20
o-Xylene			105.6		%		70-130	07-FEB-20
Styrene			106.1		%		70-130	07-FEB-20
Tetrachloroethylene			113.6		%		70-130	07-FEB-20
Toluene			108.9		%		70-130	07-FEB-20
trans-1,2-Dichloroethylene			110.6		%		70-130	07-FEB-20
trans-1,3-Dichloropropene			113.0		%		70-130	07-FEB-20
Trichloroethylene			111.7		%		70-130	07-FEB-20
Trichlorofluoromethane			117.7		%		60-140	07-FEB-20
Vinyl chloride			137.3		%		60-140	07-FEB-20
WG3269741-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	07-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	07-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	07-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	07-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	07-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4991356							
WG3269741-2	MB							
Acetone			<30		ug/L		30	07-FEB-20
Benzene			<0.50		ug/L		0.5	07-FEB-20
Bromodichloromethane			<2.0		ug/L		2	07-FEB-20
Bromoform			<5.0		ug/L		5	07-FEB-20
Bromomethane			<0.50		ug/L		0.5	07-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	07-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	07-FEB-20
Chloroform			<1.0		ug/L		1	07-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	07-FEB-20
Dibromochloromethane			<2.0		ug/L		2	07-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	07-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	07-FEB-20
n-Hexane			<0.50		ug/L		0.5	07-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	07-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	07-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	07-FEB-20
Methylene Chloride			<5.0		ug/L		5	07-FEB-20
MTBE			<2.0		ug/L		2	07-FEB-20
o-Xylene			<0.30		ug/L		0.3	07-FEB-20
Styrene			<0.50		ug/L		0.5	07-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	07-FEB-20
Toluene			<0.50		ug/L		0.5	07-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	07-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	07-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	07-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	07-FEB-20
Surrogate: 1,4-Difluorobenzene			101.5		%		70-130	07-FEB-20
Surrogate: 4-Bromofluorobenzene			98.4		%		70-130	07-FEB-20
WG3269741-5	MS	WG3269741-3						
1,1,1,2-Tetrachloroethane			109.5		%		50-140	07-FEB-20
1,1,2,2-Tetrachloroethane			108.1		%		50-140	07-FEB-20
1,1,1-Trichloroethane			112.2		%		50-140	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4991356							
WG3269741-5 MS		WG3269741-3						
1,1,2-Trichloroethane			108.2		%		50-140	07-FEB-20
1,1-Dichloroethane			110.6		%		50-140	07-FEB-20
1,1-Dichloroethylene			107.9		%		50-140	07-FEB-20
1,2-Dibromoethane			107.6		%		50-140	07-FEB-20
1,2-Dichlorobenzene			106.8		%		50-140	07-FEB-20
1,2-Dichloroethane			108.9		%		50-140	07-FEB-20
1,2-Dichloropropane			117.1		%		50-140	07-FEB-20
1,3-Dichlorobenzene			105.8		%		50-140	07-FEB-20
1,4-Dichlorobenzene			105.7		%		50-140	07-FEB-20
Acetone			108.2		%		50-140	07-FEB-20
Benzene			112.7		%		50-140	07-FEB-20
Bromodichloromethane			112.6		%		50-140	07-FEB-20
Bromoform			107.2		%		50-140	07-FEB-20
Bromomethane			103.6		%		50-140	07-FEB-20
Carbon tetrachloride			113.9		%		50-140	07-FEB-20
Chlorobenzene			108.4		%		50-140	07-FEB-20
Chloroform			113.8		%		50-140	07-FEB-20
cis-1,2-Dichloroethylene			110.9		%		50-140	07-FEB-20
cis-1,3-Dichloropropene			111.6		%		50-140	07-FEB-20
Dibromochloromethane			106.1		%		50-140	07-FEB-20
Dichlorodifluoromethane			128.2		%		50-140	07-FEB-20
Ethylbenzene			106.8		%		50-140	07-FEB-20
n-Hexane			105.3		%		50-140	07-FEB-20
m+p-Xylenes			107.2		%		50-140	07-FEB-20
Methyl Ethyl Ketone			93.7		%		50-140	07-FEB-20
Methyl Isobutyl Ketone			94.6		%		50-140	07-FEB-20
Methylene Chloride			110.7		%		50-140	07-FEB-20
MTBE			112.2		%		50-140	07-FEB-20
o-Xylene			107.3		%		50-140	07-FEB-20
Styrene			107.7		%		50-140	07-FEB-20
Tetrachloroethylene			107.2		%		50-140	07-FEB-20
Toluene			107.6		%		50-140	07-FEB-20
trans-1,2-Dichloroethylene			106.4		%		50-140	07-FEB-20



Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4991356							
WG3269741-5 MS		WG3269741-3						
trans-1,3-Dichloropropene			108.8		%		50-140	07-FEB-20
Trichloroethylene			109.8		%		50-140	07-FEB-20
Trichlorofluoromethane			113.2		%		50-140	07-FEB-20
Vinyl chloride			130.4		%		50-140	07-FEB-20

Quality Control Report

Workorder: L2413928

Report Date: 13-FEB-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

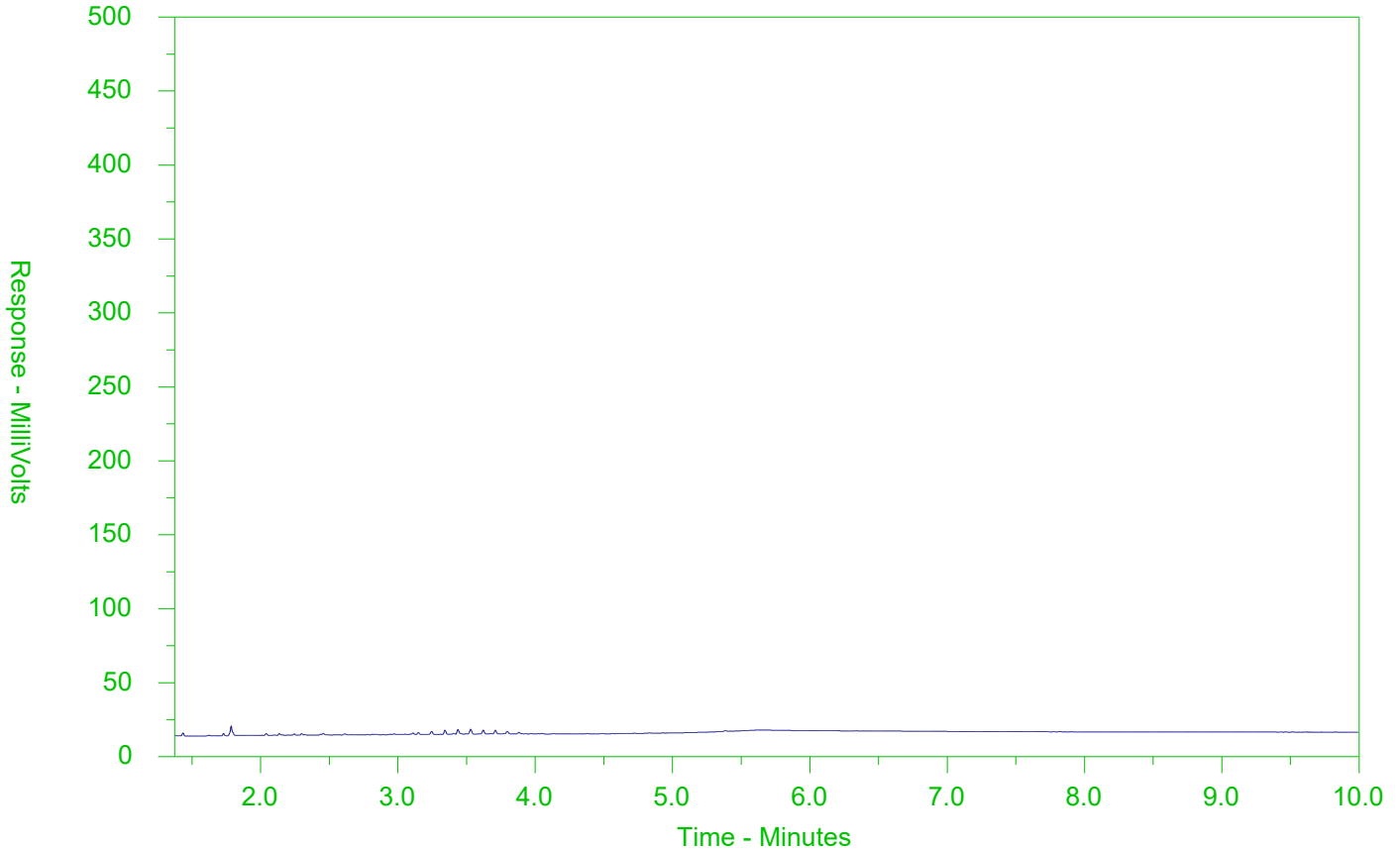
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2413928-1
 Client Sample ID: BH1



← 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.



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2413928-COFC

COC Number: 15 -

Page 1 of 1

Handwritten signature

Contact and company name below will appear on the final report

Report Format: PDF EXCEL EDD (DIGITAL)

Indicate all EAP TATs with your AM - surcharges will apply

Company: Terraprobe
Contact: Kossay Makhzoumi
Phone: 905-796-2850
Street: 11 Indell Lane
City/Province: Brampton
Postal Code: L6T 3Y3

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

Company address below will appear on the final report
Email 1 or Fax: kmakhzoumi@terraprobe.ca
Email 2
Email 3

Regular [R] Standard TAT if received by 3 pm - business days - no surcharges apply
4 day [P4]
3 day [P3]
2 day [P2]
EMERGENCY
Date and Time Required for all EAP TATs:
1 Business day [E1]
Same Day, Weekend or Statutory holiday [E0]

Invoice To: Same as Report To YES NO
Copy of Invoice with Report YES NO
Company: Terraprobe
Contact: Lorena Rossi

Invoice Distribution
Select Invoice Distribution: EMAIL MAIL FAX
Email 1 or Fax: lrossi@terraprobe.ca
Email 2
Email 3

ALS Account # / Quote #: Q64281
Job #: 1-19-0603-42
PO / AFE:
LSD:

AFE/Coast Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): 12413928
ALS Sample # (lab use only): BH1
Sample Identification and/or Coordinates (This description will appear on the report):
Date (dd-mm-yy): 04-02-20
Time (hh:mm):
Sample Type: SW

Oil and Gas Required Fields (client use)
Metals and Inorganics
Metals
Hydride Forming Metals
EC
SAR
PAH
VOC
PHC
OC Pesticides
PCBs

Drinking Water (DW) Samples (client use)
Are samples taken from a Regulated DW System? YES NO
Are samples for human drinking water use? YES NO

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)
Frozen
Ice Packs
Cooling Inlet/land
Ice Cubes
SIF Observations Yes No
Custody seal intact Yes No
INITIAL COOLER TEMPERATURES °C: 3.1
FINAL COOLER TEMPERATURES °C: 6.1

Shipping/Reception Information
Released by: Kossay Makhzoumi
Date:
Time:
Received by:
Date: 6/20
Time: 14:30

INITIAL SHIPMENT RECEPTION (lab use only)
Date: 6/20
Time: 14:30
WHITE - LABORATORY COPY
YELLOW - CLIENT COPY

Table with columns for Sample #, Date, Time, Sample Type, and various chemical analysis results (Metals, EC, SAR, PAH, VOC, PHC, OC Pesticides, PCBs).

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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 06-FEB-20
Report Date: 11-FEB-20 13:15 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2413924
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

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


Physical Tests - WATER


Lab ID L2413924-1
Sample Date 04-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	5.46
pH	pH units	-	-	7.88

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER

Lab ID L2413924-1
Sample Date 04-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	1440 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER


Lab ID L2413924-1
Sample Date 04-FEB-20
Sample ID BH2


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

		Lab ID	L2413924-1		
		Sample Date	04-FEB-20		
		Sample ID	BH2		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Mercury Filtration Location		-	-	FIELD	
Dissolved Metals Filtration Location		-	-	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	78.7	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	130	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050	
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	7.74	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000	2300000	656000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	0.91	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2413924-1
Sample Date 04-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2413924-1		
		Sample Date	04-FEB-20		
		Sample ID	BH2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	2.88	
1,2-Dichloroethane	ug/L	1.6	12	1.41	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	1.42	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2413924-1
Sample Date 04-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	97.4
Surrogate: 1,4-Difluorobenzene	%	-	-	100.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2413924-1
Sample Date 04-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100 ^{OWP}
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250 ^{OWP}
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250 ^{OWP}
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	103.6
Surrogate: 3,4-Dichlorotoluene	%	-	-	62.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2413924-1 Sample Date 04-FEB-20 Sample ID BH2				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	0.029 ^R
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	0.023
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	110.7
Surrogate: d12-Chrysene	%	-	-	99.0
Surrogate: d8-Naphthalene	%	-	-	113.1
Surrogate: d10-Phenanthrene	%	-	-	116.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
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
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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
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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
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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**
<p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 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
<p>Fraction F1 is determined by analyzing by headspace-GC/FID.</p> <p>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).</p>			
F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1
<p>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.</p> <p>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).</p>			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
<p>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.</p> <p>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).</p>			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
<p>The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.</p> <p>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).</p>			
METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
<p>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.</p> <p>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).</p>			
PH-WT	Water	pH	APHA 4500 H-Electrode
<p>Water samples are analyzed directly by a calibrated pH meter.</p> <p>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</p>			
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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2413924

Report Date: 11-FEB-20

Page 1 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4992573							
WG3271551-4	DUP	WG3271551-3						
Chloride (Cl)		29.5	29.5		mg/L	0.1	20	07-FEB-20
WG3271551-2	LCS							
Chloride (Cl)			101.6		%		90-110	07-FEB-20
WG3271551-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	07-FEB-20
WG3271551-5	MS	WG3271551-3						
Chloride (Cl)			101.2		%		75-125	07-FEB-20
CR-CR6-IC-R511-WT		Water						
Batch	R4992361							
WG3271691-4	DUP	WG3271691-3						
Chromium, Hexavalent		8.96	9.07		ug/L	1.2	20	07-FEB-20
WG3271691-2	LCS							
Chromium, Hexavalent			101.8		%		80-120	07-FEB-20
WG3271691-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	07-FEB-20
WG3271691-5	MS	WG3271691-3						
Chromium, Hexavalent			99.1		%		70-130	07-FEB-20
EC-R511-WT		Water						
Batch	R4991439							
WG3271394-4	DUP	WG3271394-3						
Conductivity		2.29	2.24		mS/cm	2.2	10	07-FEB-20
WG3271394-2	LCS							
Conductivity			103.7		%		90-110	07-FEB-20
WG3271394-1	MB							
Conductivity			<0.0030		mS/cm		0.003	07-FEB-20
F1-HS-511-WT		Water						
Batch	R4991356							
WG3269741-4	DUP	WG3269741-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	07-FEB-20
WG3269741-1	LCS							
F1 (C6-C10)			91.9		%		80-120	07-FEB-20
WG3269741-2	MB							
F1 (C6-C10)			<25		ug/L		25	07-FEB-20
Surrogate: 3,4-Dichlorotoluene			77.1		%		60-140	07-FEB-20
WG3269741-5	MS	WG3269741-3						
F1 (C6-C10)			69.7		%		60-140	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 2 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT		Water						
Batch	R4991613							
WG3270985-2	LCS							
F2 (C10-C16)			105.6		%		70-130	07-FEB-20
F3 (C16-C34)			107.2		%		70-130	07-FEB-20
F4 (C34-C50)			107.4		%		70-130	07-FEB-20
WG3270985-1	MB							
F2 (C10-C16)			<100		ug/L		100	07-FEB-20
F3 (C16-C34)			<250		ug/L		250	07-FEB-20
F4 (C34-C50)			<250		ug/L		250	07-FEB-20
Surrogate: 2-Bromobenzotrifluoride			139.5		%		60-140	07-FEB-20
HG-D-UG/L-CVAA-WT		Water						
Batch	R4991543							
WG3271392-3	DUP	L2414257-6						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	07-FEB-20
WG3271392-2	LCS							
Mercury (Hg)-Dissolved			107.0		%		80-120	07-FEB-20
WG3271392-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	07-FEB-20
WG3271392-4	MS	L2413924-1						
Mercury (Hg)-Dissolved			101.3		%		70-130	07-FEB-20
MET-D-UG/L-MS-WT		Water						
Batch	R4991876							
WG3271317-4	DUP	WG3271317-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Barium (Ba)-Dissolved		337	343		ug/L	1.9	20	07-FEB-20
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	07-FEB-20
Cadmium (Cd)-Dissolved		0.071	0.081		ug/L	14	20	07-FEB-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-FEB-20
Molybdenum (Mo)-Dissolved		3.24	3.32		ug/L	2.4	20	07-FEB-20
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Selenium (Se)-Dissolved		1.00	0.93		ug/L	7.9	20	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 3 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4991876							
WG3271317-4	DUP	WG3271317-3						
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-FEB-20
Sodium (Na)-Dissolved		1200000	1220000		ug/L	1.9	20	07-FEB-20
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	07-FEB-20
Uranium (U)-Dissolved		2.89	2.86		ug/L	1.0	20	07-FEB-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	07-FEB-20
WG3271317-2	LCS							
Antimony (Sb)-Dissolved			99.1		%		80-120	07-FEB-20
Arsenic (As)-Dissolved			93.9		%		80-120	07-FEB-20
Barium (Ba)-Dissolved			100.1		%		80-120	07-FEB-20
Beryllium (Be)-Dissolved			92.3		%		80-120	07-FEB-20
Boron (B)-Dissolved			90.3		%		80-120	07-FEB-20
Cadmium (Cd)-Dissolved			92.7		%		80-120	07-FEB-20
Chromium (Cr)-Dissolved			93.4		%		80-120	07-FEB-20
Cobalt (Co)-Dissolved			91.8		%		80-120	07-FEB-20
Copper (Cu)-Dissolved			89.5		%		80-120	07-FEB-20
Lead (Pb)-Dissolved			97.1		%		80-120	07-FEB-20
Molybdenum (Mo)-Dissolved			95.5		%		80-120	07-FEB-20
Nickel (Ni)-Dissolved			90.7		%		80-120	07-FEB-20
Selenium (Se)-Dissolved			93.3		%		80-120	07-FEB-20
Silver (Ag)-Dissolved			98.7		%		80-120	07-FEB-20
Sodium (Na)-Dissolved			95.3		%		80-120	07-FEB-20
Thallium (Tl)-Dissolved			95.3		%		80-120	07-FEB-20
Uranium (U)-Dissolved			93.0		%		80-120	07-FEB-20
Vanadium (V)-Dissolved			95.9		%		80-120	07-FEB-20
Zinc (Zn)-Dissolved			92.7		%		80-120	07-FEB-20
WG3271317-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Boron (B)-Dissolved			<10		ug/L		10	07-FEB-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	07-FEB-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 4 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4991876							
WG3271317-1 MB								
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	07-FEB-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Sodium (Na)-Dissolved			<50		ug/L		50	07-FEB-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	07-FEB-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	07-FEB-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	07-FEB-20
WG3271317-5 MS		WG3271317-6						
Antimony (Sb)-Dissolved			101.4		%		70-130	07-FEB-20
Arsenic (As)-Dissolved			96.3		%		70-130	07-FEB-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Beryllium (Be)-Dissolved			94.5		%		70-130	07-FEB-20
Boron (B)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Cadmium (Cd)-Dissolved			92.4		%		70-130	07-FEB-20
Chromium (Cr)-Dissolved			73.6		%		70-130	07-FEB-20
Cobalt (Co)-Dissolved			88.6		%		70-130	07-FEB-20
Copper (Cu)-Dissolved			70.9		%		70-130	07-FEB-20
Lead (Pb)-Dissolved			93.8		%		70-130	07-FEB-20
Molybdenum (Mo)-Dissolved			91.4		%		70-130	07-FEB-20
Nickel (Ni)-Dissolved			83.9		%		70-130	07-FEB-20
Selenium (Se)-Dissolved			90.5		%		70-130	07-FEB-20
Silver (Ag)-Dissolved			96.7		%		70-130	07-FEB-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Thallium (Tl)-Dissolved			92.7		%		70-130	07-FEB-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Vanadium (V)-Dissolved			99.5		%		70-130	07-FEB-20

PAH-511-WT **Water**



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 5 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4991387							
WG3270985-2	LCS							
1-Methylnaphthalene			108.6		%		50-140	07-FEB-20
2-Methylnaphthalene			106.9		%		50-140	07-FEB-20
Acenaphthene			118.6		%		50-140	07-FEB-20
Acenaphthylene			107.6		%		50-140	07-FEB-20
Anthracene			103.8		%		50-140	07-FEB-20
Benzo(a)anthracene			115.4		%		50-140	07-FEB-20
Benzo(a)pyrene			114.7		%		50-140	07-FEB-20
Benzo(b)fluoranthene			103.6		%		50-140	07-FEB-20
Benzo(g,h,i)perylene			115.0		%		50-140	07-FEB-20
Benzo(k)fluoranthene			102.4		%		50-140	07-FEB-20
Chrysene			108.9		%		50-140	07-FEB-20
Dibenzo(ah)anthracene			115.4		%		50-140	07-FEB-20
Fluoranthene			116.6		%		50-140	07-FEB-20
Fluorene			112.7		%		50-140	07-FEB-20
Indeno(1,2,3-cd)pyrene			129.4		%		50-140	07-FEB-20
Naphthalene			111.3		%		50-140	07-FEB-20
Phenanthrene			118.0		%		50-140	07-FEB-20
Pyrene			116.6		%		50-140	07-FEB-20
WG3270985-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	07-FEB-20
2-Methylnaphthalene			<0.020		ug/L		0.02	07-FEB-20
Acenaphthene			<0.020		ug/L		0.02	07-FEB-20
Acenaphthylene			<0.020		ug/L		0.02	07-FEB-20
Anthracene			<0.020		ug/L		0.02	07-FEB-20
Benzo(a)anthracene			<0.020		ug/L		0.02	07-FEB-20
Benzo(a)pyrene			<0.010		ug/L		0.01	07-FEB-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	07-FEB-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Chrysene			<0.020		ug/L		0.02	07-FEB-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	07-FEB-20
Fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Fluorene			<0.020		ug/L		0.02	07-FEB-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 6 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4991387							
WG3270985-1	MB							
Naphthalene			<0.050		ug/L		0.05	07-FEB-20
Phenanthrene			<0.020		ug/L		0.02	07-FEB-20
Pyrene			<0.020		ug/L		0.02	07-FEB-20
Surrogate: d8-Naphthalene			98.1		%		60-140	07-FEB-20
Surrogate: d10-Phenanthrene			97.1		%		60-140	07-FEB-20
Surrogate: d12-Chrysene			92.1		%		60-140	07-FEB-20
Surrogate: d10-Acenaphthene			98.7		%		60-140	07-FEB-20
PH-WT		Water						
Batch	R4991439							
WG3271394-4	DUP	WG3271394-3						
pH		8.11	8.11	J	pH units	0.00	0.2	07-FEB-20
WG3271394-2	LCS							
pH			7.04		pH units		6.9-7.1	07-FEB-20
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-4	DUP	WG3269741-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	07-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 7 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-4	DUP	WG3269741-3						
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	07-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	07-FEB-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	07-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-FEB-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	07-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	07-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	07-FEB-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	07-FEB-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	07-FEB-20
WG3269741-1	LCS							
1,1,1,2-Tetrachloroethane			106.0		%		70-130	07-FEB-20
1,1,1,2-Tetrachloroethane			99.4		%		70-130	07-FEB-20
1,1,1-Trichloroethane			113.4		%		70-130	07-FEB-20
1,1,2-Trichloroethane			102.7		%		70-130	07-FEB-20
1,1-Dichloroethane			110.5		%		70-130	07-FEB-20
1,1-Dichloroethylene			110.1		%		70-130	07-FEB-20
1,2-Dibromoethane			101.2		%		70-130	07-FEB-20
1,2-Dichlorobenzene			106.7		%		70-130	07-FEB-20
1,2-Dichloroethane			101.1		%		70-130	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 8 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-1	LCS							
1,2-Dichloropropane			108.7		%		70-130	07-FEB-20
1,3-Dichlorobenzene			109.9		%		70-130	07-FEB-20
1,4-Dichlorobenzene			109.4		%		70-130	07-FEB-20
Acetone			93.1		%		60-140	07-FEB-20
Benzene			112.2		%		70-130	07-FEB-20
Bromodichloromethane			105.3		%		70-130	07-FEB-20
Bromoform			100.6		%		70-130	07-FEB-20
Bromomethane			110.9		%		60-140	07-FEB-20
Carbon tetrachloride			117.2		%		70-130	07-FEB-20
Chlorobenzene			109.0		%		70-130	07-FEB-20
Chloroform			112.0		%		70-130	07-FEB-20
cis-1,2-Dichloroethylene			110.8		%		70-130	07-FEB-20
cis-1,3-Dichloropropene			111.9		%		70-130	07-FEB-20
Dibromochloromethane			100.9		%		70-130	07-FEB-20
Dichlorodifluoromethane			139.1		%		50-140	07-FEB-20
Ethylbenzene			108.8		%		70-130	07-FEB-20
n-Hexane			111.3		%		70-130	07-FEB-20
m+p-Xylenes			108.7		%		70-130	07-FEB-20
Methyl Ethyl Ketone			90.9		%		60-140	07-FEB-20
Methyl Isobutyl Ketone			78.1		%		60-140	07-FEB-20
Methylene Chloride			109.9		%		70-130	07-FEB-20
MTBE			111.4		%		70-130	07-FEB-20
o-Xylene			105.6		%		70-130	07-FEB-20
Styrene			106.1		%		70-130	07-FEB-20
Tetrachloroethylene			113.6		%		70-130	07-FEB-20
Toluene			108.9		%		70-130	07-FEB-20
trans-1,2-Dichloroethylene			110.6		%		70-130	07-FEB-20
trans-1,3-Dichloropropene			113.0		%		70-130	07-FEB-20
Trichloroethylene			111.7		%		70-130	07-FEB-20
Trichlorofluoromethane			117.7		%		60-140	07-FEB-20
Vinyl chloride			137.3		%		60-140	07-FEB-20
WG3269741-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 9 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-2 MB								
1,1,1-Trichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	07-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	07-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	07-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	07-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	07-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	07-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	07-FEB-20
Acetone			<30		ug/L		30	07-FEB-20
Benzene			<0.50		ug/L		0.5	07-FEB-20
Bromodichloromethane			<2.0		ug/L		2	07-FEB-20
Bromoform			<5.0		ug/L		5	07-FEB-20
Bromomethane			<0.50		ug/L		0.5	07-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	07-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	07-FEB-20
Chloroform			<1.0		ug/L		1	07-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	07-FEB-20
Dibromochloromethane			<2.0		ug/L		2	07-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	07-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	07-FEB-20
n-Hexane			<0.50		ug/L		0.5	07-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	07-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	07-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	07-FEB-20
Methylene Chloride			<5.0		ug/L		5	07-FEB-20
MTBE			<2.0		ug/L		2	07-FEB-20
o-Xylene			<0.30		ug/L		0.3	07-FEB-20
Styrene			<0.50		ug/L		0.5	07-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	07-FEB-20
Toluene			<0.50		ug/L		0.5	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 10 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4991356							
WG3269741-2 MB								
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	07-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	07-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	07-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	07-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	07-FEB-20
Surrogate: 1,4-Difluorobenzene			101.5		%		70-130	07-FEB-20
Surrogate: 4-Bromofluorobenzene			98.4		%		70-130	07-FEB-20
WG3269741-5 MS		WG3269741-3						
1,1,1,2-Tetrachloroethane			109.5		%		50-140	07-FEB-20
1,1,1,2,2-Tetrachloroethane			108.1		%		50-140	07-FEB-20
1,1,1-Trichloroethane			112.2		%		50-140	07-FEB-20
1,1,2-Trichloroethane			108.2		%		50-140	07-FEB-20
1,1-Dichloroethane			110.6		%		50-140	07-FEB-20
1,1-Dichloroethylene			107.9		%		50-140	07-FEB-20
1,2-Dibromoethane			107.6		%		50-140	07-FEB-20
1,2-Dichlorobenzene			106.8		%		50-140	07-FEB-20
1,2-Dichloroethane			108.9		%		50-140	07-FEB-20
1,2-Dichloropropane			117.1		%		50-140	07-FEB-20
1,3-Dichlorobenzene			105.8		%		50-140	07-FEB-20
1,4-Dichlorobenzene			105.7		%		50-140	07-FEB-20
Acetone			108.2		%		50-140	07-FEB-20
Benzene			112.7		%		50-140	07-FEB-20
Bromodichloromethane			112.6		%		50-140	07-FEB-20
Bromoform			107.2		%		50-140	07-FEB-20
Bromomethane			103.6		%		50-140	07-FEB-20
Carbon tetrachloride			113.9		%		50-140	07-FEB-20
Chlorobenzene			108.4		%		50-140	07-FEB-20
Chloroform			113.8		%		50-140	07-FEB-20
cis-1,2-Dichloroethylene			110.9		%		50-140	07-FEB-20
cis-1,3-Dichloropropene			111.6		%		50-140	07-FEB-20
Dibromochloromethane			106.1		%		50-140	07-FEB-20
Dichlorodifluoromethane			128.2		%		50-140	07-FEB-20
Ethylbenzene			106.8		%		50-140	07-FEB-20
n-Hexane			105.3		%		50-140	07-FEB-20



Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Page 11 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4991356							
WG3269741-5 MS		WG3269741-3						
m+p-Xylenes			107.2		%		50-140	07-FEB-20
Methyl Ethyl Ketone			93.7		%		50-140	07-FEB-20
Methyl Isobutyl Ketone			94.6		%		50-140	07-FEB-20
Methylene Chloride			110.7		%		50-140	07-FEB-20
MTBE			112.2		%		50-140	07-FEB-20
o-Xylene			107.3		%		50-140	07-FEB-20
Styrene			107.7		%		50-140	07-FEB-20
Tetrachloroethylene			107.2		%		50-140	07-FEB-20
Toluene			107.6		%		50-140	07-FEB-20
trans-1,2-Dichloroethylene			106.4		%		50-140	07-FEB-20
trans-1,3-Dichloropropene			108.8		%		50-140	07-FEB-20
Trichloroethylene			109.8		%		50-140	07-FEB-20
Trichlorofluoromethane			113.2		%		50-140	07-FEB-20
Vinyl chloride			130.4		%		50-140	07-FEB-20

Quality Control Report

Workorder: L2413924

Report Date: 11-FEB-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 12 of 12

Contact: Kossay Makhzoumi

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.

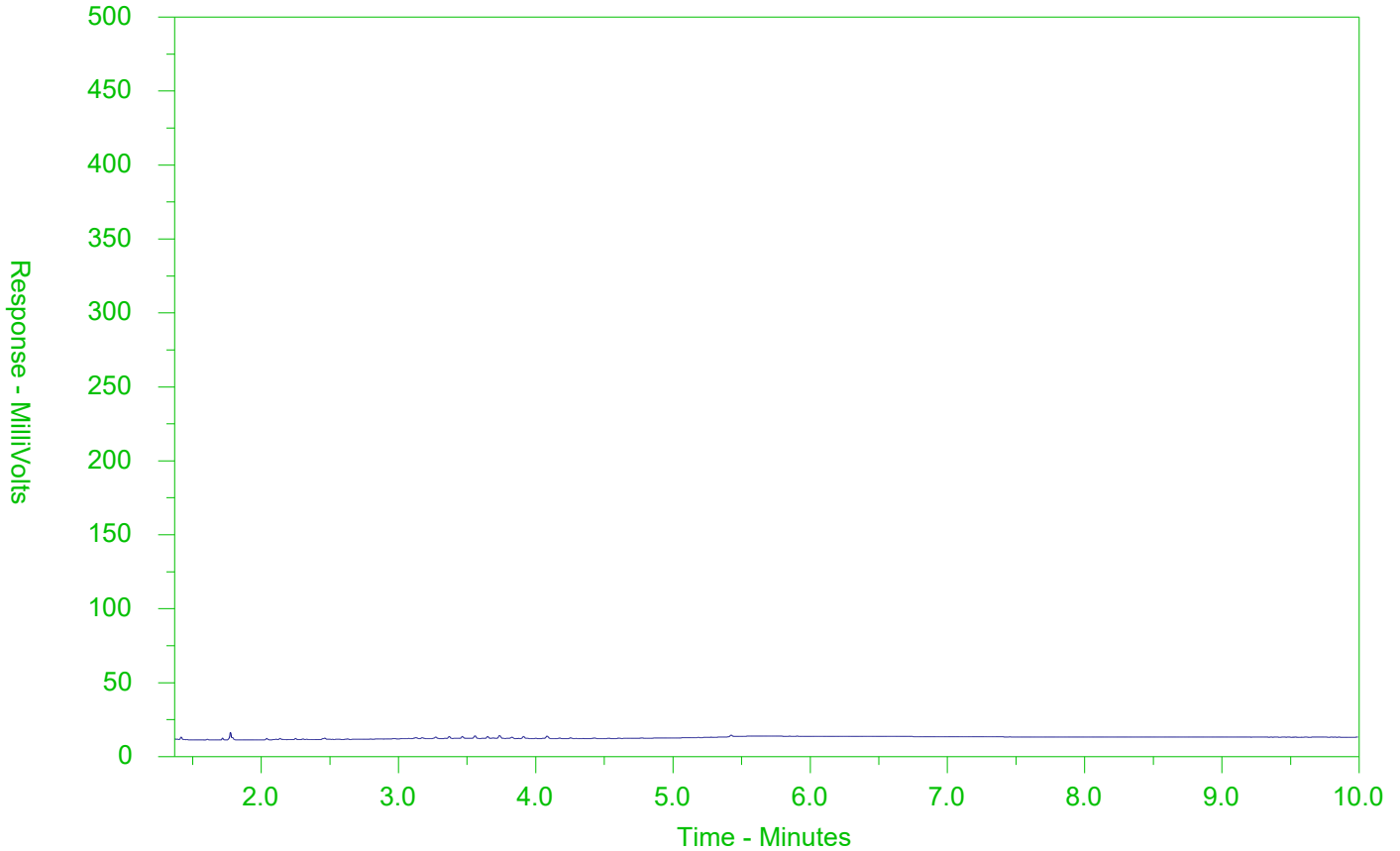
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2413924-1
 Client Sample ID: BH2



← 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

Canada Toll Free: 1 800 668 9878

L2413924-COCF

COC Number: 15 -

Page 1 of 1

[Handwritten Signature]

*EPA TATs with your AM - surcharges will apply

Regular [R] Standard [ST] 1 Business day [E1] Same Day, Weekend or Statutory holiday [E0]

Emergency [EM] 2 day [P2] 3 day [P3] 4 day [P4]

Date and Time Required for all EAP TATs: 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 (FP) below

Number of Containers

Report Format / Dis

Select Report Format: PDF EXCEL EDD (XDRITAL) YES NO
 Quality Control (QC) Report with Report Compare Results to Criteria on Report - provide details below if box checked
 Select Distribution: EMAIL MAIL FAX
 Email 1 or Fax kmakizourn@terraprobe.ca
 Email 2
 Email 3

Invoice Distribution

Select Invoice Distribution: EMAIL MAIL FAX
 Email 1 or Fax ross@terraprobe.ca
 Email 2

Oil and Gas Required Fields (client use)

AFE/Coast Center: PO#
 Major/Minor Code: Routing Code:
 Requisitioner: Location:

ALS Contact:

[Handwritten: L2413924-COCF]

Report To: Contact and company name below will appear on the final report

Company: Terraprobe
 Contact: Kasey Makizourni
 Phone: 905-796-2650
 Street: 11 Indell Lane
 City/Province: Brampton
 Postal Code: L6T 3Y3

Invoice To: Same as Report To YES NO
 Copy of invoice with Report YES NO

Company: Terraprobe
 Contact: Lorena Rossi

Project Information
 ALS Account # / Quote #: Q64281
 Job #: 1-19-0603-42
 PO / AFE:
 LSD:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type
	BH2	04-02-20		GW

ALS Lab Work Order # (lab use only)

Drinking Water (DW) Samples¹ (client use)
 Are samples taken from a Regulated DW System? YES NO
 Are samples for human drinking water use? YES NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SHIPMENT RELEASE (client use)
 Released by: Kasey Makizourni Date: Time: Received by: *[Signature]* Date: Feb 10/20 Time: 9am

Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs
X					X	X	X		

SAMPLE CONDITION AS RECEIVED (lab use only)
 Frozen Ice Packs Cooling Initiated Ice Cubes SIF Observations Yes No
 Custody seal intact Yes No

INITIAL COOLER TEMPERATURES °C: 3.1
 FINAL COOLER TEMPERATURES °C: 6.1

INITIAL SHIPMENT RECEPTION (lab use only) Date: Feb 10/20 Time: 9am
 RECEIVED BY: *[Signature]*
 FINAL SHIPMENT RECEPTION (lab use only) Date: Feb 16/20 Time: 14:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 22-NOV-19
Report Date: 29-NOV-19 12:07 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2386573
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine) (No parameter exceedances)							

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

Dissolved Metals - WATER

Lab ID L2386573-1
Sample Date 20-NOV-19
Sample ID BH3

Guide Limits
#1 #2

Analyte	Unit	#1	#2	FIELD	
Dissolved Metals Filtration Location	-	-		FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	44.9	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	190	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	2.9	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	1.96	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	23000002300000		909000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	6.97	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2386573-1		
		Sample Date	20-NOV-19		
		Sample ID	BH3		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	0.85	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2386573-1
Sample Date 20-NOV-19
Sample ID BH3

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	86.4
Surrogate: 1,4-Difluorobenzene	%	-	-	95.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386573-1
Sample Date 20-NOV-19
Sample ID BH3

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	84.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	69.4

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2386573-1 Sample Date 20-NOV-19 Sample ID BH3				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	95.3
Surrogate: d12-Chrysene	%	-	-	95.3
Surrogate: d8-Naphthalene	%	-	-	93.7
Surrogate: d10-Phenanthrene	%	-	-	98.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2386573-1
Sample Date 20-NOV-19
Sample ID BH3

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	52.3
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	79.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
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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**
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F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L
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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.

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
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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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
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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
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PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
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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)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.</p> <p>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).</p>			
PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082
<p>Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.</p> <p>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).</p>			
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
<p>Liquid samples are analyzed by headspace GC/MSD.</p> <p>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).</p>			
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			

**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: L2386573

Report Date: 29-NOV-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4927488							
WG3225887-4	DUP	WG3225887-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3225887-1	LCS							
F1 (C6-C10)			83.9		%		80-120	28-NOV-19
WG3225887-2	MB							
F1 (C6-C10)			<25		ug/L		25	28-NOV-19
Surrogate: 3,4-Dichlorotoluene			86.4		%		60-140	28-NOV-19
WG3225887-5	MS	WG3225887-3						
F1 (C6-C10)			82.7		%		60-140	28-NOV-19
F2-F4-511-WT		Water						
Batch	R4926959							
WG3227562-2	LCS							
F2 (C10-C16)			84.9		%		70-130	26-NOV-19
F3 (C16-C34)			86.9		%		70-130	26-NOV-19
F4 (C34-C50)			88.3		%		70-130	26-NOV-19
WG3227562-1	MB							
F2 (C10-C16)			<100		ug/L		100	26-NOV-19
F3 (C16-C34)			<250		ug/L		250	26-NOV-19
F4 (C34-C50)			<250		ug/L		250	26-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	26-NOV-19
MET-D-UG/L-MS-WT		Water						
Batch	R4923048							
WG3227021-4	DUP	WG3227021-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Arsenic (As)-Dissolved		0.10	0.11		ug/L	2.9	20	25-NOV-19
Barium (Ba)-Dissolved		59.5	59.5		ug/L	0.1	20	25-NOV-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	25-NOV-19
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	25-NOV-19
Chromium (Cr)-Dissolved		1.28	1.25		ug/L	2.9	20	25-NOV-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Copper (Cu)-Dissolved		1.03	1.02		ug/L	0.4	20	25-NOV-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Molybdenum (Mo)-Dissolved		0.172	0.163		ug/L	5.3	20	25-NOV-19
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	25-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-4 DUP		WG3227021-3						
Selenium (Se)-Dissolved		0.104	0.101		ug/L	3.0	20	25-NOV-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Sodium (Na)-Dissolved		2030	2020		ug/L	0.6	20	25-NOV-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	25-NOV-19
Uranium (U)-Dissolved		0.356	0.353		ug/L	0.9	20	25-NOV-19
Vanadium (V)-Dissolved		1.00	1.01		ug/L	1.3	20	25-NOV-19
Zinc (Zn)-Dissolved		2.4	2.2		ug/L	5.5	20	25-NOV-19
WG3227021-2 LCS								
Antimony (Sb)-Dissolved			99.6		%		80-120	25-NOV-19
Arsenic (As)-Dissolved			99.4		%		80-120	25-NOV-19
Barium (Ba)-Dissolved			102.2		%		80-120	25-NOV-19
Beryllium (Be)-Dissolved			101.2		%		80-120	25-NOV-19
Boron (B)-Dissolved			99.3		%		80-120	25-NOV-19
Cadmium (Cd)-Dissolved			100.3		%		80-120	25-NOV-19
Chromium (Cr)-Dissolved			100.4		%		80-120	25-NOV-19
Cobalt (Co)-Dissolved			99.9		%		80-120	25-NOV-19
Copper (Cu)-Dissolved			100.8		%		80-120	25-NOV-19
Lead (Pb)-Dissolved			99.9		%		80-120	25-NOV-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	25-NOV-19
Nickel (Ni)-Dissolved			99.6		%		80-120	25-NOV-19
Selenium (Se)-Dissolved			98.1		%		80-120	25-NOV-19
Silver (Ag)-Dissolved			100.4		%		80-120	25-NOV-19
Sodium (Na)-Dissolved			101.3		%		80-120	25-NOV-19
Thallium (Tl)-Dissolved			99.95		%		80-120	25-NOV-19
Uranium (U)-Dissolved			99.1		%		80-120	25-NOV-19
Vanadium (V)-Dissolved			100.8		%		80-120	25-NOV-19
Zinc (Zn)-Dissolved			101.2		%		80-120	25-NOV-19
WG3227021-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Boron (B)-Dissolved			<10		ug/L		10	25-NOV-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	25-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-1 MB								
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	25-NOV-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Sodium (Na)-Dissolved			<50		ug/L		50	25-NOV-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	25-NOV-19
WG3227021-5 MS		WG3227021-6						
Antimony (Sb)-Dissolved			102.4		%		70-130	25-NOV-19
Arsenic (As)-Dissolved			108.8		%		70-130	25-NOV-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Beryllium (Be)-Dissolved			107.9		%		70-130	25-NOV-19
Boron (B)-Dissolved			99.2		%		70-130	25-NOV-19
Cadmium (Cd)-Dissolved			104.8		%		70-130	25-NOV-19
Chromium (Cr)-Dissolved			99.0		%		70-130	25-NOV-19
Cobalt (Co)-Dissolved			98.0		%		70-130	25-NOV-19
Copper (Cu)-Dissolved			96.1		%		70-130	25-NOV-19
Lead (Pb)-Dissolved			97.5		%		70-130	25-NOV-19
Molybdenum (Mo)-Dissolved			105.5		%		70-130	25-NOV-19
Nickel (Ni)-Dissolved			95.6		%		70-130	25-NOV-19
Selenium (Se)-Dissolved			117.8		%		70-130	25-NOV-19
Silver (Ag)-Dissolved			98.1		%		70-130	25-NOV-19
Sodium (Na)-Dissolved			97.0		%		70-130	25-NOV-19
Thallium (Tl)-Dissolved			98.1		%		70-130	25-NOV-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Vanadium (V)-Dissolved			102.7		%		70-130	25-NOV-19
Zinc (Zn)-Dissolved			105.4		%		70-130	25-NOV-19
PAH-511-WT	Water							



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4928414							
WG3227562-2	LCS							
1-Methylnaphthalene			84.9		%		50-140	27-NOV-19
2-Methylnaphthalene			78.0		%		50-140	27-NOV-19
Acenaphthene			92.7		%		50-140	27-NOV-19
Acenaphthylene			93.6		%		50-140	27-NOV-19
Anthracene			97.3		%		50-140	27-NOV-19
Benzo(a)anthracene			99.0		%		50-140	27-NOV-19
Benzo(a)pyrene			90.8		%		50-140	27-NOV-19
Benzo(b)fluoranthene			88.2		%		50-140	27-NOV-19
Benzo(g,h,i)perylene			94.8		%		50-140	27-NOV-19
Benzo(k)fluoranthene			91.8		%		50-140	27-NOV-19
Chrysene			96.3		%		50-140	27-NOV-19
Dibenzo(ah)anthracene			89.9		%		50-140	27-NOV-19
Fluoranthene			97.0		%		50-140	27-NOV-19
Fluorene			94.2		%		50-140	27-NOV-19
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	27-NOV-19
Naphthalene			83.0		%		50-140	27-NOV-19
Phenanthrene			98.6		%		50-140	27-NOV-19
Pyrene			97.8		%		50-140	27-NOV-19
WG3227562-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
2-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthylene			<0.020		ug/L		0.02	27-NOV-19
Anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)pyrene			<0.010		ug/L		0.01	27-NOV-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	27-NOV-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Chrysene			<0.020		ug/L		0.02	27-NOV-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	27-NOV-19
Fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Fluorene			<0.020		ug/L		0.02	27-NOV-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	27-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4928414							
WG3227562-1	MB							
Naphthalene			<0.050		ug/L		0.05	27-NOV-19
Phenanthrene			<0.020		ug/L		0.02	27-NOV-19
Pyrene			<0.020		ug/L		0.02	27-NOV-19
Surrogate: d8-Naphthalene			90.1		%		60-140	27-NOV-19
Surrogate: d10-Phenanthrene			97.9		%		60-140	27-NOV-19
Surrogate: d12-Chrysene			93.2		%		60-140	27-NOV-19
Surrogate: d10-Acenaphthene			95.3		%		60-140	27-NOV-19
PCB-511-WT		Water						
Batch	R4925246							
WG3227114-2	LCS							
Aroclor 1242			99.3		%		60-140	26-NOV-19
Aroclor 1248			98.3		%		60-140	26-NOV-19
Aroclor 1254			111.0		%		60-140	26-NOV-19
Aroclor 1260			110.6		%		60-140	26-NOV-19
WG3227114-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1248			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1254			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1260			<0.020		ug/L		0.02	26-NOV-19
Surrogate: Decachlorobiphenyl			80.1		%		50-150	26-NOV-19
Surrogate: Tetrachloro-m-xylene			78.9		%		50-150	26-NOV-19
VOC-511-HS-WT		Water						
Batch	R4927488							
WG3225887-4	DUP	WG3225887-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927488							
WG3225887-4	DUP	WG3225887-3						
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-NOV-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3225887-1	LCS							
1,1,1,2-Tetrachloroethane			90.9		%		70-130	28-NOV-19
1,1,2,2-Tetrachloroethane			89.0		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927488							
WG3225887-1	LCS							
1,1,1-Trichloroethane			96.9		%		70-130	28-NOV-19
1,1,2-Trichloroethane			89.3		%		70-130	28-NOV-19
1,1-Dichloroethane			94.8		%		70-130	28-NOV-19
1,1-Dichloroethylene			94.9		%		70-130	28-NOV-19
1,2-Dibromoethane			88.1		%		70-130	28-NOV-19
1,2-Dichlorobenzene			87.4		%		70-130	28-NOV-19
1,2-Dichloroethane			96.2		%		70-130	28-NOV-19
1,2-Dichloropropane			99.3		%		70-130	28-NOV-19
1,3-Dichlorobenzene			90.2		%		70-130	28-NOV-19
1,4-Dichlorobenzene			90.8		%		70-130	28-NOV-19
Acetone			99.5		%		60-140	28-NOV-19
Benzene			98.6		%		70-130	28-NOV-19
Bromodichloromethane			98.0		%		70-130	28-NOV-19
Bromoform			89.3		%		70-130	28-NOV-19
Bromomethane			89.9		%		60-140	28-NOV-19
Carbon tetrachloride			97.3		%		70-130	28-NOV-19
Chlorobenzene			88.7		%		70-130	28-NOV-19
Chloroform			95.7		%		70-130	28-NOV-19
cis-1,2-Dichloroethylene			93.3		%		70-130	28-NOV-19
cis-1,3-Dichloropropene			101.1		%		70-130	28-NOV-19
Dibromochloromethane			88.7		%		70-130	28-NOV-19
Dichlorodifluoromethane			87.8		%		50-140	28-NOV-19
Ethylbenzene			90.7		%		70-130	28-NOV-19
n-Hexane			92.4		%		70-130	28-NOV-19
m+p-Xylenes			92.1		%		70-130	28-NOV-19
Methyl Ethyl Ketone			94.3		%		60-140	28-NOV-19
Methyl Isobutyl Ketone			90.7		%		60-140	28-NOV-19
Methylene Chloride			94.0		%		70-130	28-NOV-19
MTBE			112.4		%		70-130	28-NOV-19
o-Xylene			90.4		%		70-130	28-NOV-19
Styrene			95.6		%		70-130	28-NOV-19
Tetrachloroethylene			91.3		%		70-130	28-NOV-19
Toluene			89.0		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927488							
WG3225887-1	LCS							
trans-1,2-Dichloroethylene			96.2		%		70-130	28-NOV-19
trans-1,3-Dichloropropene			92.4		%		70-130	28-NOV-19
Trichloroethylene			96.4		%		70-130	28-NOV-19
Trichlorofluoromethane			97.5		%		60-140	28-NOV-19
Vinyl chloride			107.4		%		60-140	28-NOV-19
WG3225887-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dibromoethane			<0.20		ug/L		0.2	28-NOV-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloropropane			<0.50		ug/L		0.5	28-NOV-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Acetone			<30		ug/L		30	28-NOV-19
Benzene			<0.50		ug/L		0.5	28-NOV-19
Bromodichloromethane			<2.0		ug/L		2	28-NOV-19
Bromoform			<5.0		ug/L		5	28-NOV-19
Bromomethane			<0.50		ug/L		0.5	28-NOV-19
Carbon tetrachloride			<0.20		ug/L		0.2	28-NOV-19
Chlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Chloroform			<1.0		ug/L		1	28-NOV-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Dibromochloromethane			<2.0		ug/L		2	28-NOV-19
Dichlorodifluoromethane			<2.0		ug/L		2	28-NOV-19
Ethylbenzene			<0.50		ug/L		0.5	28-NOV-19
n-Hexane			<0.50		ug/L		0.5	28-NOV-19
m+p-Xylenes			<0.40		ug/L		0.4	28-NOV-19
Methyl Ethyl Ketone			<20		ug/L		20	28-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4927488							
WG3225887-2 MB								
Methyl Isobutyl Ketone			<20		ug/L		20	28-NOV-19
Methylene Chloride			<5.0		ug/L		5	28-NOV-19
MTBE			<2.0		ug/L		2	28-NOV-19
o-Xylene			<0.30		ug/L		0.3	28-NOV-19
Styrene			<0.50		ug/L		0.5	28-NOV-19
Tetrachloroethylene			<0.50		ug/L		0.5	28-NOV-19
Toluene			<0.50		ug/L		0.5	28-NOV-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Trichloroethylene			<0.50		ug/L		0.5	28-NOV-19
Trichlorofluoromethane			<5.0		ug/L		5	28-NOV-19
Vinyl chloride			<0.50		ug/L		0.5	28-NOV-19
Surrogate: 1,4-Difluorobenzene			96.7		%		70-130	28-NOV-19
Surrogate: 4-Bromofluorobenzene			91.3		%		70-130	28-NOV-19
WG3225887-5 MS		WG3225887-3						
1,1,1,2-Tetrachloroethane			91.4		%		50-140	28-NOV-19
1,1,2,2-Tetrachloroethane			92.7		%		50-140	28-NOV-19
1,1,1-Trichloroethane			96.8		%		50-140	28-NOV-19
1,1,2-Trichloroethane			91.4		%		50-140	28-NOV-19
1,1-Dichloroethane			96.8		%		50-140	28-NOV-19
1,1-Dichloroethylene			94.2		%		50-140	28-NOV-19
1,2-Dibromoethane			90.5		%		50-140	28-NOV-19
1,2-Dichlorobenzene			87.7		%		50-140	28-NOV-19
1,2-Dichloroethane			100.5		%		50-140	28-NOV-19
1,2-Dichloropropane			101.6		%		50-140	28-NOV-19
1,3-Dichlorobenzene			88.2		%		50-140	28-NOV-19
1,4-Dichlorobenzene			89.5		%		50-140	28-NOV-19
Acetone			109.0		%		50-140	28-NOV-19
Benzene			99.6		%		50-140	28-NOV-19
Bromodichloromethane			101.1		%		50-140	28-NOV-19
Bromoform			92.4		%		50-140	28-NOV-19
Bromomethane			88.7		%		50-140	28-NOV-19
Carbon tetrachloride			96.8		%		50-140	28-NOV-19
Chlorobenzene			88.5		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927488							
WG3225887-5 MS		WG3225887-3						
Chloroform			97.6		%		50-140	28-NOV-19
cis-1,2-Dichloroethylene			95.0		%		50-140	28-NOV-19
cis-1,3-Dichloropropene			99.6		%		50-140	28-NOV-19
Dibromochloromethane			90.7		%		50-140	28-NOV-19
Dichlorodifluoromethane			84.2		%		50-140	28-NOV-19
Ethylbenzene			88.2		%		50-140	28-NOV-19
n-Hexane			90.5		%		50-140	28-NOV-19
m+p-Xylenes			90.1		%		50-140	28-NOV-19
Methyl Ethyl Ketone			93.9		%		50-140	28-NOV-19
Methyl Isobutyl Ketone			96.2		%		50-140	28-NOV-19
Methylene Chloride			96.3		%		50-140	28-NOV-19
MTBE			112.2		%		50-140	28-NOV-19
o-Xylene			88.4		%		50-140	28-NOV-19
Styrene			93.8		%		50-140	28-NOV-19
Tetrachloroethylene			88.5		%		50-140	28-NOV-19
Toluene			87.3		%		50-140	28-NOV-19
trans-1,2-Dichloroethylene			96.0		%		50-140	28-NOV-19
trans-1,3-Dichloropropene			89.9		%		50-140	28-NOV-19
Trichloroethylene			95.5		%		50-140	28-NOV-19
Trichlorofluoromethane			96.2		%		50-140	28-NOV-19
Vinyl chloride			105.0		%		50-140	28-NOV-19

Quality Control Report

Workorder: L2386573

Report Date: 29-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

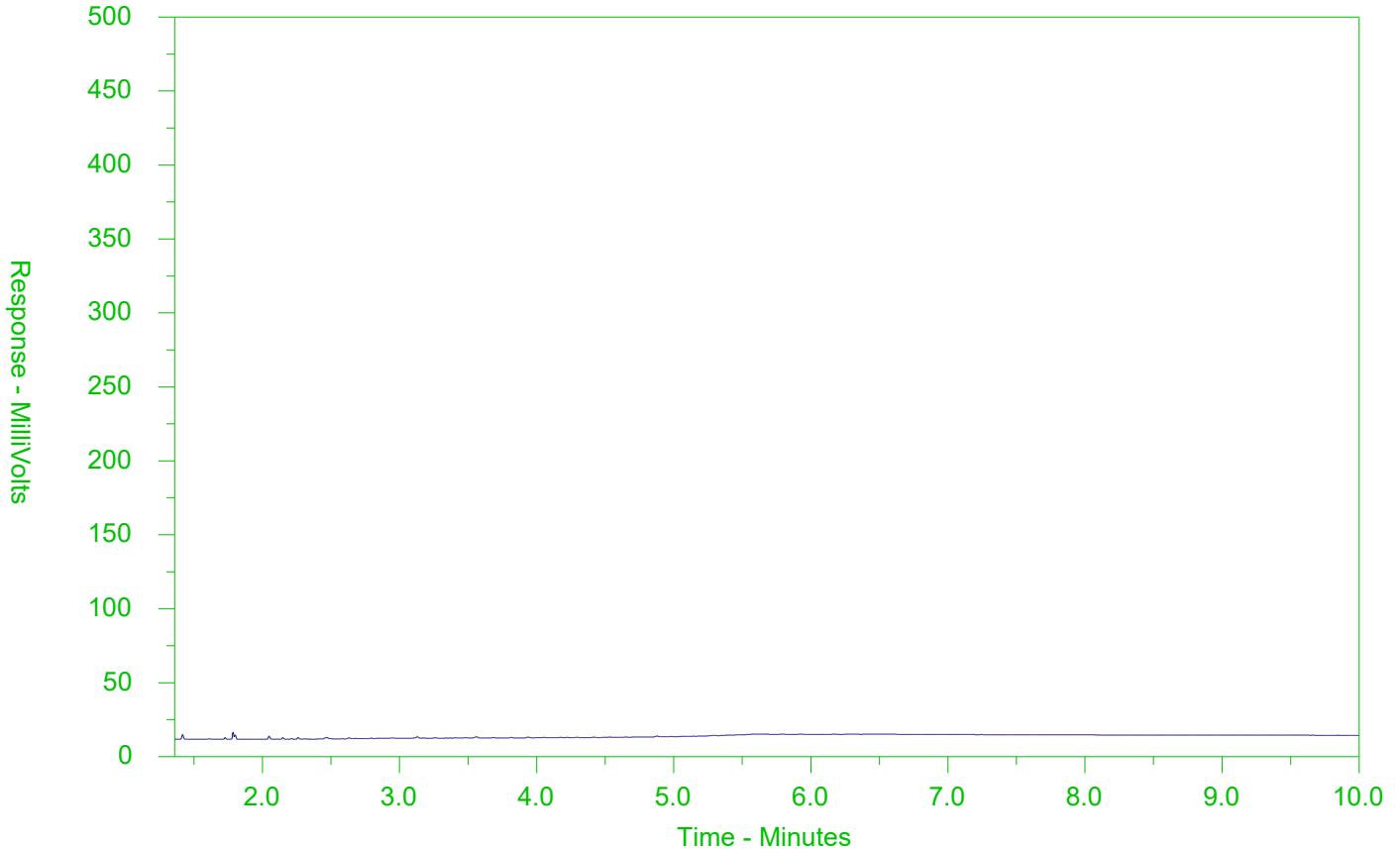
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2386573-1
 Client Sample ID: BH3



← 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



L2386573-COFC

COC Number: 15 -

Page 1 of 1

K

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>					EMERGENCY	1 Business day [E1] <input type="checkbox"/>				
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>						Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>				
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				2 day [P2] <input type="checkbox"/>										
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			Date and Time Required for all E&P TATs:											
City/Province:	Brampton	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.											
Postal Code:	L6T 3Y3	Email 3			Analysis Request											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:		Routing Code:												
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2386573 K	ALS Contact:		Sampler:												
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												
	BH3	20-11-19		GW		X				X	X	X	X		1	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		NECP T3 PPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
					Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C						
					2.3					FINAL COOLER TEMPERATURES °C						
					4.3											
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)											
Released by: Kossay Makhzoumi	Date:	Time:	Received by: <i>K</i>	Date: Nov 22/19	Time: 9am	Received by: <i>K</i>	Date: Nov 21/19	Time: 14:30								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 22-NOV-19
Report Date: 29-NOV-19 12:42 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2386608
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2386608-1	BH4-S	Anions and Nutrients	Chloride (Cl)	3840	2300	mg/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)						
L2386608-1	BH4-S	Anions and Nutrients	Chloride (Cl)	3840	2300	mg/L

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

Physical Tests - WATER

Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	10.1
pH	pH units	-	-	7.06

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.



Anions and Nutrients - WATER

Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	3840 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER


Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	29000	29000	52.6 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	45000	45000	140 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	0.081 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	66	66	2.9 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	25	25	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	0.99 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	490	490	12.9 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	63	63	6.38 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	2300000	2300000	117000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	510	510	0.27 ^{DLHC}
Uranium (U)-Dissolved	ug/L	420	420	13.6 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	250	250	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2386608-1		
		Sample Date	20-NOV-19		
		Sample ID	BH4-S		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	0.83
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	94.9
Surrogate: 1,4-Difluorobenzene	%	-	-	96.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	74.4
Surrogate: 3,4-Dichlorotoluene	%	-	-	82.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386608-1
Sample Date 20-NOV-19
Sample ID BH4-S

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	95.3
Surrogate: d12-Chrysene	%	-	-	97.7
Surrogate: d8-Naphthalene	%	-	-	94.0
Surrogate: d10-Phenanthrene	%	-	-	100.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
-----------	-------------

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**
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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.

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.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
		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).	
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	
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.	

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2386608

Report Date: 29-NOV-19

Page 1 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4922781							
WG3227376-15	DUP	WG3227376-13						
Chloride (Cl)		37.3	37.3		mg/L	0.1	20	25-NOV-19
WG3227376-12	LCS							
Chloride (Cl)			103.7		%		90-110	25-NOV-19
WG3227376-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	25-NOV-19
WG3227376-14	MS	WG3227376-13						
Chloride (Cl)			101.8		%		75-125	25-NOV-19
CN-WAD-R511-WT		Water						
Batch	R4923160							
WG3227493-3	DUP	L2386608-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	25-NOV-19
WG3227493-2	LCS							
Cyanide, Weak Acid Diss			104.5		%		80-120	25-NOV-19
WG3227493-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	25-NOV-19
WG3227493-4	MS	L2386608-1						
Cyanide, Weak Acid Diss			104.2		%		75-125	25-NOV-19
CR-CR6-IC-R511-WT		Water						
Batch	R4923058							
WG3227681-4	DUP	WG3227681-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	25-NOV-19
WG3227681-2	LCS							
Chromium, Hexavalent			104.6		%		80-120	25-NOV-19
WG3227681-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	25-NOV-19
WG3227681-5	MS	WG3227681-3						
Chromium, Hexavalent			103.2		%		70-130	25-NOV-19
EC-R511-WT		Water						
Batch	R4921925							
WG3226527-4	DUP	WG3226527-3						
Conductivity		0.610	0.609		mS/cm	0.2	10	23-NOV-19
WG3226527-2	LCS							
Conductivity			100.3		%		90-110	23-NOV-19
WG3226527-1	MB							
Conductivity			<0.0030		mS/cm		0.003	23-NOV-19
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 2 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
F1 (C6-C10)			107.4		%		80-120	28-NOV-19
WG3229973-2	MB							
F1 (C6-C10)			<25		ug/L		25	28-NOV-19
Surrogate: 3,4-Dichlorotoluene			97.6		%		60-140	28-NOV-19
WG3229973-5	MS	WG3229973-3						
F1 (C6-C10)			76.5		%		60-140	28-NOV-19
F2-F4-511-WT		Water						
Batch	R4926959							
WG3227562-2	LCS							
F2 (C10-C16)			84.9		%		70-130	26-NOV-19
F3 (C16-C34)			86.9		%		70-130	26-NOV-19
F4 (C34-C50)			88.3		%		70-130	26-NOV-19
WG3227562-1	MB							
F2 (C10-C16)			<100		ug/L		100	26-NOV-19
F3 (C16-C34)			<250		ug/L		250	26-NOV-19
F4 (C34-C50)			<250		ug/L		250	26-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	26-NOV-19
HG-D-UG/L-CVAA-WT		Water						
Batch	R4922562							
WG3227388-4	DUP	WG3227388-3						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	25-NOV-19
WG3227388-2	LCS							
Mercury (Hg)-Dissolved			94.0		%		80-120	25-NOV-19
WG3227388-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	25-NOV-19
WG3227388-6	MS	WG3227388-5						
Mercury (Hg)-Dissolved			91.5		%		70-130	25-NOV-19
MET-D-UG/L-MS-WT		Water						
Batch	R4923048							
WG3227021-4	DUP	WG3227021-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Arsenic (As)-Dissolved		0.10	0.11		ug/L	2.9	20	25-NOV-19
Barium (Ba)-Dissolved		59.5	59.5		ug/L	0.1	20	25-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 3 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-4	DUP	WG3227021-3						
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	25-NOV-19
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	25-NOV-19
Chromium (Cr)-Dissolved		1.28	1.25		ug/L	2.9	20	25-NOV-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Copper (Cu)-Dissolved		1.03	1.02		ug/L	0.4	20	25-NOV-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Molybdenum (Mo)-Dissolved		0.172	0.163		ug/L	5.3	20	25-NOV-19
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	25-NOV-19
Selenium (Se)-Dissolved		0.104	0.101		ug/L	3.0	20	25-NOV-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Sodium (Na)-Dissolved		2030	2020		ug/L	0.6	20	25-NOV-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	25-NOV-19
Uranium (U)-Dissolved		0.356	0.353		ug/L	0.9	20	25-NOV-19
Vanadium (V)-Dissolved		1.00	1.01		ug/L	1.3	20	25-NOV-19
Zinc (Zn)-Dissolved		2.4	2.2		ug/L	5.5	20	25-NOV-19
WG3227021-2	LCS							
Antimony (Sb)-Dissolved			99.6		%		80-120	25-NOV-19
Arsenic (As)-Dissolved			99.4		%		80-120	25-NOV-19
Barium (Ba)-Dissolved			102.2		%		80-120	25-NOV-19
Beryllium (Be)-Dissolved			101.2		%		80-120	25-NOV-19
Boron (B)-Dissolved			99.3		%		80-120	25-NOV-19
Cadmium (Cd)-Dissolved			100.3		%		80-120	25-NOV-19
Chromium (Cr)-Dissolved			100.4		%		80-120	25-NOV-19
Cobalt (Co)-Dissolved			99.9		%		80-120	25-NOV-19
Copper (Cu)-Dissolved			100.8		%		80-120	25-NOV-19
Lead (Pb)-Dissolved			99.9		%		80-120	25-NOV-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	25-NOV-19
Nickel (Ni)-Dissolved			99.6		%		80-120	25-NOV-19
Selenium (Se)-Dissolved			98.1		%		80-120	25-NOV-19
Silver (Ag)-Dissolved			100.4		%		80-120	25-NOV-19
Sodium (Na)-Dissolved			101.3		%		80-120	25-NOV-19
Thallium (Tl)-Dissolved			99.95		%		80-120	25-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 4 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-2	LCS							
Uranium (U)-Dissolved			99.1		%		80-120	25-NOV-19
Vanadium (V)-Dissolved			100.8		%		80-120	25-NOV-19
Zinc (Zn)-Dissolved			101.2		%		80-120	25-NOV-19
WG3227021-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Boron (B)-Dissolved			<10		ug/L		10	25-NOV-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	25-NOV-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	25-NOV-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Sodium (Na)-Dissolved			<50		ug/L		50	25-NOV-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	25-NOV-19
WG3227021-5	MS	WG3227021-6						
Antimony (Sb)-Dissolved			102.4		%		70-130	25-NOV-19
Arsenic (As)-Dissolved			108.8		%		70-130	25-NOV-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Beryllium (Be)-Dissolved			107.9		%		70-130	25-NOV-19
Boron (B)-Dissolved			99.2		%		70-130	25-NOV-19
Cadmium (Cd)-Dissolved			104.8		%		70-130	25-NOV-19
Chromium (Cr)-Dissolved			99.0		%		70-130	25-NOV-19
Cobalt (Co)-Dissolved			98.0		%		70-130	25-NOV-19
Copper (Cu)-Dissolved			96.1		%		70-130	25-NOV-19
Lead (Pb)-Dissolved			97.5		%		70-130	25-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 5 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-5	MS	WG3227021-6						
Molybdenum (Mo)-Dissolved			105.5		%		70-130	25-NOV-19
Nickel (Ni)-Dissolved			95.6		%		70-130	25-NOV-19
Selenium (Se)-Dissolved			117.8		%		70-130	25-NOV-19
Silver (Ag)-Dissolved			98.1		%		70-130	25-NOV-19
Sodium (Na)-Dissolved			97.0		%		70-130	25-NOV-19
Thallium (Tl)-Dissolved			98.1		%		70-130	25-NOV-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Vanadium (V)-Dissolved			102.7		%		70-130	25-NOV-19
Zinc (Zn)-Dissolved			105.4		%		70-130	25-NOV-19
PAH-511-WT								
	Water							
Batch	R4928414							
WG3227562-2	LCS							
1-Methylnaphthalene			84.9		%		50-140	27-NOV-19
2-Methylnaphthalene			78.0		%		50-140	27-NOV-19
Acenaphthene			92.7		%		50-140	27-NOV-19
Acenaphthylene			93.6		%		50-140	27-NOV-19
Anthracene			97.3		%		50-140	27-NOV-19
Benzo(a)anthracene			99.0		%		50-140	27-NOV-19
Benzo(a)pyrene			90.8		%		50-140	27-NOV-19
Benzo(b)fluoranthene			88.2		%		50-140	27-NOV-19
Benzo(g,h,i)perylene			94.8		%		50-140	27-NOV-19
Benzo(k)fluoranthene			91.8		%		50-140	27-NOV-19
Chrysene			96.3		%		50-140	27-NOV-19
Dibenzo(ah)anthracene			89.9		%		50-140	27-NOV-19
Fluoranthene			97.0		%		50-140	27-NOV-19
Fluorene			94.2		%		50-140	27-NOV-19
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	27-NOV-19
Naphthalene			83.0		%		50-140	27-NOV-19
Phenanthrene			98.6		%		50-140	27-NOV-19
Pyrene			97.8		%		50-140	27-NOV-19
WG3227562-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
2-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthene			<0.020		ug/L		0.02	27-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 6 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4928414							
WG3227562-1	MB							
Acenaphthylene			<0.020		ug/L		0.02	27-NOV-19
Anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)pyrene			<0.010		ug/L		0.01	27-NOV-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	27-NOV-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Chrysene			<0.020		ug/L		0.02	27-NOV-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	27-NOV-19
Fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Fluorene			<0.020		ug/L		0.02	27-NOV-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	27-NOV-19
Naphthalene			<0.050		ug/L		0.05	27-NOV-19
Phenanthrene			<0.020		ug/L		0.02	27-NOV-19
Pyrene			<0.020		ug/L		0.02	27-NOV-19
Surrogate: d8-Naphthalene			90.1		%		60-140	27-NOV-19
Surrogate: d10-Phenanthrene			97.9		%		60-140	27-NOV-19
Surrogate: d12-Chrysene			93.2		%		60-140	27-NOV-19
Surrogate: d10-Acenaphthene			95.3		%		60-140	27-NOV-19
PH-WT		Water						
Batch	R4921925							
WG3226527-4	DUP	WG3226527-3						
pH		7.30	7.18	J	pH units	0.12	0.2	23-NOV-19
WG3226527-2	LCS							
pH			7.05		pH units		6.9-7.1	23-NOV-19
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 7 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-NOV-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichloroethylene		0.83	0.82		ug/L	1.2	30	28-NOV-19
Trichlorofluoromethane		<5.0	<5.0		ug/L			28-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 8 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
1,1,1,2-Tetrachloroethane			91.9		%		70-130	28-NOV-19
1,1,2,2-Tetrachloroethane			91.6		%		70-130	28-NOV-19
1,1,1-Trichloroethane			95.8		%		70-130	28-NOV-19
1,1,2-Trichloroethane			92.6		%		70-130	28-NOV-19
1,1-Dichloroethane			95.9		%		70-130	28-NOV-19
1,1-Dichloroethylene			92.5		%		70-130	28-NOV-19
1,2-Dibromoethane			92.5		%		70-130	28-NOV-19
1,2-Dichlorobenzene			87.7		%		70-130	28-NOV-19
1,2-Dichloroethane			97.2		%		70-130	28-NOV-19
1,2-Dichloropropane			100.4		%		70-130	28-NOV-19
1,3-Dichlorobenzene			87.2		%		70-130	28-NOV-19
1,4-Dichlorobenzene			86.5		%		70-130	28-NOV-19
Acetone			99.1		%		60-140	28-NOV-19
Benzene			100.4		%		70-130	28-NOV-19
Bromodichloromethane			97.9		%		70-130	28-NOV-19
Bromoform			91.9		%		70-130	28-NOV-19
Bromomethane			85.9		%		60-140	28-NOV-19
Carbon tetrachloride			94.9		%		70-130	28-NOV-19
Chlorobenzene			90.8		%		70-130	28-NOV-19
Chloroform			98.1		%		70-130	28-NOV-19
cis-1,2-Dichloroethylene			95.3		%		70-130	28-NOV-19
cis-1,3-Dichloropropene			98.1		%		70-130	28-NOV-19
Dibromochloromethane			90.8		%		70-130	28-NOV-19
Dichlorodifluoromethane			80.2		%		50-140	28-NOV-19
Ethylbenzene			90.3		%		70-130	28-NOV-19
n-Hexane			89.6		%		70-130	28-NOV-19
m+p-Xylenes			89.8		%		70-130	28-NOV-19
Methyl Ethyl Ketone			94.2		%		60-140	28-NOV-19
Methyl Isobutyl Ketone			89.5		%		60-140	28-NOV-19
Methylene Chloride			96.6		%		70-130	28-NOV-19
MTBE			109.2		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 9 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
o-Xylene			90.4		%		70-130	28-NOV-19
Styrene			90.3		%		70-130	28-NOV-19
Tetrachloroethylene			88.6		%		70-130	28-NOV-19
Toluene			92.0		%		70-130	28-NOV-19
trans-1,2-Dichloroethylene			93.2		%		70-130	28-NOV-19
trans-1,3-Dichloropropene			92.2		%		70-130	28-NOV-19
Trichloroethylene			95.6		%		70-130	28-NOV-19
Trichlorofluoromethane			92.4		%		60-140	28-NOV-19
Vinyl chloride			102.8		%		60-140	28-NOV-19
WG3229973-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dibromoethane			<0.20		ug/L		0.2	28-NOV-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloropropane			<0.50		ug/L		0.5	28-NOV-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Acetone			<30		ug/L		30	28-NOV-19
Benzene			<0.50		ug/L		0.5	28-NOV-19
Bromodichloromethane			<2.0		ug/L		2	28-NOV-19
Bromoform			<5.0		ug/L		5	28-NOV-19
Bromomethane			<0.50		ug/L		0.5	28-NOV-19
Carbon tetrachloride			<0.20		ug/L		0.2	28-NOV-19
Chlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Chloroform			<1.0		ug/L		1	28-NOV-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Dibromochloromethane			<2.0		ug/L		2	28-NOV-19
Dichlorodifluoromethane			<2.0		ug/L		2	28-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 10 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4927602							
WG3229973-2	MB							
Ethylbenzene			<0.50		ug/L		0.5	28-NOV-19
n-Hexane			<0.50		ug/L		0.5	28-NOV-19
m+p-Xylenes			<0.40		ug/L		0.4	28-NOV-19
Methyl Ethyl Ketone			<20		ug/L		20	28-NOV-19
Methyl Isobutyl Ketone			<20		ug/L		20	28-NOV-19
Methylene Chloride			<5.0		ug/L		5	28-NOV-19
MTBE			<2.0		ug/L		2	28-NOV-19
o-Xylene			<0.30		ug/L		0.3	28-NOV-19
Styrene			<0.50		ug/L		0.5	28-NOV-19
Tetrachloroethylene			<0.50		ug/L		0.5	28-NOV-19
Toluene			<0.50		ug/L		0.5	28-NOV-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Trichloroethylene			<0.50		ug/L		0.5	28-NOV-19
Trichlorofluoromethane			<5.0		ug/L		5	28-NOV-19
Vinyl chloride			<0.50		ug/L		0.5	28-NOV-19
Surrogate: 1,4-Difluorobenzene			96.6		%		70-130	28-NOV-19
Surrogate: 4-Bromofluorobenzene			93.1		%		70-130	28-NOV-19
WG3229973-5	MS	WG3229973-3						
1,1,1,2-Tetrachloroethane			91.8		%		50-140	28-NOV-19
1,1,1,2,2-Tetrachloroethane			82.3		%		50-140	28-NOV-19
1,1,1-Trichloroethane			99.0		%		50-140	28-NOV-19
1,1,2-Trichloroethane			88.0		%		50-140	28-NOV-19
1,1-Dichloroethane			100.5		%		50-140	28-NOV-19
1,1-Dichloroethylene			94.4		%		50-140	28-NOV-19
1,2-Dibromoethane			85.8		%		50-140	28-NOV-19
1,2-Dichlorobenzene			88.0		%		50-140	28-NOV-19
1,2-Dichloroethane			92.3		%		50-140	28-NOV-19
1,2-Dichloropropane			98.1		%		50-140	28-NOV-19
1,3-Dichlorobenzene			90.0		%		50-140	28-NOV-19
1,4-Dichlorobenzene			88.3		%		50-140	28-NOV-19
Acetone			92.8		%		50-140	28-NOV-19
Benzene			99.98		%		50-140	28-NOV-19
Bromodichloromethane			95.7		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Page 11 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927602							
WG3229973-5 MS		WG3229973-3						
Bromoform			85.1		%		50-140	28-NOV-19
Bromomethane			80.1		%		50-140	28-NOV-19
Carbon tetrachloride			99.9		%		50-140	28-NOV-19
Chlorobenzene			90.7		%		50-140	28-NOV-19
Chloroform			98.3		%		50-140	28-NOV-19
cis-1,2-Dichloroethylene			94.5		%		50-140	28-NOV-19
cis-1,3-Dichloropropene			90.6		%		50-140	28-NOV-19
Dibromochloromethane			87.1		%		50-140	28-NOV-19
Dichlorodifluoromethane			79.2		%		50-140	28-NOV-19
Ethylbenzene			93.6		%		50-140	28-NOV-19
n-Hexane			91.9		%		50-140	28-NOV-19
m+p-Xylenes			92.6		%		50-140	28-NOV-19
Methyl Ethyl Ketone			75.0		%		50-140	28-NOV-19
Methyl Isobutyl Ketone			76.4		%		50-140	28-NOV-19
Methylene Chloride			94.0		%		50-140	28-NOV-19
MTBE			109.1		%		50-140	28-NOV-19
o-Xylene			92.2		%		50-140	28-NOV-19
Styrene			88.7		%		50-140	28-NOV-19
Tetrachloroethylene			92.9		%		50-140	28-NOV-19
Toluene			94.2		%		50-140	28-NOV-19
trans-1,2-Dichloroethylene			93.6		%		50-140	28-NOV-19
trans-1,3-Dichloropropene			83.4		%		50-140	28-NOV-19
Trichloroethylene			98.1		%		50-140	28-NOV-19
Trichlorofluoromethane			95.2		%		50-140	28-NOV-19
Vinyl chloride			101.7		%		50-140	28-NOV-19

Quality Control Report

Workorder: L2386608

Report Date: 29-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 12 of 12

Contact: Kossay Makhzoumi

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.

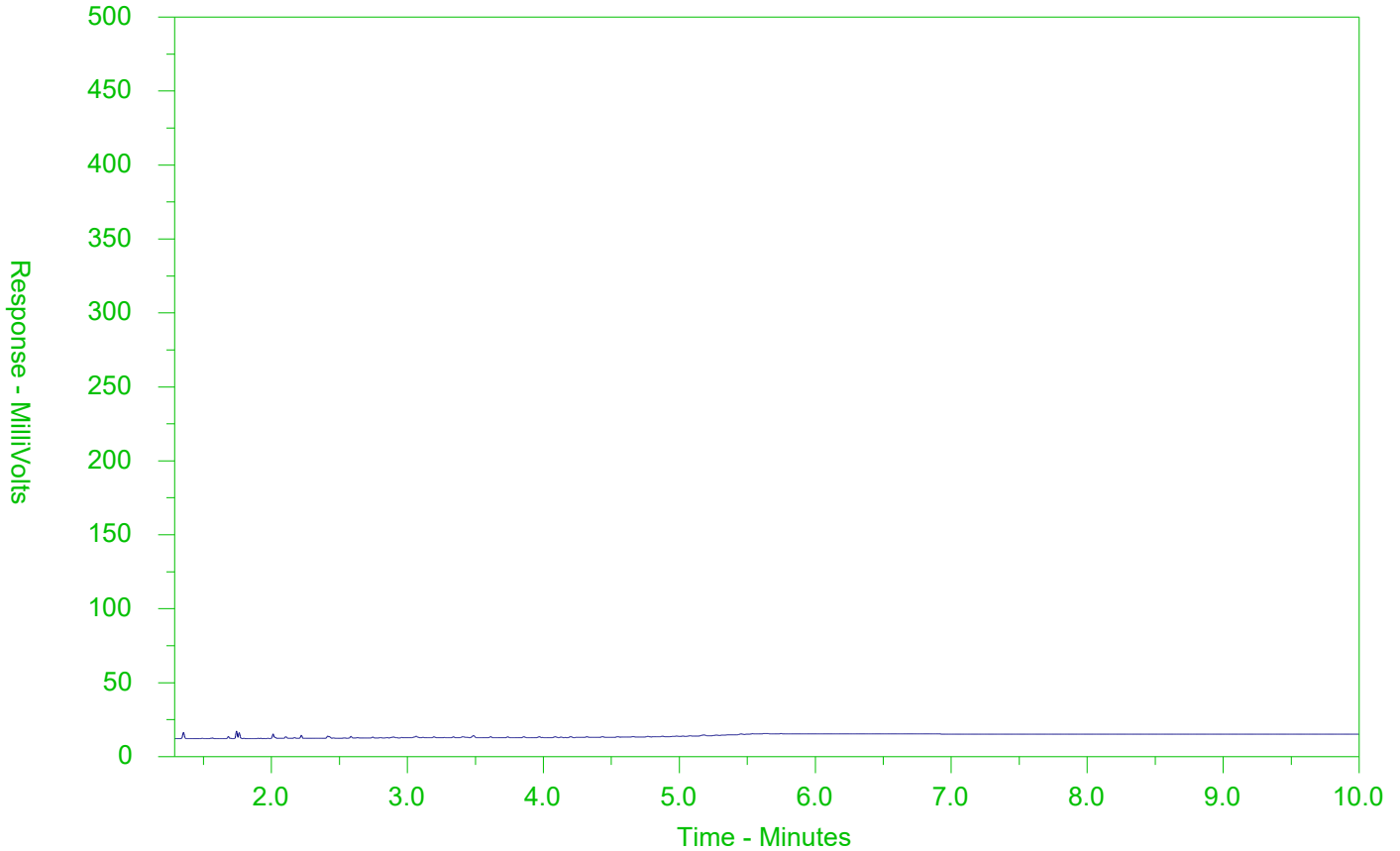
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2386608-1
 Client Sample ID: BH4-S



← 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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 22-NOV-19
Report Date: 29-NOV-19 14:38 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2386649
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2386649-1	BH5	Volatile Organic Compounds	cis-1,2-Dichloroethylene	4.89	1.6	ug/L
			Trichloroethylene	5.59	1.6	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)						
(No parameter exceedances)						

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

Dissolved Metals - WATER

Lab ID L2386649-1
Sample Date 20-NOV-19
Sample ID BH5

Guide Limits
#1 #2

Analyte	Unit	#1	#2	FIELD	
Dissolved Metals Filtration Location	-	-		FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	355	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	140	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	1.00	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	23000002300000		460000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	1.76	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2386649-1		
		Sample Date	20-NOV-19		
		Sample ID	BH5		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	3.56	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	4.89	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2386649-1
Sample Date 20-NOV-19
Sample ID BH5

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	5.59
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	94.8
Surrogate: 1,4-Difluorobenzene	%	-	-	97.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386649-1
Sample Date 20-NOV-19
Sample ID BH5

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	83.0
Surrogate: 3,4-Dichlorotoluene	%	-	-	62.2

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2386649-1 Sample Date 20-NOV-19 Sample ID BH5				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	0.023
Surrogate: d10-Acenaphthene	%	-	-	93.9
Surrogate: d12-Chrysene	%	-	-	94.5
Surrogate: d8-Naphthalene	%	-	-	92.1
Surrogate: d10-Phenanthrene	%	-	-	99.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2386649-1
Sample Date 20-NOV-19
Sample ID BH5

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1248	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1254	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1260	ug/L	-	-	<0.040 ^{DLM}
Surrogate: Decachlorobiphenyl	%	-	-	43.9 ^{RRR}
Total PCBs	ug/L	7.8	15	<0.080 ^{DLM}
Surrogate: Tetrachloro-m-xylene	%	-	-	81.8

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comment:
L2386649-1	Water	Note: RRR: Surrogate recovery marginally below ALS DQO. DL's raised 2x.	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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.

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
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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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L) EPA 200.8	
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The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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
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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).

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
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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: L2386649

Report Date: 29-NOV-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
F1 (C6-C10)			107.4		%		80-120	28-NOV-19
WG3229973-2	MB							
F1 (C6-C10)			<25		ug/L		25	28-NOV-19
Surrogate: 3,4-Dichlorotoluene			97.6		%		60-140	28-NOV-19
WG3229973-5	MS	WG3229973-3						
F1 (C6-C10)			76.5		%		60-140	28-NOV-19
F2-F4-511-WT		Water						
Batch	R4926959							
WG3227562-2	LCS							
F2 (C10-C16)			84.9		%		70-130	26-NOV-19
F3 (C16-C34)			86.9		%		70-130	26-NOV-19
F4 (C34-C50)			88.3		%		70-130	26-NOV-19
WG3227562-1	MB							
F2 (C10-C16)			<100		ug/L		100	26-NOV-19
F3 (C16-C34)			<250		ug/L		250	26-NOV-19
F4 (C34-C50)			<250		ug/L		250	26-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	26-NOV-19
MET-D-UG/L-MS-WT		Water						
Batch	R4923048							
WG3227021-4	DUP	WG3227021-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Arsenic (As)-Dissolved		0.10	0.11		ug/L	2.9	20	25-NOV-19
Barium (Ba)-Dissolved		59.5	59.5		ug/L	0.1	20	25-NOV-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	25-NOV-19
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	25-NOV-19
Chromium (Cr)-Dissolved		1.28	1.25		ug/L	2.9	20	25-NOV-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Copper (Cu)-Dissolved		1.03	1.02		ug/L	0.4	20	25-NOV-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Molybdenum (Mo)-Dissolved		0.172	0.163		ug/L	5.3	20	25-NOV-19
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	25-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-4 DUP		WG3227021-3						
Selenium (Se)-Dissolved		0.104	0.101		ug/L	3.0	20	25-NOV-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Sodium (Na)-Dissolved		2030	2020		ug/L	0.6	20	25-NOV-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	25-NOV-19
Uranium (U)-Dissolved		0.356	0.353		ug/L	0.9	20	25-NOV-19
Vanadium (V)-Dissolved		1.00	1.01		ug/L	1.3	20	25-NOV-19
Zinc (Zn)-Dissolved		2.4	2.2		ug/L	5.5	20	25-NOV-19
WG3227021-2 LCS								
Antimony (Sb)-Dissolved			99.6		%		80-120	25-NOV-19
Arsenic (As)-Dissolved			99.4		%		80-120	25-NOV-19
Barium (Ba)-Dissolved			102.2		%		80-120	25-NOV-19
Beryllium (Be)-Dissolved			101.2		%		80-120	25-NOV-19
Boron (B)-Dissolved			99.3		%		80-120	25-NOV-19
Cadmium (Cd)-Dissolved			100.3		%		80-120	25-NOV-19
Chromium (Cr)-Dissolved			100.4		%		80-120	25-NOV-19
Cobalt (Co)-Dissolved			99.9		%		80-120	25-NOV-19
Copper (Cu)-Dissolved			100.8		%		80-120	25-NOV-19
Lead (Pb)-Dissolved			99.9		%		80-120	25-NOV-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	25-NOV-19
Nickel (Ni)-Dissolved			99.6		%		80-120	25-NOV-19
Selenium (Se)-Dissolved			98.1		%		80-120	25-NOV-19
Silver (Ag)-Dissolved			100.4		%		80-120	25-NOV-19
Sodium (Na)-Dissolved			101.3		%		80-120	25-NOV-19
Thallium (Tl)-Dissolved			99.95		%		80-120	25-NOV-19
Uranium (U)-Dissolved			99.1		%		80-120	25-NOV-19
Vanadium (V)-Dissolved			100.8		%		80-120	25-NOV-19
Zinc (Zn)-Dissolved			101.2		%		80-120	25-NOV-19
WG3227021-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Boron (B)-Dissolved			<10		ug/L		10	25-NOV-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	25-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-1	MB							
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	25-NOV-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Sodium (Na)-Dissolved			<50		ug/L		50	25-NOV-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	25-NOV-19
WG3227021-5	MS	WG3227021-6						
Antimony (Sb)-Dissolved			102.4		%		70-130	25-NOV-19
Arsenic (As)-Dissolved			108.8		%		70-130	25-NOV-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Beryllium (Be)-Dissolved			107.9		%		70-130	25-NOV-19
Boron (B)-Dissolved			99.2		%		70-130	25-NOV-19
Cadmium (Cd)-Dissolved			104.8		%		70-130	25-NOV-19
Chromium (Cr)-Dissolved			99.0		%		70-130	25-NOV-19
Cobalt (Co)-Dissolved			98.0		%		70-130	25-NOV-19
Copper (Cu)-Dissolved			96.1		%		70-130	25-NOV-19
Lead (Pb)-Dissolved			97.5		%		70-130	25-NOV-19
Molybdenum (Mo)-Dissolved			105.5		%		70-130	25-NOV-19
Nickel (Ni)-Dissolved			95.6		%		70-130	25-NOV-19
Selenium (Se)-Dissolved			117.8		%		70-130	25-NOV-19
Silver (Ag)-Dissolved			98.1		%		70-130	25-NOV-19
Sodium (Na)-Dissolved			97.0		%		70-130	25-NOV-19
Thallium (Tl)-Dissolved			98.1		%		70-130	25-NOV-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Vanadium (V)-Dissolved			102.7		%		70-130	25-NOV-19
Zinc (Zn)-Dissolved			105.4		%		70-130	25-NOV-19
PAH-511-WT	Water							



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4928414							
WG3227562-2	LCS							
1-Methylnaphthalene			84.9		%		50-140	27-NOV-19
2-Methylnaphthalene			78.0		%		50-140	27-NOV-19
Acenaphthene			92.7		%		50-140	27-NOV-19
Acenaphthylene			93.6		%		50-140	27-NOV-19
Anthracene			97.3		%		50-140	27-NOV-19
Benzo(a)anthracene			99.0		%		50-140	27-NOV-19
Benzo(a)pyrene			90.8		%		50-140	27-NOV-19
Benzo(b)fluoranthene			88.2		%		50-140	27-NOV-19
Benzo(g,h,i)perylene			94.8		%		50-140	27-NOV-19
Benzo(k)fluoranthene			91.8		%		50-140	27-NOV-19
Chrysene			96.3		%		50-140	27-NOV-19
Dibenzo(ah)anthracene			89.9		%		50-140	27-NOV-19
Fluoranthene			97.0		%		50-140	27-NOV-19
Fluorene			94.2		%		50-140	27-NOV-19
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	27-NOV-19
Naphthalene			83.0		%		50-140	27-NOV-19
Phenanthrene			98.6		%		50-140	27-NOV-19
Pyrene			97.8		%		50-140	27-NOV-19
WG3227562-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
2-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthylene			<0.020		ug/L		0.02	27-NOV-19
Anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)pyrene			<0.010		ug/L		0.01	27-NOV-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	27-NOV-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Chrysene			<0.020		ug/L		0.02	27-NOV-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	27-NOV-19
Fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Fluorene			<0.020		ug/L		0.02	27-NOV-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	27-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4928414							
WG3227562-1	MB							
Naphthalene			<0.050		ug/L		0.05	27-NOV-19
Phenanthrene			<0.020		ug/L		0.02	27-NOV-19
Pyrene			<0.020		ug/L		0.02	27-NOV-19
Surrogate: d8-Naphthalene			90.1		%		60-140	27-NOV-19
Surrogate: d10-Phenanthrene			97.9		%		60-140	27-NOV-19
Surrogate: d12-Chrysene			93.2		%		60-140	27-NOV-19
Surrogate: d10-Acenaphthene			95.3		%		60-140	27-NOV-19
PCB-511-WT		Water						
Batch	R4925246							
WG3227114-2	LCS							
Aroclor 1242			99.3		%		60-140	26-NOV-19
Aroclor 1248			98.3		%		60-140	26-NOV-19
Aroclor 1254			111.0		%		60-140	26-NOV-19
Aroclor 1260			110.6		%		60-140	26-NOV-19
WG3227114-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1248			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1254			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1260			<0.020		ug/L		0.02	26-NOV-19
Surrogate: Decachlorobiphenyl			80.1		%		50-150	26-NOV-19
Surrogate: Tetrachloro-m-xylene			78.9		%		50-150	26-NOV-19
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-NOV-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichloroethylene		0.83	0.82		ug/L	1.2	30	28-NOV-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
1,1,1,2-Tetrachloroethane			91.9		%		70-130	28-NOV-19
1,1,2,2-Tetrachloroethane			91.6		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
1,1,1-Trichloroethane			95.8		%		70-130	28-NOV-19
1,1,2-Trichloroethane			92.6		%		70-130	28-NOV-19
1,1-Dichloroethane			95.9		%		70-130	28-NOV-19
1,1-Dichloroethylene			92.5		%		70-130	28-NOV-19
1,2-Dibromoethane			92.5		%		70-130	28-NOV-19
1,2-Dichlorobenzene			87.7		%		70-130	28-NOV-19
1,2-Dichloroethane			97.2		%		70-130	28-NOV-19
1,2-Dichloropropane			100.4		%		70-130	28-NOV-19
1,3-Dichlorobenzene			87.2		%		70-130	28-NOV-19
1,4-Dichlorobenzene			86.5		%		70-130	28-NOV-19
Acetone			99.1		%		60-140	28-NOV-19
Benzene			100.4		%		70-130	28-NOV-19
Bromodichloromethane			97.9		%		70-130	28-NOV-19
Bromoform			91.9		%		70-130	28-NOV-19
Bromomethane			85.9		%		60-140	28-NOV-19
Carbon tetrachloride			94.9		%		70-130	28-NOV-19
Chlorobenzene			90.8		%		70-130	28-NOV-19
Chloroform			98.1		%		70-130	28-NOV-19
cis-1,2-Dichloroethylene			95.3		%		70-130	28-NOV-19
cis-1,3-Dichloropropene			98.1		%		70-130	28-NOV-19
Dibromochloromethane			90.8		%		70-130	28-NOV-19
Dichlorodifluoromethane			80.2		%		50-140	28-NOV-19
Ethylbenzene			90.3		%		70-130	28-NOV-19
n-Hexane			89.6		%		70-130	28-NOV-19
m+p-Xylenes			89.8		%		70-130	28-NOV-19
Methyl Ethyl Ketone			94.2		%		60-140	28-NOV-19
Methyl Isobutyl Ketone			89.5		%		60-140	28-NOV-19
Methylene Chloride			96.6		%		70-130	28-NOV-19
MTBE			109.2		%		70-130	28-NOV-19
o-Xylene			90.4		%		70-130	28-NOV-19
Styrene			90.3		%		70-130	28-NOV-19
Tetrachloroethylene			88.6		%		70-130	28-NOV-19
Toluene			92.0		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
trans-1,2-Dichloroethylene			93.2		%		70-130	28-NOV-19
trans-1,3-Dichloropropene			92.2		%		70-130	28-NOV-19
Trichloroethylene			95.6		%		70-130	28-NOV-19
Trichlorofluoromethane			92.4		%		60-140	28-NOV-19
Vinyl chloride			102.8		%		60-140	28-NOV-19
WG3229973-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dibromoethane			<0.20		ug/L		0.2	28-NOV-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloropropane			<0.50		ug/L		0.5	28-NOV-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Acetone			<30		ug/L		30	28-NOV-19
Benzene			<0.50		ug/L		0.5	28-NOV-19
Bromodichloromethane			<2.0		ug/L		2	28-NOV-19
Bromoform			<5.0		ug/L		5	28-NOV-19
Bromomethane			<0.50		ug/L		0.5	28-NOV-19
Carbon tetrachloride			<0.20		ug/L		0.2	28-NOV-19
Chlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Chloroform			<1.0		ug/L		1	28-NOV-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Dibromochloromethane			<2.0		ug/L		2	28-NOV-19
Dichlorodifluoromethane			<2.0		ug/L		2	28-NOV-19
Ethylbenzene			<0.50		ug/L		0.5	28-NOV-19
n-Hexane			<0.50		ug/L		0.5	28-NOV-19
m+p-Xylenes			<0.40		ug/L		0.4	28-NOV-19
Methyl Ethyl Ketone			<20		ug/L		20	28-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-2 MB								
Methyl Isobutyl Ketone			<20		ug/L		20	28-NOV-19
Methylene Chloride			<5.0		ug/L		5	28-NOV-19
MTBE			<2.0		ug/L		2	28-NOV-19
o-Xylene			<0.30		ug/L		0.3	28-NOV-19
Styrene			<0.50		ug/L		0.5	28-NOV-19
Tetrachloroethylene			<0.50		ug/L		0.5	28-NOV-19
Toluene			<0.50		ug/L		0.5	28-NOV-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Trichloroethylene			<0.50		ug/L		0.5	28-NOV-19
Trichlorofluoromethane			<5.0		ug/L		5	28-NOV-19
Vinyl chloride			<0.50		ug/L		0.5	28-NOV-19
Surrogate: 1,4-Difluorobenzene			96.6		%		70-130	28-NOV-19
Surrogate: 4-Bromofluorobenzene			93.1		%		70-130	28-NOV-19
WG3229973-5 MS		WG3229973-3						
1,1,1,2-Tetrachloroethane			91.8		%		50-140	28-NOV-19
1,1,1,2-Tetrachloroethane			82.3		%		50-140	28-NOV-19
1,1,1-Trichloroethane			99.0		%		50-140	28-NOV-19
1,1,2-Trichloroethane			88.0		%		50-140	28-NOV-19
1,1-Dichloroethane			100.5		%		50-140	28-NOV-19
1,1-Dichloroethylene			94.4		%		50-140	28-NOV-19
1,2-Dibromoethane			85.8		%		50-140	28-NOV-19
1,2-Dichlorobenzene			88.0		%		50-140	28-NOV-19
1,2-Dichloroethane			92.3		%		50-140	28-NOV-19
1,2-Dichloropropane			98.1		%		50-140	28-NOV-19
1,3-Dichlorobenzene			90.0		%		50-140	28-NOV-19
1,4-Dichlorobenzene			88.3		%		50-140	28-NOV-19
Acetone			92.8		%		50-140	28-NOV-19
Benzene			99.98		%		50-140	28-NOV-19
Bromodichloromethane			95.7		%		50-140	28-NOV-19
Bromoform			85.1		%		50-140	28-NOV-19
Bromomethane			80.1		%		50-140	28-NOV-19
Carbon tetrachloride			99.9		%		50-140	28-NOV-19
Chlorobenzene			90.7		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927602							
WG3229973-5 MS		WG3229973-3						
Chloroform			98.3		%		50-140	28-NOV-19
cis-1,2-Dichloroethylene			94.5		%		50-140	28-NOV-19
cis-1,3-Dichloropropene			90.6		%		50-140	28-NOV-19
Dibromochloromethane			87.1		%		50-140	28-NOV-19
Dichlorodifluoromethane			79.2		%		50-140	28-NOV-19
Ethylbenzene			93.6		%		50-140	28-NOV-19
n-Hexane			91.9		%		50-140	28-NOV-19
m+p-Xylenes			92.6		%		50-140	28-NOV-19
Methyl Ethyl Ketone			75.0		%		50-140	28-NOV-19
Methyl Isobutyl Ketone			76.4		%		50-140	28-NOV-19
Methylene Chloride			94.0		%		50-140	28-NOV-19
MTBE			109.1		%		50-140	28-NOV-19
o-Xylene			92.2		%		50-140	28-NOV-19
Styrene			88.7		%		50-140	28-NOV-19
Tetrachloroethylene			92.9		%		50-140	28-NOV-19
Toluene			94.2		%		50-140	28-NOV-19
trans-1,2-Dichloroethylene			93.6		%		50-140	28-NOV-19
trans-1,3-Dichloropropene			83.4		%		50-140	28-NOV-19
Trichloroethylene			98.1		%		50-140	28-NOV-19
Trichlorofluoromethane			95.2		%		50-140	28-NOV-19
Vinyl chloride			101.7		%		50-140	28-NOV-19

Quality Control Report

Workorder: L2386649

Report Date: 29-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

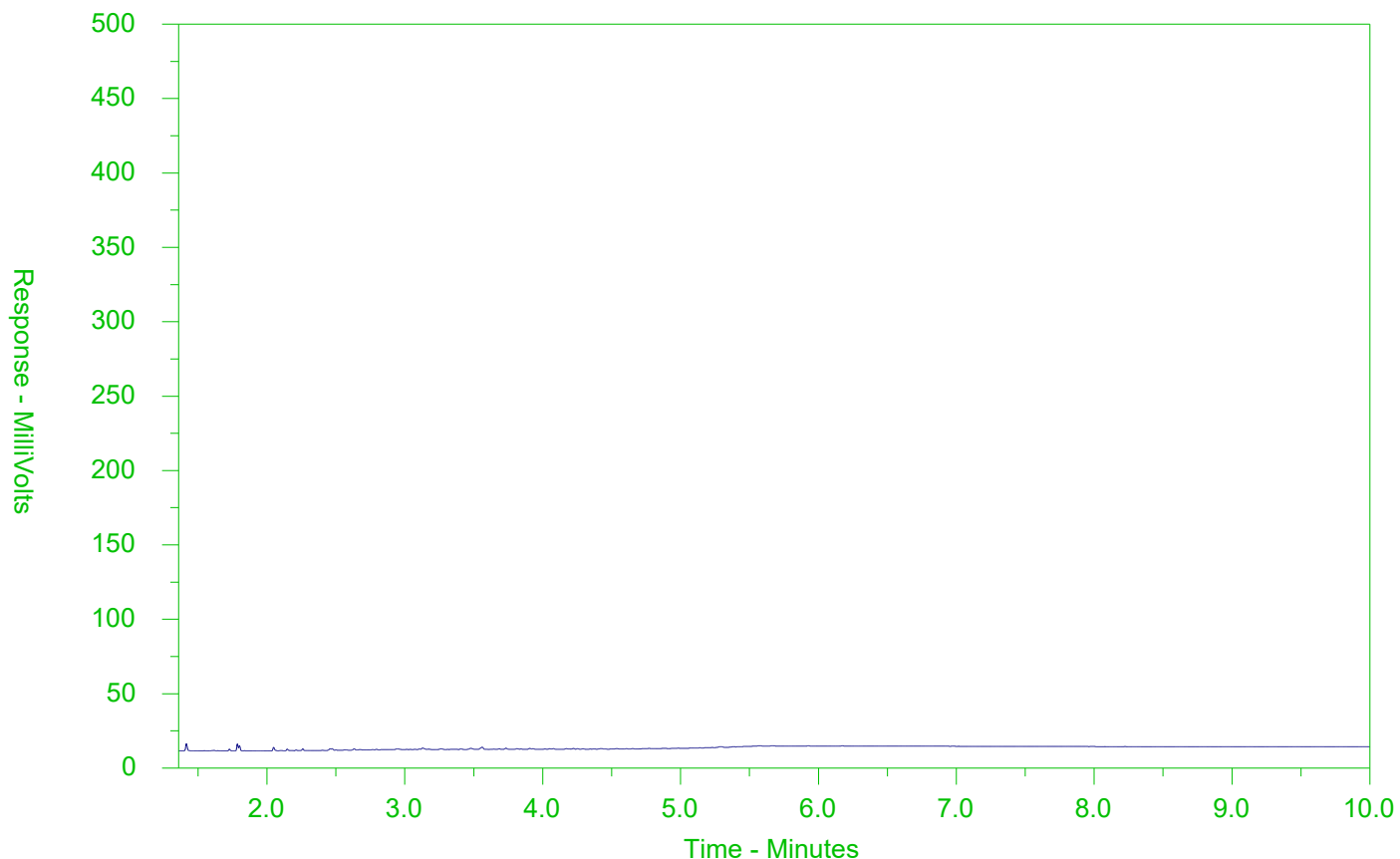
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2386649-1
 Client Sample ID: BH5



← 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



COC Number: 15 -

L2386649-COFC

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																				
Company: Terraprobe		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																				
Contact: Kossay Makhzoumi		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>			EMERGENCY	1 Business day [E1] <input type="checkbox"/>															
Phone: 905-796-2650		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>															
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:																				
Street: 11 Indell Lane		Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																				
City/Province: Brampton		Email 2			Analysis Request																				
Postal Code: L6T 3Y3		Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																				
Invoice To		Invoice Distribution			Number of Containers																				
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																							
Company: Terraprobe		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#		Metals and Inorganics		Metals		Hydride Forming Metals		EC		SAR		PAH		VOC		PHC		OC Pesticides		PCBs	
Job #: 1-19-0603-42		Major/Minor Code:		Routing Code:																					
PO / AFE:		Requisitioner:		Location:		Metals		Metals		Hydride Forming Metals		EC		SAR		PAH		VOC		PHC		OC Pesticides		PCBs	
LSD:		ALS Contact:		Sampler:																					
ALS Lab Work Order # (lab use only) L2386649						Metals		Metals		Hydride Forming Metals		EC		SAR		PAH		VOC		PHC		OC Pesticides		PCBs	
ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)																					
		BHS		20-11-19				GW																	
				</																					



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 22-NOV-19
Report Date: 29-NOV-19 13:38 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2386645
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2386645-1	BH6	Volatile Organic Compounds	cis-1,2-Dichloroethylene	4.61	1.6	ug/L
			Trichloroethylene	23.9	1.6	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)						
L2386645-1	BH6	Volatile Organic Compounds	Trichloroethylene	23.9	17	ug/L

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

Dissolved Metals - WATER

		Lab ID	L2386645-1		
		Sample Date	20-NOV-19		
		Sample ID	BH6		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Metals Filtration Location		-	-	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	44.3	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	190	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	2.42	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	23000000	23000000	696000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	1.80	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2386645-1		
		Sample Date	20-NOV-19		
		Sample ID	BH6		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	6.27	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	0.57	
cis-1,2-Dichloroethylene	ug/L	1.6	17	4.61	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2386645-1
Sample Date 20-NOV-19
Sample ID BH6

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	23.9
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	94.2
Surrogate: 1,4-Difluorobenzene	%	-	-	95.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386645-1
Sample Date 20-NOV-19
Sample ID BH6

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	75.5
Surrogate: 3,4-Dichlorotoluene	%	-	-	74.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2386645-1 Sample Date 20-NOV-19 Sample ID BH6				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	92.2
Surrogate: d12-Chrysene	%	-	-	94.6
Surrogate: d8-Naphthalene	%	-	-	90.1
Surrogate: d10-Phenanthrene	%	-	-	97.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2386645-1
Sample Date 20-NOV-19
Sample ID BH6

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1248	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1254	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1260	ug/L	-	-	<0.040 ^{DLM}
Surrogate: Decachlorobiphenyl	%	-	-	46.5 ^{RRR}
Total PCBs	ug/L	7.8	15	<0.080 ^{DLM}
Surrogate: Tetrachloro-m-xylene	%	-	-	67.9

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comment:
L2386645-1	Water	Note: RRR: Surrogate recovery marginally below ALS DQO. DL's raised 2x.	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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.

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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L) EPA 200.8	
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The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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
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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).

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

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: L2386645

Report Date: 29-NOV-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
F1 (C6-C10)			107.4		%		80-120	28-NOV-19
WG3229973-2	MB							
F1 (C6-C10)			<25		ug/L		25	28-NOV-19
Surrogate: 3,4-Dichlorotoluene			97.6		%		60-140	28-NOV-19
WG3229973-5	MS	WG3229973-3						
F1 (C6-C10)			76.5		%		60-140	28-NOV-19
F2-F4-511-WT		Water						
Batch	R4926959							
WG3227562-2	LCS							
F2 (C10-C16)			84.9		%		70-130	26-NOV-19
F3 (C16-C34)			86.9		%		70-130	26-NOV-19
F4 (C34-C50)			88.3		%		70-130	26-NOV-19
WG3227562-1	MB							
F2 (C10-C16)			<100		ug/L		100	26-NOV-19
F3 (C16-C34)			<250		ug/L		250	26-NOV-19
F4 (C34-C50)			<250		ug/L		250	26-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	26-NOV-19
MET-D-UG/L-MS-WT		Water						
Batch	R4923048							
WG3227021-4	DUP	WG3227021-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Arsenic (As)-Dissolved		0.10	0.11		ug/L	2.9	20	25-NOV-19
Barium (Ba)-Dissolved		59.5	59.5		ug/L	0.1	20	25-NOV-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	25-NOV-19
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	25-NOV-19
Chromium (Cr)-Dissolved		1.28	1.25		ug/L	2.9	20	25-NOV-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Copper (Cu)-Dissolved		1.03	1.02		ug/L	0.4	20	25-NOV-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Molybdenum (Mo)-Dissolved		0.172	0.163		ug/L	5.3	20	25-NOV-19
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	25-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-4 DUP		WG3227021-3						
Selenium (Se)-Dissolved		0.104	0.101		ug/L	3.0	20	25-NOV-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Sodium (Na)-Dissolved		2030	2020		ug/L	0.6	20	25-NOV-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	25-NOV-19
Uranium (U)-Dissolved		0.356	0.353		ug/L	0.9	20	25-NOV-19
Vanadium (V)-Dissolved		1.00	1.01		ug/L	1.3	20	25-NOV-19
Zinc (Zn)-Dissolved		2.4	2.2		ug/L	5.5	20	25-NOV-19
WG3227021-2 LCS								
Antimony (Sb)-Dissolved			99.6		%		80-120	25-NOV-19
Arsenic (As)-Dissolved			99.4		%		80-120	25-NOV-19
Barium (Ba)-Dissolved			102.2		%		80-120	25-NOV-19
Beryllium (Be)-Dissolved			101.2		%		80-120	25-NOV-19
Boron (B)-Dissolved			99.3		%		80-120	25-NOV-19
Cadmium (Cd)-Dissolved			100.3		%		80-120	25-NOV-19
Chromium (Cr)-Dissolved			100.4		%		80-120	25-NOV-19
Cobalt (Co)-Dissolved			99.9		%		80-120	25-NOV-19
Copper (Cu)-Dissolved			100.8		%		80-120	25-NOV-19
Lead (Pb)-Dissolved			99.9		%		80-120	25-NOV-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	25-NOV-19
Nickel (Ni)-Dissolved			99.6		%		80-120	25-NOV-19
Selenium (Se)-Dissolved			98.1		%		80-120	25-NOV-19
Silver (Ag)-Dissolved			100.4		%		80-120	25-NOV-19
Sodium (Na)-Dissolved			101.3		%		80-120	25-NOV-19
Thallium (Tl)-Dissolved			99.95		%		80-120	25-NOV-19
Uranium (U)-Dissolved			99.1		%		80-120	25-NOV-19
Vanadium (V)-Dissolved			100.8		%		80-120	25-NOV-19
Zinc (Zn)-Dissolved			101.2		%		80-120	25-NOV-19
WG3227021-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Boron (B)-Dissolved			<10		ug/L		10	25-NOV-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	25-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-1	MB							
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	25-NOV-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Sodium (Na)-Dissolved			<50		ug/L		50	25-NOV-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	25-NOV-19
WG3227021-5	MS	WG3227021-6						
Antimony (Sb)-Dissolved			102.4		%		70-130	25-NOV-19
Arsenic (As)-Dissolved			108.8		%		70-130	25-NOV-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Beryllium (Be)-Dissolved			107.9		%		70-130	25-NOV-19
Boron (B)-Dissolved			99.2		%		70-130	25-NOV-19
Cadmium (Cd)-Dissolved			104.8		%		70-130	25-NOV-19
Chromium (Cr)-Dissolved			99.0		%		70-130	25-NOV-19
Cobalt (Co)-Dissolved			98.0		%		70-130	25-NOV-19
Copper (Cu)-Dissolved			96.1		%		70-130	25-NOV-19
Lead (Pb)-Dissolved			97.5		%		70-130	25-NOV-19
Molybdenum (Mo)-Dissolved			105.5		%		70-130	25-NOV-19
Nickel (Ni)-Dissolved			95.6		%		70-130	25-NOV-19
Selenium (Se)-Dissolved			117.8		%		70-130	25-NOV-19
Silver (Ag)-Dissolved			98.1		%		70-130	25-NOV-19
Sodium (Na)-Dissolved			97.0		%		70-130	25-NOV-19
Thallium (Tl)-Dissolved			98.1		%		70-130	25-NOV-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Vanadium (V)-Dissolved			102.7		%		70-130	25-NOV-19
Zinc (Zn)-Dissolved			105.4		%		70-130	25-NOV-19
PAH-511-WT	Water							



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4928414							
WG3227562-2 LCS								
1-Methylnaphthalene			84.9		%		50-140	27-NOV-19
2-Methylnaphthalene			78.0		%		50-140	27-NOV-19
Acenaphthene			92.7		%		50-140	27-NOV-19
Acenaphthylene			93.6		%		50-140	27-NOV-19
Anthracene			97.3		%		50-140	27-NOV-19
Benzo(a)anthracene			99.0		%		50-140	27-NOV-19
Benzo(a)pyrene			90.8		%		50-140	27-NOV-19
Benzo(b)fluoranthene			88.2		%		50-140	27-NOV-19
Benzo(g,h,i)perylene			94.8		%		50-140	27-NOV-19
Benzo(k)fluoranthene			91.8		%		50-140	27-NOV-19
Chrysene			96.3		%		50-140	27-NOV-19
Dibenzo(ah)anthracene			89.9		%		50-140	27-NOV-19
Fluoranthene			97.0		%		50-140	27-NOV-19
Fluorene			94.2		%		50-140	27-NOV-19
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	27-NOV-19
Naphthalene			83.0		%		50-140	27-NOV-19
Phenanthrene			98.6		%		50-140	27-NOV-19
Pyrene			97.8		%		50-140	27-NOV-19
WG3227562-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
2-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthylene			<0.020		ug/L		0.02	27-NOV-19
Anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)pyrene			<0.010		ug/L		0.01	27-NOV-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	27-NOV-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Chrysene			<0.020		ug/L		0.02	27-NOV-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	27-NOV-19
Fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Fluorene			<0.020		ug/L		0.02	27-NOV-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	27-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4928414							
WG3227562-1	MB							
Naphthalene			<0.050		ug/L		0.05	27-NOV-19
Phenanthrene			<0.020		ug/L		0.02	27-NOV-19
Pyrene			<0.020		ug/L		0.02	27-NOV-19
Surrogate: d8-Naphthalene			90.1		%		60-140	27-NOV-19
Surrogate: d10-Phenanthrene			97.9		%		60-140	27-NOV-19
Surrogate: d12-Chrysene			93.2		%		60-140	27-NOV-19
Surrogate: d10-Acenaphthene			95.3		%		60-140	27-NOV-19
PCB-511-WT		Water						
Batch	R4925246							
WG3227114-2	LCS							
Aroclor 1242			99.3		%		60-140	26-NOV-19
Aroclor 1248			98.3		%		60-140	26-NOV-19
Aroclor 1254			111.0		%		60-140	26-NOV-19
Aroclor 1260			110.6		%		60-140	26-NOV-19
WG3227114-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1248			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1254			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1260			<0.020		ug/L		0.02	26-NOV-19
Surrogate: Decachlorobiphenyl			80.1		%		50-150	26-NOV-19
Surrogate: Tetrachloro-m-xylene			78.9		%		50-150	26-NOV-19
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-NOV-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichloroethylene		0.83	0.82		ug/L	1.2	30	28-NOV-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
1,1,1,2-Tetrachloroethane			91.9		%		70-130	28-NOV-19
1,1,2,2-Tetrachloroethane			91.6		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
1,1,1-Trichloroethane			95.8		%		70-130	28-NOV-19
1,1,2-Trichloroethane			92.6		%		70-130	28-NOV-19
1,1-Dichloroethane			95.9		%		70-130	28-NOV-19
1,1-Dichloroethylene			92.5		%		70-130	28-NOV-19
1,2-Dibromoethane			92.5		%		70-130	28-NOV-19
1,2-Dichlorobenzene			87.7		%		70-130	28-NOV-19
1,2-Dichloroethane			97.2		%		70-130	28-NOV-19
1,2-Dichloropropane			100.4		%		70-130	28-NOV-19
1,3-Dichlorobenzene			87.2		%		70-130	28-NOV-19
1,4-Dichlorobenzene			86.5		%		70-130	28-NOV-19
Acetone			99.1		%		60-140	28-NOV-19
Benzene			100.4		%		70-130	28-NOV-19
Bromodichloromethane			97.9		%		70-130	28-NOV-19
Bromoform			91.9		%		70-130	28-NOV-19
Bromomethane			85.9		%		60-140	28-NOV-19
Carbon tetrachloride			94.9		%		70-130	28-NOV-19
Chlorobenzene			90.8		%		70-130	28-NOV-19
Chloroform			98.1		%		70-130	28-NOV-19
cis-1,2-Dichloroethylene			95.3		%		70-130	28-NOV-19
cis-1,3-Dichloropropene			98.1		%		70-130	28-NOV-19
Dibromochloromethane			90.8		%		70-130	28-NOV-19
Dichlorodifluoromethane			80.2		%		50-140	28-NOV-19
Ethylbenzene			90.3		%		70-130	28-NOV-19
n-Hexane			89.6		%		70-130	28-NOV-19
m+p-Xylenes			89.8		%		70-130	28-NOV-19
Methyl Ethyl Ketone			94.2		%		60-140	28-NOV-19
Methyl Isobutyl Ketone			89.5		%		60-140	28-NOV-19
Methylene Chloride			96.6		%		70-130	28-NOV-19
MTBE			109.2		%		70-130	28-NOV-19
o-Xylene			90.4		%		70-130	28-NOV-19
Styrene			90.3		%		70-130	28-NOV-19
Tetrachloroethylene			88.6		%		70-130	28-NOV-19
Toluene			92.0		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
trans-1,2-Dichloroethylene			93.2		%		70-130	28-NOV-19
trans-1,3-Dichloropropene			92.2		%		70-130	28-NOV-19
Trichloroethylene			95.6		%		70-130	28-NOV-19
Trichlorofluoromethane			92.4		%		60-140	28-NOV-19
Vinyl chloride			102.8		%		60-140	28-NOV-19
WG3229973-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dibromoethane			<0.20		ug/L		0.2	28-NOV-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloropropane			<0.50		ug/L		0.5	28-NOV-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Acetone			<30		ug/L		30	28-NOV-19
Benzene			<0.50		ug/L		0.5	28-NOV-19
Bromodichloromethane			<2.0		ug/L		2	28-NOV-19
Bromoform			<5.0		ug/L		5	28-NOV-19
Bromomethane			<0.50		ug/L		0.5	28-NOV-19
Carbon tetrachloride			<0.20		ug/L		0.2	28-NOV-19
Chlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Chloroform			<1.0		ug/L		1	28-NOV-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Dibromochloromethane			<2.0		ug/L		2	28-NOV-19
Dichlorodifluoromethane			<2.0		ug/L		2	28-NOV-19
Ethylbenzene			<0.50		ug/L		0.5	28-NOV-19
n-Hexane			<0.50		ug/L		0.5	28-NOV-19
m+p-Xylenes			<0.40		ug/L		0.4	28-NOV-19
Methyl Ethyl Ketone			<20		ug/L		20	28-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4927602							
WG3229973-2 MB								
Methyl Isobutyl Ketone			<20		ug/L		20	28-NOV-19
Methylene Chloride			<5.0		ug/L		5	28-NOV-19
MTBE			<2.0		ug/L		2	28-NOV-19
o-Xylene			<0.30		ug/L		0.3	28-NOV-19
Styrene			<0.50		ug/L		0.5	28-NOV-19
Tetrachloroethylene			<0.50		ug/L		0.5	28-NOV-19
Toluene			<0.50		ug/L		0.5	28-NOV-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Trichloroethylene			<0.50		ug/L		0.5	28-NOV-19
Trichlorofluoromethane			<5.0		ug/L		5	28-NOV-19
Vinyl chloride			<0.50		ug/L		0.5	28-NOV-19
Surrogate: 1,4-Difluorobenzene			96.6		%		70-130	28-NOV-19
Surrogate: 4-Bromofluorobenzene			93.1		%		70-130	28-NOV-19
WG3229973-5 MS		WG3229973-3						
1,1,1,2-Tetrachloroethane			91.8		%		50-140	28-NOV-19
1,1,1,2-Tetrachloroethane			82.3		%		50-140	28-NOV-19
1,1,1-Trichloroethane			99.0		%		50-140	28-NOV-19
1,1,2-Trichloroethane			88.0		%		50-140	28-NOV-19
1,1-Dichloroethane			100.5		%		50-140	28-NOV-19
1,1-Dichloroethylene			94.4		%		50-140	28-NOV-19
1,2-Dibromoethane			85.8		%		50-140	28-NOV-19
1,2-Dichlorobenzene			88.0		%		50-140	28-NOV-19
1,2-Dichloroethane			92.3		%		50-140	28-NOV-19
1,2-Dichloropropane			98.1		%		50-140	28-NOV-19
1,3-Dichlorobenzene			90.0		%		50-140	28-NOV-19
1,4-Dichlorobenzene			88.3		%		50-140	28-NOV-19
Acetone			92.8		%		50-140	28-NOV-19
Benzene			99.98		%		50-140	28-NOV-19
Bromodichloromethane			95.7		%		50-140	28-NOV-19
Bromoform			85.1		%		50-140	28-NOV-19
Bromomethane			80.1		%		50-140	28-NOV-19
Carbon tetrachloride			99.9		%		50-140	28-NOV-19
Chlorobenzene			90.7		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927602							
WG3229973-5 MS		WG3229973-3						
Chloroform			98.3		%		50-140	28-NOV-19
cis-1,2-Dichloroethylene			94.5		%		50-140	28-NOV-19
cis-1,3-Dichloropropene			90.6		%		50-140	28-NOV-19
Dibromochloromethane			87.1		%		50-140	28-NOV-19
Dichlorodifluoromethane			79.2		%		50-140	28-NOV-19
Ethylbenzene			93.6		%		50-140	28-NOV-19
n-Hexane			91.9		%		50-140	28-NOV-19
m+p-Xylenes			92.6		%		50-140	28-NOV-19
Methyl Ethyl Ketone			75.0		%		50-140	28-NOV-19
Methyl Isobutyl Ketone			76.4		%		50-140	28-NOV-19
Methylene Chloride			94.0		%		50-140	28-NOV-19
MTBE			109.1		%		50-140	28-NOV-19
o-Xylene			92.2		%		50-140	28-NOV-19
Styrene			88.7		%		50-140	28-NOV-19
Tetrachloroethylene			92.9		%		50-140	28-NOV-19
Toluene			94.2		%		50-140	28-NOV-19
trans-1,2-Dichloroethylene			93.6		%		50-140	28-NOV-19
trans-1,3-Dichloropropene			83.4		%		50-140	28-NOV-19
Trichloroethylene			98.1		%		50-140	28-NOV-19
Trichlorofluoromethane			95.2		%		50-140	28-NOV-19
Vinyl chloride			101.7		%		50-140	28-NOV-19

Quality Control Report

Workorder: L2386645

Report Date: 29-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

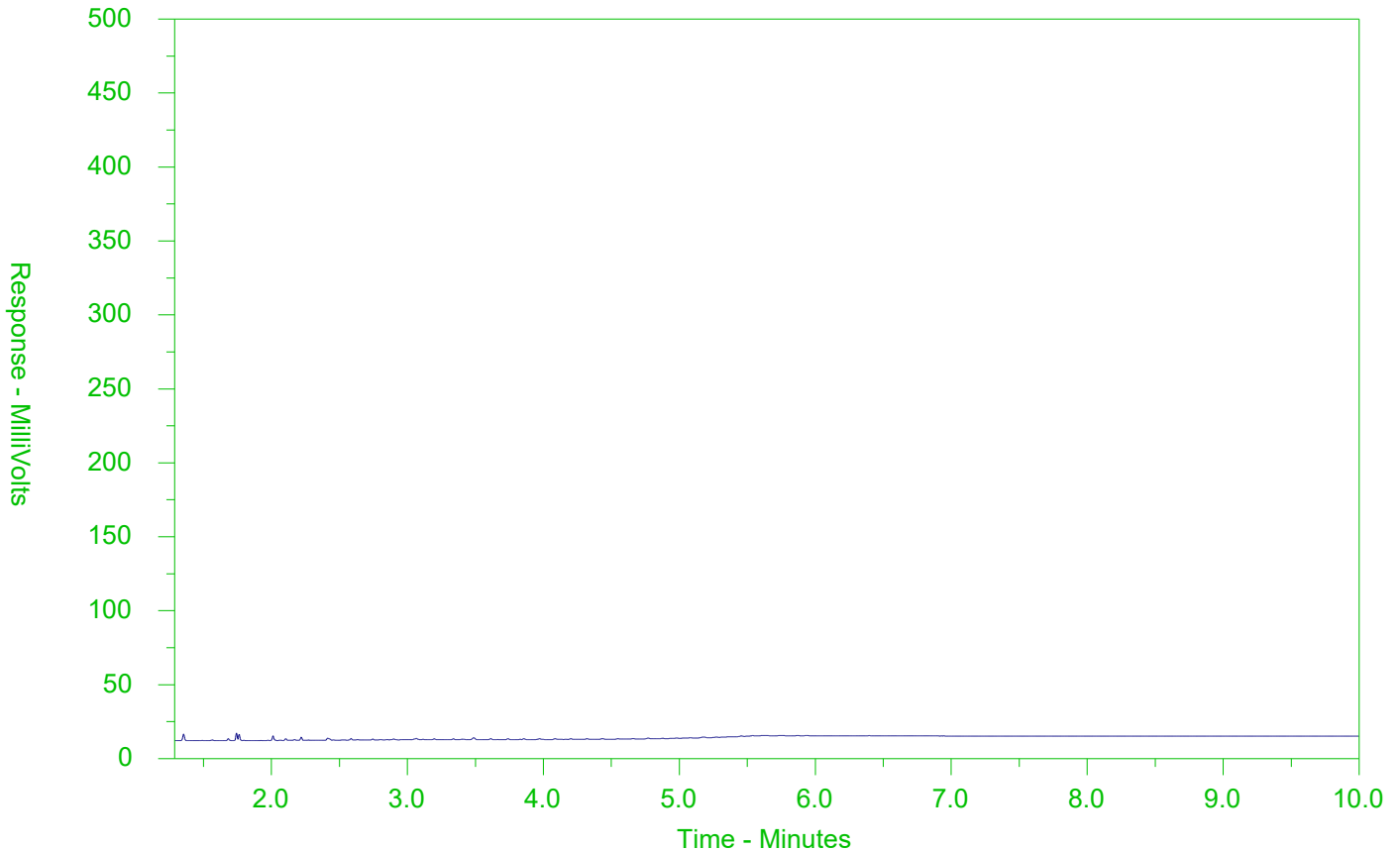
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2386645-1
 Client Sample ID: BH6



← 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



COC Number: 15 -

L2386645-COFC

Page 1 of 1

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																																																					
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																					
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>			EMERGENCY	1 Business day [E1] <input type="checkbox"/>																																																
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																																																
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				2 day [P2] <input type="checkbox"/>																																																				
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			Date and Time Required for all E&P TATs:																																																					
City/Province:	Brampton	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.																																																					
Postal Code:	L6T 3Y3	Email 3			Analysis Request																																																					
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																					
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																								
Company:	Terraprobe	Email 1 or Fax lrossi@terraprobe.ca			<table border="1"> <tr> <td>Metals and Inorganics</td> <td>Metals</td> <td>Hydride Forming Metals</td> <td>EC</td> <td>SAR</td> <td>PAH</td> <td>VOC</td> <td>PHC</td> <td>OC Pesticides</td> <td>PCBs</td> <td rowspan="4">Number of Containers</td> </tr> <tr> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>11</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers		X				X	X	X	X		11																						
Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR											PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers																																						
	X														X	X	X	X			11																																					
Contact:	Lorena Rossi	Email 2																																																								
Project Information		Oil and Gas Required Fields (client use)																																																								
ALS Account # / Quote #:	Q62481	AFE/Cost Center:	PO#																																																							
Job #:	1-19-0603-42	Major/Minor Code:	Routing Code:																																																							
PO / AFE:		Requisitioner:																																																								
LSD:		Location:																																																								
ALS Lab Work Order # (lab use only)	12386645 NOV 2013		ALS Contact:	Sampler:																																																						
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																																																						
1	BH6	20-11-19		GW																																																						
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/>		SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																			
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/>		Ice Cubes <input checked="" type="checkbox"/>		Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																	
					Cooling Initiated <input type="checkbox"/>																																																					
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C																																																
					2.3					4.3																																																
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)																																																		
Released by: Kossay Makhzoumi	Date:	Time:	Received by: <i>[Signature]</i>	Date: NOV 22/19	Time: 10am	Received by: <i>[Signature]</i>	Date: NOV 22/19	Time: 14:30																																																		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 06-FEB-20
Report Date: 13-FEB-20 09:02 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2413925
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

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

Physical Tests - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	5.45
pH	pH units	-	-	7.86

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.


Anions and Nutrients - WATER


Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	1580 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER


Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Guide Limits
#1 #2

Analyte	Unit	#1	#2	Result	FIELD
Dissolved Mercury Filtration Location	-	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	80.7	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	130	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	8.13	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000	2300000	672000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	0.93	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/L	130000	130000	<30
Benzene	ug/L	44	430	<0.50
Bromodichloromethane	ug/L	85000	85000	<2.0
Bromoform	ug/L	380	770	<5.0
Bromomethane	ug/L	5.6	56	<0.50
Carbon tetrachloride	ug/L	0.79	8.4	<0.20
Chlorobenzene	ug/L	630	630	<0.50
Dibromochloromethane	ug/L	82000	82000	<2.0
Chloroform	ug/L	2.4	22	<1.0
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50
1,4-Dichlorobenzene	ug/L	8	67	<0.50
Dichlorodifluoromethane	ug/L	4400	4400	<2.0
1,1-Dichloroethane	ug/L	320	3100	2.63
1,2-Dichloroethane	ug/L	1.6	12	1.21
1,1-Dichloroethylene	ug/L	1.6	17	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	1.34
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
Methylene Chloride	ug/L	610	5500	<5.0
1,2-Dichloropropane	ug/L	16	140	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50
Ethylbenzene	ug/L	2300	2300	<0.50
n-Hexane	ug/L	51	520	<0.50
Methyl Ethyl Ketone	ug/L	470000	1500000	<20
Methyl Isobutyl Ketone	ug/L	140000	580000	<20
MTBE	ug/L	190	1400	<2.0
Styrene	ug/L	1300	9100	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	98.4
Surrogate: 1,4-Difluorobenzene	%	-	-	101.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	99.8
Surrogate: 3,4-Dichlorotoluene	%	-	-	73.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	0.032
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	0.024
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	97.7
Surrogate: d12-Chrysene	%	-	-	90.6
Surrogate: d8-Naphthalene	%	-	-	97.0
Surrogate: d10-Phenanthrene	%	-	-	105.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2413925-1
Sample Date 04-FEB-20
Sample ID DUP 4

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.040 ^{RRR}
Aroclor 1248	ug/L	-	-	<0.040 ^{RRR}
Aroclor 1254	ug/L	-	-	<0.040 ^{RRR}
Aroclor 1260	ug/L	-	-	<0.040 ^{RRR}
Surrogate: Decachlorobiphenyl	%	-	-	40.8 ^{RRR}
Total PCBs	ug/L	7.8	15	<0.080 ^{RRR}
Surrogate: Tetrachloro-m-xylene	%	-	-	83.8

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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

Additional Comments for Sample Listed:

Sample Number	Matrix	Report Remarks	Sample Comment:
L2413925-1	Water	Note: RRR: Surrogate recovery is outside ALS DQO limits. Detection limits for affected compounds have been raised accordingly.	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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			
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: L2413925

Report Date: 13-FEB-20

Page 1 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4992573							
WG3271551-4	DUP	WG3271551-3						
Chloride (Cl)		29.5	29.5		mg/L	0.1	20	07-FEB-20
WG3271551-2	LCS							
Chloride (Cl)			101.6		%		90-110	07-FEB-20
WG3271551-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	07-FEB-20
WG3271551-5	MS	WG3271551-3						
Chloride (Cl)			101.2		%		75-125	07-FEB-20
CR-CR6-IC-R511-WT		Water						
Batch	R4992361							
WG3271691-4	DUP	WG3271691-3						
Chromium, Hexavalent		8.96	9.07		ug/L	1.2	20	07-FEB-20
WG3271691-2	LCS							
Chromium, Hexavalent			101.8		%		80-120	07-FEB-20
WG3271691-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	07-FEB-20
WG3271691-5	MS	WG3271691-3						
Chromium, Hexavalent			99.1		%		70-130	07-FEB-20
EC-R511-WT		Water						
Batch	R4991439							
WG3271394-4	DUP	WG3271394-3						
Conductivity		2.29	2.24		mS/cm	2.2	10	07-FEB-20
WG3271394-2	LCS							
Conductivity			103.7		%		90-110	07-FEB-20
WG3271394-1	MB							
Conductivity			<0.0030		mS/cm		0.003	07-FEB-20
F1-HS-511-WT		Water						
Batch	R4991436							
WG3269763-1	LCS							
F1 (C6-C10)			92.3		%		80-120	07-FEB-20
WG3269763-2	MB							
F1 (C6-C10)			<25		ug/L		25	07-FEB-20
Surrogate: 3,4-Dichlorotoluene			77.1		%		60-140	07-FEB-20
WG3269763-5	MS	WG3269763-3						
F1 (C6-C10)			83.1		%		60-140	07-FEB-20
F2-F4-511-WT		Water						



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 2 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT		Water						
Batch	R4991613							
WG3270985-2	LCS							
F2 (C10-C16)			105.6		%		70-130	07-FEB-20
F3 (C16-C34)			107.2		%		70-130	07-FEB-20
F4 (C34-C50)			107.4		%		70-130	07-FEB-20
WG3270985-1	MB							
F2 (C10-C16)			<100		ug/L		100	07-FEB-20
F3 (C16-C34)			<250		ug/L		250	07-FEB-20
F4 (C34-C50)			<250		ug/L		250	07-FEB-20
Surrogate: 2-Bromobenzotrifluoride			139.5		%		60-140	07-FEB-20
HG-D-UG/L-CVAA-WT		Water						
Batch	R4991543							
WG3271392-3	DUP	L2414257-6						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	07-FEB-20
WG3271392-2	LCS							
Mercury (Hg)-Dissolved			107.0		%		80-120	07-FEB-20
WG3271392-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	07-FEB-20
WG3271392-4	MS	L2413924-1						
Mercury (Hg)-Dissolved			101.3		%		70-130	07-FEB-20
MET-D-UG/L-MS-WT		Water						
Batch	R4991876							
WG3271317-4	DUP	WG3271317-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Barium (Ba)-Dissolved		337	343		ug/L	1.9	20	07-FEB-20
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	07-FEB-20
Cadmium (Cd)-Dissolved		0.071	0.081		ug/L	14	20	07-FEB-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-FEB-20
Molybdenum (Mo)-Dissolved		3.24	3.32		ug/L	2.4	20	07-FEB-20
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Selenium (Se)-Dissolved		1.00	0.93		ug/L	7.9	20	07-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 3 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4991876							
WG3271317-4	DUP	WG3271317-3						
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-FEB-20
Sodium (Na)-Dissolved		1200000	1220000		ug/L	1.9	20	07-FEB-20
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	07-FEB-20
Uranium (U)-Dissolved		2.89	2.86		ug/L	1.0	20	07-FEB-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	07-FEB-20
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	07-FEB-20
WG3271317-2	LCS							
Antimony (Sb)-Dissolved			99.1		%		80-120	07-FEB-20
Arsenic (As)-Dissolved			93.9		%		80-120	07-FEB-20
Barium (Ba)-Dissolved			100.1		%		80-120	07-FEB-20
Beryllium (Be)-Dissolved			92.3		%		80-120	07-FEB-20
Boron (B)-Dissolved			90.3		%		80-120	07-FEB-20
Cadmium (Cd)-Dissolved			92.7		%		80-120	07-FEB-20
Chromium (Cr)-Dissolved			93.4		%		80-120	07-FEB-20
Cobalt (Co)-Dissolved			91.8		%		80-120	07-FEB-20
Copper (Cu)-Dissolved			89.5		%		80-120	07-FEB-20
Lead (Pb)-Dissolved			97.1		%		80-120	07-FEB-20
Molybdenum (Mo)-Dissolved			95.5		%		80-120	07-FEB-20
Nickel (Ni)-Dissolved			90.7		%		80-120	07-FEB-20
Selenium (Se)-Dissolved			93.3		%		80-120	07-FEB-20
Silver (Ag)-Dissolved			98.7		%		80-120	07-FEB-20
Sodium (Na)-Dissolved			95.3		%		80-120	07-FEB-20
Thallium (Tl)-Dissolved			95.3		%		80-120	07-FEB-20
Uranium (U)-Dissolved			93.0		%		80-120	07-FEB-20
Vanadium (V)-Dissolved			95.9		%		80-120	07-FEB-20
Zinc (Zn)-Dissolved			92.7		%		80-120	07-FEB-20
WG3271317-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Boron (B)-Dissolved			<10		ug/L		10	07-FEB-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	07-FEB-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	07-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 4 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4991876							
WG3271317-1	MB							
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	07-FEB-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	07-FEB-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	07-FEB-20
Sodium (Na)-Dissolved			<50		ug/L		50	07-FEB-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	07-FEB-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	07-FEB-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	07-FEB-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	07-FEB-20
WG3271317-5	MS	WG3271317-6						
Antimony (Sb)-Dissolved			101.4		%		70-130	07-FEB-20
Arsenic (As)-Dissolved			96.3		%		70-130	07-FEB-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Beryllium (Be)-Dissolved			94.5		%		70-130	07-FEB-20
Boron (B)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Cadmium (Cd)-Dissolved			92.4		%		70-130	07-FEB-20
Chromium (Cr)-Dissolved			73.6		%		70-130	07-FEB-20
Cobalt (Co)-Dissolved			88.6		%		70-130	07-FEB-20
Copper (Cu)-Dissolved			70.9		%		70-130	07-FEB-20
Lead (Pb)-Dissolved			93.8		%		70-130	07-FEB-20
Molybdenum (Mo)-Dissolved			91.4		%		70-130	07-FEB-20
Nickel (Ni)-Dissolved			83.9		%		70-130	07-FEB-20
Selenium (Se)-Dissolved			90.5		%		70-130	07-FEB-20
Silver (Ag)-Dissolved			96.7		%		70-130	07-FEB-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Thallium (Tl)-Dissolved			92.7		%		70-130	07-FEB-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	07-FEB-20
Vanadium (V)-Dissolved			99.5		%		70-130	07-FEB-20
PAH-511-WT								
	Water							



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 5 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4991387							
WG3270985-2 LCS								
1-Methylnaphthalene			108.6		%		50-140	07-FEB-20
2-Methylnaphthalene			106.9		%		50-140	07-FEB-20
Acenaphthene			118.6		%		50-140	07-FEB-20
Acenaphthylene			107.6		%		50-140	07-FEB-20
Anthracene			103.8		%		50-140	07-FEB-20
Benzo(a)anthracene			115.4		%		50-140	07-FEB-20
Benzo(a)pyrene			114.7		%		50-140	07-FEB-20
Benzo(b)fluoranthene			103.6		%		50-140	07-FEB-20
Benzo(g,h,i)perylene			115.0		%		50-140	07-FEB-20
Benzo(k)fluoranthene			102.4		%		50-140	07-FEB-20
Chrysene			108.9		%		50-140	07-FEB-20
Dibenzo(ah)anthracene			115.4		%		50-140	07-FEB-20
Fluoranthene			116.6		%		50-140	07-FEB-20
Fluorene			112.7		%		50-140	07-FEB-20
Indeno(1,2,3-cd)pyrene			129.4		%		50-140	07-FEB-20
Naphthalene			111.3		%		50-140	07-FEB-20
Phenanthrene			118.0		%		50-140	07-FEB-20
Pyrene			116.6		%		50-140	07-FEB-20
WG3270985-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	07-FEB-20
2-Methylnaphthalene			<0.020		ug/L		0.02	07-FEB-20
Acenaphthene			<0.020		ug/L		0.02	07-FEB-20
Acenaphthylene			<0.020		ug/L		0.02	07-FEB-20
Anthracene			<0.020		ug/L		0.02	07-FEB-20
Benzo(a)anthracene			<0.020		ug/L		0.02	07-FEB-20
Benzo(a)pyrene			<0.010		ug/L		0.01	07-FEB-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	07-FEB-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Chrysene			<0.020		ug/L		0.02	07-FEB-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	07-FEB-20
Fluoranthene			<0.020		ug/L		0.02	07-FEB-20
Fluorene			<0.020		ug/L		0.02	07-FEB-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	07-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 6 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4991387							
WG3270985-1	MB							
Naphthalene			<0.050		ug/L		0.05	07-FEB-20
Phenanthrene			<0.020		ug/L		0.02	07-FEB-20
Pyrene			<0.020		ug/L		0.02	07-FEB-20
Surrogate: d8-Naphthalene			98.1		%		60-140	07-FEB-20
Surrogate: d10-Phenanthrene			97.1		%		60-140	07-FEB-20
Surrogate: d12-Chrysene			92.1		%		60-140	07-FEB-20
Surrogate: d10-Acenaphthene			98.7		%		60-140	07-FEB-20
PCB-511-WT		Water						
Batch	R4995272							
WG3271397-2	LCS							
Aroclor 1242			96.6		%		60-140	12-FEB-20
Aroclor 1248			106.0		%		60-140	12-FEB-20
Aroclor 1254			107.1		%		60-140	12-FEB-20
Aroclor 1260			118.0		%		60-140	12-FEB-20
WG3271397-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	12-FEB-20
Aroclor 1248			<0.020		ug/L		0.02	12-FEB-20
Aroclor 1254			<0.020		ug/L		0.02	12-FEB-20
Aroclor 1260			<0.020		ug/L		0.02	12-FEB-20
Surrogate: Decachlorobiphenyl			83.0		%		50-150	12-FEB-20
Surrogate: Tetrachloro-m-xylene			68.3		%		50-150	12-FEB-20
PH-WT		Water						
Batch	R4991439							
WG3271394-4	DUP	WG3271394-3						
pH		8.11	8.11	J	pH units	0.00	0.2	07-FEB-20
WG3271394-2	LCS							
pH			7.04		pH units		6.9-7.1	07-FEB-20
VOC-511-HS-WT		Water						
Batch	R4992360							
WG3264747-4	DUP	WG3264747-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 7 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4992360							
WG3264747-4	DUP	WG3264747-3						
1,1-Dichloroethane		10.8	10.7		ug/L	1.7	30	10-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	10-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	10-FEB-20
Benzene		1.74	1.73		ug/L	0.6	30	10-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	10-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	10-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	10-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	10-FEB-20
cis-1,2-Dichloroethylene		366	364		ug/L	0.5	30	10-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	10-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	10-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	10-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	10-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	10-FEB-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	10-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	10-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	10-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	10-FEB-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
Tetrachloroethylene		106	111		ug/L	4.7	30	10-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	10-FEB-20
trans-1,2-Dichloroethylene		3.24	3.32		ug/L	2.4	30	10-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30		ug/L			10-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 8 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4992360							
WG3264747-4	DUP	WG3264747-3						
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	10-FEB-20
Trichloroethylene		34.0	34.7		ug/L	2.1	30	10-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	10-FEB-20
Vinyl chloride		6.24	6.46		ug/L	3.5	30	10-FEB-20
WG3264747-1	LCS							
1,1,1,2-Tetrachloroethane			96.1		%		70-130	07-FEB-20
1,1,1,2,2-Tetrachloroethane			96.7		%		70-130	07-FEB-20
1,1,1-Trichloroethane			100.5		%		70-130	07-FEB-20
1,1,2-Trichloroethane			99.8		%		70-130	07-FEB-20
1,1-Dichloroethane			104.5		%		70-130	07-FEB-20
1,1-Dichloroethylene			99.2		%		70-130	07-FEB-20
1,2-Dibromoethane			99.9		%		70-130	07-FEB-20
1,2-Dichlorobenzene			99.2		%		70-130	07-FEB-20
1,2-Dichloroethane			104.9		%		70-130	07-FEB-20
1,2-Dichloropropane			102.4		%		70-130	07-FEB-20
1,3-Dichlorobenzene			98.5		%		70-130	07-FEB-20
1,4-Dichlorobenzene			99.2		%		70-130	07-FEB-20
Acetone			104.6		%		60-140	07-FEB-20
Benzene			105.7		%		70-130	07-FEB-20
Bromodichloromethane			100.9		%		70-130	07-FEB-20
Bromoform			91.9		%		70-130	07-FEB-20
Bromomethane			98.0		%		60-140	07-FEB-20
Carbon tetrachloride			101.8		%		70-130	07-FEB-20
Chlorobenzene			98.7		%		70-130	07-FEB-20
Chloroform			104.5		%		70-130	07-FEB-20
cis-1,2-Dichloroethylene			93.2		%		70-130	07-FEB-20
cis-1,3-Dichloropropene			101.1		%		70-130	07-FEB-20
Dibromochloromethane			94.8		%		70-130	07-FEB-20
Dichlorodifluoromethane			118.6		%		50-140	07-FEB-20
Ethylbenzene			96.6		%		70-130	07-FEB-20
n-Hexane			96.2		%		70-130	07-FEB-20
m+p-Xylenes			96.8		%		70-130	07-FEB-20
Methyl Ethyl Ketone			103.9		%		60-140	07-FEB-20
Methyl Isobutyl Ketone			91.3				60-140	



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 9 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4992360							
WG3264747-1	LCS							
Methyl Isobutyl Ketone			91.3		%		60-140	07-FEB-20
Methylene Chloride			104.9		%		70-130	07-FEB-20
MTBE			101.9		%		70-130	07-FEB-20
o-Xylene			95.6		%		70-130	07-FEB-20
Styrene			95.7		%		70-130	07-FEB-20
Tetrachloroethylene			100.7		%		70-130	07-FEB-20
Toluene			98.9		%		70-130	07-FEB-20
trans-1,2-Dichloroethylene			100.1		%		70-130	07-FEB-20
trans-1,3-Dichloropropene			96.7		%		70-130	07-FEB-20
Trichloroethylene			103.6		%		70-130	07-FEB-20
Trichlorofluoromethane			103.8		%		60-140	07-FEB-20
Vinyl chloride			116.5		%		60-140	07-FEB-20
WG3264747-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	10-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	10-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	10-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	10-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	10-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	10-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	10-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	10-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	10-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	10-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	10-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	10-FEB-20
Acetone			<30		ug/L		30	10-FEB-20
Benzene			<0.50		ug/L		0.5	10-FEB-20
Bromodichloromethane			<2.0		ug/L		2	10-FEB-20
Bromoform			<5.0		ug/L		5	10-FEB-20
Bromomethane			<0.50		ug/L		0.5	10-FEB-20
Carbon tetrachloride			<0.20		ug/L		0.2	10-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	10-FEB-20
Chloroform			<1.0		ug/L		1	10-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	10-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 10 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4992360							
WG3264747-2 MB								
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	10-FEB-20
Dibromochloromethane			<2.0		ug/L		2	10-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	10-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	10-FEB-20
n-Hexane			<0.50		ug/L		0.5	10-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	10-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	10-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	10-FEB-20
Methylene Chloride			<5.0		ug/L		5	10-FEB-20
MTBE			<2.0		ug/L		2	10-FEB-20
o-Xylene			<0.30		ug/L		0.3	10-FEB-20
Styrene			<0.50		ug/L		0.5	10-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	10-FEB-20
Toluene			<0.50		ug/L		0.5	10-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	10-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	10-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	10-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	10-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	10-FEB-20
Surrogate: 1,4-Difluorobenzene			100.6		%		70-130	10-FEB-20
Surrogate: 4-Bromofluorobenzene			98.8		%		70-130	10-FEB-20
WG3264747-5 MS		WG3264747-3						
1,1,1,2-Tetrachloroethane			92.9		%		50-140	10-FEB-20
1,1,2,2-Tetrachloroethane			76.7		%		50-140	10-FEB-20
1,1,1-Trichloroethane			104.6		%		50-140	10-FEB-20
1,1,2-Trichloroethane			84.5		%		50-140	10-FEB-20
1,1-Dichloroethane			100.2		%		50-140	10-FEB-20
1,1-Dichloroethylene			102.0		%		50-140	10-FEB-20
1,2-Dibromoethane			80.8		%		50-140	10-FEB-20
1,2-Dichlorobenzene			99.3		%		50-140	10-FEB-20
1,2-Dichloroethane			87.7		%		50-140	10-FEB-20
1,2-Dichloropropane			93.5		%		50-140	10-FEB-20
1,3-Dichlorobenzene			106.1		%		50-140	10-FEB-20
1,4-Dichlorobenzene			105.4		%		50-140	10-FEB-20



Quality Control Report

Workorder: L2413925

Report Date: 13-FEB-20

Page 11 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4992360							
WG3264747-5	MS	WG3264747-3						
Acetone			76.0		%		50-140	10-FEB-20
Benzene			103.5		%		50-140	10-FEB-20
Bromodichloromethane			92.3		%		50-140	10-FEB-20
Bromoform			75.6		%		50-140	10-FEB-20
Bromomethane			89.3		%		50-140	10-FEB-20
Carbon tetrachloride			109.4		%		50-140	10-FEB-20
Chlorobenzene			98.6		%		50-140	10-FEB-20
Chloroform			101.2		%		50-140	10-FEB-20
cis-1,2-Dichloroethylene			N/A	MS-B	%		-	10-FEB-20
cis-1,3-Dichloropropene			91.4		%		50-140	10-FEB-20
Dibromochloromethane			83.0		%		50-140	10-FEB-20
Dichlorodifluoromethane			110.2		%		50-140	10-FEB-20
Ethylbenzene			104.2		%		50-140	10-FEB-20
n-Hexane			100.1		%		50-140	10-FEB-20
m+p-Xylenes			104.7		%		50-140	10-FEB-20
Methyl Ethyl Ketone			66.1		%		50-140	10-FEB-20
Methyl Isobutyl Ketone			62.1		%		50-140	10-FEB-20
Methylene Chloride			94.3		%		50-140	10-FEB-20
MTBE			102.2		%		50-140	10-FEB-20
o-Xylene			99.6		%		50-140	10-FEB-20
Styrene			93.8		%		50-140	10-FEB-20
Tetrachloroethylene			N/A	MS-B	%		-	10-FEB-20
Toluene			103.5		%		50-140	10-FEB-20
trans-1,2-Dichloroethylene			101.4		%		50-140	10-FEB-20
trans-1,3-Dichloropropene			85.4		%		50-140	10-FEB-20
Trichloroethylene			109.0		%		50-140	10-FEB-20
Trichlorofluoromethane			107.7		%		50-140	10-FEB-20
Vinyl chloride			112.3		%		50-140	10-FEB-20

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11 Indell Lane
Brampton ON L6T 3Y3

Page 12 of 12

Contact: Kossay Makhzoumi

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.

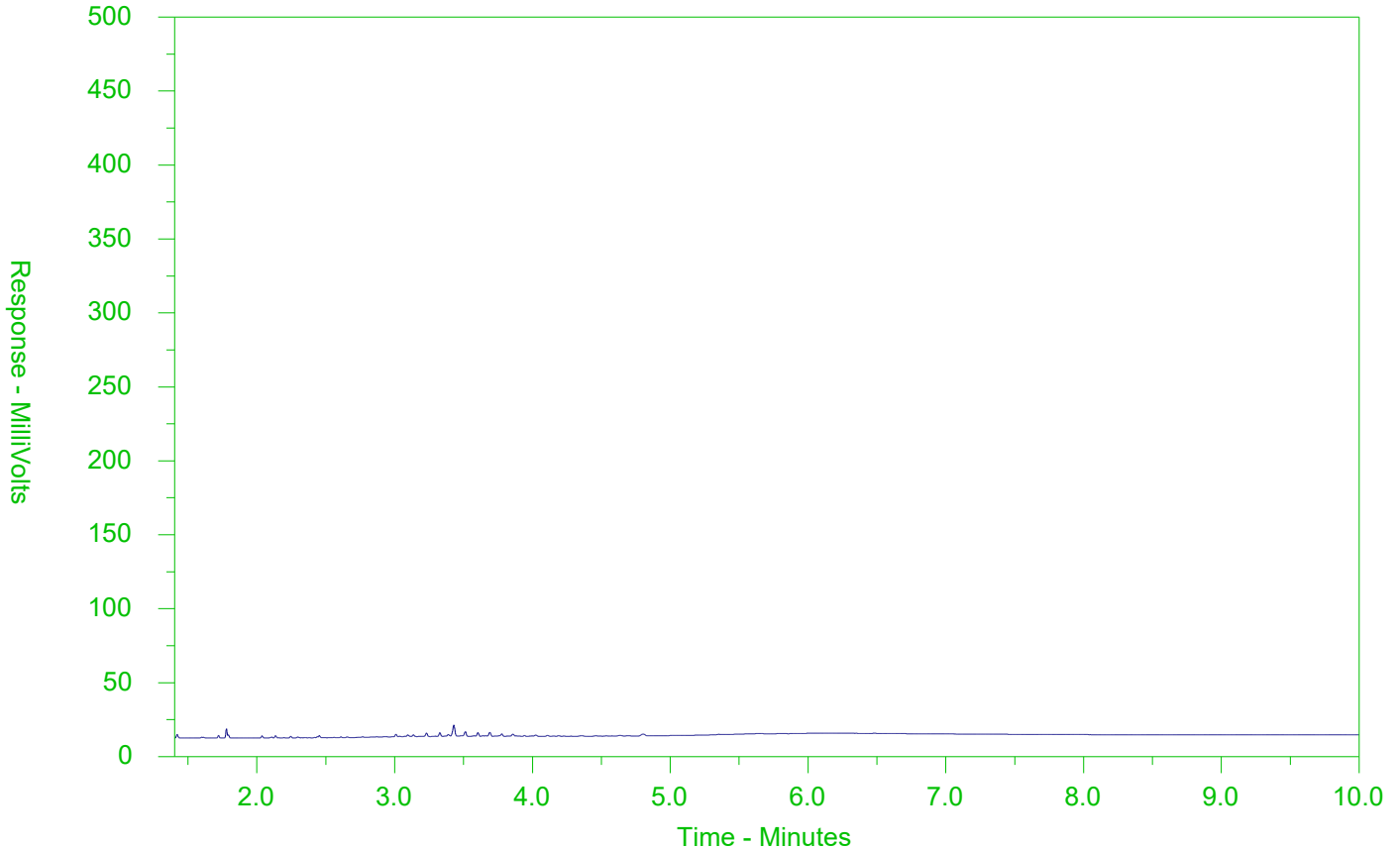
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2413925-1
 Client Sample ID: DUP 4



← 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.



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form



L2413925-COCF

COC Number: 15 - Page 1 of 1

Report To: Contact and company name below will appear on the final report

Company: Terraprobe
Contact: Kossay Makhzoumi
Phone: 905-796-2650

Street: 11 Indell Lane
City/Province: Brampton
Postal Code: L6T 3Y3

Invoice To: Same as Report To
Copy of Invoice with Report: YES NO

Company: Terraprobe
Contact: Lorena Rossi

ALS Account # / Quote #: Q64281
Job #: 1-19-0803-42
PO / A/E: L2413925

ALS Lab Work Order # (lab use only): L2413925

ALS Sample # (lab use only): DWP 4

Sample Identification and/or Coordinates (This description will appear on the report)

Drinking Water (DW) Samples (client use)

Are samples taken from a Regulated DW System? YES NO

Are samples for human drinking water use? YES NO

SHIPMENT RELEASE (client use)

Released by: Kossay Makhzoumi

Report Format: PDF EXCEL EBD (XSLT)

Select Report Format: PDF EXCEL EBD (XSLT)

Quality Control (QC) Report with Report YES NO

Select Distribution: EMAIL MAIL FAX

Email 1 or Fax kmahzoumi@terraprobe.ca

Select Invoice Distribution: EMAIL MAIL FAX

Oil and Gas Required Fields (client use)

AF/Coast Center: PO#

Major/Minor Code: Routing Code:

Requisitioner: Location:

ALS Contact:

Date (dd-mm-yy): 24-02-20

Time (hh:mm): 6:40

Sample Type: G-W

Regular (R) Standard TAT if received by 3 pm - business days - no surcharges apply

4 day (P4) 3 day (P3) 2 day (P2)

EMERGENCY Same Day, Weekend or Statutory holiday (E0)

Date and Time Required for all E&P TATs:

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below

Metals and Inorganics

Metals

Hydride Forming Metals

EC SAR PAH VOC PHC OC Pesticides PCBs

Metals and Inorganics: X X X X X X X

Metals: X X X X X X X

Hydride Forming Metals: X X X X X X X

EC: X X X X X X X

SAR: X X X X X X X

PAH: X X X X X X X

VOC: X X X X X X X

PHC: X X X X X X X

OC Pesticides: X X X X X X X

PCBs: X X X X X X X

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen Ice Packs Cooling Inlet/Out

Ice Cubes Custody seal intact

SIF Observations

Yes No

Custody seal intact Yes No

INITIAL COOLER TEMPERATURES °C

FINAL COOLER TEMPERATURES °C

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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.

DO NOT WRITE IN THESE SPACES

Handwritten notes: MWRP T3 PPI, 31, 28620, 14:35, SIF



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 22-NOV-19
Report Date: 29-NOV-19 13:00 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2386616
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine) (No parameter exceedances)							

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

Dissolved Metals - WATER

Lab ID L2386616-1
Sample Date 20-NOV-19
Sample ID DUP1

Analyte	Unit	Guide Limits		FIELD
		#1	#2	
Dissolved Metals Filtration Location	-	-		FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	29000	29000	44.9 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	45000	45000	180 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	66	66	2.9 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	25	25	<0.50 ^{DLHC}
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	2.10 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	63	63	<0.50 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	230000002300000	920000	920000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	420	420	7.04 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	250	250	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2386616-1		
		Sample Date	20-NOV-19		
		Sample ID	DUP1		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	0.94	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2386616-1
Sample Date 20-NOV-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	93.6
Surrogate: 1,4-Difluorobenzene	%	-	-	96.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386616-1
Sample Date 20-NOV-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	84.3
Surrogate: 3,4-Dichlorotoluene	%	-	-	80.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2386616-1
Sample Date 20-NOV-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	93.9
Surrogate: d12-Chrysene	%	-	-	95.4
Surrogate: d8-Naphthalene	%	-	-	93.7
Surrogate: d10-Phenanthrene	%	-	-	99.7

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2386616-1
Sample Date 20-NOV-19
Sample ID DUP1

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1248	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1254	ug/L	-	-	<0.040 ^{DLM}
Aroclor 1260	ug/L	-	-	<0.040 ^{DLM}
Surrogate: Decachlorobiphenyl	%	-	-	49.1 ^{RRR}
Total PCBs	ug/L	7.8	15	<0.080 ^{DLM}
Surrogate: Tetrachloro-m-xylene	%	-	-	82.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comment:
L2386616-1	Water	Note: RRR: Surrogate recovery marginally below ALS DQO. DL's raised 2x.	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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.

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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
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The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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
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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).

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
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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: L2386616

Report Date: 29-NOV-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
F1 (C6-C10)			107.4		%		80-120	28-NOV-19
WG3229973-2	MB							
F1 (C6-C10)			<25		ug/L		25	28-NOV-19
Surrogate: 3,4-Dichlorotoluene			97.6		%		60-140	28-NOV-19
WG3229973-5	MS	WG3229973-3						
F1 (C6-C10)			76.5		%		60-140	28-NOV-19
F2-F4-511-WT		Water						
Batch	R4926959							
WG3227562-2	LCS							
F2 (C10-C16)			84.9		%		70-130	26-NOV-19
F3 (C16-C34)			86.9		%		70-130	26-NOV-19
F4 (C34-C50)			88.3		%		70-130	26-NOV-19
WG3227562-1	MB							
F2 (C10-C16)			<100		ug/L		100	26-NOV-19
F3 (C16-C34)			<250		ug/L		250	26-NOV-19
F4 (C34-C50)			<250		ug/L		250	26-NOV-19
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	26-NOV-19
MET-D-UG/L-MS-WT		Water						
Batch	R4923048							
WG3227021-4	DUP	WG3227021-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Arsenic (As)-Dissolved		0.10	0.11		ug/L	2.9	20	25-NOV-19
Barium (Ba)-Dissolved		59.5	59.5		ug/L	0.1	20	25-NOV-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	25-NOV-19
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	25-NOV-19
Chromium (Cr)-Dissolved		1.28	1.25		ug/L	2.9	20	25-NOV-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	25-NOV-19
Copper (Cu)-Dissolved		1.03	1.02		ug/L	0.4	20	25-NOV-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Molybdenum (Mo)-Dissolved		0.172	0.163		ug/L	5.3	20	25-NOV-19
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	25-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-4 DUP		WG3227021-3						
Selenium (Se)-Dissolved		0.104	0.101		ug/L	3.0	20	25-NOV-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	25-NOV-19
Sodium (Na)-Dissolved		2030	2020		ug/L	0.6	20	25-NOV-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	25-NOV-19
Uranium (U)-Dissolved		0.356	0.353		ug/L	0.9	20	25-NOV-19
Vanadium (V)-Dissolved		1.00	1.01		ug/L	1.3	20	25-NOV-19
Zinc (Zn)-Dissolved		2.4	2.2		ug/L	5.5	20	25-NOV-19
WG3227021-2 LCS								
Antimony (Sb)-Dissolved			99.6		%		80-120	25-NOV-19
Arsenic (As)-Dissolved			99.4		%		80-120	25-NOV-19
Barium (Ba)-Dissolved			102.2		%		80-120	25-NOV-19
Beryllium (Be)-Dissolved			101.2		%		80-120	25-NOV-19
Boron (B)-Dissolved			99.3		%		80-120	25-NOV-19
Cadmium (Cd)-Dissolved			100.3		%		80-120	25-NOV-19
Chromium (Cr)-Dissolved			100.4		%		80-120	25-NOV-19
Cobalt (Co)-Dissolved			99.9		%		80-120	25-NOV-19
Copper (Cu)-Dissolved			100.8		%		80-120	25-NOV-19
Lead (Pb)-Dissolved			99.9		%		80-120	25-NOV-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	25-NOV-19
Nickel (Ni)-Dissolved			99.6		%		80-120	25-NOV-19
Selenium (Se)-Dissolved			98.1		%		80-120	25-NOV-19
Silver (Ag)-Dissolved			100.4		%		80-120	25-NOV-19
Sodium (Na)-Dissolved			101.3		%		80-120	25-NOV-19
Thallium (Tl)-Dissolved			99.95		%		80-120	25-NOV-19
Uranium (U)-Dissolved			99.1		%		80-120	25-NOV-19
Vanadium (V)-Dissolved			100.8		%		80-120	25-NOV-19
Zinc (Zn)-Dissolved			101.2		%		80-120	25-NOV-19
WG3227021-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Boron (B)-Dissolved			<10		ug/L		10	25-NOV-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	25-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4923048							
WG3227021-1 MB								
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	25-NOV-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	25-NOV-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	25-NOV-19
Sodium (Na)-Dissolved			<50		ug/L		50	25-NOV-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	25-NOV-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	25-NOV-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	25-NOV-19
WG3227021-5 MS		WG3227021-6						
Antimony (Sb)-Dissolved			102.4		%		70-130	25-NOV-19
Arsenic (As)-Dissolved			108.8		%		70-130	25-NOV-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Beryllium (Be)-Dissolved			107.9		%		70-130	25-NOV-19
Boron (B)-Dissolved			99.2		%		70-130	25-NOV-19
Cadmium (Cd)-Dissolved			104.8		%		70-130	25-NOV-19
Chromium (Cr)-Dissolved			99.0		%		70-130	25-NOV-19
Cobalt (Co)-Dissolved			98.0		%		70-130	25-NOV-19
Copper (Cu)-Dissolved			96.1		%		70-130	25-NOV-19
Lead (Pb)-Dissolved			97.5		%		70-130	25-NOV-19
Molybdenum (Mo)-Dissolved			105.5		%		70-130	25-NOV-19
Nickel (Ni)-Dissolved			95.6		%		70-130	25-NOV-19
Selenium (Se)-Dissolved			117.8		%		70-130	25-NOV-19
Silver (Ag)-Dissolved			98.1		%		70-130	25-NOV-19
Sodium (Na)-Dissolved			97.0		%		70-130	25-NOV-19
Thallium (Tl)-Dissolved			98.1		%		70-130	25-NOV-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	25-NOV-19
Vanadium (V)-Dissolved			102.7		%		70-130	25-NOV-19
Zinc (Zn)-Dissolved			105.4		%		70-130	25-NOV-19
PAH-511-WT	Water							



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4928414							
WG3227562-2 LCS								
1-Methylnaphthalene			84.9		%		50-140	27-NOV-19
2-Methylnaphthalene			78.0		%		50-140	27-NOV-19
Acenaphthene			92.7		%		50-140	27-NOV-19
Acenaphthylene			93.6		%		50-140	27-NOV-19
Anthracene			97.3		%		50-140	27-NOV-19
Benzo(a)anthracene			99.0		%		50-140	27-NOV-19
Benzo(a)pyrene			90.8		%		50-140	27-NOV-19
Benzo(b)fluoranthene			88.2		%		50-140	27-NOV-19
Benzo(g,h,i)perylene			94.8		%		50-140	27-NOV-19
Benzo(k)fluoranthene			91.8		%		50-140	27-NOV-19
Chrysene			96.3		%		50-140	27-NOV-19
Dibenzo(ah)anthracene			89.9		%		50-140	27-NOV-19
Fluoranthene			97.0		%		50-140	27-NOV-19
Fluorene			94.2		%		50-140	27-NOV-19
Indeno(1,2,3-cd)pyrene			99.8		%		50-140	27-NOV-19
Naphthalene			83.0		%		50-140	27-NOV-19
Phenanthrene			98.6		%		50-140	27-NOV-19
Pyrene			97.8		%		50-140	27-NOV-19
WG3227562-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
2-Methylnaphthalene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthene			<0.020		ug/L		0.02	27-NOV-19
Acenaphthylene			<0.020		ug/L		0.02	27-NOV-19
Anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)anthracene			<0.020		ug/L		0.02	27-NOV-19
Benzo(a)pyrene			<0.010		ug/L		0.01	27-NOV-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	27-NOV-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Chrysene			<0.020		ug/L		0.02	27-NOV-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	27-NOV-19
Fluoranthene			<0.020		ug/L		0.02	27-NOV-19
Fluorene			<0.020		ug/L		0.02	27-NOV-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	27-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4928414							
WG3227562-1	MB							
Naphthalene			<0.050		ug/L		0.05	27-NOV-19
Phenanthrene			<0.020		ug/L		0.02	27-NOV-19
Pyrene			<0.020		ug/L		0.02	27-NOV-19
Surrogate: d8-Naphthalene			90.1		%		60-140	27-NOV-19
Surrogate: d10-Phenanthrene			97.9		%		60-140	27-NOV-19
Surrogate: d12-Chrysene			93.2		%		60-140	27-NOV-19
Surrogate: d10-Acenaphthene			95.3		%		60-140	27-NOV-19
PCB-511-WT		Water						
Batch	R4925246							
WG3227114-2	LCS							
Aroclor 1242			99.3		%		60-140	26-NOV-19
Aroclor 1248			98.3		%		60-140	26-NOV-19
Aroclor 1254			111.0		%		60-140	26-NOV-19
Aroclor 1260			110.6		%		60-140	26-NOV-19
WG3227114-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1248			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1254			<0.020		ug/L		0.02	26-NOV-19
Aroclor 1260			<0.020		ug/L		0.02	26-NOV-19
Surrogate: Decachlorobiphenyl			80.1		%		50-150	26-NOV-19
Surrogate: Tetrachloro-m-xylene			78.9		%		50-150	26-NOV-19
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19

Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-4	DUP	WG3229973-3						
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-NOV-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichloroethylene		0.83	0.82		ug/L	1.2	30	28-NOV-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3229973-1	LCS							
1,1,1,2-Tetrachloroethane			91.9		%		70-130	28-NOV-19
1,1,2,2-Tetrachloroethane			91.6		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
1,1,1-Trichloroethane			95.8		%		70-130	28-NOV-19
1,1,2-Trichloroethane			92.6		%		70-130	28-NOV-19
1,1-Dichloroethane			95.9		%		70-130	28-NOV-19
1,1-Dichloroethylene			92.5		%		70-130	28-NOV-19
1,2-Dibromoethane			92.5		%		70-130	28-NOV-19
1,2-Dichlorobenzene			87.7		%		70-130	28-NOV-19
1,2-Dichloroethane			97.2		%		70-130	28-NOV-19
1,2-Dichloropropane			100.4		%		70-130	28-NOV-19
1,3-Dichlorobenzene			87.2		%		70-130	28-NOV-19
1,4-Dichlorobenzene			86.5		%		70-130	28-NOV-19
Acetone			99.1		%		60-140	28-NOV-19
Benzene			100.4		%		70-130	28-NOV-19
Bromodichloromethane			97.9		%		70-130	28-NOV-19
Bromoform			91.9		%		70-130	28-NOV-19
Bromomethane			85.9		%		60-140	28-NOV-19
Carbon tetrachloride			94.9		%		70-130	28-NOV-19
Chlorobenzene			90.8		%		70-130	28-NOV-19
Chloroform			98.1		%		70-130	28-NOV-19
cis-1,2-Dichloroethylene			95.3		%		70-130	28-NOV-19
cis-1,3-Dichloropropene			98.1		%		70-130	28-NOV-19
Dibromochloromethane			90.8		%		70-130	28-NOV-19
Dichlorodifluoromethane			80.2		%		50-140	28-NOV-19
Ethylbenzene			90.3		%		70-130	28-NOV-19
n-Hexane			89.6		%		70-130	28-NOV-19
m+p-Xylenes			89.8		%		70-130	28-NOV-19
Methyl Ethyl Ketone			94.2		%		60-140	28-NOV-19
Methyl Isobutyl Ketone			89.5		%		60-140	28-NOV-19
Methylene Chloride			96.6		%		70-130	28-NOV-19
MTBE			109.2		%		70-130	28-NOV-19
o-Xylene			90.4		%		70-130	28-NOV-19
Styrene			90.3		%		70-130	28-NOV-19
Tetrachloroethylene			88.6		%		70-130	28-NOV-19
Toluene			92.0		%		70-130	28-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-1	LCS							
trans-1,2-Dichloroethylene			93.2		%		70-130	28-NOV-19
trans-1,3-Dichloropropene			92.2		%		70-130	28-NOV-19
Trichloroethylene			95.6		%		70-130	28-NOV-19
Trichlorofluoromethane			92.4		%		60-140	28-NOV-19
Vinyl chloride			102.8		%		60-140	28-NOV-19
WG3229973-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dibromoethane			<0.20		ug/L		0.2	28-NOV-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloropropane			<0.50		ug/L		0.5	28-NOV-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Acetone			<30		ug/L		30	28-NOV-19
Benzene			<0.50		ug/L		0.5	28-NOV-19
Bromodichloromethane			<2.0		ug/L		2	28-NOV-19
Bromoform			<5.0		ug/L		5	28-NOV-19
Bromomethane			<0.50		ug/L		0.5	28-NOV-19
Carbon tetrachloride			<0.20		ug/L		0.2	28-NOV-19
Chlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Chloroform			<1.0		ug/L		1	28-NOV-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Dibromochloromethane			<2.0		ug/L		2	28-NOV-19
Dichlorodifluoromethane			<2.0		ug/L		2	28-NOV-19
Ethylbenzene			<0.50		ug/L		0.5	28-NOV-19
n-Hexane			<0.50		ug/L		0.5	28-NOV-19
m+p-Xylenes			<0.40		ug/L		0.4	28-NOV-19
Methyl Ethyl Ketone			<20		ug/L		20	28-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927602							
WG3229973-2 MB								
Methyl Isobutyl Ketone			<20		ug/L		20	28-NOV-19
Methylene Chloride			<5.0		ug/L		5	28-NOV-19
MTBE			<2.0		ug/L		2	28-NOV-19
o-Xylene			<0.30		ug/L		0.3	28-NOV-19
Styrene			<0.50		ug/L		0.5	28-NOV-19
Tetrachloroethylene			<0.50		ug/L		0.5	28-NOV-19
Toluene			<0.50		ug/L		0.5	28-NOV-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Trichloroethylene			<0.50		ug/L		0.5	28-NOV-19
Trichlorofluoromethane			<5.0		ug/L		5	28-NOV-19
Vinyl chloride			<0.50		ug/L		0.5	28-NOV-19
Surrogate: 1,4-Difluorobenzene			96.6		%		70-130	28-NOV-19
Surrogate: 4-Bromofluorobenzene			93.1		%		70-130	28-NOV-19
WG3229973-5 MS		WG3229973-3						
1,1,1,2-Tetrachloroethane			91.8		%		50-140	28-NOV-19
1,1,1,2,2-Tetrachloroethane			82.3		%		50-140	28-NOV-19
1,1,1-Trichloroethane			99.0		%		50-140	28-NOV-19
1,1,2-Trichloroethane			88.0		%		50-140	28-NOV-19
1,1-Dichloroethane			100.5		%		50-140	28-NOV-19
1,1-Dichloroethylene			94.4		%		50-140	28-NOV-19
1,2-Dibromoethane			85.8		%		50-140	28-NOV-19
1,2-Dichlorobenzene			88.0		%		50-140	28-NOV-19
1,2-Dichloroethane			92.3		%		50-140	28-NOV-19
1,2-Dichloropropane			98.1		%		50-140	28-NOV-19
1,3-Dichlorobenzene			90.0		%		50-140	28-NOV-19
1,4-Dichlorobenzene			88.3		%		50-140	28-NOV-19
Acetone			92.8		%		50-140	28-NOV-19
Benzene			99.98		%		50-140	28-NOV-19
Bromodichloromethane			95.7		%		50-140	28-NOV-19
Bromoform			85.1		%		50-140	28-NOV-19
Bromomethane			80.1		%		50-140	28-NOV-19
Carbon tetrachloride			99.9		%		50-140	28-NOV-19
Chlorobenzene			90.7		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927602							
WG3229973-5 MS		WG3229973-3						
Chloroform			98.3		%		50-140	28-NOV-19
cis-1,2-Dichloroethylene			94.5		%		50-140	28-NOV-19
cis-1,3-Dichloropropene			90.6		%		50-140	28-NOV-19
Dibromochloromethane			87.1		%		50-140	28-NOV-19
Dichlorodifluoromethane			79.2		%		50-140	28-NOV-19
Ethylbenzene			93.6		%		50-140	28-NOV-19
n-Hexane			91.9		%		50-140	28-NOV-19
m+p-Xylenes			92.6		%		50-140	28-NOV-19
Methyl Ethyl Ketone			75.0		%		50-140	28-NOV-19
Methyl Isobutyl Ketone			76.4		%		50-140	28-NOV-19
Methylene Chloride			94.0		%		50-140	28-NOV-19
MTBE			109.1		%		50-140	28-NOV-19
o-Xylene			92.2		%		50-140	28-NOV-19
Styrene			88.7		%		50-140	28-NOV-19
Tetrachloroethylene			92.9		%		50-140	28-NOV-19
Toluene			94.2		%		50-140	28-NOV-19
trans-1,2-Dichloroethylene			93.6		%		50-140	28-NOV-19
trans-1,3-Dichloropropene			83.4		%		50-140	28-NOV-19
Trichloroethylene			98.1		%		50-140	28-NOV-19
Trichlorofluoromethane			95.2		%		50-140	28-NOV-19
Vinyl chloride			101.7		%		50-140	28-NOV-19

Quality Control Report

Workorder: L2386616

Report Date: 29-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

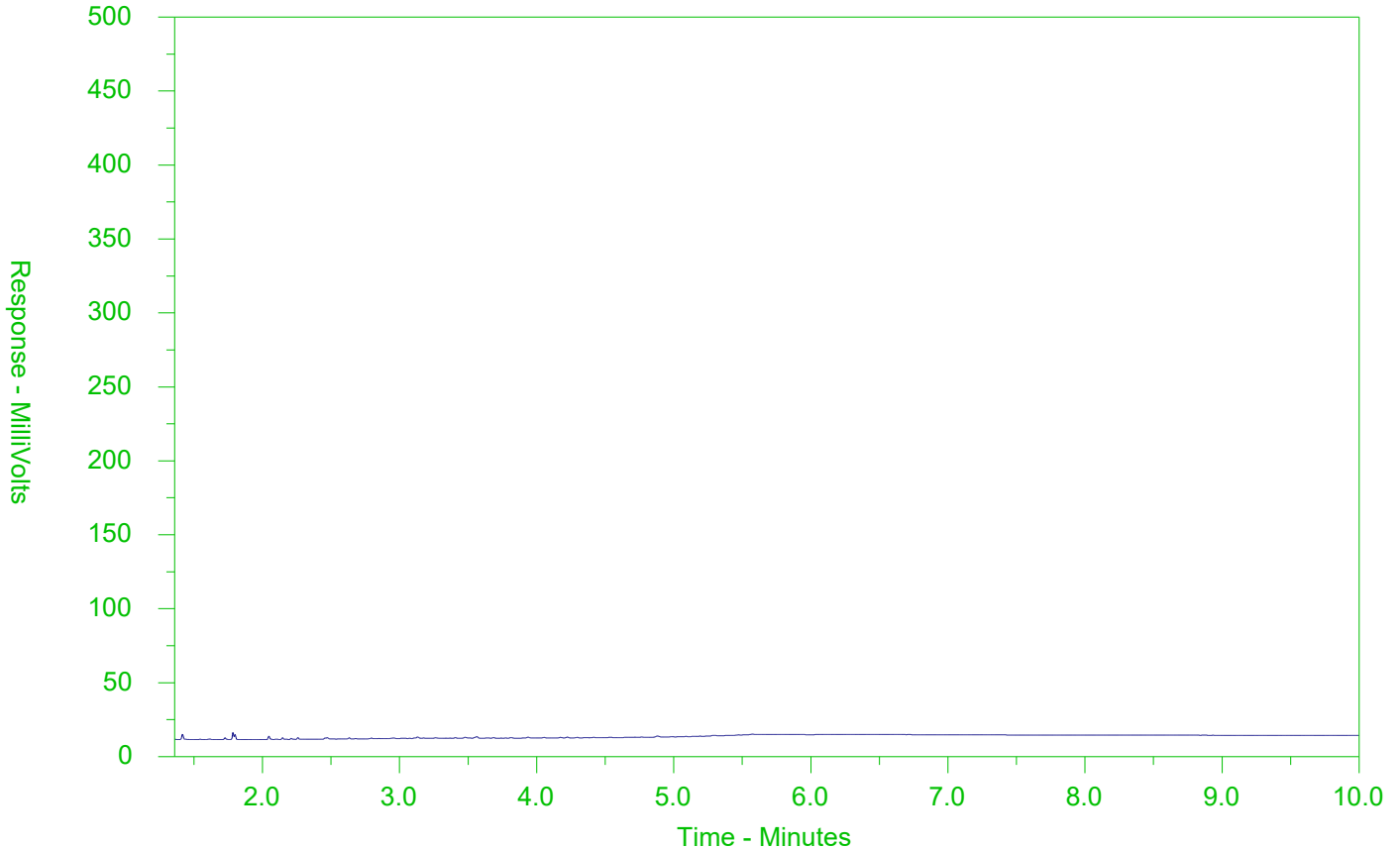
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2386616-1
 Client Sample ID: DUP1



← 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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 22-NOV-19
Report Date: 28-NOV-19 10:04 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2386581
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

Volatile Organic Compounds - WATER

Lab ID L2386581-1
Sample Date 20-NOV-19
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/L	130000	130000	<30
Benzene	ug/L	44	430	<0.50
Bromodichloromethane	ug/L	85000	85000	<2.0
Bromoform	ug/L	380	770	<5.0
Bromomethane	ug/L	5.6	56	<0.50
Carbon tetrachloride	ug/L	0.79	8.4	<0.20
Chlorobenzene	ug/L	630	630	<0.50
Dibromochloromethane	ug/L	82000	82000	<2.0
Chloroform	ug/L	2.4	22	<1.0
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50
1,4-Dichlorobenzene	ug/L	8	67	<0.50
Dichlorodifluoromethane	ug/L	4400	4400	<2.0
1,1-Dichloroethane	ug/L	320	3100	<0.50
1,2-Dichloroethane	ug/L	1.6	12	<0.50
1,1-Dichloroethylene	ug/L	1.6	17	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
Methylene Chloride	ug/L	610	5500	<5.0
1,2-Dichloropropane	ug/L	16	140	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50
Ethylbenzene	ug/L	2300	2300	<0.50
n-Hexane	ug/L	51	520	<0.50
Methyl Ethyl Ketone	ug/L	470000	1500000	<20
Methyl Isobutyl Ketone	ug/L	140000	580000	<20
MTBE	ug/L	190	1400	<2.0
Styrene	ug/L	1300	9100	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

Volatile Organic Compounds - WATER

Lab ID L2386581-1
Sample Date 20-NOV-19
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	89.3
Surrogate: 1,4-Difluorobenzene	%	-	-	95.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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**
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
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

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).

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: L2386581

Report Date: 28-NOV-19

Page 1 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927488							
WG3225887-4	DUP	WG3225887-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-NOV-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-NOV-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-NOV-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-NOV-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Styrene		<0.50	<0.50		ug/L			28-NOV-19



Quality Control Report

Workorder: L2386581

Report Date: 28-NOV-19

Page 2 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927488							
WG3225887-4	DUP	WG3225887-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-NOV-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-NOV-19
WG3225887-1	LCS							
1,1,1,2-Tetrachloroethane			90.9		%		70-130	28-NOV-19
1,1,2,2-Tetrachloroethane			89.0		%		70-130	28-NOV-19
1,1,1-Trichloroethane			96.9		%		70-130	28-NOV-19
1,1,2-Trichloroethane			89.3		%		70-130	28-NOV-19
1,1-Dichloroethane			94.8		%		70-130	28-NOV-19
1,1-Dichloroethylene			94.9		%		70-130	28-NOV-19
1,2-Dibromoethane			88.1		%		70-130	28-NOV-19
1,2-Dichlorobenzene			87.4		%		70-130	28-NOV-19
1,2-Dichloroethane			96.2		%		70-130	28-NOV-19
1,2-Dichloropropane			99.3		%		70-130	28-NOV-19
1,3-Dichlorobenzene			90.2		%		70-130	28-NOV-19
1,4-Dichlorobenzene			90.8		%		70-130	28-NOV-19
Acetone			99.5		%		60-140	28-NOV-19
Benzene			98.6		%		70-130	28-NOV-19
Bromodichloromethane			98.0		%		70-130	28-NOV-19
Bromoform			89.3		%		70-130	28-NOV-19
Bromomethane			89.9		%		60-140	28-NOV-19
Carbon tetrachloride			97.3		%		70-130	28-NOV-19
Chlorobenzene			88.7		%		70-130	28-NOV-19
Chloroform			95.7		%		70-130	28-NOV-19
cis-1,2-Dichloroethylene			93.3		%		70-130	28-NOV-19
cis-1,3-Dichloropropene			101.1		%		70-130	28-NOV-19
Dibromochloromethane			88.7		%		70-130	28-NOV-19
Dichlorodifluoromethane			87.8		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386581

Report Date: 28-NOV-19

Page 3 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4927488							
WG3225887-1	LCS							
Ethylbenzene			90.7		%		70-130	28-NOV-19
n-Hexane			92.4		%		70-130	28-NOV-19
m+p-Xylenes			92.1		%		70-130	28-NOV-19
Methyl Ethyl Ketone			94.3		%		60-140	28-NOV-19
Methyl Isobutyl Ketone			90.7		%		60-140	28-NOV-19
Methylene Chloride			94.0		%		70-130	28-NOV-19
MTBE			112.4		%		70-130	28-NOV-19
o-Xylene			90.4		%		70-130	28-NOV-19
Styrene			95.6		%		70-130	28-NOV-19
Tetrachloroethylene			91.3		%		70-130	28-NOV-19
Toluene			89.0		%		70-130	28-NOV-19
trans-1,2-Dichloroethylene			96.2		%		70-130	28-NOV-19
trans-1,3-Dichloropropene			92.4		%		70-130	28-NOV-19
Trichloroethylene			96.4		%		70-130	28-NOV-19
Trichlorofluoromethane			97.5		%		60-140	28-NOV-19
Vinyl chloride			107.4		%		60-140	28-NOV-19
WG3225887-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dibromoethane			<0.20		ug/L		0.2	28-NOV-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloroethane			<0.50		ug/L		0.5	28-NOV-19
1,2-Dichloropropane			<0.50		ug/L		0.5	28-NOV-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Acetone			<30		ug/L		30	28-NOV-19
Benzene			<0.50		ug/L		0.5	28-NOV-19
Bromodichloromethane			<2.0		ug/L		2	28-NOV-19
Bromoform			<5.0		ug/L		5	28-NOV-19
Bromomethane			<0.50		ug/L		0.5	28-NOV-19



Quality Control Report

Workorder: L2386581

Report Date: 28-NOV-19

Page 4 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4927488							
WG3225887-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	28-NOV-19
Chlorobenzene			<0.50		ug/L		0.5	28-NOV-19
Chloroform			<1.0		ug/L		1	28-NOV-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Dibromochloromethane			<2.0		ug/L		2	28-NOV-19
Dichlorodifluoromethane			<2.0		ug/L		2	28-NOV-19
Ethylbenzene			<0.50		ug/L		0.5	28-NOV-19
n-Hexane			<0.50		ug/L		0.5	28-NOV-19
m+p-Xylenes			<0.40		ug/L		0.4	28-NOV-19
Methyl Ethyl Ketone			<20		ug/L		20	28-NOV-19
Methyl Isobutyl Ketone			<20		ug/L		20	28-NOV-19
Methylene Chloride			<5.0		ug/L		5	28-NOV-19
MTBE			<2.0		ug/L		2	28-NOV-19
o-Xylene			<0.30		ug/L		0.3	28-NOV-19
Styrene			<0.50		ug/L		0.5	28-NOV-19
Tetrachloroethylene			<0.50		ug/L		0.5	28-NOV-19
Toluene			<0.50		ug/L		0.5	28-NOV-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-NOV-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-NOV-19
Trichloroethylene			<0.50		ug/L		0.5	28-NOV-19
Trichlorofluoromethane			<5.0		ug/L		5	28-NOV-19
Vinyl chloride			<0.50		ug/L		0.5	28-NOV-19
Surrogate: 1,4-Difluorobenzene			96.7		%		70-130	28-NOV-19
Surrogate: 4-Bromofluorobenzene			91.3		%		70-130	28-NOV-19
WG3225887-5 MS		WG3225887-3						
1,1,1,2-Tetrachloroethane			91.4		%		50-140	28-NOV-19
1,1,1,2,2-Tetrachloroethane			92.7		%		50-140	28-NOV-19
1,1,1-Trichloroethane			96.8		%		50-140	28-NOV-19
1,1,2-Trichloroethane			91.4		%		50-140	28-NOV-19
1,1-Dichloroethane			96.8		%		50-140	28-NOV-19
1,1-Dichloroethylene			94.2		%		50-140	28-NOV-19
1,2-Dibromoethane			90.5		%		50-140	28-NOV-19
1,2-Dichlorobenzene			87.7		%		50-140	28-NOV-19



Quality Control Report

Workorder: L2386581

Report Date: 28-NOV-19

Page 5 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4927488							
WG3225887-5 MS		WG3225887-3						
1,2-Dichloroethane			100.5		%		50-140	28-NOV-19
1,2-Dichloropropane			101.6		%		50-140	28-NOV-19
1,3-Dichlorobenzene			88.2		%		50-140	28-NOV-19
1,4-Dichlorobenzene			89.5		%		50-140	28-NOV-19
Acetone			109.0		%		50-140	28-NOV-19
Benzene			99.6		%		50-140	28-NOV-19
Bromodichloromethane			101.1		%		50-140	28-NOV-19
Bromoform			92.4		%		50-140	28-NOV-19
Bromomethane			88.7		%		50-140	28-NOV-19
Carbon tetrachloride			96.8		%		50-140	28-NOV-19
Chlorobenzene			88.5		%		50-140	28-NOV-19
Chloroform			97.6		%		50-140	28-NOV-19
cis-1,2-Dichloroethylene			95.0		%		50-140	28-NOV-19
cis-1,3-Dichloropropene			99.6		%		50-140	28-NOV-19
Dibromochloromethane			90.7		%		50-140	28-NOV-19
Dichlorodifluoromethane			84.2		%		50-140	28-NOV-19
Ethylbenzene			88.2		%		50-140	28-NOV-19
n-Hexane			90.5		%		50-140	28-NOV-19
m+p-Xylenes			90.1		%		50-140	28-NOV-19
Methyl Ethyl Ketone			93.9		%		50-140	28-NOV-19
Methyl Isobutyl Ketone			96.2		%		50-140	28-NOV-19
Methylene Chloride			96.3		%		50-140	28-NOV-19
MTBE			112.2		%		50-140	28-NOV-19
o-Xylene			88.4		%		50-140	28-NOV-19
Styrene			93.8		%		50-140	28-NOV-19
Tetrachloroethylene			88.5		%		50-140	28-NOV-19
Toluene			87.3		%		50-140	28-NOV-19
trans-1,2-Dichloroethylene			96.0		%		50-140	28-NOV-19
trans-1,3-Dichloropropene			89.9		%		50-140	28-NOV-19
Trichloroethylene			95.5		%		50-140	28-NOV-19
Trichlorofluoromethane			96.2		%		50-140	28-NOV-19
Vinyl chloride			105.0		%		50-140	28-NOV-19

Quality Control Report

Workorder: L2386581

Report Date: 28-NOV-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 6 of 6

Contact: Kossay Makhzoumi

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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 06-FEB-20
Report Date: 13-FEB-20 12:45 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2413931
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

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

Volatile Organic Compounds - WATER

Lab ID L2413931-1
Sample Date 04-FEB-20
Sample ID TRIP BLANKS

Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	VOCH S
Benzene	ug/L	44	430	<0.50	VOCH S
Bromodichloromethane	ug/L	85000	85000	<2.0	VOCH S
Bromoform	ug/L	380	770	<5.0	VOCH S
Bromomethane	ug/L	5.6	56	<0.50	VOCH S
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	VOCH S
Chlorobenzene	ug/L	630	630	<0.50	VOCH S
Dibromochloromethane	ug/L	82000	82000	<2.0	VOCH S
Chloroform	ug/L	2.4	22	<1.0	VOCH S
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	VOCH S
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	VOCH S
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	VOCH S
1,4-Dichlorobenzene	ug/L	8	67	<0.50	VOCH S
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	VOCH S
1,1-Dichloroethane	ug/L	320	3100	<0.50	VOCH S
1,2-Dichloroethane	ug/L	1.6	12	<0.50	VOCH S
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	VOCH S
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	VOCH S
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	VOCH S
Methylene Chloride	ug/L	610	5500	<5.0	VOCH S
1,2-Dichloropropane	ug/L	16	140	<0.50	VOCH S
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	VOCH S
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	VOCH S
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	VOCH S
n-Hexane	ug/L	51	520	<0.50	VOCH S
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	VOCH S
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	VOCH S
MTBE	ug/L	190	1400	<2.0	VOCH S
Styrene	ug/L	1300	9100	<0.50	VOCH S

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2413931-1
Sample Date 04-FEB-20
Sample ID TRIP BLANKS

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50 ^{VOCH} _S
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50 ^{VOCH} _S
Tetrachloroethylene	ug/L	1.6	17	<0.50 ^{VOCH} _S
Toluene	ug/L	18000	18000	<0.50 ^{VOCH} _S
1,1,1-Trichloroethane	ug/L	640	6700	<0.50 ^{VOCH} _S
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50 ^{VOCH} _S
Trichloroethylene	ug/L	1.6	17	<0.50 ^{VOCH} _S
Trichlorofluoromethane	ug/L	2500	2500	<5.0 ^{VOCH} _S
Vinyl chloride	ug/L	0.5	1.7	<0.50 ^{VOCH} _S
o-Xylene	ug/L	-	-	<0.30 ^{VOCH} _S
m+p-Xylenes	ug/L	-	-	<0.40 ^{VOCH} _S
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	91.0
Surrogate: 1,4-Difluorobenzene	%	-	-	99.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
-----------	-------------

VOCHS VOC analysis was conducted for a water sample that contained > 5% headspace. Results may be biased low.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2413931

Report Date: 13-FEB-20

Page 1 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4994408							
WG3267588-4	DUP	WG3267588-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-FEB-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	11-FEB-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-FEB-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-FEB-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	11-FEB-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	11-FEB-20
cis-1,2-Dichloroethylene		34.1	33.1		ug/L	3.1	30	11-FEB-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-FEB-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-FEB-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-FEB-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	11-FEB-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-FEB-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	11-FEB-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-FEB-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	11-FEB-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-FEB-20
Styrene		<0.50	<0.50		ug/L			11-FEB-20



Quality Control Report

Workorder: L2413931

Report Date: 13-FEB-20

Page 2 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4994408							
WG3267588-4	DUP	WG3267588-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	11-FEB-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	11-FEB-20
Trichloroethylene		30.9	30.3		ug/L	2.0	30	11-FEB-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	11-FEB-20
Vinyl chloride		7.87	7.61		ug/L	3.4	30	12-FEB-20
WG3267588-1	LCS							
1,1,1,2-Tetrachloroethane			109.0		%		70-130	11-FEB-20
1,1,2,2-Tetrachloroethane			100.2		%		70-130	11-FEB-20
1,1,1-Trichloroethane			111.6		%		70-130	11-FEB-20
1,1,2-Trichloroethane			106.9		%		70-130	11-FEB-20
1,1-Dichloroethane			108.6		%		70-130	11-FEB-20
1,1-Dichloroethylene			110.3		%		70-130	11-FEB-20
1,2-Dibromoethane			101.3		%		70-130	11-FEB-20
1,2-Dichlorobenzene			107.7		%		70-130	11-FEB-20
1,2-Dichloroethane			102.8		%		70-130	11-FEB-20
1,2-Dichloropropane			112.2		%		70-130	11-FEB-20
1,3-Dichlorobenzene			110.6		%		70-130	11-FEB-20
1,4-Dichlorobenzene			109.3		%		70-130	11-FEB-20
Acetone			101.0		%		60-140	11-FEB-20
Benzene			113.9		%		70-130	11-FEB-20
Bromodichloromethane			109.4		%		70-130	11-FEB-20
Bromoform			102.2		%		70-130	11-FEB-20
Bromomethane			108.3		%		60-140	11-FEB-20
Carbon tetrachloride			112.7		%		70-130	11-FEB-20
Chlorobenzene			108.8		%		70-130	11-FEB-20
Chloroform			112.3		%		70-130	11-FEB-20
cis-1,2-Dichloroethylene			110.5		%		70-130	11-FEB-20
cis-1,3-Dichloropropene			117.6		%		70-130	11-FEB-20
Dibromochloromethane			105.9		%		70-130	11-FEB-20
Dichlorodifluoromethane			134.6		%		50-140	11-FEB-20



Quality Control Report

Workorder: L2413931

Report Date: 13-FEB-20

Page 3 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4994408							
WG3267588-1	LCS							
Ethylbenzene			109.8		%		70-130	11-FEB-20
n-Hexane			110.4		%		70-130	11-FEB-20
m+p-Xylenes			109.5		%		70-130	11-FEB-20
Methyl Ethyl Ketone			95.5		%		60-140	11-FEB-20
Methyl Isobutyl Ketone			88.5		%		60-140	11-FEB-20
Methylene Chloride			112.9		%		70-130	11-FEB-20
MTBE			113.4		%		70-130	11-FEB-20
o-Xylene			107.8		%		70-130	11-FEB-20
Styrene			108.1		%		70-130	11-FEB-20
Tetrachloroethylene			112.9		%		70-130	11-FEB-20
Toluene			111.1		%		70-130	11-FEB-20
trans-1,2-Dichloroethylene			110.8		%		70-130	11-FEB-20
trans-1,3-Dichloropropene			116.3		%		70-130	11-FEB-20
Trichloroethylene			114.6		%		70-130	11-FEB-20
Trichlorofluoromethane			115.5		%		60-140	11-FEB-20
Vinyl chloride			135.2		%		60-140	11-FEB-20
WG3267588-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	11-FEB-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	11-FEB-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	11-FEB-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	11-FEB-20
1,1-Dichloroethane			<0.50		ug/L		0.5	11-FEB-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	11-FEB-20
1,2-Dibromoethane			<0.20		ug/L		0.2	11-FEB-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	11-FEB-20
1,2-Dichloroethane			<0.50		ug/L		0.5	11-FEB-20
1,2-Dichloropropane			<0.50		ug/L		0.5	11-FEB-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	11-FEB-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	11-FEB-20
Acetone			<30		ug/L		30	11-FEB-20
Benzene			<0.50		ug/L		0.5	11-FEB-20
Bromodichloromethane			<2.0		ug/L		2	11-FEB-20
Bromoform			<5.0		ug/L		5	11-FEB-20
Bromomethane			<0.50		ug/L		0.5	11-FEB-20



Quality Control Report

Workorder: L2413931

Report Date: 13-FEB-20

Page 4 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4994408							
WG3267588-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	11-FEB-20
Chlorobenzene			<0.50		ug/L		0.5	11-FEB-20
Chloroform			<1.0		ug/L		1	11-FEB-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-FEB-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	11-FEB-20
Dibromochloromethane			<2.0		ug/L		2	11-FEB-20
Dichlorodifluoromethane			<2.0		ug/L		2	11-FEB-20
Ethylbenzene			<0.50		ug/L		0.5	11-FEB-20
n-Hexane			<0.50		ug/L		0.5	11-FEB-20
m+p-Xylenes			<0.40		ug/L		0.4	11-FEB-20
Methyl Ethyl Ketone			<20		ug/L		20	11-FEB-20
Methyl Isobutyl Ketone			<20		ug/L		20	11-FEB-20
Methylene Chloride			<5.0		ug/L		5	11-FEB-20
MTBE			<2.0		ug/L		2	11-FEB-20
o-Xylene			<0.30		ug/L		0.3	11-FEB-20
Styrene			<0.50		ug/L		0.5	11-FEB-20
Tetrachloroethylene			<0.50		ug/L		0.5	11-FEB-20
Toluene			<0.50		ug/L		0.5	11-FEB-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	11-FEB-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	11-FEB-20
Trichloroethylene			<0.50		ug/L		0.5	11-FEB-20
Trichlorofluoromethane			<5.0		ug/L		5	11-FEB-20
Vinyl chloride			<0.50		ug/L		0.5	11-FEB-20
Surrogate: 1,4-Difluorobenzene			98.7		%		70-130	11-FEB-20
Surrogate: 4-Bromofluorobenzene			90.5		%		70-130	11-FEB-20
WG3267588-5 MS		WG3267588-3						
1,1,1,2-Tetrachloroethane			110.6		%		50-140	11-FEB-20
1,1,1,2,2-Tetrachloroethane			106.8		%		50-140	11-FEB-20
1,1,1-Trichloroethane			109.8		%		50-140	11-FEB-20
1,1,2-Trichloroethane			111.4		%		50-140	11-FEB-20
1,1-Dichloroethane			110.3		%		50-140	11-FEB-20
1,1-Dichloroethylene			104.0		%		50-140	11-FEB-20
1,2-Dibromoethane			106.5		%		50-140	11-FEB-20
1,2-Dichlorobenzene			108.4		%		50-140	11-FEB-20



Quality Control Report

Workorder: L2413931

Report Date: 13-FEB-20

Page 5 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4994408							
WG3267588-5 MS		WG3267588-3						
1,2-Dichloroethane			107.4		%		50-140	11-FEB-20
1,2-Dichloropropane			114.9		%		50-140	11-FEB-20
1,3-Dichlorobenzene			107.9		%		50-140	11-FEB-20
1,4-Dichlorobenzene			107.1		%		50-140	11-FEB-20
Acetone			106.1		%		50-140	11-FEB-20
Benzene			114.0		%		50-140	11-FEB-20
Bromodichloromethane			113.1		%		50-140	11-FEB-20
Bromoform			107.7		%		50-140	11-FEB-20
Bromomethane			100.9		%		50-140	11-FEB-20
Carbon tetrachloride			109.2		%		50-140	11-FEB-20
Chlorobenzene			108.5		%		50-140	11-FEB-20
Chloroform			113.1		%		50-140	11-FEB-20
cis-1,2-Dichloroethylene			109.6		%		50-140	11-FEB-20
cis-1,3-Dichloropropene			117.7		%		50-140	11-FEB-20
Dibromochloromethane			110.0		%		50-140	11-FEB-20
Dichlorodifluoromethane			114.7		%		50-140	11-FEB-20
Ethylbenzene			106.9		%		50-140	11-FEB-20
n-Hexane			101.5		%		50-140	11-FEB-20
m+p-Xylenes			106.5		%		50-140	11-FEB-20
Methyl Ethyl Ketone			97.0		%		50-140	11-FEB-20
Methyl Isobutyl Ketone			97.2		%		50-140	11-FEB-20
Methylene Chloride			114.2		%		50-140	11-FEB-20
MTBE			113.1		%		50-140	11-FEB-20
o-Xylene			106.6		%		50-140	11-FEB-20
Styrene			108.1		%		50-140	11-FEB-20
Tetrachloroethylene			107.7		%		50-140	11-FEB-20
Toluene			108.7		%		50-140	11-FEB-20
trans-1,2-Dichloroethylene			106.7		%		50-140	11-FEB-20
trans-1,3-Dichloropropene			114.5		%		50-140	11-FEB-20
Trichloroethylene			110.9		%		50-140	11-FEB-20
Trichlorofluoromethane			107.2		%		50-140	11-FEB-20
Vinyl chloride			120.7		%		50-140	11-FEB-20

Quality Control Report

Workorder: L2413931

Report Date: 13-FEB-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 6 of 6

Contact: Kossay Makhzoumi

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.

use confirm all EAP TATs with your AM - surcharges will apply

Regular [R] Standard TAT if received by 3 pm - business days - no surcharges apply

4 day [P4]
3 day [P3]
2 day [P2]

EMERGENCY
1 Business day [E-1]
Same Day, Weekend or Statutory holiday [E0]

Date and Time Required for all EAP TATs:

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 (FP) below

Number of Containers

Contact and company name below will appear on the final report

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 kmakizoumi@terraprobe.ca

Email 2

Email 3

Invoice Distribution

Select Invoice Distribution: EMAIL MAIL FAX

Email 1 or Fax frossi@terraprobe.ca

Email 2

Oil and Gas Required Fields (client use)

AFCoast Center:

PO#

Major/Minor Code:

Routing Code:

Requisitioner:

Location:

ALS Contact:

Sampler:

ALS Lab Work Order # (lab use only) **L2413931W2**

Sample Identification and/or Coordinates (This description will appear on the report)

TRIP BLANKS

04-02-20

GM

Metals and Inorganics

Metals

Hydride Forming Metals

EC

SAR

PAH

VOC

PHC

OC Pesticides

PCBs

2

Drinking Water (DW) Samples (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 drinking water use? YES NO

NEW T3 281

SHIPMENT RELEASE (client use)

Released by: Kossay Makizoumi

Date:

Time:

Received by:

[Signature]

Date:

FEB 01/20

Time:

9am

Received by:

[Signature]

Date:

[Signature]

Time:

INITIAL SHIPMENT RECEPTION (lab use only)

FINAL SHIPMENT RECEPTION (lab use only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen Ice Packs Cooling Initiated Ice Cubes SIF Observations Yes No Custody seal intact Yes No

INITIAL COOLER TEMPERATURES °C

FINAL COOLER TEMPERATURES °C

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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 28-FEB-20
Report Date: 05-MAR-20 08:15 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2422407
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
L2422407-1		BH1	Anions and Nutrients	Chloride (Cl)	2790	2300	mg/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
L2422407-1		BH1	Anions and Nutrients	Chloride (Cl)	2790	2300	mg/L

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

Physical Tests - WATER

Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	7.64
pH	pH units	-	-	7.05

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER


Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chloride (Cl)	mg/L	2300	2300	2790 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1


Guide Limits


Analyte	Unit	#1	#2
---------	------	----	----

Cyanide, Weak Acid Diss	ug/L	66	66	<2.0
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Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

		Lab ID	L2422407-1	
		Sample Date	27-FEB-20	
		Sample ID	BH1	
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	FIELD	
Dissolved Metals Filtration Location	-	-	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	29000	29000	79.7 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	45000	45000	140 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	0.084 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	66	66	3.5 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	25	25	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	0.64 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	63	63	<0.50 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	2300000	2300000	946000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	420	420	8.62 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	250	250	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	15 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2422407-1		
		Sample Date	27-FEB-20		
		Sample ID	BH1		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	96.1
Surrogate: 1,4-Difluorobenzene	%	-	-	101.8

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	85.5
Surrogate: 3,4-Dichlorotoluene	%	-	-	76.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422407-1
Sample Date 27-FEB-20
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	96.4
Surrogate: d12-Chrysene	%	-	-	96.4
Surrogate: d8-Naphthalene	%	-	-	95.5
Surrogate: d10-Phenanthrene	%	-	-	100.7

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID	L2422407-1
Sample Date	27-FEB-20
Sample ID	BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	98.1
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	86.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
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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**
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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.

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.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
		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	
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July SW846 8260 2011)	
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: L2422407

Report Date: 05-MAR-20

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R5013226							
WG3284708-13	DUP	WG3284708-15						
Chloride (Cl)		5.54	5.54		mg/L	0.0	20	02-MAR-20
WG3284708-12	LCS							
Chloride (Cl)			103.9		%		90-110	02-MAR-20
WG3284708-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-MAR-20
WG3284708-14	MS	WG3284708-15						
Chloride (Cl)			99.1		%		75-125	02-MAR-20
CN-WAD-R511-WT		Water						
Batch	R5013229							
WG3284843-3	DUP	L2422396-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284843-2	LCS							
Cyanide, Weak Acid Diss			100.0		%		80-120	02-MAR-20
WG3284843-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	02-MAR-20
CR-CR6-IC-R511-WT		Water						
Batch	R5012632							
WG3284757-4	DUP	WG3284757-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284757-2	LCS							
Chromium, Hexavalent			99.4		%		80-120	02-MAR-20
WG3284757-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	02-MAR-20
WG3284757-5	MS	WG3284757-3						
Chromium, Hexavalent			96.0		%		70-130	02-MAR-20
EC-R511-WT		Water						
Batch	R5012946							
WG3284273-4	DUP	WG3284273-3						
Conductivity		0.622	0.625		mS/cm	0.5	10	29-FEB-20
WG3284273-2	LCS							
Conductivity			100.5		%		90-110	29-FEB-20
WG3284273-1	MB							
Conductivity			<0.0030		mS/cm		0.003	29-FEB-20
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1	LCS							
F1 (C6-C10)			91.3		%		80-120	02-MAR-20
WG3282676-2	MB							
F1 (C6-C10)			<25		ug/L		25	02-MAR-20
Surrogate: 3,4-Dichlorotoluene			101.5		%		60-140	02-MAR-20
WG3282676-5	MS	WG3282676-3						
F1 (C6-C10)			81.5		%		60-140	02-MAR-20
F2-F4-511-WT		Water						
Batch	R5012829							
WG3284613-2	LCS							
F2 (C10-C16)			106.8		%		70-130	02-MAR-20
F3 (C16-C34)			107.1		%		70-130	02-MAR-20
F4 (C34-C50)			106.1		%		70-130	02-MAR-20
WG3284613-1	MB							
F2 (C10-C16)			<100		ug/L		100	02-MAR-20
F3 (C16-C34)			<250		ug/L		250	02-MAR-20
F4 (C34-C50)			<250		ug/L		250	02-MAR-20
Surrogate: 2-Bromobenzotrifluoride			84.4		%		60-140	02-MAR-20
HG-D-UG/L-CVAA-WT		Water						
Batch	R5012117							
WG3284635-3	DUP	L2422396-1						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284635-2	LCS							
Mercury (Hg)-Dissolved			108.0		%		80-120	02-MAR-20
WG3284635-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	02-MAR-20
WG3284635-4	MS	L2422401-1						
Mercury (Hg)-Dissolved			102.5		%		70-130	02-MAR-20
MET-D-UG/L-MS-WT		Water						
Batch	R5012163							
WG3284562-4	DUP	WG3284562-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Arsenic (As)-Dissolved		2.5	2.5		ug/L	1.5	20	02-MAR-20
Barium (Ba)-Dissolved		30.0	30.2		ug/L	0.7	20	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-4	DUP	WG3284562-3						
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Boron (B)-Dissolved		550	550		ug/L	0.8	20	02-MAR-20
Cadmium (Cd)-Dissolved		0.608	0.723		ug/L	17	20	02-MAR-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Cobalt (Co)-Dissolved		6.9	7.1		ug/L	2.8	20	02-MAR-20
Copper (Cu)-Dissolved		4.0	4.0		ug/L	0.5	20	02-MAR-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
Molybdenum (Mo)-Dissolved		49.8	51.9		ug/L	4.3	20	02-MAR-20
Nickel (Ni)-Dissolved		7.4	7.3		ug/L	1.4	20	02-MAR-20
Selenium (Se)-Dissolved		0.83	0.90		ug/L	8.1	20	02-MAR-20
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
Sodium (Na)-Dissolved		117000	117000		ug/L	0.3	20	02-MAR-20
Thallium (Tl)-Dissolved		0.13	0.13		ug/L	4.2	20	02-MAR-20
Uranium (U)-Dissolved		13.9	14.1		ug/L	1.1	20	02-MAR-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Zinc (Zn)-Dissolved		14	14	J	ug/L	11	20	02-MAR-20
WG3284562-2	LCS							
Antimony (Sb)-Dissolved			93.7		%		80-120	02-MAR-20
Arsenic (As)-Dissolved			95.3		%		80-120	02-MAR-20
Barium (Ba)-Dissolved			100.3		%		80-120	02-MAR-20
Beryllium (Be)-Dissolved			91.9		%		80-120	02-MAR-20
Boron (B)-Dissolved			92.0		%		80-120	02-MAR-20
Cadmium (Cd)-Dissolved			94.8		%		80-120	02-MAR-20
Chromium (Cr)-Dissolved			91.3		%		80-120	02-MAR-20
Cobalt (Co)-Dissolved			88.8		%		80-120	02-MAR-20
Copper (Cu)-Dissolved			85.9		%		80-120	02-MAR-20
Lead (Pb)-Dissolved			97.7		%		80-120	02-MAR-20
Molybdenum (Mo)-Dissolved			95.1		%		80-120	02-MAR-20
Nickel (Ni)-Dissolved			90.1		%		80-120	02-MAR-20
Selenium (Se)-Dissolved			91.7		%		80-120	02-MAR-20
Silver (Ag)-Dissolved			95.7		%		80-120	02-MAR-20
Sodium (Na)-Dissolved			92.6		%		80-120	02-MAR-20
Thallium (Tl)-Dissolved			96.8		%		80-120	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-2	LCS							
Uranium (U)-Dissolved			95.1		%		80-120	02-MAR-20
Vanadium (V)-Dissolved			94.7		%		80-120	02-MAR-20
Zinc (Zn)-Dissolved			92.4		%		80-120	02-MAR-20
WG3284562-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Sodium (Na)-Dissolved			<50		ug/L		50	02-MAR-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-20
WG3284562-5	MS	WG3284562-3						
Antimony (Sb)-Dissolved			91.5		%		70-130	02-MAR-20
Arsenic (As)-Dissolved			90.5		%		70-130	02-MAR-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Beryllium (Be)-Dissolved			88.4		%		70-130	02-MAR-20
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Cadmium (Cd)-Dissolved			79.1		%		70-130	02-MAR-20
Chromium (Cr)-Dissolved			87.0		%		70-130	02-MAR-20
Lead (Pb)-Dissolved			89.7		%		70-130	02-MAR-20
Molybdenum (Mo)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Selenium (Se)-Dissolved			90.1		%		70-130	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-5 MS		WG3284562-3						
Silver (Ag)-Dissolved			92.7		%		70-130	02-MAR-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Thallium (Tl)-Dissolved			91.5		%		70-130	02-MAR-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Vanadium (V)-Dissolved			91.3		%		70-130	02-MAR-20
PAH-511-WT								
	Water							
Batch	R5013271							
WG3284613-2 LCS								
1-Methylnaphthalene			87.8		%		50-140	03-MAR-20
2-Methylnaphthalene			84.7		%		50-140	03-MAR-20
Acenaphthene			94.2		%		50-140	03-MAR-20
Acenaphthylene			97.7		%		50-140	03-MAR-20
Anthracene			99.8		%		50-140	03-MAR-20
Benzo(a)anthracene			117.1		%		50-140	03-MAR-20
Benzo(a)pyrene			91.5		%		50-140	03-MAR-20
Benzo(b)fluoranthene			79.8		%		50-140	03-MAR-20
Benzo(g,h,i)perylene			94.9		%		50-140	03-MAR-20
Benzo(k)fluoranthene			86.8		%		50-140	03-MAR-20
Chrysene			103.2		%		50-140	03-MAR-20
Dibenzo(ah)anthracene			97.0		%		50-140	03-MAR-20
Fluoranthene			99.6		%		50-140	03-MAR-20
Fluorene			96.3		%		50-140	03-MAR-20
Indeno(1,2,3-cd)pyrene			114.7		%		50-140	03-MAR-20
Naphthalene			91.0		%		50-140	03-MAR-20
Phenanthrene			99.6		%		50-140	03-MAR-20
Pyrene			99.2		%		50-140	03-MAR-20
WG3284613-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	03-MAR-20
2-Methylnaphthalene			<0.020		ug/L		0.02	03-MAR-20
Acenaphthene			<0.020		ug/L		0.02	03-MAR-20
Acenaphthylene			<0.020		ug/L		0.02	03-MAR-20
Anthracene			<0.020		ug/L		0.02	03-MAR-20
Benzo(a)anthracene			<0.020		ug/L		0.02	03-MAR-20
Benzo(a)pyrene			<0.010		ug/L		0.01	03-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R5013271							
WG3284613-1	MB							
Benzo(b)fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	03-MAR-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Chrysene			<0.020		ug/L		0.02	03-MAR-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	03-MAR-20
Fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Fluorene			<0.020		ug/L		0.02	03-MAR-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	03-MAR-20
Naphthalene			<0.050		ug/L		0.05	03-MAR-20
Phenanthrene			<0.020		ug/L		0.02	03-MAR-20
Pyrene			<0.020		ug/L		0.02	03-MAR-20
Surrogate: d8-Naphthalene			96.1		%		60-140	03-MAR-20
Surrogate: d10-Phenanthrene			100.6		%		60-140	03-MAR-20
Surrogate: d12-Chrysene			100.1		%		60-140	03-MAR-20
Surrogate: d10-Acenaphthene			97.5		%		60-140	03-MAR-20
PCB-511-WT		Water						
Batch	R5014166							
WG3284619-2	LCS							
Aroclor 1242			95.7		%		60-140	04-MAR-20
Aroclor 1248			110.9		%		60-140	04-MAR-20
Aroclor 1254			95.8		%		60-140	04-MAR-20
Aroclor 1260			115.6		%		60-140	04-MAR-20
WG3284619-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1248			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1254			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1260			<0.020		ug/L		0.02	04-MAR-20
Surrogate: Decachlorobiphenyl			120.1		%		50-150	04-MAR-20
Surrogate: Tetrachloro-m-xylene			74.1		%		50-150	04-MAR-20
PH-WT		Water						
Batch	R5012946							
WG3284273-4	DUP	WG3284273-3						
pH		8.09	8.10	J	pH units	0.01	0.2	29-FEB-20
WG3284273-2	LCS							



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT		Water						
Batch	R5012946							
WG3284273-2	LCS							
pH			7.04		pH units		6.9-7.1	29-FEB-20
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1	LCS							
1,1,1,2-Tetrachloroethane			91.8		%		70-130	02-MAR-20
1,1,2,2-Tetrachloroethane			88.6		%		70-130	02-MAR-20
1,1,1-Trichloroethane			94.2		%		70-130	02-MAR-20
1,1,2-Trichloroethane			101.4		%		70-130	02-MAR-20
1,1-Dichloroethane			87.7		%		70-130	02-MAR-20
1,1-Dichloroethylene			86.8		%		70-130	02-MAR-20
1,2-Dibromoethane			101.2		%		70-130	02-MAR-20
1,2-Dichlorobenzene			95.0		%		70-130	02-MAR-20
1,2-Dichloroethane			85.8		%		70-130	02-MAR-20
1,2-Dichloropropane			88.4		%		70-130	02-MAR-20
1,3-Dichlorobenzene			94.0		%		70-130	02-MAR-20
1,4-Dichlorobenzene			93.2		%		70-130	02-MAR-20
Acetone			92.6		%		60-140	02-MAR-20
Benzene			93.0		%		70-130	02-MAR-20
Bromodichloromethane			90.5		%		70-130	02-MAR-20
Bromoform			91.5		%		70-130	02-MAR-20
Bromomethane			91.7		%		60-140	02-MAR-20
Carbon tetrachloride			91.1		%		70-130	02-MAR-20
Chlorobenzene			93.0		%		70-130	02-MAR-20
Chloroform			92.7		%		70-130	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-1	LCS							
cis-1,2-Dichloroethylene			93.7		%		70-130	02-MAR-20
cis-1,3-Dichloropropene			80.8		%		70-130	02-MAR-20
Dibromochloromethane			97.4		%		70-130	02-MAR-20
Dichlorodifluoromethane			116.3		%		50-140	02-MAR-20
Ethylbenzene			86.6		%		70-130	02-MAR-20
n-Hexane			84.9		%		70-130	02-MAR-20
m+p-Xylenes			86.5		%		70-130	02-MAR-20
Methyl Ethyl Ketone			108.6		%		60-140	02-MAR-20
Methyl Isobutyl Ketone			79.3		%		60-140	02-MAR-20
Methylene Chloride			102.6		%		70-130	02-MAR-20
MTBE			94.9		%		70-130	02-MAR-20
o-Xylene			94.1		%		70-130	02-MAR-20
Styrene			85.1		%		70-130	02-MAR-20
Tetrachloroethylene			93.8		%		70-130	02-MAR-20
Toluene			92.6		%		70-130	02-MAR-20
trans-1,2-Dichloroethylene			85.7		%		70-130	02-MAR-20
trans-1,3-Dichloropropene			87.4		%		70-130	02-MAR-20
Trichloroethylene			100.3		%		70-130	02-MAR-20
Trichlorofluoromethane			98.1		%		60-140	02-MAR-20
Vinyl chloride			116.9		%		60-140	02-MAR-20
WG3282676-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	02-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	02-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Acetone			<30		ug/L		30	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5012001							
WG3282676-2	MB							
Benzene			<0.50		ug/L		0.5	02-MAR-20
Bromodichloromethane			<2.0		ug/L		2	02-MAR-20
Bromoform			<5.0		ug/L		5	02-MAR-20
Bromomethane			<0.50		ug/L		0.5	02-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	02-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Chloroform			<1.0		ug/L		1	02-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Dibromochloromethane			<2.0		ug/L		2	02-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	02-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	02-MAR-20
n-Hexane			<0.50		ug/L		0.5	02-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	02-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	02-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	02-MAR-20
Methylene Chloride			<5.0		ug/L		5	02-MAR-20
MTBE			<2.0		ug/L		2	02-MAR-20
o-Xylene			<0.30		ug/L		0.3	02-MAR-20
Styrene			<0.50		ug/L		0.5	02-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	02-MAR-20
Toluene			<0.50		ug/L		0.5	02-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	02-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	02-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 1,4-Difluorobenzene			101.4		%		70-130	02-MAR-20
Surrogate: 4-Bromofluorobenzene			96.9		%		70-130	02-MAR-20
WG3282676-5	MS	WG3282676-3						
1,1,1,2-Tetrachloroethane			91.9		%		50-140	02-MAR-20
1,1,2,2-Tetrachloroethane			81.5		%		50-140	02-MAR-20
1,1,1-Trichloroethane			96.6		%		50-140	02-MAR-20
1,1,2-Trichloroethane			93.7		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
1,1-Dichloroethane			94.6		%		50-140	02-MAR-20
1,1-Dichloroethylene			86.5		%		50-140	02-MAR-20
1,2-Dibromoethane			90.5		%		50-140	02-MAR-20
1,2-Dichlorobenzene			95.4		%		50-140	02-MAR-20
1,2-Dichloroethane			77.8		%		50-140	02-MAR-20
1,2-Dichloropropane			85.1		%		50-140	02-MAR-20
1,3-Dichlorobenzene			96.9		%		50-140	02-MAR-20
1,4-Dichlorobenzene			95.6		%		50-140	02-MAR-20
Acetone			76.5		%		50-140	02-MAR-20
Benzene			92.2		%		50-140	02-MAR-20
Bromodichloromethane			87.3		%		50-140	02-MAR-20
Bromoform			83.8		%		50-140	02-MAR-20
Bromomethane			84.5		%		50-140	02-MAR-20
Carbon tetrachloride			94.4		%		50-140	02-MAR-20
Chlorobenzene			93.4		%		50-140	02-MAR-20
Chloroform			91.3		%		50-140	02-MAR-20
cis-1,2-Dichloroethylene			91.9		%		50-140	02-MAR-20
cis-1,3-Dichloropropene			78.1		%		50-140	02-MAR-20
Dibromochloromethane			91.6		%		50-140	02-MAR-20
Dichlorodifluoromethane			102.0		%		50-140	02-MAR-20
Ethylbenzene			90.6		%		50-140	02-MAR-20
n-Hexane			84.8		%		50-140	02-MAR-20
m+p-Xylenes			90.5		%		50-140	02-MAR-20
Methyl Ethyl Ketone			75.9		%		50-140	02-MAR-20
Methyl Isobutyl Ketone			66.1		%		50-140	02-MAR-20
Methylene Chloride			96.4		%		50-140	02-MAR-20
MTBE			95.3		%		50-140	02-MAR-20
o-Xylene			97.0		%		50-140	02-MAR-20
Styrene			84.6		%		50-140	02-MAR-20
Tetrachloroethylene			100.2		%		50-140	02-MAR-20
Toluene			94.5		%		50-140	02-MAR-20
trans-1,2-Dichloroethylene			86.2		%		50-140	02-MAR-20
trans-1,3-Dichloropropene			83.4		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
Trichloroethylene			103.9		%		50-140	02-MAR-20
Trichlorofluoromethane			97.0		%		50-140	02-MAR-20
Vinyl chloride			109.7		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2422407

Report Date: 05-MAR-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

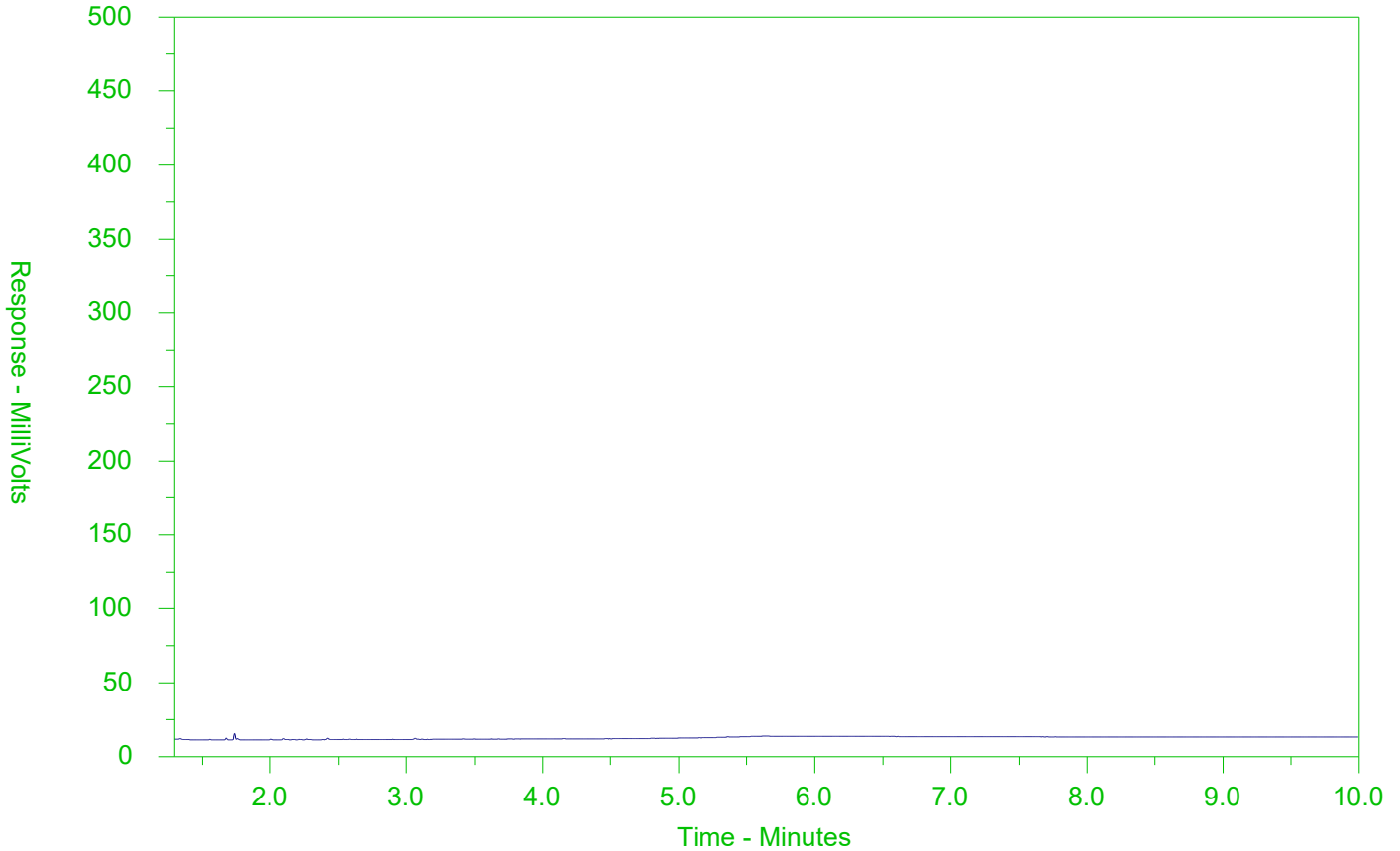
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2422407-1
 Client Sample ID: BH1



← 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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 28-FEB-20
Report Date: 05-MAR-20 11:09 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2422401
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
L2422401-1		BH2	Anions and Nutrients	Chloride (Cl)	2680	2300	mg/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
L2422401-1		BH2	Anions and Nutrients	Chloride (Cl)	2680	2300	mg/L

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

Physical Tests - WATER

Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	7.83
pH	pH units	-	-	7.17

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER

Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chloride (Cl)	mg/L	2300	2300	2680 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER


Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

		Lab ID	L2422401-1		
		Sample Date	27-FEB-20		
		Sample ID	BH2		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Mercury Filtration Location		-	-	-	FIELD
Dissolved Metals Filtration Location		-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	102	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	100	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050	
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	5.91	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000	2300000	1300000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	1.59	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2422401-1		
		Sample Date	27-FEB-20		
		Sample ID	BH2		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	95.1
Surrogate: 1,4-Difluorobenzene	%	-	-	102.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	101.6
Surrogate: 3,4-Dichlorotoluene	%	-	-	72.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2422401-1 Sample Date 27-FEB-20 Sample ID BH2				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	0.037 ^R
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	0.088
1-Methylnaphthalene	ug/L	1800	1800	0.039
2-Methylnaphthalene	ug/L	1800	1800	0.049
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	97.1
Surrogate: d12-Chrysene	%	-	-	87.3
Surrogate: d8-Naphthalene	%	-	-	100.4
Surrogate: d10-Phenanthrene	%	-	-	105.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2422401-1
Sample Date 27-FEB-20
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	83.4
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	90.4

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
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**
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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**
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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 EPA 1631E (mod)
(ug/L)

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

L2422401 CONT'D....
Job Reference: 1-19-0603-42
PAGE 15 of 15
05-MAR-20 11:09 (MT)

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
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

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).

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: L2422401

Report Date: 05-MAR-20

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R5013226							
WG3284708-13	DUP	WG3284708-15						
Chloride (Cl)		5.54	5.54		mg/L	0.0	20	02-MAR-20
WG3284708-12	LCS							
Chloride (Cl)			103.9		%		90-110	02-MAR-20
WG3284708-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-MAR-20
WG3284708-14	MS	WG3284708-15						
Chloride (Cl)			99.1		%		75-125	02-MAR-20
CN-WAD-R511-WT		Water						
Batch	R5013229							
WG3284843-3	DUP	L2422396-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284843-2	LCS							
Cyanide, Weak Acid Diss			100.0		%		80-120	02-MAR-20
WG3284843-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	02-MAR-20
CR-CR6-IC-R511-WT		Water						
Batch	R5012632							
WG3284757-4	DUP	WG3284757-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284757-2	LCS							
Chromium, Hexavalent			99.4		%		80-120	02-MAR-20
WG3284757-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	02-MAR-20
WG3284757-5	MS	WG3284757-3						
Chromium, Hexavalent			96.0		%		70-130	02-MAR-20
EC-R511-WT		Water						
Batch	R5012946							
WG3284273-4	DUP	WG3284273-3						
Conductivity		0.622	0.625		mS/cm	0.5	10	29-FEB-20
WG3284273-2	LCS							
Conductivity			100.5		%		90-110	29-FEB-20
WG3284273-1	MB							
Conductivity			<0.0030		mS/cm		0.003	29-FEB-20
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1	LCS							
F1 (C6-C10)			91.3		%		80-120	02-MAR-20
WG3282676-2	MB							
F1 (C6-C10)			<25		ug/L		25	02-MAR-20
Surrogate: 3,4-Dichlorotoluene			101.5		%		60-140	02-MAR-20
WG3282676-5	MS	WG3282676-3						
F1 (C6-C10)			81.5		%		60-140	02-MAR-20
F2-F4-511-WT		Water						
Batch	R5012153							
WG3284543-2	LCS							
F2 (C10-C16)			104.8		%		70-130	02-MAR-20
F3 (C16-C34)			104.1		%		70-130	02-MAR-20
F4 (C34-C50)			110.9		%		70-130	02-MAR-20
WG3284543-1	MB							
F2 (C10-C16)			<100		ug/L		100	02-MAR-20
F3 (C16-C34)			<250		ug/L		250	02-MAR-20
F4 (C34-C50)			<250		ug/L		250	02-MAR-20
Surrogate: 2-Bromobenzotrifluoride			102.4		%		60-140	02-MAR-20
HG-D-UG/L-CVAA-WT		Water						
Batch	R5012117							
WG3284635-3	DUP	L2422396-1						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284635-2	LCS							
Mercury (Hg)-Dissolved			108.0		%		80-120	02-MAR-20
WG3284635-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	02-MAR-20
WG3284635-4	MS	L2422401-1						
Mercury (Hg)-Dissolved			102.5		%		70-130	02-MAR-20
MET-D-UG/L-MS-WT		Water						
Batch	R5012163							
WG3284562-4	DUP	WG3284562-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Arsenic (As)-Dissolved		2.5	2.5		ug/L	1.5	20	02-MAR-20
Barium (Ba)-Dissolved		30.0	30.2		ug/L	0.7	20	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-4	DUP	WG3284562-3						
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Boron (B)-Dissolved		550	550		ug/L	0.8	20	02-MAR-20
Cadmium (Cd)-Dissolved		0.608	0.723		ug/L	17	20	02-MAR-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Cobalt (Co)-Dissolved		6.9	7.1		ug/L	2.8	20	02-MAR-20
Copper (Cu)-Dissolved		4.0	4.0		ug/L	0.5	20	02-MAR-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
Molybdenum (Mo)-Dissolved		49.8	51.9		ug/L	4.3	20	02-MAR-20
Nickel (Ni)-Dissolved		7.4	7.3		ug/L	1.4	20	02-MAR-20
Selenium (Se)-Dissolved		0.83	0.90		ug/L	8.1	20	02-MAR-20
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
Sodium (Na)-Dissolved		117000	117000		ug/L	0.3	20	02-MAR-20
Thallium (Tl)-Dissolved		0.13	0.13		ug/L	4.2	20	02-MAR-20
Uranium (U)-Dissolved		13.9	14.1		ug/L	1.1	20	02-MAR-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Zinc (Zn)-Dissolved		14	14	J	ug/L	11	20	02-MAR-20
WG3284562-2	LCS							
Antimony (Sb)-Dissolved			93.7		%		80-120	02-MAR-20
Arsenic (As)-Dissolved			95.3		%		80-120	02-MAR-20
Barium (Ba)-Dissolved			100.3		%		80-120	02-MAR-20
Beryllium (Be)-Dissolved			91.9		%		80-120	02-MAR-20
Boron (B)-Dissolved			92.0		%		80-120	02-MAR-20
Cadmium (Cd)-Dissolved			94.8		%		80-120	02-MAR-20
Chromium (Cr)-Dissolved			91.3		%		80-120	02-MAR-20
Cobalt (Co)-Dissolved			88.8		%		80-120	02-MAR-20
Copper (Cu)-Dissolved			85.9		%		80-120	02-MAR-20
Lead (Pb)-Dissolved			97.7		%		80-120	02-MAR-20
Molybdenum (Mo)-Dissolved			95.1		%		80-120	02-MAR-20
Nickel (Ni)-Dissolved			90.1		%		80-120	02-MAR-20
Selenium (Se)-Dissolved			91.7		%		80-120	02-MAR-20
Silver (Ag)-Dissolved			95.7		%		80-120	02-MAR-20
Sodium (Na)-Dissolved			92.6		%		80-120	02-MAR-20
Thallium (Tl)-Dissolved			96.8		%		80-120	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-2	LCS							
Uranium (U)-Dissolved			95.1		%		80-120	02-MAR-20
Vanadium (V)-Dissolved			94.7		%		80-120	02-MAR-20
Zinc (Zn)-Dissolved			92.4		%		80-120	02-MAR-20
WG3284562-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Sodium (Na)-Dissolved			<50		ug/L		50	02-MAR-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-20
WG3284562-5	MS	WG3284562-3						
Antimony (Sb)-Dissolved			91.5		%		70-130	02-MAR-20
Arsenic (As)-Dissolved			90.5		%		70-130	02-MAR-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Beryllium (Be)-Dissolved			88.4		%		70-130	02-MAR-20
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Cadmium (Cd)-Dissolved			79.1		%		70-130	02-MAR-20
Chromium (Cr)-Dissolved			87.0		%		70-130	02-MAR-20
Lead (Pb)-Dissolved			89.7		%		70-130	02-MAR-20
Molybdenum (Mo)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Selenium (Se)-Dissolved			90.1		%		70-130	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-5 MS		WG3284562-3						
Silver (Ag)-Dissolved			92.7		%		70-130	02-MAR-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Thallium (Tl)-Dissolved			91.5		%		70-130	02-MAR-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Vanadium (V)-Dissolved			91.3		%		70-130	02-MAR-20
PAH-511-WT								
	Water							
Batch	R5013129							
WG3284543-2 LCS								
1-Methylnaphthalene			90.8		%		50-140	03-MAR-20
2-Methylnaphthalene			87.7		%		50-140	03-MAR-20
Acenaphthene			98.0		%		50-140	03-MAR-20
Acenaphthylene			101.4		%		50-140	03-MAR-20
Anthracene			100.6		%		50-140	03-MAR-20
Benzo(a)anthracene			113.5		%		50-140	03-MAR-20
Benzo(a)pyrene			89.1		%		50-140	03-MAR-20
Benzo(b)fluoranthene			80.8		%		50-140	03-MAR-20
Benzo(g,h,i)perylene			100.4		%		50-140	03-MAR-20
Benzo(k)fluoranthene			92.6		%		50-140	03-MAR-20
Chrysene			106.2		%		50-140	03-MAR-20
Dibenzo(ah)anthracene			104.7		%		50-140	03-MAR-20
Fluoranthene			104.3		%		50-140	03-MAR-20
Fluorene			99.8		%		50-140	03-MAR-20
Indeno(1,2,3-cd)pyrene			114.0		%		50-140	03-MAR-20
Naphthalene			95.0		%		50-140	03-MAR-20
Phenanthrene			104.3		%		50-140	03-MAR-20
Pyrene			103.4		%		50-140	03-MAR-20
WG3284543-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	03-MAR-20
2-Methylnaphthalene			<0.020		ug/L		0.02	03-MAR-20
Acenaphthene			<0.020		ug/L		0.02	03-MAR-20
Acenaphthylene			<0.020		ug/L		0.02	03-MAR-20
Anthracene			<0.020		ug/L		0.02	03-MAR-20
Benzo(a)anthracene			<0.020		ug/L		0.02	03-MAR-20
Benzo(a)pyrene			<0.010		ug/L		0.01	03-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R5013129							
WG3284543-1	MB							
Benzo(b)fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	03-MAR-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Chrysene			<0.020		ug/L		0.02	03-MAR-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	03-MAR-20
Fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Fluorene			<0.020		ug/L		0.02	03-MAR-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	03-MAR-20
Naphthalene			<0.050		ug/L		0.05	03-MAR-20
Phenanthrene			<0.020		ug/L		0.02	03-MAR-20
Pyrene			<0.020		ug/L		0.02	03-MAR-20
Surrogate: d8-Naphthalene			107.4		%		60-140	03-MAR-20
Surrogate: d10-Phenanthrene			104.5		%		60-140	03-MAR-20
Surrogate: d12-Chrysene			98.3		%		60-140	03-MAR-20
Surrogate: d10-Acenaphthene			103.6		%		60-140	03-MAR-20
PCB-511-WT		Water						
Batch	R5014166							
WG3284619-2	LCS							
Aroclor 1242			95.7		%		60-140	04-MAR-20
Aroclor 1248			110.9		%		60-140	04-MAR-20
Aroclor 1254			95.8		%		60-140	04-MAR-20
Aroclor 1260			115.6		%		60-140	04-MAR-20
WG3284619-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1248			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1254			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1260			<0.020		ug/L		0.02	04-MAR-20
Surrogate: Decachlorobiphenyl			120.1		%		50-150	04-MAR-20
Surrogate: Tetrachloro-m-xylene			74.1		%		50-150	04-MAR-20
PH-WT		Water						
Batch	R5012946							
WG3284273-4	DUP	WG3284273-3						
pH		8.09	8.10	J	pH units	0.01	0.2	29-FEB-20
WG3284273-2	LCS							



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT		Water						
Batch	R5012946							
WG3284273-2	LCS							
pH			7.04		pH units		6.9-7.1	29-FEB-20
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1	LCS							
1,1,1,2-Tetrachloroethane			91.8		%		70-130	02-MAR-20
1,1,1,2,2-Tetrachloroethane			88.6		%		70-130	02-MAR-20
1,1,1-Trichloroethane			94.2		%		70-130	02-MAR-20
1,1,2-Trichloroethane			101.4		%		70-130	02-MAR-20
1,1-Dichloroethane			87.7		%		70-130	02-MAR-20
1,1-Dichloroethylene			86.8		%		70-130	02-MAR-20
1,2-Dibromoethane			101.2		%		70-130	02-MAR-20
1,2-Dichlorobenzene			95.0		%		70-130	02-MAR-20
1,2-Dichloroethane			85.8		%		70-130	02-MAR-20
1,2-Dichloropropane			88.4		%		70-130	02-MAR-20
1,3-Dichlorobenzene			94.0		%		70-130	02-MAR-20
1,4-Dichlorobenzene			93.2		%		70-130	02-MAR-20
Acetone			92.6		%		60-140	02-MAR-20
Benzene			93.0		%		70-130	02-MAR-20
Bromodichloromethane			90.5		%		70-130	02-MAR-20
Bromoform			91.5		%		70-130	02-MAR-20
Bromomethane			91.7		%		60-140	02-MAR-20
Carbon tetrachloride			91.1		%		70-130	02-MAR-20
Chlorobenzene			93.0		%		70-130	02-MAR-20
Chloroform			92.7		%		70-130	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-1	LCS							
cis-1,2-Dichloroethylene			93.7		%		70-130	02-MAR-20
cis-1,3-Dichloropropene			80.8		%		70-130	02-MAR-20
Dibromochloromethane			97.4		%		70-130	02-MAR-20
Dichlorodifluoromethane			116.3		%		50-140	02-MAR-20
Ethylbenzene			86.6		%		70-130	02-MAR-20
n-Hexane			84.9		%		70-130	02-MAR-20
m+p-Xylenes			86.5		%		70-130	02-MAR-20
Methyl Ethyl Ketone			108.6		%		60-140	02-MAR-20
Methyl Isobutyl Ketone			79.3		%		60-140	02-MAR-20
Methylene Chloride			102.6		%		70-130	02-MAR-20
MTBE			94.9		%		70-130	02-MAR-20
o-Xylene			94.1		%		70-130	02-MAR-20
Styrene			85.1		%		70-130	02-MAR-20
Tetrachloroethylene			93.8		%		70-130	02-MAR-20
Toluene			92.6		%		70-130	02-MAR-20
trans-1,2-Dichloroethylene			85.7		%		70-130	02-MAR-20
trans-1,3-Dichloropropene			87.4		%		70-130	02-MAR-20
Trichloroethylene			100.3		%		70-130	02-MAR-20
Trichlorofluoromethane			98.1		%		60-140	02-MAR-20
Vinyl chloride			116.9		%		60-140	02-MAR-20
WG3282676-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	02-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	02-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Acetone			<30		ug/L		30	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-2	MB							
Benzene			<0.50		ug/L		0.5	02-MAR-20
Bromodichloromethane			<2.0		ug/L		2	02-MAR-20
Bromoform			<5.0		ug/L		5	02-MAR-20
Bromomethane			<0.50		ug/L		0.5	02-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	02-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Chloroform			<1.0		ug/L		1	02-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Dibromochloromethane			<2.0		ug/L		2	02-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	02-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	02-MAR-20
n-Hexane			<0.50		ug/L		0.5	02-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	02-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	02-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	02-MAR-20
Methylene Chloride			<5.0		ug/L		5	02-MAR-20
MTBE			<2.0		ug/L		2	02-MAR-20
o-Xylene			<0.30		ug/L		0.3	02-MAR-20
Styrene			<0.50		ug/L		0.5	02-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	02-MAR-20
Toluene			<0.50		ug/L		0.5	02-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	02-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	02-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 1,4-Difluorobenzene			101.4		%		70-130	02-MAR-20
Surrogate: 4-Bromofluorobenzene			96.9		%		70-130	02-MAR-20
WG3282676-5	MS	WG3282676-3						
1,1,1,2-Tetrachloroethane			91.9		%		50-140	02-MAR-20
1,1,2,2-Tetrachloroethane			81.5		%		50-140	02-MAR-20
1,1,1-Trichloroethane			96.6		%		50-140	02-MAR-20
1,1,2-Trichloroethane			93.7		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
1,1-Dichloroethane			94.6		%		50-140	02-MAR-20
1,1-Dichloroethylene			86.5		%		50-140	02-MAR-20
1,2-Dibromoethane			90.5		%		50-140	02-MAR-20
1,2-Dichlorobenzene			95.4		%		50-140	02-MAR-20
1,2-Dichloroethane			77.8		%		50-140	02-MAR-20
1,2-Dichloropropane			85.1		%		50-140	02-MAR-20
1,3-Dichlorobenzene			96.9		%		50-140	02-MAR-20
1,4-Dichlorobenzene			95.6		%		50-140	02-MAR-20
Acetone			76.5		%		50-140	02-MAR-20
Benzene			92.2		%		50-140	02-MAR-20
Bromodichloromethane			87.3		%		50-140	02-MAR-20
Bromoform			83.8		%		50-140	02-MAR-20
Bromomethane			84.5		%		50-140	02-MAR-20
Carbon tetrachloride			94.4		%		50-140	02-MAR-20
Chlorobenzene			93.4		%		50-140	02-MAR-20
Chloroform			91.3		%		50-140	02-MAR-20
cis-1,2-Dichloroethylene			91.9		%		50-140	02-MAR-20
cis-1,3-Dichloropropene			78.1		%		50-140	02-MAR-20
Dibromochloromethane			91.6		%		50-140	02-MAR-20
Dichlorodifluoromethane			102.0		%		50-140	02-MAR-20
Ethylbenzene			90.6		%		50-140	02-MAR-20
n-Hexane			84.8		%		50-140	02-MAR-20
m+p-Xylenes			90.5		%		50-140	02-MAR-20
Methyl Ethyl Ketone			75.9		%		50-140	02-MAR-20
Methyl Isobutyl Ketone			66.1		%		50-140	02-MAR-20
Methylene Chloride			96.4		%		50-140	02-MAR-20
MTBE			95.3		%		50-140	02-MAR-20
o-Xylene			97.0		%		50-140	02-MAR-20
Styrene			84.6		%		50-140	02-MAR-20
Tetrachloroethylene			100.2		%		50-140	02-MAR-20
Toluene			94.5		%		50-140	02-MAR-20
trans-1,2-Dichloroethylene			86.2		%		50-140	02-MAR-20
trans-1,3-Dichloropropene			83.4		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
Trichloroethylene			103.9		%		50-140	02-MAR-20
Trichlorofluoromethane			97.0		%		50-140	02-MAR-20
Vinyl chloride			109.7		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2422401

Report Date: 05-MAR-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

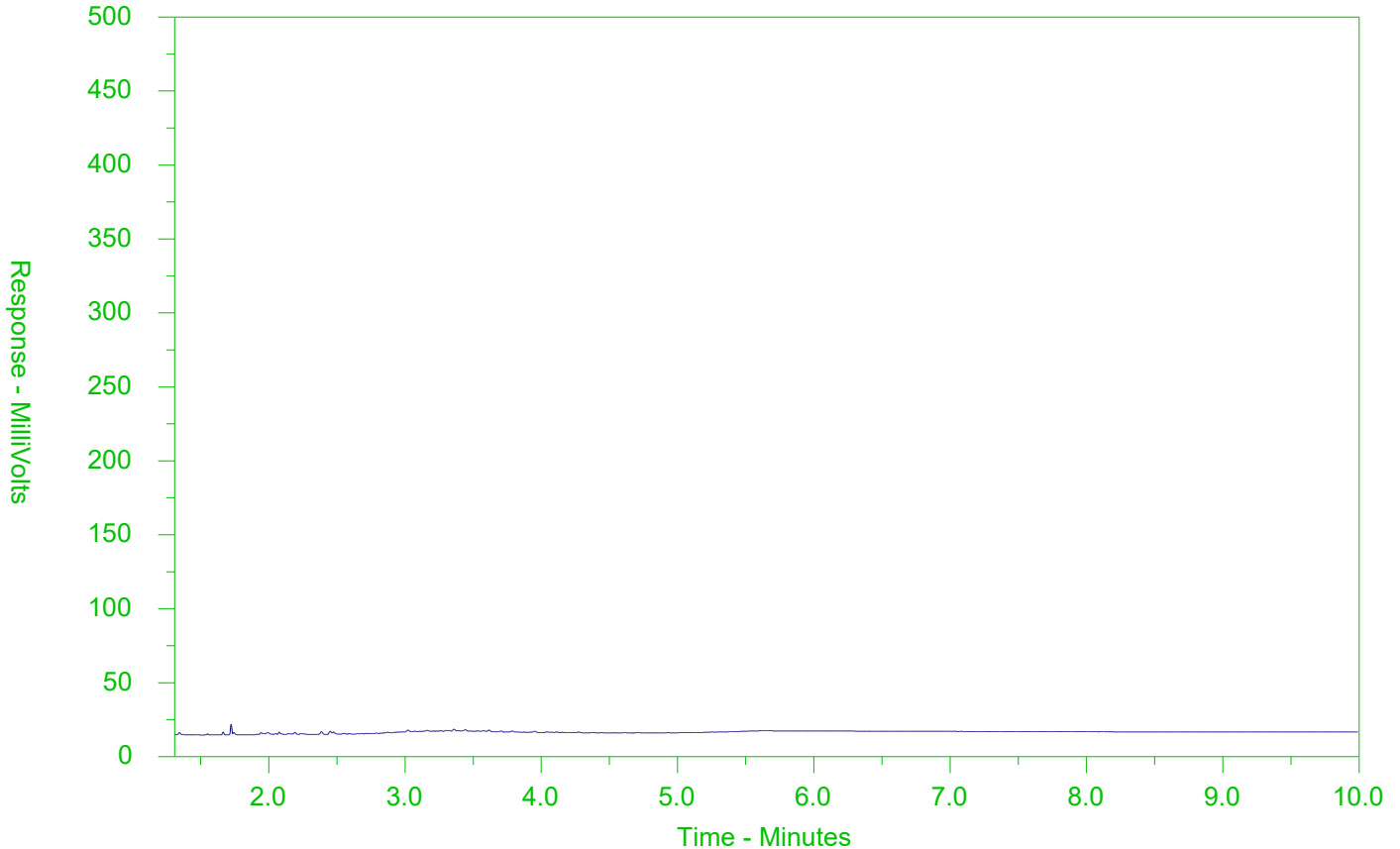
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2422401-1
 Client Sample ID: BH2



← 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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 09:07 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398104
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine) (No parameter exceedances)							

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



Environmental

ANALYTICAL REPORT

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		FIELD	
		#1	#2		
Dissolved Metals Filtration Location	-	-	-	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	48.4	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	210	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	2.9	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	1.11	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	15.3	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	23000002300000	992000		DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	6.45	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2398104-1		
		Sample Date	16-DEC-19		
		Sample ID	BH3		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	0.79	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2398104-1
Sample Date 16-DEC-19
Sample ID BH3

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	92.4
Surrogate: 1,4-Difluorobenzene	%	-	-	94.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398104-1
Sample Date 16-DEC-19
Sample ID BH3

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	95.4
Surrogate: 3,4-Dichlorotoluene	%	-	-	81.6

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2398104-1 Sample Date 16-DEC-19 Sample ID BH3				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	0.011
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	0.035
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	0.033
Pyrene	ug/L	68	68	0.033
Surrogate: d10-Acenaphthene	%	-	-	101.3
Surrogate: d12-Chrysene	%	-	-	92.3
Surrogate: d8-Naphthalene	%	-	-	91.1
Surrogate: d10-Phenanthrene	%	-	-	100.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2398104-1
Sample Date 16-DEC-19
Sample ID BH3

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	55.9
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	77.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
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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**
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F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L
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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.

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
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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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
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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
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PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
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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)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
		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).	
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: L2398104

Report Date: 27-DEC-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4951330							
WG3247542-1	LCS							
F1 (C6-C10)			96.3		%		80-120	21-DEC-19
WG3247542-2	MB							
F1 (C6-C10)			<25		ug/L		25	21-DEC-19
Surrogate: 3,4-Dichlorotoluene			91.7		%		60-140	21-DEC-19
F2-F4-511-WT		Water						
Batch	R4948447							
WG3245881-2	LCS							
F2 (C10-C16)			92.9		%		70-130	19-DEC-19
F3 (C16-C34)			98.2		%		70-130	19-DEC-19
F4 (C34-C50)			96.4		%		70-130	19-DEC-19
WG3245881-1	MB							
F2 (C10-C16)			<100		ug/L		100	19-DEC-19
F3 (C16-C34)			<250		ug/L		250	19-DEC-19
F4 (C34-C50)			<250		ug/L		250	19-DEC-19
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	19-DEC-19
MET-D-UG/L-MS-WT		Water						
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Arsenic (As)-Dissolved		0.13	0.16		ug/L	15	20	19-DEC-19
Barium (Ba)-Dissolved		104	104		ug/L	0.1	20	19-DEC-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Boron (B)-Dissolved		36	36		ug/L	0.5	20	19-DEC-19
Cadmium (Cd)-Dissolved		0.0130	0.0124		ug/L	4.7	20	19-DEC-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Copper (Cu)-Dissolved		0.90	0.87		ug/L	3.4	20	19-DEC-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Molybdenum (Mo)-Dissolved		3.79	3.81		ug/L	0.7	20	19-DEC-19
Nickel (Ni)-Dissolved		0.65	0.64		ug/L	1.3	20	19-DEC-19
Selenium (Se)-Dissolved		0.844	0.860		ug/L	1.9	20	19-DEC-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Sodium (Na)-Dissolved		202000	204000		ug/L	0.8	20	19-DEC-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Uranium (U)-Dissolved		0.897	0.893		ug/L	0.4	20	19-DEC-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3245950-2	LCS							
Antimony (Sb)-Dissolved			103.7		%		80-120	19-DEC-19
Arsenic (As)-Dissolved			105.5		%		80-120	19-DEC-19
Barium (Ba)-Dissolved			108.5		%		80-120	19-DEC-19
Beryllium (Be)-Dissolved			102.8		%		80-120	19-DEC-19
Boron (B)-Dissolved			102.4		%		80-120	19-DEC-19
Cadmium (Cd)-Dissolved			106.4		%		80-120	19-DEC-19
Chromium (Cr)-Dissolved			108.6		%		80-120	19-DEC-19
Cobalt (Co)-Dissolved			107.7		%		80-120	19-DEC-19
Copper (Cu)-Dissolved			107.3		%		80-120	19-DEC-19
Lead (Pb)-Dissolved			106.1		%		80-120	19-DEC-19
Molybdenum (Mo)-Dissolved			107.2		%		80-120	19-DEC-19
Nickel (Ni)-Dissolved			108.3		%		80-120	19-DEC-19
Selenium (Se)-Dissolved			101.9		%		80-120	19-DEC-19
Silver (Ag)-Dissolved			105.8		%		80-120	19-DEC-19
Sodium (Na)-Dissolved			109.0		%		80-120	19-DEC-19
Thallium (Tl)-Dissolved			104.8		%		80-120	19-DEC-19
Uranium (U)-Dissolved			106.9		%		80-120	19-DEC-19
Vanadium (V)-Dissolved			108.5		%		80-120	19-DEC-19
Zinc (Zn)-Dissolved			107.4		%		80-120	19-DEC-19
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-1	MB							
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-19
WG3245950-5	MS	WG3245950-6						
Antimony (Sb)-Dissolved			100.9		%		70-130	19-DEC-19
Arsenic (As)-Dissolved			114.9		%		70-130	19-DEC-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Beryllium (Be)-Dissolved			109.4		%		70-130	19-DEC-19
Boron (B)-Dissolved			100.3		%		70-130	19-DEC-19
Cadmium (Cd)-Dissolved			98.7		%		70-130	19-DEC-19
Chromium (Cr)-Dissolved			109.3		%		70-130	19-DEC-19
Cobalt (Co)-Dissolved			101.4		%		70-130	19-DEC-19
Copper (Cu)-Dissolved			93.5		%		70-130	19-DEC-19
Lead (Pb)-Dissolved			93.5		%		70-130	19-DEC-19
Molybdenum (Mo)-Dissolved			106.1		%		70-130	19-DEC-19
Nickel (Ni)-Dissolved			95.7		%		70-130	19-DEC-19
Selenium (Se)-Dissolved			117.1		%		70-130	19-DEC-19
Silver (Ag)-Dissolved			92.2		%		70-130	19-DEC-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Thallium (Tl)-Dissolved			94.4		%		70-130	19-DEC-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Vanadium (V)-Dissolved			112.2		%		70-130	19-DEC-19
Zinc (Zn)-Dissolved			97.9		%		70-130	19-DEC-19
PAH-511-WT								
	Water							
Batch	R4949666							
WG3245881-2	LCS							
1-Methylnaphthalene			94.6		%		50-140	20-DEC-19
2-Methylnaphthalene			84.5		%		50-140	20-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4949666							
WG3245881-2	LCS							
Acenaphthene			100.4		%		50-140	20-DEC-19
Acenaphthylene			99.8		%		50-140	20-DEC-19
Anthracene			98.4		%		50-140	20-DEC-19
Benzo(a)anthracene			102.2		%		50-140	20-DEC-19
Benzo(a)pyrene			95.3		%		50-140	20-DEC-19
Benzo(b)fluoranthene			95.0		%		50-140	20-DEC-19
Benzo(g,h,i)perylene			101.3		%		50-140	20-DEC-19
Benzo(k)fluoranthene			101.2		%		50-140	20-DEC-19
Chrysene			100.5		%		50-140	20-DEC-19
Dibenzo(ah)anthracene			100.1		%		50-140	20-DEC-19
Fluoranthene			101.8		%		50-140	20-DEC-19
Fluorene			98.6		%		50-140	20-DEC-19
Indeno(1,2,3-cd)pyrene			104.9		%		50-140	20-DEC-19
Naphthalene			90.7		%		50-140	20-DEC-19
Phenanthrene			101.9		%		50-140	20-DEC-19
Pyrene			101.2		%		50-140	20-DEC-19
WG3245881-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
2-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthylene			<0.020		ug/L		0.02	20-DEC-19
Anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)pyrene			<0.010		ug/L		0.01	20-DEC-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-DEC-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Chrysene			<0.020		ug/L		0.02	20-DEC-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-DEC-19
Fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Fluorene			<0.020		ug/L		0.02	20-DEC-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-DEC-19
Naphthalene			<0.050		ug/L		0.05	20-DEC-19
Phenanthrene			<0.020		ug/L		0.02	20-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4949666							
WG3245881-1	MB							
Pyrene			<0.020		ug/L		0.02	20-DEC-19
Surrogate: d8-Naphthalene			85.7		%		60-140	20-DEC-19
Surrogate: d10-Phenanthrene			91.4		%		60-140	20-DEC-19
Surrogate: d12-Chrysene			86.1		%		60-140	20-DEC-19
Surrogate: d10-Acenaphthene			92.4		%		60-140	20-DEC-19
PCB-511-WT		Water						
Batch	R4949187							
WG3246028-2	LCS							
Aroclor 1242			104.7		%		60-140	19-DEC-19
Aroclor 1248			92.4		%		60-140	19-DEC-19
Aroclor 1254			109.4		%		60-140	19-DEC-19
Aroclor 1260			116.0		%		60-140	19-DEC-19
WG3246028-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1248			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1254			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1260			<0.020		ug/L		0.02	19-DEC-19
Surrogate: Decachlorobiphenyl			89.6		%		50-150	19-DEC-19
Surrogate: Tetrachloro-m-xylene			76.5		%		50-150	19-DEC-19
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		1.27	1.25		ug/L	1.6	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3243074-1	LCS							
1,1,1,2-Tetrachloroethane			90.4		%		70-130	20-DEC-19
1,1,2,2-Tetrachloroethane			91.8		%		70-130	20-DEC-19
1,1,1-Trichloroethane			91.6		%		70-130	20-DEC-19
1,1,2-Trichloroethane			91.0		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
1,1-Dichloroethane			92.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			88.2		%		70-130	20-DEC-19
1,2-Dibromoethane			93.1		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.9		%		70-130	20-DEC-19
1,2-Dichloroethane			91.5		%		70-130	20-DEC-19
1,2-Dichloropropane			100.5		%		70-130	20-DEC-19
1,3-Dichlorobenzene			84.8		%		70-130	20-DEC-19
1,4-Dichlorobenzene			84.8		%		70-130	20-DEC-19
Acetone			96.5		%		60-140	20-DEC-19
Benzene			95.2		%		70-130	20-DEC-19
Bromodichloromethane			88.8		%		70-130	20-DEC-19
Bromoform			93.9		%		70-130	20-DEC-19
Bromomethane			83.1		%		60-140	20-DEC-19
Carbon tetrachloride			91.6		%		70-130	20-DEC-19
Chlorobenzene			89.1		%		70-130	20-DEC-19
Chloroform			93.5		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			90.3		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			91.3		%		70-130	20-DEC-19
Dibromochloromethane			88.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			94.0		%		50-140	20-DEC-19
Ethylbenzene			88.3		%		70-130	20-DEC-19
n-Hexane			87.2		%		70-130	20-DEC-19
m+p-Xylenes			87.9		%		70-130	20-DEC-19
Methyl Ethyl Ketone			90.7		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			92.9		%		60-140	20-DEC-19
Methylene Chloride			90.7		%		70-130	20-DEC-19
MTBE			94.0		%		70-130	20-DEC-19
o-Xylene			88.4		%		70-130	20-DEC-19
Styrene			90.8		%		70-130	20-DEC-19
Tetrachloroethylene			87.6		%		70-130	20-DEC-19
Toluene			89.7		%		70-130	20-DEC-19
trans-1,2-Dichloroethylene			89.5		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			90.6		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
Trichloroethylene			91.7		%		70-130	20-DEC-19
Trichlorofluoromethane			90.9		%		60-140	20-DEC-19
Vinyl chloride			104.1		%		60-140	20-DEC-19
WG3243074-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-2	MB							
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			93.6		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.4		%		70-130	20-DEC-19
WG3243074-5	MS	WG3243074-3						
1,1,1,2-Tetrachloroethane			91.5		%		50-140	23-DEC-19
1,1,2,2-Tetrachloroethane			91.3		%		50-140	23-DEC-19
1,1,1-Trichloroethane			92.7		%		50-140	23-DEC-19
1,1,2-Trichloroethane			95.7		%		50-140	23-DEC-19
1,1-Dichloroethane			87.1		%		50-140	23-DEC-19
1,1-Dichloroethylene			84.8		%		50-140	23-DEC-19
1,2-Dibromoethane			96.8		%		50-140	23-DEC-19
1,2-Dichlorobenzene			82.4		%		50-140	23-DEC-19
1,2-Dichloroethane			97.3		%		50-140	23-DEC-19
1,2-Dichloropropane			95.5		%		50-140	23-DEC-19
1,3-Dichlorobenzene			82.3		%		50-140	23-DEC-19
1,4-Dichlorobenzene			78.8		%		50-140	23-DEC-19
Acetone			106.3		%		50-140	23-DEC-19
Benzene			94.5		%		50-140	23-DEC-19
Bromodichloromethane			94.0		%		50-140	23-DEC-19
Bromoform			95.2		%		50-140	23-DEC-19
Bromomethane			81.7		%		50-140	23-DEC-19
Carbon tetrachloride			89.9		%		50-140	23-DEC-19
Chlorobenzene			88.5		%		50-140	23-DEC-19
Chloroform			93.9		%		50-140	23-DEC-19
cis-1,2-Dichloroethylene			88.6		%		50-140	23-DEC-19



Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4949168							
WG3243074-5 MS		WG3243074-3						
cis-1,3-Dichloropropene			86.4		%		50-140	23-DEC-19
Dibromochloromethane			93.4		%		50-140	23-DEC-19
Dichlorodifluoromethane			71.7		%		50-140	23-DEC-19
Ethylbenzene			85.7		%		50-140	23-DEC-19
n-Hexane			81.7		%		50-140	23-DEC-19
m+p-Xylenes			84.8		%		50-140	23-DEC-19
Methyl Ethyl Ketone			93.6		%		50-140	23-DEC-19
Methyl Isobutyl Ketone			96.9		%		50-140	23-DEC-19
Methylene Chloride			93.7		%		50-140	23-DEC-19
MTBE			90.2		%		50-140	23-DEC-19
o-Xylene			87.0		%		50-140	23-DEC-19
Styrene			88.4		%		50-140	23-DEC-19
Tetrachloroethylene			83.4		%		50-140	23-DEC-19
Toluene			89.0		%		50-140	23-DEC-19
trans-1,2-Dichloroethylene			77.8		%		50-140	23-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	23-DEC-19
Trichloroethylene			87.3		%		50-140	23-DEC-19
Trichlorofluoromethane			87.8		%		50-140	23-DEC-19
Vinyl chloride			100.1		%		50-140	23-DEC-19

Quality Control Report

Workorder: L2398104

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

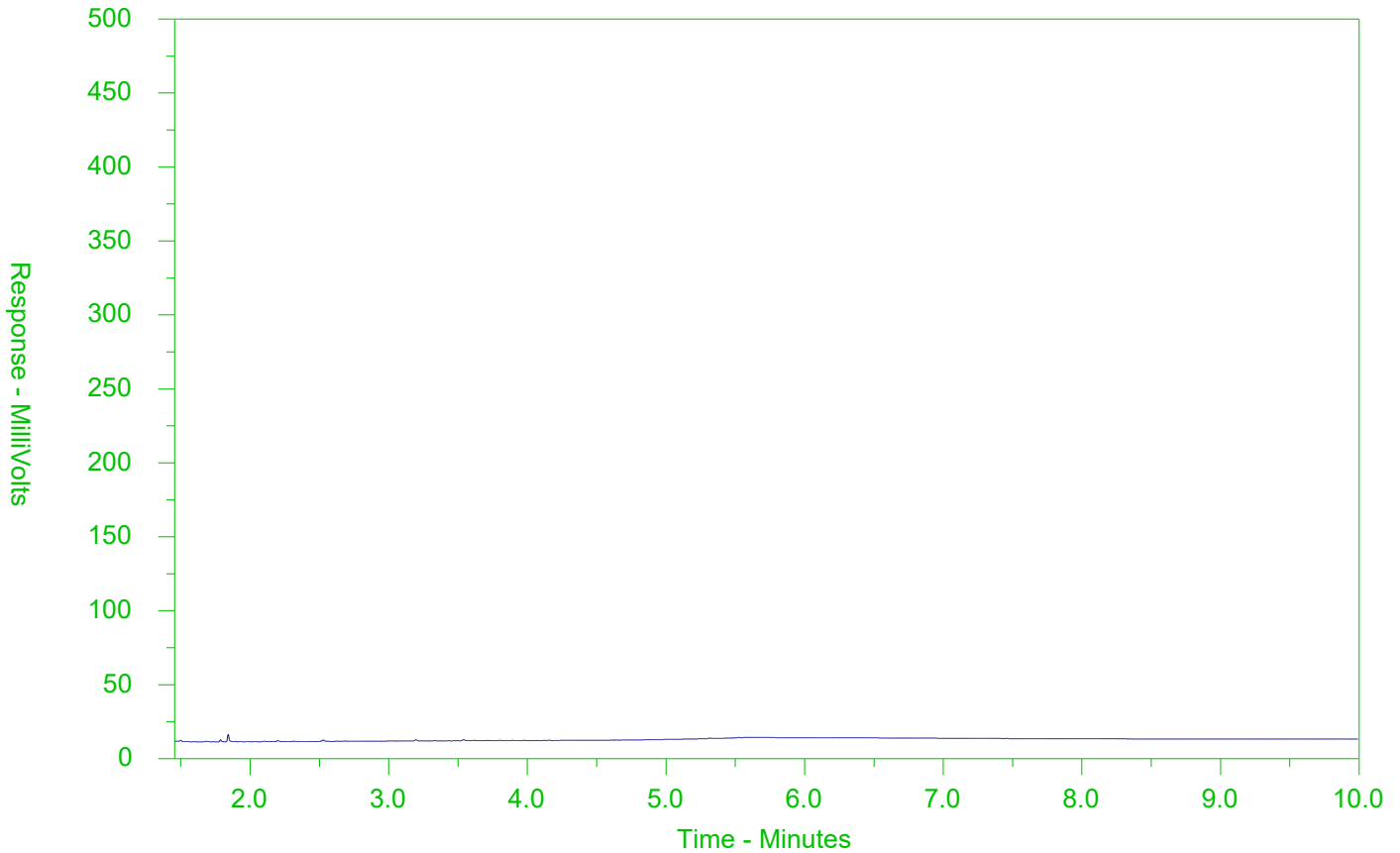
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2398104-1
 Client Sample ID: BH3



← 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



COC Number: 15 -

Canada Toll Free: 1 800 668 9878

L2398104-COFC

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level below - Please confirm all E&P TATs with your AM - surcharges will apply												
Company: Terraprobe		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply												
Contact: Kossay Makhzoumi		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PROPERTY (Business Days)		EMERGENCY										
Phone: 905-796-2650		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>										
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			3 day [P3] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>										
Street: 11 Indell Lane		Email 1 or Fax: kmakhzoumi@terraprobe.ca			Date and Time Required for all E&P TATs:												
City/Province: Brampton		Email 2			For tests that can not be performed according to the service level selected, you will be contacted.												
Postal Code: L6T 3Y3		Email 3			Analysis Request												
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX															
Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Email 1 or Fax: lrossi@terraprobe.ca															
Company: Terraprobe		Email 2															
Contact: Lorena Rossi																	
Project Information		Oil and Gas Required Fields (client use)															
ALS Account # / Quote #: Q62481		AFE/Cost Center: PO#															
Job #: 1-19-0603-42		Major/Minor Code: Routing Code:															
PO / AFE:		Requisitioner:															
LSD:		Location:															
ALS Lab Work Order # (lab use only): L2398104RD		ALS Contact: E.S		Sampler:													
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers
	B#3			16-12-19		GW		X				X	X	X	X		1
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3			Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>							
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>							
		Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C					
							2.1					3.0					
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)									
Released by: Kossay Makhzoumi		Date:		Time:		Received by: <i>[Signature]</i>		Date: Dec 18/19		Time: 14:25		Received by: <i>[Signature]</i>		Date: Dec 18/19		Time: 14:25	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 13:23 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398120
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

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

Physical Tests - WATER

Lab ID L2398120-1
Sample Date 16-DEC-19
Sample ID BH4-D

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	2.32
pH	pH units	-	-	7.53

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER

Lab ID	L2398120-1
Sample Date	16-DEC-19
Sample ID	BH4-D

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	449 ^{DLDS}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.



Environmental

ANALYTICAL REPORT

Cyanides - WATER


Lab ID L2398120-1
Sample Date 16-DEC-19
Sample ID BH4-D


Guide Limits

Analyte	Unit	Guide Limits		
		#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2398120-1
Sample Date 16-DEC-19
Sample ID BH4-D

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2398120-1		
		Sample Date	16-DEC-19		
		Sample ID	BH4-D		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	0.55	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2398120-1
Sample Date 16-DEC-19
Sample ID BH4-D

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	0.87
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	90.0
Surrogate: 1,4-Difluorobenzene	%	-	-	95.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398120-1
Sample Date 16-DEC-19
Sample ID BH4-D

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	95.3
Surrogate: 3,4-Dichlorotoluene	%	-	-	70.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398120-1
Sample Date 16-DEC-19
Sample ID BH4-D

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	0.027
Benzo(a)anthracene	ug/L	4.7	4.7	0.101
Benzo(a)pyrene	ug/L	0.81	0.81	0.073
Benzo(b)fluoranthene	ug/L	0.75	0.75	0.107
Benzo(g,h,i)perylene	ug/L	0.2	0.2	0.043
Benzo(k)fluoranthene	ug/L	0.4	0.4	0.046
Chrysene	ug/L	1	1	0.097
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	0.204
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	0.053
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	0.122
Pyrene	ug/L	68	68	0.181
Surrogate: d10-Acenaphthene	%	-	-	95.0
Surrogate: d12-Chrysene	%	-	-	70.3
Surrogate: d8-Naphthalene	%	-	-	90.5
Surrogate: d10-Phenanthrene	%	-	-	95.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
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**
<p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 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
<p>Fraction F1 is determined by analyzing by headspace-GC/FID.</p> <p>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).</p>			
F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1
<p>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.</p> <p>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).</p>			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
<p>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.</p> <p>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).</p>			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
<p>The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.</p> <p>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).</p>			
METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
<p>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.</p> <p>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).</p>			
PH-WT	Water	pH	APHA 4500 H-Electrode
<p>Water samples are analyzed directly by a calibrated pH meter.</p> <p>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</p>			
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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2398120

Report Date: 27-DEC-19

Page 1 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4948668							
WG3246535-4	DUP	WG3246535-3						
Chloride (Cl)		6.98	6.99		mg/L	0.2	20	19-DEC-19
WG3246535-2	LCS							
Chloride (Cl)			104.2		%		90-110	19-DEC-19
WG3246535-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-19
WG3246535-5	MS	WG3246535-3						
Chloride (Cl)			103.4		%		75-125	19-DEC-19
CN-WAD-R511-WT		Water						
Batch	R4948388							
WG3246441-3	DUP	L2398120-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246441-2	LCS							
Cyanide, Weak Acid Diss			100.7		%		80-120	19-DEC-19
WG3246441-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	19-DEC-19
WG3246441-4	MS	L2398120-1						
Cyanide, Weak Acid Diss			104.1		%		75-125	19-DEC-19
CR-CR6-IC-R511-WT		Water						
Batch	R4948092							
WG3246367-4	DUP	WG3246367-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246367-2	LCS							
Chromium, Hexavalent			101.1		%		80-120	19-DEC-19
WG3246367-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	19-DEC-19
WG3246367-5	MS	WG3246367-3						
Chromium, Hexavalent			96.2		%		70-130	19-DEC-19
EC-R511-WT		Water						
Batch	R4948309							
WG3246108-4	DUP	WG3246108-3						
Conductivity		0.297	0.296		mS/cm	0.3	10	19-DEC-19
WG3246108-2	LCS							
Conductivity			102.3		%		90-110	19-DEC-19
WG3246108-1	MB							
Conductivity			<0.0030		mS/cm		0.003	19-DEC-19
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 2 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4948179							
WG3246300-4	DUP	WG3246300-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3246300-1	LCS							
F1 (C6-C10)			94.5		%		80-120	20-DEC-19
WG3246300-2	MB							
F1 (C6-C10)			<25		ug/L		25	20-DEC-19
Surrogate: 3,4-Dichlorotoluene			89.9		%		60-140	20-DEC-19
WG3246300-5	MS	WG3246300-3						
F1 (C6-C10)			100.7		%		60-140	20-DEC-19
F2-F4-511-WT		Water						
Batch	R4948447							
WG3245881-2	LCS							
F2 (C10-C16)			92.9		%		70-130	19-DEC-19
F3 (C16-C34)			98.2		%		70-130	19-DEC-19
F4 (C34-C50)			96.4		%		70-130	19-DEC-19
WG3245881-1	MB							
F2 (C10-C16)			<100		ug/L		100	19-DEC-19
F3 (C16-C34)			<250		ug/L		250	19-DEC-19
F4 (C34-C50)			<250		ug/L		250	19-DEC-19
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	19-DEC-19
HG-D-UG/L-CVAA-WT		Water						
Batch	R4946371							
WG3246069-4	DUP	WG3246069-3						
Mercury (Hg)-Dissolved		<0.0050	0.0064	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246069-2	LCS							
Mercury (Hg)-Dissolved			94.4		%		80-120	19-DEC-19
WG3246069-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
WG3246069-6	MS	WG3246069-5						
Mercury (Hg)-Dissolved			93.3		%		70-130	19-DEC-19
MET-D-UG/L-MS-WT		Water						
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Arsenic (As)-Dissolved		0.13	0.16		ug/L	15	20	19-DEC-19
Barium (Ba)-Dissolved		104	104		ug/L	0.1	20	19-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 3 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Boron (B)-Dissolved		36	36		ug/L	0.5	20	19-DEC-19
Cadmium (Cd)-Dissolved		0.0130	0.0124		ug/L	4.7	20	19-DEC-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Copper (Cu)-Dissolved		0.90	0.87		ug/L	3.4	20	19-DEC-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Molybdenum (Mo)-Dissolved		3.79	3.81		ug/L	0.7	20	19-DEC-19
Nickel (Ni)-Dissolved		0.65	0.64		ug/L	1.3	20	19-DEC-19
Selenium (Se)-Dissolved		0.844	0.860		ug/L	1.9	20	19-DEC-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Sodium (Na)-Dissolved		202000	204000		ug/L	0.8	20	19-DEC-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-19
Uranium (U)-Dissolved		0.897	0.893		ug/L	0.4	20	19-DEC-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3245950-2	LCS							
Antimony (Sb)-Dissolved			103.7		%		80-120	19-DEC-19
Arsenic (As)-Dissolved			105.5		%		80-120	19-DEC-19
Barium (Ba)-Dissolved			108.5		%		80-120	19-DEC-19
Beryllium (Be)-Dissolved			102.8		%		80-120	19-DEC-19
Boron (B)-Dissolved			102.4		%		80-120	19-DEC-19
Cadmium (Cd)-Dissolved			106.4		%		80-120	19-DEC-19
Chromium (Cr)-Dissolved			108.6		%		80-120	19-DEC-19
Cobalt (Co)-Dissolved			107.7		%		80-120	19-DEC-19
Copper (Cu)-Dissolved			107.3		%		80-120	19-DEC-19
Lead (Pb)-Dissolved			106.1		%		80-120	19-DEC-19
Molybdenum (Mo)-Dissolved			107.2		%		80-120	19-DEC-19
Nickel (Ni)-Dissolved			108.3		%		80-120	19-DEC-19
Selenium (Se)-Dissolved			101.9		%		80-120	19-DEC-19
Silver (Ag)-Dissolved			105.8		%		80-120	19-DEC-19
Sodium (Na)-Dissolved			109.0		%		80-120	19-DEC-19
Thallium (Tl)-Dissolved			104.8		%		80-120	19-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 4 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-2	LCS							
Uranium (U)-Dissolved			106.9		%		80-120	19-DEC-19
Vanadium (V)-Dissolved			108.5		%		80-120	19-DEC-19
Zinc (Zn)-Dissolved			107.4		%		80-120	19-DEC-19
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-19
WG3245950-5	MS	WG3245950-6						
Antimony (Sb)-Dissolved			100.9		%		70-130	19-DEC-19
Arsenic (As)-Dissolved			114.9		%		70-130	19-DEC-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Beryllium (Be)-Dissolved			109.4		%		70-130	19-DEC-19
Boron (B)-Dissolved			100.3		%		70-130	19-DEC-19
Cadmium (Cd)-Dissolved			98.7		%		70-130	19-DEC-19
Chromium (Cr)-Dissolved			109.3		%		70-130	19-DEC-19
Cobalt (Co)-Dissolved			101.4		%		70-130	19-DEC-19
Copper (Cu)-Dissolved			93.5		%		70-130	19-DEC-19
Lead (Pb)-Dissolved			93.5		%		70-130	19-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 5 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-5 MS		WG3245950-6						
Molybdenum (Mo)-Dissolved			106.1		%		70-130	19-DEC-19
Nickel (Ni)-Dissolved			95.7		%		70-130	19-DEC-19
Selenium (Se)-Dissolved			117.1		%		70-130	19-DEC-19
Silver (Ag)-Dissolved			92.2		%		70-130	19-DEC-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Thallium (Tl)-Dissolved			94.4		%		70-130	19-DEC-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Vanadium (V)-Dissolved			112.2		%		70-130	19-DEC-19
Zinc (Zn)-Dissolved			97.9		%		70-130	19-DEC-19
PAH-511-WT								
	Water							
Batch	R4949666							
WG3245881-2 LCS								
1-Methylnaphthalene			94.6		%		50-140	20-DEC-19
2-Methylnaphthalene			84.5		%		50-140	20-DEC-19
Acenaphthene			100.4		%		50-140	20-DEC-19
Acenaphthylene			99.8		%		50-140	20-DEC-19
Anthracene			98.4		%		50-140	20-DEC-19
Benzo(a)anthracene			102.2		%		50-140	20-DEC-19
Benzo(a)pyrene			95.3		%		50-140	20-DEC-19
Benzo(b)fluoranthene			95.0		%		50-140	20-DEC-19
Benzo(g,h,i)perylene			101.3		%		50-140	20-DEC-19
Benzo(k)fluoranthene			101.2		%		50-140	20-DEC-19
Chrysene			100.5		%		50-140	20-DEC-19
Dibenzo(ah)anthracene			100.1		%		50-140	20-DEC-19
Fluoranthene			101.8		%		50-140	20-DEC-19
Fluorene			98.6		%		50-140	20-DEC-19
Indeno(1,2,3-cd)pyrene			104.9		%		50-140	20-DEC-19
Naphthalene			90.7		%		50-140	20-DEC-19
Phenanthrene			101.9		%		50-140	20-DEC-19
Pyrene			101.2		%		50-140	20-DEC-19
WG3245881-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
2-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthene			<0.020		ug/L		0.02	20-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 6 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4949666							
WG3245881-1	MB							
Acenaphthylene			<0.020		ug/L		0.02	20-DEC-19
Anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)pyrene			<0.010		ug/L		0.01	20-DEC-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-DEC-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Chrysene			<0.020		ug/L		0.02	20-DEC-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-DEC-19
Fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Fluorene			<0.020		ug/L		0.02	20-DEC-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-DEC-19
Naphthalene			<0.050		ug/L		0.05	20-DEC-19
Phenanthrene			<0.020		ug/L		0.02	20-DEC-19
Pyrene			<0.020		ug/L		0.02	20-DEC-19
Surrogate: d8-Naphthalene			85.7		%		60-140	20-DEC-19
Surrogate: d10-Phenanthrene			91.4		%		60-140	20-DEC-19
Surrogate: d12-Chrysene			86.1		%		60-140	20-DEC-19
Surrogate: d10-Acenaphthene			92.4		%		60-140	20-DEC-19
PH-WT		Water						
Batch	R4948309							
WG3246108-4	DUP	WG3246108-3						
pH		8.21	8.20	J	pH units	0.01	0.2	19-DEC-19
WG3246108-2	LCS							
pH			7.00		pH units		6.9-7.1	19-DEC-19
VOC-511-HS-WT		Water						
Batch	R4948179							
WG3246300-4	DUP	WG3246300-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 7 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4948179							
WG3246300-4	DUP	WG3246300-3						
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		43.3	41.8		ug/L	3.6	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		0.55	0.53		ug/L	3.7	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0		ug/L			20-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 8 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4948179							
WG3246300-4	DUP	WG3246300-3						
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3246300-1	LCS							
1,1,1,2-Tetrachloroethane			84.6		%		70-130	20-DEC-19
1,1,2,2-Tetrachloroethane			80.7		%		70-130	20-DEC-19
1,1,1-Trichloroethane			87.1		%		70-130	20-DEC-19
1,1,2-Trichloroethane			83.1		%		70-130	20-DEC-19
1,1-Dichloroethane			87.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			92.0		%		70-130	20-DEC-19
1,2-Dibromoethane			80.9		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.7		%		70-130	20-DEC-19
1,2-Dichloroethane			83.2		%		70-130	20-DEC-19
1,2-Dichloropropane			89.1		%		70-130	20-DEC-19
1,3-Dichlorobenzene			89.3		%		70-130	20-DEC-19
1,4-Dichlorobenzene			87.9		%		70-130	20-DEC-19
Acetone			80.3		%		60-140	20-DEC-19
Benzene			90.2		%		70-130	20-DEC-19
Bromodichloromethane			83.2		%		70-130	20-DEC-19
Bromoform			81.2		%		70-130	20-DEC-19
Bromomethane			82.1		%		60-140	20-DEC-19
Carbon tetrachloride			95.7		%		70-130	20-DEC-19
Chlorobenzene			85.2		%		70-130	20-DEC-19
Chloroform			85.6		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			85.4		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			84.2		%		70-130	20-DEC-19
Dibromochloromethane			83.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			101.3		%		50-140	20-DEC-19
Ethylbenzene			88.7		%		70-130	20-DEC-19
n-Hexane			91.3		%		70-130	20-DEC-19
m+p-Xylenes			92.0		%		70-130	20-DEC-19
Methyl Ethyl Ketone			70.9		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			72.7		%		60-140	20-DEC-19
Methylene Chloride			86.4		%		70-130	20-DEC-19
MTBE			87.6		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 9 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4948179							
WG3246300-1	LCS							
o-Xylene			87.5		%		70-130	20-DEC-19
Styrene			85.5		%		70-130	20-DEC-19
Tetrachloroethylene			95.5		%		70-130	20-DEC-19
Toluene			92.5		%		70-130	20-DEC-19
trans-1,2-Dichloroethylene			91.3		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			81.2		%		70-130	20-DEC-19
Trichloroethylene			85.3		%		70-130	20-DEC-19
Trichlorofluoromethane			96.5		%		60-140	20-DEC-19
Vinyl chloride			105.8		%		60-140	20-DEC-19
WG3246300-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 10 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4948179							
WG3246300-2	MB							
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			94.8		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.2		%		70-130	20-DEC-19
WG3246300-5	MS	WG3246300-3						
1,1,1,2-Tetrachloroethane			84.7		%		50-140	20-DEC-19
1,1,1,2,2-Tetrachloroethane			81.3		%		50-140	20-DEC-19
1,1,1-Trichloroethane			86.0		%		50-140	20-DEC-19
1,1,2-Trichloroethane			85.8		%		50-140	20-DEC-19
1,1-Dichloroethane			86.3		%		50-140	20-DEC-19
1,1-Dichloroethylene			89.7		%		50-140	20-DEC-19
1,2-Dibromoethane			85.1		%		50-140	20-DEC-19
1,2-Dichlorobenzene			85.3		%		50-140	20-DEC-19
1,2-Dichloroethane			88.0		%		50-140	20-DEC-19
1,2-Dichloropropane			91.9		%		50-140	20-DEC-19
1,3-Dichlorobenzene			89.3		%		50-140	20-DEC-19
1,4-Dichlorobenzene			88.4		%		50-140	20-DEC-19
Acetone			86.7		%		50-140	20-DEC-19
Benzene			90.3		%		50-140	20-DEC-19
Bromodichloromethane			86.0		%		50-140	20-DEC-19



Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Page 11 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4948179							
WG3246300-5 MS		WG3246300-3						
Bromoform			82.8		%		50-140	20-DEC-19
Bromomethane			81.3		%		50-140	20-DEC-19
Carbon tetrachloride			94.4		%		50-140	20-DEC-19
Chlorobenzene			85.2		%		50-140	20-DEC-19
Chloroform			86.8		%		50-140	20-DEC-19
cis-1,2-Dichloroethylene			84.8		%		50-140	20-DEC-19
cis-1,3-Dichloropropene			89.1		%		50-140	20-DEC-19
Dibromochloromethane			85.1		%		50-140	20-DEC-19
Dichlorodifluoromethane			92.1		%		50-140	20-DEC-19
Ethylbenzene			85.9		%		50-140	20-DEC-19
n-Hexane			87.0		%		50-140	20-DEC-19
m+p-Xylenes			89.7		%		50-140	20-DEC-19
Methyl Ethyl Ketone			81.0		%		50-140	20-DEC-19
Methyl Isobutyl Ketone			80.1		%		50-140	20-DEC-19
Methylene Chloride			88.2		%		50-140	20-DEC-19
MTBE			86.7		%		50-140	20-DEC-19
o-Xylene			85.5		%		50-140	20-DEC-19
Styrene			84.4		%		50-140	20-DEC-19
Tetrachloroethylene			88.7		%		50-140	20-DEC-19
Toluene			90.4		%		50-140	20-DEC-19
trans-1,2-Dichloroethylene			90.9		%		50-140	20-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	20-DEC-19
Trichloroethylene			85.6		%		50-140	20-DEC-19
Trichlorofluoromethane			93.9		%		50-140	20-DEC-19
Vinyl chloride			101.3		%		50-140	20-DEC-19

Quality Control Report

Workorder: L2398120

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 12 of 12

Contact: Kossay Makhzoumi

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.

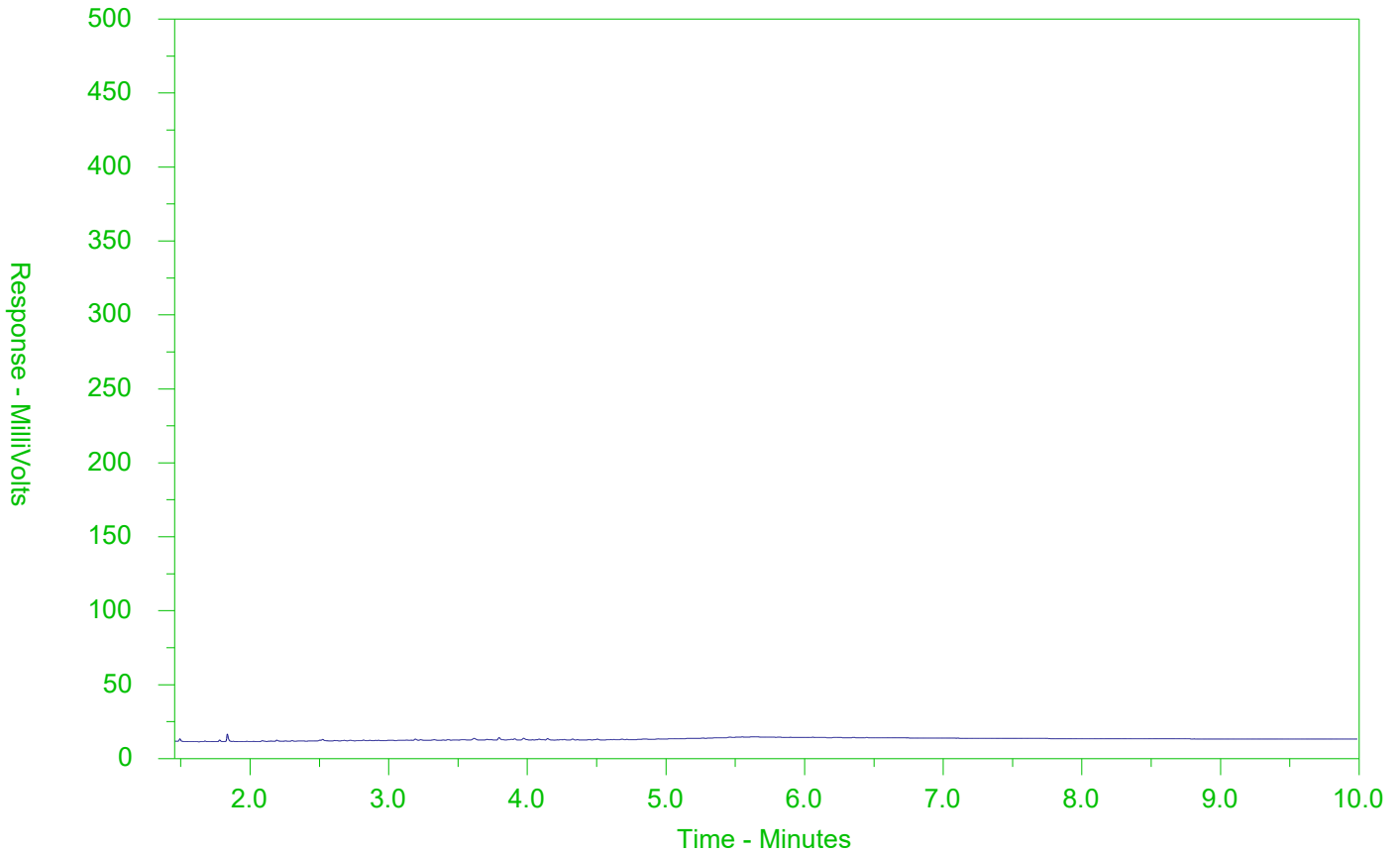
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2398120-1
 Client Sample ID: BH4-D



← 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

Canada Toll Free: 1 800 668 9878



L2398120-COFC

COC Number: 15 -

ML

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>					
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>					
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province:	Brampton	Email 2			Analysis Request											
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:		Routing Code:												
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2398120RD	ALS Contact:		Sampler:												
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												
	BH4-D	16-12-19		GW	X					X	X	X			13	
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
		Cooling Initiated <input type="checkbox"/>														
		INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C									
		2.1					3.0									
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Kossay Makhzoumi	Date: 17-12-19	Time:	Received by: [Signature]	Date: DEC 18/19	Time: 9am	Received by: [Signature]	Date: Dec 18/19	Time: 14:25								



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 10:43 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398131
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
L2398131-1		BH4-5	Anions and Nutrients	Chloride (Cl)	3560	2300	mg/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
L2398131-1		BH4-5	Anions and Nutrients	Chloride (Cl)	3560	2300	mg/L

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

Physical Tests - WATER

Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	10.6
pH	pH units	-	-	7.11

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER


Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chloride (Cl)	mg/L	2300	2300	3560 ^{DLDS}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5


Guide Limits

Analyte	Unit	#1	#2
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Cyanide, Weak Acid Diss	ug/L	66	66	<2.0
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Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

		Lab ID	L2398131-1		
		Sample Date	16-DEC-19		
		Sample ID	BH4-5		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Mercury Filtration Location		-	-	FIELD	
Dissolved Metals Filtration Location		-	-	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	67.4	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	150	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	0.137	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	3.7	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050	
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	0.64	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	15.6	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	4.28	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000	2300000	1370000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	0.27	DLHC
Uranium (U)-Dissolved	ug/L	420	420	13.3	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER


Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5


Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
		Lab ID	L2398131-1		
		Sample Date	16-DEC-19		
		Sample ID	BH4-5		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	1.27
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	93.5
Surrogate: 1,4-Difluorobenzene	%	-	-	94.9

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	80.3
Surrogate: 3,4-Dichlorotoluene	%	-	-	91.9

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398131-1
Sample Date 16-DEC-19
Sample ID BH4-5

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	<0.020
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	<0.020
Pyrene	ug/L	68	68	<0.020
Surrogate: d10-Acenaphthene	%	-	-	78.1
Surrogate: d12-Chrysene	%	-	-	73.0
Surrogate: d8-Naphthalene	%	-	-	70.7
Surrogate: d10-Phenanthrene	%	-	-	74.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
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**
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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 APHA 2510
 Only)

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 CCME CWS-PHC, Pub #1310, Dec 2001-L
 Parameters

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**
<p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 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
<p>Fraction F1 is determined by analyzing by headspace-GC/FID.</p> <p>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).</p>			
F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1
<p>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.</p> <p>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).</p>			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
<p>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.</p> <p>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).</p>			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
<p>The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.</p> <p>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).</p>			
METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
<p>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.</p> <p>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).</p>			
PH-WT	Water	pH	APHA 4500 H-Electrode
<p>Water samples are analyzed directly by a calibrated pH meter.</p> <p>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</p>			
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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2398131

Report Date: 27-DEC-19

Page 1 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4948668							
WG3246535-4	DUP	WG3246535-3						
Chloride (Cl)		6.98	6.99		mg/L	0.2	20	19-DEC-19
WG3246535-2	LCS							
Chloride (Cl)			104.2		%		90-110	19-DEC-19
WG3246535-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-19
WG3246535-5	MS	WG3246535-3						
Chloride (Cl)			103.4		%		75-125	19-DEC-19
CN-WAD-R511-WT		Water						
Batch	R4948388							
WG3246441-3	DUP	L2398120-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246441-2	LCS							
Cyanide, Weak Acid Diss			100.7		%		80-120	19-DEC-19
WG3246441-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	19-DEC-19
WG3246441-4	MS	L2398120-1						
Cyanide, Weak Acid Diss			104.1		%		75-125	19-DEC-19
CR-CR6-IC-R511-WT		Water						
Batch	R4948092							
WG3246367-4	DUP	WG3246367-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246367-2	LCS							
Chromium, Hexavalent			101.1		%		80-120	19-DEC-19
WG3246367-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	19-DEC-19
WG3246367-5	MS	WG3246367-3						
Chromium, Hexavalent			96.2		%		70-130	19-DEC-19
EC-R511-WT		Water						
Batch	R4948309							
WG3246108-4	DUP	WG3246108-3						
Conductivity		0.297	0.296		mS/cm	0.3	10	19-DEC-19
WG3246108-2	LCS							
Conductivity			102.3		%		90-110	19-DEC-19
WG3246108-1	MB							
Conductivity			<0.0030		mS/cm		0.003	19-DEC-19
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 2 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4952529							
WG3247743-4	DUP	WG3247743-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	23-DEC-19
WG3247743-1	LCS							
F1 (C6-C10)			93.3		%		80-120	23-DEC-19
WG3247743-2	MB							
F1 (C6-C10)			<25		ug/L		25	23-DEC-19
Surrogate: 3,4-Dichlorotoluene			96.0		%		60-140	23-DEC-19
WG3247743-5	MS	WG3247743-3						
F1 (C6-C10)			60.3		%		60-140	23-DEC-19
F2-F4-511-WT		Water						
Batch	R4948429							
WG3245885-2	LCS							
F2 (C10-C16)			99.6		%		70-130	19-DEC-19
F3 (C16-C34)			105.1		%		70-130	19-DEC-19
F4 (C34-C50)			106.1		%		70-130	19-DEC-19
WG3245885-1	MB							
F2 (C10-C16)			<100		ug/L		100	19-DEC-19
F3 (C16-C34)			<250		ug/L		250	19-DEC-19
F4 (C34-C50)			<250		ug/L		250	19-DEC-19
Surrogate: 2-Bromobenzotrifluoride			90.7		%		60-140	19-DEC-19
HG-D-UG/L-CVAA-WT		Water						
Batch	R4946371							
WG3246069-4	DUP	WG3246069-3						
Mercury (Hg)-Dissolved		<0.0050	0.0064	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246069-2	LCS							
Mercury (Hg)-Dissolved			94.4		%		80-120	19-DEC-19
WG3246069-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
WG3246069-6	MS	WG3246069-5						
Mercury (Hg)-Dissolved			93.3		%		70-130	19-DEC-19
MET-D-UG/L-MS-WT		Water						
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Arsenic (As)-Dissolved		0.13	0.16		ug/L	15	20	19-DEC-19
Barium (Ba)-Dissolved		104	104		ug/L	0.1	20	19-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 3 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Boron (B)-Dissolved		36	36		ug/L	0.5	20	19-DEC-19
Cadmium (Cd)-Dissolved		0.0130	0.0124		ug/L	4.7	20	19-DEC-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Copper (Cu)-Dissolved		0.90	0.87		ug/L	3.4	20	19-DEC-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Molybdenum (Mo)-Dissolved		3.79	3.81		ug/L	0.7	20	19-DEC-19
Nickel (Ni)-Dissolved		0.65	0.64		ug/L	1.3	20	19-DEC-19
Selenium (Se)-Dissolved		0.844	0.860		ug/L	1.9	20	19-DEC-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Sodium (Na)-Dissolved		202000	204000		ug/L	0.8	20	19-DEC-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-19
Uranium (U)-Dissolved		0.897	0.893		ug/L	0.4	20	19-DEC-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3245950-2	LCS							
Antimony (Sb)-Dissolved			103.7		%		80-120	19-DEC-19
Arsenic (As)-Dissolved			105.5		%		80-120	19-DEC-19
Barium (Ba)-Dissolved			108.5		%		80-120	19-DEC-19
Beryllium (Be)-Dissolved			102.8		%		80-120	19-DEC-19
Boron (B)-Dissolved			102.4		%		80-120	19-DEC-19
Cadmium (Cd)-Dissolved			106.4		%		80-120	19-DEC-19
Chromium (Cr)-Dissolved			108.6		%		80-120	19-DEC-19
Cobalt (Co)-Dissolved			107.7		%		80-120	19-DEC-19
Copper (Cu)-Dissolved			107.3		%		80-120	19-DEC-19
Lead (Pb)-Dissolved			106.1		%		80-120	19-DEC-19
Molybdenum (Mo)-Dissolved			107.2		%		80-120	19-DEC-19
Nickel (Ni)-Dissolved			108.3		%		80-120	19-DEC-19
Selenium (Se)-Dissolved			101.9		%		80-120	19-DEC-19
Silver (Ag)-Dissolved			105.8		%		80-120	19-DEC-19
Sodium (Na)-Dissolved			109.0		%		80-120	19-DEC-19
Thallium (Tl)-Dissolved			104.8		%		80-120	19-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 4 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-2	LCS							
Uranium (U)-Dissolved			106.9		%		80-120	19-DEC-19
Vanadium (V)-Dissolved			108.5		%		80-120	19-DEC-19
Zinc (Zn)-Dissolved			107.4		%		80-120	19-DEC-19
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-19
WG3245950-5	MS	WG3245950-6						
Antimony (Sb)-Dissolved			100.9		%		70-130	19-DEC-19
Arsenic (As)-Dissolved			114.9		%		70-130	19-DEC-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Beryllium (Be)-Dissolved			109.4		%		70-130	19-DEC-19
Boron (B)-Dissolved			100.3		%		70-130	19-DEC-19
Cadmium (Cd)-Dissolved			98.7		%		70-130	19-DEC-19
Chromium (Cr)-Dissolved			109.3		%		70-130	19-DEC-19
Cobalt (Co)-Dissolved			101.4		%		70-130	19-DEC-19
Copper (Cu)-Dissolved			93.5		%		70-130	19-DEC-19
Lead (Pb)-Dissolved			93.5		%		70-130	19-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 5 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-5 MS		WG3245950-6						
Molybdenum (Mo)-Dissolved			106.1		%		70-130	19-DEC-19
Nickel (Ni)-Dissolved			95.7		%		70-130	19-DEC-19
Selenium (Se)-Dissolved			117.1		%		70-130	19-DEC-19
Silver (Ag)-Dissolved			92.2		%		70-130	19-DEC-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Thallium (Tl)-Dissolved			94.4		%		70-130	19-DEC-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Vanadium (V)-Dissolved			112.2		%		70-130	19-DEC-19
Zinc (Zn)-Dissolved			97.9		%		70-130	19-DEC-19
PAH-511-WT								
	Water							
Batch	R4949716							
WG3245885-2 LCS								
1-Methylnaphthalene			92.8		%		50-140	20-DEC-19
2-Methylnaphthalene			82.1		%		50-140	20-DEC-19
Acenaphthene			94.6		%		50-140	20-DEC-19
Acenaphthylene			96.6		%		50-140	20-DEC-19
Anthracene			91.5		%		50-140	20-DEC-19
Benzo(a)anthracene			97.7		%		50-140	20-DEC-19
Benzo(a)pyrene			91.9		%		50-140	20-DEC-19
Benzo(b)fluoranthene			90.5		%		50-140	20-DEC-19
Benzo(g,h,i)perylene			94.6		%		50-140	20-DEC-19
Benzo(k)fluoranthene			97.7		%		50-140	20-DEC-19
Chrysene			96.2		%		50-140	20-DEC-19
Dibenzo(ah)anthracene			93.9		%		50-140	20-DEC-19
Fluoranthene			96.5		%		50-140	20-DEC-19
Fluorene			93.0		%		50-140	20-DEC-19
Indeno(1,2,3-cd)pyrene			98.0		%		50-140	20-DEC-19
Naphthalene			86.9		%		50-140	20-DEC-19
Phenanthrene			95.8		%		50-140	20-DEC-19
Pyrene			96.0		%		50-140	20-DEC-19
WG3245885-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
2-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthene			<0.020		ug/L		0.02	20-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 6 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4949716							
WG3245885-1	MB							
Acenaphthylene			<0.020		ug/L		0.02	20-DEC-19
Anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)pyrene			<0.010		ug/L		0.01	20-DEC-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-DEC-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Chrysene			<0.020		ug/L		0.02	20-DEC-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-DEC-19
Fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Fluorene			<0.020		ug/L		0.02	20-DEC-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-DEC-19
Naphthalene			<0.050		ug/L		0.05	20-DEC-19
Phenanthrene			<0.020		ug/L		0.02	20-DEC-19
Pyrene			<0.020		ug/L		0.02	20-DEC-19
Surrogate: d8-Naphthalene			89.9		%		60-140	20-DEC-19
Surrogate: d10-Phenanthrene			95.9		%		60-140	20-DEC-19
Surrogate: d12-Chrysene			93.4		%		60-140	20-DEC-19
Surrogate: d10-Acenaphthene			97.2		%		60-140	20-DEC-19
PH-WT		Water						
Batch	R4948309							
WG3246108-4	DUP	WG3246108-3						
pH		8.21	8.20	J	pH units	0.01	0.2	19-DEC-19
WG3246108-2	LCS							
pH			7.00		pH units		6.9-7.1	19-DEC-19
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 7 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		1.27	1.25		ug/L	1.6	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0		ug/L			20-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 8 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3243074-1	LCS							
1,1,1,2-Tetrachloroethane			90.4		%		70-130	20-DEC-19
1,1,2,2-Tetrachloroethane			91.8		%		70-130	20-DEC-19
1,1,1-Trichloroethane			91.6		%		70-130	20-DEC-19
1,1,2-Trichloroethane			91.0		%		70-130	20-DEC-19
1,1-Dichloroethane			92.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			88.2		%		70-130	20-DEC-19
1,2-Dibromoethane			93.1		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.9		%		70-130	20-DEC-19
1,2-Dichloroethane			91.5		%		70-130	20-DEC-19
1,2-Dichloropropane			100.5		%		70-130	20-DEC-19
1,3-Dichlorobenzene			84.8		%		70-130	20-DEC-19
1,4-Dichlorobenzene			84.8		%		70-130	20-DEC-19
Acetone			96.5		%		60-140	20-DEC-19
Benzene			95.2		%		70-130	20-DEC-19
Bromodichloromethane			88.8		%		70-130	20-DEC-19
Bromoform			93.9		%		70-130	20-DEC-19
Bromomethane			83.1		%		60-140	20-DEC-19
Carbon tetrachloride			91.6		%		70-130	20-DEC-19
Chlorobenzene			89.1		%		70-130	20-DEC-19
Chloroform			93.5		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			90.3		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			91.3		%		70-130	20-DEC-19
Dibromochloromethane			88.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			94.0		%		50-140	20-DEC-19
Ethylbenzene			88.3		%		70-130	20-DEC-19
n-Hexane			87.2		%		70-130	20-DEC-19
m+p-Xylenes			87.9		%		70-130	20-DEC-19
Methyl Ethyl Ketone			90.7		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			92.9		%		60-140	20-DEC-19
Methylene Chloride			90.7		%		70-130	20-DEC-19
MTBE			94.0		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 9 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
o-Xylene			88.4		%		70-130	20-DEC-19
Styrene			90.8		%		70-130	20-DEC-19
Tetrachloroethylene			87.6		%		70-130	20-DEC-19
Toluene			89.7		%		70-130	20-DEC-19
trans-1,2-Dichloroethylene			89.5		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			90.6		%		70-130	20-DEC-19
Trichloroethylene			91.7		%		70-130	20-DEC-19
Trichlorofluoromethane			90.9		%		60-140	20-DEC-19
Vinyl chloride			104.1		%		60-140	20-DEC-19
WG3243074-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 10 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-2	MB							
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			93.6		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.4		%		70-130	20-DEC-19
WG3243074-5	MS	WG3243074-3						
1,1,1,2-Tetrachloroethane			91.5		%		50-140	23-DEC-19
1,1,1,2,2-Tetrachloroethane			91.3		%		50-140	23-DEC-19
1,1,1-Trichloroethane			92.7		%		50-140	23-DEC-19
1,1,2-Trichloroethane			95.7		%		50-140	23-DEC-19
1,1-Dichloroethane			87.1		%		50-140	23-DEC-19
1,1-Dichloroethylene			84.8		%		50-140	23-DEC-19
1,2-Dibromoethane			96.8		%		50-140	23-DEC-19
1,2-Dichlorobenzene			82.4		%		50-140	23-DEC-19
1,2-Dichloroethane			97.3		%		50-140	23-DEC-19
1,2-Dichloropropane			95.5		%		50-140	23-DEC-19
1,3-Dichlorobenzene			82.3		%		50-140	23-DEC-19
1,4-Dichlorobenzene			78.8		%		50-140	23-DEC-19
Acetone			106.3		%		50-140	23-DEC-19
Benzene			94.5		%		50-140	23-DEC-19
Bromodichloromethane			94.0		%		50-140	23-DEC-19



Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Page 11 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4949168							
WG3243074-5 MS		WG3243074-3						
Bromoform			95.2		%		50-140	23-DEC-19
Bromomethane			81.7		%		50-140	23-DEC-19
Carbon tetrachloride			89.9		%		50-140	23-DEC-19
Chlorobenzene			88.5		%		50-140	23-DEC-19
Chloroform			93.9		%		50-140	23-DEC-19
cis-1,2-Dichloroethylene			88.6		%		50-140	23-DEC-19
cis-1,3-Dichloropropene			86.4		%		50-140	23-DEC-19
Dibromochloromethane			93.4		%		50-140	23-DEC-19
Dichlorodifluoromethane			71.7		%		50-140	23-DEC-19
Ethylbenzene			85.7		%		50-140	23-DEC-19
n-Hexane			81.7		%		50-140	23-DEC-19
m+p-Xylenes			84.8		%		50-140	23-DEC-19
Methyl Ethyl Ketone			93.6		%		50-140	23-DEC-19
Methyl Isobutyl Ketone			96.9		%		50-140	23-DEC-19
Methylene Chloride			93.7		%		50-140	23-DEC-19
MTBE			90.2		%		50-140	23-DEC-19
o-Xylene			87.0		%		50-140	23-DEC-19
Styrene			88.4		%		50-140	23-DEC-19
Tetrachloroethylene			83.4		%		50-140	23-DEC-19
Toluene			89.0		%		50-140	23-DEC-19
trans-1,2-Dichloroethylene			77.8		%		50-140	23-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	23-DEC-19
Trichloroethylene			87.3		%		50-140	23-DEC-19
Trichlorofluoromethane			87.8		%		50-140	23-DEC-19
Vinyl chloride			100.1		%		50-140	23-DEC-19

Quality Control Report

Workorder: L2398131

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 12 of 12

Contact: Kossay Makhzoumi

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.

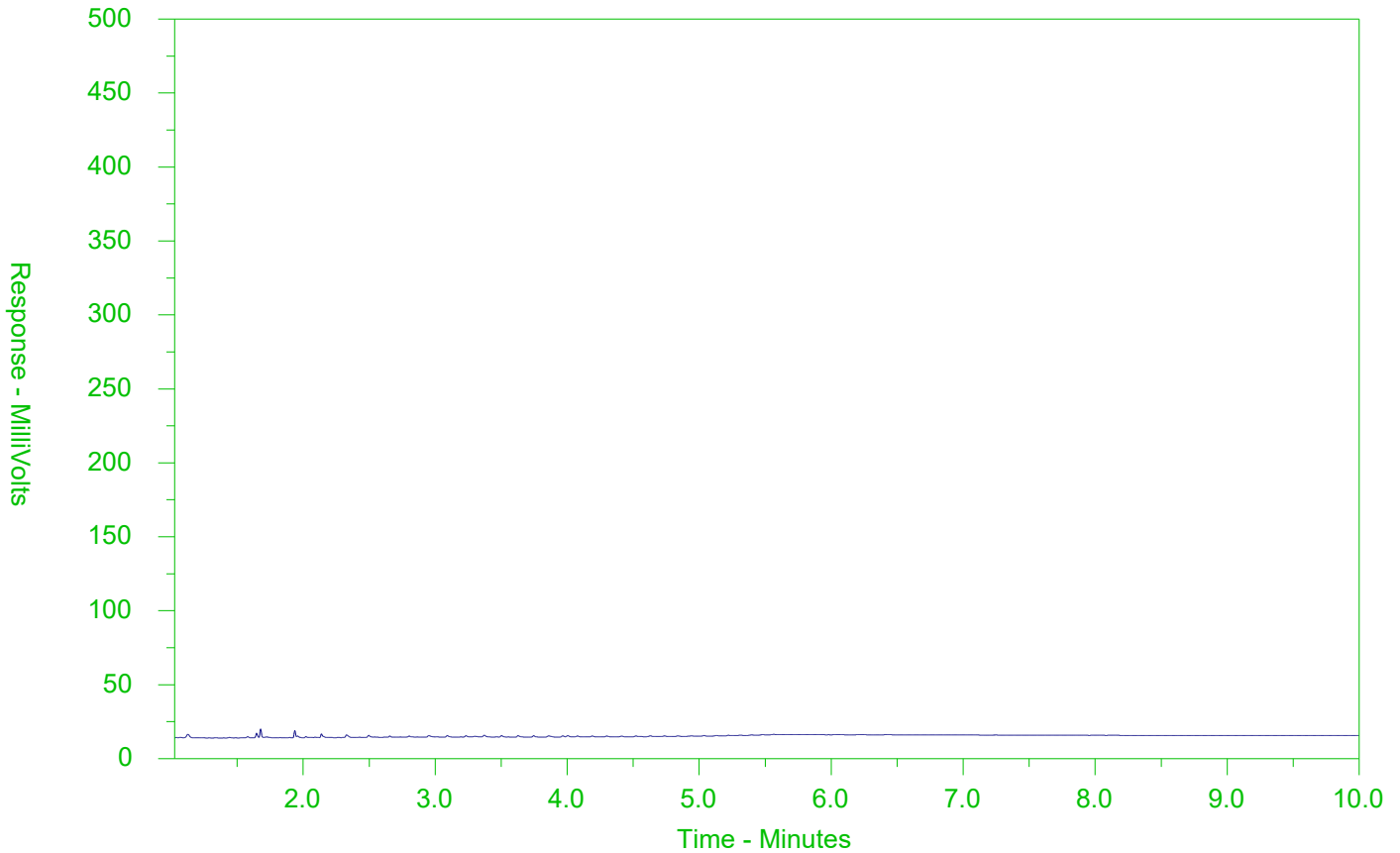
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2398131-1
 Client Sample ID: BH4-5



← 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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 10:52 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398134
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2398134-1	BH5	Volatile Organic Compounds	cis-1,2-Dichloroethylene	2.79	1.6	ug/L
			Trichloroethylene	28.8	1.6	ug/L
		Polycyclic Aromatic Hydrocarbons	Benzo(b)fluoranthene	0.870	0.75	ug/L
			Benzo(g,h,i)perylene	0.386	0.2	ug/L
			Indeno(1,2,3-cd)pyrene	0.465	0.2	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)						
L2398134-1	BH5	Volatile Organic Compounds	Trichloroethylene	28.8	17	ug/L
		Polycyclic Aromatic Hydrocarbons	Benzo(b)fluoranthene	0.870	0.75	ug/L
			Benzo(g,h,i)perylene	0.386	0.2	ug/L
			Indeno(1,2,3-cd)pyrene	0.465	0.2	ug/L

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

Dissolved Metals - WATER

		Lab ID	L2398134-1		
		Sample Date	16-DEC-19		
		Sample ID	BH5		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Metals Filtration Location		-	-	FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	50.6	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	210	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	0.65	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	8.4	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000023000000	812000		DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	0.45	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2398134-1		
		Sample Date	16-DEC-19		
		Sample ID	BH5		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	4.14	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	2.79	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2398134-1
Sample Date 16-DEC-19
Sample ID BH5

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	28.8
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	93.8
Surrogate: 1,4-Difluorobenzene	%	-	-	94.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398134-1
Sample Date 16-DEC-19
Sample ID BH5

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	260
F3-PAH	ug/L	-	-	250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	65.0
Surrogate: 3,4-Dichlorotoluene	%	-	-	83.8

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2398134-1 Sample Date 16-DEC-19 Sample ID BH5				
Acenaphthene	ug/L	600	1700	0.067
Acenaphthylene	ug/L	1.8	1.8	0.025 ^R
Anthracene	ug/L	2.4	2.4	0.178
Benzo(a)anthracene	ug/L	4.7	4.7	0.802
Benzo(a)pyrene	ug/L	0.81	0.81	0.619
Benzo(b)fluoranthene	ug/L	0.75	0.75	0.870
Benzo(g,h,i)perylene	ug/L	0.2	0.2	0.386
Benzo(k)fluoranthene	ug/L	0.4	0.4	0.348
Chrysene	ug/L	1	1	0.831
Dibenzo(ah)anthracene	ug/L	0.52	0.52	0.101
Fluoranthene	ug/L	130	130	1.38
Fluorene	ug/L	400	400	0.050
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	0.465
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	0.612
Pyrene	ug/L	68	68	1.20
Surrogate: d10-Acenaphthene	%	-	-	68.9
Surrogate: d12-Chrysene	%	-	-	71.2
Surrogate: d8-Naphthalene	%	-	-	63.7
Surrogate: d10-Phenanthrene	%	-	-	68.9

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2398134-1
Sample Date 16-DEC-19
Sample ID BH5

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	52.5
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	78.7

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
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**
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.

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
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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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
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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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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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
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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).

VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
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VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)
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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
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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: L2398134

Report Date: 27-DEC-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4951330							
WG3247542-1	LCS							
F1 (C6-C10)			96.3		%		80-120	21-DEC-19
WG3247542-2	MB							
F1 (C6-C10)			<25		ug/L		25	21-DEC-19
Surrogate: 3,4-Dichlorotoluene			91.7		%		60-140	21-DEC-19
F2-F4-511-WT		Water						
Batch	R4948429							
WG3245885-2	LCS							
F2 (C10-C16)			99.6		%		70-130	19-DEC-19
F3 (C16-C34)			105.1		%		70-130	19-DEC-19
F4 (C34-C50)			106.1		%		70-130	19-DEC-19
WG3245885-1	MB							
F2 (C10-C16)			<100		ug/L		100	19-DEC-19
F3 (C16-C34)			<250		ug/L		250	19-DEC-19
F4 (C34-C50)			<250		ug/L		250	19-DEC-19
Surrogate: 2-Bromobenzotrifluoride			90.7		%		60-140	19-DEC-19
MET-D-UG/L-MS-WT		Water						
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Arsenic (As)-Dissolved		0.13	0.16		ug/L	15	20	19-DEC-19
Barium (Ba)-Dissolved		104	104		ug/L	0.1	20	19-DEC-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Boron (B)-Dissolved		36	36		ug/L	0.5	20	19-DEC-19
Cadmium (Cd)-Dissolved		0.0130	0.0124		ug/L	4.7	20	19-DEC-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Copper (Cu)-Dissolved		0.90	0.87		ug/L	3.4	20	19-DEC-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Molybdenum (Mo)-Dissolved		3.79	3.81		ug/L	0.7	20	19-DEC-19
Nickel (Ni)-Dissolved		0.65	0.64		ug/L	1.3	20	19-DEC-19
Selenium (Se)-Dissolved		0.844	0.860		ug/L	1.9	20	19-DEC-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Sodium (Na)-Dissolved		202000	204000		ug/L	0.8	20	19-DEC-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Uranium (U)-Dissolved		0.897	0.893		ug/L	0.4	20	19-DEC-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3245950-2	LCS							
Antimony (Sb)-Dissolved			103.7		%		80-120	19-DEC-19
Arsenic (As)-Dissolved			105.5		%		80-120	19-DEC-19
Barium (Ba)-Dissolved			108.5		%		80-120	19-DEC-19
Beryllium (Be)-Dissolved			102.8		%		80-120	19-DEC-19
Boron (B)-Dissolved			102.4		%		80-120	19-DEC-19
Cadmium (Cd)-Dissolved			106.4		%		80-120	19-DEC-19
Chromium (Cr)-Dissolved			108.6		%		80-120	19-DEC-19
Cobalt (Co)-Dissolved			107.7		%		80-120	19-DEC-19
Copper (Cu)-Dissolved			107.3		%		80-120	19-DEC-19
Lead (Pb)-Dissolved			106.1		%		80-120	19-DEC-19
Molybdenum (Mo)-Dissolved			107.2		%		80-120	19-DEC-19
Nickel (Ni)-Dissolved			108.3		%		80-120	19-DEC-19
Selenium (Se)-Dissolved			101.9		%		80-120	19-DEC-19
Silver (Ag)-Dissolved			105.8		%		80-120	19-DEC-19
Sodium (Na)-Dissolved			109.0		%		80-120	19-DEC-19
Thallium (Tl)-Dissolved			104.8		%		80-120	19-DEC-19
Uranium (U)-Dissolved			106.9		%		80-120	19-DEC-19
Vanadium (V)-Dissolved			108.5		%		80-120	19-DEC-19
Zinc (Zn)-Dissolved			107.4		%		80-120	19-DEC-19
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-1	MB							
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-19
WG3245950-5	MS	WG3245950-6						
Antimony (Sb)-Dissolved			100.9		%		70-130	19-DEC-19
Arsenic (As)-Dissolved			114.9		%		70-130	19-DEC-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Beryllium (Be)-Dissolved			109.4		%		70-130	19-DEC-19
Boron (B)-Dissolved			100.3		%		70-130	19-DEC-19
Cadmium (Cd)-Dissolved			98.7		%		70-130	19-DEC-19
Chromium (Cr)-Dissolved			109.3		%		70-130	19-DEC-19
Cobalt (Co)-Dissolved			101.4		%		70-130	19-DEC-19
Copper (Cu)-Dissolved			93.5		%		70-130	19-DEC-19
Lead (Pb)-Dissolved			93.5		%		70-130	19-DEC-19
Molybdenum (Mo)-Dissolved			106.1		%		70-130	19-DEC-19
Nickel (Ni)-Dissolved			95.7		%		70-130	19-DEC-19
Selenium (Se)-Dissolved			117.1		%		70-130	19-DEC-19
Silver (Ag)-Dissolved			92.2		%		70-130	19-DEC-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Thallium (Tl)-Dissolved			94.4		%		70-130	19-DEC-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Vanadium (V)-Dissolved			112.2		%		70-130	19-DEC-19
Zinc (Zn)-Dissolved			97.9		%		70-130	19-DEC-19
PAH-511-WT								
	Water							
Batch	R4949716							
WG3245885-2	LCS							
1-Methylnaphthalene			92.8		%		50-140	20-DEC-19
2-Methylnaphthalene			82.1		%		50-140	20-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4949716							
WG3245885-2	LCS							
Acenaphthene			94.6		%		50-140	20-DEC-19
Acenaphthylene			96.6		%		50-140	20-DEC-19
Anthracene			91.5		%		50-140	20-DEC-19
Benzo(a)anthracene			97.7		%		50-140	20-DEC-19
Benzo(a)pyrene			91.9		%		50-140	20-DEC-19
Benzo(b)fluoranthene			90.5		%		50-140	20-DEC-19
Benzo(g,h,i)perylene			94.6		%		50-140	20-DEC-19
Benzo(k)fluoranthene			97.7		%		50-140	20-DEC-19
Chrysene			96.2		%		50-140	20-DEC-19
Dibenzo(ah)anthracene			93.9		%		50-140	20-DEC-19
Fluoranthene			96.5		%		50-140	20-DEC-19
Fluorene			93.0		%		50-140	20-DEC-19
Indeno(1,2,3-cd)pyrene			98.0		%		50-140	20-DEC-19
Naphthalene			86.9		%		50-140	20-DEC-19
Phenanthrene			95.8		%		50-140	20-DEC-19
Pyrene			96.0		%		50-140	20-DEC-19
WG3245885-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
2-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthylene			<0.020		ug/L		0.02	20-DEC-19
Anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)pyrene			<0.010		ug/L		0.01	20-DEC-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-DEC-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Chrysene			<0.020		ug/L		0.02	20-DEC-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-DEC-19
Fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Fluorene			<0.020		ug/L		0.02	20-DEC-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-DEC-19
Naphthalene			<0.050		ug/L		0.05	20-DEC-19
Phenanthrene			<0.020		ug/L		0.02	20-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4949716							
WG3245885-1	MB							
Pyrene			<0.020		ug/L		0.02	20-DEC-19
Surrogate: d8-Naphthalene			89.9		%		60-140	20-DEC-19
Surrogate: d10-Phenanthrene			95.9		%		60-140	20-DEC-19
Surrogate: d12-Chrysene			93.4		%		60-140	20-DEC-19
Surrogate: d10-Acenaphthene			97.2		%		60-140	20-DEC-19
PCB-511-WT		Water						
Batch	R4949187							
WG3246028-2	LCS							
Aroclor 1242			104.7		%		60-140	19-DEC-19
Aroclor 1248			92.4		%		60-140	19-DEC-19
Aroclor 1254			109.4		%		60-140	19-DEC-19
Aroclor 1260			116.0		%		60-140	19-DEC-19
WG3246028-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1248			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1254			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1260			<0.020		ug/L		0.02	19-DEC-19
Surrogate: Decachlorobiphenyl			89.6		%		50-150	19-DEC-19
Surrogate: Tetrachloro-m-xylene			76.5		%		50-150	19-DEC-19
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP		WG3243074-3					
1,1,1,2-Tetrachloroethane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dibromoethane	<0.20	<0.20		RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,3-Dichlorobenzene	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene	<0.50	<0.50		RPD-NA	ug/L	N/A	30	20-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		1.27	1.25		ug/L	1.6	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3243074-1	LCS							
1,1,1,2-Tetrachloroethane			90.4		%		70-130	20-DEC-19
1,1,2,2-Tetrachloroethane			91.8		%		70-130	20-DEC-19
1,1,1-Trichloroethane			91.6		%		70-130	20-DEC-19
1,1,2-Trichloroethane			91.0		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
1,1-Dichloroethane			92.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			88.2		%		70-130	20-DEC-19
1,2-Dibromoethane			93.1		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.9		%		70-130	20-DEC-19
1,2-Dichloroethane			91.5		%		70-130	20-DEC-19
1,2-Dichloropropane			100.5		%		70-130	20-DEC-19
1,3-Dichlorobenzene			84.8		%		70-130	20-DEC-19
1,4-Dichlorobenzene			84.8		%		70-130	20-DEC-19
Acetone			96.5		%		60-140	20-DEC-19
Benzene			95.2		%		70-130	20-DEC-19
Bromodichloromethane			88.8		%		70-130	20-DEC-19
Bromoform			93.9		%		70-130	20-DEC-19
Bromomethane			83.1		%		60-140	20-DEC-19
Carbon tetrachloride			91.6		%		70-130	20-DEC-19
Chlorobenzene			89.1		%		70-130	20-DEC-19
Chloroform			93.5		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			90.3		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			91.3		%		70-130	20-DEC-19
Dibromochloromethane			88.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			94.0		%		50-140	20-DEC-19
Ethylbenzene			88.3		%		70-130	20-DEC-19
n-Hexane			87.2		%		70-130	20-DEC-19
m+p-Xylenes			87.9		%		70-130	20-DEC-19
Methyl Ethyl Ketone			90.7		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			92.9		%		60-140	20-DEC-19
Methylene Chloride			90.7		%		70-130	20-DEC-19
MTBE			94.0		%		70-130	20-DEC-19
o-Xylene			88.4		%		70-130	20-DEC-19
Styrene			90.8		%		70-130	20-DEC-19
Tetrachloroethylene			87.6		%		70-130	20-DEC-19
Toluene			89.7		%		70-130	20-DEC-19
trans-1,2-Dichloroethylene			89.5		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			90.6		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
Trichloroethylene			91.7		%		70-130	20-DEC-19
Trichlorofluoromethane			90.9		%		60-140	20-DEC-19
Vinyl chloride			104.1		%		60-140	20-DEC-19
WG3243074-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-2	MB							
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			93.6		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.4		%		70-130	20-DEC-19
WG3243074-5	MS	WG3243074-3						
1,1,1,2-Tetrachloroethane			91.5		%		50-140	23-DEC-19
1,1,2,2-Tetrachloroethane			91.3		%		50-140	23-DEC-19
1,1,1-Trichloroethane			92.7		%		50-140	23-DEC-19
1,1,2-Trichloroethane			95.7		%		50-140	23-DEC-19
1,1-Dichloroethane			87.1		%		50-140	23-DEC-19
1,1-Dichloroethylene			84.8		%		50-140	23-DEC-19
1,2-Dibromoethane			96.8		%		50-140	23-DEC-19
1,2-Dichlorobenzene			82.4		%		50-140	23-DEC-19
1,2-Dichloroethane			97.3		%		50-140	23-DEC-19
1,2-Dichloropropane			95.5		%		50-140	23-DEC-19
1,3-Dichlorobenzene			82.3		%		50-140	23-DEC-19
1,4-Dichlorobenzene			78.8		%		50-140	23-DEC-19
Acetone			106.3		%		50-140	23-DEC-19
Benzene			94.5		%		50-140	23-DEC-19
Bromodichloromethane			94.0		%		50-140	23-DEC-19
Bromoform			95.2		%		50-140	23-DEC-19
Bromomethane			81.7		%		50-140	23-DEC-19
Carbon tetrachloride			89.9		%		50-140	23-DEC-19
Chlorobenzene			88.5		%		50-140	23-DEC-19
Chloroform			93.9		%		50-140	23-DEC-19
cis-1,2-Dichloroethylene			88.6		%		50-140	23-DEC-19



Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-5 MS		WG3243074-3						
cis-1,3-Dichloropropene			86.4		%		50-140	23-DEC-19
Dibromochloromethane			93.4		%		50-140	23-DEC-19
Dichlorodifluoromethane			71.7		%		50-140	23-DEC-19
Ethylbenzene			85.7		%		50-140	23-DEC-19
n-Hexane			81.7		%		50-140	23-DEC-19
m+p-Xylenes			84.8		%		50-140	23-DEC-19
Methyl Ethyl Ketone			93.6		%		50-140	23-DEC-19
Methyl Isobutyl Ketone			96.9		%		50-140	23-DEC-19
Methylene Chloride			93.7		%		50-140	23-DEC-19
MTBE			90.2		%		50-140	23-DEC-19
o-Xylene			87.0		%		50-140	23-DEC-19
Styrene			88.4		%		50-140	23-DEC-19
Tetrachloroethylene			83.4		%		50-140	23-DEC-19
Toluene			89.0		%		50-140	23-DEC-19
trans-1,2-Dichloroethylene			77.8		%		50-140	23-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	23-DEC-19
Trichloroethylene			87.3		%		50-140	23-DEC-19
Trichlorofluoromethane			87.8		%		50-140	23-DEC-19
Vinyl chloride			100.1		%		50-140	23-DEC-19

Quality Control Report

Workorder: L2398134

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

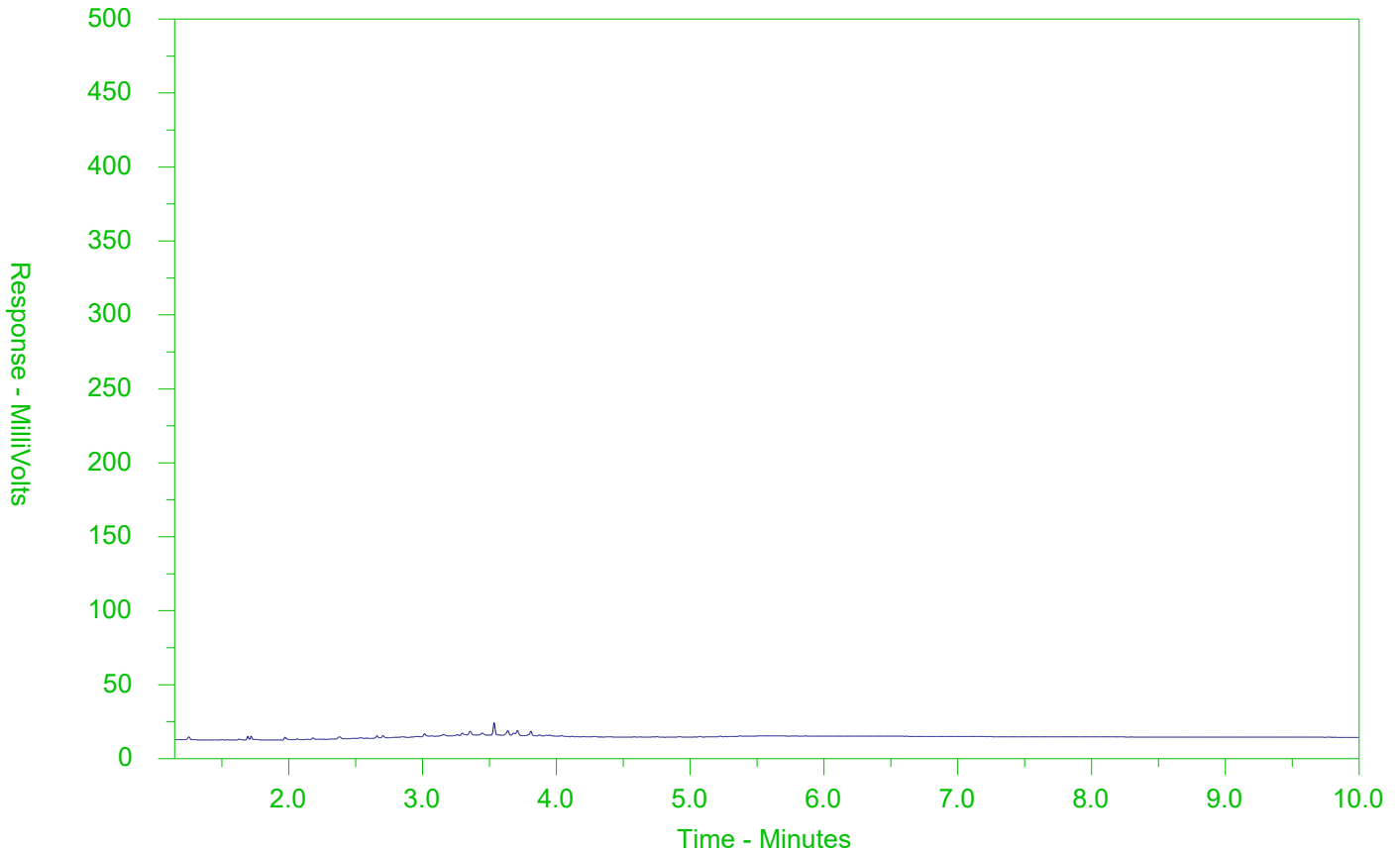
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2398134-1
 Client Sample ID: BH5



← 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

Canada Toll Free: 1 800 668 9878



L2398134-COFC

COC Number: 15 -

Page 1 of 1

MG

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level For all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>			EMERGENCY	1 Business day [E1] <input type="checkbox"/>						
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>						
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province:	Brampton	Email 2			Analysis Request											
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	Email 1 or Fax krossi@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 #:	1-19-0603-42	Major/Minor Code:	Routing Code:													
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2398134RD	ALS Contact:	Sampler:													
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												
	BH5	16-12-19		GW	X				X	X	X	X		11		
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>						
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C	
					2.1					3.0						
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Kossay Makhzoumi	Date: 17-12-19	Time:	Received by: <i>[Signature]</i>	Date: Dec 18/19	Time: 9am	Received by: <i>[Signature]</i>	Date: Dec 18/19	Time: 14:25								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 09:16 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398115
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2398115-1	BH6	Volatile Organic Compounds	cis-1,2-Dichloroethylene	4.97	1.6	ug/L
			Trichloroethylene	3.81	1.6	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)						
(No parameter exceedances)						

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

Dissolved Metals - WATER

Lab ID L2398115-1
Sample Date 16-DEC-19
Sample ID BH6

Guide Limits
#1 #2

Analyte	Unit	#1	#2	FIELD	
Dissolved Metals Filtration Location	-	-		FIELD	
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	58.1	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	130	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	0.63	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	5.2	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	23000002300000		524000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	1.02	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2398115-1		
		Sample Date	16-DEC-19		
		Sample ID	BH6		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	3.96	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	4.97	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	0.60	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2398115-1
Sample Date 16-DEC-19
Sample ID BH6

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	3.81
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	94.2
Surrogate: 1,4-Difluorobenzene	%	-	-	95.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398115-1
Sample Date 16-DEC-19
Sample ID BH6

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	100.5
Surrogate: 3,4-Dichlorotoluene	%	-	-	74.2

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Lab ID L2398115-1 Sample Date 16-DEC-19 Sample ID BH6				
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	0.036
Benzo(a)pyrene	ug/L	0.81	0.81	0.029
Benzo(b)fluoranthene	ug/L	0.75	0.75	0.045
Benzo(g,h,i)perylene	ug/L	0.2	0.2	0.021
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	0.039
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	0.099
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	0.024
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	0.086
Pyrene	ug/L	68	68	0.087
Surrogate: d10-Acenaphthene	%	-	-	100.6
Surrogate: d12-Chrysene	%	-	-	91.7
Surrogate: d8-Naphthalene	%	-	-	93.8
Surrogate: d10-Phenanthrene	%	-	-	100.4

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID L2398115-1
Sample Date 16-DEC-19
Sample ID BH6

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	54.3
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	86.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
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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**
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F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L
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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.

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
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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
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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).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
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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
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PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
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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)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.</p> <p>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).</p>			
PCB-511-WT	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082
<p>Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.</p> <p>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).</p>			
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
<p>Liquid samples are analyzed by headspace GC/MSD.</p> <p>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).</p>			
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total xylenes represents the sum of o-xylene and m&p-xylene.</p>			

**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: L2398115

Report Date: 27-DEC-19

Page 1 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT Water								
Batch	R4951330							
WG3247542-1	LCS							
F1 (C6-C10)			96.3		%		80-120	21-DEC-19
WG3247542-2	MB							
F1 (C6-C10)			<25		ug/L		25	21-DEC-19
Surrogate: 3,4-Dichlorotoluene			91.7		%		60-140	21-DEC-19
F2-F4-511-WT Water								
Batch	R4948447							
WG3245881-2	LCS							
F2 (C10-C16)			92.9		%		70-130	19-DEC-19
F3 (C16-C34)			98.2		%		70-130	19-DEC-19
F4 (C34-C50)			96.4		%		70-130	19-DEC-19
WG3245881-1	MB							
F2 (C10-C16)			<100		ug/L		100	19-DEC-19
F3 (C16-C34)			<250		ug/L		250	19-DEC-19
F4 (C34-C50)			<250		ug/L		250	19-DEC-19
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	19-DEC-19
MET-D-UG/L-MS-WT Water								
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Arsenic (As)-Dissolved		0.13	0.16		ug/L	15	20	19-DEC-19
Barium (Ba)-Dissolved		104	104		ug/L	0.1	20	19-DEC-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Boron (B)-Dissolved		36	36		ug/L	0.5	20	19-DEC-19
Cadmium (Cd)-Dissolved		0.0130	0.0124		ug/L	4.7	20	19-DEC-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Copper (Cu)-Dissolved		0.90	0.87		ug/L	3.4	20	19-DEC-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Molybdenum (Mo)-Dissolved		3.79	3.81		ug/L	0.7	20	19-DEC-19
Nickel (Ni)-Dissolved		0.65	0.64		ug/L	1.3	20	19-DEC-19
Selenium (Se)-Dissolved		0.844	0.860		ug/L	1.9	20	19-DEC-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Sodium (Na)-Dissolved		202000	204000		ug/L	0.8	20	19-DEC-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 2 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Uranium (U)-Dissolved		0.897	0.893		ug/L	0.4	20	19-DEC-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3245950-2	LCS							
Antimony (Sb)-Dissolved			103.7		%		80-120	19-DEC-19
Arsenic (As)-Dissolved			105.5		%		80-120	19-DEC-19
Barium (Ba)-Dissolved			108.5		%		80-120	19-DEC-19
Beryllium (Be)-Dissolved			102.8		%		80-120	19-DEC-19
Boron (B)-Dissolved			102.4		%		80-120	19-DEC-19
Cadmium (Cd)-Dissolved			106.4		%		80-120	19-DEC-19
Chromium (Cr)-Dissolved			108.6		%		80-120	19-DEC-19
Cobalt (Co)-Dissolved			107.7		%		80-120	19-DEC-19
Copper (Cu)-Dissolved			107.3		%		80-120	19-DEC-19
Lead (Pb)-Dissolved			106.1		%		80-120	19-DEC-19
Molybdenum (Mo)-Dissolved			107.2		%		80-120	19-DEC-19
Nickel (Ni)-Dissolved			108.3		%		80-120	19-DEC-19
Selenium (Se)-Dissolved			101.9		%		80-120	19-DEC-19
Silver (Ag)-Dissolved			105.8		%		80-120	19-DEC-19
Sodium (Na)-Dissolved			109.0		%		80-120	19-DEC-19
Thallium (Tl)-Dissolved			104.8		%		80-120	19-DEC-19
Uranium (U)-Dissolved			106.9		%		80-120	19-DEC-19
Vanadium (V)-Dissolved			108.5		%		80-120	19-DEC-19
Zinc (Zn)-Dissolved			107.4		%		80-120	19-DEC-19
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 3 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-1	MB							
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-19
WG3245950-5	MS	WG3245950-6						
Antimony (Sb)-Dissolved			100.9		%		70-130	19-DEC-19
Arsenic (As)-Dissolved			114.9		%		70-130	19-DEC-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Beryllium (Be)-Dissolved			109.4		%		70-130	19-DEC-19
Boron (B)-Dissolved			100.3		%		70-130	19-DEC-19
Cadmium (Cd)-Dissolved			98.7		%		70-130	19-DEC-19
Chromium (Cr)-Dissolved			109.3		%		70-130	19-DEC-19
Cobalt (Co)-Dissolved			101.4		%		70-130	19-DEC-19
Copper (Cu)-Dissolved			93.5		%		70-130	19-DEC-19
Lead (Pb)-Dissolved			93.5		%		70-130	19-DEC-19
Molybdenum (Mo)-Dissolved			106.1		%		70-130	19-DEC-19
Nickel (Ni)-Dissolved			95.7		%		70-130	19-DEC-19
Selenium (Se)-Dissolved			117.1		%		70-130	19-DEC-19
Silver (Ag)-Dissolved			92.2		%		70-130	19-DEC-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Thallium (Tl)-Dissolved			94.4		%		70-130	19-DEC-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Vanadium (V)-Dissolved			112.2		%		70-130	19-DEC-19
Zinc (Zn)-Dissolved			97.9		%		70-130	19-DEC-19
PAH-511-WT								
	Water							
Batch	R4949666							
WG3245881-2	LCS							
1-Methylnaphthalene			94.6		%		50-140	20-DEC-19
2-Methylnaphthalene			84.5		%		50-140	20-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R4949666							
WG3245881-2	LCS							
Acenaphthene			100.4		%		50-140	20-DEC-19
Acenaphthylene			99.8		%		50-140	20-DEC-19
Anthracene			98.4		%		50-140	20-DEC-19
Benzo(a)anthracene			102.2		%		50-140	20-DEC-19
Benzo(a)pyrene			95.3		%		50-140	20-DEC-19
Benzo(b)fluoranthene			95.0		%		50-140	20-DEC-19
Benzo(g,h,i)perylene			101.3		%		50-140	20-DEC-19
Benzo(k)fluoranthene			101.2		%		50-140	20-DEC-19
Chrysene			100.5		%		50-140	20-DEC-19
Dibenzo(ah)anthracene			100.1		%		50-140	20-DEC-19
Fluoranthene			101.8		%		50-140	20-DEC-19
Fluorene			98.6		%		50-140	20-DEC-19
Indeno(1,2,3-cd)pyrene			104.9		%		50-140	20-DEC-19
Naphthalene			90.7		%		50-140	20-DEC-19
Phenanthrene			101.9		%		50-140	20-DEC-19
Pyrene			101.2		%		50-140	20-DEC-19
WG3245881-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
2-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthylene			<0.020		ug/L		0.02	20-DEC-19
Anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)pyrene			<0.010		ug/L		0.01	20-DEC-19
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-DEC-19
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Chrysene			<0.020		ug/L		0.02	20-DEC-19
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-DEC-19
Fluoranthene			<0.020		ug/L		0.02	20-DEC-19
Fluorene			<0.020		ug/L		0.02	20-DEC-19
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-DEC-19
Naphthalene			<0.050		ug/L		0.05	20-DEC-19
Phenanthrene			<0.020		ug/L		0.02	20-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 5 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R4949666							
WG3245881-1	MB							
Pyrene			<0.020		ug/L		0.02	20-DEC-19
Surrogate: d8-Naphthalene			85.7		%		60-140	20-DEC-19
Surrogate: d10-Phenanthrene			91.4		%		60-140	20-DEC-19
Surrogate: d12-Chrysene			86.1		%		60-140	20-DEC-19
Surrogate: d10-Acenaphthene			92.4		%		60-140	20-DEC-19
PCB-511-WT		Water						
Batch	R4949187							
WG3246028-2	LCS							
Aroclor 1242			104.7		%		60-140	19-DEC-19
Aroclor 1248			92.4		%		60-140	19-DEC-19
Aroclor 1254			109.4		%		60-140	19-DEC-19
Aroclor 1260			116.0		%		60-140	19-DEC-19
WG3246028-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1248			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1254			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1260			<0.020		ug/L		0.02	19-DEC-19
Surrogate: Decachlorobiphenyl			89.6		%		50-150	19-DEC-19
Surrogate: Tetrachloro-m-xylene			76.5		%		50-150	19-DEC-19
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP							
		WG3243074-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 6 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		1.27	1.25		ug/L	1.6	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3243074-1	LCS							
1,1,1,2-Tetrachloroethane			90.4		%		70-130	20-DEC-19
1,1,2,2-Tetrachloroethane			91.8		%		70-130	20-DEC-19
1,1,1-Trichloroethane			91.6		%		70-130	20-DEC-19
1,1,2-Trichloroethane			91.0		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 7 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-1	LCS							
1,1-Dichloroethane			92.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			88.2		%		70-130	20-DEC-19
1,2-Dibromoethane			93.1		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.9		%		70-130	20-DEC-19
1,2-Dichloroethane			91.5		%		70-130	20-DEC-19
1,2-Dichloropropane			100.5		%		70-130	20-DEC-19
1,3-Dichlorobenzene			84.8		%		70-130	20-DEC-19
1,4-Dichlorobenzene			84.8		%		70-130	20-DEC-19
Acetone			96.5		%		60-140	20-DEC-19
Benzene			95.2		%		70-130	20-DEC-19
Bromodichloromethane			88.8		%		70-130	20-DEC-19
Bromoform			93.9		%		70-130	20-DEC-19
Bromomethane			83.1		%		60-140	20-DEC-19
Carbon tetrachloride			91.6		%		70-130	20-DEC-19
Chlorobenzene			89.1		%		70-130	20-DEC-19
Chloroform			93.5		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			90.3		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			91.3		%		70-130	20-DEC-19
Dibromochloromethane			88.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			94.0		%		50-140	20-DEC-19
Ethylbenzene			88.3		%		70-130	20-DEC-19
n-Hexane			87.2		%		70-130	20-DEC-19
m+p-Xylenes			87.9		%		70-130	20-DEC-19
Methyl Ethyl Ketone			90.7		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			92.9		%		60-140	20-DEC-19
Methylene Chloride			90.7		%		70-130	20-DEC-19
MTBE			94.0		%		70-130	20-DEC-19
o-Xylene			88.4		%		70-130	20-DEC-19
Styrene			90.8		%		70-130	20-DEC-19
Tetrachloroethylene			87.6		%		70-130	20-DEC-19
Toluene			89.7		%		70-130	20-DEC-19
trans-1,2-Dichloroethylene			89.5		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			90.6		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 8 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
Trichloroethylene			91.7		%		70-130	20-DEC-19
Trichlorofluoromethane			90.9		%		60-140	20-DEC-19
Vinyl chloride			104.1		%		60-140	20-DEC-19
WG3243074-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 9 of 11

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-2 MB								
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			93.6		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.4		%		70-130	20-DEC-19
WG3243074-5 MS		WG3243074-3						
1,1,1,2-Tetrachloroethane			91.5		%		50-140	23-DEC-19
1,1,2,2-Tetrachloroethane			91.3		%		50-140	23-DEC-19
1,1,1-Trichloroethane			92.7		%		50-140	23-DEC-19
1,1,2-Trichloroethane			95.7		%		50-140	23-DEC-19
1,1-Dichloroethane			87.1		%		50-140	23-DEC-19
1,1-Dichloroethylene			84.8		%		50-140	23-DEC-19
1,2-Dibromoethane			96.8		%		50-140	23-DEC-19
1,2-Dichlorobenzene			82.4		%		50-140	23-DEC-19
1,2-Dichloroethane			97.3		%		50-140	23-DEC-19
1,2-Dichloropropane			95.5		%		50-140	23-DEC-19
1,3-Dichlorobenzene			82.3		%		50-140	23-DEC-19
1,4-Dichlorobenzene			78.8		%		50-140	23-DEC-19
Acetone			106.3		%		50-140	23-DEC-19
Benzene			94.5		%		50-140	23-DEC-19
Bromodichloromethane			94.0		%		50-140	23-DEC-19
Bromoform			95.2		%		50-140	23-DEC-19
Bromomethane			81.7		%		50-140	23-DEC-19
Carbon tetrachloride			89.9		%		50-140	23-DEC-19
Chlorobenzene			88.5		%		50-140	23-DEC-19
Chloroform			93.9		%		50-140	23-DEC-19
cis-1,2-Dichloroethylene			88.6		%		50-140	23-DEC-19



Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Page 10 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-5 MS		WG3243074-3						
cis-1,3-Dichloropropene			86.4		%		50-140	23-DEC-19
Dibromochloromethane			93.4		%		50-140	23-DEC-19
Dichlorodifluoromethane			71.7		%		50-140	23-DEC-19
Ethylbenzene			85.7		%		50-140	23-DEC-19
n-Hexane			81.7		%		50-140	23-DEC-19
m+p-Xylenes			84.8		%		50-140	23-DEC-19
Methyl Ethyl Ketone			93.6		%		50-140	23-DEC-19
Methyl Isobutyl Ketone			96.9		%		50-140	23-DEC-19
Methylene Chloride			93.7		%		50-140	23-DEC-19
MTBE			90.2		%		50-140	23-DEC-19
o-Xylene			87.0		%		50-140	23-DEC-19
Styrene			88.4		%		50-140	23-DEC-19
Tetrachloroethylene			83.4		%		50-140	23-DEC-19
Toluene			89.0		%		50-140	23-DEC-19
trans-1,2-Dichloroethylene			77.8		%		50-140	23-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	23-DEC-19
Trichloroethylene			87.3		%		50-140	23-DEC-19
Trichlorofluoromethane			87.8		%		50-140	23-DEC-19
Vinyl chloride			100.1		%		50-140	23-DEC-19

Quality Control Report

Workorder: L2398115

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 11 of 11

Contact: Kossay Makhzoumi

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
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.

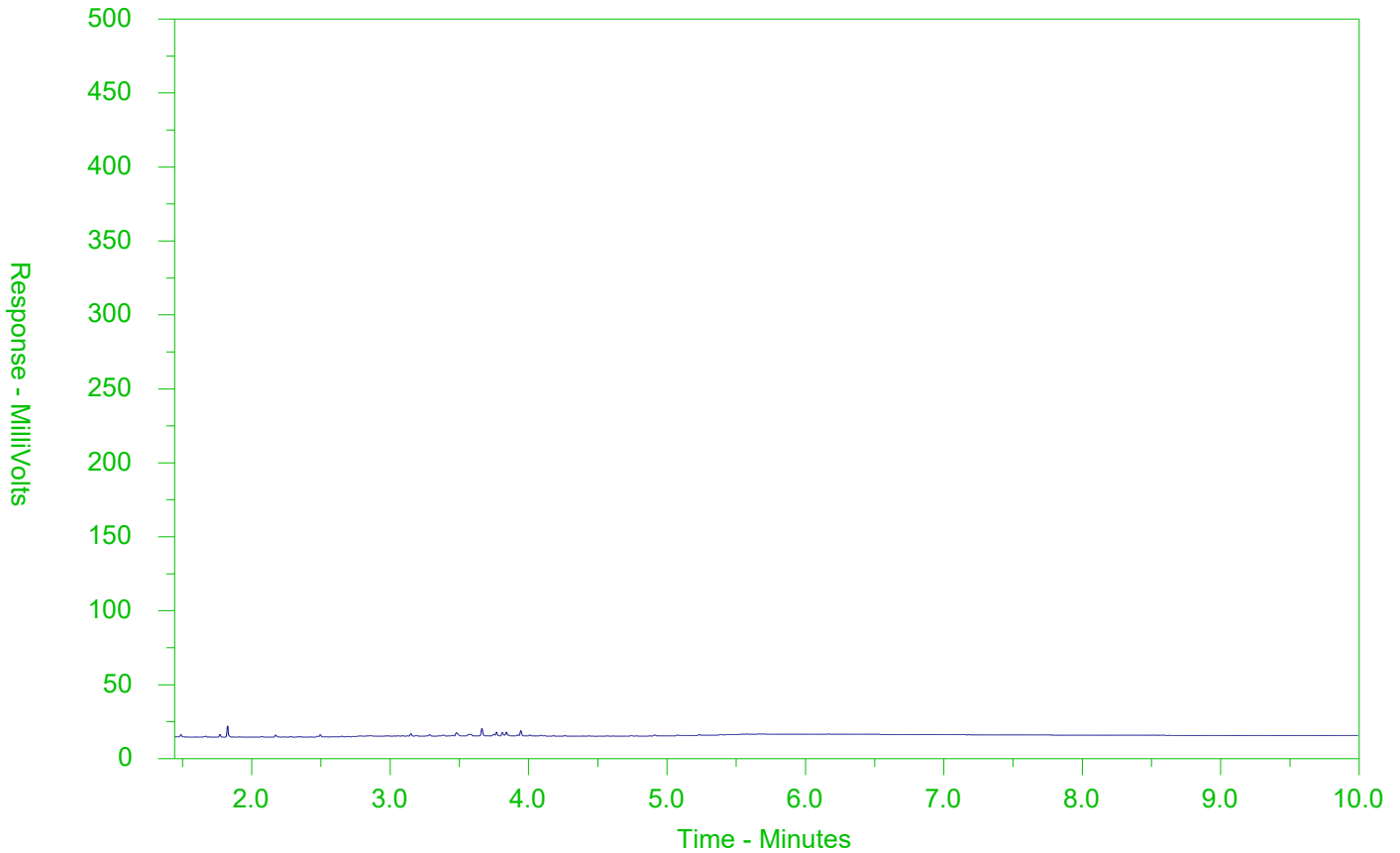
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2398115-1
 Client Sample ID: BH6



← 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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 28-FEB-20
Report Date: 05-MAR-20 10:58 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2422396
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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Summary of Guideline Exceedances

Guideline		Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID	Client ID					
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2422396-1	DUP 5	Anions and Nutrients	Chloride (Cl)	2900	2300	mg/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)						
L2422396-1	DUP 5	Anions and Nutrients	Chloride (Cl)	2900	2300	mg/L

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

Physical Tests - WATER

Lab ID	L2422396-1
Sample Date	27-FEB-20
Sample ID	DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	7.85
pH	pH units	-	-	7.28

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.


Anions and Nutrients - WATER


Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	2900 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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

Dissolved Metals - WATER

Lab ID L2422396-1
 Sample Date 27-FEB-20
 Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	29000	29000	102 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	45000	45000	100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	25	25	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	5.76 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	63	63	<0.50 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	2300000	2300000	132000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	420	420	1.61 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	250	250	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10 ^{DLHC}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/L	130000	130000	<30
Benzene	ug/L	44	430	<0.50
Bromodichloromethane	ug/L	85000	85000	<2.0
Bromoform	ug/L	380	770	<5.0
Bromomethane	ug/L	5.6	56	<0.50
Carbon tetrachloride	ug/L	0.79	8.4	<0.20
Chlorobenzene	ug/L	630	630	<0.50
Dibromochloromethane	ug/L	82000	82000	<2.0
Chloroform	ug/L	2.4	22	<1.0
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50
1,4-Dichlorobenzene	ug/L	8	67	<0.50
Dichlorodifluoromethane	ug/L	4400	4400	<2.0
1,1-Dichloroethane	ug/L	320	3100	<0.50
1,2-Dichloroethane	ug/L	1.6	12	<0.50
1,1-Dichloroethylene	ug/L	1.6	17	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
Methylene Chloride	ug/L	610	5500	<5.0
1,2-Dichloropropane	ug/L	16	140	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50
Ethylbenzene	ug/L	2300	2300	<0.50
n-Hexane	ug/L	51	520	<0.50
Methyl Ethyl Ketone	ug/L	470000	1500000	<20
Methyl Isobutyl Ketone	ug/L	140000	580000	<20
MTBE	ug/L	190	1400	<2.0
Styrene	ug/L	1300	9100	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	95.4
Surrogate: 1,4-Difluorobenzene	%	-	-	102.4

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	97.7
Surrogate: 3,4-Dichlorotoluene	%	-	-	72.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2422396-1
Sample Date 27-FEB-20
Sample ID DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	0.026 ^R
Anthracene	ug/L	2.4	2.4	<0.020
Benzo(a)anthracene	ug/L	4.7	4.7	<0.020
Benzo(a)pyrene	ug/L	0.81	0.81	<0.010
Benzo(b)fluoranthene	ug/L	0.75	0.75	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020
Benzo(k)fluoranthene	ug/L	0.4	0.4	<0.020
Chrysene	ug/L	1	1	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	0.023
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020
1+2-Methylnaphthalenes	ug/L	1800	1800	0.082
1-Methylnaphthalene	ug/L	1800	1800	0.035
2-Methylnaphthalene	ug/L	1800	1800	0.046
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	0.028
Pyrene	ug/L	68	68	0.023
Surrogate: d10-Acenaphthene	%	-	-	93.0
Surrogate: d12-Chrysene	%	-	-	83.5
Surrogate: d8-Naphthalene	%	-	-	96.4
Surrogate: d10-Phenanthrene	%	-	-	101.2

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Polychlorinated Biphenyls - WATER

Lab ID	L2422396-1
Sample Date	27-FEB-20
Sample ID	DUP 5

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	94.0
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	91.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
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**
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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**
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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 EPA 1631E (mod)
(ug/L)

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

L2422396 CONT'D....
Job Reference: 1-19-0603-42
PAGE 15 of 15
05-MAR-20 10:58 (MT)

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
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

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).

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: L2422396

Report Date: 05-MAR-20

Page 1 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R5013226							
WG3284708-13	DUP	WG3284708-15						
Chloride (Cl)		5.54	5.54		mg/L	0.0	20	02-MAR-20
WG3284708-12	LCS							
Chloride (Cl)			103.9		%		90-110	02-MAR-20
WG3284708-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-MAR-20
WG3284708-14	MS	WG3284708-15						
Chloride (Cl)			99.1		%		75-125	02-MAR-20
CN-WAD-R511-WT		Water						
Batch	R5013229							
WG3284843-3	DUP	L2422396-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284843-2	LCS							
Cyanide, Weak Acid Diss			100.0		%		80-120	02-MAR-20
WG3284843-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	02-MAR-20
CR-CR6-IC-R511-WT		Water						
Batch	R5012632							
WG3284757-4	DUP	WG3284757-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284757-2	LCS							
Chromium, Hexavalent			99.4		%		80-120	02-MAR-20
WG3284757-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	02-MAR-20
WG3284757-5	MS	WG3284757-3						
Chromium, Hexavalent			96.0		%		70-130	02-MAR-20
EC-R511-WT		Water						
Batch	R5012946							
WG3284273-4	DUP	WG3284273-3						
Conductivity		0.622	0.625		mS/cm	0.5	10	29-FEB-20
WG3284273-2	LCS							
Conductivity			100.5		%		90-110	29-FEB-20
WG3284273-1	MB							
Conductivity			<0.0030		mS/cm		0.003	29-FEB-20
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 2 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1	LCS							
F1 (C6-C10)			91.3		%		80-120	02-MAR-20
WG3282676-2	MB							
F1 (C6-C10)			<25		ug/L		25	02-MAR-20
Surrogate: 3,4-Dichlorotoluene			101.5		%		60-140	02-MAR-20
WG3282676-5	MS	WG3282676-3						
F1 (C6-C10)			81.5		%		60-140	02-MAR-20
F2-F4-511-WT		Water						
Batch	R5012153							
WG3284543-2	LCS							
F2 (C10-C16)			104.8		%		70-130	02-MAR-20
F3 (C16-C34)			104.1		%		70-130	02-MAR-20
F4 (C34-C50)			110.9		%		70-130	02-MAR-20
WG3284543-1	MB							
F2 (C10-C16)			<100		ug/L		100	02-MAR-20
F3 (C16-C34)			<250		ug/L		250	02-MAR-20
F4 (C34-C50)			<250		ug/L		250	02-MAR-20
Surrogate: 2-Bromobenzotrifluoride			102.4		%		60-140	02-MAR-20
HG-D-UG/L-CVAA-WT		Water						
Batch	R5012117							
WG3284635-3	DUP	L2422396-1						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-20
WG3284635-2	LCS							
Mercury (Hg)-Dissolved			108.0		%		80-120	02-MAR-20
WG3284635-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	02-MAR-20
WG3284635-4	MS	L2422401-1						
Mercury (Hg)-Dissolved			102.5		%		70-130	02-MAR-20
MET-D-UG/L-MS-WT		Water						
Batch	R5012163							
WG3284562-4	DUP	WG3284562-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Arsenic (As)-Dissolved		2.5	2.5		ug/L	1.5	20	02-MAR-20
Barium (Ba)-Dissolved		30.0	30.2		ug/L	0.7	20	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 3 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-4	DUP	WG3284562-3						
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Boron (B)-Dissolved		550	550		ug/L	0.8	20	02-MAR-20
Cadmium (Cd)-Dissolved		0.608	0.723		ug/L	17	20	02-MAR-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Cobalt (Co)-Dissolved		6.9	7.1		ug/L	2.8	20	02-MAR-20
Copper (Cu)-Dissolved		4.0	4.0		ug/L	0.5	20	02-MAR-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
Molybdenum (Mo)-Dissolved		49.8	51.9		ug/L	4.3	20	02-MAR-20
Nickel (Ni)-Dissolved		7.4	7.3		ug/L	1.4	20	02-MAR-20
Selenium (Se)-Dissolved		0.83	0.90		ug/L	8.1	20	02-MAR-20
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-20
Sodium (Na)-Dissolved		117000	117000		ug/L	0.3	20	02-MAR-20
Thallium (Tl)-Dissolved		0.13	0.13		ug/L	4.2	20	02-MAR-20
Uranium (U)-Dissolved		13.9	14.1		ug/L	1.1	20	02-MAR-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	02-MAR-20
Zinc (Zn)-Dissolved		14	14	J	ug/L	11	20	02-MAR-20
WG3284562-2	LCS							
Antimony (Sb)-Dissolved			93.7		%		80-120	02-MAR-20
Arsenic (As)-Dissolved			95.3		%		80-120	02-MAR-20
Barium (Ba)-Dissolved			100.3		%		80-120	02-MAR-20
Beryllium (Be)-Dissolved			91.9		%		80-120	02-MAR-20
Boron (B)-Dissolved			92.0		%		80-120	02-MAR-20
Cadmium (Cd)-Dissolved			94.8		%		80-120	02-MAR-20
Chromium (Cr)-Dissolved			91.3		%		80-120	02-MAR-20
Cobalt (Co)-Dissolved			88.8		%		80-120	02-MAR-20
Copper (Cu)-Dissolved			85.9		%		80-120	02-MAR-20
Lead (Pb)-Dissolved			97.7		%		80-120	02-MAR-20
Molybdenum (Mo)-Dissolved			95.1		%		80-120	02-MAR-20
Nickel (Ni)-Dissolved			90.1		%		80-120	02-MAR-20
Selenium (Se)-Dissolved			91.7		%		80-120	02-MAR-20
Silver (Ag)-Dissolved			95.7		%		80-120	02-MAR-20
Sodium (Na)-Dissolved			92.6		%		80-120	02-MAR-20
Thallium (Tl)-Dissolved			96.8		%		80-120	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 4 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-2	LCS							
Uranium (U)-Dissolved			95.1		%		80-120	02-MAR-20
Vanadium (V)-Dissolved			94.7		%		80-120	02-MAR-20
Zinc (Zn)-Dissolved			92.4		%		80-120	02-MAR-20
WG3284562-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-20
Sodium (Na)-Dissolved			<50		ug/L		50	02-MAR-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-20
WG3284562-5	MS	WG3284562-3						
Antimony (Sb)-Dissolved			91.5		%		70-130	02-MAR-20
Arsenic (As)-Dissolved			90.5		%		70-130	02-MAR-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Beryllium (Be)-Dissolved			88.4		%		70-130	02-MAR-20
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Cadmium (Cd)-Dissolved			79.1		%		70-130	02-MAR-20
Chromium (Cr)-Dissolved			87.0		%		70-130	02-MAR-20
Lead (Pb)-Dissolved			89.7		%		70-130	02-MAR-20
Molybdenum (Mo)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Selenium (Se)-Dissolved			90.1		%		70-130	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 5 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R5012163							
WG3284562-5 MS		WG3284562-3						
Silver (Ag)-Dissolved			92.7		%		70-130	02-MAR-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Thallium (Tl)-Dissolved			91.5		%		70-130	02-MAR-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-20
Vanadium (V)-Dissolved			91.3		%		70-130	02-MAR-20
PAH-511-WT								
	Water							
Batch	R5013129							
WG3284543-2 LCS								
1-Methylnaphthalene			90.8		%		50-140	03-MAR-20
2-Methylnaphthalene			87.7		%		50-140	03-MAR-20
Acenaphthene			98.0		%		50-140	03-MAR-20
Acenaphthylene			101.4		%		50-140	03-MAR-20
Anthracene			100.6		%		50-140	03-MAR-20
Benzo(a)anthracene			113.5		%		50-140	03-MAR-20
Benzo(a)pyrene			89.1		%		50-140	03-MAR-20
Benzo(b)fluoranthene			80.8		%		50-140	03-MAR-20
Benzo(g,h,i)perylene			100.4		%		50-140	03-MAR-20
Benzo(k)fluoranthene			92.6		%		50-140	03-MAR-20
Chrysene			106.2		%		50-140	03-MAR-20
Dibenzo(ah)anthracene			104.7		%		50-140	03-MAR-20
Fluoranthene			104.3		%		50-140	03-MAR-20
Fluorene			99.8		%		50-140	03-MAR-20
Indeno(1,2,3-cd)pyrene			114.0		%		50-140	03-MAR-20
Naphthalene			95.0		%		50-140	03-MAR-20
Phenanthrene			104.3		%		50-140	03-MAR-20
Pyrene			103.4		%		50-140	03-MAR-20
WG3284543-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	03-MAR-20
2-Methylnaphthalene			<0.020		ug/L		0.02	03-MAR-20
Acenaphthene			<0.020		ug/L		0.02	03-MAR-20
Acenaphthylene			<0.020		ug/L		0.02	03-MAR-20
Anthracene			<0.020		ug/L		0.02	03-MAR-20
Benzo(a)anthracene			<0.020		ug/L		0.02	03-MAR-20
Benzo(a)pyrene			<0.010		ug/L		0.01	03-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 6 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R5013129							
WG3284543-1	MB							
Benzo(b)fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	03-MAR-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Chrysene			<0.020		ug/L		0.02	03-MAR-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	03-MAR-20
Fluoranthene			<0.020		ug/L		0.02	03-MAR-20
Fluorene			<0.020		ug/L		0.02	03-MAR-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	03-MAR-20
Naphthalene			<0.050		ug/L		0.05	03-MAR-20
Phenanthrene			<0.020		ug/L		0.02	03-MAR-20
Pyrene			<0.020		ug/L		0.02	03-MAR-20
Surrogate: d8-Naphthalene			107.4		%		60-140	03-MAR-20
Surrogate: d10-Phenanthrene			104.5		%		60-140	03-MAR-20
Surrogate: d12-Chrysene			98.3		%		60-140	03-MAR-20
Surrogate: d10-Acenaphthene			103.6		%		60-140	03-MAR-20
PCB-511-WT		Water						
Batch	R5014166							
WG3284619-2	LCS							
Aroclor 1242			95.7		%		60-140	04-MAR-20
Aroclor 1248			110.9		%		60-140	04-MAR-20
Aroclor 1254			95.8		%		60-140	04-MAR-20
Aroclor 1260			115.6		%		60-140	04-MAR-20
WG3284619-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1248			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1254			<0.020		ug/L		0.02	04-MAR-20
Aroclor 1260			<0.020		ug/L		0.02	04-MAR-20
Surrogate: Decachlorobiphenyl			120.1		%		50-150	04-MAR-20
Surrogate: Tetrachloro-m-xylene			74.1		%		50-150	04-MAR-20
PH-WT		Water						
Batch	R5012946							
WG3284273-4	DUP	WG3284273-3						
pH		8.09	8.10	J	pH units	0.01	0.2	29-FEB-20
WG3284273-2	LCS							



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 7 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT		Water						
Batch	R5012946							
WG3284273-2	LCS							
pH			7.04		pH units		6.9-7.1	29-FEB-20
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 8 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4 DUP		WG3282676-3						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1 LCS								
1,1,1,2-Tetrachloroethane			91.8		%		70-130	02-MAR-20
1,1,2,2-Tetrachloroethane			88.6		%		70-130	02-MAR-20
1,1,1-Trichloroethane			94.2		%		70-130	02-MAR-20
1,1,2-Trichloroethane			101.4		%		70-130	02-MAR-20
1,1-Dichloroethane			87.7		%		70-130	02-MAR-20
1,1-Dichloroethylene			86.8		%		70-130	02-MAR-20
1,2-Dibromoethane			101.2		%		70-130	02-MAR-20
1,2-Dichlorobenzene			95.0		%		70-130	02-MAR-20
1,2-Dichloroethane			85.8		%		70-130	02-MAR-20
1,2-Dichloropropane			88.4		%		70-130	02-MAR-20
1,3-Dichlorobenzene			94.0		%		70-130	02-MAR-20
1,4-Dichlorobenzene			93.2		%		70-130	02-MAR-20
Acetone			92.6		%		60-140	02-MAR-20
Benzene			93.0		%		70-130	02-MAR-20
Bromodichloromethane			90.5		%		70-130	02-MAR-20
Bromoform			91.5		%		70-130	02-MAR-20
Bromomethane			91.7		%		60-140	02-MAR-20
Carbon tetrachloride			91.1		%		70-130	02-MAR-20
Chlorobenzene			93.0		%		70-130	02-MAR-20
Chloroform			92.7		%		70-130	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 9 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-1	LCS							
cis-1,2-Dichloroethylene			93.7		%		70-130	02-MAR-20
cis-1,3-Dichloropropene			80.8		%		70-130	02-MAR-20
Dibromochloromethane			97.4		%		70-130	02-MAR-20
Dichlorodifluoromethane			116.3		%		50-140	02-MAR-20
Ethylbenzene			86.6		%		70-130	02-MAR-20
n-Hexane			84.9		%		70-130	02-MAR-20
m+p-Xylenes			86.5		%		70-130	02-MAR-20
Methyl Ethyl Ketone			108.6		%		60-140	02-MAR-20
Methyl Isobutyl Ketone			79.3		%		60-140	02-MAR-20
Methylene Chloride			102.6		%		70-130	02-MAR-20
MTBE			94.9		%		70-130	02-MAR-20
o-Xylene			94.1		%		70-130	02-MAR-20
Styrene			85.1		%		70-130	02-MAR-20
Tetrachloroethylene			93.8		%		70-130	02-MAR-20
Toluene			92.6		%		70-130	02-MAR-20
trans-1,2-Dichloroethylene			85.7		%		70-130	02-MAR-20
trans-1,3-Dichloropropene			87.4		%		70-130	02-MAR-20
Trichloroethylene			100.3		%		70-130	02-MAR-20
Trichlorofluoromethane			98.1		%		60-140	02-MAR-20
Vinyl chloride			116.9		%		60-140	02-MAR-20
WG3282676-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	02-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	02-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Acetone			<30		ug/L		30	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 10 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5012001							
WG3282676-2	MB							
Benzene			<0.50		ug/L		0.5	02-MAR-20
Bromodichloromethane			<2.0		ug/L		2	02-MAR-20
Bromoform			<5.0		ug/L		5	02-MAR-20
Bromomethane			<0.50		ug/L		0.5	02-MAR-20
Carbon tetrachloride			<0.20		ug/L		0.2	02-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Chloroform			<1.0		ug/L		1	02-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Dibromochloromethane			<2.0		ug/L		2	02-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	02-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	02-MAR-20
n-Hexane			<0.50		ug/L		0.5	02-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	02-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	02-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	02-MAR-20
Methylene Chloride			<5.0		ug/L		5	02-MAR-20
MTBE			<2.0		ug/L		2	02-MAR-20
o-Xylene			<0.30		ug/L		0.3	02-MAR-20
Styrene			<0.50		ug/L		0.5	02-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	02-MAR-20
Toluene			<0.50		ug/L		0.5	02-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	02-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	02-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 1,4-Difluorobenzene			101.4		%		70-130	02-MAR-20
Surrogate: 4-Bromofluorobenzene			96.9		%		70-130	02-MAR-20
WG3282676-5	MS	WG3282676-3						
1,1,1,2-Tetrachloroethane			91.9		%		50-140	02-MAR-20
1,1,2,2-Tetrachloroethane			81.5		%		50-140	02-MAR-20
1,1,1-Trichloroethane			96.6		%		50-140	02-MAR-20
1,1,2-Trichloroethane			93.7		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 11 of 13

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
1,1-Dichloroethane			94.6		%		50-140	02-MAR-20
1,1-Dichloroethylene			86.5		%		50-140	02-MAR-20
1,2-Dibromoethane			90.5		%		50-140	02-MAR-20
1,2-Dichlorobenzene			95.4		%		50-140	02-MAR-20
1,2-Dichloroethane			77.8		%		50-140	02-MAR-20
1,2-Dichloropropane			85.1		%		50-140	02-MAR-20
1,3-Dichlorobenzene			96.9		%		50-140	02-MAR-20
1,4-Dichlorobenzene			95.6		%		50-140	02-MAR-20
Acetone			76.5		%		50-140	02-MAR-20
Benzene			92.2		%		50-140	02-MAR-20
Bromodichloromethane			87.3		%		50-140	02-MAR-20
Bromoform			83.8		%		50-140	02-MAR-20
Bromomethane			84.5		%		50-140	02-MAR-20
Carbon tetrachloride			94.4		%		50-140	02-MAR-20
Chlorobenzene			93.4		%		50-140	02-MAR-20
Chloroform			91.3		%		50-140	02-MAR-20
cis-1,2-Dichloroethylene			91.9		%		50-140	02-MAR-20
cis-1,3-Dichloropropene			78.1		%		50-140	02-MAR-20
Dibromochloromethane			91.6		%		50-140	02-MAR-20
Dichlorodifluoromethane			102.0		%		50-140	02-MAR-20
Ethylbenzene			90.6		%		50-140	02-MAR-20
n-Hexane			84.8		%		50-140	02-MAR-20
m+p-Xylenes			90.5		%		50-140	02-MAR-20
Methyl Ethyl Ketone			75.9		%		50-140	02-MAR-20
Methyl Isobutyl Ketone			66.1		%		50-140	02-MAR-20
Methylene Chloride			96.4		%		50-140	02-MAR-20
MTBE			95.3		%		50-140	02-MAR-20
o-Xylene			97.0		%		50-140	02-MAR-20
Styrene			84.6		%		50-140	02-MAR-20
Tetrachloroethylene			100.2		%		50-140	02-MAR-20
Toluene			94.5		%		50-140	02-MAR-20
trans-1,2-Dichloroethylene			86.2		%		50-140	02-MAR-20
trans-1,3-Dichloropropene			83.4		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Page 12 of 13

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
Trichloroethylene			103.9		%		50-140	02-MAR-20
Trichlorofluoromethane			97.0		%		50-140	02-MAR-20
Vinyl chloride			109.7		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2422396

Report Date: 05-MAR-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 13 of 13

Contact: Kossay Makhzoumi

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.

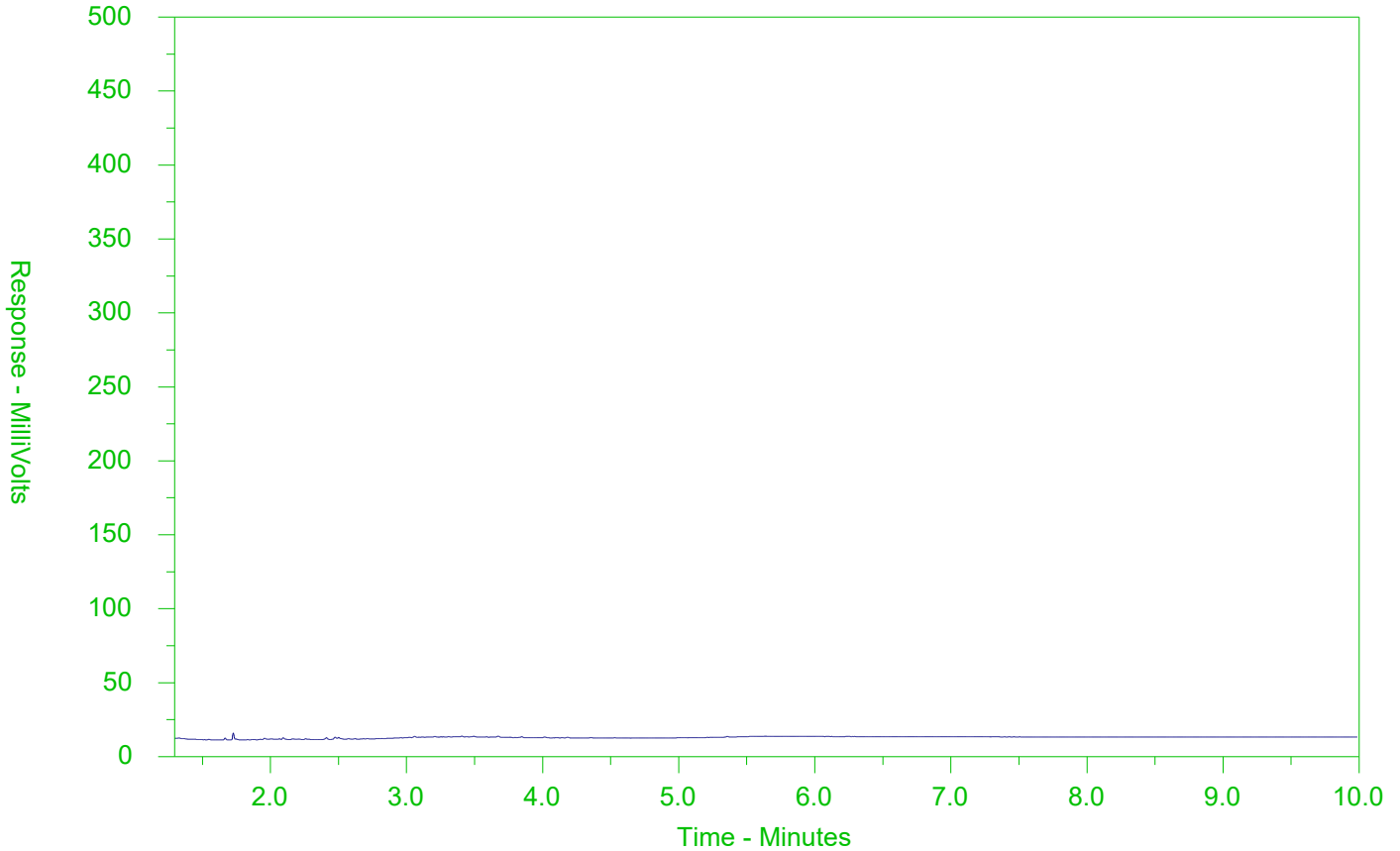
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2422396-1
 Client Sample ID: DUP 5



← 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



L2422396-COFC

COC Number: 15 -

ML

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

re

Page 1 of 1

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply											
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply											
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>					EMERGENCY	1 Business day [E1] <input type="checkbox"/>				
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>						Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>				
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:											
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
City/Province:	Brampton	Email 2			Analysis Request											
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below											
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers	
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX														
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:	Routing Code:													
PO / AFE:		Requisitioner:														
LSD:		Location:														
ALS Lab Work Order # (lab use only)	L2422396	ALS Contact:	E													
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												
	Dwp 5				X					X	X	X	X			
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>											
					Cooling Initiated <input type="checkbox"/>											
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C						
					24 6.3 15.3					2.3						
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)											
Released by: Kossay Makhzoumi	Date:	Time:	Received by: <i>[Signature]</i>	Date: Feb 28/20	Time: 3:36	Received by: <i>ML</i>	Date: Feb 28/20	Time: 18:15								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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.

SIF



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 10:53 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398138
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							


Polychlorinated Biphenyls - WATER


Lab ID L2398138-1
Sample Date 16-DEC-19
Sample ID DUP 2

Analyte	Unit	Guide Limits		
		#1	#2	
Aroclor 1242	ug/L	-	-	<0.020
Aroclor 1248	ug/L	-	-	<0.020
Aroclor 1254	ug/L	-	-	<0.020
Aroclor 1260	ug/L	-	-	<0.020
Surrogate: Decachlorobiphenyl	%	-	-	58.8
Total PCBs	ug/L	7.8	15	<0.040
Surrogate: Tetrachloro-m-xylene	%	-	-	84.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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**
---------------	--------	------------------	--------------------

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).

**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: L2398138

Report Date: 27-DEC-19

Page 1 of 2

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB-511-WT	Water							
Batch	R4949187							
WG3246028-2	LCS							
Aroclor 1242			104.7		%		60-140	19-DEC-19
Aroclor 1248			92.4		%		60-140	19-DEC-19
Aroclor 1254			109.4		%		60-140	19-DEC-19
Aroclor 1260			116.0		%		60-140	19-DEC-19
WG3246028-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1248			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1254			<0.020		ug/L		0.02	19-DEC-19
Aroclor 1260			<0.020		ug/L		0.02	19-DEC-19
Surrogate: Decachlorobiphenyl			89.6		%		50-150	19-DEC-19
Surrogate: Tetrachloro-m-xylene			76.5		%		50-150	19-DEC-19

Quality Control Report

Workorder: L2398138

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 2 of 2

Contact: Kossay Makhzoumi

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

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.



TERRAPROBE-BRAMPTON
ATTN: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 10:12 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398126
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine)							
(No parameter exceedances)							

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

Physical Tests - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	2.31
pH	pH units	-	-	7.40

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Anions and Nutrients - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	2300	2300	458 ^{DLDS}

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3


Guide Limits


Analyte	Unit	#1	#2
---------	------	----	----

Cyanide, Weak Acid Diss	ug/L	66	66	<2.0
-------------------------	------	----	----	------

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Dissolved Metals - WATER

		Lab ID	L2398126-1		
		Sample Date	16-DEC-19		
		Sample ID	DUP 3		
Analyte	Unit	Guide Limits			
		#1	#2		
Dissolved Mercury Filtration Location		-	-	-	FIELD
Dissolved Metals Filtration Location		-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	20000	<1.0	DLHC
Arsenic (As)-Dissolved	ug/L	1900	1900	<1.0	DLHC
Barium (Ba)-Dissolved	ug/L	29000	29000	45.2	DLHC
Beryllium (Be)-Dissolved	ug/L	67	67	<1.0	DLHC
Boron (B)-Dissolved	ug/L	45000	45000	<100	DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050	DLHC
Chromium (Cr)-Dissolved	ug/L	810	810	<5.0	DLHC
Cobalt (Co)-Dissolved	ug/L	66	66	<1.0	DLHC
Copper (Cu)-Dissolved	ug/L	87	87	<2.0	DLHC
Lead (Pb)-Dissolved	ug/L	25	25	<0.50	DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	2.8	<0.0050	
Molybdenum (Mo)-Dissolved	ug/L	9200	9200	2.51	DLHC
Nickel (Ni)-Dissolved	ug/L	490	490	<5.0	DLHC
Selenium (Se)-Dissolved	ug/L	63	63	<0.50	DLHC
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50	DLHC
Sodium (Na)-Dissolved	ug/L	2300000	2300000	286000	DLHC
Thallium (Tl)-Dissolved	ug/L	510	510	<0.10	DLHC
Uranium (U)-Dissolved	ug/L	420	420	2.34	DLHC
Vanadium (V)-Dissolved	ug/L	250	250	<5.0	DLHC
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10	DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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.

Speciated Metals - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	140	140	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

		Lab ID	L2398126-1		
		Sample Date	16-DEC-19		
		Sample ID	DUP 3		
Analyte	Unit	Guide Limits			
		#1	#2		
Acetone	ug/L	130000	130000	<30	
Benzene	ug/L	44	430	<0.50	
Bromodichloromethane	ug/L	85000	85000	<2.0	
Bromoform	ug/L	380	770	<5.0	
Bromomethane	ug/L	5.6	56	<0.50	
Carbon tetrachloride	ug/L	0.79	8.4	<0.20	
Chlorobenzene	ug/L	630	630	<0.50	
Dibromochloromethane	ug/L	82000	82000	<2.0	
Chloroform	ug/L	2.4	22	<1.0	
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20	
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50	
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50	
1,4-Dichlorobenzene	ug/L	8	67	<0.50	
Dichlorodifluoromethane	ug/L	4400	4400	<2.0	
1,1-Dichloroethane	ug/L	320	3100	<0.50	
1,2-Dichloroethane	ug/L	1.6	12	<0.50	
1,1-Dichloroethylene	ug/L	1.6	17	<0.50	
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	
Methylene Chloride	ug/L	610	5500	<5.0	
1,2-Dichloropropane	ug/L	16	140	<0.50	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50	
Ethylbenzene	ug/L	2300	2300	<0.50	
n-Hexane	ug/L	51	520	<0.50	
Methyl Ethyl Ketone	ug/L	470000	1500000	<20	
Methyl Isobutyl Ketone	ug/L	140000	580000	<20	
MTBE	ug/L	190	1400	<2.0	
Styrene	ug/L	1300	9100	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

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

Volatile Organic Compounds - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	0.64
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	93.6
Surrogate: 1,4-Difluorobenzene	%	-	-	95.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
F1 (C6-C10)	ug/L	750	750	<25
F1-BTEX	ug/L	750	750	<25
F2 (C10-C16)	ug/L	150	150	<100
F2-Naphth	ug/L	-	-	<100
F3 (C16-C34)	ug/L	500	500	<250
F3-PAH	ug/L	-	-	<250
F4 (C34-C50)	ug/L	500	500	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	99.2
Surrogate: 3,4-Dichlorotoluene	%	-	-	78.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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 - WATER

Lab ID L2398126-1
Sample Date 16-DEC-19
Sample ID DUP 3

Analyte	Unit	Guide Limits		
		#1	#2	
Acenaphthene	ug/L	600	1700	<0.020
Acenaphthylene	ug/L	1.8	1.8	<0.020
Anthracene	ug/L	2.4	2.4	0.029
Benzo(a)anthracene	ug/L	4.7	4.7	0.102
Benzo(a)pyrene	ug/L	0.81	0.81	0.075
Benzo(b)fluoranthene	ug/L	0.75	0.75	0.111
Benzo(g,h,i)perylene	ug/L	0.2	0.2	0.044
Benzo(k)fluoranthene	ug/L	0.4	0.4	0.044
Chrysene	ug/L	1	1	0.096
Dibenzo(ah)anthracene	ug/L	0.52	0.52	<0.020
Fluoranthene	ug/L	130	130	0.212
Fluorene	ug/L	400	400	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	0.056
1+2-Methylnaphthalenes	ug/L	1800	1800	<0.028
1-Methylnaphthalene	ug/L	1800	1800	<0.020
2-Methylnaphthalene	ug/L	1800	1800	<0.020
Naphthalene	ug/L	1400	6400	<0.050
Phenanthrene	ug/L	580	580	0.131
Pyrene	ug/L	68	68	0.184
Surrogate: d10-Acenaphthene	%	-	-	99.3
Surrogate: d12-Chrysene	%	-	-	69.1
Surrogate: d8-Naphthalene	%	-	-	90.0
Surrogate: d10-Phenanthrene	%	-	-	99.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
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**
<p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 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
<p>Fraction F1 is determined by analyzing by headspace-GC/FID.</p> <p>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).</p>			
F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1
<p>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.</p> <p>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).</p>			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
<p>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.</p> <p>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).</p>			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
<p>The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.</p> <p>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).</p>			
METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
<p>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.</p> <p>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).</p>			
PH-WT	Water	pH	APHA 4500 H-Electrode
<p>Water samples are analyzed directly by a calibrated pH meter.</p> <p>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</p>			
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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

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: L2398126

Report Date: 27-DEC-19

Page 1 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4948668							
WG3246535-4	DUP	WG3246535-3						
Chloride (Cl)		6.98	6.99		mg/L	0.2	20	19-DEC-19
WG3246535-2	LCS							
Chloride (Cl)			104.2		%		90-110	19-DEC-19
WG3246535-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-19
WG3246535-5	MS	WG3246535-3						
Chloride (Cl)			103.4		%		75-125	19-DEC-19
CN-WAD-R511-WT		Water						
Batch	R4948388							
WG3246441-3	DUP	L2398120-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246441-2	LCS							
Cyanide, Weak Acid Diss			100.7		%		80-120	19-DEC-19
WG3246441-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	19-DEC-19
WG3246441-4	MS	L2398120-1						
Cyanide, Weak Acid Diss			104.1		%		75-125	19-DEC-19
CR-CR6-IC-R511-WT		Water						
Batch	R4948092							
WG3246367-4	DUP	WG3246367-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246367-2	LCS							
Chromium, Hexavalent			101.1		%		80-120	19-DEC-19
WG3246367-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	19-DEC-19
WG3246367-5	MS	WG3246367-3						
Chromium, Hexavalent			96.2		%		70-130	19-DEC-19
EC-R511-WT		Water						
Batch	R4948309							
WG3246108-4	DUP	WG3246108-3						
Conductivity		0.297	0.296		mS/cm	0.3	10	19-DEC-19
WG3246108-2	LCS							
Conductivity			102.3		%		90-110	19-DEC-19
WG3246108-1	MB							
Conductivity			<0.0030		mS/cm		0.003	19-DEC-19
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 2 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch	R4951330							
WG3247542-1	LCS							
F1 (C6-C10)			96.3		%		80-120	21-DEC-19
WG3247542-2	MB							
F1 (C6-C10)			<25		ug/L		25	21-DEC-19
Surrogate: 3,4-Dichlorotoluene			91.7		%		60-140	21-DEC-19
F2-F4-511-WT		Water						
Batch	R4948447							
WG3245881-2	LCS							
F2 (C10-C16)			92.9		%		70-130	19-DEC-19
F3 (C16-C34)			98.2		%		70-130	19-DEC-19
F4 (C34-C50)			96.4		%		70-130	19-DEC-19
WG3245881-1	MB							
F2 (C10-C16)			<100		ug/L		100	19-DEC-19
F3 (C16-C34)			<250		ug/L		250	19-DEC-19
F4 (C34-C50)			<250		ug/L		250	19-DEC-19
Surrogate: 2-Bromobenzotrifluoride			89.6		%		60-140	19-DEC-19
HG-D-UG/L-CVAA-WT		Water						
Batch	R4946371							
WG3246069-4	DUP	WG3246069-3						
Mercury (Hg)-Dissolved		<0.0050	0.0064	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3246069-2	LCS							
Mercury (Hg)-Dissolved			94.4		%		80-120	19-DEC-19
WG3246069-1	MB							
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
WG3246069-6	MS	WG3246069-5						
Mercury (Hg)-Dissolved			93.3		%		70-130	19-DEC-19
MET-D-UG/L-MS-WT		Water						
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Arsenic (As)-Dissolved		0.13	0.16		ug/L	15	20	19-DEC-19
Barium (Ba)-Dissolved		104	104		ug/L	0.1	20	19-DEC-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Boron (B)-Dissolved		36	36		ug/L	0.5	20	19-DEC-19
Cadmium (Cd)-Dissolved		0.0130	0.0124		ug/L	4.7	20	19-DEC-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 3 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-4	DUP	WG3245950-3						
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-19
Copper (Cu)-Dissolved		0.90	0.87		ug/L	3.4	20	19-DEC-19
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Molybdenum (Mo)-Dissolved		3.79	3.81		ug/L	0.7	20	19-DEC-19
Nickel (Ni)-Dissolved		0.65	0.64		ug/L	1.3	20	19-DEC-19
Selenium (Se)-Dissolved		0.844	0.860		ug/L	1.9	20	19-DEC-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-19
Sodium (Na)-Dissolved		202000	204000		ug/L	0.8	20	19-DEC-19
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-19
Uranium (U)-Dissolved		0.897	0.893		ug/L	0.4	20	19-DEC-19
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-19
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-19
WG3245950-2	LCS							
Antimony (Sb)-Dissolved			103.7		%		80-120	19-DEC-19
Arsenic (As)-Dissolved			105.5		%		80-120	19-DEC-19
Barium (Ba)-Dissolved			108.5		%		80-120	19-DEC-19
Beryllium (Be)-Dissolved			102.8		%		80-120	19-DEC-19
Boron (B)-Dissolved			102.4		%		80-120	19-DEC-19
Cadmium (Cd)-Dissolved			106.4		%		80-120	19-DEC-19
Chromium (Cr)-Dissolved			108.6		%		80-120	19-DEC-19
Cobalt (Co)-Dissolved			107.7		%		80-120	19-DEC-19
Copper (Cu)-Dissolved			107.3		%		80-120	19-DEC-19
Lead (Pb)-Dissolved			106.1		%		80-120	19-DEC-19
Molybdenum (Mo)-Dissolved			107.2		%		80-120	19-DEC-19
Nickel (Ni)-Dissolved			108.3		%		80-120	19-DEC-19
Selenium (Se)-Dissolved			101.9		%		80-120	19-DEC-19
Silver (Ag)-Dissolved			105.8		%		80-120	19-DEC-19
Sodium (Na)-Dissolved			109.0		%		80-120	19-DEC-19
Thallium (Tl)-Dissolved			104.8		%		80-120	19-DEC-19
Uranium (U)-Dissolved			106.9		%		80-120	19-DEC-19
Vanadium (V)-Dissolved			108.5		%		80-120	19-DEC-19
Zinc (Zn)-Dissolved			107.4		%		80-120	19-DEC-19
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10				0.1	



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 4 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-19
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-19
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-19
WG3245950-5	MS	WG3245950-6						
Antimony (Sb)-Dissolved			100.9		%		70-130	19-DEC-19
Arsenic (As)-Dissolved			114.9		%		70-130	19-DEC-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Beryllium (Be)-Dissolved			109.4		%		70-130	19-DEC-19
Boron (B)-Dissolved			100.3		%		70-130	19-DEC-19
Cadmium (Cd)-Dissolved			98.7		%		70-130	19-DEC-19
Chromium (Cr)-Dissolved			109.3		%		70-130	19-DEC-19
Cobalt (Co)-Dissolved			101.4		%		70-130	19-DEC-19
Copper (Cu)-Dissolved			93.5		%		70-130	19-DEC-19
Lead (Pb)-Dissolved			93.5		%		70-130	19-DEC-19
Molybdenum (Mo)-Dissolved			106.1		%		70-130	19-DEC-19
Nickel (Ni)-Dissolved			95.7		%		70-130	19-DEC-19
Selenium (Se)-Dissolved			117.1		%		70-130	19-DEC-19
Silver (Ag)-Dissolved			92.2		%		70-130	19-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 5 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4946430							
WG3245950-5 MS		WG3245950-6						
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Thallium (Tl)-Dissolved			94.4		%		70-130	19-DEC-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-19
Vanadium (V)-Dissolved			112.2		%		70-130	19-DEC-19
Zinc (Zn)-Dissolved			97.9		%		70-130	19-DEC-19
PAH-511-WT								
	Water							
Batch	R4949666							
WG3245881-2 LCS								
1-Methylnaphthalene			94.6		%		50-140	20-DEC-19
2-Methylnaphthalene			84.5		%		50-140	20-DEC-19
Acenaphthene			100.4		%		50-140	20-DEC-19
Acenaphthylene			99.8		%		50-140	20-DEC-19
Anthracene			98.4		%		50-140	20-DEC-19
Benzo(a)anthracene			102.2		%		50-140	20-DEC-19
Benzo(a)pyrene			95.3		%		50-140	20-DEC-19
Benzo(b)fluoranthene			95.0		%		50-140	20-DEC-19
Benzo(g,h,i)perylene			101.3		%		50-140	20-DEC-19
Benzo(k)fluoranthene			101.2		%		50-140	20-DEC-19
Chrysene			100.5		%		50-140	20-DEC-19
Dibenzo(ah)anthracene			100.1		%		50-140	20-DEC-19
Fluoranthene			101.8		%		50-140	20-DEC-19
Fluorene			98.6		%		50-140	20-DEC-19
Indeno(1,2,3-cd)pyrene			104.9		%		50-140	20-DEC-19
Naphthalene			90.7		%		50-140	20-DEC-19
Phenanthrene			101.9		%		50-140	20-DEC-19
Pyrene			101.2		%		50-140	20-DEC-19
WG3245881-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
2-Methylnaphthalene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthene			<0.020		ug/L		0.02	20-DEC-19
Acenaphthylene			<0.020		ug/L		0.02	20-DEC-19
Anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)anthracene			<0.020		ug/L		0.02	20-DEC-19
Benzo(a)pyrene			<0.010		ug/L		0.01	20-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 6 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
PAH-511-WT		Water							
Batch	R4949666								
WG3245881-1 MB									
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-DEC-19	
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-DEC-19	
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-DEC-19	
Chrysene			<0.020		ug/L		0.02	20-DEC-19	
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-DEC-19	
Fluoranthene			<0.020		ug/L		0.02	20-DEC-19	
Fluorene			<0.020		ug/L		0.02	20-DEC-19	
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-DEC-19	
Naphthalene			<0.050		ug/L		0.05	20-DEC-19	
Phenanthrene			<0.020		ug/L		0.02	20-DEC-19	
Pyrene			<0.020		ug/L		0.02	20-DEC-19	
Surrogate: d8-Naphthalene			85.7		%		60-140	20-DEC-19	
Surrogate: d10-Phenanthrene			91.4		%		60-140	20-DEC-19	
Surrogate: d12-Chrysene			86.1		%		60-140	20-DEC-19	
Surrogate: d10-Acenaphthene			92.4		%		60-140	20-DEC-19	
PH-WT		Water							
Batch	R4948309								
WG3246108-4 DUP									
pH		WG3246108-3	8.21	8.20	J	pH units	0.01	0.2	19-DEC-19
WG3246108-2 LCS									
pH				7.00		pH units		6.9-7.1	19-DEC-19
VOC-511-HS-WT		Water							
Batch	R4949168								
WG3243074-4 DUP									
1,1,1,2-Tetrachloroethane		WG3243074-3	<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dibromoethane			<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane			<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 7 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		1.27	1.25		ug/L	1.6	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3243074-1	LCS							
1,1,1,2-Tetrachloroethane			90.4		%		70-130	20-DEC-19
1,1,2,2-Tetrachloroethane			91.8		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 8 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4949168							
WG3243074-1 LCS								
1,1,1-Trichloroethane			91.6		%		70-130	20-DEC-19
1,1,2-Trichloroethane			91.0		%		70-130	20-DEC-19
1,1-Dichloroethane			92.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			88.2		%		70-130	20-DEC-19
1,2-Dibromoethane			93.1		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.9		%		70-130	20-DEC-19
1,2-Dichloroethane			91.5		%		70-130	20-DEC-19
1,2-Dichloropropane			100.5		%		70-130	20-DEC-19
1,3-Dichlorobenzene			84.8		%		70-130	20-DEC-19
1,4-Dichlorobenzene			84.8		%		70-130	20-DEC-19
Acetone			96.5		%		60-140	20-DEC-19
Benzene			95.2		%		70-130	20-DEC-19
Bromodichloromethane			88.8		%		70-130	20-DEC-19
Bromoform			93.9		%		70-130	20-DEC-19
Bromomethane			83.1		%		60-140	20-DEC-19
Carbon tetrachloride			91.6		%		70-130	20-DEC-19
Chlorobenzene			89.1		%		70-130	20-DEC-19
Chloroform			93.5		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			90.3		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			91.3		%		70-130	20-DEC-19
Dibromochloromethane			88.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			94.0		%		50-140	20-DEC-19
Ethylbenzene			88.3		%		70-130	20-DEC-19
n-Hexane			87.2		%		70-130	20-DEC-19
m+p-Xylenes			87.9		%		70-130	20-DEC-19
Methyl Ethyl Ketone			90.7		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			92.9		%		60-140	20-DEC-19
Methylene Chloride			90.7		%		70-130	20-DEC-19
MTBE			94.0		%		70-130	20-DEC-19
o-Xylene			88.4		%		70-130	20-DEC-19
Styrene			90.8		%		70-130	20-DEC-19
Tetrachloroethylene			87.6		%		70-130	20-DEC-19
Toluene			89.7		%		70-130	20-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 9 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
trans-1,2-Dichloroethylene			89.5		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			90.6		%		70-130	20-DEC-19
Trichloroethylene			91.7		%		70-130	20-DEC-19
Trichlorofluoromethane			90.9		%		60-140	20-DEC-19
Vinyl chloride			104.1		%		60-140	20-DEC-19
WG3243074-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 10 of 12

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-2 MB								
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			93.6		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.4		%		70-130	20-DEC-19
WG3243074-5 MS		WG3243074-3						
1,1,1,2-Tetrachloroethane			91.5		%		50-140	23-DEC-19
1,1,1,2,2-Tetrachloroethane			91.3		%		50-140	23-DEC-19
1,1,1-Trichloroethane			92.7		%		50-140	23-DEC-19
1,1,2-Trichloroethane			95.7		%		50-140	23-DEC-19
1,1-Dichloroethane			87.1		%		50-140	23-DEC-19
1,1-Dichloroethylene			84.8		%		50-140	23-DEC-19
1,2-Dibromoethane			96.8		%		50-140	23-DEC-19
1,2-Dichlorobenzene			82.4		%		50-140	23-DEC-19
1,2-Dichloroethane			97.3		%		50-140	23-DEC-19
1,2-Dichloropropane			95.5		%		50-140	23-DEC-19
1,3-Dichlorobenzene			82.3		%		50-140	23-DEC-19
1,4-Dichlorobenzene			78.8		%		50-140	23-DEC-19
Acetone			106.3		%		50-140	23-DEC-19
Benzene			94.5		%		50-140	23-DEC-19
Bromodichloromethane			94.0		%		50-140	23-DEC-19
Bromoform			95.2		%		50-140	23-DEC-19
Bromomethane			81.7		%		50-140	23-DEC-19
Carbon tetrachloride			89.9		%		50-140	23-DEC-19
Chlorobenzene			88.5		%		50-140	23-DEC-19



Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Page 11 of 12

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R4949168							
WG3243074-5 MS		WG3243074-3						
Chloroform			93.9		%		50-140	23-DEC-19
cis-1,2-Dichloroethylene			88.6		%		50-140	23-DEC-19
cis-1,3-Dichloropropene			86.4		%		50-140	23-DEC-19
Dibromochloromethane			93.4		%		50-140	23-DEC-19
Dichlorodifluoromethane			71.7		%		50-140	23-DEC-19
Ethylbenzene			85.7		%		50-140	23-DEC-19
n-Hexane			81.7		%		50-140	23-DEC-19
m+p-Xylenes			84.8		%		50-140	23-DEC-19
Methyl Ethyl Ketone			93.6		%		50-140	23-DEC-19
Methyl Isobutyl Ketone			96.9		%		50-140	23-DEC-19
Methylene Chloride			93.7		%		50-140	23-DEC-19
MTBE			90.2		%		50-140	23-DEC-19
o-Xylene			87.0		%		50-140	23-DEC-19
Styrene			88.4		%		50-140	23-DEC-19
Tetrachloroethylene			83.4		%		50-140	23-DEC-19
Toluene			89.0		%		50-140	23-DEC-19
trans-1,2-Dichloroethylene			77.8		%		50-140	23-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	23-DEC-19
Trichloroethylene			87.3		%		50-140	23-DEC-19
Trichlorofluoromethane			87.8		%		50-140	23-DEC-19
Vinyl chloride			100.1		%		50-140	23-DEC-19

Quality Control Report

Workorder: L2398126

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 12 of 12

Contact: Kossay Makhzoumi

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.

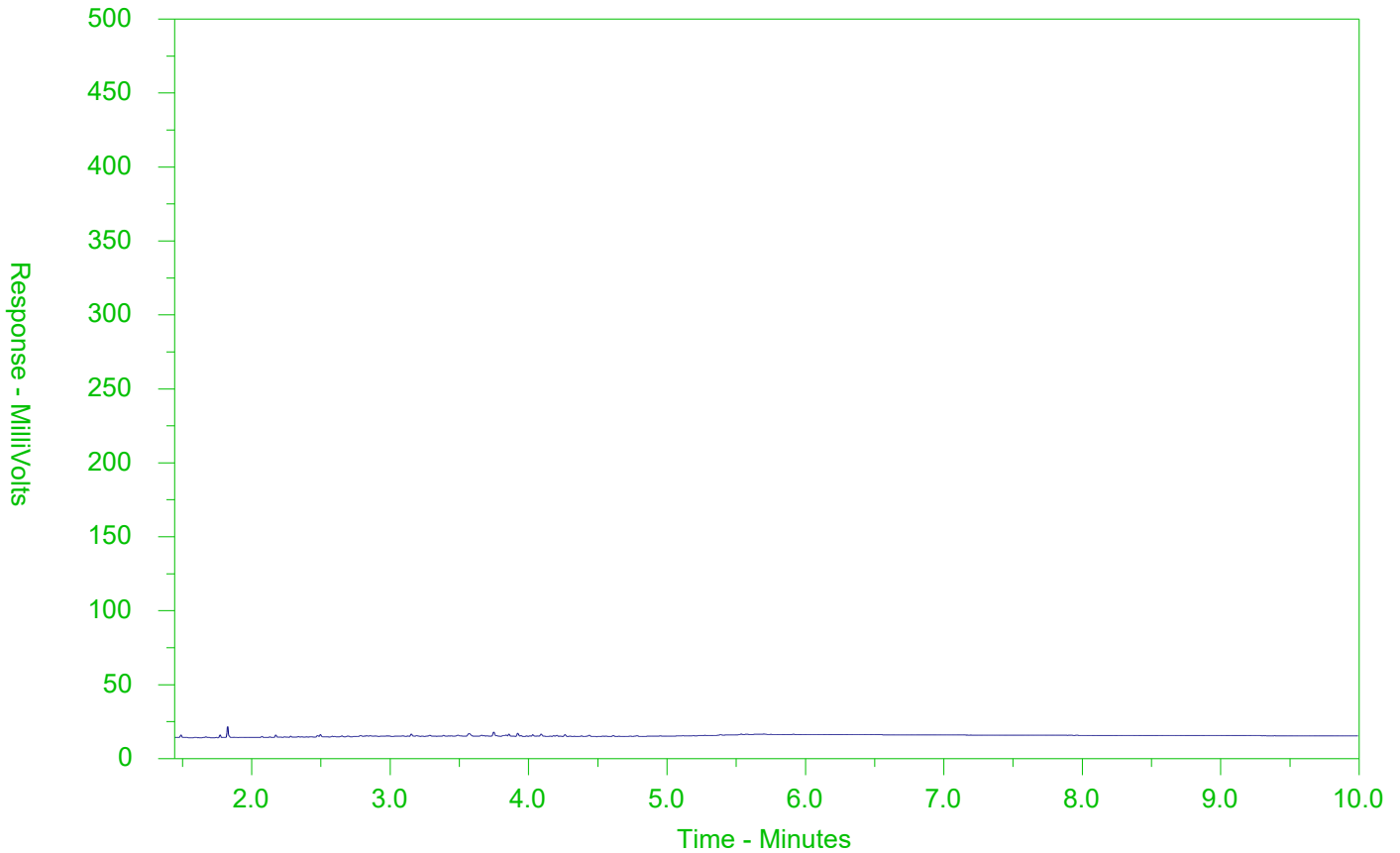
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2398126-1
 Client Sample ID: DUP 3



← 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

Canada Toll Free: 1 800 668 9878



L2398126-COFC

COC Number: 15 -

MG

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level: <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply														
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/>				EMERGENCY										
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>												
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>												
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																	
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca																	
City/Province:	Brampton	Email 2																	
Postal Code:	L6T 3Y3	Email 3																	
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below														
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																	
Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Email 1 or Fax Irossi@terraprobe.ca																	
Company: Terraprobe		Email 2																	
Contact: Lorena Rossi																			
Project Information				Oil and Gas Required Fields (client use)															
ALS Account # / Quote #: Q62481		AFE/Cost Center:		PO#															
Job #: 1-19-0603-42		Major/Minor Code:		Routing Code:															
PO / AFE:		Requisitioner:																	
LSD:		Location:																	
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:															
L2398126RD																			
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	Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers		
	Dup 3			16-12-19		GW	X					X	X	X			13		
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3																	
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO																			
		SAMPLE CONDITION AS RECEIVED (lab use only)																	
		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																	
		Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																	
		Cooling Initiated <input type="checkbox"/>																	
		INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C													
		2.1				3.0													
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)											
Released by: Kossay Makhzoumi		Date: 17-12-19	Time:	Received by: [Signature]		Date: Dec 18/19	Time: 9am	Received by: [Signature]				Date: Dec 18/19	Time: 14:25						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 18-DEC-19
Report Date: 27-DEC-19 09:03 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2398098
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine) (No parameter exceedances)							

Volatile Organic Compounds - WATER

Lab ID L2398098-1
Sample Date 16-DEC-19
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/L	130000	130000	<30
Benzene	ug/L	44	430	<0.50
Bromodichloromethane	ug/L	85000	85000	<2.0
Bromoform	ug/L	380	770	<5.0
Bromomethane	ug/L	5.6	56	<0.50
Carbon tetrachloride	ug/L	0.79	8.4	<0.20
Chlorobenzene	ug/L	630	630	<0.50
Dibromochloromethane	ug/L	82000	82000	<2.0
Chloroform	ug/L	2.4	22	<1.0
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50
1,4-Dichlorobenzene	ug/L	8	67	<0.50
Dichlorodifluoromethane	ug/L	4400	4400	<2.0
1,1-Dichloroethane	ug/L	320	3100	<0.50
1,2-Dichloroethane	ug/L	1.6	12	<0.50
1,1-Dichloroethylene	ug/L	1.6	17	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
Methylene Chloride	ug/L	610	5500	<5.0
1,2-Dichloropropane	ug/L	16	140	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50
Ethylbenzene	ug/L	2300	2300	<0.50
n-Hexane	ug/L	51	520	<0.50
Methyl Ethyl Ketone	ug/L	470000	1500000	<20
Methyl Isobutyl Ketone	ug/L	140000	580000	<20
MTBE	ug/L	190	1400	<2.0
Styrene	ug/L	1300	9100	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)


Volatile Organic Compounds - WATER


Lab ID L2398098-1
Sample Date 16-DEC-19
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	93.5
Surrogate: 1,4-Difluorobenzene	%	-	-	94.7

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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**
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: L2398098

Report Date: 27-DEC-19

Page 1 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-DEC-19
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-DEC-19
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-DEC-19
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-DEC-19
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Styrene		<0.50	<0.50		ug/L			20-DEC-19



Quality Control Report

Workorder: L2398098

Report Date: 27-DEC-19

Page 2 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-4	DUP	WG3243074-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-DEC-19
Trichloroethylene		1.27	1.25		ug/L	1.6	30	20-DEC-19
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-DEC-19
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-DEC-19
WG3243074-1	LCS							
1,1,1,2-Tetrachloroethane			90.4		%		70-130	20-DEC-19
1,1,1,2-Tetrachloroethane			91.8		%		70-130	20-DEC-19
1,1,1-Trichloroethane			91.6		%		70-130	20-DEC-19
1,1,2-Trichloroethane			91.0		%		70-130	20-DEC-19
1,1-Dichloroethane			92.1		%		70-130	20-DEC-19
1,1-Dichloroethylene			88.2		%		70-130	20-DEC-19
1,2-Dibromoethane			93.1		%		70-130	20-DEC-19
1,2-Dichlorobenzene			85.9		%		70-130	20-DEC-19
1,2-Dichloroethane			91.5		%		70-130	20-DEC-19
1,2-Dichloropropane			100.5		%		70-130	20-DEC-19
1,3-Dichlorobenzene			84.8		%		70-130	20-DEC-19
1,4-Dichlorobenzene			84.8		%		70-130	20-DEC-19
Acetone			96.5		%		60-140	20-DEC-19
Benzene			95.2		%		70-130	20-DEC-19
Bromodichloromethane			88.8		%		70-130	20-DEC-19
Bromoform			93.9		%		70-130	20-DEC-19
Bromomethane			83.1		%		60-140	20-DEC-19
Carbon tetrachloride			91.6		%		70-130	20-DEC-19
Chlorobenzene			89.1		%		70-130	20-DEC-19
Chloroform			93.5		%		70-130	20-DEC-19
cis-1,2-Dichloroethylene			90.3		%		70-130	20-DEC-19
cis-1,3-Dichloropropene			91.3		%		70-130	20-DEC-19
Dibromochloromethane			88.4		%		70-130	20-DEC-19
Dichlorodifluoromethane			94.0		%		50-140	20-DEC-19



Quality Control Report

Workorder: L2398098

Report Date: 27-DEC-19

Page 3 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4949168							
WG3243074-1	LCS							
Ethylbenzene			88.3		%		70-130	20-DEC-19
n-Hexane			87.2		%		70-130	20-DEC-19
m+p-Xylenes			87.9		%		70-130	20-DEC-19
Methyl Ethyl Ketone			90.7		%		60-140	20-DEC-19
Methyl Isobutyl Ketone			92.9		%		60-140	20-DEC-19
Methylene Chloride			90.7		%		70-130	20-DEC-19
MTBE			94.0		%		70-130	20-DEC-19
o-Xylene			88.4		%		70-130	20-DEC-19
Styrene			90.8		%		70-130	20-DEC-19
Tetrachloroethylene			87.6		%		70-130	20-DEC-19
Toluene			89.7		%		70-130	20-DEC-19
trans-1,2-Dichloroethylene			89.5		%		70-130	20-DEC-19
trans-1,3-Dichloropropene			90.6		%		70-130	20-DEC-19
Trichloroethylene			91.7		%		70-130	20-DEC-19
Trichlorofluoromethane			90.9		%		60-140	20-DEC-19
Vinyl chloride			104.1		%		60-140	20-DEC-19
WG3243074-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dibromoethane			<0.20		ug/L		0.2	20-DEC-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloroethane			<0.50		ug/L		0.5	20-DEC-19
1,2-Dichloropropane			<0.50		ug/L		0.5	20-DEC-19
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Acetone			<30		ug/L		30	20-DEC-19
Benzene			<0.50		ug/L		0.5	20-DEC-19
Bromodichloromethane			<2.0		ug/L		2	20-DEC-19
Bromoform			<5.0		ug/L		5	20-DEC-19
Bromomethane			<0.50		ug/L		0.5	20-DEC-19



Quality Control Report

Workorder: L2398098

Report Date: 27-DEC-19

Page 4 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	20-DEC-19
Chlorobenzene			<0.50		ug/L		0.5	20-DEC-19
Chloroform			<1.0		ug/L		1	20-DEC-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Dibromochloromethane			<2.0		ug/L		2	20-DEC-19
Dichlorodifluoromethane			<2.0		ug/L		2	20-DEC-19
Ethylbenzene			<0.50		ug/L		0.5	20-DEC-19
n-Hexane			<0.50		ug/L		0.5	20-DEC-19
m+p-Xylenes			<0.40		ug/L		0.4	20-DEC-19
Methyl Ethyl Ketone			<20		ug/L		20	20-DEC-19
Methyl Isobutyl Ketone			<20		ug/L		20	20-DEC-19
Methylene Chloride			<5.0		ug/L		5	20-DEC-19
MTBE			<2.0		ug/L		2	20-DEC-19
o-Xylene			<0.30		ug/L		0.3	20-DEC-19
Styrene			<0.50		ug/L		0.5	20-DEC-19
Tetrachloroethylene			<0.50		ug/L		0.5	20-DEC-19
Toluene			<0.50		ug/L		0.5	20-DEC-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-DEC-19
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-DEC-19
Trichloroethylene			<0.50		ug/L		0.5	20-DEC-19
Trichlorofluoromethane			<5.0		ug/L		5	20-DEC-19
Vinyl chloride			<0.50		ug/L		0.5	20-DEC-19
Surrogate: 1,4-Difluorobenzene			93.6		%		70-130	20-DEC-19
Surrogate: 4-Bromofluorobenzene			92.4		%		70-130	20-DEC-19
WG3243074-5 MS		WG3243074-3						
1,1,1,2-Tetrachloroethane			91.5		%		50-140	23-DEC-19
1,1,1,2,2-Tetrachloroethane			91.3		%		50-140	23-DEC-19
1,1,1-Trichloroethane			92.7		%		50-140	23-DEC-19
1,1,2-Trichloroethane			95.7		%		50-140	23-DEC-19
1,1-Dichloroethane			87.1		%		50-140	23-DEC-19
1,1-Dichloroethylene			84.8		%		50-140	23-DEC-19
1,2-Dibromoethane			96.8		%		50-140	23-DEC-19
1,2-Dichlorobenzene			82.4		%		50-140	23-DEC-19



Quality Control Report

Workorder: L2398098

Report Date: 27-DEC-19

Page 5 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4949168							
WG3243074-5 MS		WG3243074-3						
1,2-Dichloroethane			97.3		%		50-140	23-DEC-19
1,2-Dichloropropane			95.5		%		50-140	23-DEC-19
1,3-Dichlorobenzene			82.3		%		50-140	23-DEC-19
1,4-Dichlorobenzene			78.8		%		50-140	23-DEC-19
Acetone			106.3		%		50-140	23-DEC-19
Benzene			94.5		%		50-140	23-DEC-19
Bromodichloromethane			94.0		%		50-140	23-DEC-19
Bromoform			95.2		%		50-140	23-DEC-19
Bromomethane			81.7		%		50-140	23-DEC-19
Carbon tetrachloride			89.9		%		50-140	23-DEC-19
Chlorobenzene			88.5		%		50-140	23-DEC-19
Chloroform			93.9		%		50-140	23-DEC-19
cis-1,2-Dichloroethylene			88.6		%		50-140	23-DEC-19
cis-1,3-Dichloropropene			86.4		%		50-140	23-DEC-19
Dibromochloromethane			93.4		%		50-140	23-DEC-19
Dichlorodifluoromethane			71.7		%		50-140	23-DEC-19
Ethylbenzene			85.7		%		50-140	23-DEC-19
n-Hexane			81.7		%		50-140	23-DEC-19
m+p-Xylenes			84.8		%		50-140	23-DEC-19
Methyl Ethyl Ketone			93.6		%		50-140	23-DEC-19
Methyl Isobutyl Ketone			96.9		%		50-140	23-DEC-19
Methylene Chloride			93.7		%		50-140	23-DEC-19
MTBE			90.2		%		50-140	23-DEC-19
o-Xylene			87.0		%		50-140	23-DEC-19
Styrene			88.4		%		50-140	23-DEC-19
Tetrachloroethylene			83.4		%		50-140	23-DEC-19
Toluene			89.0		%		50-140	23-DEC-19
trans-1,2-Dichloroethylene			77.8		%		50-140	23-DEC-19
trans-1,3-Dichloropropene			85.4		%		50-140	23-DEC-19
Trichloroethylene			87.3		%		50-140	23-DEC-19
Trichlorofluoromethane			87.8		%		50-140	23-DEC-19
Vinyl chloride			100.1		%		50-140	23-DEC-19

Quality Control Report

Workorder: L2398098

Report Date: 27-DEC-19

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 6 of 6

Contact: Kossay Makhzoumi

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) / Analysis Request Form



COC Number: 15 -

Handwritten initials 'ML'

Canada Toll Free: 1 800 668 987

L2398098-COFC

ere

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Standard TAT - Please confirm all E&P TATs with your AM - surcharges will apply																				
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																				
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>														
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>														
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:																				
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																				
City/Province:	Brampton	Email 2			Analysis Request																				
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below																				
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers										
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																							
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:		Routing Code:																					
PO / AFE:		Requisitioner:																							
LSD:		Location:																							
ALS Lab Work Order # (lab use only)	L2398098RD	ALS Contact:		Sampler:																					
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																					
	TRIP BLANK	16-12-19		GW							X			2											
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MEUP T3			Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>															
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>															
					Cooling Initiated <input type="checkbox"/>																				
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C															
					2.1					3.0															
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)																	
Released by: Kossay Makhzoumi	Date:	Time:	Received by: <i>KR</i>	Date: DEC 18/19	Time: 9am	Received by: <i>K</i>	Date: Dec 18/19	Time: 14:25																	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 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: Kossay Makhzoumi
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 28-FEB-20
Report Date: 03-MAR-20 18:58 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2422343
Project P.O. #: NOT SUBMITTED
Job Reference: 1-19-0603-42
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline							
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit	
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine) (No parameter exceedances)							

Volatile Organic Compounds - WATER

Lab ID L2422343-1
Sample Date 28-FEB-20
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/L	130000	130000	<30
Benzene	ug/L	44	430	<0.50
Bromodichloromethane	ug/L	85000	85000	<2.0
Bromoform	ug/L	380	770	<5.0
Bromomethane	ug/L	5.6	56	<0.50
Carbon tetrachloride	ug/L	0.79	8.4	<0.20
Chlorobenzene	ug/L	630	630	<0.50
Dibromochloromethane	ug/L	82000	82000	<2.0
Chloroform	ug/L	2.4	22	<1.0
1,2-Dibromoethane	ug/L	0.25	0.83	<0.20
1,2-Dichlorobenzene	ug/L	4600	9600	<0.50
1,3-Dichlorobenzene	ug/L	9600	9600	<0.50
1,4-Dichlorobenzene	ug/L	8	67	<0.50
Dichlorodifluoromethane	ug/L	4400	4400	<2.0
1,1-Dichloroethane	ug/L	320	3100	<0.50
1,2-Dichloroethane	ug/L	1.6	12	<0.50
1,1-Dichloroethylene	ug/L	1.6	17	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50
Methylene Chloride	ug/L	610	5500	<5.0
1,2-Dichloropropane	ug/L	16	140	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	5.2	45	<0.50
Ethylbenzene	ug/L	2300	2300	<0.50
n-Hexane	ug/L	51	520	<0.50
Methyl Ethyl Ketone	ug/L	470000	1500000	<20
Methyl Isobutyl Ketone	ug/L	140000	580000	<20
MTBE	ug/L	190	1400	<2.0
Styrene	ug/L	1300	9100	<0.50

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

Volatile Organic Compounds - WATER

Lab ID L2422343-1
Sample Date 28-FEB-20
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28	<0.50
1,1,2,2-Tetrachloroethane	ug/L	3.2	15	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	18000	18000	<0.50
1,1,1-Trichloroethane	ug/L	640	6700	<0.50
1,1,2-Trichloroethane	ug/L	4.7	30	<0.50
Trichloroethylene	ug/L	1.6	17	<0.50
Trichlorofluoromethane	ug/L	2500	2500	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50
o-Xylene	ug/L	-	-	<0.30
m+p-Xylenes	ug/L	-	-	<0.40
Xylenes (Total)	ug/L	4200	4200	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	96.5
Surrogate: 1,4-Difluorobenzene	%	-	-	102.2

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (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**
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
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

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).

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: L2422343

Report Date: 03-MAR-20

Page 1 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	02-MAR-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	02-MAR-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	02-MAR-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	02-MAR-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Styrene		<0.50	<0.50		ug/L			02-MAR-20



Quality Control Report

Workorder: L2422343

Report Date: 03-MAR-20

Page 2 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-4	DUP	WG3282676-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	02-MAR-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	02-MAR-20
WG3282676-1	LCS							
1,1,1,2-Tetrachloroethane			91.8		%		70-130	02-MAR-20
1,1,1,2-Tetrachloroethane			88.6		%		70-130	02-MAR-20
1,1,1-Trichloroethane			94.2		%		70-130	02-MAR-20
1,1,2-Trichloroethane			101.4		%		70-130	02-MAR-20
1,1-Dichloroethane			87.7		%		70-130	02-MAR-20
1,1-Dichloroethylene			86.8		%		70-130	02-MAR-20
1,2-Dibromoethane			101.2		%		70-130	02-MAR-20
1,2-Dichlorobenzene			95.0		%		70-130	02-MAR-20
1,2-Dichloroethane			85.8		%		70-130	02-MAR-20
1,2-Dichloropropane			88.4		%		70-130	02-MAR-20
1,3-Dichlorobenzene			94.0		%		70-130	02-MAR-20
1,4-Dichlorobenzene			93.2		%		70-130	02-MAR-20
Acetone			92.6		%		60-140	02-MAR-20
Benzene			93.0		%		70-130	02-MAR-20
Bromodichloromethane			90.5		%		70-130	02-MAR-20
Bromoform			91.5		%		70-130	02-MAR-20
Bromomethane			91.7		%		60-140	02-MAR-20
Carbon tetrachloride			91.1		%		70-130	02-MAR-20
Chlorobenzene			93.0		%		70-130	02-MAR-20
Chloroform			92.7		%		70-130	02-MAR-20
cis-1,2-Dichloroethylene			93.7		%		70-130	02-MAR-20
cis-1,3-Dichloropropene			80.8		%		70-130	02-MAR-20
Dibromochloromethane			97.4		%		70-130	02-MAR-20
Dichlorodifluoromethane			116.3		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422343

Report Date: 03-MAR-20

Page 3 of 6

Client: TERRAPROBE-BRAMPTON
 11 Indell Lane
 Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5012001							
WG3282676-1	LCS							
Ethylbenzene			86.6		%		70-130	02-MAR-20
n-Hexane			84.9		%		70-130	02-MAR-20
m+p-Xylenes			86.5		%		70-130	02-MAR-20
Methyl Ethyl Ketone			108.6		%		60-140	02-MAR-20
Methyl Isobutyl Ketone			79.3		%		60-140	02-MAR-20
Methylene Chloride			102.6		%		70-130	02-MAR-20
MTBE			94.9		%		70-130	02-MAR-20
o-Xylene			94.1		%		70-130	02-MAR-20
Styrene			85.1		%		70-130	02-MAR-20
Tetrachloroethylene			93.8		%		70-130	02-MAR-20
Toluene			92.6		%		70-130	02-MAR-20
trans-1,2-Dichloroethylene			85.7		%		70-130	02-MAR-20
trans-1,3-Dichloropropene			87.4		%		70-130	02-MAR-20
Trichloroethylene			100.3		%		70-130	02-MAR-20
Trichlorofluoromethane			98.1		%		60-140	02-MAR-20
Vinyl chloride			116.9		%		60-140	02-MAR-20
WG3282676-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dibromoethane			<0.20		ug/L		0.2	02-MAR-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloroethane			<0.50		ug/L		0.5	02-MAR-20
1,2-Dichloropropane			<0.50		ug/L		0.5	02-MAR-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Acetone			<30		ug/L		30	02-MAR-20
Benzene			<0.50		ug/L		0.5	02-MAR-20
Bromodichloromethane			<2.0		ug/L		2	02-MAR-20
Bromoform			<5.0		ug/L		5	02-MAR-20
Bromomethane			<0.50		ug/L		0.5	02-MAR-20



Quality Control Report

Workorder: L2422343

Report Date: 03-MAR-20

Page 4 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R5012001							
WG3282676-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	02-MAR-20
Chlorobenzene			<0.50		ug/L		0.5	02-MAR-20
Chloroform			<1.0		ug/L		1	02-MAR-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Dibromochloromethane			<2.0		ug/L		2	02-MAR-20
Dichlorodifluoromethane			<2.0		ug/L		2	02-MAR-20
Ethylbenzene			<0.50		ug/L		0.5	02-MAR-20
n-Hexane			<0.50		ug/L		0.5	02-MAR-20
m+p-Xylenes			<0.40		ug/L		0.4	02-MAR-20
Methyl Ethyl Ketone			<20		ug/L		20	02-MAR-20
Methyl Isobutyl Ketone			<20		ug/L		20	02-MAR-20
Methylene Chloride			<5.0		ug/L		5	02-MAR-20
MTBE			<2.0		ug/L		2	02-MAR-20
o-Xylene			<0.30		ug/L		0.3	02-MAR-20
Styrene			<0.50		ug/L		0.5	02-MAR-20
Tetrachloroethylene			<0.50		ug/L		0.5	02-MAR-20
Toluene			<0.50		ug/L		0.5	02-MAR-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	02-MAR-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	02-MAR-20
Trichloroethylene			<0.50		ug/L		0.5	02-MAR-20
Trichlorofluoromethane			<5.0		ug/L		5	02-MAR-20
Vinyl chloride			<0.50		ug/L		0.5	02-MAR-20
Surrogate: 1,4-Difluorobenzene			101.4		%		70-130	02-MAR-20
Surrogate: 4-Bromofluorobenzene			96.9		%		70-130	02-MAR-20
WG3282676-5 MS		WG3282676-3						
1,1,1,2-Tetrachloroethane			91.9		%		50-140	02-MAR-20
1,1,1,2,2-Tetrachloroethane			81.5		%		50-140	02-MAR-20
1,1,1-Trichloroethane			96.6		%		50-140	02-MAR-20
1,1,2-Trichloroethane			93.7		%		50-140	02-MAR-20
1,1-Dichloroethane			94.6		%		50-140	02-MAR-20
1,1-Dichloroethylene			86.5		%		50-140	02-MAR-20
1,2-Dibromoethane			90.5		%		50-140	02-MAR-20
1,2-Dichlorobenzene			95.4		%		50-140	02-MAR-20



Quality Control Report

Workorder: L2422343

Report Date: 03-MAR-20

Page 5 of 6

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: Kossay Makhzoumi

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Water							
Batch	R5012001							
WG3282676-5 MS		WG3282676-3						
1,2-Dichloroethane			77.8		%		50-140	02-MAR-20
1,2-Dichloropropane			85.1		%		50-140	02-MAR-20
1,3-Dichlorobenzene			96.9		%		50-140	02-MAR-20
1,4-Dichlorobenzene			95.6		%		50-140	02-MAR-20
Acetone			76.5		%		50-140	02-MAR-20
Benzene			92.2		%		50-140	02-MAR-20
Bromodichloromethane			87.3		%		50-140	02-MAR-20
Bromoform			83.8		%		50-140	02-MAR-20
Bromomethane			84.5		%		50-140	02-MAR-20
Carbon tetrachloride			94.4		%		50-140	02-MAR-20
Chlorobenzene			93.4		%		50-140	02-MAR-20
Chloroform			91.3		%		50-140	02-MAR-20
cis-1,2-Dichloroethylene			91.9		%		50-140	02-MAR-20
cis-1,3-Dichloropropene			78.1		%		50-140	02-MAR-20
Dibromochloromethane			91.6		%		50-140	02-MAR-20
Dichlorodifluoromethane			102.0		%		50-140	02-MAR-20
Ethylbenzene			90.6		%		50-140	02-MAR-20
n-Hexane			84.8		%		50-140	02-MAR-20
m+p-Xylenes			90.5		%		50-140	02-MAR-20
Methyl Ethyl Ketone			75.9		%		50-140	02-MAR-20
Methyl Isobutyl Ketone			66.1		%		50-140	02-MAR-20
Methylene Chloride			96.4		%		50-140	02-MAR-20
MTBE			95.3		%		50-140	02-MAR-20
o-Xylene			97.0		%		50-140	02-MAR-20
Styrene			84.6		%		50-140	02-MAR-20
Tetrachloroethylene			100.2		%		50-140	02-MAR-20
Toluene			94.5		%		50-140	02-MAR-20
trans-1,2-Dichloroethylene			86.2		%		50-140	02-MAR-20
trans-1,3-Dichloropropene			83.4		%		50-140	02-MAR-20
Trichloroethylene			103.9		%		50-140	02-MAR-20
Trichlorofluoromethane			97.0		%		50-140	02-MAR-20
Vinyl chloride			109.7		%		50-140	02-MAR-20

Quality Control Report

Workorder: L2422343

Report Date: 03-MAR-20

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Page 6 of 6

Contact: Kossay Makhzoumi

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



L2422343-COFC

COC Number: 15 -

MG

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																																																												
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																												
Contact:	Kossay Makhzoumi	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)		4 day [P4] <input type="checkbox"/>		EMERGENCY		1 Business day [E1] <input type="checkbox"/>																																																						
Phone:	905-796-2650	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		2 day [P2] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																																																								
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:																																																												
Street:	11 Indell Lane	Email 1 or Fax kmakhzoumi@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																												
City/Province:	Brampton	Email 2			Analysis Request																																																												
Postal Code:	L6T 3Y3	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																												
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Invoice Distribution			<table border="1"> <tr> <td>Metals and Inorganics</td> <td>Metals</td> <td>Hydride Forming Metals</td> <td>EC</td> <td>SAR</td> <td>PAH</td> <td>VOC</td> <td>PHC</td> <td>OC Pesticides</td> <td>PCBs</td> <td rowspan="5">Number of Containers</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR	PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers																																								
Metals and Inorganics	Metals	Hydride Forming Metals	EC	SAR											PAH	VOC	PHC	OC Pesticides	PCBs	Number of Containers																																													
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																															
Company:	Terraprobe	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 #:	1-19-0603-42	Major/Minor Code:		Routing Code:																																																													
PO / AFE:		Requisitioner:																																																															
LSD:		Location:																																																															
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:																																																													
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																																																													
	TRIP BLANK																																																																
Drinking Water (DW) Samples¹ (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? <input type="checkbox"/> YES <input type="checkbox"/> NO		MECP T3 RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																												
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																												
					Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C																																																		
					12.4					6.3 15.3					2.3																																																		
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																												
Released by: Kossay Makhzoumi	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:																																																
			<i>[Signature]</i>	FEB 28/20	3:30	<i>MG</i>	FEB 28/20	18:45																																																									

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
 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.
 OCTOBER 2016 FRONT