



**61-67 OWEN STREET AND
55-57 McDONALD STREET, BARRIE, ON**

Revised Modified Generic Risk Assessment

Project Location:

61-67 Owen Street and 55-57 McDonald Street
Barrie, ON

Prepared for:

Terraprobe Inc.
11 Indell Lane
Brampton, ON L6T 3Y3
Tel: 905-796-2650 | Fax: (905) 796-2250

Prepared By:

MTE GlobalTox
520 Bingemans Centre Drive
Kitchener, ON N2B 3X9
Tel: 519-743-6500 | Fax: 519-743-6513

February 20, 2019 April 22, 2019

MTE File No.: 43666-100



MODIFIED GENERIC RISK ASSESSMENT

Table 1-1: Proposed Standards for the following Property Use

Residential/Parkland/Institutional

	Chemical Name	Maximum Measured Concentration	Applicable Generic SCS for Table 3	Proposed Property Specific Standards	Is PSS based on REM?	Dominant Exposure Pathway	Eco Driver	Eco Standard	HH Driver	HH Standard	Potential to Exceed Applicable SCS at Nearest Off-Site Receptors?	Pathway Modifiers*	
Groundwater	Barium	1740	23000	2100	NO	GW3	GW3	110000	NA	NA	YES	No Ground Water Use for Drinking Water	
	Chloride	5650000	2300000	8800000	NO	GW3	GW3	8900000	NA	NA	YES	No Ground Water Use for Drinking Water	
	Sodium	1720000	2300000	2100000	NO	GW3	GW3	8900000	NA	NA	YES	No Ground Water Use for Drinking Water	
	Trichloroethylene	0.58	1.6	0.64	NO	GW2	GW3	1100000	GW2	0.64	NO	Building With Storage Garage - Intermittent Ventilation	
Surface soil	Electrical Conductivity (mS/cm)	2.88	0.7	3.5	NO	Soil Org.	Soil Org.	1400	NA	NA	NO	Fill Cap or Hard Cap, Asphalt or Concrete Cap, or soil cap >1m thick	
	Sodium Adsorption Ratio	40	5	48	YES	Soil Org.	Soil Org.	12000	NA	NA	NO	Fill Cap or Hard Cap, Asphalt or Concrete Cap, or soil cap >1m thick	
Subsurface soil													

ATTACHMENTS

Revised Attachment 4: Groundwater Contaminant Inventory

Contaminant Identifier	Contaminant Name	Reported Detection Limit (RDL)	Maximum Concentration (µg/L)		Applicable Site Condition Standard (SCS)	Additional Screen of Volatile Parameters Against 2011 MOE Table 6 SCS to Account for Shallow Groundwater Condition	Potential for Exceedance of Applicable SCSs at Nearest off-Site Receptors?	Retained as a Contaminant for RA?	
					2011 MOE Table 2 SCS (Coarse)	2011 MOE Table 6 SCS (Table 6 GW2 in brackets)	Yes/No	Yes/No	Comment
Metals									
7440393	Barium	1		1740	1000	Not Volatile	Yes		
7440417	Beryllium	1	<	1	4	Not Volatile	No	Yes	Exceedance of 2011 MOE Table 2 SCS
7440428	Boron (total)	100	<	100	5000	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440439	Cadmium	0.1	<	0.1	2.7	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
16065831	Chromium Total	5		17.4	50	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440484	Cobalt	1		3.8	3.8	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440508	Copper	2		20.9	87	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7439921	Lead	0.05		1.03	10	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7439987	Molybdenum	0.05		13.2	70	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440020	Nickel	0.5		7.4	100	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440224	Silver	0.05	<	0.5	1.5	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440280	Thallium	0.01	<	0.1	2	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440611	Uranium	0.01		6.09	20	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440622	Vanadium	0.5	<	5	6.2	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440666	Zinc	1		40	1100	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
Hydride Metals									
7440360	Antimony	0.1	<	1	6	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7440382	Arsenic	0.1		2.7	25	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
7782492	Selenium	0.05		2.11	10	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
Hexavalent Chromium									
18540299	Chromium VI	1		20	25	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
Cyanide									
	Cyanide (CN-)	2	<	20	66	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
Mercury									
7439976	Mercury	0.01	<	0.01	0.29	0.1 (0.0047)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
Chloride									
16887006	Chloride	500		5650000	790000	Not Volatile	Yes	Yes	Exceedance of 2011 MOE Table 2 SCS
Sodium									
7440235	Sodium	500		1720000	490000	Not Volatile	Yes	Yes	Exceedance of 2011 MOE Table 2 SCS
Polycyclic Aromatic Hydrocarbons (PAHs)									
83329	Acenaphthene	0.02	<	0.02	4.1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
208968	Acenaphthylene	0.02	<	0.02	1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
120127	Anthracene	0.02	<	0.02	2.4	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
56553	Benzo(a)anthracene	0.02	<	0.02	1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
50328	Benzo(a)pyrene	0.01	<	0.01	0.01	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
205992	Benzo(b)fluoranthene	0.02	<	0.02	0.1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
191242	Benzo(g,h,i)perylene	0.02	<	0.02	0.2	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
207089	Benzo(k)fluoranthene	0.02	<	0.02	0.1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
218019	Chrysene	0.02	<	0.02	0.1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
53703	Dibenzo(ah)anthracene	0.02	<	0.02	0.2	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
206440	Fluoranthene	0.02	<	0.02	0.41	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
86737	Fluorene	0.02	<	0.02	120	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
193395	Indeno(1,2,3-cd)pyrene	0.02	<	0.02	0.2	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
91576	1+2-Methylnaphthalenes	0.028	<	0.028	3.2	3.2 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
91576	1-Methylnaphthalene	0.02	<	0.02	NR	NR	No	NA	Refer to 1+2-Methylnaphthalenes
91576	2-Methylnaphthalene	0.02		0.024	NR	NR	No	NA	Refer to 1+2-Methylnaphthalenes
91203	Naphthalene	0.05	<	0.07	11	7 (4.4)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
85018	Phenanthrene	0.02	<	0.02	1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
129000	Pyrene	0.02	<	0.02	4.1	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS

Revised Attachment 4: Groundwater Contaminant Inventory

Contaminant Identifier	Contaminant Name	Reported Detection Limit (RDL)	Maximum Concentration (µg/L)		Applicable Site Condition Standard (SCS)	Additional Screen of Volatile Parameters Against 2011 MOE Table 6 SCS to Account for Shallow Groundwater Condition	Potential for Exceedance of Applicable SCSs at Nearest off-Site Receptors?	Retained as a Contaminant for RA?	
					2011 MOE Table 2 SCS (Coarse)	2011 MOE Table 6 SCS (Table 6 GW2 in brackets)	Yes/No	Yes/No	Comment
Petroleum Hydrocarbons (PHCs)									
PHCF1	F1 (C6 to C10)	25	<	25	NR	NR	No	NA	Refer to F1-BTEX (C6-C10)
PHCF1-BTEX	F1-BTEX (C6-C10)	25	<	25	750	420 (3.4)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
PHCF2	F2 (C10 to C16)	100	<	100	150	150 (5.7)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
PHCF3	F3 (C16 to C34)	250	<	250	500	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
PHCF4	F4 (C34 to C50)	250	<	250	500	Not Volatile	No	No	No Exceedance of 2011 MOE Table 2 SCS
BTEX									
71432	Benzene	0.5	<	0.5	5	0.5 (0.17)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
100414	Ethylbenzene	0.5	<	0.5	2.4	2.4 (57)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
108883	Toluene	0.5		0.64	24	24 (320)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
1330207	Xylene Mixture	0.5	<	0.5	300	72 (26)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
1330207	m/p-xylene	0.4	<	0.4	NR	NR	No	NA	Refer to Xylene Mixture
1330207	o-xylene	0.3	<	0.3	NR	NR	No	NA	Refer to Xylene Mixture
Volatile Organic Compounds (VOCs)									
67641	Acetone	30	<	30	2700	2700 (120000)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
74839	Bromomethane	0.5	<	0.5	0.89	0.89 (0.2)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
56235	Carbon tetrachloride	0.2	<	0.2	0.79	0.2 (0.028)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
108907	Chlorobenzene	0.5	<	0.5	30	30 (140)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
67663	Chloroform	1	<	1	2.4	2 (10)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
106934	1,2-Dibromoethane	0.2	<	0.2	0.2	0.2 (0.0033)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
95501	1,2-Dichlorobenzene	0.5	<	0.5	3	3 (150)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
541731	1,3-Dichlorobenzene	0.5	<	0.5	59	59 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
106467	1,4-Dichlorobenzene	0.5	<	0.5	1	0.5 (0.26)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
75718	Dichlorodifluoromethane	2	<	2	590	590 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
75343	1,1-Dichloroethane	0.5	<	0.5	5	5 (11)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
107062	1,2-Dichloroethane	0.5	<	0.5	1.6	0.5 (0.07)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
75354	1,1-Dichloroethylene	0.5	<	0.5	1.6	0.5 (0.072)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
156592	cis-1,2-Dichloroethylene	0.5	<	0.5	1.6	1.6 (0.072)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
156605	trans-1,2-Dichloroethylene	0.5	<	0.5	1.6	1.6 (0.072)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
75092	Methylene Chloride	5	<	5	50	26 (26)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
78875	1,2-Dichloropropane	0.5	<	0.5	5	0.58 (0.58)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
542756	cis-1,3-Dichloropropene	0.3	<	0.3	NR	NR	No	NA	Refer to 1,3-Dichloropropene (cis & trans)
542756	trans-1,3-Dichloropropene	0.3	<	0.3	NR	NR	No	NA	Refer to 1,3-Dichloropropene (cis & trans)

Revised Attachment 4: Groundwater Contaminant Inventory

Contaminant Identifier	Contaminant Name	Reported Detection Limit (RDL)	Maximum Concentration (µg/L)	Applicable Site Condition Standard (SCS)	Additional Screen of Volatile Parameters Against 2011 MOE Table 6 SCS to Account for Shallow Groundwater Condition	Potential for Exceedance of Applicable SCSs at Nearest off-Site Receptors?	Retained as a Contaminant for RA?	
				2011 MOE Table 2 SCS (Coarse)	2011 MOE Table 6 SCS (Table 6 GW2 in brackets)	Yes/No	Yes/No	Comment
Volatile Organic Compounds (VOCs) contd.								
542756	1,3-Dichloropropene (cis & trans)	0.5	< 0.5	0.5	0.5 (0.16)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
11053	n-Hexane	0.5	< 0.5	51	5 (0.34)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
78933	Methyl Ethyl Ketone	20	< 20	1800	1800 (21000)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
108101	Methyl Isobutyl Ketone	20	< 20	640	640 (5200)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
1634044	MTBE	2	< 2	15	15 (8.6)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
100425	Styrene	0.5	< 0.5	5.4	5.4 (43)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
630206	1,1,1,2-Tetrachloroethane	0.5	< 0.5	1.1	1.1 (0.073)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
79345	1,1,2,2-Tetrachloroethane	0.5	< 0.5	1	0.5 (0.11)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
127184	Tetrachloroethylene	0.5	< 0.5	1.6	0.5 (0.072)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
71556	1,1,1-Trichloroethane	0.5	< 0.5	200	23 (23)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
79005	1,1,2-Trichloroethane	0.5	< 0.5	4.7	0.5 (0.17)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
79016	Trichloroethylene	0.5	0.58	1.6	0.5 (0.053)	No	Yes	Exceedance of MOE 2011 Table 6 SCS
75694	Trichlorofluoromethane	5	< 5	150	150 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
75014	Vinyl chloride	0.5	< 0.5	0.5	0.5 (0.0072)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
Trihalomethanes								
75274	Bromodichloromethane	2	4.5	16	16 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
75252	Bromoform	5	< 5	25	5 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS
124481	Dibromochloromethane	2	2.9	25	25 (NV)	No	No	No Exceedance of 2011 MOE Table 2 or Table 6 SCS

Notes:
 Analytical Comparison document: 2011 MOE Table 2 SCS - As identified for groundwater in "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011, coarse textured soil, Residential/Parkland/Institutional (R/P/I) land use. To account for the future presence of 2 storeys of underground parking, an additional screening against the 2011 MOE Table 6 SCS was completed for volatile substances in groundwater.

Grey Highlight - Exceedance of 2011 MOE Table 2 SCS

Green Highlight - Exceedance of MOE 2011 Table 6 SCS

NR - Not relevant. Refer to Comment.

NA - Not applicable.

NV - No value.

"<" - Less than the reported detection limit.

MANDATORY CERTIFICATIONS

APPENDIX A - MANDATORY CERTIFICATIONS – Part A

- 1. I have conducted or supervised a risk assessment report in accordance with the regulation.
- 2. I am a qualified person, as defined in section 168.1 of the Act, and have the qualifications required by section 6 of the regulation.
- 3. I have in place an insurance policy that satisfies the requirements of section 7 of the regulation.
- 4. The risk assessment team included members with expertise in all of the disciplines required to complete the risk assessment in accordance with the regulation.
- 5. The opinions expressed in the risk assessment are engineering or scientific opinions made in accordance with generally accepted principles and practices as recognized by members of the environmental engineering or science profession or discipline practising at the same time and in the same or similar location.
- 6. To the best of my knowledge, the certifications and statements in this risk assessment are true as of:

22-Apr-19 *Date of completion of risk assessment report*

- 7. By making these certifications in this risk assessment report, I make no express or implied warranties or guarantees.

QP_{RA} signature:  Date: April 22, 2019

MANDATORY CERTIFICATIONS – Part B

As of the **date of completion of risk assessment report (see below)**, it is my opinion that based on the phase one environmental site assessment and the phase two environmental site assessment and other relevant property information, the approach taken in the conduct of the risk assessment, is appropriate to evaluate human health and ecological risks from the contaminants of concern at the concentrations proposed as the standards specified in the risk assessment and assuming no measures have been taken at the RA property which have the effect of reducing the risk from the contaminants, and is consistent with the approach set out in the pre-submission form with the exception of those deviations listed in section 1 of the report under the heading “Deviations from Pre-Submission Form”.

22-Apr-19 **Date of completion of risk assessment report**

As of the **date of completion of risk assessment report (see above)**, it is my opinion that, taking into consideration the assumptions specified in the risk assessment report, including the use of the property specified in report section 3 (Property Information, Site Plan and Geological Interpretation) of the risk assessment, and any risk management measures recommended in the report, as long as the RA property satisfies those assumptions and meets the standards specified in the risk assessment report, the contaminants of concern are unlikely to pose a human health or ecological risk greater than the level of risk that was intended in the development of the applicable full-depth site condition standards for those contaminants.

As of the **date of completion of risk assessment report (see above)**, it is my opinion that, **(pick the applicable statement below)**,

- i. **no risk management plan is necessary** for a contaminant of concern addressed in the risk assessment report to prevent, eliminate or ameliorate any adverse effect from that contaminant to the human or ecological receptors addressed in the report and located on the RA property, or
- ii. the implementation of the **risk management plan described in Report Section 7** (Risk Management Plan) of the risk assessment report is necessary for a contaminant of concern addressed in the risk assessment report to prevent, eliminate or ameliorate any adverse effect from that contaminant to the human or ecological receptors addressed in the report and located on the RA property and is sufficient to address the current and potential future transport and exposure pathways

As of the **date of completion of risk assessment report (see above)**, the risk assessment report completely and accurately reflects the risk assessment assumptions and conclusions and all pertinent information has been included in the report and the appendices to the report.

If Clause 5(3) of Schedule C applies,

As of the submission date, it is my opinion that, taking into consideration the assumptions specified in the risk assessment report including any risk management measures recommended in the report, as long as the RA property satisfies those assumptions and meets the standards specified in the report, the applicable full depth site condition standards will likely be met at the nearest off-site ecological and human receptors identified in the report.

QP_{RA} signature:  Date: Apr-122, 2019

ADDITIONAL QP_{RA} STATEMENT(S)

It is my opinion, based on the phase one environmental site assessment and the phase two environmental site assessment of the property and other relevant information respecting the property, that the assumptions I used in applying the approved model, to the extent that those assumptions differed from the assumptions on which the Soil Ground water and Sediment Standards are based, are appropriate.

QP_{RA} signature:



Date:

Apr. 1, 22, 2019

ESA SUMMARIES AND PHASE TWO CSM



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

**SUMMARY REPORT
PHASE ONE ESA AND PHASE TWO ESA
61-67 OWEN STREET AND 55-57 MCDONALD STREET
BARRIE, ONTARIO**

File No 1-17-0481-44

Issued Date: May 18, 2018

Revised Date (REV 1.1): April 18, 2019

©**Terraprobe Inc.**

Terraprobe Inc.

Greater Toronto

11 Indell Lane
Brampton, Ontario L6T 3Y3
(905) 796-2650 Fax: 796-2250

Hamilton – Niagara

903 Barton Street, Unit 22
Stoney Creek, Ontario L8E 5P5
(905) 643-7560 Fax: 643-7559

Central Ontario

220 Bayview Drive, Unit 25
Barrie, Ontario L4N 4Y8
(705) 739-8355 Fax: 739-8369

Northern Ontario

1012 Kelly Lake Rd., Unit 1
Sudbury, Ontario P3E 5P4
(705) 670-0460 Fax: 670-0558

www.terraprobe.ca

TABLE OF CONTENTS

SECTION	PAGE
1.0 INTRODUCTION	1
1.1 Property Description	1
1.2 Property Information.....	1
1.3 Physical Settings	2
2.0 INFORMATION FROM THE PHASE ONE ESA	4
2.1 Areas Where Potentially Contaminating Activities Identified	4
2.2 Areas of Potential Environmental Concern	4
2.3 Subsurface Structures and Utilities.....	5
3.0 INFORMATION FROM THE PHASE TWO ESA	6
3.1 Site Stratigraphy	6
3.1.1 Pavement Structure & Topsoil.....	6
3.1.2 Fill Materials.....	6
3.1.3 Native Soil	6
3.1.4 Bedrock.....	7
3.2 Soil Texture.....	7
3.3 Groundwater Elevations and Flow Direction.....	7
3.4 Groundwater Hydraulic Gradients	8
3.5 Soils Placed On, In or Under the Phase Two Property	8
3.6 Applicable Site Condition Standard.....	8
3.7 Media Investigated.....	9
3.8 Overview of Site Investigation	9
3.9 Rationale for Borehole and Monitoring Well Locations	10
3.10 Deviations from Sampling and Analysis Plan	10
3.11 Soil Field Screening.....	10
3.12 Soil Quality	10
3.13 Groundwater Quality	11
3.14 Sediment Quality	13
3.15 Quality Assurance and Quality Control Results	13
4.0 CONCLUSIONS	18
4.1 Areas Where Contaminants are Present.....	18
4.2 Distribution of Contaminant	18
4.3 Reasons for Discharge of Contaminant	19
4.4 Migration of Contaminant	19
4.5 Climatic or Meteorological Influences on Migration	20
4.6 Soil Vapour Intrusion into Buildings.....	20
4.7 Subsurface Structures and Utilities.....	20
4.8 Summary	20
4.9 Signatures.....	21



TABLES:

Table 1	Metals in Soil
Table 2	Hydride Metals in Soil
Table 3	Boron - Hot Water Soluble in Soil
Table 4	Hexavalent Chromium in Soil
Table 5	Cyanide in Soil
Table 6	Electrical Conductivity in Soil
Table 7	Mercury in Soil
Table 8	Sodium Adsorption Ratio in Soil
Table 9	pH in Soil
Table 10	Polycyclic Aromatic Hydrocarbons in Soil
Table 11	Petroleum Hydrocarbons in Soil
Table 12	Benzene, Toluene, Ethylbenzene, Xylene in Soil
Table 13	Volatile Organic Compounds in Soil
Table 14	Trihalomethanes in Soil
Table 15	Metals in Ground Water
Table 16	Hydride Metals in Ground Water
Table 17	Hexavalent Chromium in Ground Water
Table 18	Cyanide in Ground Water
Table 19	Mercury in Ground Water
Table 20	Chloride in Ground Water
Table 21	Sodium in Ground Water
Table 22	Polycyclic Aromatic Hydrocarbons in Ground Water
Table 23	Petroleum Hydrocarbons in Ground Water
Table 24	Benzene, Toluene, Ethylbenzene, Xylene in Ground Water
Table 25	Volatile Organic Compounds in Ground Water
Table 26	Trihalomethanes in Ground Water
Table 27	Soil Exceedances in Earth Fill & Native Soils
Table 28	Ground Water Exceedances

FIGURES:

Figure 1	Phase Two ESA Property Location
Figure 2	PCA and APEC Locations
Figure 3	Monitoring Well Location
Figure 4	Ground Water Elevation
Figure 5	Cross Section Locations
Figure 6	EC Exceedances in Soil - Plan View
Figure 7	EC Exceedances in Soil - Cross Section A-A'
Figure 8	EC Exceedances in Soil - Cross Section B-B'
Figure 9	SAR Exceedances in Soil - Plan View
Figure 10	SAR Exceedances in Soil - Cross Section A-A'
Figure 11	SAR Exceedances in Soil - Cross Section B-B'
Figure 12	Metal Exceedances in Ground Water - Plan View
Figure 13	Metal Exceedances in Ground Water - Cross Section A-A'
Figure 14	Metal Exceedances in Ground Water - Cross Section B-B'



Figure 15	Chloride Exceedances in Ground Water - Plan View
Figure 16	Chloride Exceedances in Ground Water - Cross Section A-A'
Figure 17	Chloride Exceedances in Ground Water - Cross Section B-B'
Figure 18	Sodium Exceedances in Ground Water - Plan View
Figure 19	Sodium Exceedances in Ground Water - Cross Section A-A'
Figure 20	Sodium Exceedances in Ground Water - Cross Section B-B'
Figure 21A	SCS VOC Exceedances in Ground Water - Plan View (Historical)
Figure 22A	SCS VOC Exceedances in Ground Water - Cross Section A-A' (Historical)
Figure 23A	SCS VOC Exceedances in Ground Water - Cross Section B-B' (Historical)
Figure 21B	Table 6 VOC Exceedances in Ground Water - Plan View (Historical)
Figure 22B	Table 6 VOC Exceedances in Ground Water - Cross Section A-A' (Historical)
Figure 23B	Table 6 VOC Exceedances in Ground Water - Cross Section B-B' (Historical)

APPENDICES:

Appendix A	Borehole Logs
Appendix B	Grain Size Analyses
Appendix C	Ground Water Levels
Appendix D	Sampling Analysis Plan
Appendix E	Certificates of Analysis
Appendix F	Phase One ESA Figures



1.0 INTRODUCTION

Terraprobe Inc. (Terraprobe) was retained by Barrie Owen Service Inc. (BOSI) to complete a Phase One and a Phase Two Environmental Assessment (ESA) of the subject property (Property) located at the southwest corner of Owen and McDonald Streets in Barrie, Ontario. The Property comprises multiple municipal addresses: 61-67 Owen Street and 55-57 McDonald Street. This report summarizes both the Phase One ESA and the Phase Two ESA investigations.

1.1 Property Description

The Property is roughly rectangular in shape, with a total area of approximately 0.2 ha. The Property is currently developed as municipal asphalt parking lot. The Property was considered to be in Commercial Land Use by the Ontario [Ministry of the Environment, Conservation and Parks](#) ~~Ministry of the Environment and Climate Change~~ (MOECCMECP). The proposed future land use for the Property includes multi-storey residential towers, resting on a two (2) level underground parking structure shared with the future structure adjacent to the south.

1.2 Property Information

Legal Description	<p>55 McDonald Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO1420694; S/T & T/W RO1420694; S/T Interest In RO1287454; Barrie</p> <p>57 McDonald Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO1327580; T/W RO1327580; Barrie</p> <p>61 Owen Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO653238; Barrie</p> <p>67 Owen Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO1287119; Barrie & Part James Street, Plan 31 Barrie, Part 1, 51R32355; Barrie</p>
PIN (s)	<p>55 McDonald Street: 58817-0026 (LT)</p> <p>57 McDonald Street: 58817-0027 (LT)</p> <p>61 Owen Street: 58817-0025 (LT)</p> <p>67 Owen Street: 58817-0024 (LT) & 58817-0174 (LT)</p>
Assessment Roll Number	<p>55 McDonald Street: 43 42 022 009 050 00</p> <p>57 McDonald Street: 43 42 022 009 049 00</p> <p>61 Owen Street: 43 42 022 009 052 00</p> <p>67 Owen Street: 43 42 022 009 051 00</p>
Municipal Address	61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario
Zoning	Transation Centre Commercial (C2 and C2-1)
Property Owner Information	61-67 Owen Street & 55-57 McDonald Street: Corporation of the City of Barrie



1.3 Physical Settings

The Property is located in a developed urban area of the City of Barrie. A topographic map from the Ontario Ministry of Natural Resources and Forestry (MNRF) was reviewed. The information gleaned for the physical settings of the Property from the mapping is summarized below.

Topography	The approximate elevation of the Property is 234.5 masl and was gently sloping to the south.
Hydrogeology	The nearest water bodies are Sophia Creek located 180 m north of the Property and Lake Simcoe which is located approximately 440 m south of the Property. The approximate depth to ground water, based on Water Well Records in the local area, is expected to be 11 - 13 m. Regionally, ground water and surface water is expected to flow to the south/southeast.
Geology (overburden)	The overburden consists of undifferentiated sand, gravel, minor silt and clay (9b coarse-textured glaciolacustrine deposits)
Geology (bedrock)	The bedrock on the site is of the Shadow Lake Formation which is comprised of limestone, dolostone, shale, arkose, sandstone (54a).
Geology (depth to bedrock)	Based upon historic borehole information from the MNRF and Water Well Records in the vicinity from the MOECCMECP , the depth to bedrock in the area of the Property is beyond 50 m.

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"> Sophia Creek – 180 m north of the Property Lake Simcoe – 440 m south of the Property
Wetland (Property)	<p><u>Provincially Significant</u></p> <ul style="list-style-type: none"> No Provincially Significant wetlands are present on the Property. <p><u>Non- Provincially Significant</u></p> <ul style="list-style-type: none"> No Non- Provincially Significant wetlands are present on the Property. <p><u>Unevaluated</u></p> <ul style="list-style-type: none"> No Unevaluated wetlands are present on the Property.



Wetland (Study Area)	<u>Provincially Significant</u> <ul style="list-style-type: none">• No Provincially Significant wetlands are present in the Study Area. <u>Non- Provincially Significant</u> <ul style="list-style-type: none">• No Non- Provincially Significant wetlands are present in the Study Area. <u>Unevaluated</u> <ul style="list-style-type: none">• No Unevaluated wetlands are present in the Study Area.
ANSIs (Property)	<u>Provincially Significant Life Science ANSI</u> <ul style="list-style-type: none">• No Life Science ANSIs were identified on the Property. <u>Provincially Significant Earth Science ANSI</u> <ul style="list-style-type: none">• No Earth Science ANSIs were identified on the Property.
ANSIs (Study Area)	<u>Provincially Significant Life Science ANSI</u> <ul style="list-style-type: none">• No Life Science ANSIs were identified in the Study Area. <u>Provincially Significant Earth Science ANSI</u> <ul style="list-style-type: none">• No Earth Science ANSIs were identified in the Study Area.



2.0 INFORMATION FROM THE PHASE ONE ESA

2.1 Areas Where Potentially Contaminating Activities Identified

The Phase One Environmental Site Assessment (ESA) identified the following Potentially Contaminating Activities (PCAs) on the Property and within the Study Area. The PCAs that have resulted in Areas of Potential Environmental Concerns (APECs) on the Property are summarized below and are shown on Figures 5 and 6 of Appendix F.

Location of PCA	PCA	Potential APEC (Yes/No)	Justification
Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Yes (APEC 1)	Historical use of fill material of unknown quality used at the Property during redevelopment
Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Yes (APEC 2)	Potential historical use and storage of fuel oil at former buildings that were located at 55-57 McDonald Street
60 Worsley Street	#Other 1 – Spill	Yes (APEC 32)	Historical spill of fuel oil in 2003 and 2015

2.2 Areas of Potential Environmental Concern

The following Areas of Potential Environmental Concern (APEC) resulting from the potentially contaminating activities were identified by the Phase One ESA and are shown on Figure 5 and Figure 6 of Appendix F:

APEC 1 - Historical use of fill material of unknown quality at the Property during redevelopment.

- Location on the Property
 - Entire Property
- Potential Contaminants of Concern (PCoCs)
 - Metals
 - Hydride Metals
 - Selected ORPs – Boron (HWS), Cyanide, Electrical Conductivity (EC), Hexavalent Chromium, Mercury, pH and Sodium Adsorption Ratio (SAR)
 - Polycyclic Aromatic Hydrocarbons (PAHs)
- Media Potentially Impacted
 - Soil
 - Ground water



~~APEC 2 – Potential historical use and storage of fuel oil at the former buildings at 61-67 Worsley Street and 55-57 McDonald Street (Property).~~

- ~~• Location on the Property
 - ~~○ Entire Property~~~~
- ~~• Potential Contaminants of Concern (PCoCs)
 - ~~○ PHCs~~
 - ~~○ VOCs II (BTEX)~~
 - ~~○ VOCs I~~~~
- ~~• Media Potentially Impacted
 - ~~○ Soil~~
 - ~~○ Ground water~~~~

APEC 3-2 – Historical spill of transmission oil in 2003 and hydraulic oil in 2015 at 60 Worsley Street

- Location on the Property
 - West portion of Property
- Potential Contaminants of Concern (PCoCs)
 - PHCs
 - VOCs II (BTEX)
 - VOCs I
- Media Potentially Impacted
 - Ground water

2.3 Subsurface Structures and Utilities

The Phase One ESA site inspection of the Property and the utility locates conducted as part of the Phase Two ESA found the following information regarding utilities and services at the Property:

- The Phase One ESA site inspection found evidence of subsurface structures or utilities on the Property.
- Underground utilities are located on the Property including sewer, water and electrical.

Buried utilities are located on the Property above the static water table (approximately 7 m below grade). As such, it is unlikely that the buried utilities influence the ground water flow or serve as preferential pathways for the migration of Potential Contaminants of Concern.



3.0 INFORMATION FROM THE PHASE TWO ESA

3.1 Site Stratigraphy

The ground surface at the Property is primarily covered by asphaltic paved parking areas. Based on the findings in the boreholes (Appendix A), the surficial material is underlain by an earth fill. Underlying the earth fill layer, a native deposit of silts and sand (the “upper silts/sands”) followed by clayey silt soils was encountered. Underlying the clayey silt deposit, a cohesionless gravelly sand layer (the “lower sands”) was encountered. Further details are provided below.

3.1.1 Pavement Structure & Topsoil

Surficial asphalt concrete was encountered in all Boreholes. The asphalt was 125 to 150 mm thick, and no granular was encountered underneath. Granular type parking lot base and sub-base full soils were identified below the asphalt topping in Boreholes 101 to 103. The granular type base and sub-base fill had a thickness of 460 to 600 mm.

3.1.2 Fill Materials

Earth fill was encountered in each borehole location. The fill generally consisted of sand with variable amounts of silt and clay, and contains gravel, glass rubble, asphalt rubble, brick rubble, and trace organics at various locations and depths. The fill extended to depths of 1.5 m to 3.0 m below grade (Elev. 233.5 to 231.5 ± masl) and was generally brown and moist.

3.1.3 Native Soil

The boreholes encountered an upper unit of cohesionless deposits underlying the earth fill at depths of 1.5 m to 3.0 m below grade (Elev. 233.5 to 231.5 ± masl). The unit generally consisted of silty sand, to sand, to sand and silt, and extended to depths varying from 9.1 m to 21.3 m below grade (Elev. 225.4 to 213.0 ± masl). Zones of sandy gravel to gravelly sand were interbedded within the deposit, and cobbles and boulders were also present in these zones. The deposits were brown to grey, and were moist becoming wet with depth.

Underlying the upper cohesionless unit, the boreholes generally encountered a cohesive deposit of clay and silt to silty clay, with trace sand, and layering. The clay and silt was encountered at depths varying from 9.1 m to 21.3 m below grade (Elev. 225.4 to 213.0 ± masl) and extended to depths of 18.3 m to 23.2 m below grade (Elev. 216.7 to 211.1 ± masl). It was grey and moist.

Boreholes 201 to 203 encountered a lower sand deposit underlying the clay and silt. The sand was encountered at depths of 18.3 m to 23.2 m below grade (Elev. 216.7 to 211.1 ± masl) and extended beyond the vertical depth of investigation at 24.6 m to 25.0 m below grade (Elev. 210.4 to 209.3 ± masl). The sand was grey and wet.



3.1.4 Bedrock

Although not encountered within the advanced boreholes at the Property, the area is underlain by bedrock of the Verulam Formation of the Simcoe Group (Trenton-Black River). The surface of the bedrock formation is identified to be located at a depth of ± 90 to ± 120 masl, below ground surface as based on drift thickness mapping for the area. None of the boreholes were advanced to the anticipated bedrock levels.

3.2 Soil Texture

O.Reg. 153/04 indicates that a soil is considered coarse texture if more than 50 percent by weight of the particles are $75 \mu\text{m}$ (0.075 mm) or larger. O.Reg. 153/04 also indicates that to use the coarse soil texture Standards, is at least one-thirds of the soil across the Property with respect to volume must be considered coarse textured.

Based on the volume calculation of the soil at the Property, more than one-thirds of the soil is considered to be coarse-textured soil. As such, the coarse textured standards have been used for the comparison of the chemical results as required under Ontario Regulation 153/04. The grain size analyses are presented in Appendix B.

3.3 Groundwater Elevations and Flow Direction

Stabilized groundwater levels were measured in each borehole as they were drilled and after completion, as noted in the borehole logs (Appendix A). Stabilized water levels were also measured within all monitoring wells. The monitoring well location plan is shown in Figure 3. The ground water elevations and contours are summarized in Appendix C and shown in Figure 4.

It is noted that the clayey silt strata observed within the boreholes were generally interbed with sand seams or sand. In addition, based on geotechnical investigations completed at the Property and the adjacent properties to the south (53-59 Owen Street and 70-78 Worsley Street), the clayey silt layer was determined to be varying in thickness from north to south. Based on the ~~varying thickness of the clayey silt aquifer~~ available soil stratigraphy information and the observed ground water levels in the monitoring wells screened in the upper sand/silt and lower sand aquifers, it was determined that these units are hydraulically connected regionally. The shallow wells and the deep wells have stabilized. Based on the current ground water levels, the ground water within the aquifer is encountered at an elevation of approximately ± 222 to 228 masl. The shallowest measured depth to groundwater as shown in Appendix C was 7.5 mbgs (Elev. 227.5 masl) at BH201-S in December 2017. This differs from the ~~MOECC-MECP~~ generic assumption of 3 mbgs. The cohesionless sand layers have a high to moderate permeability. The ~~MOECC-MECP~~ generic assumption of 3.0×10^{-5} for hydraulic conductivity will be applicable.



The ground water measurements at the Property during the period of the investigation indicated a static ground water level of approximately ± 222 to 228 masl. The interpreted direction of local ground water flow is to the south to southeast.

3.4 Groundwater Hydraulic Gradients

The ground water table is within the upper sands/silts and clayey silt layer. The horizontal gradient was determined to be approximately 0.07 m/m based on the ground water elevations observed in BH101, BH102 and BH103 which were screened in the upper sands and clayey silt layer. This differs from the [MOECC-MECP](#) generic assumption of 0.003 m/m.

The vertical gradient was determined to be approximately 0.04 m/m to 0.1 m/m based on the ground water elevations observed in BH102, BH103, BH201-S, BH201-D, BH202 and BH203.

3.5 Soils Placed On, In or Under the Phase Two Property

No soils have been imported or placed on, in or under the Phase Two Property since the site reconnaissance completed for the Phase One ESA in July 2017. Fill was encountered at the Property during the subsurface investigation by Terraprobe in 2017 in all boreholes.

3.6 Applicable Site Condition Standard

The applicable soil and ground water Standards for the Property were determined to be those in Table 2 of the April 15, 2011 Ontario [Ministry of the Environment, Conservation and Parks Ministry of Environment and Climate Change \(MOECC-MECP\)](#) “Soil, Ground Water and Sediment Standards for use under part XV.1 of the Environmental Protection Act” for Residential, Parkland, Institutional Land Use in a potable ground water condition for coarse textured soil (Table 2 RPI Standards).

These are considered to be the applicable Standards for the following reasons:

- The current use for the parcel is for Commercial Land Use.
- If developed, the parcel will be Residential in Land Use.
- Bedrock is located at a depth of greater than 2 m.
- The Property is located within the 5 and 25 year capture zone of various municipal supply wells. Thus, ground water conditions in the vicinity of the Property are considered to be potable water conditions.
- The parcel is not located within 30 m of a surface water body.

The parcel is not located in or adjacent to a provincial park or an area of natural significance.



The proposed redevelopment of the Property comprises of a residential building with two levels of underground parking garage i.e. approximately 7 m bgs. Due to the proximity of the parking garage to the ground water table observed at 7.5 m bgs, Table 6 RPI Standards will be considered for the MGRA.

3.7 Media Investigated

Based upon the PCAs identified in the Phase One ESA for the Property, it was decided that sampling and analysis was required for both soil and ground water on the Property. Sample locations were selected to investigate all APECs as identified in the Phase One ESA. No surface water was present on the Property; therefore, surface water or sediment sampling was not conducted.

3.8 Overview of Site Investigation

Terraprobe conducted the following subsurface work at the Property:

- Drilling of seven (7) boreholes between 13.6 m to 24.8 m below existing grade
- Installation of seven (7) ground water monitoring wells
- Laboratory analysis of selected soil samples for parameters including:
 - Metals
 - Hydride-Forming Metals (H-M)
 - Select Other regulated Parameters (ORPs) including Electrical conductivity (EC), Sodium Absorption Ratio (SAR), Boron, hot water soluble, Cyanide, Mercury, Hexavalent Chromium, pH
 - Petroleum Hydrocarbons (PHCs)
 - Volatile Organic Compounds I (VOCs)
 - Volatile Organic Compounds II (BTEX)
 - Polycyclic Aromatic Hydrocarbons (PAHs)
- Submission of soil samples to Terraprobe Inc. for grain size analysis and soil classification
- Survey of all boreholes and monitoring wells to a geodetic benchmark
- Measurement of ground water elevations to determine ground water elevation
- Development and sampling of all monitoring wells
- Laboratory analysis of ground water samples for:
 - Metals
 - Hydride-Forming Metals
 - Select ORP including Chloride, Cyanide, Mercury, Hexavalent Chromium, pH
 - Sodium
 - PHCs
 - VOCs
 - BTEX
 - PAHs



3.9 Rationale for Borehole and Monitoring Well Locations

The locations of the boreholes and monitoring wells were chosen based on the information available from the Phase One ESA and the Phase One Conceptual Site Model. The rationale for the borehole and monitoring well locations are summarized in the sampling and analysis plan in Appendix D.

3.10 Deviations from Sampling and Analysis Plan

There were no deviations from the sampling and analysis plan. The sampling and analysis plan is presented in Appendix D.

3.11 Soil Field Screening

Soil vapour field screening was conducted on soil samples from the Terraprobe boreholes. Vapour concentrations ranged from 0 ppm to 35 ppm, which did not indicate the presence of significant amounts of petroleum hydrocarbon and volatile compounds. Complete soil field screening results are presented on the borehole logs in Appendix A.

3.12 Soil Quality

A summary of the soil samples and the selected analyses is presented below. The scope of analysis was chosen based on the Contaminants of Concern as noted in the Phase One ESA.

Sample ID	Depth (m)	Elevation (masl)	Strata	M	H-M	ORPs	PAH	PHC	VOC I	VOC II (BTEX)	THM
BH101-SA2	0.8 - 1.4	233.8 - 233.2	Fill				✓	✓	✓	✓	✓
BH101-SA3	1.7 - 2.3	232.9 - 232.2	Native	✓	✓	✓					
BH101-SA4	2.3 - 2.9	232.3 - 231.6	Native			✓					
BH101-SA7	6.1 - 6.7	228.4 - 227.8	Native			✓					
BH101-SA10B	10.9 - 11.3	223.7 - 223.3	Native				✓				
BH101-SA11	12.2 - 12.8	222.3 - 221.7	Native	✓	✓	✓		✓	✓	✓	✓
BH102-SA2	0.8 - 1.4	233.7 - 233.1	Fill	✓	✓	✓		✓	✓	✓	✓
BH102-SA3	1.5 - 2.1	233.0 - 232.4	Fill				✓				
BH102-SA6	4.6 - 5.0	229.9 - 229.5	Native			✓					
BH102-SA8	7.6 - 8.2	226.9 - 226.3	Native			✓					
BH102-SA11	12.2 - 12.8	222.3 - 221.7	Native	✓	✓	✓		✓	✓	✓	✓
BH102-SA12	13.7 - 14.3	220.8 - 220.2	Native				✓				
BH103-SA2	0.8 - 1.4	233.6 - 233.0	Fill	✓	✓	✓					
BH103-SA3	1.7 - 2.3	232.7 - 232.1	Fill				✓	✓	✓	✓	✓
BH103-SA6	4.6 - 4.9	229.8 - 229.5	Native			✓					
BH103-SA10	10.7 - 11.3	223.7 - 223.1	Native				✓	✓	✓	✓	✓
BH103-SA11	12.2 - 12.8	222.2 - 221.6	Native	✓	✓	✓					
BH201-SA2	0.8 - 1.4	234.3 - 233.7	Fill	✓	✓	✓	✓	✓	✓	✓	✓
BH201-SA5	3.1 - 3.7	232.0 - 231.4	Native			✓					



Sample ID	Depth (m)	Elevation (masl)	Strata	M	H-M	ORPs	PAH	PHC	VOC I	VOC II (BTEX)	THM
BH201-SA9	9.1 - 9.8	225.9 - 225.3	Native					✓	✓	✓	✓
BH201-SA10	10.7 - 11.3	224.4 - 223.8	Native	✓	✓	✓					
BH201-SA12	13.7 - 14.3	221.3 - 220.7	Native			✓	✓				
BH201-SA13	15.2 - 15.8	219.8 - 219.2	Native	✓	✓	✓					
BH202-SA1	9.1 - 9.8	225.2 - 224.6	Native			✓					
BH202-SA7	18.3 - 18.9	216.1 - 215.5	Native	✓	✓	✓	✓				
BH202-SA8	19.8 - 20.4	214.6 - 213.9	Native					✓	✓	✓	✓
BH202-SA9	21.3 - 21.6	213 - 212.8	Native	✓	✓	✓					
BH203-SA2	0.8 - 1.4	233.7 - 233.1	Fill					✓	✓	✓	✓
BH203-SA3	1.5 - 2.1	232.9 - 232.3	Fill	✓	✓	✓					
BH203-SA4	2.3 - 2.9	232.2 - 231.6	Fill				✓				
BH203-SA6	4.6 - 5.2	229.9 - 229.3	Native			✓					
BH203-SA8	7.6 - 8.2	226.8 - 226.2	Native	✓	✓	✓					
BH203-SA9	9.1 - 9.8	225.3 - 224.7	Native					✓	✓	✓	✓
BH203-SA10	10.7 - 11.3	223.8 - 223.2	Native	✓	✓	✓	✓				

Note: ORPs include boron (hot water soluble), cyanide, hexavalent chromium, electrical conductivity, sodium adsorption ratio, mercury, pH.

Select soil samples were analysed for the Potential Contaminants of Concern (PCOCs). PCOCs include metals, hydride-forming metals, other regulated parameters (ORPs) including electrical conductivity (EC), sodium absorption ratio (SAR), boron hot water soluble, cyanide, mercury, hexavalent chromium, pH, petroleum hydrocarbons (PHCs), volatile organic compounds (VOC I, II and THMs) and polycyclic aromatic hydrocarbons (PAHs). The results of the analysis were compared to the applicable Site Condition Standard for the Property (Table 2 RPI). The laboratory certificates of analysis are provided in Appendix E.

The soil exceedances for ORPs (EC and SAR) are provided in Table 27. The results not noted within Table 27 met the [MOECC-MECP](#) Table 2 RPI soil Standards. All soil exceedance locations and the cross sections indicating the elevation of exceedances are shown in the Figures 6-11.

3.13 Groundwater Quality

A summary of the ground water samples and the selected analyses is presented below. The scope of analysis was chosen based on the Contaminants of Concern as noted in the Phase One ESA.

Sample ID	Screen Depth (m)	Screen Elevation (masl)	Strata	M	H-M	ORPs	PAH	PHC	VOCs	VOC II	THM
BH101	10.5 - 13.6	224 - 221	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH102	9.1 - 12.2	225.4 - 222.3	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH103	10.7 - 13.7	233.7-220.7	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH201-S	6.1 - 9.1	229-225.9	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH201-D	21.3 - 24.4	231.7-210.7	Native	✓	✓	✓	✓	✓	✓	✓	✓



Sample ID	Screen Depth (m)	Screen Elevation (masl)	Strata	M	H-M	ORPs	PAH	PHC	VOCs	VOC II	THM
BH202	21.3 - 24.4	213.0-210.0	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH203	21.3 - 24.4	213.1-210.1	Native	✓	✓	✓	✓	✓	✓	✓	✓

Note: ORPs include sodium, chloride, cyanide, hexavalent chromium, mercury, pH

Ground water sampling was completed for monitoring wells installed in boreholes on the Property. Ground water samples were analysed for parameters including metals, hydride-forming metals, other regulated parameters (ORPs) including chloride, cyanide, mercury, hexavalent chromium, and pH, sodium, petroleum hydrocarbons (PHCs), volatile organic compounds (VOC I, II & THMs) and polycyclic aromatic hydrocarbons (PAHs). The monitoring wells on the Property were purged and sampled on the dates provided below.

Monitoring Wells	Date Purged	Date Sampled
BH101-BH103	8 & 11 August, 2017	11 August 2017 & 18-September 2017
BH201-BH203	6 November, 2017	8 & 9 November 2017
BH101-BH103, BH201-BH203	7 & 8 December 2017	7 & 8 December 2017
BH201-D, BH203	4 January 2018	4 January 2018
BH101-BH103, BH201-BH203	17 January 2018	17 January 2018
BH203	25 & 29 January 2018	25 & 29 January 2018
BH201-D & BH203	18 June, 2018	18 June, 2018
BH201-D & BH203	19 September, 2018	19 September, 2018
BH101, BH102, BH103, BH201-S, BH201-D, BH202, BH203	19 December 2018	19 December 2018
BH101	4 January 2019	4 January 2019
BH103	10 January 2019	10 January 2019
BH101	10 April 2019	10 April 2019

The results of the analysis were compared to the applicable site condition standard for the property (Table 2 RPI). The laboratory Certificates of Analysis are provided in Appendix E.

The ground water exceedances for Metals (Barium) ~~and~~ ORPs (Chloride and Sodium) ~~and VOCs (Trichloroethylene)~~ are provided in Table 28. The results not noted within Table 28 met the ~~MOECC~~ MECC Table 2 RPI ground water Standards. The ground water exceedance locations on plan view and cross sections are noted in the Figures 12 to 23. It is noted that Figures 21A to 23A are included to show historical exceedances for VOCs when compared to SCS (Table 2 RPI) that are no longer present at the Property (see Section 3.15 for more details), but have been included for illustration purposes. For the



[purposes of the MGRA, Figures 21B to 23B show the VOC exceedances when compared to Table 6 RPI Standards.](#)

3.14 Sediment Quality

No sediment sampling was conducted as part of this investigation.

3.15 Quality Assurance and Quality Control Results

In general, samples for the Terraprobe investigation 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 [MOECC-MECP](#) standards for quality control under Ontario Regulation 153/04 which require laboratory results to meet specific method detection limit (MDL) requirements. In general, the sampling and analyses performed conformed with the following:

- Ministry of the Environment, [Conservation and Parks and Climate Change](#) Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.
- Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.I of the Environmental Protection Act of Ontario.

Soil and ground water samples obtained during the investigations were handled in accordance with generally accepted professional practices under the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* and the [MOECC-MECP](#) Guidance on *Sampling and Analytical Methods for Use at Contaminated Properties in Ontario*.

Laboratory sample analysis for the Terraprobe investigation was provided by ALS Environmental. ALS Environmental is accredited by the Standards Council of Canada and Canadian Association for Environmental Laboratories in accordance with ISO/IEC 17025 (1999) for the parameters tested in the investigation.

Laboratory supplied sample containers were used for all sampling conducted on the subject property. All sampling containers were identified with laboratory supplied labels. Samples were placed in coolers with loose ice after collection for transportation to the laboratory. Chains of Custody were completed for all samples submitted to the laboratory. Sample hold times were met for all submitted soil and ground water samples.



During soil sampling, the split spoon sampling device was washed between samples to minimize cross-contamination. While handling all samples Terraprobe staff used nitrile gloves. New gloves were used for each sample to avoid cross contamination. Borehole samples for submission for analytical testing were collected from the undisturbed split spoon sample. Samples that were collected for analysis of VOCs and the F1 fraction of PHCs were collected directly from the split spoon core using a new Terracore sampling device for each sample taken, placing the sample in a methanol preserved vial supplied by the laboratory to minimize potential volatile losses. All samples were placed in sealed labeled bags to reach ambient temperature.

All retrieved soil samples were screened in the field using PHC vapour testing equipment and following the procedure outlined in the “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario” published by the [MOECCMECP](#). All samples were screened using an RKI Instruments EAGLE 6 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 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.

In accordance with standard industry practice, sampling for VOCs was carried out utilizing low-flow sampling techniques. All VOC groundwater samples were placed directly into vials preserved with chemicals supplied by the laboratory, filling the vials to zero headspace to minimize potential volatile losses. Water quality parameters measured during development and prior to sampling included pH, specific conductance, and temperature to ensure that the groundwater has stabilized for sampling.

The groundwater samples were collected using the dedicated tubing that had been installed in each well during the sampling events. The use of dedicated tubing eliminates the potential for cross contamination related to sampling equipment. The pumps were also washed between each sample to minimize the potential for cross contamination. Disposable latex gloves were worn at each sample site. The groundwater samples were immediately placed into coolers packed with ice pending delivery to the analytical laboratory.

No deviations from the sampling and analysis plan occurred. Field duplicates were obtained for both soil and ground water samples at a rate of at least 10%. In addition, ALS Environmental included a standard internal QA/QC program consisting of the analysis of replicates and assessment of surrogate recoveries.

It should be noted that the following quality assurance deviations with respect to the ground water quality occurred during the Phase Two ESA:

- As noted in the summary Table 15, the reported concentration of vanadium exceeded the applicable standard in BH202 during the November 8, 2017 sampling event. The sample was observed to contain particulate matter at the time of the sample collection. This monitoring well was purged and resampled on two subsequent occasions (December 7, 2017 and January 17, 2018), with the reported concentrations for vanadium well below the Table 2 Standards. In the



opinion of the QP_{ESA}, the original exceedance of vanadium was due to matrix interference and the previous exceedance was rejected. Thus, vanadium has been omitted as a COC in the ground water.

- As noted in the summary Table 25, the reported concentration of chloroform exceeded the applicable standard in BH201-D during in the November 8 and December 7, 2017 sampling event. BH201-D was further redeveloped, purged and resampled seasonally on ~~two~~four subsequent occasions (January 4 and 17, 18 June and 19 September, 2018), with the reported concentration for chloroform was below the reportable detection limit. Additionally, chloroform was not detected in any of the other six monitoring wells. In the opinion of the QP_{ESA}, the original exceedances noted may have been due to the use of potable municipal water during drilling and the previous exceedances were rejected. In the opinion of the QP_{ESA} the ground water in BH201-D meets the applicable standards for chloroform.
- As noted in the summary Table 25, the reported concentration of trichloroethylene exceeded the applicable standard in BH201-D during in the December 7, 2017 sampling event, and in BH203 during in the December 7, 2017 and January 17, 2018 sampling events. BH201-D was further redeveloped, purged and resampled seasonally on ~~four~~two subsequent occasions (January 4 and 17, 18 June and 19 September, 2018), with the reported concentration for trichloroethylene below the reportable detection limit. Similarly, BH203 was redeveloped, purged and resampled on ~~two~~four subsequent occasions (January 25 and 29, 18 June and 19 September, 2018), with the reported concentration for trichloroethylene below the reportable detection limit or well below the Table 2 SCS. In the opinion of the QP_{ESA}, these results were considered to be anomalies and therefore considered non-reliable t for the following reasons:

 - The Phase One ESA for the Property did not indicate any current or historical on- or off-site up-gradient sources for TCE.
 - The results of the four (4) subsequent sampling events completed after additional development of BH201-D and BH203 wells indicated that TCE results met the SCS.
 - The results from BH202 located upgradient and screened at approximately same depth as BH201-D and BH203 were non-detect for TCE in November 2017, December 2017 and January 2018. As well, the concentrations for TCE in all the other monitoring wells (BH101-BH103) on the property were also non-detect and met the SCS over all the sampling events.
 - Results for BH201-D and BH203 from a total of at least four (4) sampling events over three (3) quarters indicated that the TCE concentrations in these wells meet the SCS as shown below.
 - BH201-D was sampled in Q4 2017 (Nov 2017), Q1, Q2 & Q3 2018 and met the SCS
 - BH203 was sampled in Q4 2017 (Nov 2017), Q1, Q2 & Q3 2018 and met the SCS

Thus, trichloroethylene has been omitted as a COC in the ground water for the Phase Two ESA. It is noted that for the purposes of the MGRA which considers Table 6 RPI Standards, there remains a trichloroethylene exceedance in BH201-D. As such, the maximum concentration of 0.58 ug/L (BH201-D during January 2018 event) for the TCE COC has been considered for the MGRA. As the concentrations of trichloroethylene in these monitoring wells were intermittently



~~detected, the QP has noted it to be included as a COC for the purposes of this Phase Two CSM. Additional seasonal confirmatory sampling may be conducted in these location to further confirm the concentrations and to eliminate trichloroethylene as a COC.~~

- As noted in the summary Table 15, the reported concentration of barium exceeded the applicable standard in BH101 during the 17 January 2018 sampling event. As BH101 had not exceeded during the previous two sampling events, the QP_{ESA} rejected the exceedance of barium in ground water in BH101 during the January 17, 2018 event based on the following:
 - Prior to the January 17, 2018 sampling event, only BH103 had exceeded for barium at the Property.
 - Two (2) subsequent sampling events completed in BH101 after the January 17, 2018 sampling event, indicated that the concentration of barium in ground water in BH101 were similar to the previous sampling events and well below the SCS.
 - An additional sampling event was conducted in BH101 on April 10, 2019.
 - Results for BH101 from sampling events over five (5) quarters indicated that the Barium concentrations in this well meets the SCS as shown below. BH101 was sampled in Q3 and Q4 2017, Q4 2018 and Q1 and Q2 2019, and met the SCS.

Based on the results of the previous sampling event and the confirmatory sampling, the QP has rejected the previous barium exceedance that occurred in BH101 during the January 2018 event. Thus, barium has been omitted as a COC in the ground water.

Based on a review of the QA/QC data, there are no issues that would affect the interpretation of the results. The objectives of the investigation were met and overall quality of the field data from the investigation did not affect the outcome of the investigation. A certificate of analysis or analytical report has been received for each sample submitted for analysis. All certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47(3). All laboratory Certificates of Analysis or analytical reports received have been included in full and are provided in Appendix E. It is noted that the Phase Two ESA investigation for the subject Property was originally completed in conjunction with the Phase Two ESA for the adjacent lands to the south (53-59 Owen Street and 70-78 Worsley Street) as it is proposed that the subject Property and these adjacent lands to the south will be redeveloped simultaneously. As such, some of the soil and ground water samples were submitted on the same chains of custody as the samples from the subject property. The Phase Two ESAs and MGRA submissions have since been separated based on the ~~MOECC-MECP~~ requirements for legal ownership documents for filing an RSC as there are multiple ownerships between these properties. While the Certificates of Analysis have been revised accordingly to only show the samples from the subject Property, the chains of custody still include some soil and ground water samples from the adjacent south lands (i.e. samples from BH104-BH105 and BH204-BH207). Based on a review of the field and laboratory QA/QC data, there are no issues that would affect the interpretation of the results.



The investigation program completed for the Phase Two ESA is adequate for the Risk Assessment objectives and approach specified in Section 1 of the Risk Assessment, given the following:

- Site geology and hydrogeology have been adequately characterized to understand contaminant transport, potential receptors and exposure pathways;
- Soil and groundwater quality have been adequately assessed with respect to the PCAs identified in the Phase One ESA; and,
- Maximum concentrations of COCs in soil and groundwater have been identified to move forward for evaluation in the RA.

Based on the results of the Phase Two Environmental Site Assessment, Terraprobe is of the opinion that subsurface conditions at the Property have been adequately characterized for the purpose of conducting the Risk Assessment. There is sufficient description of subsurface conditions and ground water and soil data to assess exposure pathways and risks to relevant receptors. Based on a review of the field and laboratory QA/QC data, there are no issues that would affect the interpretation of the results.



4.0 CONCLUSIONS

4.1 Areas Where Contaminants are Present

The Phase Two ESA used the [Table 2](#) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011).

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

- EC
- SAR

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

- EC
- SAR

The Contaminants of Concern associated with the ground water are:

- Barium
- Chloride
- Sodium
- [Trichloroethylene](#)

With respect to the APECs identified at the Property, the following exceedances were noted in each media:

- APEC 1 is impacted by EC and SAR in the earth fill and native soils
- APEC 1 is impacted by barium, chloride and sodium in the ground water
- ~~APEC 2 is impacted by trichloroethylene in the ground water~~

[The MGRA considered Table 6 RPI Standards. As such, in addition to the above, trichloroethylene exceedance was also present in ground water in one borehole at the Property during one of the four most recent sampling events.](#)

4.2 Distribution of Contaminant

ORP contaminants EC and SAR was found within the fill soil at BH102, BH103, BH201 and BH203. ORP contaminant EC and SAR was found within the native soil at BH101, BH102 and BH201. It should be noted that a majority of the impacted fill material and native soils will likely be removed from the Property during construction earth works, and will be replaced with either clean fill or underground parking structures. As such it is unlikely that soil impacts will remain on the Property upon development of the proposed buildings.



Barium was found in the ground water at ~~BH101 and~~ BH103. Sodium and chloride was found in the ground water at BH101, BH102 and BH103.

As noted in Section 3.1.5, barium is not considered a CoC in the ground water of BH101 and trichloroethylene is not considered a CoC in BH201-D and BH203 for the purposes of the Phase Two ESA.

Figures 6 to 23 depict the location, concentration of each contaminant found at the Property, and the vertical extent of soil and ground water contamination. It is noted that Figure 21A-23A show historical trichloroethylene exceedances for illustration purposes.

4.3 Reasons for Discharge of Contaminant

The origin of EC and SAR in the soil, and sodium and chloride in the ground water can be attributed to the long-term application of road salt for de-icing on the paved /parking areas present the Property and municipal roads adjacent to the Property. The origin of metals in the ground water can be attributed to the presence of low quality fill material used during historical development of the Property. ~~The origin of trichloroethylene in the ground water can be attributed to the presence of unknown off-site sources located upgradient of the Property.~~

Based on the available soil and ground water information, it is possible that there may be discharges of contaminants onto the Property from upgradient off-site sources into the soil and ground water.

4.4 Migration of Contaminant

The EC and SAR impacts are expected to migrate down into the soil through cracks in the asphalt. The ORP contaminants within the fill material are unlikely to migrate substantial distances horizontally or vertically due to the nature of the contaminants. It should be noted that the impacted fill material and native soils will likely be removed from the Property during construction earth works, and will be replaced with either clean fill or underground parking structures. As such it is unlikely that soil impacts will remain on the Property upon development of the proposed buildings.

The ground water contaminants (barium, sodium, and chloride ~~and trichloroethylene~~) are expected to migrate horizontally, in the direction of the ground water flow, where contaminants are expected to flow in a south to southeast direction.

There may be future migration of contaminants from the off-site sources.



4.5 Climatic or Meteorological Influences on Migration

The Property is currently covered by asphalt/concrete and has limited landscaped areas with a soft cover. Climatic or meteorological influence on migration of potential contamination on the Property is unlikely due to the asphalt/concrete cover. Limited influence may be possible through surface water infiltration through the areas with a soft cover. However, as the soil contaminants have limited mobility, it is unlikely the influence of climatic or meteorological effects would affect migration substantially.

Future migration of contaminants from the off-site sources may be possible due to climatic or meteorological influences.

4.6 Soil Vapour Intrusion into Buildings

~~Contaminants of Concern were identified in the soil and ground water upon completion of the investigation. Trichloroethylene (a Volatile contaminants compound) exceeding exceeded the SCS (Table 2 RPI) were identified during the initial ground water sampling events, but was. However, trichloroethylene was eliminated as a CoC based on the results of additional sampling events, as explained in detail in Section 3.15. However, as the MGRA considered Table 6 RPI Standards and trichloroethylene exceedance was present in the ground water in BH201-D during one of the four most recent sampling events, this COC has been considered for the MGRA.~~ As such, there is the possibility for soil vapour intrusion of contaminants into future proposed building.

4.7 Subsurface Structures and Utilities

There are underground utilities present on the Property. Buried utilities are located on the Property above the static water table (approximately 7 m below grade). As such, it is unlikely that the buried utilities will serve as preferential pathways for the migration of Contaminants of Concern.

4.8 Summary

The Phase Two Conceptual Site Model is shown as a stand-alone document in Appendix B of the Modified Generic Risk Assessment. The lateral exceedances found in the soil and ground water have been delineated by the boundaries of the Property. The vertical extents of contaminants found in the soil have been vertically delineated to evaluate the maximum site concentrations.

Exceedances of the applicable site condition standards were noted in the earth fill, native soils and in the ground water on the Property. It should be noted that a majority of the impacted fill material and native soils will likely be removed from the Property during construction earth works, and will be replaced with either clean fill or underground parking structures. As such it is unlikely that soil impacts will remain on the Property upon development of the proposed buildings.



~~It is noted that the concentrations of trichloroethylene within two monitoring wells (BH203 and BH201-D) exceeded the T2 RPI Standards during one or more of the sampling events. These concentrations were observed to be well below the T2 RPI Standards during the two subsequent sampling events (January & February 2018). As the concentrations of trichloroethylene in these monitoring wells were intermittently detected, the QP has noted it to be included as a COC for the purposes of this Phase Two CSM. Additional seasonal confirmatory sampling may be conducted in these location to further confirm the concentrations and to eliminate trichloroethylene as a COC.~~

The environmental conditions are such that it is not possible to remediate the ground water to the Generic Site Condition Standards without the need for a Risk Assessment. As such there is a requirement for a Risk Assessment to occur for the Property.

It is noted that the concentrations of trichloroethylene within two monitoring wells (BH203 and BH201-D) exceeded the T2 RPI Standards during the initial sampling events. As discussed in Section 3.15, the QP_{ESA} believed these exceedances to be anomalies. These monitoring wells were purged and resampled seasonally on four separate occasions (January, June and September, 2018). The TCE concentrations during all four sampling events was not detected or well below the Table 2 SCS. Due to the QA/QC concerns with the sampling results prior to these events (i.e. December 2017 and January 2018), the QP_{ESA} will only be relying on the results from the four most recent sampling events (January, June and September, 2018) for BH201-D and BH203 for the purposes of the Phase Two ESA and MGRA. Although the TCE concentrations from these sampling events meet the Table 2 SCS, it has been included as a COC in the MGRA which considers Table 6 Standards. As such, the maximum concentration of 0.58 ug/L (BH201-D during January 2018 event) for the TCE COC has been considered for the MGRA.

As discussed in Section 3.3, the shallowest measured depth to groundwater differs from the generic MECP assumption which was the basis for developing the generic SCS. This difference will be accounted for in the Risk Assessment. There are no other hydrogeological and geological interpretations observed at the Property that differ from the assumption on which the Soil, Ground Water and Sediment Standards are based as noted in the MECP *Rationale For The Development Of Soil And Ground Water Standards For Use At Contaminated Sites In Ontario* (April, 2011) document.

4.9 Signatures

The Phase One and Phase Two ESA have been completed by Ms. Suvish Melanta, P.Eng., QP_{ESA} under the direction and supervision of Matthew J. Bielaski, P.Eng., QP_{RA}. The findings and conclusions presented in this report have been determined on the basis of the information that was obtained and reviewed from review of previous investigations provided and on the current investigation for the Property.



The Phase One and Phase Two Environmental Site Assessment were completed in accordance with Ontario Regulation 153/04 (Records of Site Condition–Part XV.1 of the Environmental Protection Act). The Phase One and Phase Two Environmental Site Assessment met the objectives and requirements set out in that Ontario Regulation 153/04 for a Phase One and Phase Two Environmental Site Assessment were applied in carrying out the environmental site assessments and preparation of the reports.

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.

Suvish Melanta, P.Eng., QP_{ESA}
Environmental Engineer

Matthew J. Bielaski, P.Eng., QP_{RA}
Associate

Brampton Office



TABLES

TERRAPROBE INC.

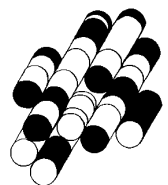


TABLE 1
SOIL QUALITY ANALYSIS
METALS
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MOECC		RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)	
		Table 2	2011 Criteria			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	
		2011 Criteria	RPI CT			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
		Parameter				232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47	213.03-212.78	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	
Barium	µg/g	390	1	203	57.3	188	115	16	101	138	134	34	22.1	203	144	25.5	39.2	83.9	108	44.5		
Beryllium	µg/g	4	0.5	0.9	<0.50	0.72	<0.5	<0.50	<0.50	0.54	<0.50	<0.50	<0.50	0.9	0.66	<0.5	<0.5	<0.5	<0.5	<0.5		
Boron	µg/g	120	5	17	5.4	15.7	6.2	<5.0	8.9	12.2	10.8	<5.0	<5.0	17	12.5	<5.0	<5.0	5.1	9.6	<5.0		
Cadmium	µg/g	1.2	0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Chromium	µg/g	160	1	38.5	17.8	34.1	18.9	8	17.4	27.6	26.5	11.6	7.9	38.5	29.7	9	11.2	12.9	22.5	12.1		
Cobalt	µg/g	22	1	12.2	4.70	11.50	4.50	1.9	5.60	8.9	8.80	3.5	2.4	12.2	9.4	2.2	3.6	3.6	7.2	3.8		
Copper	µg/g	140	1	25.8	8.80	21.80	8.80	4.00	10.30	20.90	19.00	7.80	5.90	25.80	20.80	5.60	7.00	7.20	17.10	7.60		
Lead	µg/g	120	1	84	3.6	6.9	84	1	3.5	5.5	5.2	2.3	1	8.1	6.2	1.5	3.7	2	5.1	3.1		
Molybdenum	µg/g	6.9	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
Nickel	µg/g	100	1	28.1	9.3	24.4	8.8	3.1	10.8	18.1	17.9	7.2	4.7	28.1	20.9	4.5	7.4	6.4	15.9	7.7		
Silver	µg/g	20	0.2	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
Thallium	µg/g	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		
Uranium	µg/g	23	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
Vanadium	µg/g	86	1	51.6	41	46.8	38.8	22.8	30.6	41.6	40.7	24.5	18.6	51.6	42.6	23.6	27.8	27.3	34.5	28.9		
Zinc	µg/g	340	5	79.9	27.6	54.8	79.9	8.2	30	43.3	43.4	18.5	11.3	84.6	48.1	10	19.9	20.6	37	22.4		

Comments:
Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G/S - Guideline / Standard
150 - Detection limit exceeded Standard
160 - Sample result exceeded Standard
pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.
NV - No Value
NA - Not Analyzed

TABLE 2
 SOIL QUALITY ANALYSIS
 HYDRIDE METALS
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)	
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	
Parameter																					
Antimony	µg/g	7.5	1	3.4	<1.0	<1.0	3.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Arsenic	µg/g	18	1	2.9	1.5	2.5	1.8	<1.0	1.3	2.2	2.2	1.1	<1.0	2.9	2.2	<1.0	1.2	<1.0	2.3	1.2	
Selenium	µg/g	2.4	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

NV- No Value

NA-Not Analyzed

TABLE 3
SOIL QUALITY ANALYSIS
BORON - HOT WATER SOLUBLE
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)	
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	
Parameter																					
Boron (Hot Water Soluble)	µg/g	1.5	0.1	0.31	<0.1	0.19	0.2	<0.1	<0.1	0.18	0.2	<0.10	<0.10	0.31	0.25	<0.10	<0.10	<0.10	0.17	<0.10	

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

NV- No Value
 NA-Not Analyzed

TABLE 4
SOIL QUALITY ANALYSIS
HEXAVALENT CHROMIUM
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16
Date	2011 Criteria	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	
Elev of Sample (masl)	RPI CT	232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32			
Parameter																				
Chromium VI	µg/g	8	0.2	1.12	1.12	0.28	0.54	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

NV- No Value
NA-Not Analyzed

TABLE 5
SOIL QUALITY ANALYSIS
CYANIDE
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)
					L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.6-219.19	216.06-216.47	213.03-212.75	232.93-232.32	226.93-226.22	223.78-223.17	232.93-232.32
Parameter																				
Cyanide (CN-)	µg/g	0.051	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit: G / S - Guideline / Standard

<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

NV- No Value

NA-Not Analyzed

TABLE 6
 SOIL QUALITY ANALYSIS
 ELECTRICAL CONDUCTIVITY
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77
Parameter													
Electrical Conductivity (mS/cm)	mS/cm	0.7	0.004	2.88	0.951	0.201	0.661	0.372	0.527	0.679	0.498	1.15	0.757

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard

EC were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

NV- No Value
 NA-Not Analyzed

TABLE 6
 SOIL QUALITY ANALYSIS
 ELECTRICAL CONDUCTIVITY
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)	BH101-SA4	BH101-SA7	BH102-SA6	BH103-SA6	BH201-SA5	BH202-SA1	BH203-SA6	
Lab ID #		Table 2			L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	L2022921-1	L2022921-2	L2022921-3	L2022921-4	L2022921-7	L2022921-8	L2022921-9	
Date		2011 Criteria			23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	31-Jul-17	31-Jul-17	1-Aug-17	31-Jul-17	23-Oct-17	24-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			219.8-219.19	216.08-215.47	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	232.25-231.64	228.44-227.83	229.94-229.53	229.81-229.53	231.99-231.39	225.23-224.62	229.88-229.27	
Parameter																			
Electrical Conductivity (mS/cm)	mS/cm	0.7	0.004	2.88	0.242	0.241	0.31	2.86	0.118	0.226	2.88	1.49	0.135	0.337	0.18	0.55	0.279	0.592	

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard

EC were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

NV- No Value
 NA-Not Analyzed

TABLE 7
SOIL QUALITY ANALYSIS
MERCURY
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)	
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	
Parameter																					
Mercury	µg/g	0.27	0.005	0.117	0.008	0.0096	0.117	<0.005	0.0054	0.0075	0.0074	<0.005	<0.005	0.0113	0.0096	<0.005	0.0054	<0.005	0.0087	0.0065	

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

NV- No Value
NA-Not Analyzed

TABLE 8
 SOIL QUALITY ANALYSIS
 SODIUM ADSORPTION RATIO
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2 *	BH201-SA10**	BH201-SA13	BH202-SA7
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47
Parameter															
Sodium Adsorption Ratio	---	5	0.1	26.1	6.79	1.93	9.64	4.18	22.4	2.88	2.35	>40	26.1	1.51	0.85

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

< 150	Detection limit exceeded Standard
150	Sample result exceeded Standard

- BH000-SA0 * Lab noted that SAR is incalculable due to Ca and Mg below DL. Lowest possible SAR is reported as minimum value.
- BH201-SA2* Lab reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

NV- No Value
 NA-Not Analyzed

TABLE 8
 SOIL QUALITY ANALYSIS
 SODIUM ADSORPTION RATIO
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH202-SA9	BH203-SA3	BH203-SA8 *	BH203-SA10	DUP2 (BH203-SA3)	BH101-SA4	BH101-SA7	BH102-SA6	BH103-SA6	BH201-SA5 *	BH202-SA1	BH203-SA6	BH201-SA12	BH102-SA8
Lab ID #		Table 2			L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	L2022921-1	L2022921-2	L2022921-3	L2022921-4	L2022921-7	L2022921-8	L2022921-9	L2033273-1	L2033273-2
Date		2011 Criteria			24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	31-Jul-17	31-Jul-17	1-Aug-17	31-Jul-17	23-Oct-17	24-Oct-17	25-Oct-17	23-Oct-17	4-Aug-17
Elev of Sample (masl)	RPI CT	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	232.25-231.94	228.44-227.83	229.94-229.53	229.81-229.53	213.99-231.39	225.23-224.62	229.88-229.27	221.3-220.7	226.89-226.28			
Parameter																		
Sodium Adsorption Ratio	---	5	0.1	26.1	4.34	18.9	> 0.73	1.05	20.9	21.3	1.05	7.53	0.86	>17	1.71	3.36	0.13	5.72

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit;	G / S - Guideline / Standard
< 150	Detection limit exceeded Standard
150	Sample result exceeded Standard

- BH000-SA0 * Lab noted that SAR is incalculable due to Ca and Mg below DL. Lowest possible SAR is reported as minimum value.
- BH201-SA2* Lab reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil).

NV- No Value
 NA-Not Analyzed

TABLE 9
SOIL QUALITY ANALYSIS
pH
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2 (BH203-SA3)	
Lab ID #		Table 2			L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16	
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			232.9-232.2	222.3-221.7	233.7-233.1	222.3-221.7	233.6-233	222.2-211.6	222.2-211.6	234.28-233.67	224.37-223.77	219.8-219.19	216.08-215.47	213.03-212.75	232.93-232.32	226.83-226.22	223.78-223.17	232.93-232.32	
Parameter																					
pH	-	-	0.1	8.42	7.77	7.71	7.72	7.81	7.73	7.92	8	7.96	8.06	8.42	8.2	8.03	7.8	8.02	8.03	7.79	

Comments:
Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.
NV- No Value
NA-Not Analyzed

TABLE 10
 SOIL QUALITY ANALYSIS
 POLYCYCLIC AROMATIC HYDROCARBONS
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA2	BH101-SA10B	BH102-SA3	BH102-SA12	BH103-SA3	BH103-SA10	DUP1 (BH103-SA10)	BH201-SA2	BH201-SA12	BH202-SA7	BH203-SA4	BH203-SA10	DUP3 (BH203-SA4)
Lab ID #		Table 2			L1972459-1	L1972459-3	L1972459-6	L1972459-8	L1972459-10	L1972459-12	L1972459-13	L2014021-1	L2014021-4	L2014021-6	L2014021-11	L2014021-14	L2014021-17
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			233.8-233.2	223.7-223.3	233-232.4	220.8-220.2	232.7-232.1	223.7-223.1	223.7-223.1	234.28-233.67	221.33-220.72	216.08-215.47	232.16-231.55	223.78-223.17	232.16-231.55
Parameter																	
Moisture Content	%	-	-		14.9	17.3	11.8	24.3	10.80	15.5	17.9	8.56	22.2	20.3	10.2	15.2	9.6
Acenaphthene	µg/g	7.9	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	µg/g	0.15	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	µg/g	0.67	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	µg/g	0.5	0.05	0.085	<0.05	<0.05	0.085	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	µg/g	0.3	0.05	0.085	<0.05	<0.05	0.085	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	µg/g	0.78	0.05	0.105	<0.05	<0.05	0.105	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	µg/g	6.6	0.05	0.057	<0.05	<0.05	0.057	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	µg/g	7	0.05	0.097	<0.05	<0.05	0.097	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	µg/g	0.69	0.05	0.164	<0.05	<0.05	0.164	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	µg/g	62	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	0.054	<0.05	<0.05	0.054	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene	µg/g	0.99	0.03	<0.030	<0.042	<0.042	<0.042	<0.042	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	µg/g	0.99	0.03	<0.030	<0.03	<0.03	<0.030	<0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-and 1-Methylnaphthalene	µg/g	0.99	0.042	<0.042	<0.03	<0.03	<0.030	<0.03	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Naphthalene	µg/g	0.6	0.05	<0.050	<0.05	<0.05	<0.050	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/g	6.2	0.05	0.091	<0.05	<0.05	0.091	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	µg/g	78	0.05	0.16	<0.05	<0.05	0.160	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Fluorobiphenyl	%				90.6	90.6	90.7	84.4	92.2	92.3	94.0	93.3	104.9	105.0	107.5	99.1	107.6
p-Terphenyl d14	%				89.1	90.7	89.7	85.6	89.8	93.2	97.4	99.0	118.6	116.9	115.1	112.3	118.4

Comments:
 Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
 RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard
 150 Sample result exceeded Standard

NV- No Value
 NA-Not Analyzed

TABLE 11
SOIL QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
OWEN STREET & WORLSEY STREET
BARRIE, ONTARIO
PROJECT #11-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA2	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA3	BH103-SA10	DUP1 (BH103-SA10)	BH201-SA2	BH201-SA9	BH202-SA8	BH203-SA2	BH203-SA9	DUP1 (BH203-SA2)
		Table 2			L1972459-1	L1972459-4	L1972459-5	L1972459-7	L1972459-10	L1972459-12	L1972459-13	L2014021-1	L2014021-2	L2014021-7	L2014021-9	L2014021-13	L2014021-15
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			233.8-233.2	222.3-221.7	233.7-233.1	222.3-211.7	232.7-232.1	223.7-223.1	223.7-223.1	234.28-233.67	225.9-225.29	214.56-213.95	233.69-233.08	225.31-224.7	233.69-233.08
Parameter																	
Moisture	%	-	1		14.9	15.4	14.3	15.2	10.80	15.5	17.9	8.56	18.3	18.9	11.4	15.8	10.5
F1 (C6 to C10)	µg/g	55	10	<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
F1-BTEX (C6-C10)	µg/g	55	10	<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
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2-Naphth	µg/g	-	10	0	<10	-	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3-PAH	µg/g	-	50	0	<50	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Hydrocarbons (C6-C50)	µg/g	-	72	<72	<72	<72	<72	<72	<72	<72	<72	<72	<72	<72	<72	<72	<72
Gravimetric Heavy Hydrocarbons	µg/g	2800	200	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromatogram returned to baseline at nC50	-	-	-		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
2-Bromobenzotrifluoride	%	-	-		84.5	87	88.5	74.2	77	91.4	75.6	88.4	77.6	88	75.7	84	85.4
3,4-Dichlorotoluene	%	-	-		97	95.3	92.4	100.5	109.8	88.7	96.1	91.8	88.8	93.1	82.3	90	92.4

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

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 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 with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not

requested by the client.

Quality Control Data is available upon request

NV- No Value

NA-Not Analyzed

TABLE 12
 SOIL QUALITY ANALYSIS
 BENZENE, TOULENE, ETHYLBENZENE, XYLENE
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA2	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA3	BH103-SA10	DUP1 (BH103-SA10)	BH201-SA2	BH201-SA9	BH202-SA8	BH203-SA2	BH203-SA9	DUP1 (BH203-SA2)
Lab ID #		Table 2			L1972459-1	L1972459-4	L1972459-5	L1972459-7	L1972459-10	L1972459-12	L1972459-13	L2014021-1	L2014021-2	L2014021-7	L2014021-9	L2014021-13	L2014021-15
Date		2011 Criteria			31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT			233.8-233.2	222.3-221.7	233.7-233.1	222.3-211.7	232.7-232.1	223.7-223.1	223.7-223.1	234.28-233.67	225.9-225.29	214.56-213.95	233.69-233.08	225.31-224.7	233.69-233.08
Parameter																	
Moisture	%	-	1		14.9	15.4	14.3	15.2	10.80	15.5	17.9	8.56	18.3	18.9	11.4	15.8	10.5
Benzene	µg/g	0.21	0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	µg/g	1.1	0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Toluene	µg/g	2.3	0.08	<0.08	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Xylene Mixture	µg/g	3.1	0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m/p-xylene	µg/g	-	0.03	<0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
o-xylene	µg/g	-	0.02	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150	Detection limit exceeded Standard
150	Sample result exceeded Standard

NV- No Value
 NA-Not Analyzed

TABLE 12
 SOIL QUALITY ANALYSIS
 BENZENE, TOULENE, ETHYLBENZENE, XYLENE
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC		RDL	Maximum
		Table 2			
		2011 Criteria			
		RPI CT			
Parameter					
Moisture	%	-	1		
Benzene	µg/g	0.21	0.0068	<0.0068	
Ethylbenzene	µg/g	1.1	0.018	<0.018	
Toluene	µg/g	2.3	0.08	<0.08	
Xylene Mixture	µg/g	3.1	0.05	<0.05	
m/p-xylene	µg/g	-	0.03	<0.03	
o-xylene	µg/g	-	0.02	<0.02	

Comments:

Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150	Detection limit exceeded Standard
150	Sample result exceeded Standard

NV- No Value
 NA-Not Analyzed

TABLE 14
 SOIL QUALITY ANALYSIS
 TRIHALOMETHANES
 OWEN STREET & WORLSEY STREET
 BARRIE, ONTARIO
 PROJECT #1-17-0481-42

Sample Name	Units	MOECC	RDL	Maximum	BH101-SA2	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA3	BH103-SA10	DUP1 (BH103-SA10)	BH201-SA2	BH201-SA9	BH202-SA8	BH203-SA2	BH203-SA9	DUP1 (BH203-SA2)	
Lab ID #		Table 2		-	L1972459-1	L1972459-4	L1972459-5	L1972459-7	L1972459-10	L1972459-12	L1972459-13	L2014021-1	L2014021-2	L2014021-7	L2014021-9	L2014021-13	L2014021-15	
Date		2011 Criteria		-	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)		RPI CT		-	233.8-233.2	222.3-221.7	233.7-233.1	222.3-211.7	232.7-232.1	223.7-223.1	223.7-223.1	223.7-223.1	234.28-233.67	225.9-225.29	214.56-213.95	233.69-233.08	225.31-224.7	233.69-233.08
Parameter																		
Moisture Content	%	-	-		14.9	15.4	14.3	15.2	10.80	15.5	17.9	8.56	18.3	18.9	11.4	15.8	10.5	
Bromodichloromethane	µg/g	1.5	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Bromoform	µg/g	0.27	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Dibromochloromethane	µg/g	2.3	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	

Comments:
 Results compared to MOECC 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
 RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard
 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed.
 Results are based on the dry weight of the soil.
 NV- No Value
 NA-Not Analyzed

TABLE 15
GROUND WATER QUALITY ANALYSIS
METALS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103
		Table 2	2011 Criteria			L1977878-1	L2033776-1	L2046388-1	L2212854-1	L2212851-1	L2216676-1	L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3
Date						11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17
Elev of Sample (masl)						224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66
Parameter		RPI	CT													
Barium	µg/L	1000	1	1220	210	357	1330*	151	151	151	517	439	222	251	1630	
Beryllium	µg/L	4	1	<1.0	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (total)	µg/L	5000	100	79	77	75	<100	74	73	79	<100	<100	<100	<100	<100	<100
Cadmium	µg/L	2.7	0.1	0.064	<0.01	0.012	<0.050	<0.010	<0.010	<0.010	<0.1	0.064	<0.050	<0.050	<0.050	<0.10
Chromium Tota	µg/L	50	5	17.4	<0.5	<0.05	<5.0	<0.50	<0.50	<0.50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cobalt	µg/L	3.8	1	3.8	0.16	0.39	<1.0	<0.10	<0.10	<0.10	2.70	3.8	1.0	3.8	1.40	
Copper	µg/L	87	2	20.9	1.93	0.59	6.00	1.3	1.3	3.3	<2.0	<2.0	<2.0	<2.0	3.10	
Lead	µg/L	10	0.05	1.03	0.303	0.069	<0.50	0.066	0.067	0.245	<0.5	<0.50	<0.50	<0.50	<0.5	
Molybdenum	µg/L	70	0.05	13.2	8.33	8.24	5.43	3.3	3.1	3.0	6.15	6.18	2.34	2.6	5.85	
Nickel	µg/L	100	0.5	7.4	0.72	0.91	<5.0	<0.50	<0.50	0.7	<5.0	7.40	<5.0	6.9	<5.0	
Silver	µg/L	1.5	0.05	0.19	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.50	<0.50	<0.50	<0.50	<0.50	
Thallium	µg/L	2	0.01	0.031	0.031	<0.01	<0.10	0.013	0.012	0.013	<0.10	<0.10	<0.10	<0.10	<0.10	
Uranium	µg/L	20	0.01	6.09	2.89	3.5	2.45	2.19	2.11	2.02	2.13	3.35	2.86	4.29	2.85	
Vanadium	µg/L	6.2	0.5	1.95	1.64	1.58	<5.0	2.0	2.0	1.8	<5.0	<5.0	<5.0	<5.0	<5.0	
Zinc	µg/L	1100	1	40	3	1.7	<10	1.8	1.7	3.6	<10	40.0	<10	<10	<10	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

Additional results

150* Result rejected by QP. Refer to report for more details.

NV-No Value

NA-Not Analyzed

TABLE 15
GROUND WATER QUALITY ANALYSIS
METALS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	DUP1	BH103	BH103	BH103	BH103	DUP	BH201-S	BH201-S	DUP	BH201-S	DUP2	BH201-S	BH201-S	BH201-D			
Lab ID #		Table 2				(BH103)					(BH103)					(BH201-S)	(BH201-S)					
Date		2011 Criteria					L1977878-4	L2033776-3	L2046388-3	L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13	L2212837-2	L2020783			
Elev of Sample (masl)							11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	8-Nov-17			
Parameter	RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	213.71-210.66			
Barium	µg/L	1000	1	1240	1640	1640	145	1650	1230	1210	250	300	301	319	305	293	22					
Beryllium	µg/L	4	1	<1.0	<1.0	<1.0	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.10	<0.10				
Boron (total)	µg/L	5000	100	79	<100	<100	71	<100	<100	<100	<100	<100	<100	<100	<100	<100	38	23				
Cadmium	µg/L	2.7	0.1	0.064	<0.1	<0.05	<0.010	<0.050	<0.050	<0.050	<0.10	<0.05	<0.05	<0.050	<0.050	<0.010	0.013					
Chromium Tota	µg/L	50	5	17.4	<5.0	<5.0	<0.50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.3	<0.50					
Cobalt	µg/L	3.8	1	3.8	1.30	1.6	0.1	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.1	0.10					
Copper	µg/L	87	2	20.9	2.80	<2.0	1.4	2.2	20.6	20.9	2.2	<2.0	<2.0	2.40	<2.0	1.0	3.10					
Lead	µg/L	10	0.05	1.03	<0.5	<0.50	0.061	<0.50	1.03	1.01	<0.50	<0.50	<0.50	<0.50	<0.50	0.27	0.128					
Molybdenum	µg/L	70	0.05	13.2	5.81	13.20	5.31	4.2	4.9	4.6	1.61	1.06	0.86	<0.50	<0.50	0.2	3.05					
Nickel	µg/L	100	0.5	7.4	<5.0	<5.0	0.61	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	0.6	1.08					
Silver	µg/L	1.5	0.05	0.19	<0.50	<0.50	<0.050	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.050	<0.05	<0.05					
Thallium	µg/L	2	0.01	0.031	<0.10	<0.10	0.013	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.010	<0.010					
Uranium	µg/L	20	0.01	6.09	2.86	3.23	3.4	2.38	1.77	1.71	0.85	0.66	0.68	0.59	0.61	0.522	0.673					
Vanadium	µg/L	6.2	0.5	1.95	<5.0	<5.0	1.64	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.3	0.92						
Zinc	µg/L	1100	1	40	<10	<10	2.2	<10	10.0	<10	<10	<10	<10	<10	<10	1.4	3.1					

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standar

150 Sample result exceeded Standar

Additional results

150* Result rejected by QP. Refer to report for more details.

NV-No Value

NA-Not Analyzed

TABLE 15
GROUND WATER QUALITY ANALYSIS
METALS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH101	DUP (BH101)	
Lab ID #		Table 2				L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783	L2033776-6	L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1	L2256179-1	L2256179-2
Date		2011 Criteria				8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)	RPI CT		213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99	213.03-209.99	213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	224.02-220.97	224.02-220.97		
Parameter	RPI CT																		
Barium	µg/L	1000	1	1210	18.9	41.6	243	210	130	203	286	286	61.5	143	101	180	526	539	
Beryllium	µg/L	4	1	<1.0	<0.10	<0.10	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0	<1.0	
Boron (total)	µg/L	5000	100	79	22	21	27	<10	<100	15	<10	<10	34	64	26	11	<100	<100	
Cadmium	µg/L	2.7	0.1	0.064	<0.01	0.013	<0.010	<0.010	<0.10	<0.01	<0.010	<0.010	<0.01	<0.01	<0.010	<0.010	<0.050	<0.050	
Chromium Tota	µg/L	50	5	17.4	<0.50	<0.50	0.8	<0.50	17.4	0.77	<0.50	<0.50	0.87	<0.50	<0.50	<0.50	<5.0	<5.0	
Cobalt	µg/L	3.8	1	3.8	<0.10	<0.10	0.23	<0.10	<1.0	0.2	<0.10	0.16	0.27	0.11	<0.10	<0.10	3.20	2.80	
Copper	µg/L	87	2	20.9	1.75	1.5	0.92	0.3	6.9	0.32	0.8	0.3	1.53	0.55	0.64	0.3	3.00	3.10	
Lead	µg/L	10	0.05	1.03	<0.05	<0.05	0.099	<0.050	0.55	<0.05	0.099	<0.050	<0.05	0.055	<0.050	<0.050	<0.50	<0.50	
Molybdenum	µg/L	70	0.05	13.2	2.96	3.65	0.51	0.8	12.5	1.60	0.50	0.7	4.06	6.64	3.32	0.8	3.31	3.39	
Nickel	µg/L	100	0.5	7.4	0.94	0.81	0.64	<0.50	<5.0	0.56	<0.50	<0.50	<0.50	0.75	0.51	<0.50	<5.0	<5.0	
Silver	µg/L	1.5	0.05	0.19	0.19	<0.05	<0.050	<0.050	<0.50	<0.05	<0.050	<0.050	<0.05	<0.05	<0.050	<0.050	<0.50	<0.50	
Thallium	µg/L	2	0.01	0.031	<0.01	<0.01	<0.010	<0.010	<0.10	<0.01	<0.010	<0.010	<0.01	<0.01	<0.010	<0.010	<0.10	<0.10	
Uranium	µg/L	20	0.01	6.09	0.644	0.729	0.646	1.11	3.43	2.54	3.19	3.24	0.521	1.24	2.91	1.56	5.9	6.09	
Vanadium	µg/L	6.2	0.5	1.95	0.86	1.38	0.85	0.8	6.8*	1.14	1.0	1.0	1.3	1.29	0.82	<0.50	<5.0	<5.0	
Zinc	µg/L	1100	1	40	1.7	1.3	2.9	<1.0	<10	1.3	2.3	<1.0	2.5	1.1	2.20	<1.0	<10	<10	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standar
150 Sample result exceeded Standar
Additional results
150* Result rejected by QP. Refer to report for more details.

NV-No Value
NA-Not Analyzed

TABLE 16
GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)	
Lab ID #		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783	L2020783
Date		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66	
Parameter														
Antimony	µg/L	6	0.1	0.45	0.45	<1.0	<1.0	<1.0	<1.0	0.21	<1.0	<1.0	0.21	
Arsenic	µg/L	25	0.1	2.7	1.14	<1.0	<1.0	<1.0	<1.0	0.97	2.7	1.01	0.95	
Selenium	µg/L	10	0.05	2.11	1.61	<0.50	0.86	0.79	1.66	0.187	0.57	0.083	0.19	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional results

NV-No Value
NA-Not Analyzed

TABLE 16
GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP ² (BH201-S)	
Lab ID #		Table 2			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13	
Date		2011 Criteria			7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	
Parameter																					
Antimony	µg/L	6	0.1	0.45	0.2	<1.0	<1.0	<1.0	0.21	<0.10	0.16	<1.0	<1.0	<1.0	0.2	<1.0	<0.10	<0.10	<0.10	<1.0	
Arsenic	µg/L	25	0.1	2.7	1.01	<1.0	<1.0	<1.0	1.03	0.37	0.76	<1.0	<1.0	<1.0	1.0	<1.0	0.4	0.2	1.0	<1.0	
Selenium	µg/L	10	0.05	2.11	0.781	<0.5	0.97	1.81	0.193	0.119	0.595	1.73	0.72	<0.50	0.733	1.63	1.6	0.092	0.097	1.86	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standar
<150 Detection limit exceeded Standar
150 Sample result exceeded Standar
 Additional results

NV-No Value
 NA-Not Analyzed

TABLE 16
GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH202	BH201-S	BH201-D	BH203	BH102	DUP (BH101)	BH103	BH101	BH101	BH103	DUP (BH103)	BH101	DUP (BH101)	
Lab ID #		Table 2			L2212837-1	L2212837-2	L2212837-3	L2212841-1	L2212844-1	L2212851-1	L2212853-1	L2212854-1	L2216676-1	L2218841-1	L2218841-2	L2256179-1	L2256179-2	
Date		2011 Criteria			19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Jan-19	10-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)		RPI CT			213.03-209.99	228.95-225.9	213.71-210.66	213.11-210.07	225.36-222.32	224.02-220.97	223.71-220.66	224.02-220.97	224.02-220.97	223.71-220.66	223.71-220.66	224.02-220.97	224.02-220.97	
Parameter																		
Antimony	µg/L	6	0.1	0.45	<0.10	<0.10	<0.10	<0.10	<1.0	<0.10	<1.0	0.1	<0.10	<1.0	<1.0	<1.0	<1.0	
Arsenic	µg/L	25	0.1	2.7	0.2	0.2	0.3	0.2	<1.0	1.1	<1.0	1.1	1.7	<1.0	<1.0	<1.0	<1.0	
Selenium	µg/L	10	0.05	2.11	0.087	2.11	<0.050	<0.050	<0.50	0.188	0.7	0.218	0.299	0.94	0.81	0.5	<0.50	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional results

NV-No Value
NA-Not Analyzed

TABLE 17
GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)	BH101	BH102	
Lab ID #		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783	L2020783	L2033776-1	L2033776-2
Date		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	7-Dec-17	7-Dec-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66	224.02-220.97	225.36-222.32	
Parameter																
Chromium VI	µg/L	25	1	20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20	10.5	<1.0	<1.0	<1.0	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional results

NV-No Value
NA-Not Analyzed

TABLE 17
GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2 (BH201-S)
Lab ID #		Table 2			L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
Date		2011 Criteria			7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9
Parameter																		
Chromium VI	µg/L	25	1	20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1	0.12	<1.0	0.23	0.12	0.11	<1.0

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional results

NV-No Value
NA-Not Analyzed

TABLE 17
GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH202	BH201-S	BH201-D	BH203	BH102	DUP (BH101)	BH103	BH101	BH101	BH103	DUP (BH103)	BH101	DUP (BH101)
		Table 2 2011 Criteria			L2212837-1	L2212837-2	L2212837-3	L2212841-1	L2212844-1	L2212851-1	L2212853-1	L2212854-1	L2216676-1	L2218841-1	L2218841-2	L2256179-1	L2256179-2
Date					19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Jan-19	10-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)					213.03-209.99	228.95-225.9	213.71-210.66	213.11-210.07	225.36-222.32	224.02-220.97	223.71-220.66	224.02-220.97	224.02-220.97	223.71-220.66	223.71-220.66	224.02-220.97	224.02-220.97
Parameter		RPI CT															
Chromium VI	µg/L	25	1	20	<0.50	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.010	<0.010	<0.50	0.69

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional results

NV-No Value
NA-Not Analyzed

TABLE 18
GROUND WATER QUALITY ANALYSIS
CYANIDE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
Lab ID #		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783
Date		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66
Parameter													
Cyanide (CN ⁻)	µg/L	66	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard

<150	Detection limit exceeded Standard
150	Sample result exceeded Standard

Additional results
NV-No Value
NA-Not Analyzed

TABLE 18
GROUND WATER QUALITY ANALYSIS
CYANIDE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP ² (BH201-S)
Lab ID #		Table 2			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
Date	2011 Criteria	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18
Elev of Sample (masl)	RPI CT	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9			
Parameter																				
Cyanide (CN ⁻)	µg/L	66	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
 Additional results
 NV-No Value
 NA-Not Analyzed

TABLE 18
GROUND WATER QUALITY ANALYSIS
CYANIDE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH202	BH201-S	BH201-D	BH203	BH102	DUP (BH101)	BH103	BH101	BH101	BH103	DUP (BH103)	BH101	DUP (BH101)
Lab ID #		Table 2			L2212837-1	L2212837-2	L2212837-3	L2212841-1	L2212844-1	L2212851-1	L2212853-1	L2212854-1	L2216676-1	L2218841-1	L2218841-2	L2256179-1	L2256179-2
Date	2011 Criteria	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Jan-19	10-Jan-19	10-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)	RPI CT	213.03-209.99	228.95-225.9	213.71-210.66	213.11-210.07	225.36-222.32	224.02-220.97	223.71-220.66	224.02-220.97	224.02-220.97	224.02-220.97	223.71-220.66	223.71-220.66	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter																	
Cyanide (CN ⁻)	µg/L	66	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
 Additional results
 NV-No Value
 NA-Not Analyzed

TABLE 19
GROUND WATER QUALITY ANALYSIS
MERCURY
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
Lab ID #		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783
Date		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66
Parameter													
Mercury	µg/L	0.29	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
 Additional results

NV-No Value
NA-Not Analyzed

TABLE 19
GROUND WATER QUALITY ANALYSIS
MERCURY
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2 (BH201-S)		
Lab ID #		Table 2			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13		
Date		2011 Criteria			7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9		
Parameter																						
Mercury	µg/L	0.29	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard
 Additional results

NV-No Value
 NA-Not Analyzed

TABLE 19
GROUND WATER QUALITY ANALYSIS
MERCURY
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH202	BH201-S	BH201-D	BH203	BH102	DUP (BH101)	BH103	BH101	BH101	BH103	DUP (BH103)	BH101	DUP (BH101)
Lab ID #		Table 2			L2212837-1	L2212837-2	L2212837-3	L2212841-1	L2212844-1	L2212851-1	L2212853-1	L2212854-1	L2216676-1	L2218841-1	L2218841-2	L2256179-1	L2256179-2
Date		2011 Criteria			19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Jan-19	10-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)		RPI CT			213.03-209.99	228.95-225.9	213.71-210.66	213.11-210.07	225.36-222.32	224.02-220.97	223.71-220.66	224.02-220.97	224.02-220.97	223.71-220.66	223.71-220.66	224.02-220.97	224.02-220.97
Parameter																	
Mercury	µg/L	0.29	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standar
 <150 Detection limit exceeded Standar
 150 Sample result exceeded Standar
 Additional results

NV-No Value
 NA-Not Analyzed

TABLE 20
GROUND WATER QUALITY ANALYSIS
CHLORIDE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
Lab ID #		Table 2 2011 Criteria			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783
Date					11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)					224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66
Parameter		RPI CT											
Chloride	µg/L	790000	500	5650000	122000	3040000	2530000	2730000	617000	31500	740000	5200	31400

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

Detection limit raised, RDL = 250µg/L, Dilution required due to high concentration of test analyte(s)

<150	Detection limit exceeded Standan
150	Sample result exceeded Standan

Additional results

NV-No Value

NA-Not Analyzed

TABLE 20
GROUND WATER QUALITY ANALYSIS
CHLORIDE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name		MECP			BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2 (BH201-S)		
Lab ID #	Units	Table 2	RDL	Maximum	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13		
Date		2011 Criteria			7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9		
Parameter																						
Chloride	µg/L	790000	500	5650000	110000	5650000	2620000	559000	113000	132000	26200	583000	2930000	2280000	111000	590000	538000	137000	173000	541000		

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

Detection limit raised, RDL = 250µg/L, Dilution required due to high concentration of test analyte(s)

<150 Detection limit exceeded Standan
150 Sample result exceeded Standan
Additional results

NV-No Value

NA-Not Analyzed

TABLE 20
GROUND WATER QUALITY ANALYSIS
CHLORIDE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH202	BH201-S	BH201-D	BH203	BH102	DUP (BH101)	BH103	BH101	BH101	BH103	DUP (BH103)	BH101	DUP (BH101)
Lab ID #		Table 2 2011 Criteria			L2212837-1	L2212837-2	L2212837-3	L2212844-1	L2212844-1	L2212851-1	L2212853-1	L2212854-1	L2216676-1	L2218841-1	L2218841-2	L2256179-1	L2256179-2
Date					19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Jan-19	10-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)					213.03-209.99	228.95-225.9	213.71-210.66	213.11-210.07	225.36-222.32	224.02-220.97	223.71-220.66	224.02-220.97	224.02-220.97	223.71-220.66	223.71-220.66	224.02-220.97	224.02-220.97
Parameter		RPI CT															
Chloride	µg/L	790000	500	5650000	109000	452000	92800	150000	4780000	108000	3510000	107000	104000	3800000	3320000	3630000	3630000

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

Detection limit raised, RDL = 250µg/L, Dilution required due to high concentration of test analyte(s)

<150	Detection limit exceeded Standan
150	Sample result exceeded Standan
	Additional results

NV-No Value

NA-Not Analyzed

TABLE 21
GROUND WATER QUALITY ANALYSIS
SODIUM
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
Lab ID #		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783
Date		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66
Parameter													
Sodium	µg/L	490000	500	1720000	61500	1080000	542000	543000	288000	23500	419000	40800	23200

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
Detection limit raised, RDL = 500µg/L, Dilution required due to high concentration of test analyte(s)
<150 Detection limit exceeded Standar
150 Sample result exceeded Standar
Additional results

NV-No Value
NA-Not Analyzed

TABLE 21
GROUND WATER QUALITY ANALYSIS
SODIUM
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2 (BH201-S)
Lab ID #		Table 2			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
Date	2011 Criteria	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	
Elev of Sample (masl)	RPI CT	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	213.11-210.07	228.95-225.9	
Parameter																				
Sodium	µg/L	490000	500	1720000	172000	1450000	857000	302000	70100	29200	61600	306000	660000	287000	53300	290000	214000	17600	110000	290000

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
Detection limit raised, RDL = 500µg/L, Dilution required due to high concentration of test analyte

<150	Detection limit exceeded Standar
150	Sample result exceeded Standar

 NV-No Value
 NA-Not Analyzed

TABLE 21
GROUND WATER QUALITY ANALYSIS
SODIUM
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH202	BH201-S	BH201-D	BH203	BH102	DUP (BH101)	BH103	BH101	BH101	BH103	DUP (BH103)	BH101	DUP (BH101)
Lab ID #		Table 2			L2212837-1	L2212837-2	L2212837-3	L2212841-1	L2212844-1	L2212851-1	L2212853-1	L2212854-1	L2216676-1	L2218841-1	L2218841-2	L2256179-1	L2256179-2
Date	2011 Criteria	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Jan-19	10-Jan-19	10-Apr-19	10-Apr-19		
Elev of Sample (masl)	RPI CT	213.03-209.99	228.95-225.9	213.71-210.66	213.11-210.07	225.36-222.32	224.02-220.97	223.71-220.66	224.02-220.97	223.71-220.66	223.71-220.66	223.71-220.66	224.02-220.97	224.02-220.97			
Parameter																	
Sodium	µg/L	490000	500	1720000	11400	228000	31900	55300	1690000	48800	757000	49200	51600	946000	946000	1720000	1640000

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit; G / S - Guideline / Standard
Detection limit raised, RDL = 500µg/L, Dilution required due to high concentration of test analyte
<150 Detection limit exceeded Standar
150 Sample result exceeded Standar
Additional results
NV-No Value
NA-Not Analyzed

TABLE 22
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
		Table 2				L1993774-1	L1993774-2	L1993774-3	L1993774-4	L2020783	L2020783	L2020783	L2020783	L2020783
		2011 Criteria				18-Sep-17	18-Sep-17	18-Sep-17	18-Sep-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Lab ID #					224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66	
Date														
Elev of Sample (masl)														
Parameter		RPI	CT											
Acenaphthene	µg/L	4.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	µg/L	1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	µg/L	2.4	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	µg/L	1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	µg/L	0.01	0.01	<0.010	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Benzo(b)fluoranthene	µg/L	0.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	µg/L	0.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	µg/L	0.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenz(ah)anthracene	µg/L	0.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	µg/L	0.41	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	µg/L	120	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	µg/L	3.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	µg/L	3.2	0.02	0.024	<0.020	<0.020	<0.020	<0.020	0.024	<0.020	0.024	<0.020	<0.020	<0.020
Naphthalene	µg/L	11	0.05	<0.050	<0.050	<0.070	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/L	1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	µg/L	4.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

150* Result not considered COC. Refer to report for more details.

Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.

+ - Insufficient water for sampling

NA-Not Analyzed

TABLE 22
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)
		Table 2	2011 Criteria			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
Lab ID #						7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17
Date						224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9
Elev of Sample (masl)													
Parameter		RPI	CT										
Acenaphthene	µg/L	4.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	µg/L	1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	µg/L	2.4	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	µg/L	1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	µg/L	0.01	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	µg/L	0.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	µg/L	0.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	µg/L	0.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenz(ah)anthracene	µg/L	0.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	µg/L	0.41	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	µg/L	120	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	µg/L	3.2	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	µg/L	3.2	0.02	0.024	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	µg/L	11	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/L	1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	µg/L	4.1	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Resider

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

150* Result not considered COC. Refer to report for more details.

Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Floure

+ - Insufficient water for sampling

NA-Not Analyzed

TABLE 23
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202
		Table 2	2011 Criteria			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783
Lab ID #						11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17
Date						224.02-220.97	226.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99
Elev of Sample (masl)												
Parameter		RPI	CT									
F1 (C8 to C10)	µg/L	750	25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX (C6-C10)	µg/L	750	25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34 to C50)	µg/L	500	250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Reached baseline at nC50	µg/L	-	-	-	YES	YES	YES	YES	YES	YES	YES	YES

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150	Detection limit exceeded Standard
150	Sample result exceeded Standard

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 nC34.

Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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.

+ - Insufficient water for sampling

NA-Not Analyzed

TABLE 23
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH203	DUP1 (BH201-D)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)
		Table 2	2011 Criteria			L2020783	L2020783	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
Date						8-Nov-17	8-Nov-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17
Elev of Sample (masl)						213.11-210.07	213.71-210.66	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-226.9
Parameter		RPI CT													
F1 (C8 to C10)	µg/L	750	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX (C6-C10)	µg/L	750	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34 to C50)	µg/L	500	250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Reached baseline at nC50	µg/L	-	-	-	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150	Detection limit exceeded Standard
150	Sample result exceeded Standard

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 nC34.

Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated 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.

+ - Insufficient water for sampling

NA-Not Analyzed

TABLE 24
GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
		Table 2	2011 Criteria			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783
		Date				11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)						224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66
Parameter		RPI CT												
Benzene	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	0.64	<0.50	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	-	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional results

Extraction and holding times were met for this sample.

NV-No Value

NA-Not Analyzed

TABLE 24
GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH201-D	BH203	DUP1 (BH201-D)
Lab ID #		Table 2			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2042320-1	L2042320-2	L2042320-4
Date		2011 Criteria			7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	4-Jan-18	4-Jan-18	4-Jan-18
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	213.71-210.66	213.11-210.07	213.71-210.66
Benzene	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	-	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard
 Additional results

Extraction and holding times were met for this sample.

NV-No Value

NA-Not Analyzed

TABLE 24
GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2 (BH201-S)	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	
Lab ID #		Table 2			L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13	L2049614-1	L2049614-2	L2050901-1	L2050901-2	
Date		2011 Criteria			17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	
Benzene	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Ethylbenzene	µg/L	2.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Toluene	µg/L	24	0.5	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Xylene Mixture	µg/L	300	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
m/p-xylene	µg/L	-	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
o-xylene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard
 Additional results

Extraction and holding times were met for this sample.

NV-No Value

NA-Not Analyzed

TABLE 24
GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH201-D	BH203	DUP (BH201-D)	BH201-D	BH203	DUP (BH201-D)
		Table 2 2011 Criteria				L2116071-1 18-Jun-18	L2116071-2 18-Jun-18	L2116071-3 18-Jun-18	L2168350-1 19-Sep-18	L2168350-2 19-Sep-18	L2168350-3 19-Sep-18
Lab ID #						213.71-210.66	213.11-210.07	213.71-210.66	213.71-210.66	213.11-210.07	213.71-210.66
Date											
Elev of Sample (masl)											
Parameter		RPI CT									
Benzene	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	-	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard
 Additional results

Extraction and holding times were met for this sample.

NV-No Value

NA-Not Analyzed

TABLE 25
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103
		Table 2	2011 Criteria			L1977878-1	L2033776-1	L2046388-1	L1977878-2	L2033776-2	L2046388-2	L1977878-3	L1977878-4	L2033776-3	L2046388-3
Date						11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)						224.02-220.97	224.02-220.97	224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66
Parameter		RPI	CT												
Acetone	µg/L	2700	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Bromomethane	µg/L	0.89	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	µg/L	0.79	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	30	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	2.4	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	3	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	59	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	590	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	51	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	µg/L	1800	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	640	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
MIBK	µg/L	15	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	µg/L	6.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	1.6	0.5	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	150	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	µg/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit: G / S - Guideline / Standard

<150	Detection limit exceeded Standar
150	Sample result exceeded Standar
	Additional results
150*	Result rejected by QP. Refer to report for more details

NV-No Value
NA-Not Analyzed

TABLE 25
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP 2011 Criteria	RDL	Maximum	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D
Lab ID #	Table 2		RDL	Maximum	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13	L2020783	L2020783	L2033776-5	L2042320-1	L2042320-4	L2046388-7	L2116071-1	L2116071-3	L2168350-1
Date	2011 Criteria				8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)	RPI CT				228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66
Parameter	RPI CT																	
Acetone	µg/L	2700	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	
Bromomethane	µg/L	0.89	0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Carbon tetrachloride	µg/L	0.79	0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Chlorobenzene	µg/L	30	0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroform	µg/L	2.4	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14.1*	13.9*	10*	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dibromoethane	µg/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
1,2-Dichlorobenzene	µg/L	3	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,3-Dichlorobenzene	µg/L	59	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,4-Dichlorobenzene	µg/L	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Dichlorodifluoromethane	µg/L	590	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
1,1-Dichloroethane	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,2-Dichloroethane	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Methylene Chloride	µg/L	50	5	<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	
1,2-Dichloropropane	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
trans-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
n-Hexane	µg/L	51	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Methyl Ethyl Ketone	µg/L	1800	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
Methyl Isobutyl Ketone	µg/L	640	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
MTBE	µg/L	15	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Styrene	µg/L	6.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,1-Trichloroethane	µg/L	200	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2-Trichloroethane	µg/L	4.7	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Trichloroethylene	µg/L	1.6	0.5	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	1.06*	1.03*	2.56*	<0.50	<0.50	0.58	<0.50	<0.50	
Trichlorofluoromethane	µg/L	150	5	<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	
Vinyl chloride	µg/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit:	G / S - Guideline / Standard
<150	Detection limit exceeded Standard
150	Sample result exceeded Standard
	Additional results
150*	Result rejected by QP. Refer to report for more details

NV:No Value
NA:Not Analyzed

TABLE 25
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	DUP
		Table 2			(BH201-D)
Lab ID #		2011 Criteria			L2168350-3
Date					19-Sep-18
Elev of Sample (masl)					213.71-210.66
Parameter		RPI CT			
Acetone	µg/L	2700	30	<30	<30
Bromomethane	µg/L	0.89	0.5	<0.50	<0.50
Carbon tetrachloride	µg/L	0.79	0.2	<0.20	<0.20
Chlorobenzene	µg/L	30	0.5	<0.50	<0.50
Chloroform	µg/L	2.4	1	<1.0	<1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	3	0.5	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	59	0.5	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	1	0.5	<0.50	<0.50
Dichlorodifluoromethane	µg/L	590	2	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	0.5	<0.50	<0.50
1,2-Dichloroethane	µg/L	1.6	0.5	<0.50	<0.50
1,1-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50
Methylene Chloride	µg/L	50	5	<5.0	<5.0
1,2-Dichloropropane	µg/L	5	0.5	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<0.50	<0.50
n-Hexane	µg/L	51	0.5	<0.50	<0.50
Methyl Ethyl Ketone	µg/L	1800	20	<20	<20
Methyl Isobutyl Ketone	µg/L	640	20	<20	<20
MTBE	µg/L	15	2	<2.0	<2.0
Styrene	µg/L	5.4	0.5	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<0.50	<0.50
Tetrachloroethylene	µg/L	1.6	0.5	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<0.50	<0.50
Trichloroethylene	µg/L	1.6	0.5	0.58	<0.50
Trichlorofluoromethane	µg/L	150	5	<5.0	<5.0
Vinyl chloride	µg/L	0.5	0.5	<0.50	<0.50

Comments:
 Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit:	G / S - Guideline / Standar
<150	Detection limit exceeded Standar
150	Sample result exceeded Standar
	Additional results
150*	Result rejected by QP. Refer to report for more details

NV:No Value
 NA:Not Analyzed

TABLE 25
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
		Table 2				L2020783	L2033776-6	L2046388-8	L2020783	L2033776-7	L2042320-2	L2046388-9	L2049614-1	L2049614-2	L2050901-1	L2050901-2	L2116071-2	L2168350-2	
		2011 Criteria	RPI CT			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18	
Acetone	µg/L	2700	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Bromomethane	µg/L	0.89	0.5	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	µg/L	0.79	0.2	<0.20	<0.2	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	30	0.5	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	2.4	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	3	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	59	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	590	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50	5	<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
1,2-Dichloropropane	µg/L	5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	-	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	51	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	µg/L	1800	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	640	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
MTBE	µg/L	15	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	µg/L	6.4	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	µg/L	1.6	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	1.6	0.5	0.58	<0.50	<0.50	<0.50	0.86*	2.83*	<0.50*	2.43*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	150	5	<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
Vinyl chloride	µg/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Comments:
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit:	G / S - Guideline / Standard
<150	Detection limit exceeded Standar
150	Sample result exceeded Standar
	Additional results
150*	Result rejected by QP. Refer to report for more details

NV-No Value
NA-Not Analyzed

TABLE 26
GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203	DUP1 (BH201-D)
Lab ID #		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783	L2020783
Date		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	213.71-210.66
Parameter													
Bromodichloromethane	µg/L	16	2	4.50	<2.0	<2.0	<2.0	<2.0	<2.0	4.50	<2.0	<2.0	4.40
Bromoform	µg/L	25	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.90	<2.0	<2.0	<2.0	<2.0	<2.0	2.90	<2.0	<2.0	2.80

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit: G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional Results

NV-No Value
NA-Not Analyzed

TABLE 26
GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP		RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)	BH201-D	BH203	DUP1 (BH201-D)
		Table 2	2011 Criteria			L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8	L2042320-1	L2042320-2	L2042320-4
Date						7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	4-Jan-18	4-Jan-18	4-Jan-18
Elev of Sample (masl)						224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	213.71-210.66	213.11-210.07	213.71-210.66
Parameter		RPI CT														
Bromodichloromethane	µg/L	16	2	4.50		<2.0	<2.0	<2.0	<2.0	2.90	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	<5.0		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.90		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit: G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional Results

NV-No Value
NA-Not Analyzed

TABLE 26
GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2 (BH201-S)	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	
Lab ID #		Table 2			L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13	L2049614-1	L2049614-2	L2050901-1	L2050901-2	
Date		2011 Criteria			17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	
Parameter																	
Bromodichloromethane	µg/L	16	2	4.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Bromoform	µg/L	25	5	<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	
Dibromochloromethane	µg/L	25	2	2.90	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	

Comments:

Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit: G / S - Guideline / Standard
 <150 Detection limit exceeded Standard
 150 Sample result exceeded Standard
 Additional Results

NV-No Value
 NA-Not Analyzed

TABLE 26
GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES
OWEN STREET AND WORSLEY STREET
BARRIE, ONTARIO
PROJECT #1-17-0481-42

Sample Name	Units	MECP	RDL	Maximum	BH201-D	BH203	DUP (BH201-D)	BH201-D	BH203	DUP (BH201-D)
		Table 2			L2116071-1	L2116071-2	L2116071-3	L2168350-1	L2168350-2	L2168350-3
Lab ID #		2011 Criteria			18-Jun-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	19-Sep-18
Date					213.71-210.66	213.11-210.07	213.71-210.66	213.71-210.66	213.11-210.07	213.71-210.66
Elev of Sample (masl)		RPI CT								
Parameter										
Bromodichloromethane	µg/L	16	2	4.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.90	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

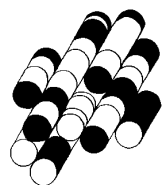
Results compared to MECP 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

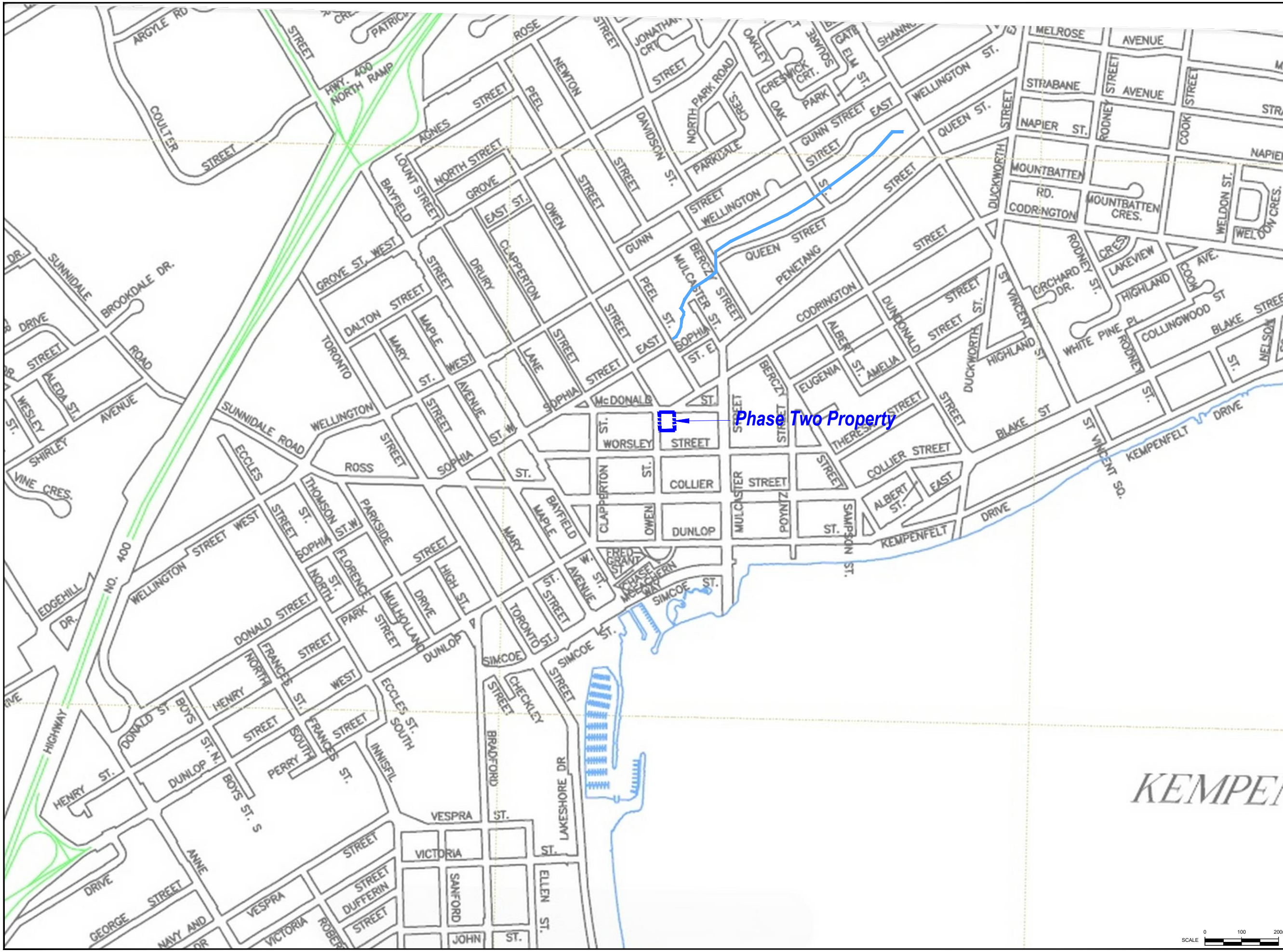
RDL - Reported Detection Limit: G / S - Guideline / Standard
<150 Detection limit exceeded Standard
150 Sample result exceeded Standard
Additional Results

NV-No Value
NA-Not Analyzed

FIGURES

TERRAPROBE INC.





Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESA\A-Dwg - Logs\AutoCAD\1-17-0481-42_North Parcel_Dec 2018.dwg.kiv



Reference:

York Region Maps

Notes:

PCA - Potentially Contaminating Activity

#00 - PCA Causing APEC

#00 - PCA Not Causing APEC

APEC - Areas of Potential Environmental Concern

Legend:

- Approximate Phase Two Property Boundary
- Phase One Study Area, 250m
- Watercourse Within Study Area
- #10** Commercial Body Shops
- #28** Gasoline and Associated Products Storage in Fixed Tanks
- #30** Importation of Fill Material of Unknown Quality
- #37** Operation of Dry Cleaning Equipment (where chemicals are used)
- #01** Ontario Spills
- APEC 1 (Entire Site)
- APEC 2 (West Portion of Site)

Project Title:

Phase One Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

PCA AND APEC LOCATIONS

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

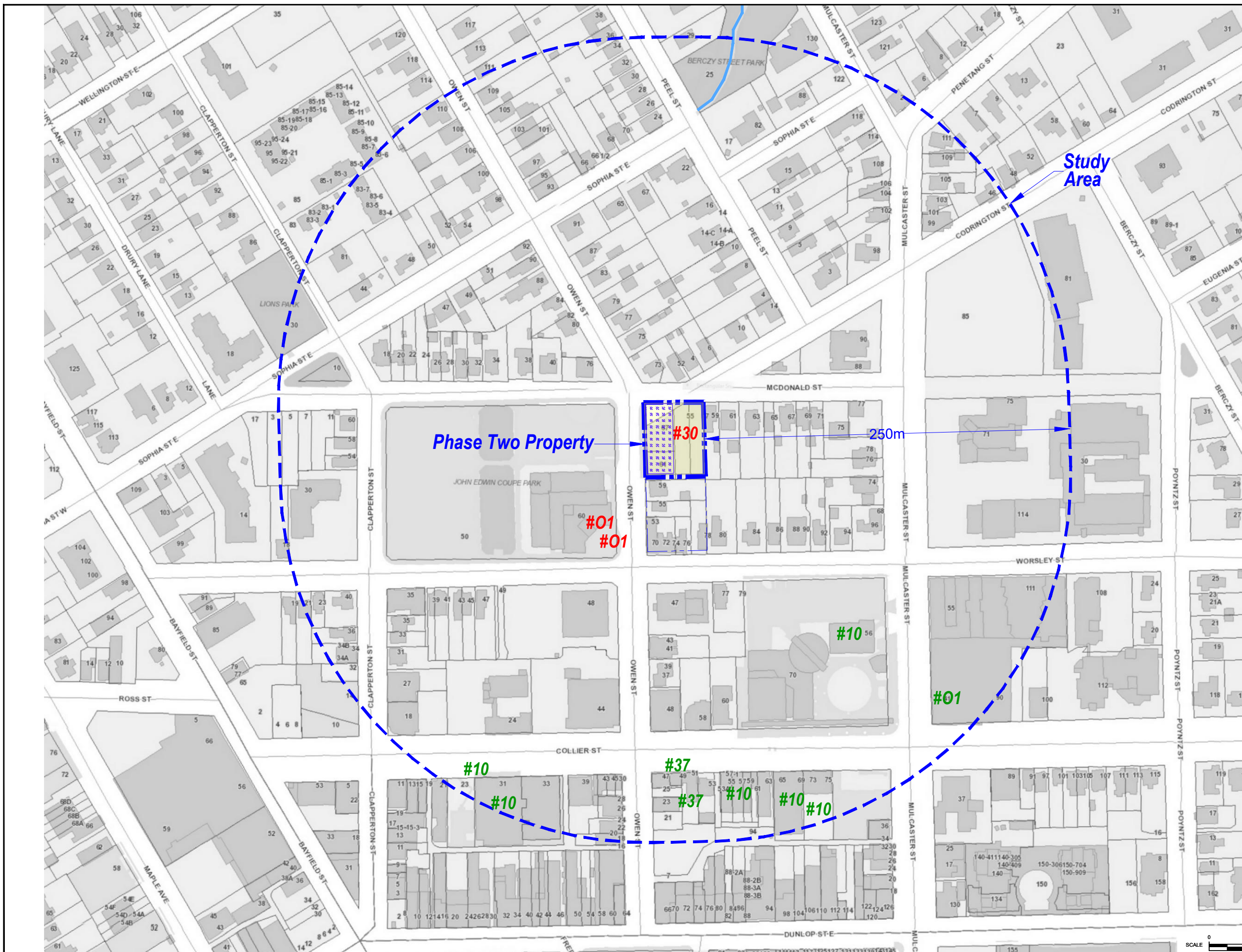
MB

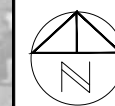
Figure No.:

2

Date:

December 2018





Reference:
 Google Earth 2017

Notes:
 PCA - Potentially Contaminating Activity
 #00 - PCA Causing APEC
 #00 - PCA Not Causing APEC
 APEC - Areas of Potential Environmental Concern

Legend:

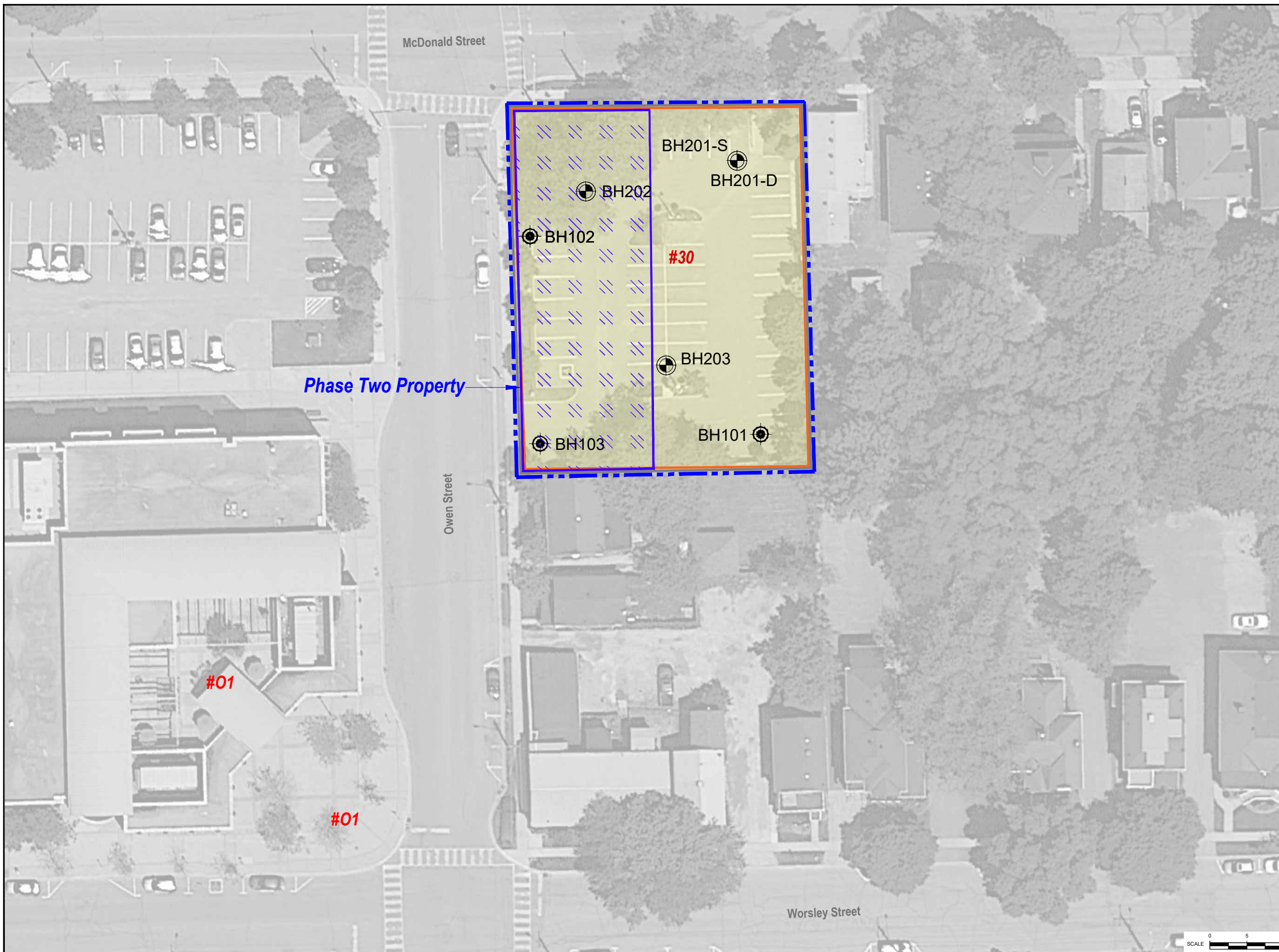
	Approximate Phase Two Property Boundary
	Approximate Borehole Location with Monitoring Well (August 2017)
	Approximate Borehole Location with Monitoring Well (October 2017)
#30	Importation of Fill Material of Unknown Quality
#01	Ontario Spills
	APEC 1 (Entire Site)
	APEC 2 (West Portion of Site)

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 BOREHOLE/MONITORING WELL LOCATIONS

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 3
Date: December 2018	



Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESA\A - Dwg. - Logs\AutoCAD\1-17-0481-42_North Parcel_Dec 2018.dwg.MTV

Notes:

Legend:

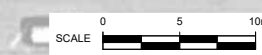
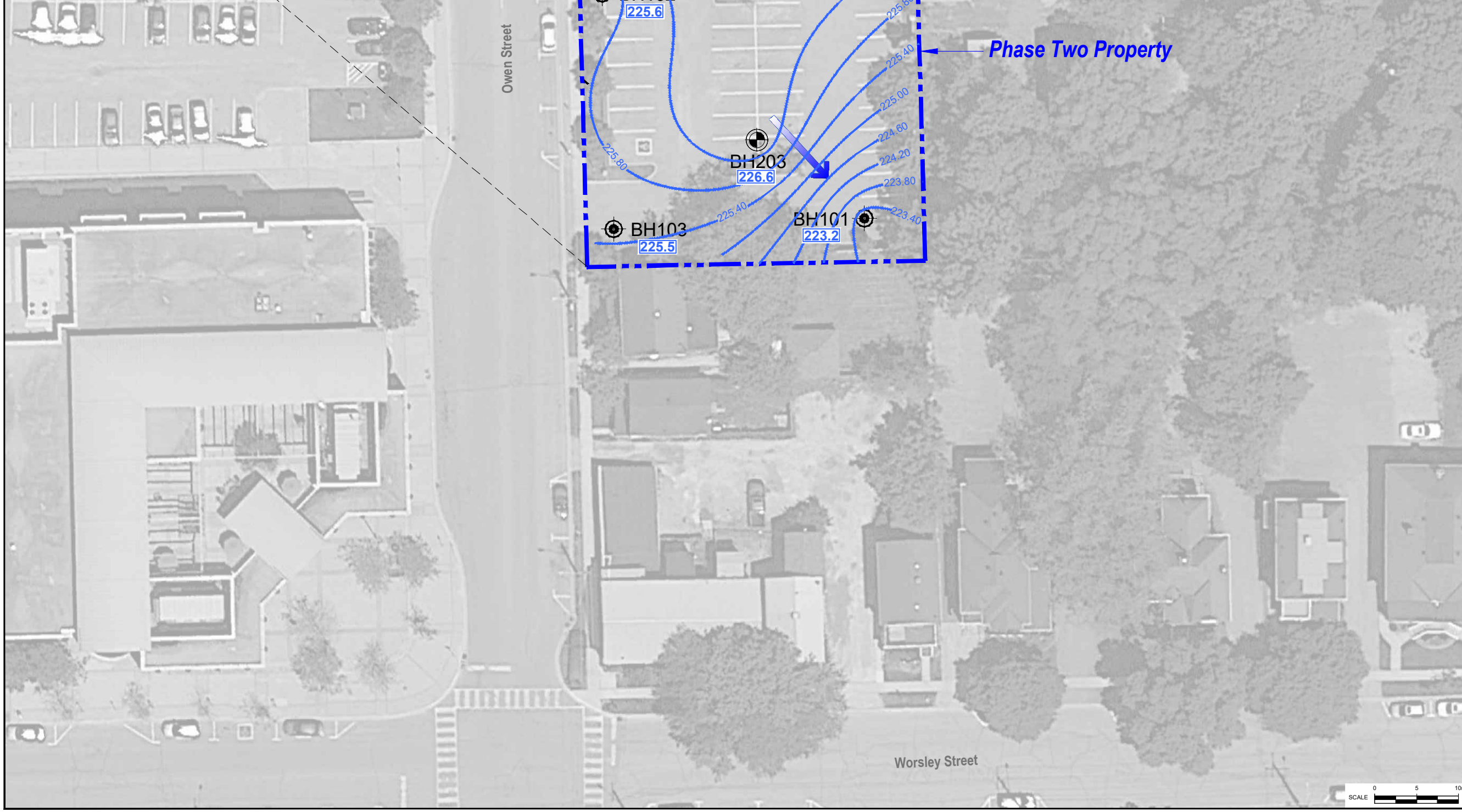
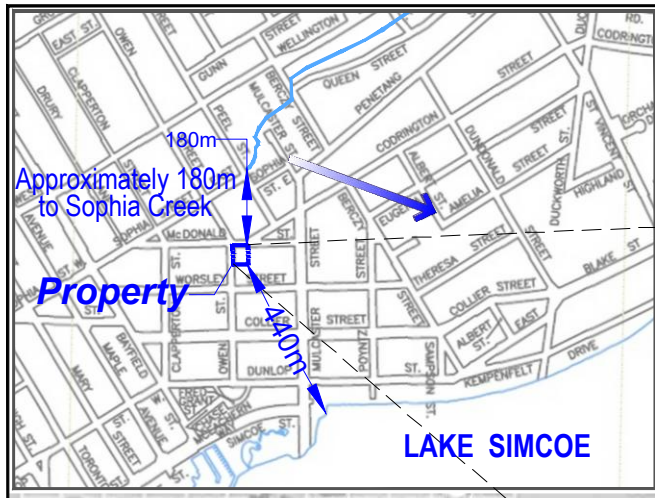
	Approximate Phase Two Property Boundary
	Approximate Borehole Location with Monitoring Well (August 2017)
	Approximate Borehole Location with Monitoring Well (October 2017)
	Ground Water Level (masl), January 17, 2018
	Ground Water Contour Line
	Approximate Ground Water Flow Direction
	Watercourse Within Study Area

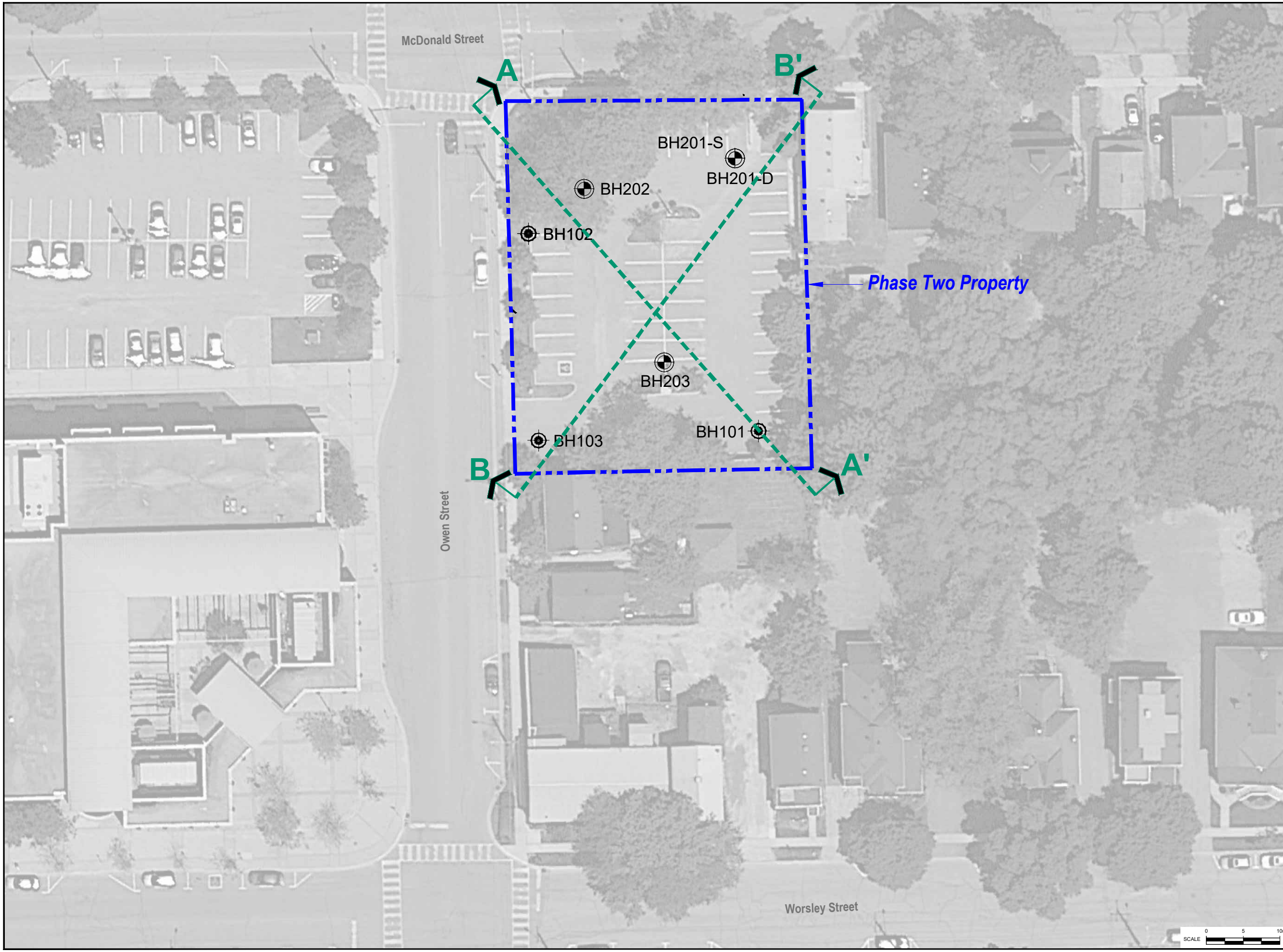
Project Title:
 Phase Two Environmental Site Assessment


Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 GROUND WATER ELEVATIONS

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 4
Date: December 2018	









	Reference:
	Google Earth 2017

Notes:

Legend:

	Approximate Phase Two Property Boundary
	Approximate Borehole Location with Monitoring Well (August 2017)
	Approximate Borehole Location with Monitoring Well (October 2017)
	Approximate Cross Section Location

Project Title:
Phase Two Environmental Site Assessment

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
CROSS SECTION LOCATIONS

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 5
Date: December 2018	

Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\2 - Phase Two ESA\A - Dwg. - Logs\AutoCAD\1-17-0481-42_North Parcel_Dec 2018.dwg.MV

Reference:

Google Earth 2017

Notes:

1. **0.592** = Parameter Result Meets 2011 T2 Standard, Coarse
 2. **2.86** = Parameter Result Exceeds 2011 T2 Standard, Coarse

- Legend:**
- Approximate Phase Two Property Boundary
 - Approximate Borehole Location with Monitoring Well (August 2017)
 - Approximate Borehole Location with Monitoring Well (October 2017)
 - Approximate Extent of Contaminant Impact
 - Sample in Borehole Meets Standard
 - Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

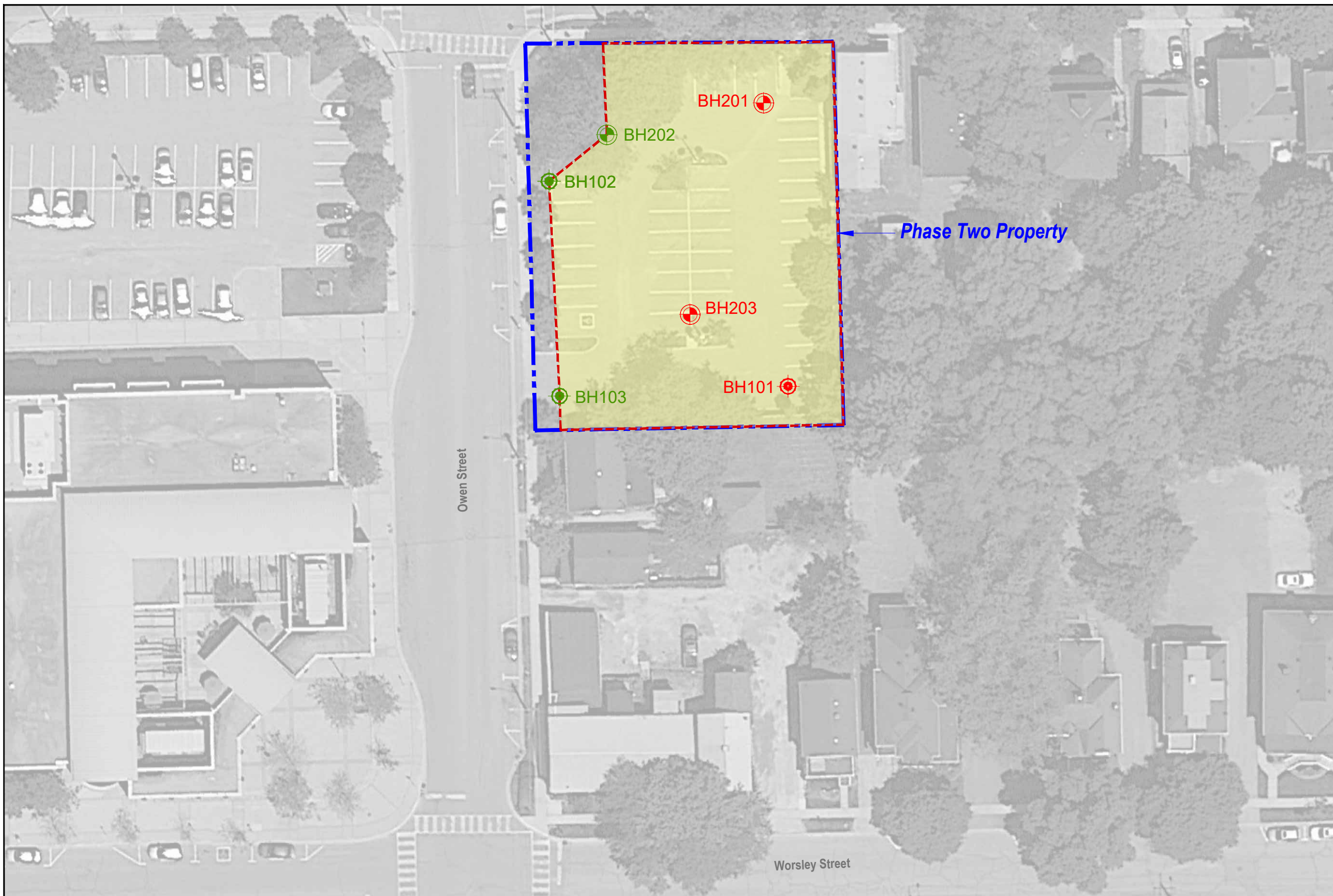
EC EXCEEDANCES IN SOIL
 PLAN VIEW

Designed By: SM **File No.:** 1-17-0481-42

Drawn By: MV **Scale:** As Shown

Reviewed By: MB **Figure No.:** 6

Date: December 2018



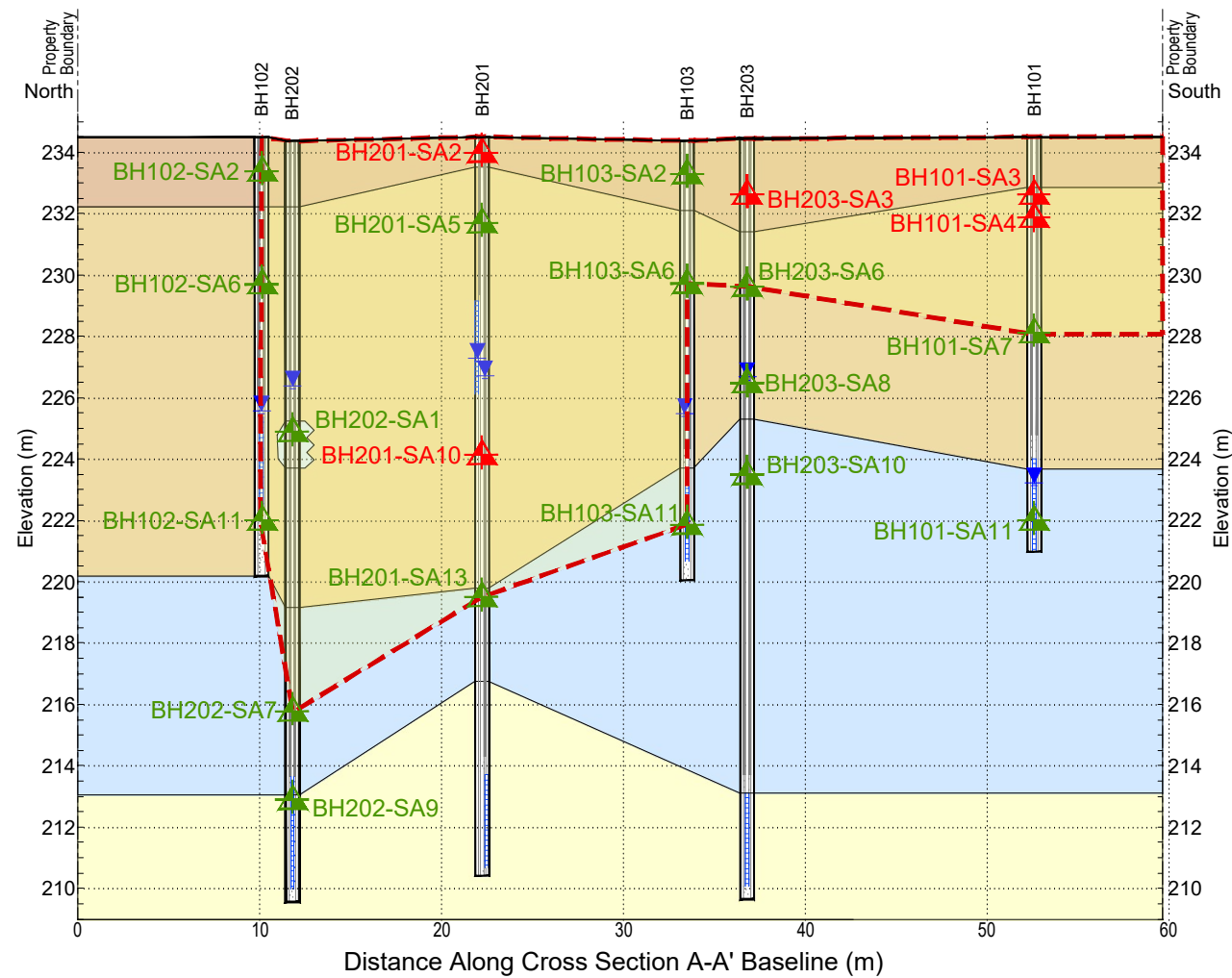
Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6	BH203-SA8	BH203-SA10
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	226.8-226.2	223.8-223.2
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	7.6-8.2	10.7-11.3
Parameter																									
Electrical Conductivity	mS/cm	0.7	0.951	1.49	0.135	0.201	0.661	0.337	0.372	0.527	0.18	0.679	0.498	1.15	0.55	0.757	0.242	0.279	0.241	0.31	2.86	2.88	0.592	0.118	0.226

Reference:

- Notes:
- 0.592 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 2.86 = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


 Project Title:
 Phase Two Environmental Site Assessment Update

 Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

 Figure Title:
 EC EXCEEDANCES IN SOIL
 CROSS SECTION A-A'

 Designed By: SM
 File No.: 1-17-0481-42

 Drawn By: MV
 Scale: As Shown

 Reviewed By: MB
 Figure No.: 7

Date: December 2018

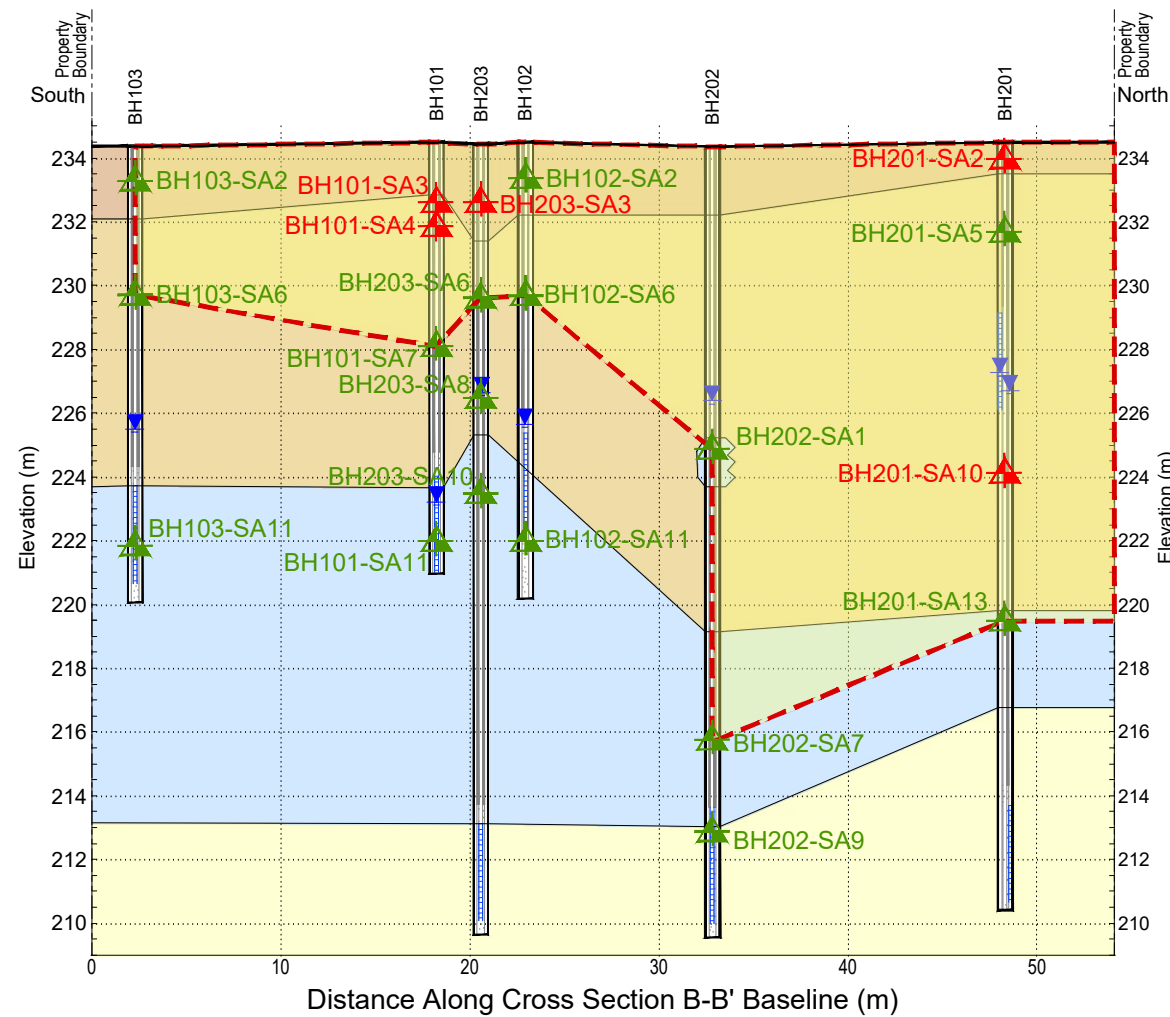
Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6	BH203-SA8	BH203-SA10
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	226.8-226.2	223.8-223.2
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	7.6-8.2	10.7-11.3
Parameter																									
Electrical Conductivity	mS/cm	0.7	0.951	1.49	0.135	0.201	0.661	0.337	0.372	0.527	0.18	0.679	0.498	1.15	0.55	0.757	0.242	0.279	0.241	0.31	2.86	2.88	0.592	0.118	0.226

Reference:

- Notes:**
- 0.592 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 2.86 = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
EC EXCEEDANCES IN SOIL
CROSS SECTION B-B'

Designed By: SM **File No.:** 1-17-0481-42

Drawn By: MV **Scale:** As Shown


Reviewed By: MB **Figure No.:** 8

Date: December 2018

Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6	BH203-SA8	BH203-SA10
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	226.8-226.2	223.8-223.2
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	7.6-8.2	10.7-11.3
Parameter																									
Electrical Conductivity	mS/cm	0.7	0.951	1.49	0.135	0.201	0.661	0.337	0.372	0.527	0.18	0.679	0.498	1.15	0.55	0.757	0.242	0.279	0.241	0.31	2.86	2.88	0.592	0.118	0.226

Reference:


Google Earth 2017



Notes:

1. **0.86** = Parameter Result Meets 2011 T2 Standard, Coarse
 2. **22.4** = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Approximate Phase Two Property Boundary
-  Approximate Borehole Location with Monitoring Well (August 2017)
-  Approximate Borehole Location with Monitoring Well (October 2017)
- Approximate Extent of Contaminant Impact
-  Sample in Borehole Meets Standard
-  Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

SAR EXCEEDANCES IN SOIL
 PLAN VIEW

Designed By: SM **File No.:** 1-17-0481-42

Drawn By: MV **Scale:** As Shown

Reviewed By: MB **Figure No.:** 9

Date: December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA8	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA12	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	4-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	226.9-226.3	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	221.3-220.7	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	7.6-8.2	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	13.7-14.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	
Parameter																										
Sodium Adsorption Ratio	---	5	6.79	21.3	1.05	1.93	9.64	7.53	5.72	4.18	22.4	0.86	2.88	2.35	>40	>17	26.1	0.13	1.51	1.71	0.85	4.34	18.9	20.9	3.36	

Sample Name	Units	MOECC T2 RPI CT	BH203-SA8	BH203-SA10
Date			25-Oct-17	25-Oct-17
Elev of Sample (masl)			226.8-226.2	223.8-223.2
Depth (m)			7.6-8.2	10.7-11.3
Parameter				
Sodium Adsorption Ratio	---	5	> 0.73	1.05

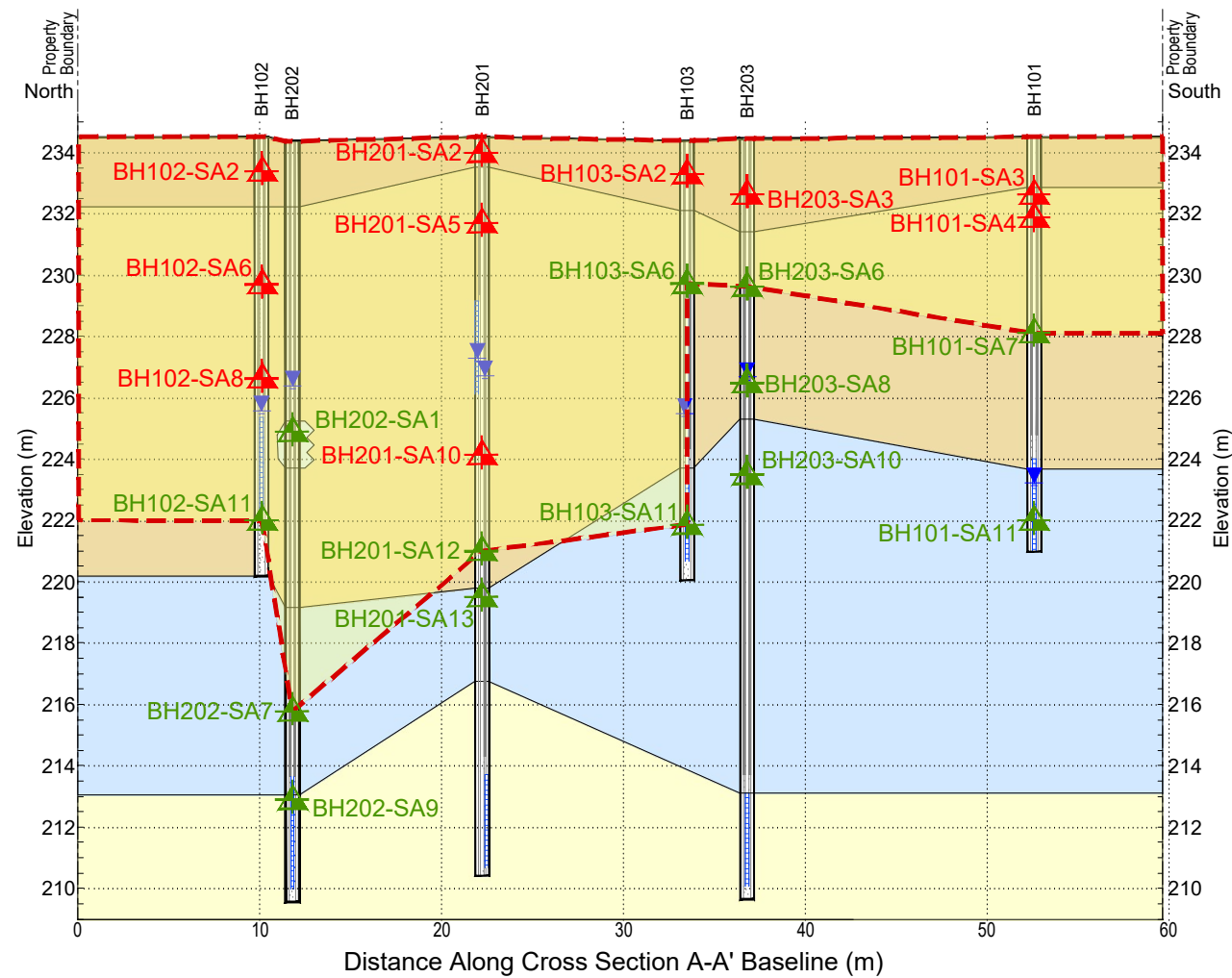


Reference:

Notes:
 1. **0.86** = Parameter Result Meets 2011 T2 Standard, Coarse
 2. **22.4** = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:
 Phase Two Environmental Site Assessment Update

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 SAR EXCEEDANCES IN SOIL
 CROSS SECTION A-A'

Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA8	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA12	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	4-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	DUP2 (BH203-SA3)	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	226.9-226.3	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	221.3-220.7	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	7.6-8.2	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	13.7-14.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2
Parameter																									
Sodium Adsorption Ratio	---	5	6.79	21.3	1.05	1.93	9.64	7.53	5.72	4.18	22.4	0.86	2.88	2.35	>40	>17	26.1	0.13	1.51	1.71	0.85	4.34	18.9	20.9	3.36

Sample Name	Units	MOECC T2 RPI CT	BH203-SA8	BH203-SA10
Date			25-Oct-17	25-Oct-17
Elev of Sample (masl)			226.8-226.2	223.8-223.2
Depth (m)			7.6-8.2	10.7-11.3
Parameter				
Sodium Adsorption Ratio	---	5	> 0.73	1.05

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 10

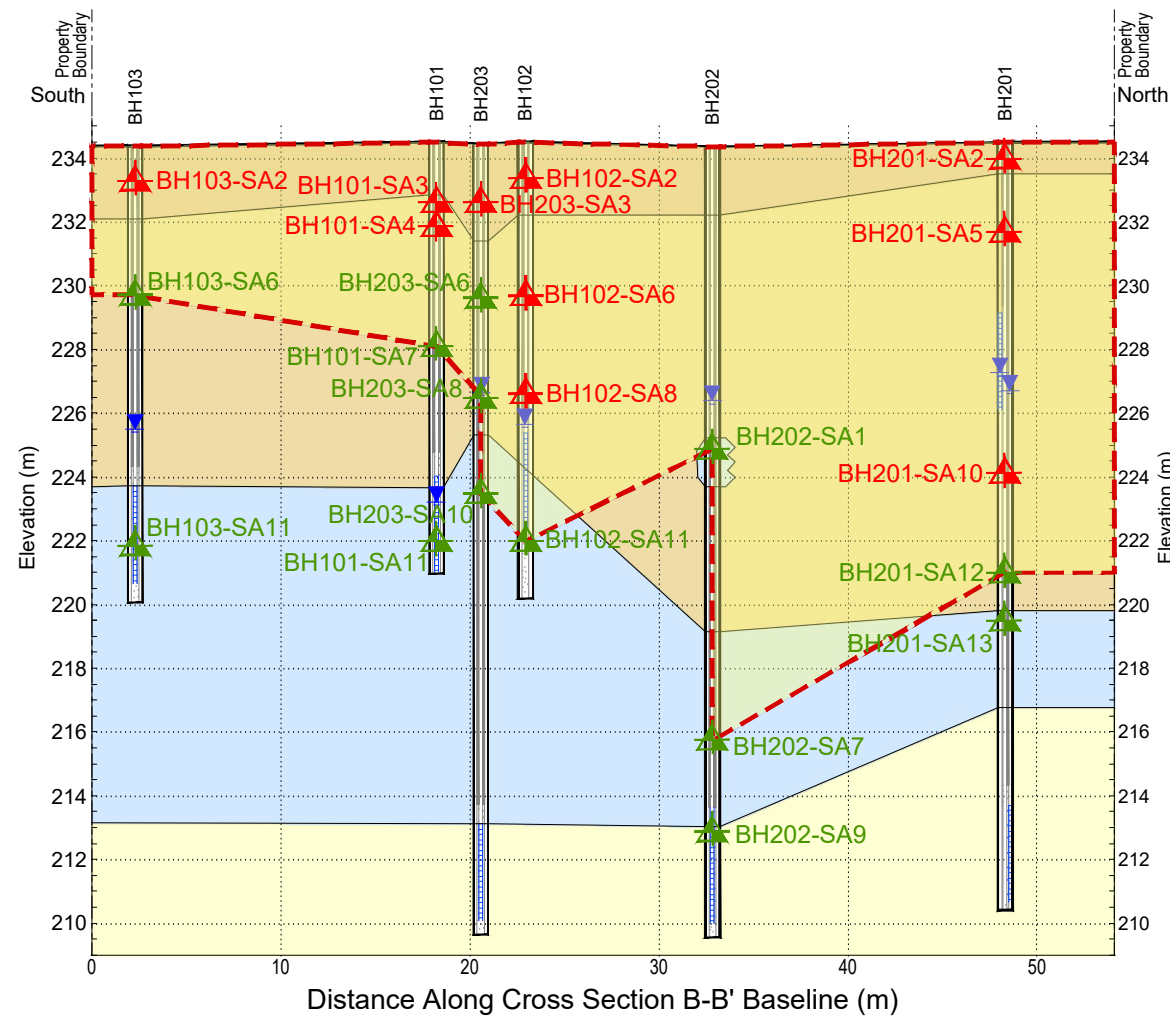
Reference:

Notes:

- 0.86 = Parameter Result Meets 2011 T2 Standard, Coarse
- 22.4 = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 SAR EXCEEDANCES IN SOIL
 CROSS SECTION B-B'

Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA8	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA12	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	4-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	226.9-226.3	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	221.3-220.7	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	7.6-8.2	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	13.7-14.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2
Parameter																									
Sodium Adsorption Ratio	---	5	6.79	21.3	1.05	1.93	9.64	7.53	5.72	4.18	22.4	0.86	2.88	2.35	>40	>17	26.1	0.13	1.51	1.71	0.85	4.34	18.9	20.9	3.36

Sample Name	Units	MOECC T2 RPI CT	BH203-SA8	BH203-SA10
Date			25-Oct-17	25-Oct-17
Elev of Sample (masl)			226.8-226.2	223.8-223.2
Depth (m)			7.6-8.2	10.7-11.3
Parameter				
Sodium Adsorption Ratio	---	5	> 0.73	1.05

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:


MB

Figure No.:

11







Date:

December 2018

Reference:
 Google Earth 2017

Notes:
 1. 145 = Parameter Result Meets 2011 T2 Standard, Coarse
 2. 1630 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

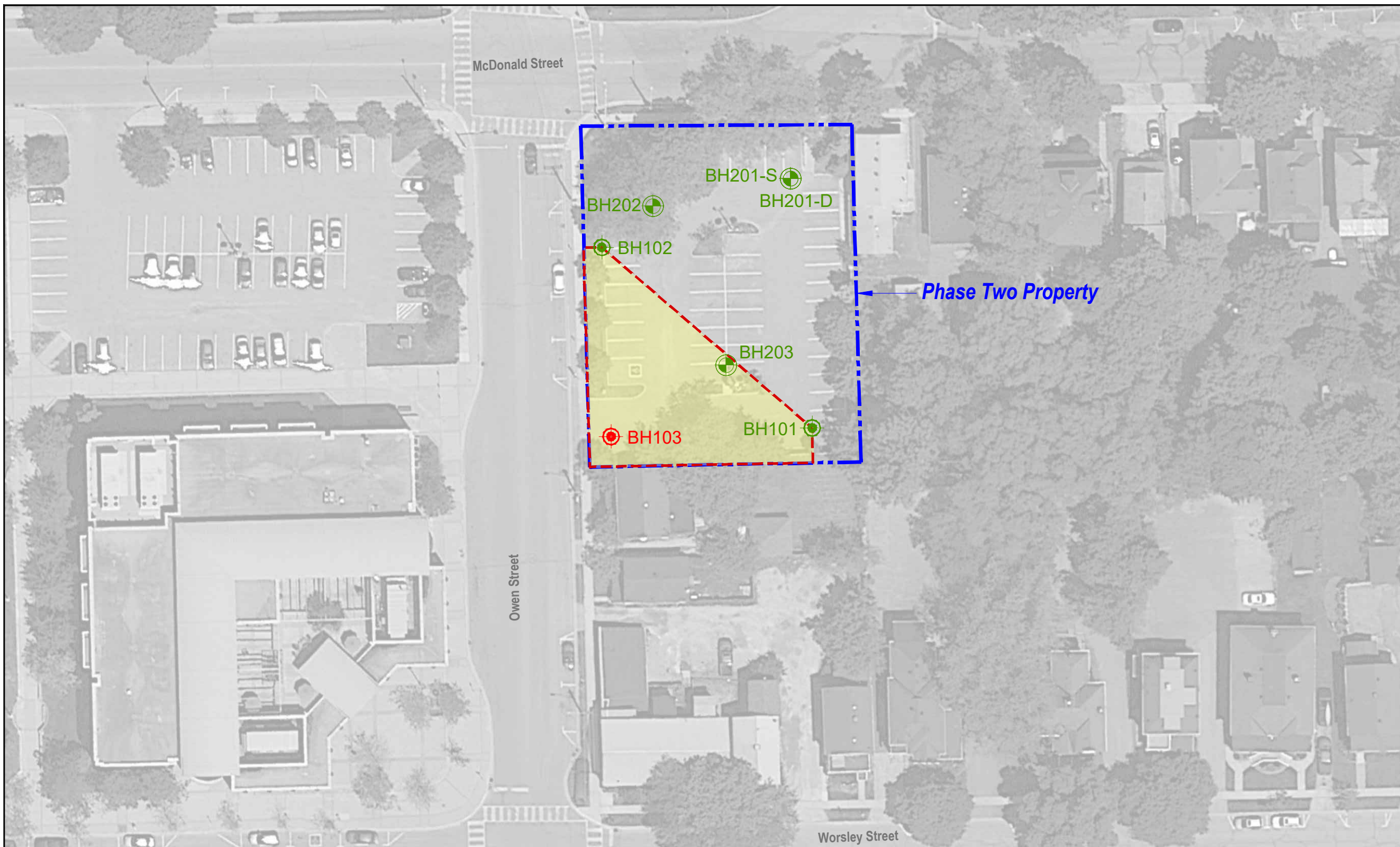
- Legend:
-  Approximate Phase Two Property Boundary
 -  Approximate Borehole Location with Monitoring Well (August 2017)
 -  Approximate Borehole Location with Monitoring Well (October 2017)
 -  Approximate Extent of Contaminant Impact
 -  Sample in Borehole Meets Standard
 -  Sample in Borehole Exceeds Standard

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 METAL EXCEEDANCES IN GROUND WATER
 PLAN VIEW

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 12
Date: December 2018	



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																											
Barium	µg/L	1000	210	357	1330*	151	151	151	517	439	222	251	1630	1640	1740	145	1650	1730	1710	250	300	301	319	305	293		

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																	
Barium	µg/L	1000	22	19	42	243	210	130	203	286	298	62	143	101	180		

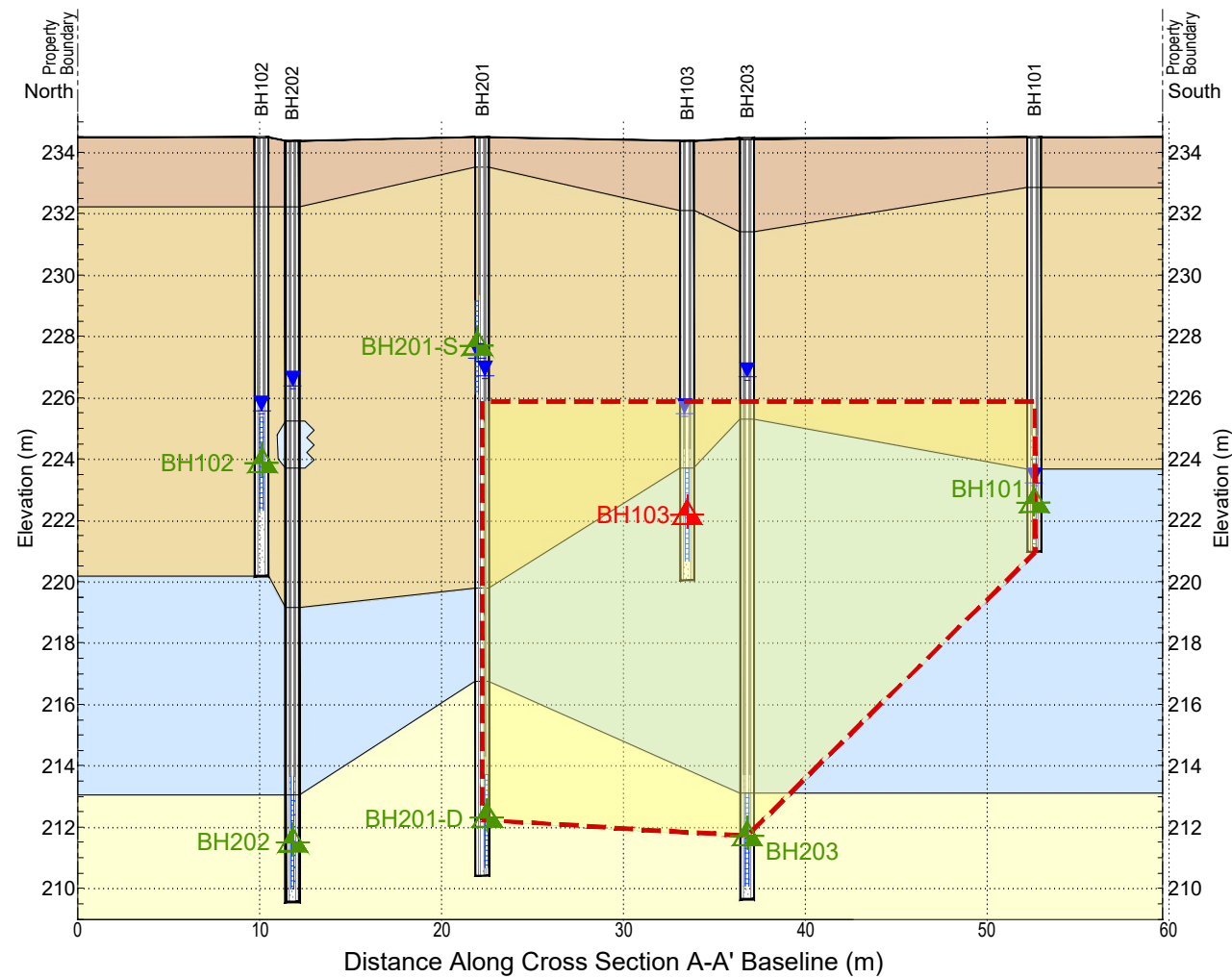
Reference:

- Notes:**
- 145 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 1630 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
METAL EXCEEDANCES IN GROUND WATER
CROSS SECTION A-A'

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 13

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																									
Barium	µg/L	1000	210	357	1330*	151	151	151	517	439	222	251	1630	1640	1740	145	1650	1730	1710	250	300	301	319	305	293

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																
Barium	µg/L	1000	22	19	42	243	210	130	203	286	298	62	143	101	180	

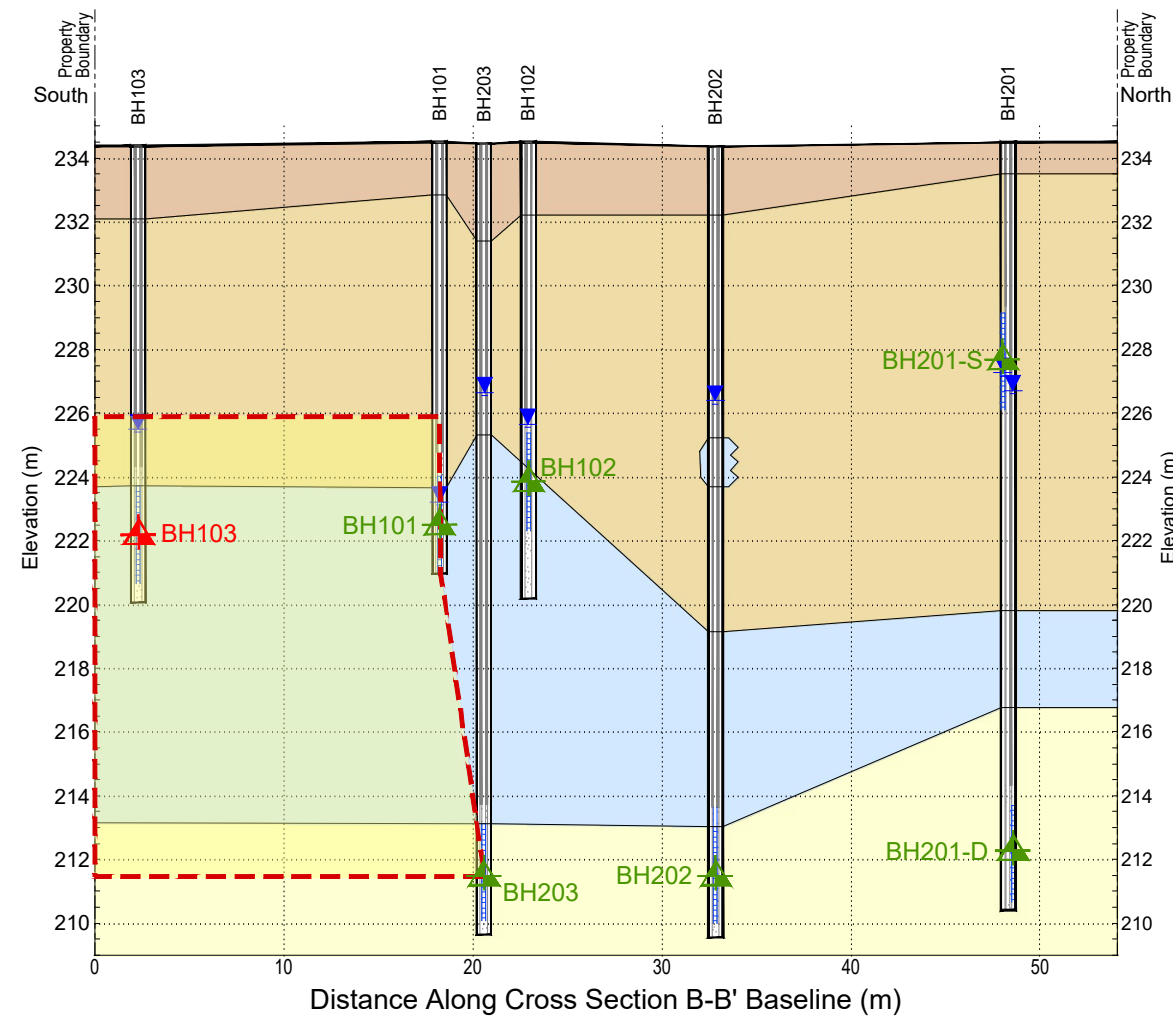
Reference:

- Notes:**
-
1. 145 = Parameter Result Meets 2011 T2 Standard, Coarse
-
2. 1630 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:
 Phase Two Environmental Site Assessment Update

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 METAL EXCEEDANCES IN GROUND WATER
 CROSS SECTION B-B'

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	
Date: December 2018	14

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	10-Jan-19	10-Jan-19	10-Jan-19	10-Jan-19	19-Dec-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1
Parameter																									
Barium	µg/L	1000	210	357	1330*	151	151	151	517	439	222	251	1630	1640	1740	145	1650	1730	1710	250	300	301	319	305	293

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																	
Barium	µg/L	1000	22	19	42	243	210	130	203	286	298	62	143	101	180		



Reference:

Google Earth 2017

Notes:

- 1. 111,000 = Parameter Result Meets 2011 T2 Standard, Coarse
- 2. 2,670,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Approximate Phase Two Property Boundary
- Approximate Borehole Location with Monitoring Well (August 2017)
- Approximate Borehole Location with Monitoring Well (October 2017)
- Approximate Extent of Contaminant Impact
- Sample in Borehole Meets Standard
- Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

CHLORIDE EXCEEDANCES IN GROUND WATER
 PLAN VIEW

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

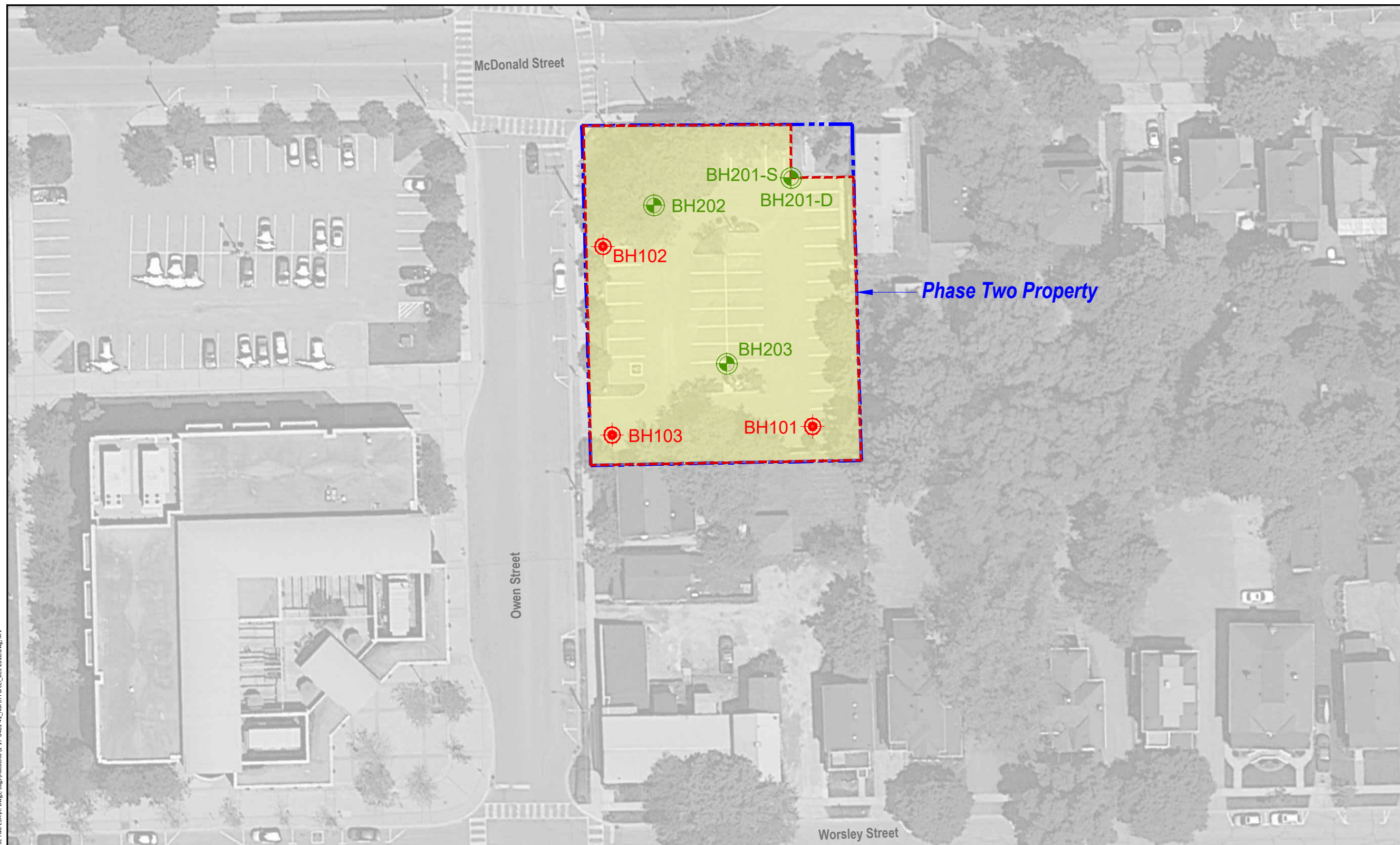
MB

Figure No.:

15

Date:

December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18		
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																											
Chloride	ug/L	790000	122000	110000	2930000*	107000	108000	104000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000	3510000	3800000	3320000	617000	559000	583000	590000	541000	452000		

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																		
Chloride	ug/L	790000	31500	31400	113000	538000	92800	740000	132000	137000	109000	5200	26200	173000	150000	3630000	3630000	

Reference:

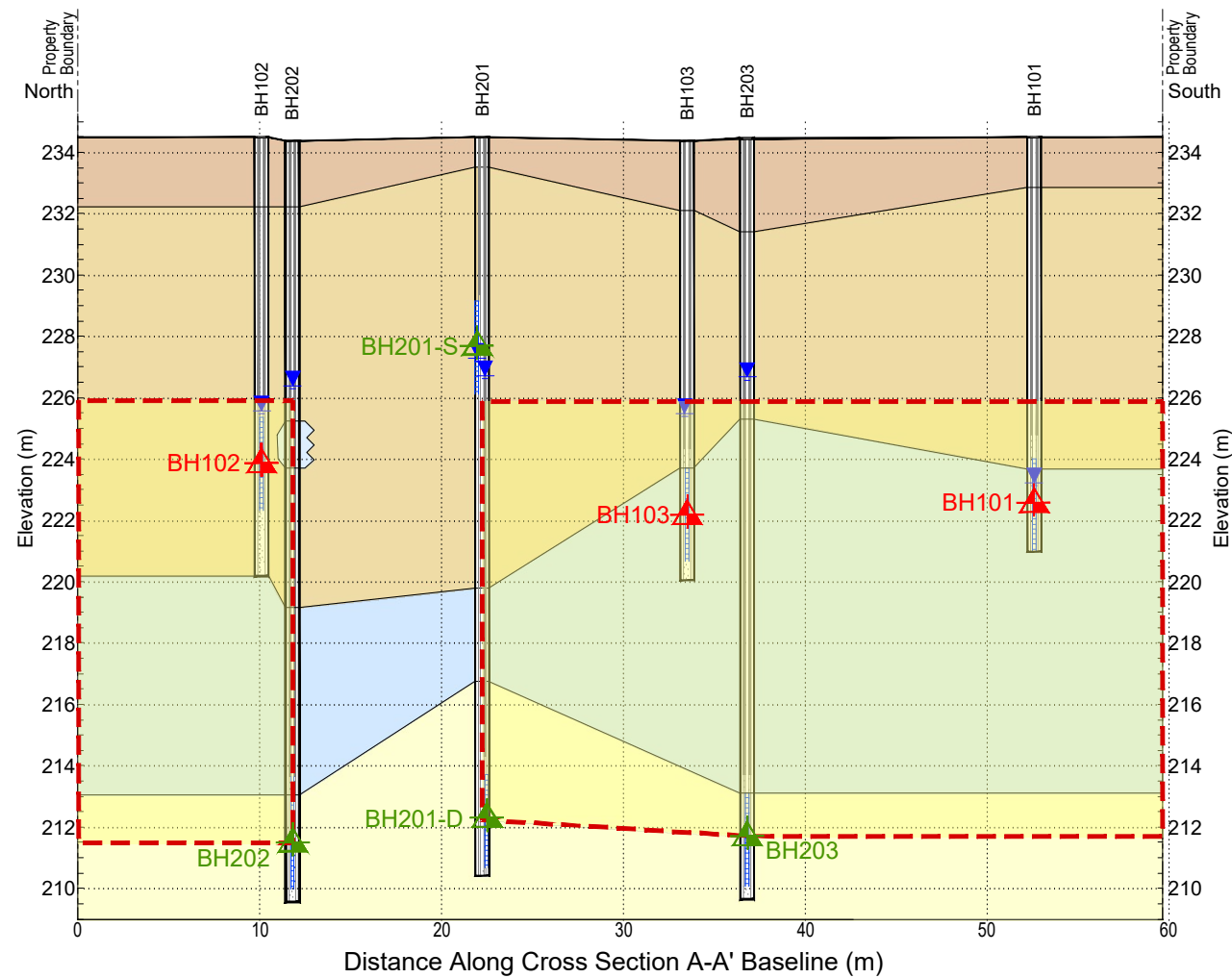
Notes:

- 111,000 = Parameter Result Meets 2011 T2 Standard, Coarse
- 2,670,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Z:\I-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-02 - North Parcel - Dec 2018.dwg, MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Chloride	ug/L	790000	122000	110000	2930000*	107000	108000	104000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000	3510000	3800000	3320000	617000	559000	583000	590000	541000	452000	

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																	
Chloride	ug/L	790000	31500	31400	113000	538000	92800	740000	132000	137000	109000	5200	26200	173000	150000	3630000	3630000

 Project Title:
 Phase Two Environmental Site Assessment Update

 Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

 Figure Title:
 CHLORIDE EXCEEDANCES IN GROUND WATER
 CROSS SECTION A-A'

 Designed By: SM
 File No.: 1-17-0481-42

 Drawn By: MV
 Scale: As Shown

 Reviewed By: MB
 Date: December 2018
 Figure No.: 16

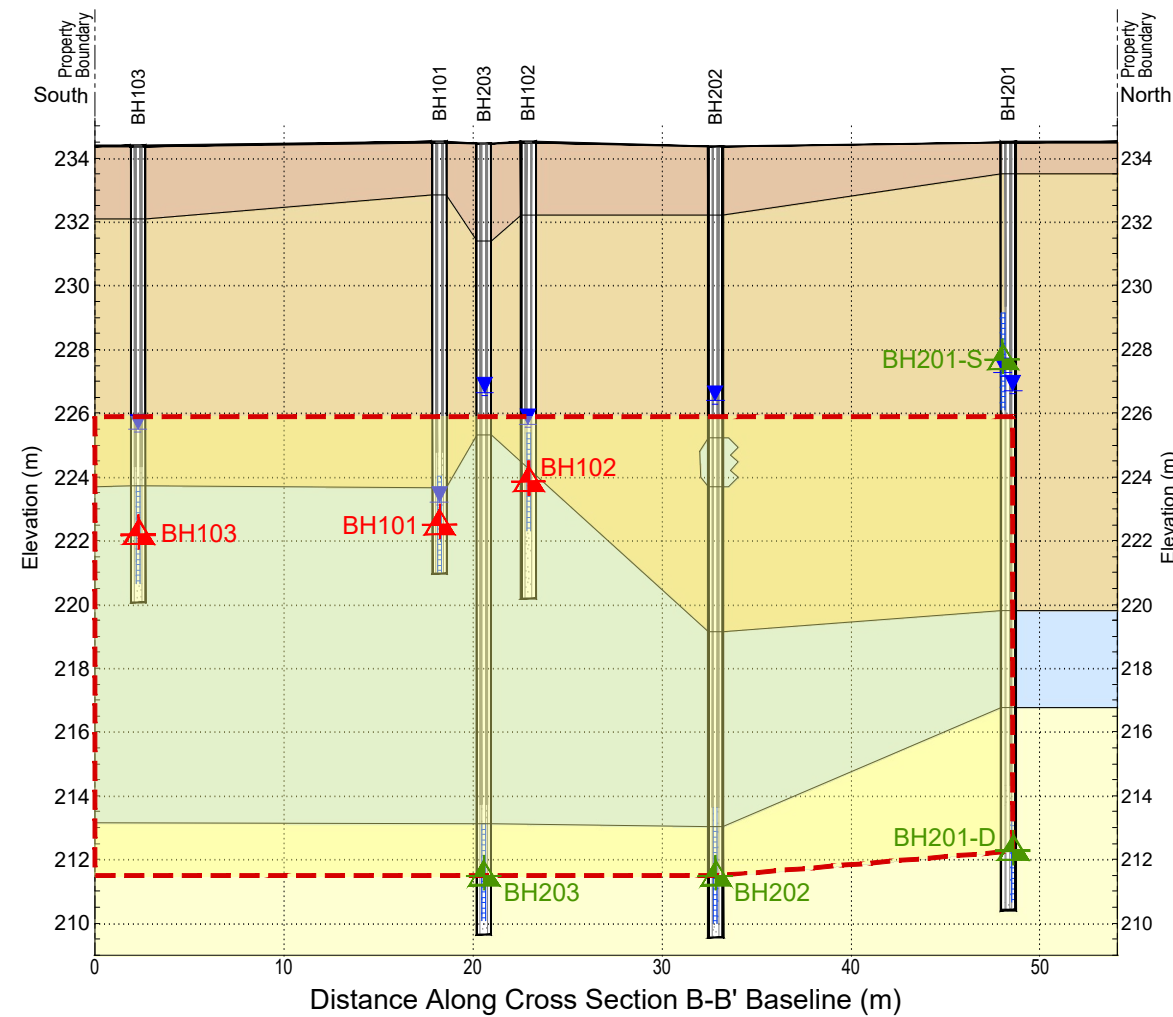
Reference:

- Notes:**
-
1. 111,000 = Parameter Result Meets 2011 T2 Standard, Coarse
-
2. 2,670,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Z:\I-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-02 - North Parcel - Dec 2018.dwg.MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Chloride	ug/L	790000	122000	110000	2930000*	107000	108000	104000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000	3510000	3800000	3320000	617000	559000	583000	590000	541000	452000	

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																		
Chloride	ug/L	790000	31500	31400	113000	538000	92800	740000	132000	137000	109000	5200	26200	173000	150000	3630000	3630000	

Project Title:
 Phase Two Environmental Site Assessment Update

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 CHLORIDE EXCEEDANCES IN GROUND WATER
 CROSS SECTION B-B'

Designed By: SM **File No.:** 1-17-0481-42
Drawn By: MV **Scale:** As Shown
Reviewed By: MB **Figure No.:** 17
Date: December 2018



Reference:

Google Earth 2017

Notes:

- 1. 53,300 = Parameter Result Meets 2011 T2 Standard, Coarse
- 2. 542,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Approximate Phase Two Property Boundary
- Approximate Borehole Location with Monitoring Well (August 2017)
- Approximate Borehole Location with Monitoring Well (October 2017)
- Approximate Extent of Contaminant Impact
- Sample in Borehole Meets Standard
- Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

SODIUM EXCEEDANCES IN GROUND WATER
 PLAN VIEW

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

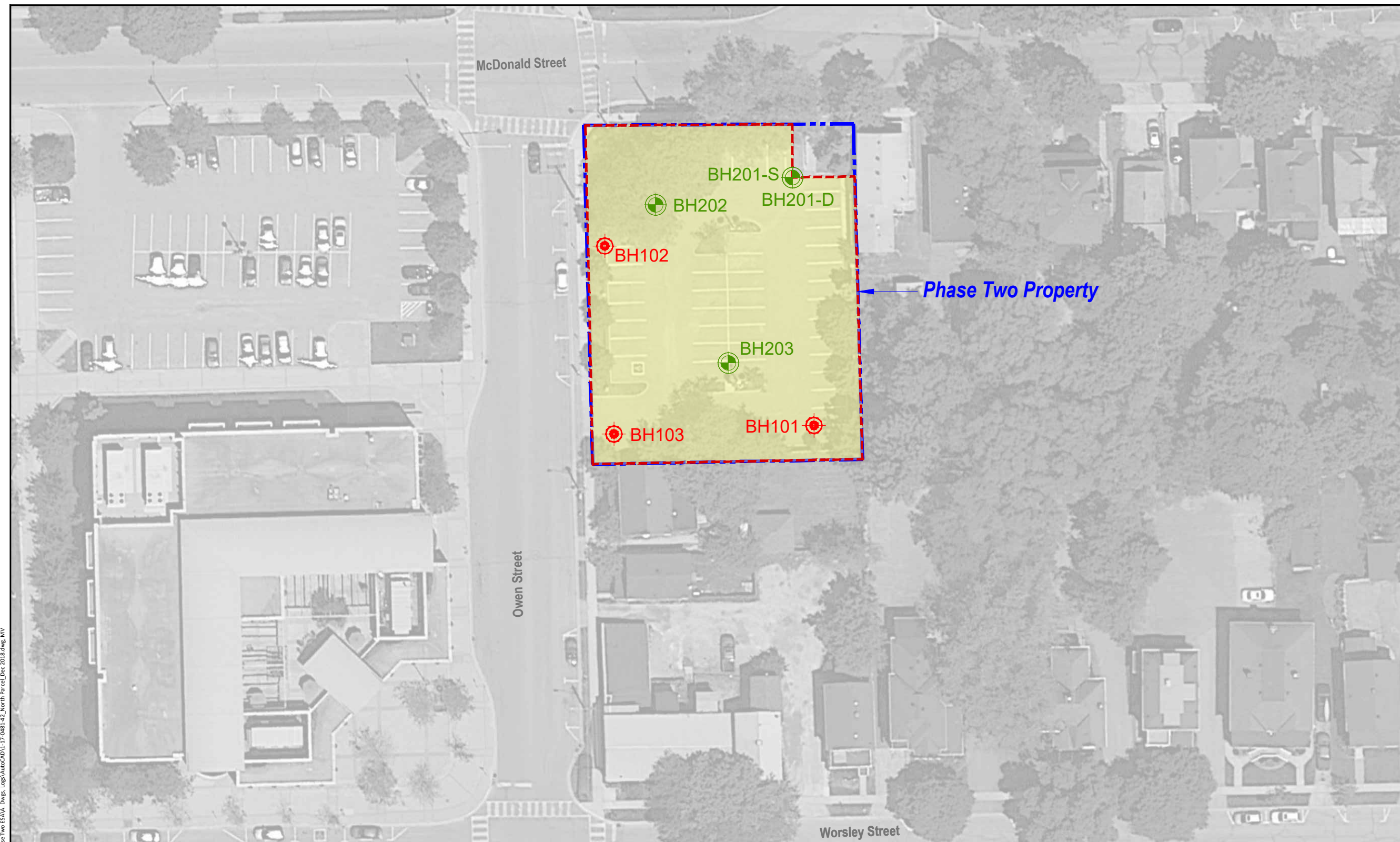
MB

Figure No.:

18

Date:

December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18		
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																											
Sodium	µg/L	490000	61500	172000	660000*	49200	48800	51600	1080000	1450000	287000	1690000	542000	543000	857000	53300	757000	946000	946000	288000	302000	306000	290000	290000	226000		

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																		
Sodium	µg/L	490000	23500	23200	70100	214000	31900	419000	29200	17600	11400	40800	61600	110000	55300	1720000	1640000	

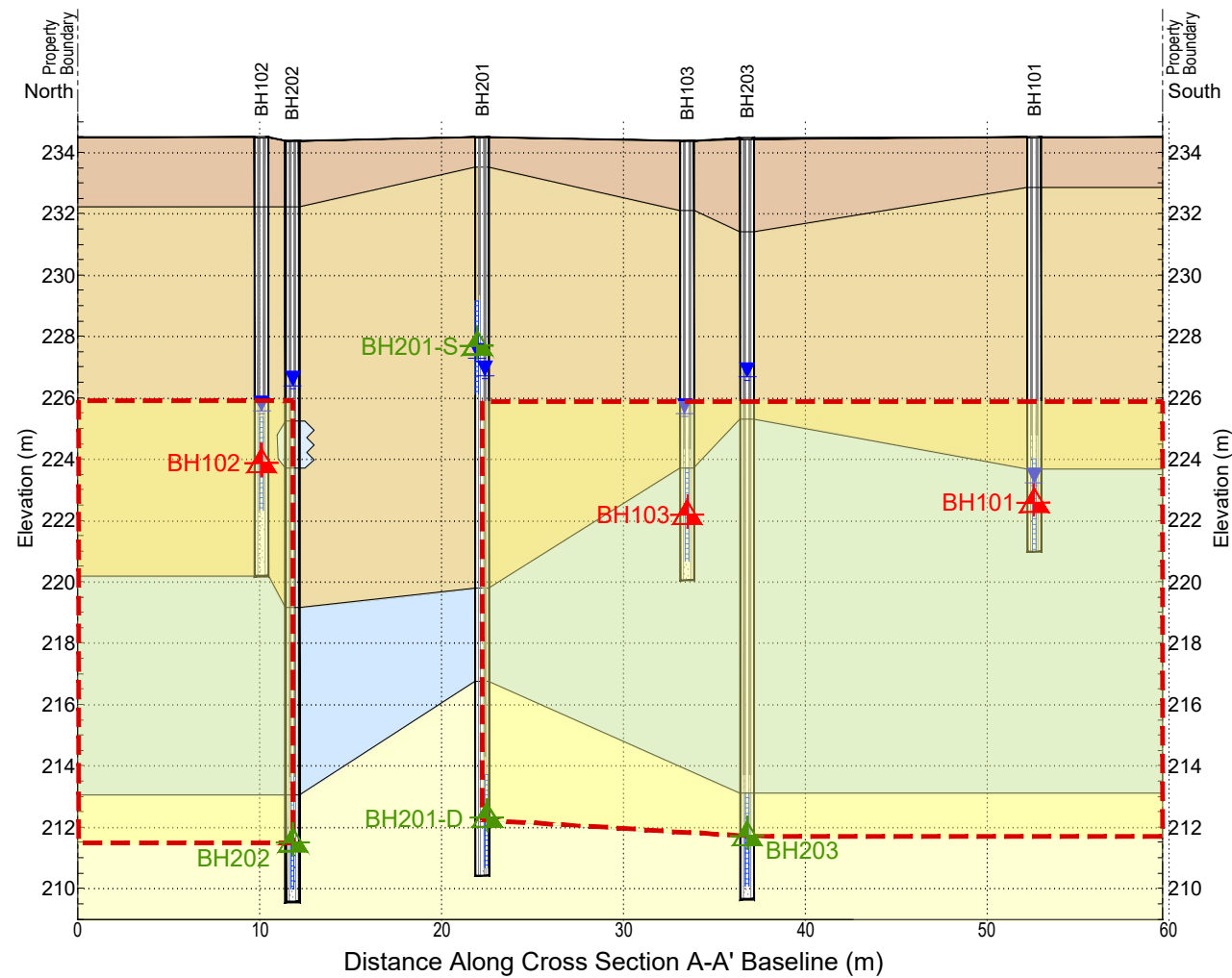
Reference:

- Notes:**
- 53,300 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 542,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 SODIUM EXCEEDANCES IN GROUND WATER
 CROSS SECTION A-A'

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

19

Date:

December 2018

Z:\Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\2 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg, MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																									
Sodium	µg/L	490000	61500	172000	660000*	49200	48800	51600	1080000	1450000	287000	1690000	542000	543000	857000	53300	757000	946000	946000	288000	302000	306000	290000	290000	226000

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																	
Sodium	µg/L	490000	23500	23200	70100	214000	31900	419000	29200	17600	11400	40800	61600	110000	55300	1720000	1640000

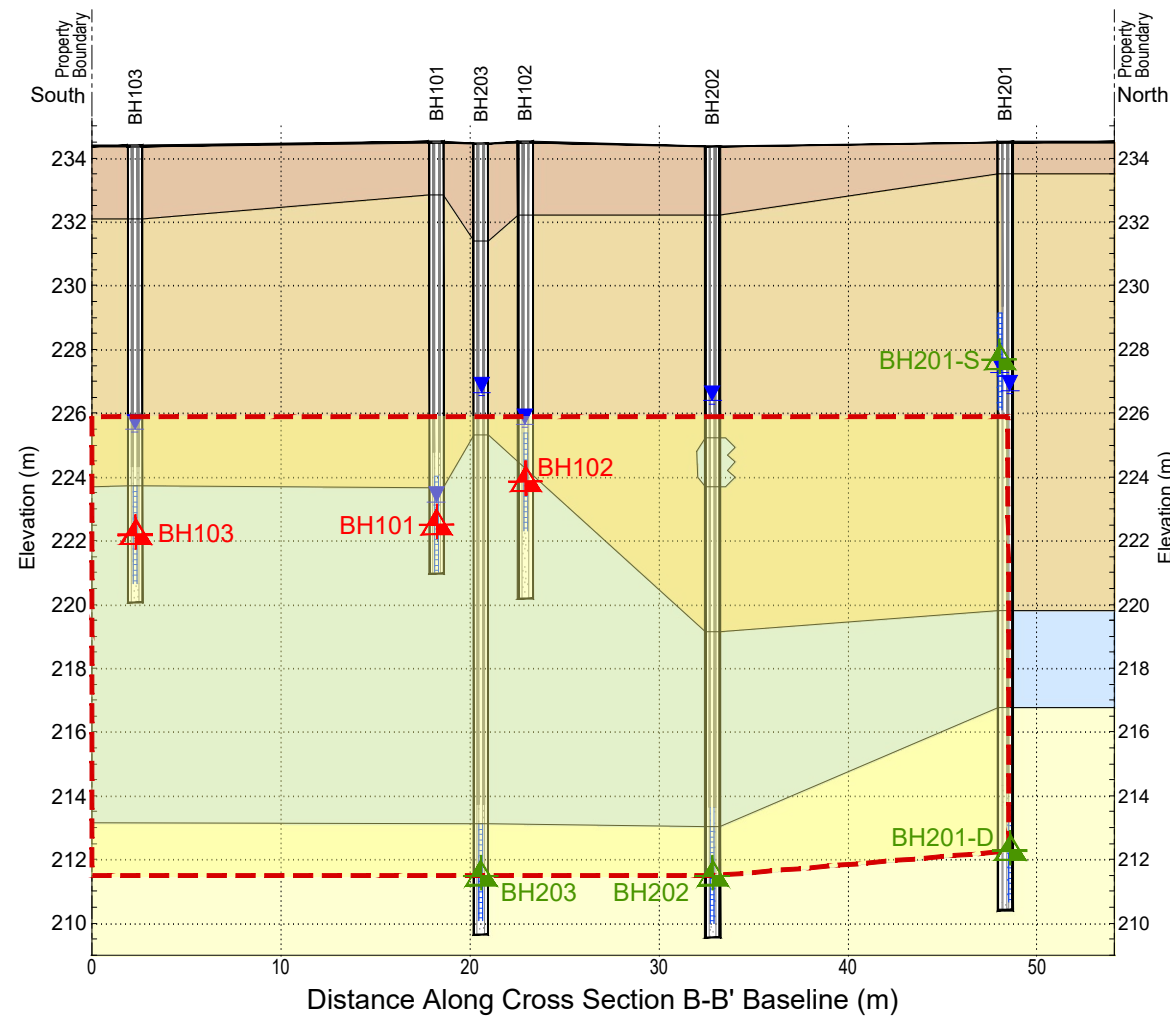
Reference:

- Notes:**
-
1. 53,300 = Parameter Result Meets 2011 T2 Standard, Coarse
-
2. 542,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 SODIUM EXCEEDANCES IN GROUND WATER
 CROSS SECTION B-B'

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

20

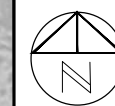
Date:

December 2018

Z:\Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg, MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																									
Sodium	µg/L	490000	61500	172000	660000*	49200	48800	51600	1080000	1450000	287000	1690000	542000	543000	857000	53300	757000	946000	946000	288000	302000	306000	290000	290000	226000

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																	
Sodium	µg/L	490000	23500	23200	70100	214000	31900	419000	29200	17600	11400	40800	61600	110000	55300	1720000	1640000



Reference:
 Google Earth 2017

Notes:
 1. 1.1 = Parameter Result Meets 2011 T2 Standard, Coarse
 2. 14.1 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

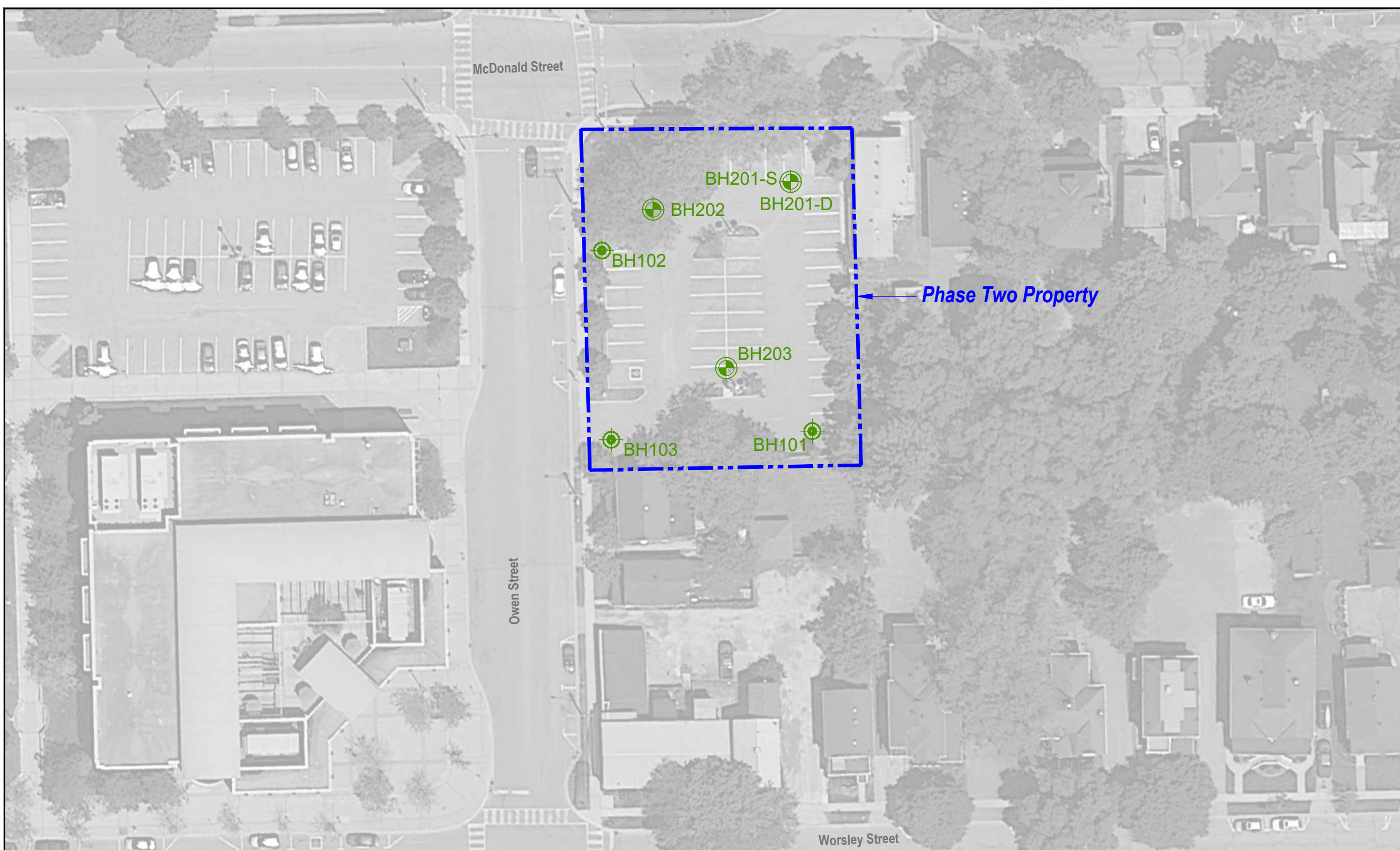
- Legend:
- Approximate Phase Two Property Boundary
 -
 -
 - Approximate Extent of Contaminant Impact
 -
 -

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

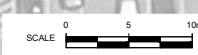
Figure Title:
 SCS VOC EXCEEDANCES IN GROUND WATER
 PLAN VIEW (Historical)

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 21A
Date: December 2018	



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	19-Sep-18	19-Sep-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																														
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	<0.50		

Sample Name	Units	MOECC T2 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203	
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter															
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	



Z:\Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESIA.Dwg - Logs\AutoCAD\17-0481-02_North Parcel_Dec 2018.dwg, MV

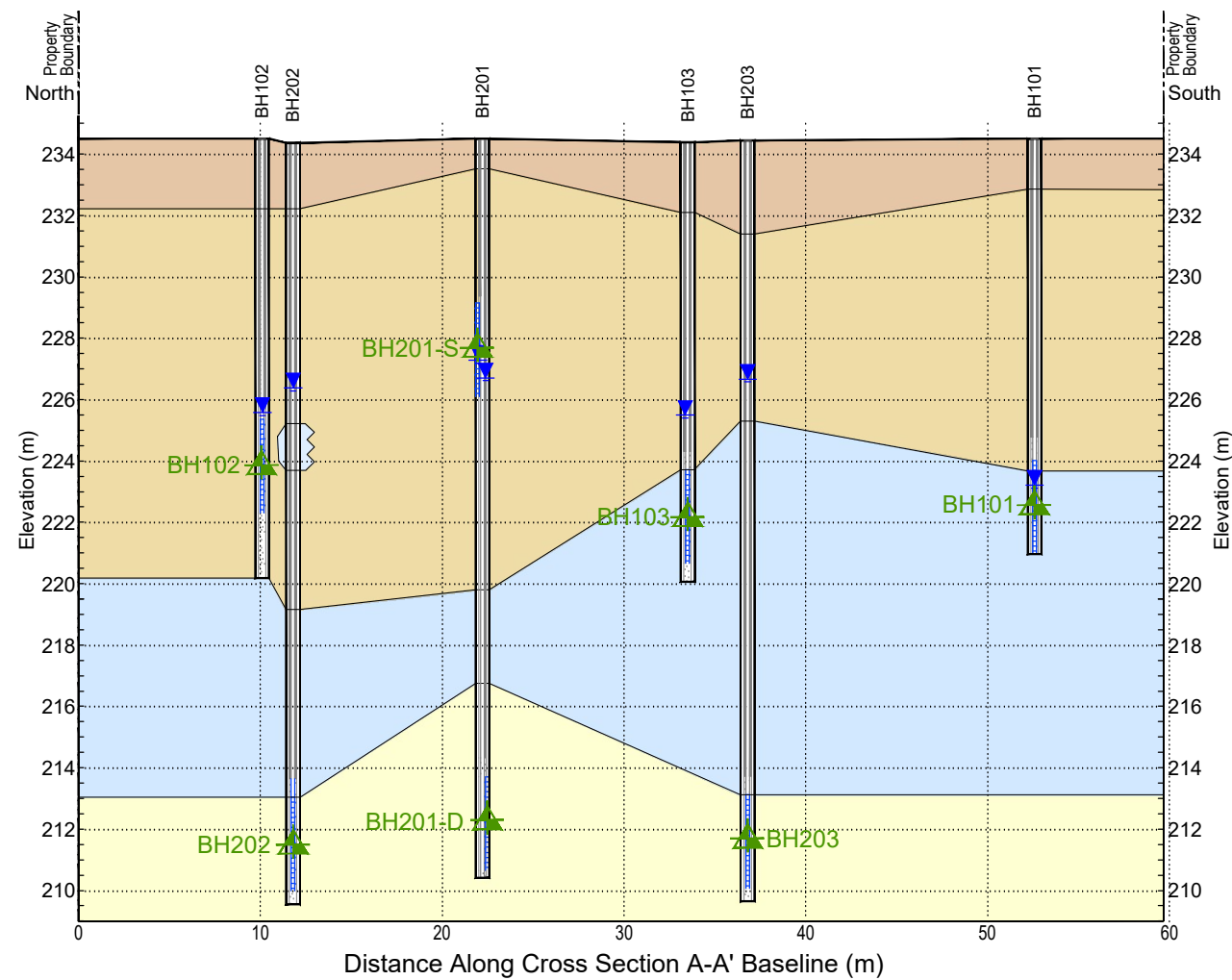
Reference:

- Notes:**
- 1.1 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 14.1 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
SCS VOC EXCEEDANCES IN GROUND WATER
CROSS SECTION A-A' (Historical)

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																											
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50

Sample Name	Units	MOECC T2 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter															
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 22A

Reference:

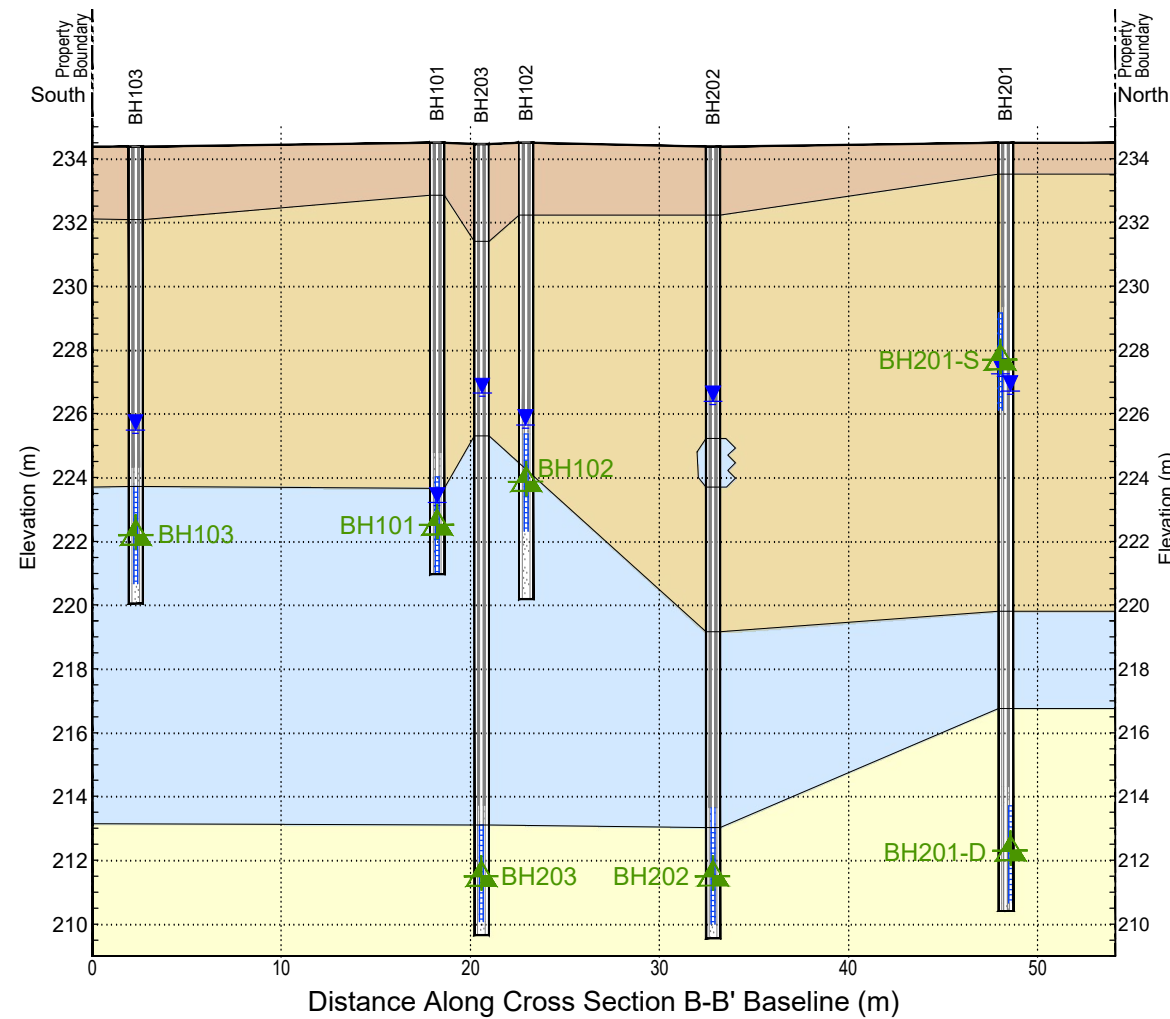
Notes:

1. 1.1 = Parameter Result Meets 2011 T2 Standard, Coarse
2. 14.1 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 SCS VOC EXCEEDANCES IN GROUND WATER
 CROSS SECTION B-B' (Historical)

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	19-Sep-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																														
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	<0.50		

Sample Name	Units	MOECC T2 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter															
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

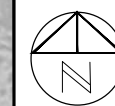
As Shown

Reviewed By:

MB

Figure No.:
23A
Date:

December 2018



Reference:
 Google Earth 2017

Notes:
 1. 1.1 = Parameter Result Meets 2011 T6 Standard, Coarse
 2. 14.1 = Parameter Result Exceeds 2011 T6 Standard, Coarse

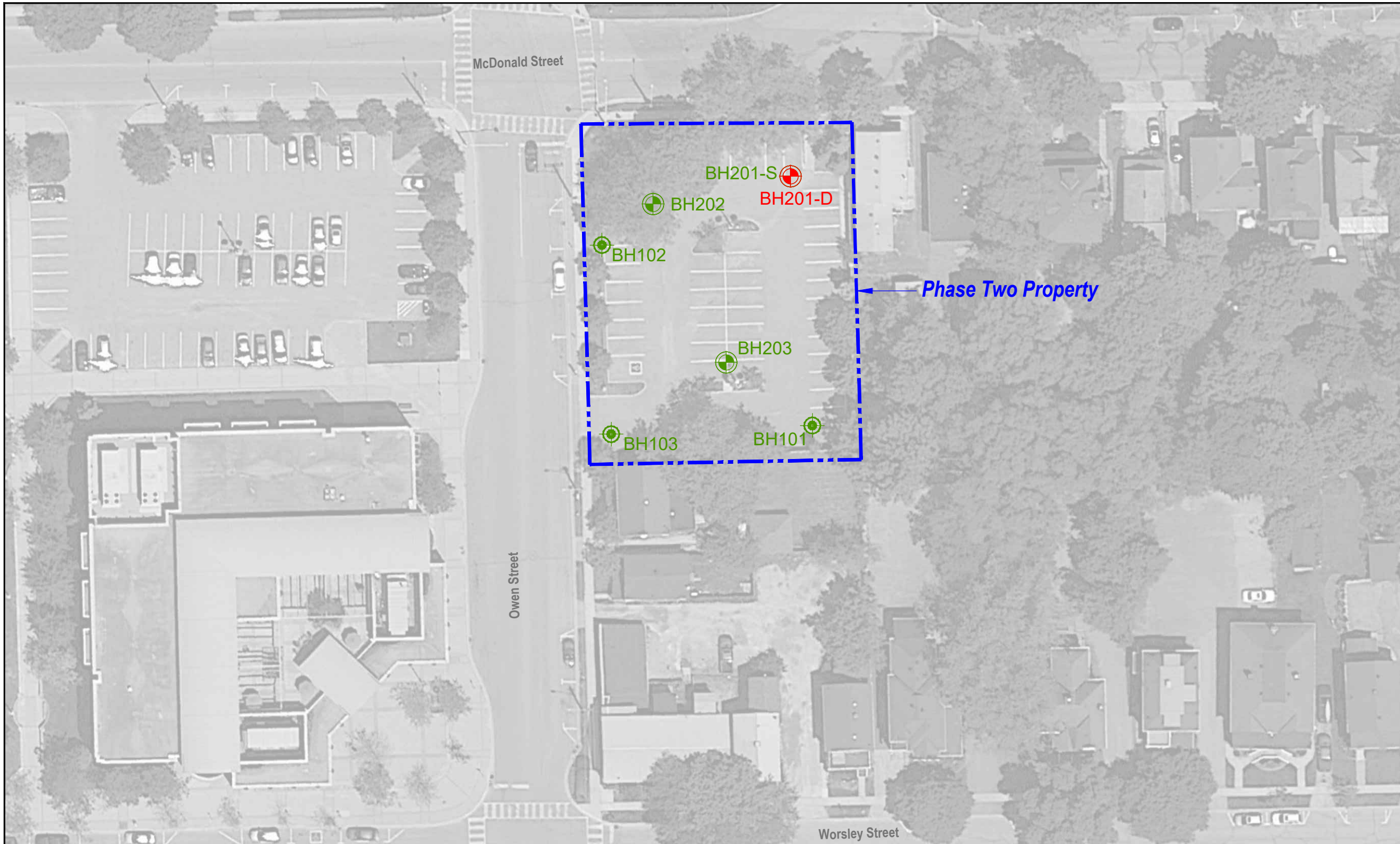
* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

- Legend:
- Approximate Phase Two Property Boundary
 - Approximate Borehole Location with Monitoring Well (August 2017)
 - Approximate Borehole Location with Monitoring Well (October 2017)
 - Sample in Borehole Meets Standard
 - Sample in Borehole Exceeds Standard

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 TABLE 6 VOC EXCEEDANCES IN GROUND WATER PLAN VIEW (Historical)



Sample Name	Units	MOECC T6 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	19-Sep-18	19-Sep-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																														
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T6 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203	
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter															
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	

Designed By: SM
 Drawn By: MV
 Reviewed By: MB
 Date: December 2018

File No.: 1-17-0481-42
 Scale: As Shown
 Figure No.: 21B



Reference:

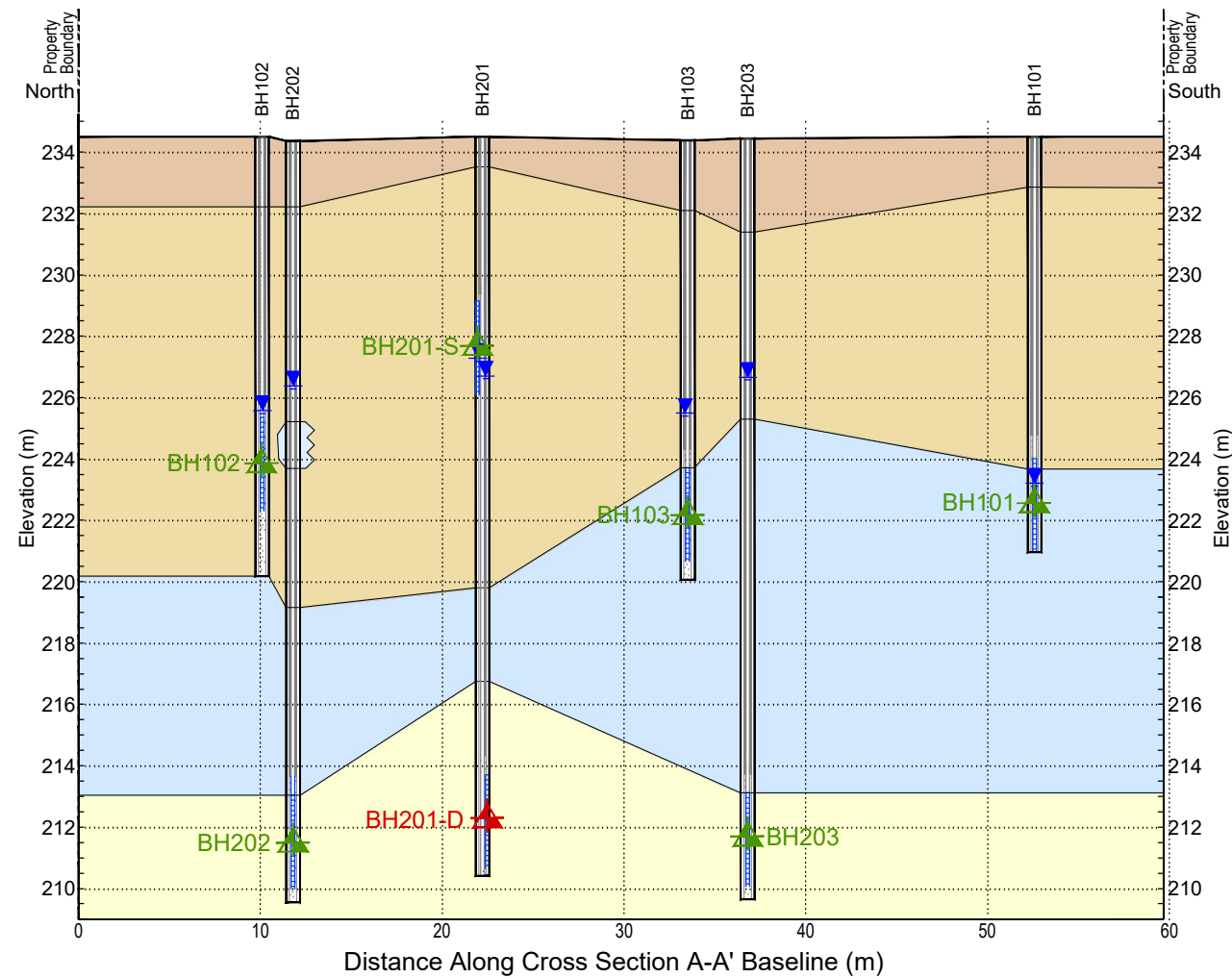
Notes:

1. 1.1 = Parameter Result Meets 2011 T6 Standard, Coarse
2. 14.1 = Parameter Result Exceeds 2011 T6 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

TABLE 6 VOC EXCEEDANCES IN GROUND WATER CROSS SECTION A-A' (Historical)

Sample Name	Units	MOECC T6 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																												
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T6 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter															
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

22B

Date:

December 2018

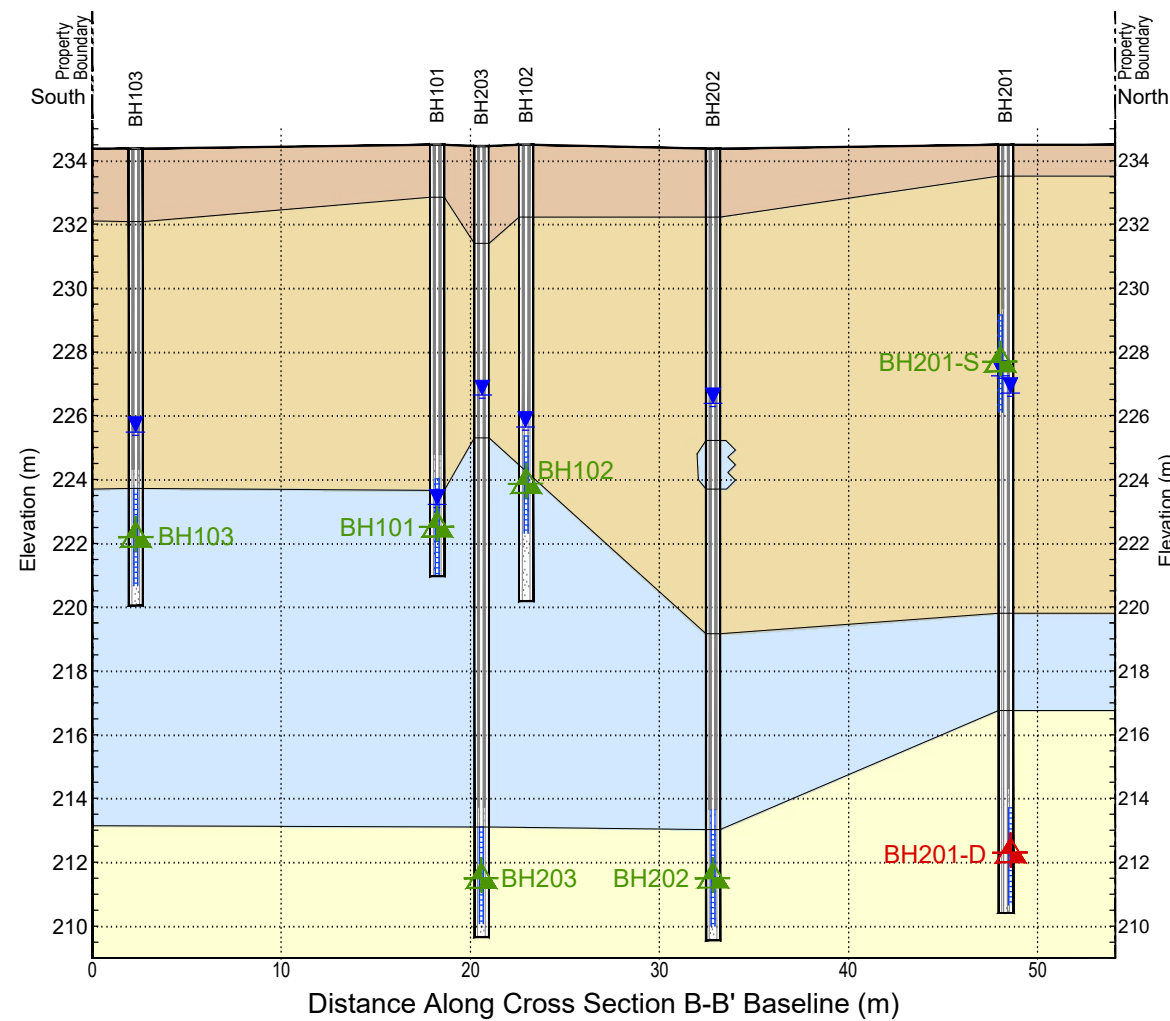
Reference:

- Notes:**
- 1.1 = Parameter Result Meets 2011 T6 Standard, Coarse
 - 14.1 = Parameter Result Exceeds 2011 T6 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
TABLE 6 VOC EXCEEDANCES IN GROUND WATER CROSS SECTION B-B' (Historical)

Sample Name	Units	MOECC T6 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																												
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T6 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter														
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50

Designed By: SM
File No.: 1-17-0481-42

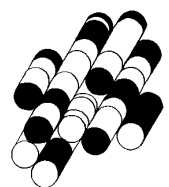
Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 23B

APPENDIX A

TERRAPROBE INC.



Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : July 31, 2017

Project : NE Worsley & Owen Streets

Compiled by : JH

Sheet No. : 1 of 1

Location : Barrie, Ontario

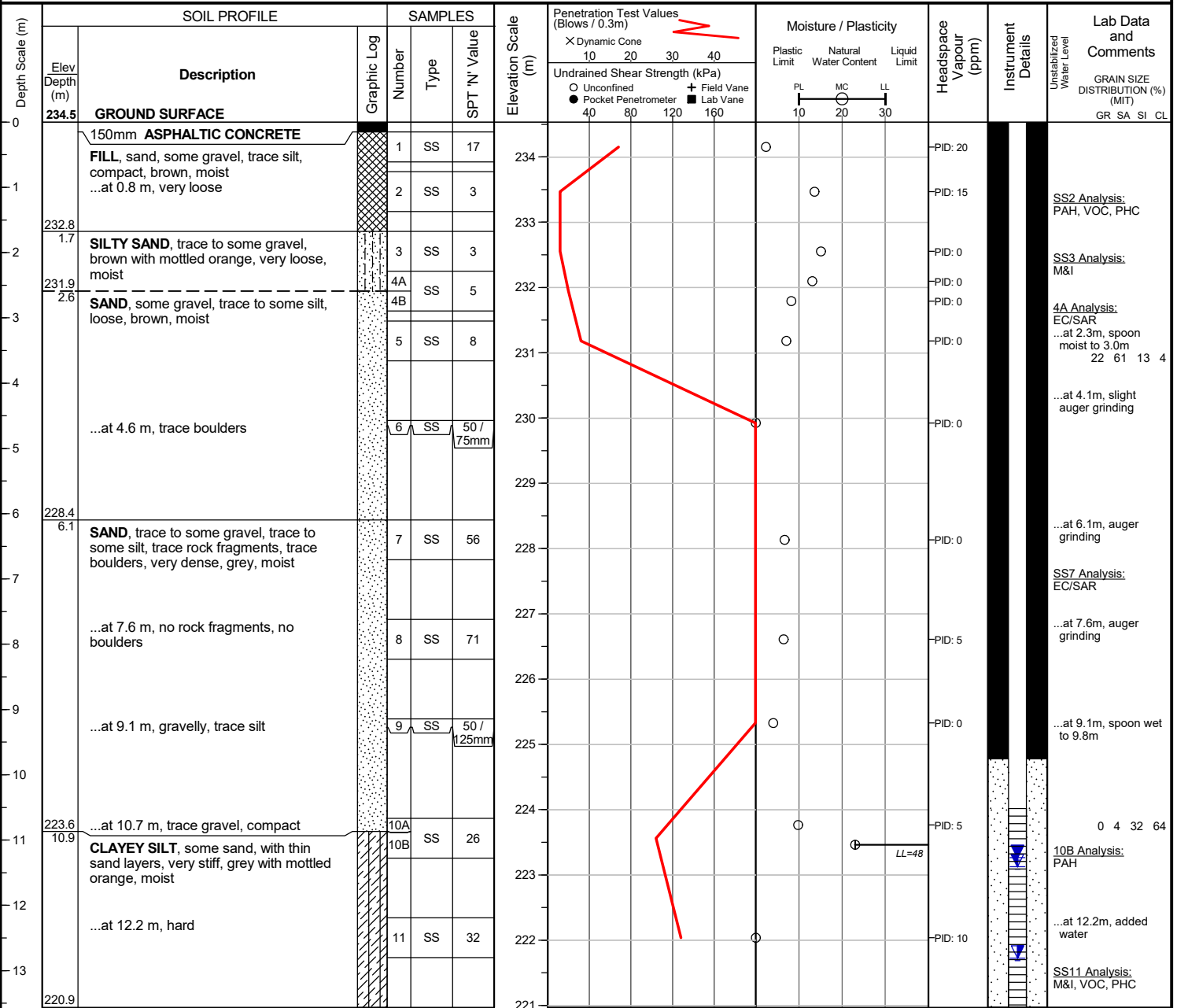
Checked by : JC

Position : E: 604545, N: 4916266 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Truck-mounted

Drilling Method : Hollow stem augers



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

50 mm dia. monitoring well installed.

Date	Water Depth (m)	Elevation (m)
Aug 8, 2017	11.4	223.1
Aug 11, 2017	12.8	221.7
Aug 24, 2017	9.0	225.6
Sep 7, 2017	11.4	223.1
Oct 25, 2017	11.5	223.0
Nov 10, 2017	10.5	224.0
Dec 7, 2017	11.3	223.3
Jan 17, 2018	11.3	223.2
Dec 20, 2018	11.3	223.3

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : August 1, 2017

Project : NE Worsley & Owen Streets

Compiled by : JH

Sheet No. : 1 of 1

Location : Barrie, Ontario

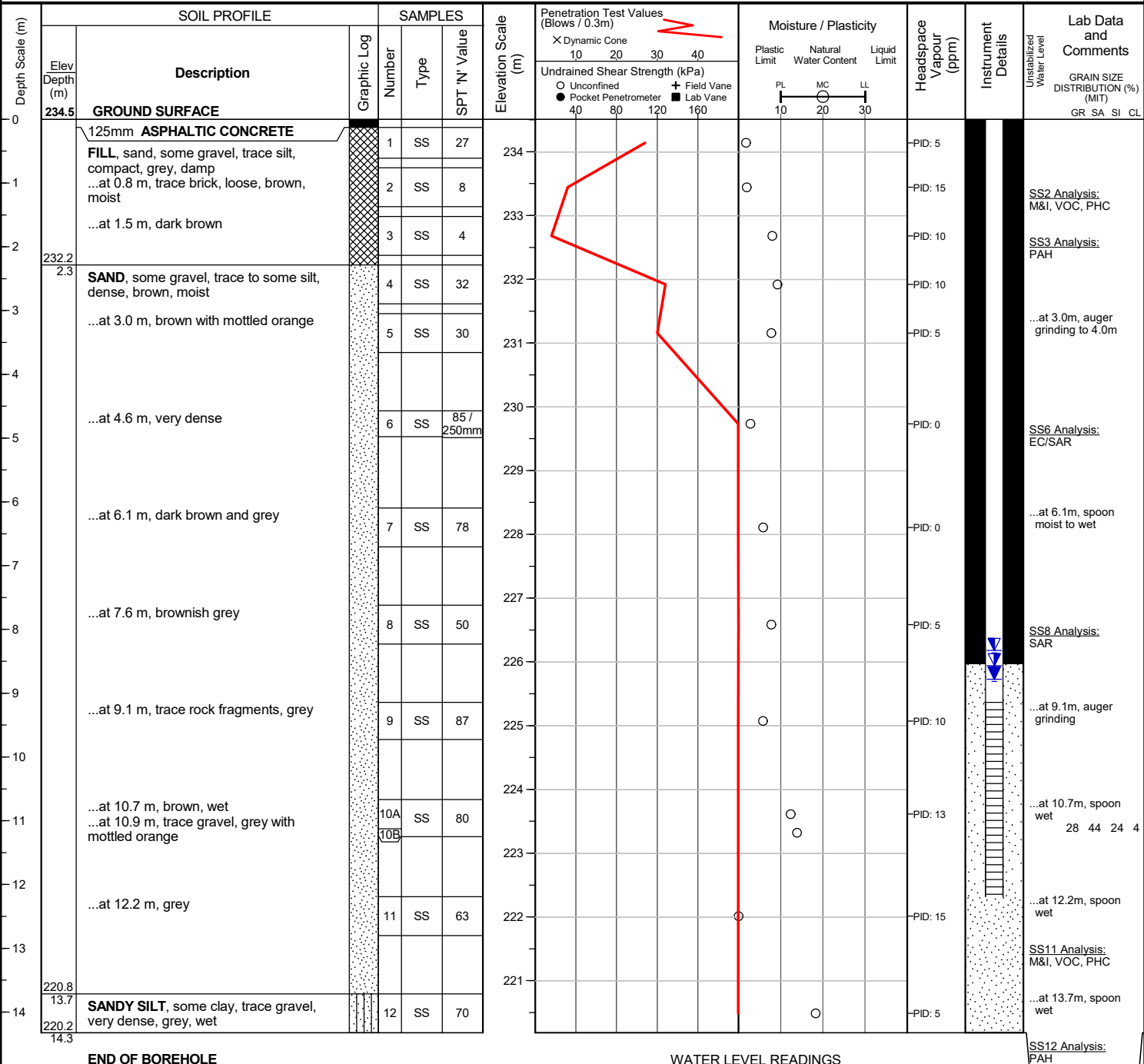
Checked by : JC

Position : E: 604515, N: 4916284 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Truck-mounted

Drilling Method : Hollow stem augers



WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Aug 8, 2017	8.3	226.2
Aug 11, 2017	8.6	225.9
Aug 24, 2017	8.6	225.9
Sep 7, 2017	8.5	226.0
Oct 25, 2017	8.9	225.6
Nov 10, 2017	8.8	225.7
Dec 7, 2017	8.8	225.7
Jan 17, 2018	8.9	225.6
Dec 20, 2018	8.8	225.7

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

50 mm dia. monitoring well installed.

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : August 2, 2017

Project : NE Worsley & Owen Streets

Compiled by : JH

Sheet No. : 1 of 1

Location : Barrie, Ontario

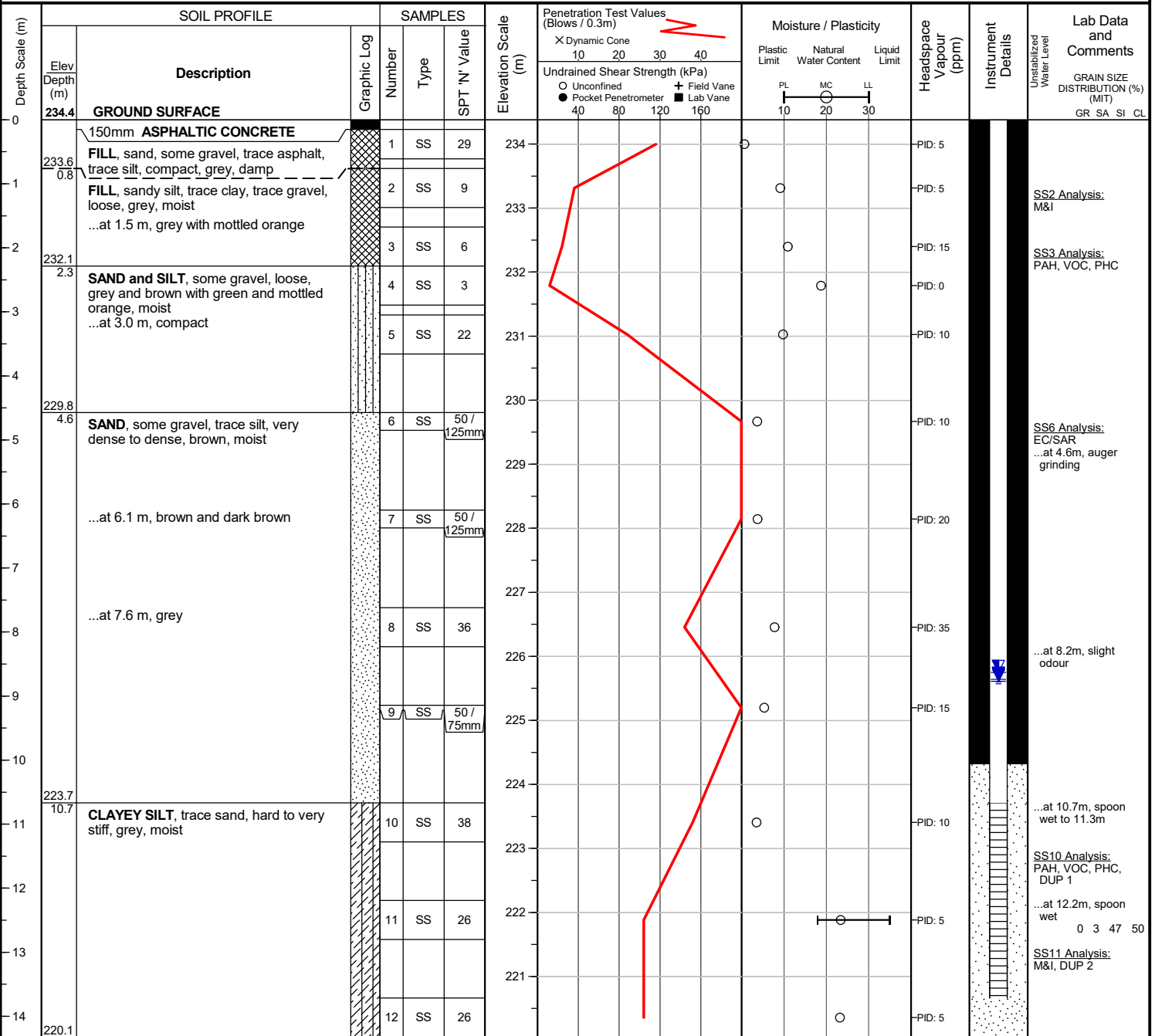
Checked by : JC

Position : E: 604516, N: 4916264 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Truck-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)
Aug 8, 2017	8.6	225.7
Aug 11, 2017	8.8	225.6
Aug 24, 2017	9.0	225.4
Sep 7, 2017	8.9	225.4
Oct 25, 2017	8.5	225.9
Nov 10, 2017	8.4	226.0
Dec 7, 2017	8.9	225.5
Jan 17, 2018	8.8	225.6
Dec 20, 2018	8.7	225.6

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : October 23, 2017

Project : NE Worsley & Owen Streets

Compiled by : RW

Sheet No. : 1 of 2

Location : Barrie, Ontario

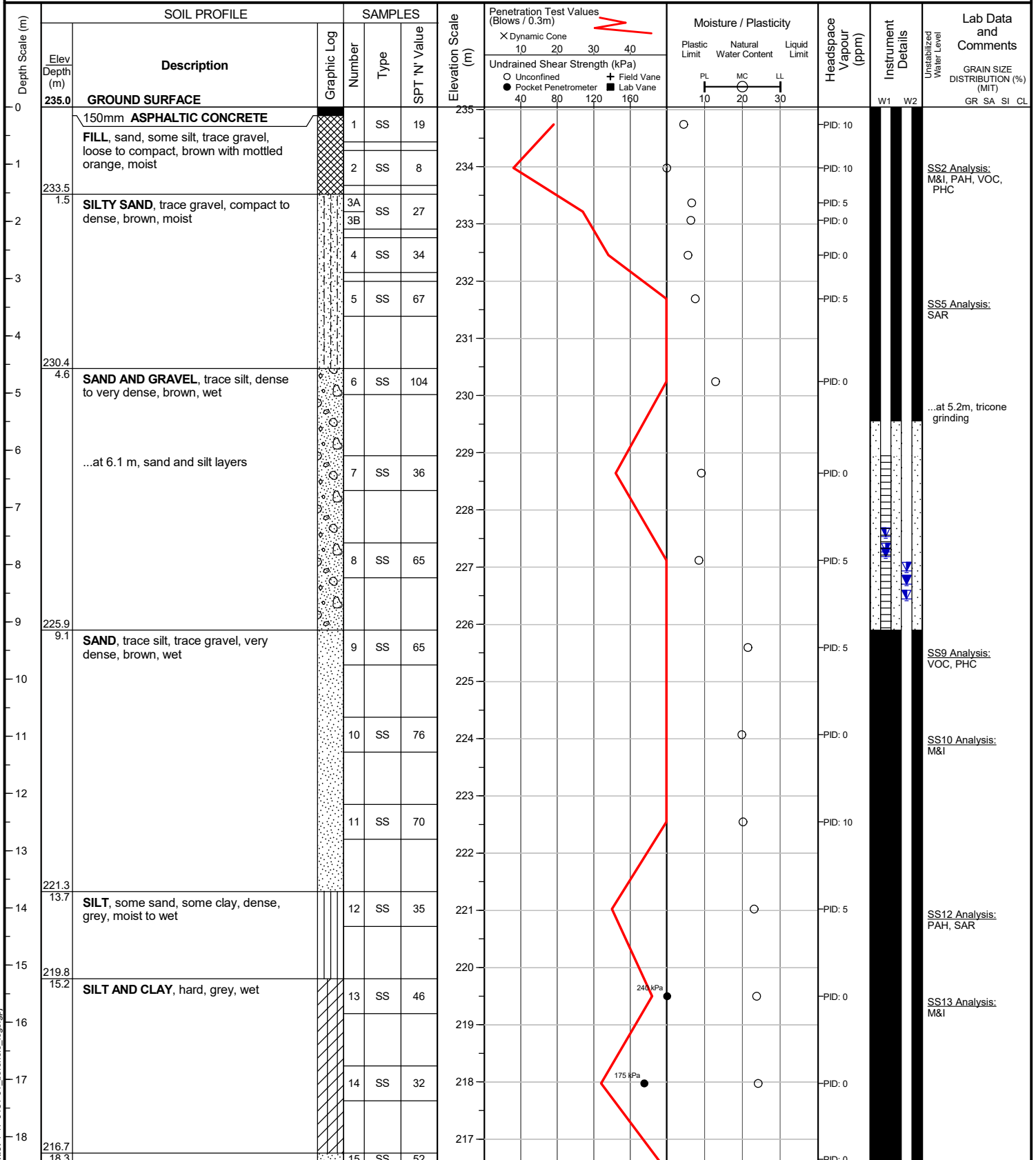
Checked by : JC

Position : E: 604540, N: 4916303 (UTM 17T)

Elevation Datum : Local Datum

Rig type : Truck-mounted

Drilling Method : Hollow stem augers / mud rotary (tricone)



file: 1-17-0481-01_borehole_logs.gpj

(continued next page)

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : October 23, 2017

Project : NE Worsley & Owen Streets

Compiled by : RW

Sheet No. : 2 of 2

Location : Barrie, Ontario

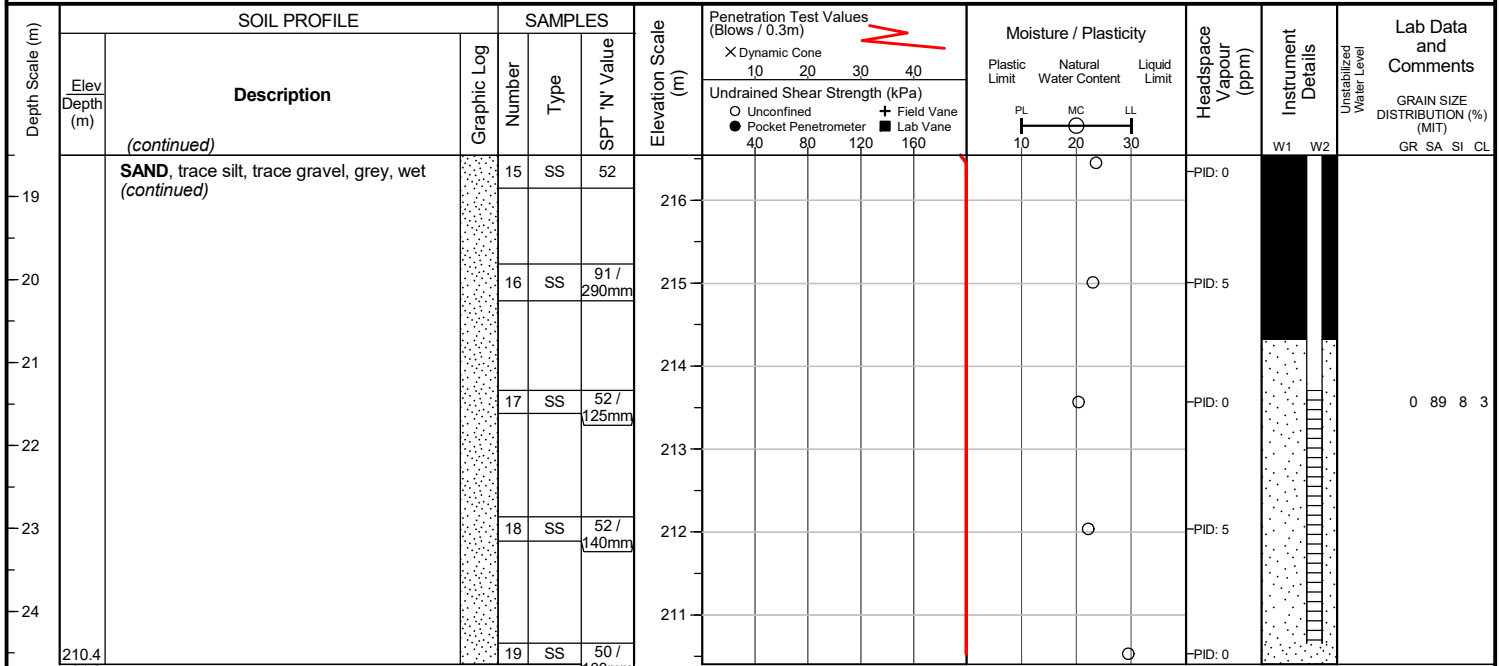
Checked by : JC

Position : E: 604540, N: 4916303 (UTM 17T)

Elevation Datum : Local Datum

Rig type : Truck-mounted

Drilling Method : Hollow stem augers / mud rotary (tricone)


END OF BOREHOLE

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

 W1: 50 mm dia. monitoring well installed.
 W2: 50 mm dia. monitoring well installed.

W1 WATER LEVELS

Date	Water Depth (m)	Elevation (m)
Dec 7, 2017	7.5	227.5
Jan 17, 2018	7.8	227.3
Dec 20, 2018	7.9	227.2

W2 WATER LEVELS

Date	Water Depth (m)	Elevation (m)
Nov 10, 2017	8.6	226.4
Dec 7, 2017	8.1	226.9
Jan 17, 2018	8.7	226.4
Sep 19, 2018	8.7	226.3
Dec 20, 2018	8.3	226.7

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : October 24, 2017

Project : NE Worsley & Owen Streets

Compiled by : RW

Sheet No. : 1 of 2

Location : Barrie, Ontario

Checked by : JC

Position : E: 604519, N: 4916287 (UTM 17T)

Elevation Datum : Local Datum

Rig type : Truck-mounted

Drilling Method : Hollow stem augers / mud rotary (tricone)

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							10
0	234.4	GROUND SURFACE											
		140mm ASPHALTIC CONCRETE											
		Straight auger to 9.1m											
9.1	225.3	CLAYEY SILT , some sand, hard, grey with mottled orange, wet		1	SS	74	225	225 kPa					PID: 0
10.7	223.7	SILTY SAND , very dense, brownish grey, wet		2	SS	57							PID: 5
		...at 12.2 m, grey		3	SS	52							PID: 5
13.7	220.7	SILT , some clay, trace sand, very stiff to hard, grey, wet		4	SS	31		200 kPa					PID: 0
15.2	219.2	CLAY AND SILT , layered, trace sand, hard, grey, moist		5	SS	26	219	125 kPa					PID: 0
				6	SS	44							PID: 5
				7	SS	45							PID: 5

file: 1-17-0481-01_borehole_logs.gpj

(continued next page)

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : October 24, 2017

Project : NE Worsley & Owen Streets

Compiled by : RW

Sheet No. : 2 of 2

Location : Barrie, Ontario

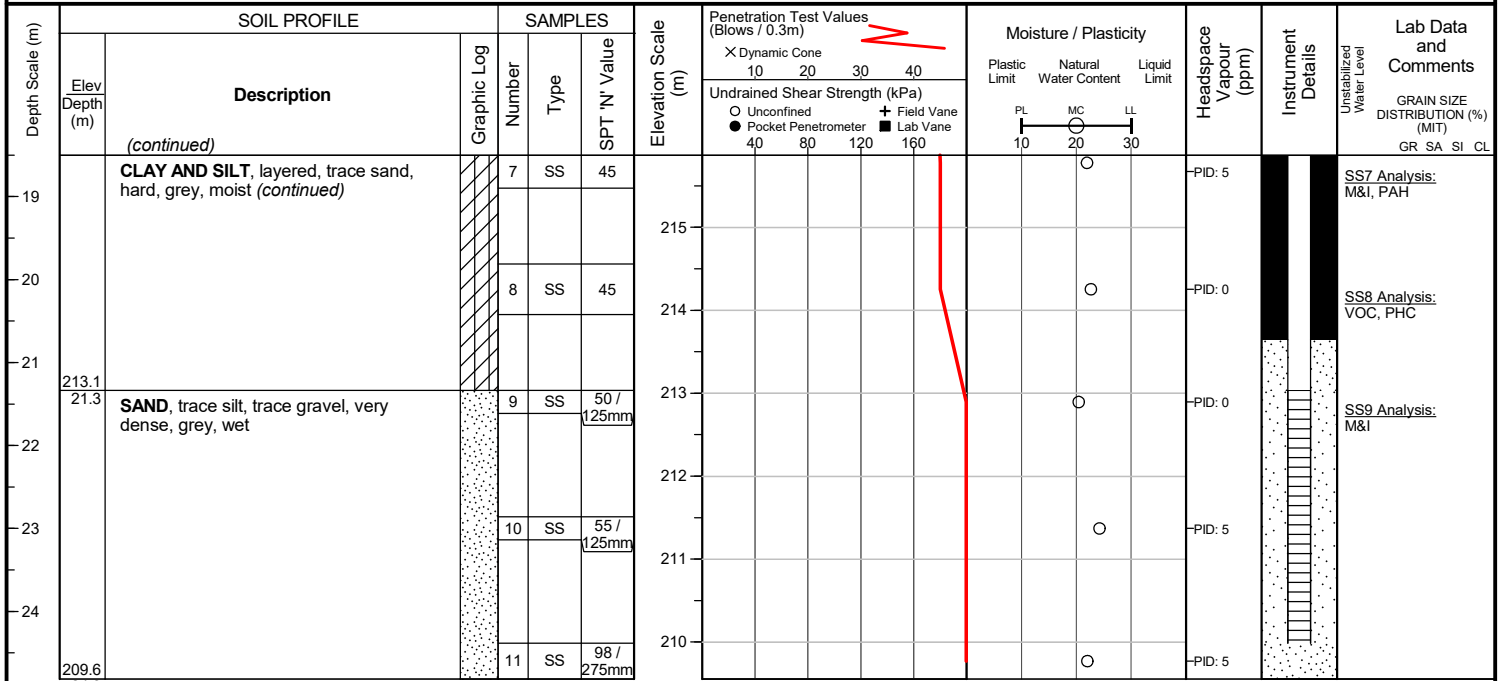
Checked by : JC

Position : E: 604519, N: 4916287 (UTM 17T)

Elevation Datum : Local Datum

Rig type : Truck-mounted

Drilling Method : Hollow stem augers / mud rotary (tricone)


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)
Nov 10, 2017	8.5	225.9
Dec 7, 2017	7.9	226.4
Jan 17, 2018	8.6	225.7
Dec 20, 2018	8.3	226.1

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : October 25, 2017

Project : NE Worsley & Owen Streets

Compiled by : RW

Sheet No. : 1 of 2

Location : Barrie, Ontario

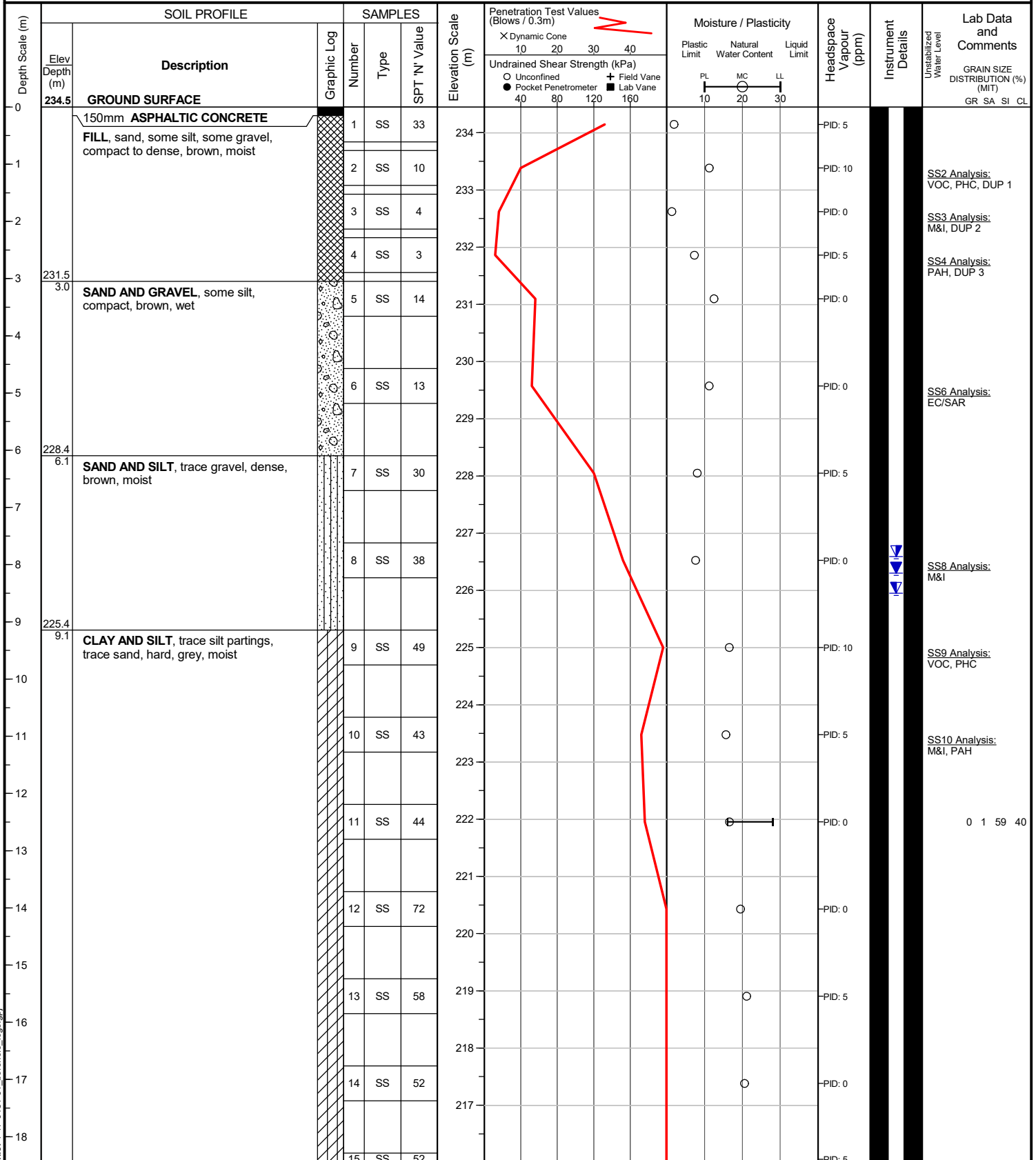
Checked by : JC

Position : E: 604537, N: 4916276 (UTM 17T)

Elevation Datum : Local Datum

Rig type : Truck-mounted

Drilling Method : Hollow stem augers / mud rotary (tricone)



file: 1-17-0481-01_borehole_logs.gpj

(continued next page)

Project No. : 1-17-0481-01

Client : Barrie Owen Service Inc.

Originated by : NG

Date started : October 25, 2017

Project : NE Worsley & Owen Streets

Compiled by : RW

Sheet No. : 2 of 2

Location : Barrie, Ontario



Checked by : JC

Position : E: 604537, N: 4916276 (UTM 17T)

Elevation Datum : Local Datum

Rig type : Truck-mounted

Drilling Method : Hollow stem augers / mud rotary (tricone)

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
19		<i>(continued)</i>										
19		CLAY AND SILT , trace silt partings, trace sand, hard, grey, moist <i>(continued)</i>		15	SS	52						
20												
20												
21	213.2											
21	21.3	SAND , some silt, trace clay, very dense, grey, wet		17	SS	100 / 250mm						
22												
23												
23												0 84 12 4
24												
24	209.7											
24.8	24.8											

END OF BOREHOLE

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

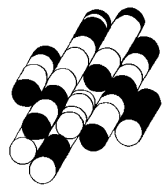
50 mm dia. monitoring well installed.

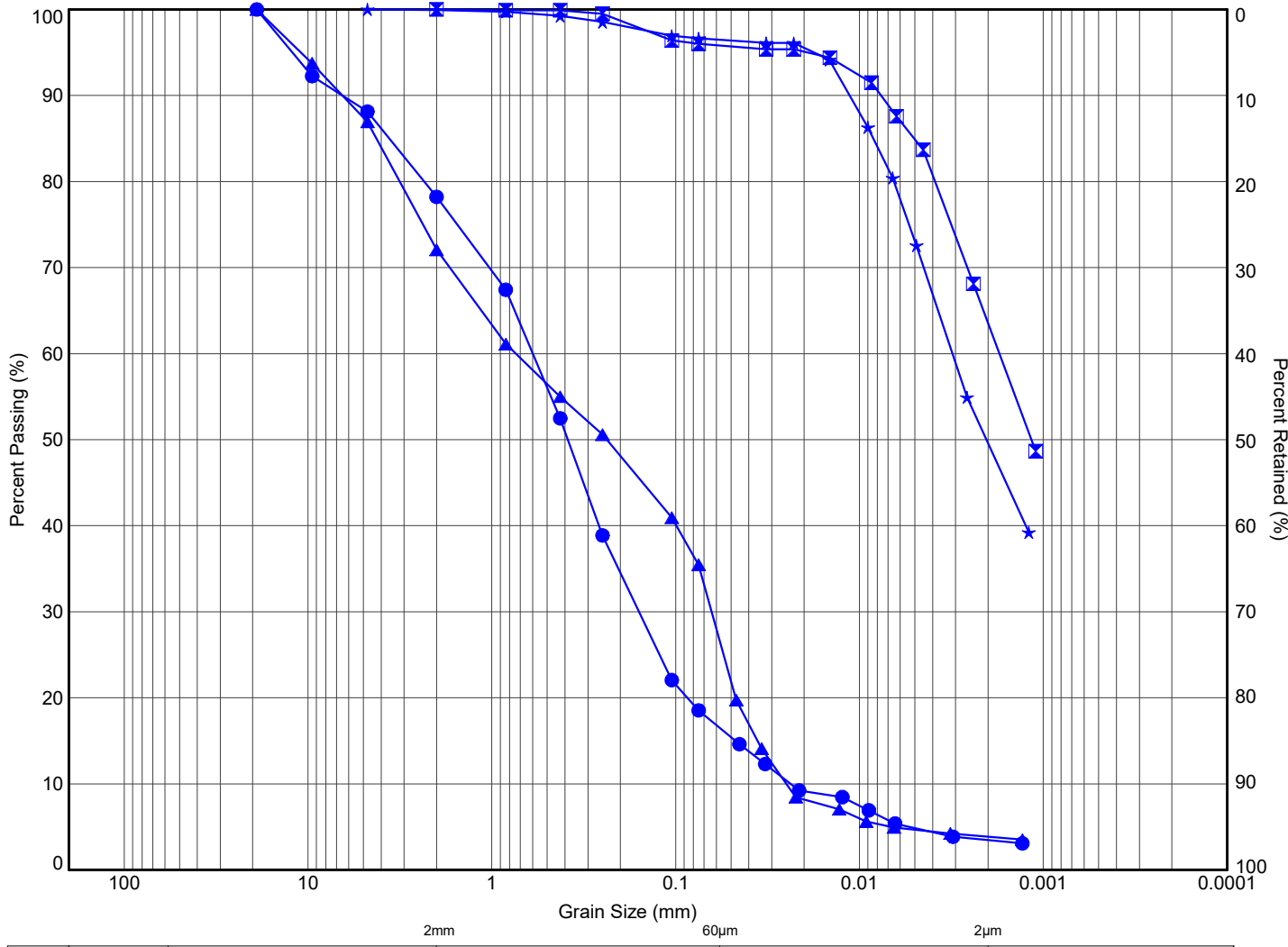
WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 10, 2017	8.5	226.0
Dec 7, 2017	7.9	226.6
Jan 17, 2018	8.5	226.0
Sep 19, 2018	8.6	225.9
Dec 20, 2018	8.2	226.3

APPENDIX B

TERRAPROBE INC.





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

MIT SYSTEM

	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)
●	101	SS5	3.4	231.2	22	61	13	4	
☒	101	10B	11.1	223.5	0	4	32	64	
▲	102	10A	10.9	223.6	28	44	24	4	
★	103	SS11	12.5	221.9	0	3	47	50	



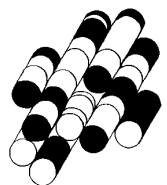
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title: **GRAIN SIZE DISTRIBUTION**

File No.: **1-17-0481-42**

APPENDIX C

TERRAPROBE INC.

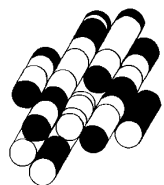


Water Level Measurements
61-67 Owen Street and 55-57 McDonald Street
1-17-0481

Monitoring Well ID	Ground Surface Elevation	Strata Screened	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
			(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)
			8-Aug-17		11-Aug-17		24-Aug-17		7-Sep-17		25-Oct-17		10-Nov-17		7-Dec-17		17-Jan-18		20-Dec-18	
BH101	234.5	Clayey Silt	11.4	223.1	12.8	221.7	9	225.5	11.4	223.1	11.5	223	10.5	224	11.3	223.2	11.3	223.2	11.3	223.2
BH102	234.5	Sand	8.3	226.2	8.6	225.9	8.6	225.9	8.5	226	8.9	225.6	8.8	225.7	8.8	225.7	8.9	225.6	8.8	225.7
BH103	234.4	Clayey Silt	8.6	225.8	8.8	225.6	9	225.4	8.9	225.5	8.5	225.9	8.4	226	8.9	225.5	8.9	225.5	8.7	225.7
BH201-S	235.0	Sand and Gravel	-	-	-	-	-	-	-	-	-	-	-	-	7.5	227.5	7.7	227.3	7.9	227.1
BH201-D	235.0	Sand	-	-	-	-	-	-	-	-	-	-	8.6	226.4	8.1	226.9	8.3	226.7	8.3	226.7
BH202	234.4	Sand	-	-	-	-	-	-	-	-	-	-	8.5	225.9	7.9	226.5	8	226.4	8.3	226.1
BH203	234.5	Sand	-	-	-	-	-	-	-	-	-	-	8.5	226	7.9	226.6	7.9	226.6	8.2	226.3

APPENDIX D

TERRAPROBE INC.





Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

Issued: August 1, 2017

Revised: ~~October~~ ~~November~~ ~~16~~15, 2017 2018

File No. 1-17-0481-42

Brampton Office

**RE: SAMPLING AND ANALYSIS PLAN (SAP)
61-67 OWEN STREET AND 55-57 MCDONALD STREET
BARRIE, 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 that is located on the southeast corner of Owen and McDonald Streets in Barrie, Ontario (hereinafter referred to as the 'Property'). The Property comprises multiple municipal addresses: 61 and 67 Owen Street, and 55 and 57 McDonald Street. 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 Ontario Ministry of the Environment and Climate Change (MOECC) 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 groundwater 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.

Terraprobe Inc.

Greater Toronto

11 Indell Lane
Brampton, Ontario L6T 3Y3
(905) 796-2650 Fax: 796-2250

Hamilton – Niagara

903 Barton Street, Unit 22
Stoney Creek, Ontario L8E 5P5
(905) 643-7560 Fax: 643-7559

Central Ontario

220 Bayview Drive, Unit 25
Barrie, Ontario L4N 4Y8
(705) 739-8355 Fax: 739-

Northern Ontario

1012 Kelly Lake Rd., Unit 1
Sudbury, Ontario P3E 5P4
(705) 670-0460 Fax: 670-0558

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) 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 groundwater 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 duplicate was collected are submitted for chemical analysis to evaluate the potential for sample cross-contamination during sampling. 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 groundwater 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;
- Soil Sampling;
- Field Screening Measurements, including Calibration Procedures;
- Monitoring Well Installation;
- Monitoring Well Development;
- Field Measurement of Water Quality Indicators, including Calibration Procedures;
- Residue Management Procedures;
- Groundwater Level Measurements;
- Elevation Survey; and,
- Groundwater Sampling.

The following procedures are not required for this investigation:

- Sediment Sampling.

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

4.1 Borehole Drilling

Boreholes are advanced at the Property to facilitate the collection of soil samples for chemical analysis and geologic characterization; and, for the installation of ground water monitoring wells. Three (3) boreholes are required at the Property, up to a maximum depth of approximately 15 m below grade, within the surficial fill and native soil overburden materials. The boreholes are required to provide for the collection of samples of the surficial and subsurface materials beneath the Property. Additional boreholes/monitoring wells may be installed for horizontal or vertical delineation of any soil or ground water impacts identified during 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 the presence of fill on the Property. The APEC includes the entire Property. Contaminants of concern (CoCs) are metals, hydride-forming metals, other regulated parameters (ORPs), sodium, and polycyclic aromatic hydrocarbons (PAHs). The CoCs may have impacted the soil and ground water.
- ~~2. APEC 2 is a result of potential historical use and storage of fuel oil at the former buildings at 61-67 Worsley Street and 55-57 McDonald Street. The APEC includes the entire Property. CoCs are petroleum hydrocarbons (PHCs) and volatile organic compounds (VOCs). The CoCs may have impacted the soil and ground water.~~

3.2. APEC ~~3-2~~ is a result of historical off-site spills. The APEC includes the west portion of the Property. CoCs are PHCs and VOCs. The CoCs may have impacted the 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 the portable direct push drill rig, or using a track mounted drill rig equipped with hollow 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 VOCs and/or petroleum hydrocarbon (PHCs) fractions F1 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

A total of three (3) boreholes are required to be instrumented as ground water monitoring wells installed with 3 m long screens intercepting the groundwater table in the overburden to depths of approximately 15 m below ground surface. Additional monitoring wells may be installed for horizontal and vertical delineation of any soils or ground water impacts identified during investigation. 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 50 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 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 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.

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 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 556 MPS Multi-Probe Field Meter 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 aquifer 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 top of casing and ground surface elevation of each monitoring well location is ultimately surveyed against a known geodetic benchmark. Elevations measured against a geodetic benchmark are recorded as meters above mean sea level (masl). The elevation survey is accurate to within ± 1.0 cm in vertical elevation.

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 if possible, 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 VOCs analysis are collected in triplicate vials prepared with concentrated hydrochloric acid as a preservative. Each VOCs 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

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 silt and sand, and clayey silt soils. There is no surface water at the Property and thus sediment is not included in the soil sampling media.

The media sampled does not include air as VOCs and sVOCs were not found on the Property and the proposed buildings were not present at the time of the investigation. 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 water table aquifer unit contained within the native silt and sand layer. 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.

Groundwater 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. 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. Groundwater flow and direction in the water table aquifer are determined through groundwater level measurements and the relative groundwater elevations established in the Property elevation survey.

Wells are required with screens within the native silt and sand soils, which contains the water table aquifer. This provides data regarding ground water quality in the water table aquifer. The water table aquifer is the zones 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-metals, ORPs, sodium, VOC I, VOC II (BTEX), THMs, PHCs and PAHs.

7. SAMPLING AND ANALYSIS PLAN CRITERIA

The QP considered the PCAs, all PCOCs, 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 PCOCs 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 summarised in the following table:

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Potential Contaminants of Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 1	Across Entire Property	#30 – Importation of Fill Material of Unknown Quality	On-site	Metals As, Sb, Se EC SAR B-HWS Cl CN- Hg Cr(VI) Low or high pH Na PAHs	Soil & Ground Water Soil & Ground Water Soil Soil Soil Ground Water Soil & Ground Water Soil & Ground Water Soil & Ground Water Soil & Ground Water Ground Water Soil & Ground Water
APEC 2	Across Entire Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	PHCs VOCs BTEX	Soil and Ground water Soil and Ground water Soil and Ground water
APEC 3 2	West Portion of Property	#Other 1 – Spill	Off-site	PHCs VOCs BTEX	Ground water Ground water Ground water



7.1 Plan of Implementation

Borehole	Rationale	APEC	Chemical Analyses	
			Soil	Groundwater
BH101	Borehole drilled to determine ground water flow direction and to assess the potential impacts from the historic application of fill on the Property and historical use/storage of fuel oil at the former buildings on the Property.	APECs 1 & 2	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs
BH102	Borehole drilled to determine ground water flow direction, and to assess the potential impacts from the historic application of fill on the Property, historical use/storage of fuel oil at the former buildings on the Property, and if any down-gradient impacts from historical off-site spills.	APECs 1, 2 & 3	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs
BH103	Borehole drilled to determine ground water flow direction, and to assess the potential impacts from the historic application of fill on the Property, historical use/storage of fuel oil at the former buildings on the Property, and if any down-gradient impacts from historical off-site spills.	APECs 1, 2 & 3	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs
Additional Drilling				
BH201-S	Shallow borehole drilled to determine ground water flow direction and delineate horizontal and vertical extent of identified soil and ground water impacts. In addition, borehole drilled to determine potential impacts from historical use/storage of fuel oil at the former buildings on the Property.	APECs 1 & 2	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs
BH201-D	Deep borehole drilled to determine ground water flow direction and delineate vertical extent of identified soil and ground water impacts.	APECs 1 & 2	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs

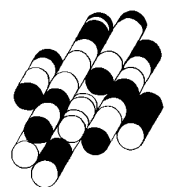


Borehole	Rationale	APEC	Chemical Analyses	
			Soil	Groundwater
BH202	Deep borehole drilled to determine ground water flow direction and delineate horizontal and vertical extent of identified soil and ground water impacts. In addition, borehole drilled to determine potential impacts from historical use/storage of fuel oil at the former buildings on the Property.	<i>APECs 1, 2 & 3</i>	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs
BH203	Deep borehole drilled to determine ground water flow direction and delineate horizontal and vertical extent of identified soil and ground water impacts. In addition, borehole drilled to determine potential impacts from historical use/storage of fuel oil at the former buildings on the Property.	<i>APECs 1 & 2</i>	2 Metals 2 Hydride-Metals 2 ORPs 2 PAHs 2 PHCs 2 VOCs	1 Metal 1 ORPs 1 Sodium 1 PAHs 1 PHCs 1 VOCs



APPENDIX E

TERRAPROBE INC.





TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 09-AUG-17
Report Date: 16-AUG-17 14:52 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L1972459
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 15-574186, 15-574187
Legal Site Desc:

Emerson Perez, B.S.E
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 - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L1972459-2	BH101-SA3	Physical Tests	Conductivity	0.951	0.7	mS/cm
		Saturated Paste Extractables	SAR	6.79	5	SAR
L1972459-5	BH102-SA2	Saturated Paste Extractables	SAR	9.64	5	SAR
L1972459-9	BH103-SA2	Saturated Paste Extractables	SAR	22.4	5	SAR

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

Physical Tests - SOIL

Analyte	Unit	Guide Limits										
		#1	#2									
Conductivity	mS/cm	0.7	-	0.951			0.201	0.661		0.372		0.527
% Moisture	%	-	-	14.9	14.1	17.3	15.4	14.3	11.8	15.2	24.3	9.32
pH	pH units	-	-		7.77		7.71	7.72		7.81		7.73

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

- Detection Limit for result 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.

Physical Tests - SOIL

Analyte	Unit	Guide Limits				
		#1	#2			
Conductivity	mS/cm	0.7	-	0.679		0.498
% Moisture	%	-	-	10.8	18.3	15.5 17.9 18.4
pH	pH units	-	-	7.92		8.00

Lab ID	L1972459-10	L1972459-11	L1972459-12	L1972459-13	L1972459-14
Sample Date	01-AUG-17	02-AUG-17	02-AUG-17	02-AUG-17	02-AUG-17
Sample ID	BH103-SA3	BH103-SA11	BH103-SA10	DUP1	DUP2

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

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

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

ANALYTICAL REPORT

Cyanides - SOIL

Lab ID	L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14
Sample Date	31-JUL-17	31-JUL-17	01-AUG-17	01-AUG-17	01-AUG-17	02-AUG-17	02-AUG-17
Sample ID	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2

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

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

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

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

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID				
		#1	#2	L1972459-2	31-JUL-17	BH101-SA3	L1972459-4	31-JUL-17	BH101-SA11	L1972459-5	01-AUG-17	BH102-SA2	L1972459-7	01-AUG-17	BH102-SA11	L1972459-9	01-AUG-17	BH103-SA2	L1972459-11	02-AUG-17	BH103-SA11	L1972459-14
SAR	SAR	5	-	6.79	1.93	9.64	4.18	22.4	SAR-M	2.88	2.35											
Calcium (Ca)	mg/L	-	-	22.4	7.7	8.4	10.6	2.0	36.2	23.5												
Magnesium (Mg)	mg/L	-	-	39.2	1.5	7.5	1.9	<1.0	11.5	9.0												
Sodium (Na)	mg/L	-	-	230	22.2	160	56.4	116	77.7	52.9												

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

- Detection Limit for result 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

Analyte	Unit	Guide Limits									
		#1	#2	L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14	
				Lab ID	L1972459-2	L1972459-4	L1972459-5	L1972459-7	L1972459-9	L1972459-11	L1972459-14
				Sample Date	31-JUL-17	31-JUL-17	01-AUG-17	01-AUG-17	01-AUG-17	02-AUG-17	02-AUG-17
				Sample ID	BH101-SA3	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA2	BH103-SA11	DUP2
Antimony (Sb)	ug/g	7.5	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	ug/g	18	-	1.5	2.5	1.8	<1.0	1.3	2.2	2.2	2.2
Barium (Ba)	ug/g	390	-	57.3	188	115	16.0	101	138	134	134
Beryllium (Be)	ug/g	4	-	<0.50	0.72	<0.50	<0.50	<0.50	0.54	<0.50	<0.50
Boron (B)	ug/g	120	-	5.4	15.7	6.2	<5.0	8.9	12.2	10.8	10.8
Boron (B), Hot Water Ext.	ug/g	1.5	-	<0.10	0.19	0.20	<0.10	<0.10	0.18	0.20	0.20
Cadmium (Cd)	ug/g	1.2	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium (Cr)	ug/g	160	-	17.8	34.1	18.9	8.0	17.4	27.6	26.5	26.5
Cobalt (Co)	ug/g	22	-	4.7	11.5	4.5	1.9	5.6	8.9	8.8	8.8
Copper (Cu)	ug/g	140	-	8.8	21.8	8.8	4.0	10.3	20.9	19.0	19.0
Lead (Pb)	ug/g	120	-	3.6	6.9	84.0	1.0	3.5	5.5	5.2	5.2
Mercury (Hg)	ug/g	0.27	-	0.0080	0.0096	0.117	<0.0050	0.0054	0.0075	0.0074	0.0074
Molybdenum (Mo)	ug/g	6.9	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	ug/g	100	-	9.3	24.4	8.8	3.1	10.8	18.1	17.9	17.9
Selenium (Se)	ug/g	2.4	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	ug/g	20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	ug/g	1	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	ug/g	23	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	ug/g	86	-	41.0	46.8	39.8	22.8	30.6	41.6	40.7	40.7
Zinc (Zn)	ug/g	340	-	27.6	54.8	79.9	8.2	30.0	43.3	43.4	43.4

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

- Detection Limit for result 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 - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID																
		#1	#2	L1972459-2	31-JUL-17	BH101-SA3	L1972459-4	31-JUL-17	BH101-SA11	L1972459-5	01-AUG-17	BH102-SA2	L1972459-7	01-AUG-17	BH102-SA11	L1972459-9	01-AUG-17	BH103-SA2	L1972459-11	02-AUG-17	BH103-SA11	L1972459-14	02-AUG-17	DUP2										
Chromium, Hexavalent	ug/g	8	-	1.12	0.28	0.54	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

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

- Detection Limit for result 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	L1972459-1	L1972459-4	L1972459-5	L1972459-7	L1972459-10	L1972459-12	L1972459-13
		#1	#2	Sample Date	31-JUL-17	31-JUL-17	01-AUG-17	01-AUG-17	01-AUG-17	02-AUG-17	02-AUG-17
				Sample ID	BH101-SA2	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA3	BH103-SA10	DUP1
Acetone	ug/g	16	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	-	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	ug/g	1.5	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	2.3	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	1.2	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.083	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	ug/g	16	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	0.47	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	ug/g	0.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	-	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Ethylbenzene	ug/g	1.1	-	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
n-Hexane	ug/g	2.8	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	ug/g	16	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MTBE	ug/g	0.75	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	ug/g	0.7	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

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

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



ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

		Lab ID	L1972459-1	L1972459-4	L1972459-5	L1972459-7	L1972459-10	L1972459-12	L1972459-13	
		Sample Date	31-JUL-17	31-JUL-17	01-AUG-17	01-AUG-17	01-AUG-17	02-AUG-17	02-AUG-17	
		Sample ID	BH101-SA2	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA3	BH103-SA10	DUP1	
Analyte	Unit	Guide Limits								
		#1	#2							
1,1,1,2-Tetrachloroethane	ug/g	0.058	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethylene	ug/g	0.28	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	-	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	0.38	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	ug/g	0.061	-	0.016	0.017	0.019	0.019	0.022	0.011	0.017
Trichlorofluoromethane	ug/g	4	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	3.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	102.1	105.8	104.3	106.5	115.4	104.4	103.3
Surrogate: 1,4-Difluorobenzene	%	-	-	100.8	105.6	103.1	105.3	112.2	102.1	99.9

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

- Detection Limit for result 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

Analyte	Unit	Guide Limits		Lab ID	L1972459-1	L1972459-4	L1972459-5	L1972459-7	L1972459-10	L1972459-12	L1972459-13
		#1	#2	Sample Date	31-JUL-17	31-JUL-17	01-AUG-17	01-AUG-17	01-AUG-17	02-AUG-17	02-AUG-17
				Sample ID	BH101-SA2	BH101-SA11	BH102-SA2	BH102-SA11	BH103-SA3	BH103-SA10	DUP1
F1 (C6-C10)	ug/g	55	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F1-BTEX	ug/g	55	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F2 (C10-C16)	ug/g	98	-	<10	<10	<10	<10	<10	<10	<10	<10
F2-Naphth	ug/g	-	-	<10				<10	<10	<10	<10
F3 (C16-C34)	ug/g	300	-	<50	<50	<50	<50	<50	<50	<50	<50
F3-PAH	ug/g	-	-	<50				<50	<50	<50	<50
F4 (C34-C50)	ug/g	2800	-	<50	<50	<50	<50	<50	<50	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72	<72	<72	<72	<72	<72	<72
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	84.5	87.0	88.5	74.2	77.0	91.4	91.4	75.6
Surrogate: 3,4-Dichlorotoluene	%	-	-	97.0	95.3	92.4	100.5	109.8	88.7	88.7	96.1

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

- Detection Limit for result 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		Lab ID	L1972459-1	L1972459-3	L1972459-6	L1972459-8	L1972459-10	L1972459-12	L1972459-13
		#1	#2	Sample Date	31-JUL-17	31-JUL-17	01-AUG-17	01-AUG-17	01-AUG-17	02-AUG-17	02-AUG-17
				Sample ID	BH101-SA2	BH101-SA10B	BH102-SA3	BH102-SA12	BH103-SA3	BH103-SA10	DUP1
Acenaphthene	ug/g	7.9	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	-	<0.050	<0.050	0.085	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	-	<0.050	<0.050	0.085	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	-	<0.050	<0.050	0.105	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	-	<0.050	<0.050	0.057	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	7	-	<0.050	<0.050	0.097	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	0.69	-	<0.050	<0.050	0.164	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/g	62	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	<0.050	<0.050	0.054	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	-	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
1-Methylnaphthalene	ug/g	0.99	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	ug/g	0.99	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	ug/g	0.6	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/g	6.2	-	<0.050	<0.050	0.091	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	ug/g	78	-	<0.050	<0.050	0.160	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	90.6	90.6	90.7	84.4	92.2	92.3	94.0	
Surrogate: p-Terphenyl d14	%	-	-	89.1	90.7	89.7	85.6	89.8	93.2	97.4	

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

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

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

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

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

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

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
-----------------------	------	--	----------------------------

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

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

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
---------------------	------	-----------------------------	------------------

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

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

EC-WT	Soil	Conductivity (EC)	MOEE E3138
--------------	------	-------------------	------------

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

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

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
--------------------------	------	---	-------------------------------------

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<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	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)	MOE DECPH-E3398/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>This method uses a heated strong acid digestion with HNO₃ and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.</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	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

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. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A
--------------	------	----	-------------

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

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

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
--------------------	------	------------------------------	-------------

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

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

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
----------------------------	------	---------------------	-----------------

VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)
----------------------	------	------------------------------	------------------

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
----------------------------	------	-------------------------------------	-------------

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

15-574186	15-574187
-----------	-----------

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

L1972459 CONT'D....
Job Reference: 1-17-0481-42
PAGE 16 of 16
16-AUG-17 14:52 (MT)

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.



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 1 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT								
	Soil							
Batch	R3797748							
WG2591199-4	DUP	L1972459-2						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	14-AUG-17
WG2591199-2	IRM	HOTB-SAL_SOIL5						
Boron (B), Hot Water Ext.			98.7		%		70-130	14-AUG-17
WG2591199-3	LCS							
Boron (B), Hot Water Ext.			98.5		%		70-130	14-AUG-17
WG2591199-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	14-AUG-17
CN-WAD-R511-WT								
	Soil							
Batch	R3796731							
WG2589299-3	DUP	L1972459-7						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	11-AUG-17
WG2589299-2	LCS							
Cyanide, Weak Acid Diss			101.7		%		80-120	11-AUG-17
WG2589299-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	11-AUG-17
WG2589299-4	MS	L1972459-7						
Cyanide, Weak Acid Diss			104.7		%		70-130	11-AUG-17
CR-CR6-IC-WT								
	Soil							
Batch	R3797451							
WG2589284-3	CRM	WT-SQC012						
Chromium, Hexavalent			100.1		%		70-130	14-AUG-17
WG2589284-4	DUP	L1972459-7						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	14-AUG-17
WG2589284-2	LCS							
Chromium, Hexavalent			98.8		%		80-120	14-AUG-17
WG2589284-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	14-AUG-17
EC-WT								
	Soil							
Batch	R3797545							
WG2591202-4	DUP	WG2591202-3						
Conductivity		0.727	0.742		mS/cm	2.0	20	14-AUG-17
WG2591522-2	LCS							
Conductivity			99.0		%		90-110	14-AUG-17
WG2591202-1	MB							
Conductivity			<0.0040		mS/cm		0.004	14-AUG-17
F1-HS-511-WT								
	Soil							



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 2 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Soil						
Batch	R3795291							
WG2589127-4	DUP	WG2589127-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	11-AUG-17
WG2589127-2	LCS							
F1 (C6-C10)			113.3		%		80-120	11-AUG-17
WG2589127-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	11-AUG-17
Surrogate: 3,4-Dichlorotoluene			106.8		%		60-140	11-AUG-17
WG2589127-7	MS	WG2589127-6						
F1 (C6-C10)			109.2		%		60-140	11-AUG-17
Batch		R3797003						
WG2589904-4	DUP	WG2589904-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	14-AUG-17
WG2589904-2	LCS							
F1 (C6-C10)			111.3		%		80-120	14-AUG-17
WG2589904-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	14-AUG-17
Surrogate: 3,4-Dichlorotoluene			100.8		%		60-140	14-AUG-17
WG2589904-7	MS	WG2589904-6						
F1 (C6-C10)			86.7		%		60-140	14-AUG-17
F2-F4-511-WT		Soil						
Batch	R3801198							
WG2589831-3	CRM	ALS PHC2 IRM						
F2 (C10-C16)			103.6		%		70-130	15-AUG-17
F3 (C16-C34)			103.4		%		70-130	15-AUG-17
F4 (C34-C50)			101.3		%		70-130	15-AUG-17
WG2589831-5	DUP	WG2589831-4						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	15-AUG-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	15-AUG-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	15-AUG-17
WG2589831-2	LCS							
F2 (C10-C16)			105.6		%		80-120	15-AUG-17
F3 (C16-C34)			100.6		%		80-120	15-AUG-17
F4 (C34-C50)			98.7		%		80-120	15-AUG-17
WG2589831-1	MB							
F2 (C10-C16)			<10		ug/g		10	15-AUG-17
F3 (C16-C34)			<50		ug/g		50	15-AUG-17
F4 (C34-C50)			<50		ug/g		50	15-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 3 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
Batch	R3801198							
WG2589831-1	MB							
Surrogate: 2-Bromobenzotrifluoride			59.9	MBS	%		60-140	15-AUG-17
HG-200.2-CVAA-WT	Soil							
Batch	R3800365							
WG2592076-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			98.6		%		70-130	15-AUG-17
WG2592076-6	DUP	WG2592076-5						
Mercury (Hg)		0.0080	0.0076		ug/g	5.6	40	15-AUG-17
WG2592076-3	LCS							
Mercury (Hg)			105.0		%		80-120	15-AUG-17
WG2592076-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	15-AUG-17
MET-200.2-CCMS-WT	Soil							
Batch	R3801541							
WG2592076-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			85.5		%		70-130	15-AUG-17
Arsenic (As)			94.7		%		70-130	15-AUG-17
Barium (Ba)			99.3		%		70-130	15-AUG-17
Beryllium (Be)			88.8		%		70-130	15-AUG-17
Boron (B)			3.1		mg/kg		0-8.2	15-AUG-17
Cadmium (Cd)			93.3		%		70-130	15-AUG-17
Chromium (Cr)			93.9		%		70-130	15-AUG-17
Cobalt (Co)			93.8		%		70-130	15-AUG-17
Copper (Cu)			96.2		%		70-130	15-AUG-17
Lead (Pb)			87.1		%		70-130	15-AUG-17
Molybdenum (Mo)			90.7		%		70-130	15-AUG-17
Nickel (Ni)			94.1		%		70-130	15-AUG-17
Selenium (Se)			0.28		mg/kg		0.11-0.51	15-AUG-17
Silver (Ag)			0.19		mg/kg		0.13-0.33	15-AUG-17
Thallium (Tl)			0.100		mg/kg		0.077-0.18	15-AUG-17
Uranium (U)			90.4		%		70-130	15-AUG-17
Vanadium (V)			93.7		%		70-130	15-AUG-17
Zinc (Zn)			93.8		%		70-130	15-AUG-17
WG2592076-6	DUP	WG2592076-5						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	15-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 4 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3801541							
WG2592076-6	DUP	WG2592076-5						
Arsenic (As)		1.55	1.52		ug/g	1.5	30	15-AUG-17
Barium (Ba)		57.3	60.2		ug/g	4.9	40	15-AUG-17
Beryllium (Be)		0.39	0.38		ug/g	3.4	30	15-AUG-17
Boron (B)		5.4	5.4		ug/g	0.3	30	15-AUG-17
Cadmium (Cd)		0.057	0.052		ug/g	9.8	30	15-AUG-17
Chromium (Cr)		17.8	18.3		ug/g	2.7	30	15-AUG-17
Cobalt (Co)		4.68	4.79		ug/g	2.3	30	15-AUG-17
Copper (Cu)		8.82	8.82		ug/g	0.0	30	15-AUG-17
Lead (Pb)		3.65	3.74		ug/g	2.5	40	15-AUG-17
Molybdenum (Mo)		0.34	0.35		ug/g	2.7	40	15-AUG-17
Nickel (Ni)		9.35	9.40		ug/g	0.5	30	15-AUG-17
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	15-AUG-17
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	15-AUG-17
Thallium (Tl)		0.056	0.059		ug/g	4.3	30	15-AUG-17
Uranium (U)		0.374	0.390		ug/g	4.2	30	15-AUG-17
Vanadium (V)		41.0	41.5		ug/g	1.2	30	15-AUG-17
Zinc (Zn)		27.6	27.8		ug/g	0.8	30	15-AUG-17
WG2592076-4	LCS							
Antimony (Sb)			95.9		%		80-120	15-AUG-17
Arsenic (As)			95.5		%		80-120	15-AUG-17
Barium (Ba)			94.2		%		80-120	15-AUG-17
Beryllium (Be)			99.2		%		80-120	15-AUG-17
Boron (B)			98.5		%		80-120	15-AUG-17
Cadmium (Cd)			96.2		%		80-120	15-AUG-17
Chromium (Cr)			93.6		%		80-120	15-AUG-17
Cobalt (Co)			93.9		%		80-120	15-AUG-17
Copper (Cu)			91.3		%		80-120	15-AUG-17
Lead (Pb)			88.3		%		80-120	15-AUG-17
Molybdenum (Mo)			100.4		%		80-120	15-AUG-17
Nickel (Ni)			93.3		%		80-120	15-AUG-17
Selenium (Se)			99.2		%		80-120	15-AUG-17
Silver (Ag)			89.5		%		80-120	15-AUG-17
Thallium (Tl)			89.6		%		80-120	15-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 5 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R3801541							
WG2592076-4	LCS							
Uranium (U)			89.0		%		80-120	15-AUG-17
Vanadium (V)			95.9		%		80-120	15-AUG-17
Zinc (Zn)			88.0		%		80-120	15-AUG-17
WG2592076-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	15-AUG-17
Arsenic (As)			<0.10		mg/kg		0.1	15-AUG-17
Barium (Ba)			<0.50		mg/kg		0.5	15-AUG-17
Beryllium (Be)			<0.10		mg/kg		0.1	15-AUG-17
Boron (B)			<5.0		mg/kg		5	15-AUG-17
Cadmium (Cd)			<0.020		mg/kg		0.02	15-AUG-17
Chromium (Cr)			<0.50		mg/kg		0.5	15-AUG-17
Cobalt (Co)			<0.10		mg/kg		0.1	15-AUG-17
Copper (Cu)			<0.50		mg/kg		0.5	15-AUG-17
Lead (Pb)			<0.50		mg/kg		0.5	15-AUG-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	15-AUG-17
Nickel (Ni)			<0.50		mg/kg		0.5	15-AUG-17
Selenium (Se)			<0.20		mg/kg		0.2	15-AUG-17
Silver (Ag)			<0.10		mg/kg		0.1	15-AUG-17
Thallium (Tl)			<0.050		mg/kg		0.05	15-AUG-17
Uranium (U)			<0.050		mg/kg		0.05	15-AUG-17
Vanadium (V)			<0.20		mg/kg		0.2	15-AUG-17
Zinc (Zn)			<2.0		mg/kg		2	15-AUG-17
MOISTURE-WT								
	Soil							
Batch	R3796030							
WG2589752-3	DUP	L1972459-2						
% Moisture		14.1	14.0		%	0.7	20	11-AUG-17
WG2589752-2	LCS							
% Moisture			100.0		%		90-110	11-AUG-17
WG2589752-1	MB							
% Moisture			<0.10		%		0.1	11-AUG-17
Batch	R3796031							
WG2589753-3	DUP	L1972460-3						
% Moisture		18.1	17.7		%	2.0	20	11-AUG-17
WG2589753-2	LCS							
% Moisture			99.9		%		90-110	11-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 6 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R3796031							
WG2589753-1	MB							
% Moisture			<0.10		%		0.1	11-AUG-17
PAH-511-WT		Soil						
Batch	R3800694							
WG2589749-4	DUP	WG2589749-3						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-AUG-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-AUG-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-AUG-17
WG2589749-2	LCS							
1-Methylnaphthalene			84.9		%		50-140	15-AUG-17
2-Methylnaphthalene			83.5		%		50-140	15-AUG-17
Acenaphthene			85.0		%		50-140	15-AUG-17
Acenaphthylene			81.6		%		50-140	15-AUG-17
Anthracene			79.8		%		50-140	15-AUG-17
Benzo(a)anthracene			83.6		%		50-140	15-AUG-17
Benzo(a)pyrene			81.1		%		50-140	15-AUG-17
Benzo(b)fluoranthene			81.3		%		50-140	15-AUG-17
Benzo(g,h,i)perylene			87.4		%		50-140	15-AUG-17
Benzo(k)fluoranthene			80.2				50-140	15-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 7 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT								
	Soil							
Batch	R3800694							
WG2589749-2	LCS							
Benzo(k)fluoranthene			80.2		%		50-140	15-AUG-17
Chrysene			94.3		%		50-140	15-AUG-17
Dibenzo(ah)anthracene			88.8		%		50-140	15-AUG-17
Fluoranthene			78.5		%		50-140	15-AUG-17
Fluorene			81.5		%		50-140	15-AUG-17
Indeno(1,2,3-cd)pyrene			86.0		%		50-140	15-AUG-17
Naphthalene			86.9		%		50-140	15-AUG-17
Phenanthrene			84.7		%		50-140	15-AUG-17
Pyrene			80.3		%		50-140	15-AUG-17
WG2589749-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	15-AUG-17
2-Methylnaphthalene			<0.030		ug/g		0.03	15-AUG-17
Acenaphthene			<0.050		ug/g		0.05	15-AUG-17
Acenaphthylene			<0.050		ug/g		0.05	15-AUG-17
Anthracene			<0.050		ug/g		0.05	15-AUG-17
Benzo(a)anthracene			<0.050		ug/g		0.05	15-AUG-17
Benzo(a)pyrene			<0.050		ug/g		0.05	15-AUG-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	15-AUG-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	15-AUG-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	15-AUG-17
Chrysene			<0.050		ug/g		0.05	15-AUG-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	15-AUG-17
Fluoranthene			<0.050		ug/g		0.05	15-AUG-17
Fluorene			<0.050		ug/g		0.05	15-AUG-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	15-AUG-17
Naphthalene			<0.050		ug/g		0.05	15-AUG-17
Phenanthrene			<0.050		ug/g		0.05	15-AUG-17
Pyrene			<0.050		ug/g		0.05	15-AUG-17
Surrogate: 2-Fluorobiphenyl			88.7		%		50-140	15-AUG-17
Surrogate: p-Terphenyl d14			80.0		%		50-140	15-AUG-17
WG2589749-5	MS	WG2589749-3						
1-Methylnaphthalene			88.0		%		50-140	15-AUG-17
2-Methylnaphthalene			86.9		%		50-140	15-AUG-17
Acenaphthene			88.2		%		50-140	15-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 8 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R3800694							
WG2589749-5	MS	WG2589749-3						
Acenaphthylene			83.6		%		50-140	15-AUG-17
Anthracene			82.5		%		50-140	15-AUG-17
Benzo(a)anthracene			88.0		%		50-140	15-AUG-17
Benzo(a)pyrene			84.3		%		50-140	15-AUG-17
Benzo(b)fluoranthene			80.0		%		50-140	15-AUG-17
Benzo(g,h,i)perylene			92.3		%		50-140	15-AUG-17
Benzo(k)fluoranthene			90.0		%		50-140	15-AUG-17
Chrysene			98.7		%		50-140	15-AUG-17
Dibenzo(ah)anthracene			93.7		%		50-140	15-AUG-17
Fluoranthene			82.5		%		50-140	15-AUG-17
Fluorene			84.7		%		50-140	15-AUG-17
Indeno(1,2,3-cd)pyrene			87.5		%		50-140	15-AUG-17
Naphthalene			90.0		%		50-140	15-AUG-17
Phenanthrene			87.7		%		50-140	15-AUG-17
Pyrene			85.5		%		50-140	15-AUG-17
PH-WT		Soil						
Batch	R3796034							
WG2589970-1	DUP	L1972459-9						
pH		7.73	7.78	J	pH units	0.05	0.3	11-AUG-17
WG2590542-1	LCS							
pH			6.98		pH units		6.9-7.1	11-AUG-17
Batch	R3796037							
WG2589305-1	DUP	L1972459-7						
pH		7.81	7.88	J	pH units	0.07	0.3	11-AUG-17
WG2590102-1	LCS							
pH			6.99		pH units		6.9-7.1	11-AUG-17
SAR-R511-WT		Soil						
Batch	R3797704							
WG2591202-4	DUP	WG2591202-3						
Calcium (Ca)		19.4	18.8		mg/L	3.4	30	14-AUG-17
Sodium (Na)		140	139		mg/L	0.7	30	14-AUG-17
Magnesium (Mg)		<1.0	<1.0	RPD-NA	mg/L	N/A	30	14-AUG-17
WG2591202-2	IRM	WT SAR1						
Calcium (Ca)			103.7		%		70-130	14-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 9 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT		Soil						
Batch	R3797704							
WG2591202-2	IRM	WT SAR1						
Sodium (Na)			103.3		%		70-130	14-AUG-17
Magnesium (Mg)			111.4		%		70-130	14-AUG-17
WG2591202-1	MB							
Calcium (Ca)			<1.0		mg/L		1	14-AUG-17
Sodium (Na)			<1.0		mg/L		1	14-AUG-17
Magnesium (Mg)			<1.0		mg/L		1	14-AUG-17
VOC-511-HS-WT		Soil						
Batch	R3795291							
WG2589127-4	DUP	WG2589127-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	11-AUG-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	11-AUG-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-AUG-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 10 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3795291							
WG2589127-4	DUP	WG2589127-3						
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	11-AUG-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-AUG-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	11-AUG-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	11-AUG-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	11-AUG-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	11-AUG-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	11-AUG-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	11-AUG-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	11-AUG-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	11-AUG-17
WG2589127-2	LCS							
1,1,1,2-Tetrachloroethane			96.9		%		60-130	11-AUG-17
1,1,1,2,2-Tetrachloroethane			95.7		%		60-130	11-AUG-17
1,1,1-Trichloroethane			101.3		%		60-130	11-AUG-17
1,1,2-Trichloroethane			108.2		%		60-130	11-AUG-17
1,1-Dichloroethane			103.5		%		60-130	11-AUG-17
1,1-Dichloroethylene			94.5		%		60-130	11-AUG-17
1,2-Dibromoethane			108.1		%		70-130	11-AUG-17
1,2-Dichlorobenzene			99.9		%		70-130	11-AUG-17
1,2-Dichloroethane			112.2		%		60-130	11-AUG-17
1,2-Dichloropropane			112.3		%		70-130	11-AUG-17
1,3-Dichlorobenzene			100.8		%		70-130	11-AUG-17
1,4-Dichlorobenzene			103.5		%		70-130	11-AUG-17
Acetone			122.1		%		60-140	11-AUG-17
Benzene			103.7		%		70-130	11-AUG-17
Bromodichloromethane			108.7		%		50-140	11-AUG-17
Bromoform			99.7		%		70-130	11-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 11 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3795291							
WG2589127-2	LCS							
Bromomethane			114.7		%		50-140	11-AUG-17
Carbon tetrachloride			99.6		%		70-130	11-AUG-17
Chlorobenzene			101.8		%		70-130	11-AUG-17
Chloroform			102.9		%		70-130	11-AUG-17
cis-1,2-Dichloroethylene			105.2		%		70-130	11-AUG-17
cis-1,3-Dichloropropene			120.4		%		70-130	11-AUG-17
Dibromochloromethane			111.3		%		60-130	11-AUG-17
Dichlorodifluoromethane			95.3		%		50-140	11-AUG-17
Ethylbenzene			101.5		%		70-130	11-AUG-17
n-Hexane			110.8		%		70-130	11-AUG-17
Methylene Chloride			111.5		%		70-130	11-AUG-17
MTBE			98.7		%		70-130	11-AUG-17
m+p-Xylenes			102.0		%		70-130	11-AUG-17
Methyl Ethyl Ketone			109.5		%		60-140	11-AUG-17
Methyl Isobutyl Ketone			107.1		%		60-140	11-AUG-17
o-Xylene			101.3		%		70-130	11-AUG-17
Styrene			104.5		%		70-130	11-AUG-17
Tetrachloroethylene			102.0		%		60-130	11-AUG-17
Toluene			101.4		%		70-130	11-AUG-17
trans-1,2-Dichloroethylene			105.2		%		60-130	11-AUG-17
trans-1,3-Dichloropropene			117.8		%		70-130	11-AUG-17
Trichloroethylene			103.3		%		60-130	11-AUG-17
Trichlorofluoromethane			106.4		%		50-140	11-AUG-17
Vinyl chloride			96.7		%		60-140	11-AUG-17
WG2589127-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	11-AUG-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	11-AUG-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	11-AUG-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	11-AUG-17
1,1-Dichloroethane			<0.050		ug/g		0.05	11-AUG-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	11-AUG-17
1,2-Dibromoethane			<0.050		ug/g		0.05	11-AUG-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	11-AUG-17
1,2-Dichloroethane			<0.050		ug/g		0.05	11-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 12 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3795291							
WG2589127-1	MB							
1,2-Dichloropropane			<0.050		ug/g		0.05	11-AUG-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	11-AUG-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	11-AUG-17
Acetone			<0.50		ug/g		0.5	11-AUG-17
Benzene			<0.0068		ug/g		0.0068	11-AUG-17
Bromodichloromethane			<0.050		ug/g		0.05	11-AUG-17
Bromoform			<0.050		ug/g		0.05	11-AUG-17
Bromomethane			<0.050		ug/g		0.05	11-AUG-17
Carbon tetrachloride			<0.050		ug/g		0.05	11-AUG-17
Chlorobenzene			<0.050		ug/g		0.05	11-AUG-17
Chloroform			<0.050		ug/g		0.05	11-AUG-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	11-AUG-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	11-AUG-17
Dibromochloromethane			<0.050		ug/g		0.05	11-AUG-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	11-AUG-17
Ethylbenzene			<0.018		ug/g		0.018	11-AUG-17
n-Hexane			<0.050		ug/g		0.05	11-AUG-17
Methylene Chloride			<0.050		ug/g		0.05	11-AUG-17
MTBE			<0.050		ug/g		0.05	11-AUG-17
m+p-Xylenes			<0.030		ug/g		0.03	11-AUG-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	11-AUG-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	11-AUG-17
o-Xylene			<0.020		ug/g		0.02	11-AUG-17
Styrene			<0.050		ug/g		0.05	11-AUG-17
Tetrachloroethylene			<0.050		ug/g		0.05	11-AUG-17
Toluene			<0.080		ug/g		0.08	11-AUG-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	11-AUG-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	11-AUG-17
Trichloroethylene			<0.010		ug/g		0.01	11-AUG-17
Trichlorofluoromethane			<0.050		ug/g		0.05	11-AUG-17
Vinyl chloride			<0.020		ug/g		0.02	11-AUG-17
Surrogate: 1,4-Difluorobenzene			109.2		%		50-140	11-AUG-17
Surrogate: 4-Bromofluorobenzene			111.8		%		50-140	11-AUG-17

WG2589127-5 MS

WG2589127-3



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 13 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R3795291							
WG2589127-5 MS		WG2589127-3						
1,1,1,2-Tetrachloroethane			92.9		%		50-140	11-AUG-17
1,1,1,2,2-Tetrachloroethane			91.9		%		50-140	11-AUG-17
1,1,1-Trichloroethane			95.3		%		50-140	11-AUG-17
1,1,2-Trichloroethane			103.7		%		50-140	11-AUG-17
1,1-Dichloroethane			97.5		%		50-140	11-AUG-17
1,1-Dichloroethylene			90.1		%		50-140	11-AUG-17
1,2-Dibromoethane			104.1		%		50-140	11-AUG-17
1,2-Dichlorobenzene			96.5		%		50-140	11-AUG-17
1,2-Dichloroethane			105.5		%		50-140	11-AUG-17
1,2-Dichloropropane			105.3		%		50-140	11-AUG-17
1,3-Dichlorobenzene			96.9		%		50-140	11-AUG-17
1,4-Dichlorobenzene			99.4		%		50-140	11-AUG-17
Acetone			118.6		%		50-140	11-AUG-17
Benzene			97.4		%		50-140	11-AUG-17
Bromodichloromethane			102.1		%		50-140	11-AUG-17
Bromoform			94.7		%		50-140	11-AUG-17
Bromomethane			107.2		%		50-140	11-AUG-17
Carbon tetrachloride			94.1		%		50-140	11-AUG-17
Chlorobenzene			97.4		%		50-140	11-AUG-17
Chloroform			96.3		%		50-140	11-AUG-17
cis-1,2-Dichloroethylene			98.2		%		50-140	11-AUG-17
cis-1,3-Dichloropropene			109.8		%		50-140	11-AUG-17
Dibromochloromethane			107.1		%		50-140	11-AUG-17
Dichlorodifluoromethane			100.1		%		50-140	11-AUG-17
Ethylbenzene			97.4		%		50-140	11-AUG-17
n-Hexane			107.4		%		50-140	11-AUG-17
Methylene Chloride			106.3		%		50-140	11-AUG-17
MTBE			96.5		%		50-140	11-AUG-17
m+p-Xylenes			98.1		%		50-140	11-AUG-17
Methyl Ethyl Ketone			103.8		%		50-140	11-AUG-17
Methyl Isobutyl Ketone			100.8		%		50-140	11-AUG-17
o-Xylene			96.9		%		50-140	11-AUG-17
Styrene			100.2		%		50-140	11-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 14 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R3795291							
WG2589127-5 MS		WG2589127-3						
Tetrachloroethylene			98.3		%		50-140	11-AUG-17
Toluene			97.5		%		50-140	11-AUG-17
trans-1,2-Dichloroethylene			98.9		%		50-140	11-AUG-17
trans-1,3-Dichloropropene			108.6		%		50-140	11-AUG-17
Trichloroethylene			97.0		%		50-140	11-AUG-17
Trichlorofluoromethane			102.8		%		50-140	11-AUG-17
Vinyl chloride			93.8		%		50-140	11-AUG-17
Batch	R3797003							
WG2589904-4 DUP		WG2589904-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	14-AUG-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	14-AUG-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-AUG-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 15 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3797003							
WG2589904-4	DUP	WG2589904-3						
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	14-AUG-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-AUG-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	14-AUG-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	14-AUG-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	14-AUG-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	14-AUG-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-AUG-17
Trichloroethylene		0.017	0.016		ug/g	7.7	40	14-AUG-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	14-AUG-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	14-AUG-17
WG2589904-2	LCS							
1,1,1,2-Tetrachloroethane			95.3		%		60-130	14-AUG-17
1,1,1,2,2-Tetrachloroethane			94.1		%		60-130	14-AUG-17
1,1,1-Trichloroethane			95.8		%		60-130	14-AUG-17
1,1,2-Trichloroethane			109.7		%		60-130	14-AUG-17
1,1-Dichloroethane			102.0		%		60-130	14-AUG-17
1,1-Dichloroethylene			88.6		%		60-130	14-AUG-17
1,2-Dibromoethane			110.6		%		70-130	14-AUG-17
1,2-Dichlorobenzene			94.7		%		70-130	14-AUG-17
1,2-Dichloroethane			110.9		%		60-130	14-AUG-17
1,2-Dichloropropane			108.7		%		70-130	14-AUG-17
1,3-Dichlorobenzene			92.4		%		70-130	14-AUG-17
1,4-Dichlorobenzene			94.5		%		70-130	14-AUG-17
Acetone			128.5		%		60-140	14-AUG-17
Benzene			99.3		%		70-130	14-AUG-17
Bromodichloromethane			106.0		%		50-140	14-AUG-17
Bromoform			100.4		%		70-130	14-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 16 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3797003							
WG2589904-2	LCS							
Bromomethane			107.2		%		50-140	14-AUG-17
Carbon tetrachloride			93.6		%		70-130	14-AUG-17
Chlorobenzene			98.6		%		70-130	14-AUG-17
Chloroform			99.0		%		70-130	14-AUG-17
cis-1,2-Dichloroethylene			101.3		%		70-130	14-AUG-17
cis-1,3-Dichloropropene			112.0		%		70-130	14-AUG-17
Dibromochloromethane			111.5		%		60-130	14-AUG-17
Dichlorodifluoromethane			86.3		%		50-140	14-AUG-17
Ethylbenzene			96.4		%		70-130	14-AUG-17
n-Hexane			103.0		%		70-130	14-AUG-17
Methylene Chloride			108.8		%		70-130	14-AUG-17
MTBE			98.1		%		70-130	14-AUG-17
m+p-Xylenes			96.3		%		70-130	14-AUG-17
Methyl Ethyl Ketone			116.5		%		60-140	14-AUG-17
Methyl Isobutyl Ketone			110.2		%		60-140	14-AUG-17
o-Xylene			97.2		%		70-130	14-AUG-17
Styrene			100.2		%		70-130	14-AUG-17
Tetrachloroethylene			93.9		%		60-130	14-AUG-17
Toluene			97.8		%		70-130	14-AUG-17
trans-1,2-Dichloroethylene			96.7		%		60-130	14-AUG-17
trans-1,3-Dichloropropene			111.7		%		70-130	14-AUG-17
Trichloroethylene			96.8		%		60-130	14-AUG-17
Trichlorofluoromethane			99.3		%		50-140	14-AUG-17
Vinyl chloride			89.1		%		60-140	14-AUG-17
WG2589904-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	14-AUG-17
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	14-AUG-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	14-AUG-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	14-AUG-17
1,1-Dichloroethane			<0.050		ug/g		0.05	14-AUG-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	14-AUG-17
1,2-Dibromoethane			<0.050		ug/g		0.05	14-AUG-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	14-AUG-17
1,2-Dichloroethane			<0.050		ug/g		0.05	14-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 17 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R3797003							
WG2589904-1 MB								
1,2-Dichloropropane			<0.050		ug/g		0.05	14-AUG-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	14-AUG-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	14-AUG-17
Acetone			<0.50		ug/g		0.5	14-AUG-17
Benzene			<0.0068		ug/g		0.0068	14-AUG-17
Bromodichloromethane			<0.050		ug/g		0.05	14-AUG-17
Bromoform			<0.050		ug/g		0.05	14-AUG-17
Bromomethane			<0.050		ug/g		0.05	14-AUG-17
Carbon tetrachloride			<0.050		ug/g		0.05	14-AUG-17
Chlorobenzene			<0.050		ug/g		0.05	14-AUG-17
Chloroform			<0.050		ug/g		0.05	14-AUG-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	14-AUG-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	14-AUG-17
Dibromochloromethane			<0.050		ug/g		0.05	14-AUG-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	14-AUG-17
Ethylbenzene			<0.018		ug/g		0.018	14-AUG-17
n-Hexane			<0.050		ug/g		0.05	14-AUG-17
Methylene Chloride			<0.050		ug/g		0.05	14-AUG-17
MTBE			<0.050		ug/g		0.05	14-AUG-17
m+p-Xylenes			<0.030		ug/g		0.03	14-AUG-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	14-AUG-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	14-AUG-17
o-Xylene			<0.020		ug/g		0.02	14-AUG-17
Styrene			<0.050		ug/g		0.05	14-AUG-17
Tetrachloroethylene			<0.050		ug/g		0.05	14-AUG-17
Toluene			<0.080		ug/g		0.08	14-AUG-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	14-AUG-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	14-AUG-17
Trichloroethylene			<0.010		ug/g		0.01	14-AUG-17
Trichlorofluoromethane			<0.050		ug/g		0.05	14-AUG-17
Vinyl chloride			<0.020		ug/g		0.02	14-AUG-17
Surrogate: 1,4-Difluorobenzene			103.3		%		50-140	14-AUG-17
Surrogate: 4-Bromofluorobenzene			104.3		%		50-140	14-AUG-17
WG2589904-5 MS		WG2589904-3						



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 18 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Soil							
Batch	R3797003							
WG2589904-5 MS		WG2589904-3						
1,1,1,2-Tetrachloroethane			94.8		%		50-140	14-AUG-17
1,1,1,2,2-Tetrachloroethane			97.0		%		50-140	14-AUG-17
1,1,1-Trichloroethane			95.3		%		50-140	14-AUG-17
1,1,2-Trichloroethane			110.0		%		50-140	14-AUG-17
1,1-Dichloroethane			102.9		%		50-140	14-AUG-17
1,1-Dichloroethylene			87.7		%		50-140	14-AUG-17
1,2-Dibromoethane			110.5		%		50-140	14-AUG-17
1,2-Dichlorobenzene			97.3		%		50-140	14-AUG-17
1,2-Dichloroethane			111.5		%		50-140	14-AUG-17
1,2-Dichloropropane			109.4		%		50-140	14-AUG-17
1,3-Dichlorobenzene			93.6		%		50-140	14-AUG-17
1,4-Dichlorobenzene			96.7		%		50-140	14-AUG-17
Acetone			131.3		%		50-140	14-AUG-17
Benzene			99.0		%		50-140	14-AUG-17
Bromodichloromethane			106.7		%		50-140	14-AUG-17
Bromoform			102.6		%		50-140	14-AUG-17
Bromomethane			105.3		%		50-140	14-AUG-17
Carbon tetrachloride			93.3		%		50-140	14-AUG-17
Chlorobenzene			98.0		%		50-140	14-AUG-17
Chloroform			98.9		%		50-140	14-AUG-17
cis-1,2-Dichloroethylene			100.5		%		50-140	14-AUG-17
cis-1,3-Dichloropropene			109.5		%		50-140	14-AUG-17
Dibromochloromethane			112.3		%		50-140	14-AUG-17
Dichlorodifluoromethane			79.9		%		50-140	14-AUG-17
Ethylbenzene			95.2		%		50-140	14-AUG-17
n-Hexane			101.4		%		50-140	14-AUG-17
Methylene Chloride			110.2		%		50-140	14-AUG-17
MTBE			97.4		%		50-140	14-AUG-17
m+p-Xylenes			95.1		%		50-140	14-AUG-17
Methyl Ethyl Ketone			114.2		%		50-140	14-AUG-17
Methyl Isobutyl Ketone			112.5		%		50-140	14-AUG-17
o-Xylene			96.3		%		50-140	14-AUG-17
Styrene			99.8		%		50-140	14-AUG-17



Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

Page 19 of 20

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R3797003							
WG2589904-5 MS		WG2589904-3						
Tetrachloroethylene			92.7		%		50-140	14-AUG-17
Toluene			96.6		%		50-140	14-AUG-17
trans-1,2-Dichloroethylene			95.7		%		50-140	14-AUG-17
trans-1,3-Dichloropropene			107.7		%		50-140	14-AUG-17
Trichloroethylene			95.9		%		50-140	14-AUG-17
Trichlorofluoromethane			98.4		%		50-140	14-AUG-17
Vinyl chloride			87.0		%		50-140	14-AUG-17

Quality Control Report

Workorder: L1972459

Report Date: 16-AUG-17

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

Page 20 of 20

Contact: Suvish Melanta

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.
MBS	Surrogate recovery in Method Blank was outside ALS DQO. Moderately low-biased results in the MB do not significantly affect its purpose.
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.

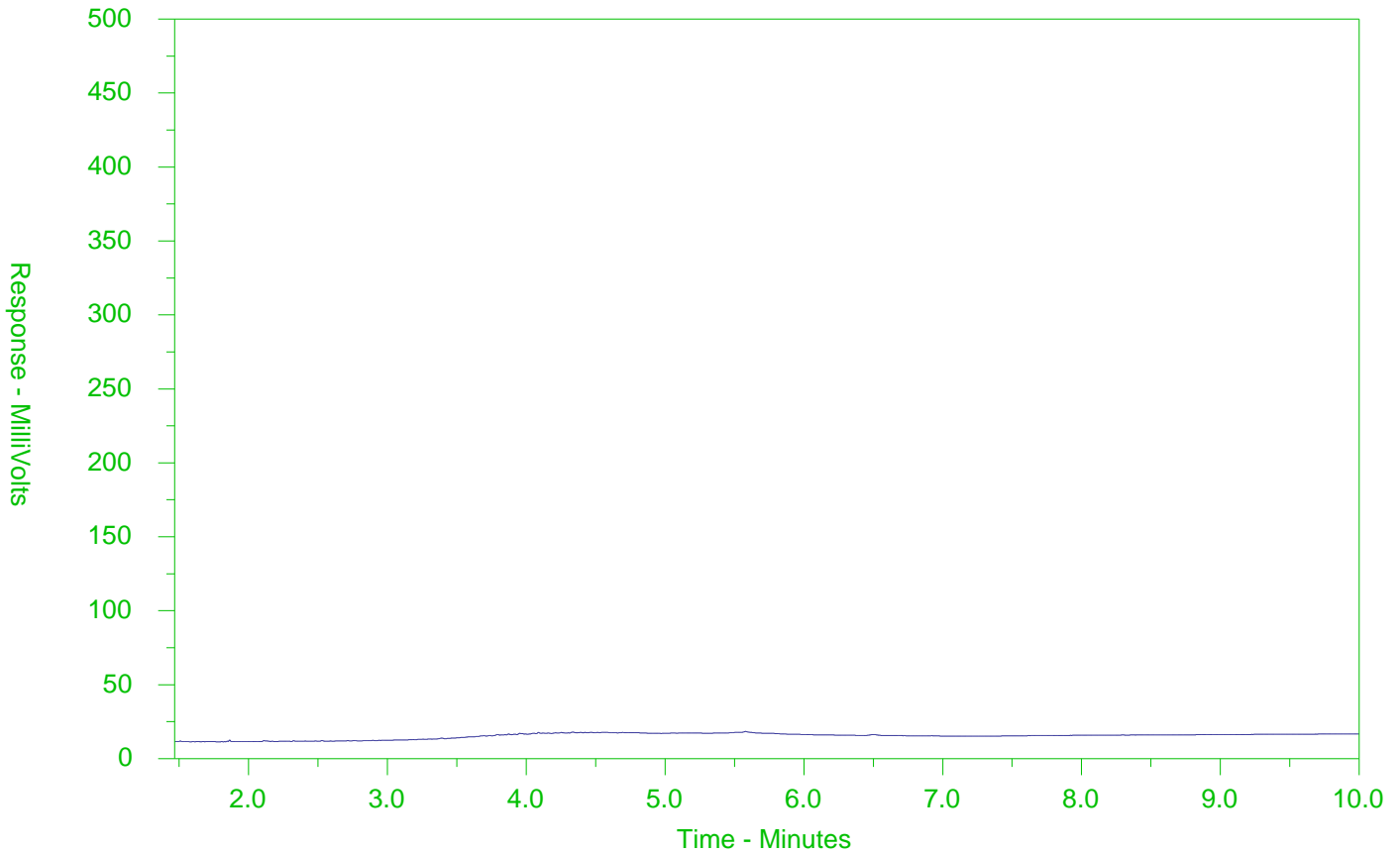
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L1972459-1
 Client Sample ID: BH101-SA2



← 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.

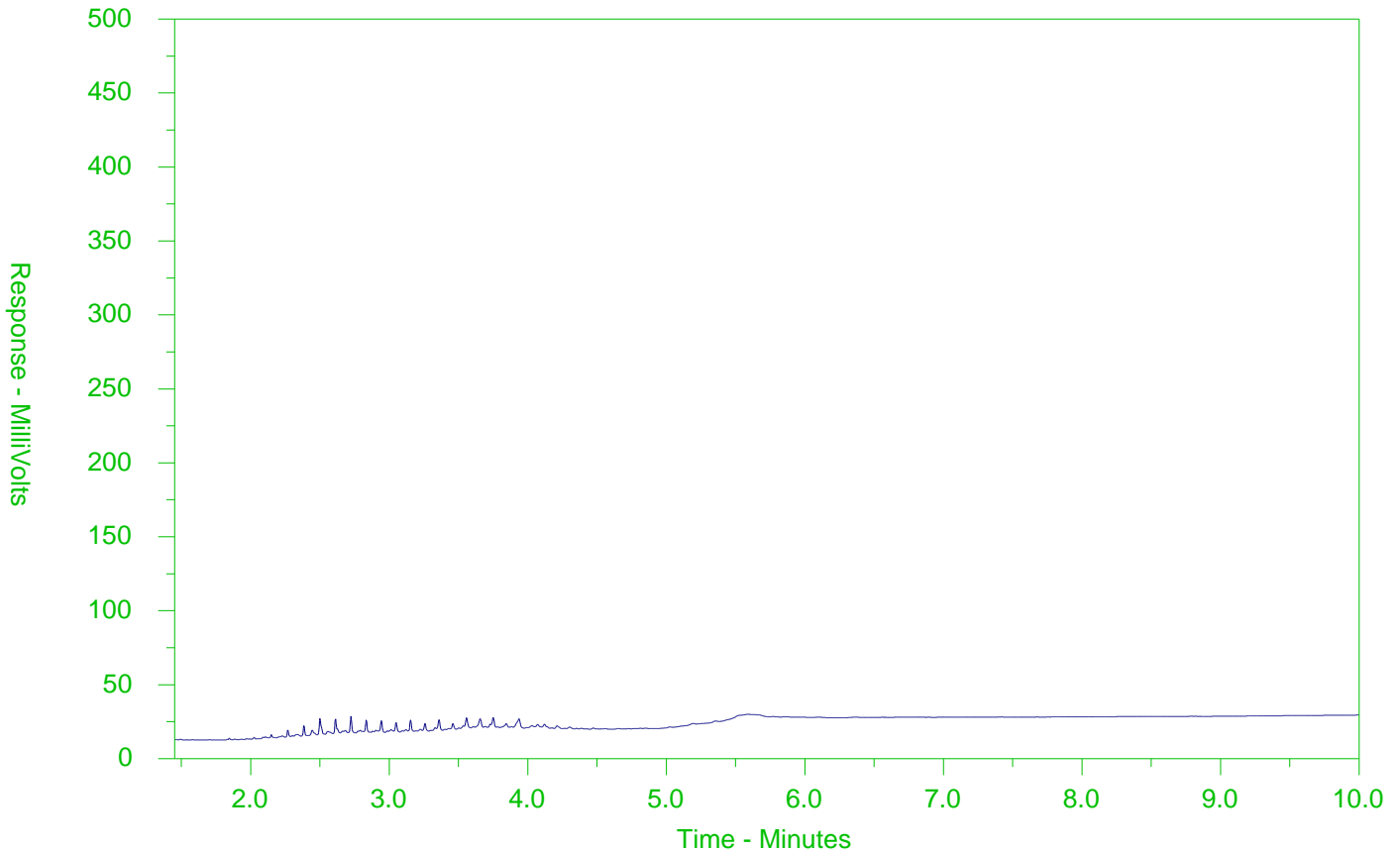
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1972459-4
 Client Sample ID: BH101-SA11



← 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.

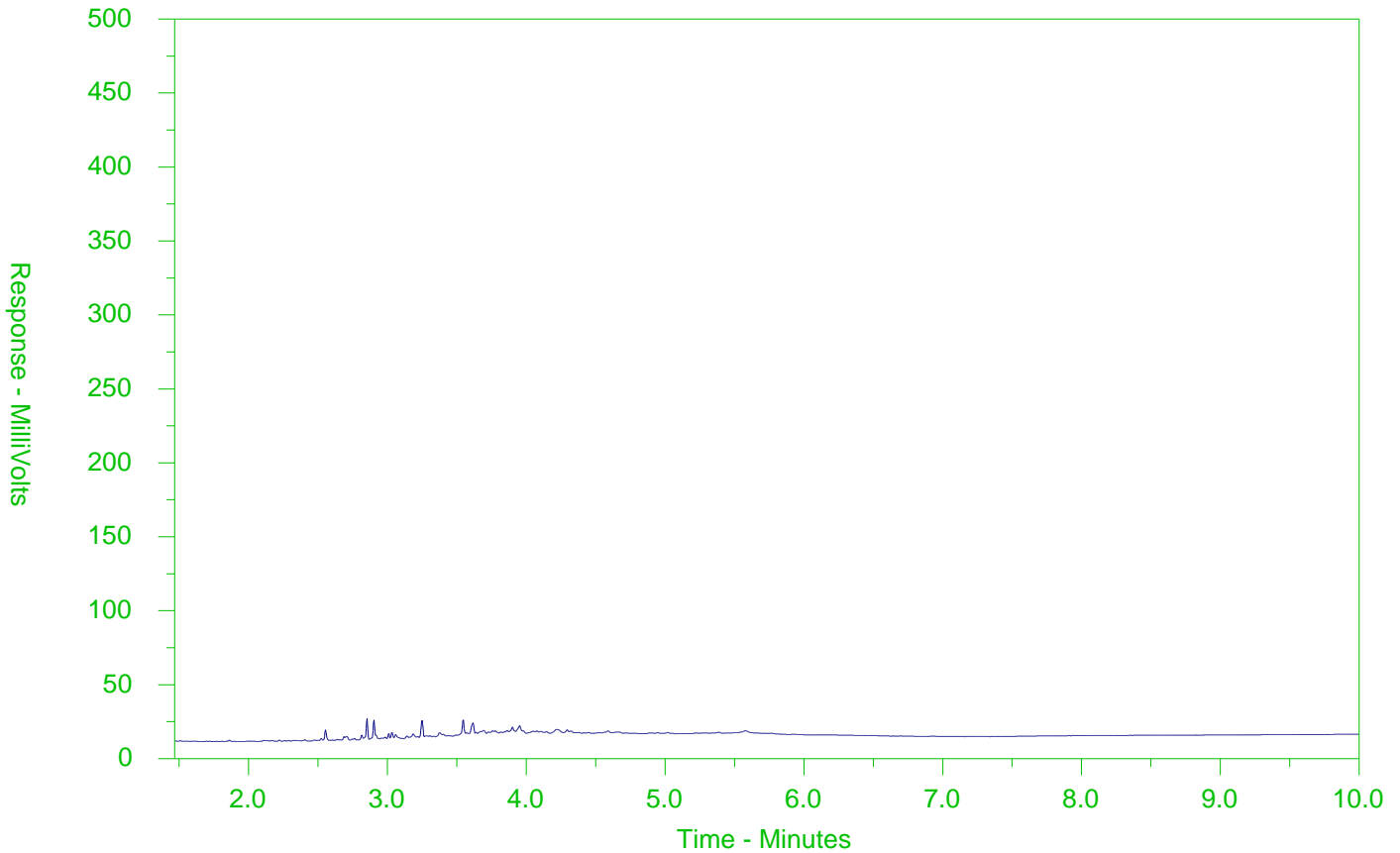
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1972459-5
 Client Sample ID: BH102-SA2



← 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.

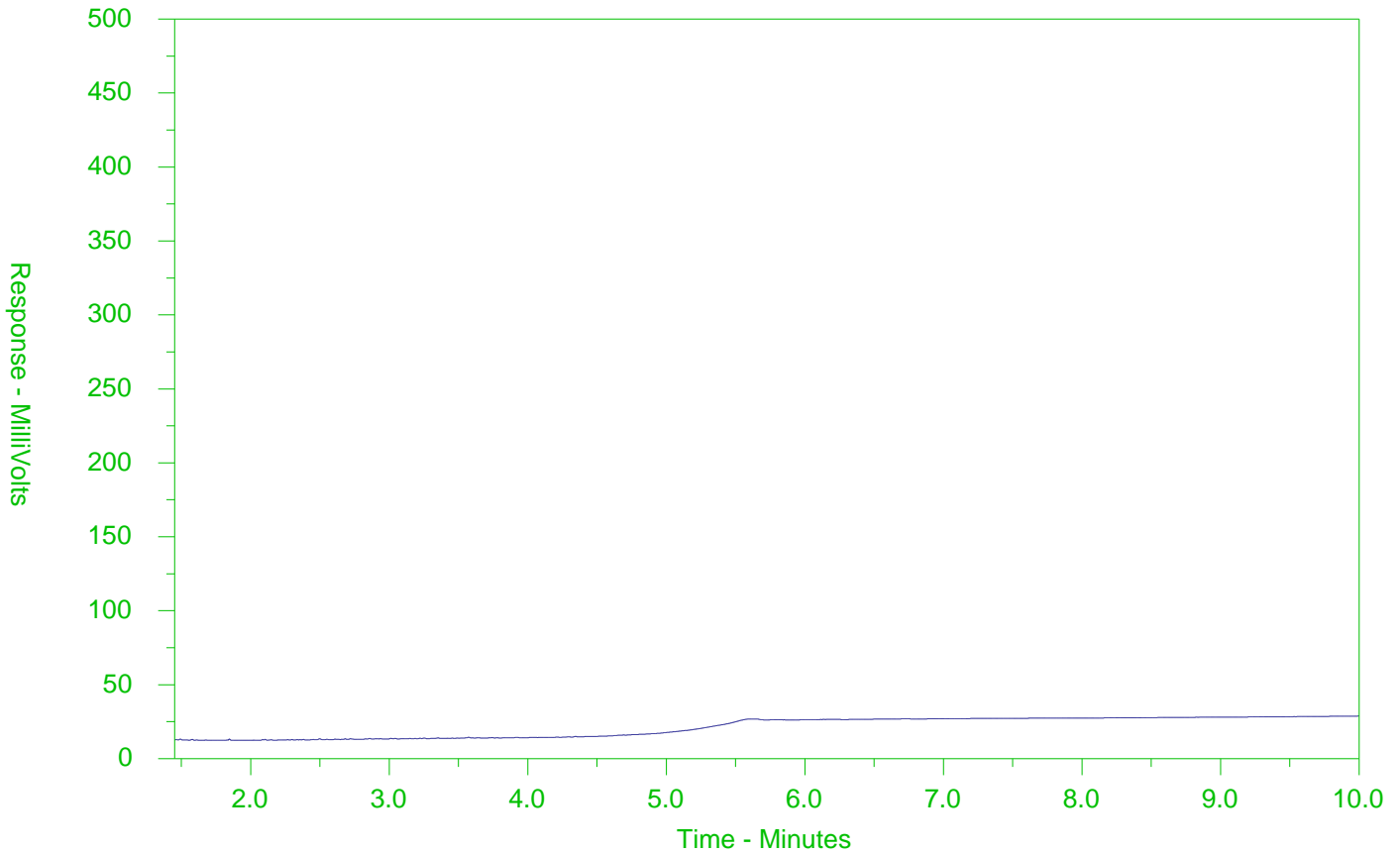
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1972459-7
 Client Sample ID: BH102-SA11



← 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.

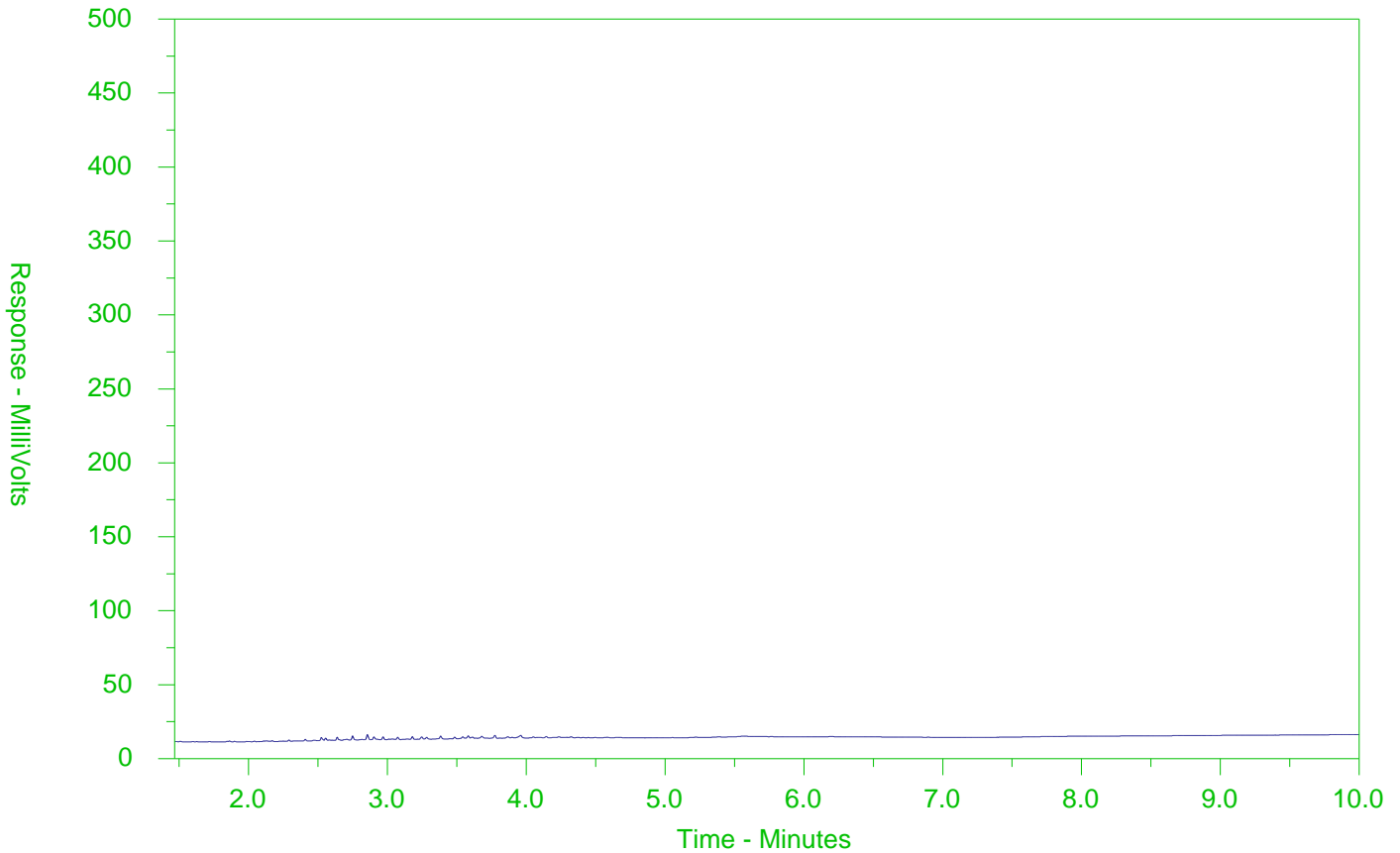
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1972459-10
 Client Sample ID: BH103-SA3



← 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.

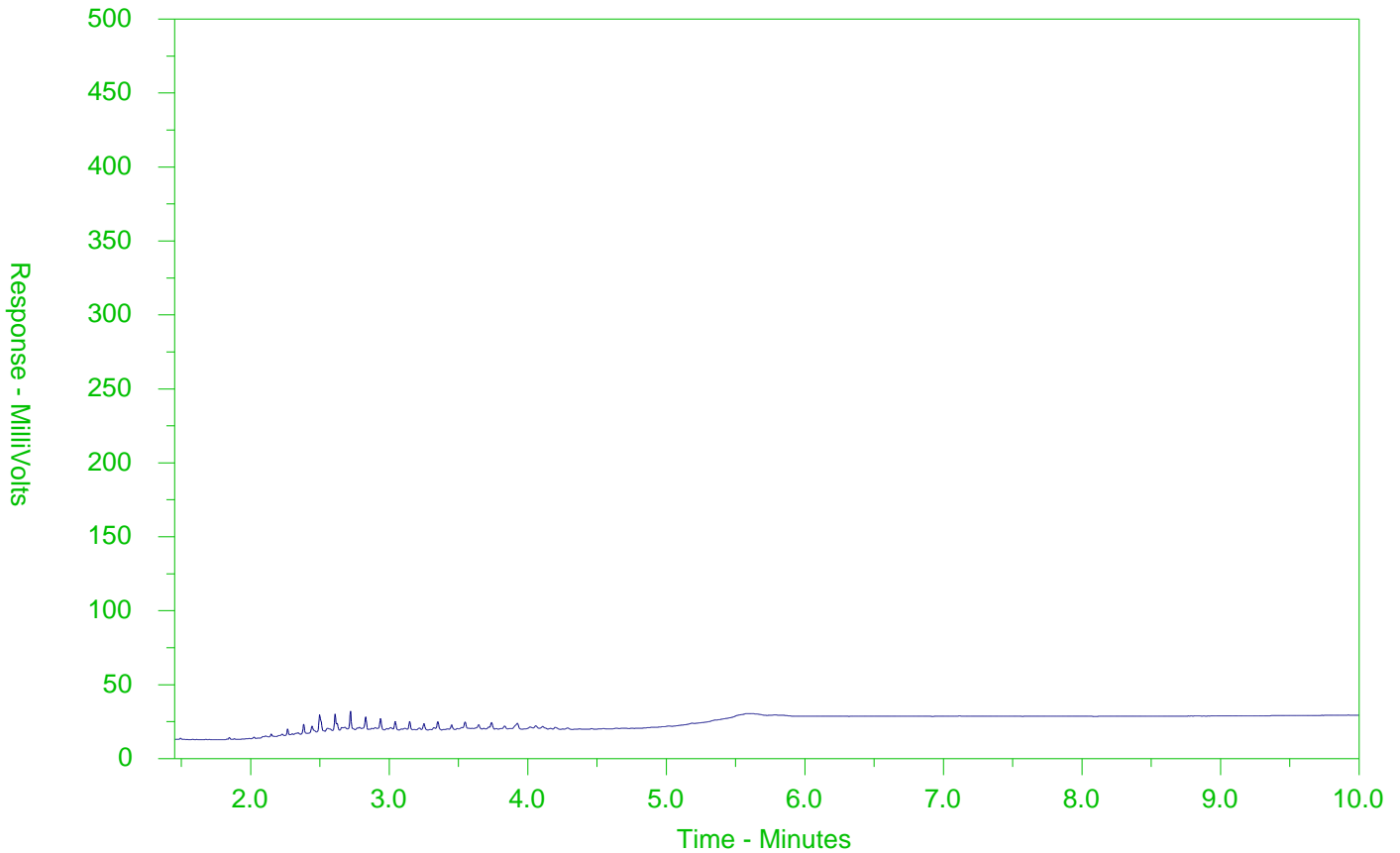
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1972459-12
 Client Sample ID: BH103-SA10



← 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.

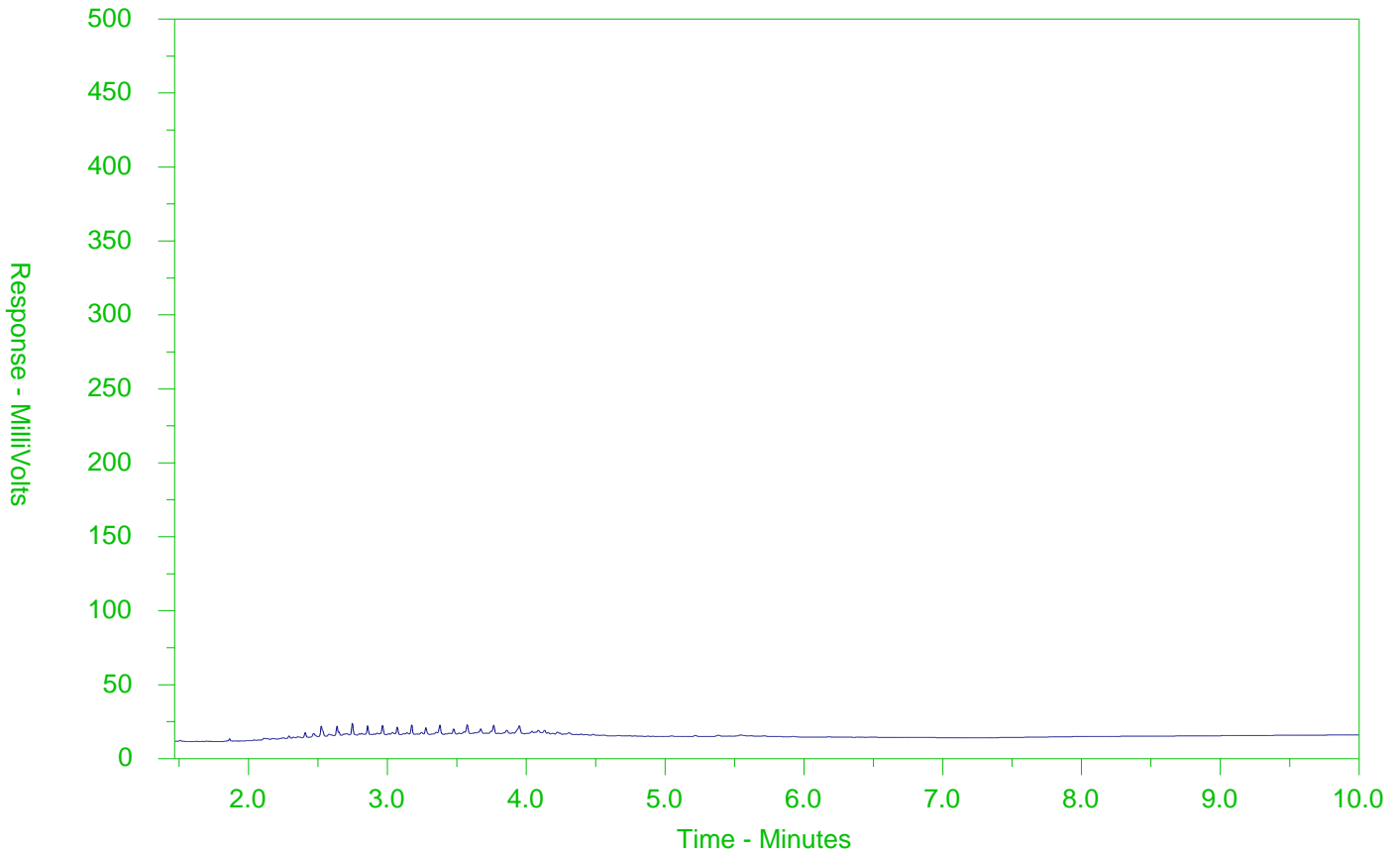
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1972459-13
 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.



L1972459-COFC

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: Swish Melanta		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <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"/>																																																																																																																																							
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 Inlet Lane		Email 1 or Fax: Smelanta@terraprobe.ca			PRIORITY (Business Days)		EMERGENCY		1 Business day [E1] <input type="checkbox"/>																																																																																																																																			
City/Province: Scarbnr ON		Email 2: Matte@terraprobe.ca			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																																																							
Postal Code: L1T 3K3		Email 3:			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																							
Invoice To		Invoice Distribution			Analysis Request																																																																																																																																							
Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																																																																							
Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax: Loosie@terraprobe.ca			<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <th>Method and Parameters</th> <th>PAHs</th> <th>PHCs</th> <th>VOCs</th> <th colspan="6">Number of Containers</th> </tr> <tr> <td>1</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>2</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">1</td> </tr> <tr> <td>3</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">1</td> </tr> <tr> <td>4</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>5</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>6</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>7</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>8</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">1</td> </tr> <tr> <td>9</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>10</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>11</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> <tr> <td>12</td> <td>X</td> <td>X</td> <td>X</td> <td colspan="6">4</td> </tr> </table>						Method and Parameters	PAHs	PHCs	VOCs	Number of Containers						1	X	X	X	4						2	X	X	X	1						3	X	X	X	1						4	X	X	X	4						5	X	X	X	4						6	X	X	X	4						7	X	X	X	4						8	X	X	X	1						9	X	X	X	4						10	X	X	X	4						11	X	X	X	4						12	X	X	X	4					
Method and Parameters	PAHs	PHCs	VOCs	Number of Containers																																																																																																																																								
1	X	X	X	4																																																																																																																																								
2	X	X	X	1																																																																																																																																								
3	X	X	X	1																																																																																																																																								
4	X	X	X	4																																																																																																																																								
5	X	X	X	4																																																																																																																																								
6	X	X	X	4																																																																																																																																								
7	X	X	X	4																																																																																																																																								
8	X	X	X	1																																																																																																																																								
9	X	X	X	4																																																																																																																																								
10	X	X	X	4																																																																																																																																								
11	X	X	X	4																																																																																																																																								
12	X	X	X	4																																																																																																																																								
Company: Terraprobe		Email 2:																																																																																																																																										
Contact: Loosie Ross		Email 3:																																																																																																																																										
Project Information		Oil and Gas Required Fields (client use)																																																																																																																																										
ALS Account # / Quote #:		AFE/Cost Center:			PO#																																																																																																																																							
Job #: 17-047-42		Major/Minor Code:			Routing Code:																																																																																																																																							
PO / AFE:		Requisitioner:																																																																																																																																										
LSD:		Location:																																																																																																																																										
ALS Lab Work Order # (lab use only) L1972459 SH		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	BH101-SAZ	07/27/17	AM	S																																																																																																																																								
2	BH101-SA3	07/27/17	PM																																																																																																																																									
3	BH101-SA10B	07/31/17	PM																																																																																																																																									
4	BH101-SAH	07/31/17	PM																																																																																																																																									
5	BH102-SAZ	08/01/17	AM																																																																																																																																									
6	BH102-SA3	08/01/17	AM																																																																																																																																									
7	BH102-SAH	08/01/17	PM																																																																																																																																									
8	BH102-SA12	08/01/17	PM																																																																																																																																									
9	BH103-SAZ	08/04/17	PM																																																																																																																																									
10	BH103-SA3	08/04/17	PM																																																																																																																																									
11	BH103-SAH BH103-SAH	08/02/17	AM																																																																																																																																									
12	BH103-SAH BH103-SAH	08/02/17	AM																																																																																																																																									
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		Res/Perk - Course - RSC			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 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																																																																																																																																				
								0.4																																																																																																																																				
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																																																																																																							
Released by: Nicholas Cameron	Date: 08/07/17	Time:	Received by:	Date:	Time:	Received by: RW	Date: Aug 07 2017	Time: 17:30																																																																																																																																				

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.



L1972459-COFC

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: <u>Terraprobe</u>		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: <u>Smith</u>		Quality Control (QC) Report with Report <input 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: <u>905 746 2650</u>		<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			Date and Time Required for all E&P TATS: dd-mm-yy hh:mm																																																																																																																																																																																												
Street: <u>11 Indell Lane</u>		Email 1 or Fax: <u>Smelenta@terraprobe.ca</u>			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																																																												
City/Province: <u>Brampton ON</u>		Email 2: <u>Matt@terraprobe.ca</u>			Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																																																																																																																												
Postal Code: <u>L6T 3T3</u>		Email 3:																																																																																																																																																																																															
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution			<table border="1" style="width:100%; height: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th colspan="10">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> <th rowspan="2">Number of Containers</th> </tr> <tr> <th>ALS Sample # (lab use only)</th> <th>Sample Identification and/or Coordinates (This description will appear on the report)</th> <th>Date (dd-mm-yy)</th> <th>Time (hh:mm)</th> <th>Sample Type</th> <th>Methals and Inorganics</th> <th>PAHs</th> <th>PHCs</th> <th>VOCs</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>13</td> <td>DUP1</td> <td>08/02/17</td> <td>AM</td> <td>S</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4</td> </tr> <tr> <td>14</td> <td>DUP2</td> <td>08/02/17</td> <td>AM</td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</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><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><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><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><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><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><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>							Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below										Number of Containers	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	Methals and Inorganics	PAHs	PHCs	VOCs											13	DUP1	08/02/17	AM	S	X	X	X											4	14	DUP2	08/02/17	AM		X													1																																																																																																																		
		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below										Number of Containers																																																																																																																																																																																					
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						Methals and Inorganics	PAHs		PHCs	VOCs																																																																																																																																																																																			
13	DUP1	08/02/17	AM	S						X	X	X											4																																																																																																																																																																										
14	DUP2	08/02/17	AM							X													1																																																																																																																																																																										
Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																																																																																																																																																															
Company: <u>LORNA ROSSI</u>		Email 1 or Fax: <u>LROSSI@terraprobe.ca</u>																																																																																																																																																																																															
Contact: <u>LORNA ROSSI</u>		Email 2:																																																																																																																																																																																															
Project Information		Oil and Gas Required Fields (client use)																																																																																																																																																																																															
ALS Account # / Quote #:		AFE/Cost Center:			PO#:																																																																																																																																																																																												
Job #: <u>17-0481-42</u>		Major/Minor Code:			Routing Code:																																																																																																																																																																																												
PO / AFE:		Requisitioner:																																																																																																																																																																																															
LSD:		Location:																																																																																																																																																																																															
ALS Lab Work Order # (lab use only): <u>L1972459</u>		ALS Contact:			Sampler:																																																																																																																																																																																												
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																																																																																																																																																																																							
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		<u>Table 2 holes K3-04 RSC</u> <u>Res/Parlc course</u>			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 type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																												
					Cooling Initiated <input type="checkbox"/>																																																																																																																																																																																												
					INITIAL COOLER TEMPERATURES °C: <u>0-4</u> FINAL COOLER TEMPERATURES °C: <u>15</u>																																																																																																																																																																																												
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																																																																																																																																																												
Released by: <u>NICHOLAS GAUREAU</u> Date: <u>08/08/17</u> Time: <u> </u>		Received by: <u> </u> Date: <u> </u> Time: <u> </u>			Received by: <u>RW</u> Date: <u>Aug 09 2017</u> Time: <u>17:30</u>																																																																																																																																																																																												



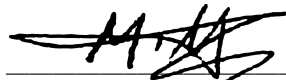
TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 26-OCT-17
Report Date: 03-NOV-17 14:10 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2014021
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 1, 2
Legal Site Desc:



Mathy Mahadera
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 - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2014021-1	BH201-SA2	Physical Tests	Conductivity	1.15	0.7	mS/cm
L2014021-3	BH201-SA10	Physical Tests	Conductivity	0.757	0.7	mS/cm
		Saturated Paste Extractables	SAR	26.1	5	SAR
L2014021-10	BH203-SA3	Physical Tests	Conductivity	2.86	0.7	mS/cm
		Saturated Paste Extractables	SAR	18.9	5	SAR
L2014021-16	DUP2	Physical Tests	Conductivity	2.88	0.7	mS/cm
		Saturated Paste Extractables	SAR	20.9	5	SAR

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

Physical Tests - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	L2014021-1	L2014021-2	L2014021-3	L2014021-4	L2014021-5	L2014021-6	L2014021-7	L2014021-8	L2014021-9	
		#1	#2	L2014021-1	L2014021-2	L2014021-3	L2014021-4	L2014021-5	L2014021-6	L2014021-7	L2014021-8	L2014021-9				
Conductivity	mS/cm	0.7	-	L2014021-1	23-OCT-17	BH201-SA2	1.15									
% Moisture	%	-	-	L2014021-2	23-OCT-17	BH201-SA9	8.56	18.3	16.9	22.2	19.1	20.3	18.9	17.5	11.4	
pH	pH units	-	-	L2014021-3	23-OCT-17	BH201-SA10	7.96		8.06		8.42	8.20		8.03		

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

- Detection Limit for result 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.

Physical Tests - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2014021-10	L2014021-11	L2014021-12	L2014021-13	L2014021-14	L2014021-15	L2014021-16	L2014021-17
		#1	#2	Sample Date	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
Conductivity	mS/cm	0.7	-	25-OCT-17	BH203-SA3	BH203-SA4	BH203-SA8	BH203-SA9	BH203-SA10	DUP1	DUP2	DUP3
% Moisture	%	-	-									
pH	pH units	-	-									

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

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

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

Cyanides - SOIL

Lab ID	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16
Sample Date	23-OCT-17	23-OCT-17	23-OCT-17	24-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
Sample ID	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2

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

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

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

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

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16
		#1	#2	Sample Date	23-OCT-17	23-OCT-17	23-OCT-17	24-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
				Sample ID	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2
SAR	SAR	5	-	>40. ^{SAR:L}	26.1 ^{SAR:M}	1.51	0.85	4.34	18.9	>0.73 ^{SAR:L}	1.05	20.9	
Calcium (Ca)	mg/L	-	-	<1.0	2.2	3.1	3.7	1.7	57.9	<1.0	3.2	50.5	
Magnesium (Mg)	mg/L	-	-	<1.0	<1.0	1.5	1.9	3.2	2.2	<1.0	1.5	2.2	
Sodium (Na)	mg/L	-	-	234	139	13.0	8.0	41.7	538	4.3	9.0	557	

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

- Detection Limit for result 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

Analyte	Unit	Guide Limits		Lab ID	L2014021-1	L2014021-3	L2014021-5	L2014021-6	L2014021-8	L2014021-10	L2014021-12	L2014021-14	L2014021-16
		#1	#2	Sample Date	23-OCT-17	23-OCT-17	23-OCT-17	24-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
				Sample ID	BH201-SA2	BH201-SA10	BH201-SA13	BH202-SA7	BH202-SA9	BH203-SA3	BH203-SA8	BH203-SA10	DUP2
Antimony (Sb)	ug/g	7.5	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	ug/g	18	-	1.1	<1.0	2.9	2.2	<1.0	1.2	<1.0	2.3	1.2	
Barium (Ba)	ug/g	390	-	34.0	22.1	203	144	25.5	39.2	83.9	108	44.5	
Beryllium (Be)	ug/g	4	-	<0.50	<0.50	0.90	0.66	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron (B)	ug/g	120	-	<5.0	<5.0	17.0	12.5	<5.0	<5.0	5.1	9.6	<5.0	
Boron (B), Hot Water Ext.	ug/g	1.5	-	<0.10	<0.10	0.31	0.25	<0.10	<0.10	<0.10	0.17	<0.10	
Cadmium (Cd)	ug/g	1.2	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium (Cr)	ug/g	160	-	11.6	7.9	38.5	29.7	9.0	11.2	12.9	22.5	12.1	
Cobalt (Co)	ug/g	22	-	3.5	2.4	12.2	9.4	2.2	3.6	3.6	7.2	3.8	
Copper (Cu)	ug/g	140	-	7.8	5.9	25.8	20.8	5.6	7.0	7.2	17.1	7.6	
Lead (Pb)	ug/g	120	-	2.3	1.0	8.1	6.2	1.5	3.7	2.0	5.1	3.1	
Mercury (Hg)	ug/g	0.27	-	<0.0050	<0.0050	0.0113	0.0096	<0.0050	0.0054	<0.0050	0.0087	0.0065	
Molybdenum (Mo)	ug/g	6.9	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	ug/g	100	-	7.2	4.7	28.1	20.9	4.5	7.4	6.4	15.9	7.7	
Selenium (Se)	ug/g	2.4	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	ug/g	20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	ug/g	1	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	ug/g	23	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	ug/g	86	-	24.5	18.6	51.6	42.6	23.6	27.8	27.3	34.5	28.9	
Zinc (Zn)	ug/g	340	-	18.5	11.3	64.6	49.1	10.0	19.9	20.6	37.0	22.4	

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

- Detection Limit for result 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 - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID																				
		#1	#2	L2014021-1	23-OCT-17	BH201-SA2	L2014021-3	23-OCT-17	BH201-SA10	L2014021-5	23-OCT-17	BH201-SA13	L2014021-6	24-OCT-17	BH202-SA7	L2014021-8	24-OCT-17	BH202-SA9	L2014021-10	25-OCT-17	BH203-SA3	L2014021-12	25-OCT-17	BH203-SA8	L2014021-14	25-OCT-17	BH203-SA10	L2014021-16	25-OCT-17	DUP2											
Chromium, Hexavalent	ug/g	8	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

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

- Detection Limit for result 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	L2014021-1	L2014021-2	L2014021-7	L2014021-9	L2014021-13	L2014021-15
		#1	#2	Sample Date	23-OCT-17	23-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
				Sample ID	BH201-SA2	BH201-SA9	BH202-SA8	BH203-SA2	BH203-SA9	DUP1
Acetone	ug/g	16	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	-	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	ug/g	1.5	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	2.3	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	1.2	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.083	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	ug/g	16	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	0.47	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	ug/g	0.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	-	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Ethylbenzene	ug/g	1.1	-	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
n-Hexane	ug/g	2.8	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	ug/g	16	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MTBE	ug/g	0.75	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	ug/g	0.7	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

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

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

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits		Lab ID	L2014021-1	L2014021-2	L2014021-7	L2014021-9	L2014021-13	L2014021-15
		#1	#2	Sample Date	23-OCT-17	23-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
				Sample ID	BH201-SA2	BH201-SA9	BH202-SA8	BH203-SA2	BH203-SA9	DUP1
1,1,1,2-Tetrachloroethane	ug/g	0.058	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethylene	ug/g	0.28	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	-	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	0.38	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	ug/g	0.061	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	ug/g	4	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	3.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	88.3	85.9	91.7	88.1	87.2	93.9	
Surrogate: 1,4-Difluorobenzene	%	-	-	96.2	94.1	97.9	97.9	95.6	103.4	

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

- Detection Limit for result 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

Analyte	Unit	Guide Limits		Lab ID	L2014021-1	L2014021-2	L2014021-7	L2014021-9	L2014021-13	L2014021-15
		#1	#2	Sample Date	23-OCT-17	23-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
				Sample ID	BH201-SA2	BH201-SA9	BH202-SA8	BH203-SA2	BH203-SA9	DUP1
F1 (C6-C10)	ug/g	55	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F1-BTEX	ug/g	55	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F2 (C10-C16)	ug/g	98	-	<10	<10	<10	<10	<10	<10	<10
F2-Naphth	ug/g	-	-	<10						
F3 (C16-C34)	ug/g	300	-	<50	<50	<50	<50	<50	<50	<50
F3-PAH	ug/g	-	-	<50						
F4 (C34-C50)	ug/g	2800	-	<50	<50	<50	<50	<50	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72	<72	<72	<72	<72	<72
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	88.4	77.6	88.0	75.7	84.0	85.4	
Surrogate: 3,4-Dichlorotoluene	%	-	-	91.8	88.8	93.1	82.3	90.0	92.4	

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

- Detection Limit for result 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		Lab ID	L2014021-1	L2014021-4	L2014021-6	L2014021-11	L2014021-14	L2014021-17
		#1	#2	Sample Date	23-OCT-17	23-OCT-17	24-OCT-17	25-OCT-17	25-OCT-17	25-OCT-17
				Sample ID	BH201-SA2	BH201-SA12	BH202-SA7	BH203-SA4	BH203-SA10	DUP3
Acenaphthene	ug/g	7.9	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	7	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	0.69	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/g	62	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	-	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
1-Methylnaphthalene	ug/g	0.99	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	ug/g	0.99	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	ug/g	0.6	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/g	6.2	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	ug/g	78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	93.3	104.9	105.0	107.5	99.1	107.6	
Surrogate: p-Terphenyl d14	%	-	-	99.0	118.6	116.9	115.1	112.3	118.4	

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

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

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:L	SAR is incalculable due to Ca and Mg below DL. Lowest possible SAR is reported as minimum value.
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

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

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

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

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
-----------------------	------	--	----------------------------

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

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

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
---------------------	------	-----------------------------	------------------

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

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

EC-WT	Soil	Conductivity (EC)	MOEE E3138
--------------	------	-------------------	------------

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

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

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
--------------------------	------	---	-------------------------------------

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<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	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>This method uses a heated strong acid digestion with HNO₃ and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.</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	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

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. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A
--------------	------	----	-------------

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

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

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
--------------------	------	------------------------------	-------------

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

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

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
----------------------------	------	---------------------	-----------------

VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)
----------------------	------	------------------------------	------------------

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
----------------------------	------	-------------------------------------	-------------

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

1	2
---	---

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.



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 1 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT		Soil						
Batch R3871991								
WG2653683-4	DUP	L2006528-6						
Boron (B), Hot Water Ext.		0.14	0.14		ug/g	3.0	30	01-NOV-17
WG2653683-2	IRM	HOTB-SAL_SOIL5						
Boron (B), Hot Water Ext.			102.8		%		70-130	01-NOV-17
WG2653683-3	LCS							
Boron (B), Hot Water Ext.			109.1		%		70-130	01-NOV-17
WG2653683-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	01-NOV-17
Batch R3873367								
WG2654754-4	DUP	L2014021-16						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	02-NOV-17
WG2654754-2	IRM	HOTB-SAL_SOIL5						
Boron (B), Hot Water Ext.			118.5		%		70-130	02-NOV-17
WG2654754-3	LCS							
Boron (B), Hot Water Ext.			113.0		%		70-130	02-NOV-17
WG2654754-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	02-NOV-17
CN-WAD-R511-WT		Soil						
Batch R3873001								
WG2652631-3	DUP	L2015429-5						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	01-NOV-17
WG2652631-2	LCS							
Cyanide, Weak Acid Diss			97.6		%		80-120	01-NOV-17
WG2652631-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	01-NOV-17
WG2652631-4	MS	L2015429-5						
Cyanide, Weak Acid Diss			103.2		%		70-130	01-NOV-17
CR-CR6-IC-WT		Soil						
Batch R3871863								
WG2652637-3	CRM	WT-SQC012						
Chromium, Hexavalent			89.2		%		70-130	01-NOV-17
WG2652637-4	DUP	L2007134-19						
Chromium, Hexavalent		0.41	0.39		ug/g	4.0	35	01-NOV-17
WG2652637-2	LCS							
Chromium, Hexavalent			93.9		%		80-120	01-NOV-17
WG2652637-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	01-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 2 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT		Soil						
Batch	R3871812							
WG2653695-4	DUP	WG2653695-3						
Conductivity		0.537	0.546		mS/cm	1.7	20	01-NOV-17
WG2653969-1	LCS							
Conductivity			99.9		%		90-110	01-NOV-17
WG2653695-1	MB							
Conductivity			<0.0040		mS/cm		0.004	01-NOV-17
F1-HS-511-WT		Soil						
Batch	R3872926							
WG2652449-4	DUP	WG2652449-3						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	02-NOV-17
WG2652449-2	LCS							
F1 (C6-C10)			98.6		%		80-120	02-NOV-17
WG2652449-1	MB							
F1 (C6-C10)			<5.0		ug/g		5	02-NOV-17
Surrogate: 3,4-Dichlorotoluene			91.5		%		60-140	02-NOV-17
WG2652449-7	MS	WG2652449-6						
F1 (C6-C10)			111.7		%		60-140	02-NOV-17
F2-F4-511-WT		Soil						
Batch	R3873854							
WG2652749-4	CRM	ALS PHC2 IRM						
F2 (C10-C16)			106.9		%		70-130	03-NOV-17
F3 (C16-C34)			104.4		%		70-130	03-NOV-17
F4 (C34-C50)			103.3		%		70-130	03-NOV-17
WG2652749-3	DUP	WG2652749-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	03-NOV-17
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	03-NOV-17
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	03-NOV-17
WG2652749-2	LCS							
F2 (C10-C16)			103.1		%		80-120	03-NOV-17
F3 (C16-C34)			101.4		%		80-120	03-NOV-17
F4 (C34-C50)			103.3		%		80-120	03-NOV-17
WG2652749-1	MB							
F2 (C10-C16)			<10		ug/g		10	03-NOV-17
F3 (C16-C34)			<50		ug/g		50	03-NOV-17
F4 (C34-C50)			<50		ug/g		50	03-NOV-17
Surrogate: 2-Bromobenzotrifluoride			68.8		%		60-140	03-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 3 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3871765							
WG2653660-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			95.8		%		70-130	01-NOV-17
WG2653660-6	DUP	WG2653660-5						
Mercury (Hg)		<0.0050	<0.0050	RPD-NA	ug/g	N/A	40	01-NOV-17
WG2653660-3	LCS							
Mercury (Hg)			111.5		%		80-120	01-NOV-17
WG2653660-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	01-NOV-17
MET-200.2-CCMS-WT		Soil						
Batch	R3873552							
WG2653660-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			92.6		%		70-130	01-NOV-17
Arsenic (As)			98.0		%		70-130	01-NOV-17
Barium (Ba)			98.1		%		70-130	01-NOV-17
Beryllium (Be)			106.1		%		70-130	01-NOV-17
Boron (B)			4.3		mg/kg		0-8.2	01-NOV-17
Cadmium (Cd)			99.8		%		70-130	01-NOV-17
Chromium (Cr)			98.6		%		70-130	01-NOV-17
Cobalt (Co)			91.5		%		70-130	01-NOV-17
Copper (Cu)			98.2		%		70-130	01-NOV-17
Lead (Pb)			90.0		%		70-130	01-NOV-17
Molybdenum (Mo)			98.5		%		70-130	01-NOV-17
Nickel (Ni)			97.2		%		70-130	01-NOV-17
Selenium (Se)			0.30		mg/kg		0.11-0.51	01-NOV-17
Silver (Ag)			0.21		mg/kg		0.13-0.33	01-NOV-17
Thallium (Tl)			0.115		mg/kg		0.077-0.18	01-NOV-17
Uranium (U)			90.1		%		70-130	01-NOV-17
Vanadium (V)			97.5		%		70-130	01-NOV-17
Zinc (Zn)			96.5		%		70-130	01-NOV-17
WG2653660-6	DUP	WG2653660-5						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	01-NOV-17
Arsenic (As)		1.10	1.04		ug/g	4.7	30	01-NOV-17
Barium (Ba)		34.0	32.8		ug/g	3.4	40	01-NOV-17
Beryllium (Be)		0.27	0.27		ug/g	0.8	30	01-NOV-17
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	01-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 4 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
MET-200.2-CCMS-WT		Soil							
Batch	R3873552								
WG2653660-6	DUP	WG2653660-5							
Cadmium (Cd)		0.034	0.033		ug/g	2.3	30	01-NOV-17	
Chromium (Cr)		11.6	10.7		ug/g	7.7	30	01-NOV-17	
Cobalt (Co)		3.54	3.41		ug/g	3.6	30	01-NOV-17	
Copper (Cu)		7.81	7.44		ug/g	4.9	30	01-NOV-17	
Lead (Pb)		2.34	2.41		ug/g	2.8	40	01-NOV-17	
Molybdenum (Mo)		0.18	0.18		ug/g	2.3	40	01-NOV-17	
Nickel (Ni)		7.16	6.87		ug/g	4.2	30	01-NOV-17	
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	01-NOV-17	
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	01-NOV-17	
Thallium (Tl)		0.053	0.054		ug/g	1.5	30	01-NOV-17	
Uranium (U)		0.279	0.296		ug/g	6.0	30	01-NOV-17	
Vanadium (V)		24.5	22.9		ug/g	6.7	30	01-NOV-17	
Zinc (Zn)		18.5	17.1		ug/g	7.8	30	01-NOV-17	
WG2653660-4	LCS								
Antimony (Sb)			98.0		%		80-120	01-NOV-17	
Arsenic (As)			94.9		%		80-120	01-NOV-17	
Barium (Ba)			86.7		%		80-120	01-NOV-17	
Beryllium (Be)			89.4		%		80-120	01-NOV-17	
Boron (B)			84.1		%		80-120	01-NOV-17	
Cadmium (Cd)			93.9		%		80-120	01-NOV-17	
Chromium (Cr)			93.5		%		80-120	01-NOV-17	
Cobalt (Co)			88.1		%		80-120	01-NOV-17	
Copper (Cu)			89.9		%		80-120	01-NOV-17	
Lead (Pb)			95.2		%		80-120	01-NOV-17	
Molybdenum (Mo)			89.6		%		80-120	01-NOV-17	
Nickel (Ni)			91.6		%		80-120	01-NOV-17	
Selenium (Se)			89.3		%		80-120	01-NOV-17	
Silver (Ag)			92.1		%		80-120	01-NOV-17	
Thallium (Tl)			92.3		%		80-120	01-NOV-17	
Uranium (U)			83.9		%		80-120	01-NOV-17	
Vanadium (V)			94.9		%		80-120	01-NOV-17	
Zinc (Zn)			87.2		%		80-120	01-NOV-17	
WG2653660-1	MB							0.1	



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 5 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
	Soil							
Batch	R3873552							
WG2653660-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	01-NOV-17
Arsenic (As)			<0.10		mg/kg		0.1	01-NOV-17
Barium (Ba)			<0.50		mg/kg		0.5	01-NOV-17
Beryllium (Be)			<0.10		mg/kg		0.1	01-NOV-17
Boron (B)			<5.0		mg/kg		5	01-NOV-17
Cadmium (Cd)			<0.020		mg/kg		0.02	01-NOV-17
Chromium (Cr)			<0.50		mg/kg		0.5	01-NOV-17
Cobalt (Co)			<0.10		mg/kg		0.1	01-NOV-17
Copper (Cu)			<0.50		mg/kg		0.5	01-NOV-17
Lead (Pb)			<0.50		mg/kg		0.5	01-NOV-17
Molybdenum (Mo)			<0.10		mg/kg		0.1	01-NOV-17
Nickel (Ni)			<0.50		mg/kg		0.5	01-NOV-17
Selenium (Se)			<0.20		mg/kg		0.2	01-NOV-17
Silver (Ag)			<0.10		mg/kg		0.1	01-NOV-17
Thallium (Tl)			<0.050		mg/kg		0.05	01-NOV-17
Uranium (U)			<0.050		mg/kg		0.05	01-NOV-17
Vanadium (V)			<0.20		mg/kg		0.2	01-NOV-17
Zinc (Zn)			<2.0		mg/kg		2	01-NOV-17
MOISTURE-WT								
	Soil							
Batch	R3869025							
WG2650531-3	DUP	L2013976-10						
% Moisture		13.4	13.5		%	1.3	20	27-OCT-17
WG2650531-2	LCS							
% Moisture			97.6		%		90-110	27-OCT-17
WG2650531-1	MB							
% Moisture			<0.10		%		0.1	27-OCT-17
Batch	R3871426							
WG2653067-3	DUP	L2014739-23						
% Moisture		9.75	10.4		%	6.6	20	31-OCT-17
WG2653067-2	LCS							
% Moisture			98.7		%		90-110	31-OCT-17
WG2653067-1	MB							
% Moisture			<0.10		%		0.1	31-OCT-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 6 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT		Soil						
Batch	R3873348							
WG2655489-3	DUP	L2017248-1						
% Moisture		17.9	17.7		%	0.6	20	03-NOV-17
WG2655489-2	LCS							
% Moisture			99.9		%		90-110	03-NOV-17
WG2655489-1	MB							
% Moisture			<0.10		%		0.1	03-NOV-17
PAH-511-WT		Soil						
Batch	R3872685							
WG2651123-4	DUP	WG2651123-3						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(b)fluoranthene		<0.050	0.057	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Fluoranthene		0.060	0.076		ug/g	25	40	02-NOV-17
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Pyrene		0.053	0.068		ug/g	25	40	02-NOV-17
WG2651123-2	LCS							
1-Methylnaphthalene			81.3		%		50-140	02-NOV-17
2-Methylnaphthalene			80.2		%		50-140	02-NOV-17
Acenaphthene			81.7		%		50-140	02-NOV-17
Acenaphthylene			85.2		%		50-140	02-NOV-17
Anthracene			80.2		%		50-140	02-NOV-17
Benzo(a)anthracene			82.9		%		50-140	02-NOV-17
Benzo(a)pyrene			75.8		%		50-140	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 7 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch	R3872685							
WG2651123-2 LCS								
Benzo(b)fluoranthene			69.2		%		50-140	02-NOV-17
Benzo(g,h,i)perylene			65.3		%		50-140	02-NOV-17
Benzo(k)fluoranthene			84.0		%		50-140	02-NOV-17
Chrysene			84.8		%		50-140	02-NOV-17
Dibenzo(ah)anthracene			71.1		%		50-140	02-NOV-17
Fluoranthene			76.2		%		50-140	02-NOV-17
Fluorene			79.5		%		50-140	02-NOV-17
Indeno(1,2,3-cd)pyrene			67.4		%		50-140	02-NOV-17
Naphthalene			83.8		%		50-140	02-NOV-17
Phenanthrene			78.4		%		50-140	02-NOV-17
Pyrene			78.0		%		50-140	02-NOV-17
WG2651123-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	02-NOV-17
2-Methylnaphthalene			<0.030		ug/g		0.03	02-NOV-17
Acenaphthene			<0.050		ug/g		0.05	02-NOV-17
Acenaphthylene			<0.050		ug/g		0.05	02-NOV-17
Anthracene			<0.050		ug/g		0.05	02-NOV-17
Benzo(a)anthracene			<0.050		ug/g		0.05	02-NOV-17
Benzo(a)pyrene			<0.050		ug/g		0.05	02-NOV-17
Benzo(b)fluoranthene			<0.050		ug/g		0.05	02-NOV-17
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	02-NOV-17
Benzo(k)fluoranthene			<0.050		ug/g		0.05	02-NOV-17
Chrysene			<0.050		ug/g		0.05	02-NOV-17
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	02-NOV-17
Fluoranthene			<0.050		ug/g		0.05	02-NOV-17
Fluorene			<0.050		ug/g		0.05	02-NOV-17
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	02-NOV-17
Naphthalene			<0.050		ug/g		0.05	02-NOV-17
Phenanthrene			<0.050		ug/g		0.05	02-NOV-17
Pyrene			<0.050		ug/g		0.05	02-NOV-17
Surrogate: 2-Fluorobiphenyl			102.2		%		50-140	02-NOV-17
Surrogate: p-Terphenyl d14			106.0		%		50-140	02-NOV-17
WG2651123-5 MS		WG2651123-3						
1-Methylnaphthalene			83.2		%		50-140	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 8 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R3872685								
WG2651123-5 MS		WG2651123-3						
2-Methylnaphthalene			82.2		%		50-140	02-NOV-17
Acenaphthene			85.6		%		50-140	02-NOV-17
Acenaphthylene			86.7		%		50-140	02-NOV-17
Anthracene			85.1		%		50-140	02-NOV-17
Benzo(a)anthracene			87.0		%		50-140	02-NOV-17
Benzo(a)pyrene			81.1		%		50-140	02-NOV-17
Benzo(b)fluoranthene			71.2		%		50-140	02-NOV-17
Benzo(g,h,i)perylene			67.3		%		50-140	02-NOV-17
Benzo(k)fluoranthene			94.0		%		50-140	02-NOV-17
Chrysene			92.6		%		50-140	02-NOV-17
Dibenzo(ah)anthracene			76.4		%		50-140	02-NOV-17
Fluoranthene			79.6		%		50-140	02-NOV-17
Fluorene			83.9		%		50-140	02-NOV-17
Indeno(1,2,3-cd)pyrene			72.4		%		50-140	02-NOV-17
Naphthalene			85.6		%		50-140	02-NOV-17
Phenanthrene			82.2		%		50-140	02-NOV-17
Pyrene			81.1		%		50-140	02-NOV-17
PH-WT	Soil							
Batch R3871045								
WG2652095-1 DUP		L2013777-10						
pH		8.03	7.99	J	pH units	0.04	0.3	31-OCT-17
WG2652646-2 LCS								
pH			6.99		pH units		6.9-7.1	31-OCT-17
Batch R3871847								
WG2652634-1 DUP		L2014021-6						
pH		8.20	8.27	J	pH units	0.07	0.3	01-NOV-17
WG2653945-1 LCS								
pH			6.98		pH units		6.9-7.1	01-NOV-17
Batch R3872071								
WG2652072-1 DUP		L2014736-39						
pH		7.85	7.80	J	pH units	0.05	0.3	01-NOV-17
WG2653952-1 LCS								
pH			6.97		pH units		6.9-7.1	01-NOV-17
SAR-R511-WT	Soil							



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 9 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT		Soil						
Batch	R3872012							
WG2653695-4	DUP	WG2653695-3						
Calcium (Ca)		19.2	18.4		mg/L	4.1	30	01-NOV-17
Sodium (Na)		17.7	17.6		mg/L	0.5	30	01-NOV-17
Magnesium (Mg)		18.3	17.5		mg/L	4.2	30	01-NOV-17
WG2653695-2	IRM	WT SAR1						
Calcium (Ca)			106.2		%		70-130	01-NOV-17
Sodium (Na)			100.3		%		70-130	01-NOV-17
Magnesium (Mg)			105.7		%		70-130	01-NOV-17
WG2653695-1	MB							
Calcium (Ca)			<1.0		mg/L		1	01-NOV-17
Sodium (Na)			<1.0		mg/L		1	01-NOV-17
Magnesium (Mg)			<1.0		mg/L		1	01-NOV-17
VOC-511-HS-WT		Soil						
Batch	R3872926							
WG2652449-4	DUP	WG2652449-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 10 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3872926							
WG2652449-4	DUP	WG2652449-3						
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	02-NOV-17
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	02-NOV-17
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	02-NOV-17
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	02-NOV-17
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	02-NOV-17
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	02-NOV-17
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	02-NOV-17
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	02-NOV-17
WG2652449-2	LCS							
1,1,1,2-Tetrachloroethane			98.6		%		60-130	02-NOV-17
1,1,2,2-Tetrachloroethane			92.8		%		60-130	02-NOV-17
1,1,1-Trichloroethane			104.8		%		60-130	02-NOV-17
1,1,2-Trichloroethane			97.8		%		60-130	02-NOV-17
1,1-Dichloroethane			102.4		%		60-130	02-NOV-17
1,1-Dichloroethylene			94.6		%		60-130	02-NOV-17
1,2-Dibromoethane			97.2		%		70-130	02-NOV-17
1,2-Dichlorobenzene			105.0		%		70-130	02-NOV-17
1,2-Dichloroethane			101.4		%		60-130	02-NOV-17
1,2-Dichloropropane			101.5		%		70-130	02-NOV-17
1,3-Dichlorobenzene			106.0		%		70-130	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 11 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3872926							
WG2652449-2	LCS							
1,4-Dichlorobenzene			108.9		%		70-130	02-NOV-17
Acetone			102.7		%		60-140	02-NOV-17
Benzene			103.7		%		70-130	02-NOV-17
Bromodichloromethane			99.8		%		50-140	02-NOV-17
Bromoform			93.9		%		70-130	02-NOV-17
Bromomethane			98.9		%		50-140	02-NOV-17
Carbon tetrachloride			104.1		%		70-130	02-NOV-17
Chlorobenzene			102.6		%		70-130	02-NOV-17
Chloroform			104.3		%		70-130	02-NOV-17
cis-1,2-Dichloroethylene			103.3		%		70-130	02-NOV-17
cis-1,3-Dichloropropene			102.6		%		70-130	02-NOV-17
Dibromochloromethane			101.2		%		60-130	02-NOV-17
Dichlorodifluoromethane			56.3		%		50-140	02-NOV-17
Ethylbenzene			99.1		%		70-130	02-NOV-17
n-Hexane			101.1		%		70-130	02-NOV-17
Methylene Chloride			102.5		%		70-130	02-NOV-17
MTBE			99.6		%		70-130	02-NOV-17
m+p-Xylenes			101.5		%		70-130	02-NOV-17
Methyl Ethyl Ketone			98.8		%		60-140	02-NOV-17
Methyl Isobutyl Ketone			89.1		%		60-140	02-NOV-17
o-Xylene			98.8		%		70-130	02-NOV-17
Styrene			104.9		%		70-130	02-NOV-17
Tetrachloroethylene			104.1		%		60-130	02-NOV-17
Toluene			97.0		%		70-130	02-NOV-17
trans-1,2-Dichloroethylene			103.3		%		60-130	02-NOV-17
trans-1,3-Dichloropropene			96.7		%		70-130	02-NOV-17
Trichloroethylene			106.3		%		60-130	02-NOV-17
Trichlorofluoromethane			102.2		%		50-140	02-NOV-17
Vinyl chloride			90.6		%		60-140	02-NOV-17
WG2652449-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,1-Trichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1,2-Trichloroethane			<0.050		ug/g		0.05	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 12 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3872926							
WG2652449-1 MB								
1,1-Dichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,1-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
1,2-Dibromoethane			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichloroethane			<0.050		ug/g		0.05	02-NOV-17
1,2-Dichloropropane			<0.050		ug/g		0.05	02-NOV-17
1,3-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
1,4-Dichlorobenzene			<0.050		ug/g		0.05	02-NOV-17
Acetone			<0.50		ug/g		0.5	02-NOV-17
Benzene			<0.0068		ug/g		0.0068	02-NOV-17
Bromodichloromethane			<0.050		ug/g		0.05	02-NOV-17
Bromoform			<0.050		ug/g		0.05	02-NOV-17
Bromomethane			<0.050		ug/g		0.05	02-NOV-17
Carbon tetrachloride			<0.050		ug/g		0.05	02-NOV-17
Chlorobenzene			<0.050		ug/g		0.05	02-NOV-17
Chloroform			<0.050		ug/g		0.05	02-NOV-17
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	02-NOV-17
Dibromochloromethane			<0.050		ug/g		0.05	02-NOV-17
Dichlorodifluoromethane			<0.050		ug/g		0.05	02-NOV-17
Ethylbenzene			<0.018		ug/g		0.018	02-NOV-17
n-Hexane			<0.050		ug/g		0.05	02-NOV-17
Methylene Chloride			<0.050		ug/g		0.05	02-NOV-17
MTBE			<0.050		ug/g		0.05	02-NOV-17
m+p-Xylenes			<0.030		ug/g		0.03	02-NOV-17
Methyl Ethyl Ketone			<0.50		ug/g		0.5	02-NOV-17
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	02-NOV-17
o-Xylene			<0.020		ug/g		0.02	02-NOV-17
Styrene			<0.050		ug/g		0.05	02-NOV-17
Tetrachloroethylene			<0.050		ug/g		0.05	02-NOV-17
Toluene			<0.080		ug/g		0.08	02-NOV-17
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	02-NOV-17
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 13 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R3872926							
WG2652449-1	MB							
Trichloroethylene			<0.010		ug/g		0.01	02-NOV-17
Trichlorofluoromethane			<0.050		ug/g		0.05	02-NOV-17
Vinyl chloride			<0.020		ug/g		0.02	02-NOV-17
Surrogate: 1,4-Difluorobenzene			106.1		%		50-140	02-NOV-17
Surrogate: 4-Bromofluorobenzene			95.4		%		50-140	02-NOV-17
WG2652449-5	MS		WG2652449-3					
1,1,1,2-Tetrachloroethane			107.7		%		50-140	02-NOV-17
1,1,2,2-Tetrachloroethane			103.1		%		50-140	02-NOV-17
1,1,1-Trichloroethane			111.7		%		50-140	02-NOV-17
1,1,2-Trichloroethane			109.1		%		50-140	02-NOV-17
1,1-Dichloroethane			109.5		%		50-140	02-NOV-17
1,1-Dichloroethylene			100.4		%		50-140	02-NOV-17
1,2-Dibromoethane			109.1		%		50-140	02-NOV-17
1,2-Dichlorobenzene			114.0		%		50-140	02-NOV-17
1,2-Dichloroethane			113.1		%		50-140	02-NOV-17
1,2-Dichloropropane			111.6		%		50-140	02-NOV-17
1,3-Dichlorobenzene			112.8		%		50-140	02-NOV-17
1,4-Dichlorobenzene			116.6		%		50-140	02-NOV-17
Acetone			122.5		%		50-140	02-NOV-17
Benzene			112.3		%		50-140	02-NOV-17
Bromodichloromethane			109.7		%		50-140	02-NOV-17
Bromoform			105.2		%		50-140	02-NOV-17
Bromomethane			105.0		%		50-140	02-NOV-17
Carbon tetrachloride			110.3		%		50-140	02-NOV-17
Chlorobenzene			111.1		%		50-140	02-NOV-17
Chloroform			113.3		%		50-140	02-NOV-17
cis-1,2-Dichloroethylene			112.3		%		50-140	02-NOV-17
cis-1,3-Dichloropropene			112.1		%		50-140	02-NOV-17
Dibromochloromethane			112.1		%		50-140	02-NOV-17
Dichlorodifluoromethane			49.8	MES	%		50-140	02-NOV-17
Ethylbenzene			106.1		%		50-140	02-NOV-17
n-Hexane			105.0		%		50-140	02-NOV-17
Methylene Chloride			113.7		%		50-140	02-NOV-17
MTBE			108.3		%		50-140	02-NOV-17



Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

Page 14 of 15

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
Batch	R3872926							
WG2652449-5 MS		WG2652449-3						
m+p-Xylenes			107.9		%		50-140	02-NOV-17
Methyl Ethyl Ketone			113.5		%		50-140	02-NOV-17
Methyl Isobutyl Ketone			103.1		%		50-140	02-NOV-17
o-Xylene			106.1		%		50-140	02-NOV-17
Styrene			109.9		%		50-140	02-NOV-17
Tetrachloroethylene			110.2		%		50-140	02-NOV-17
Toluene			104.9		%		50-140	02-NOV-17
trans-1,2-Dichloroethylene			111.0		%		50-140	02-NOV-17
trans-1,3-Dichloropropene			108.9		%		50-140	02-NOV-17
Trichloroethylene			113.7		%		50-140	02-NOV-17
Trichlorofluoromethane			107.0		%		50-140	02-NOV-17
Vinyl chloride			84.6		%		50-140	02-NOV-17

Quality Control Report

Workorder: L2014021

Report Date: 03-NOV-17

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

Page 15 of 15

Contact: Suvish Melanta

Legend:

Limit ALS Control Limit (Data Quality Objectives)
DUP Duplicate
RPD Relative Percent Difference
N/A Not Available
LCS Laboratory Control Sample
SRM Standard Reference Material
MS Matrix Spike
MSD Matrix Spike Duplicate
ADE Average Desorption Efficiency
MB Method Blank
IRM Internal Reference Material
CRM Certified Reference Material
CCV Continuing Calibration Verification
CVS Calibration Verification Standard
LCSD Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
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.

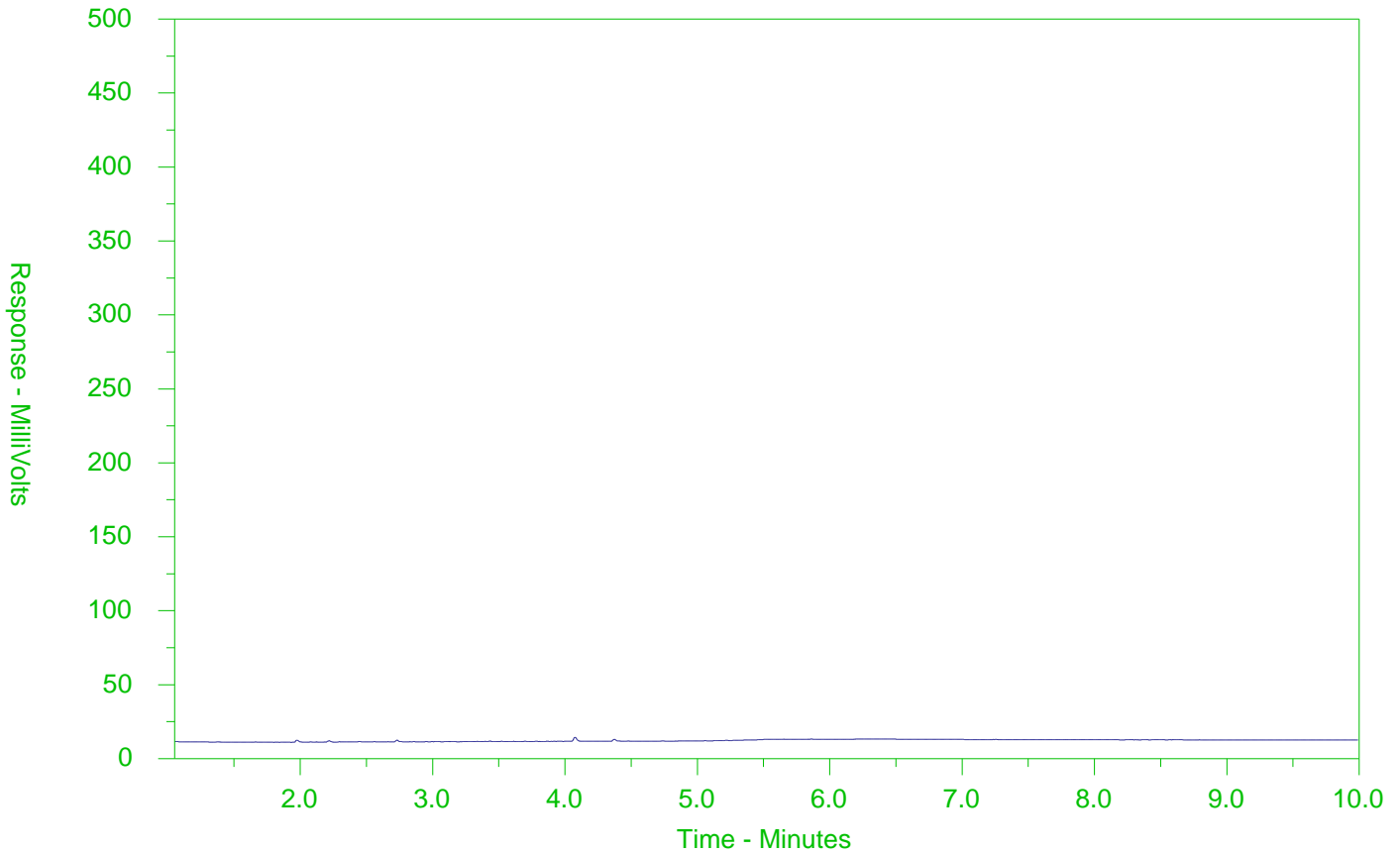
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2014021-1
 Client Sample ID: BH201-SA2



← 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.

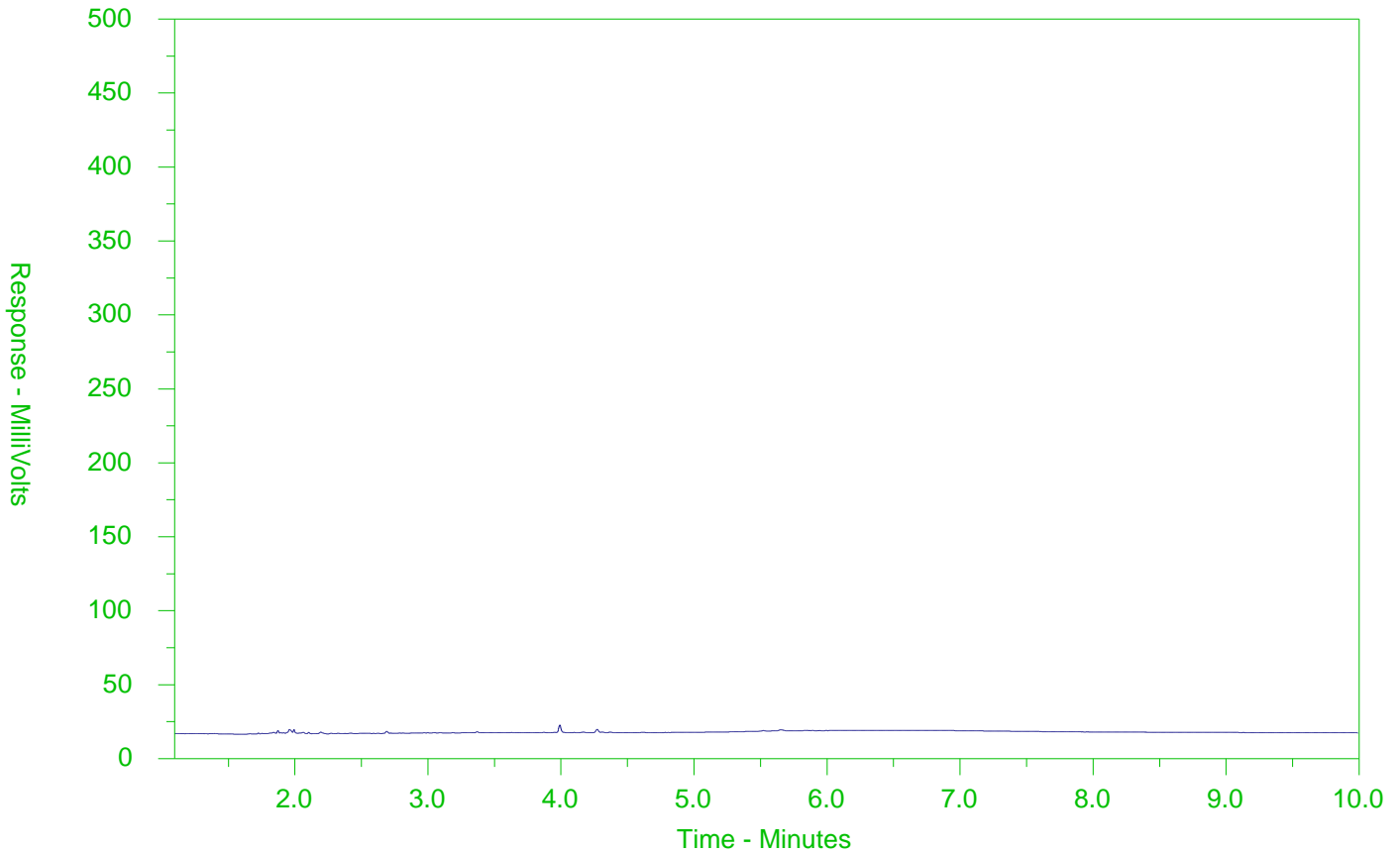
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2014021-2
 Client Sample ID: BH201-SA9



← 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.

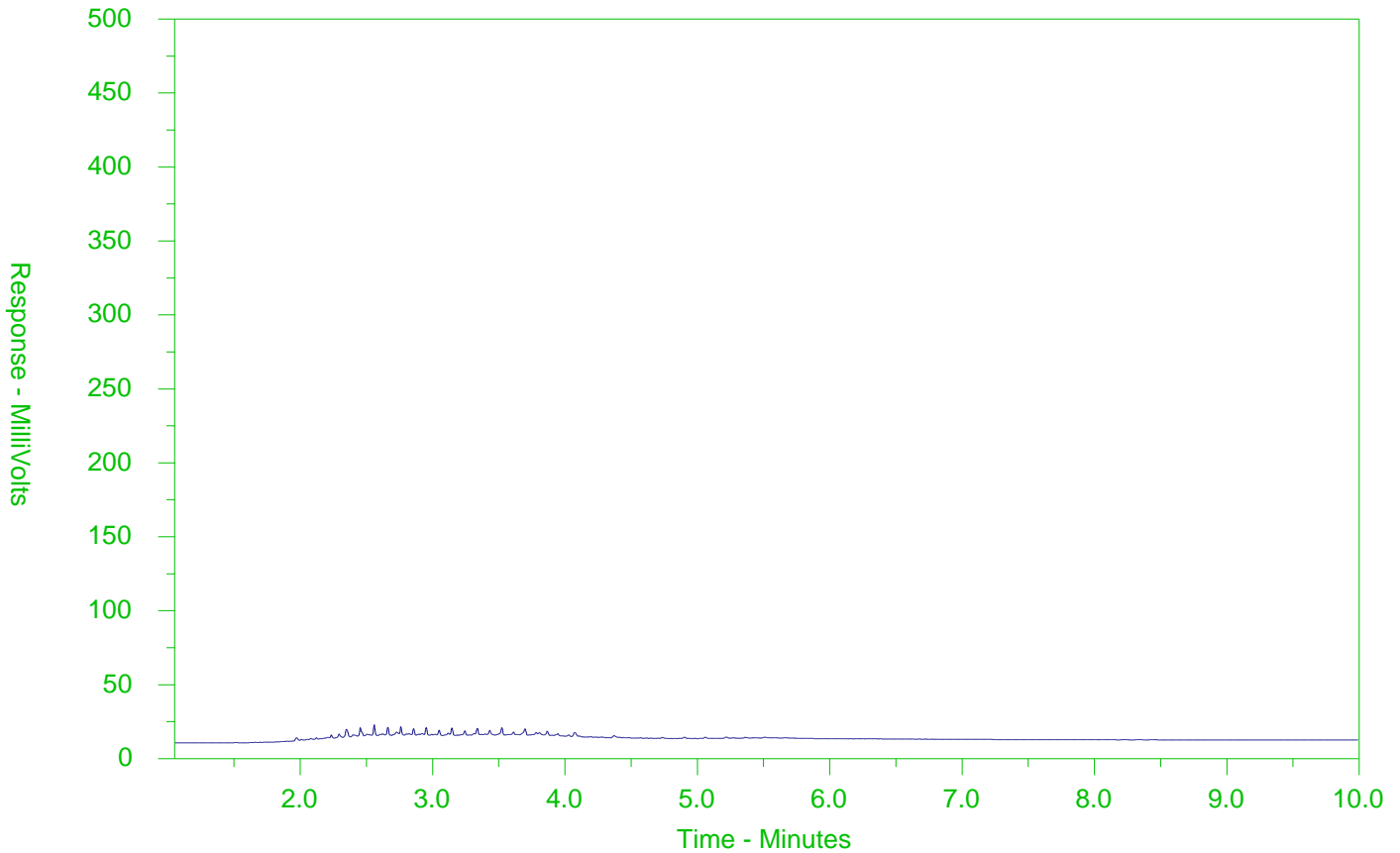
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2014021-7
 Client Sample ID: BH202-SA8



← 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.

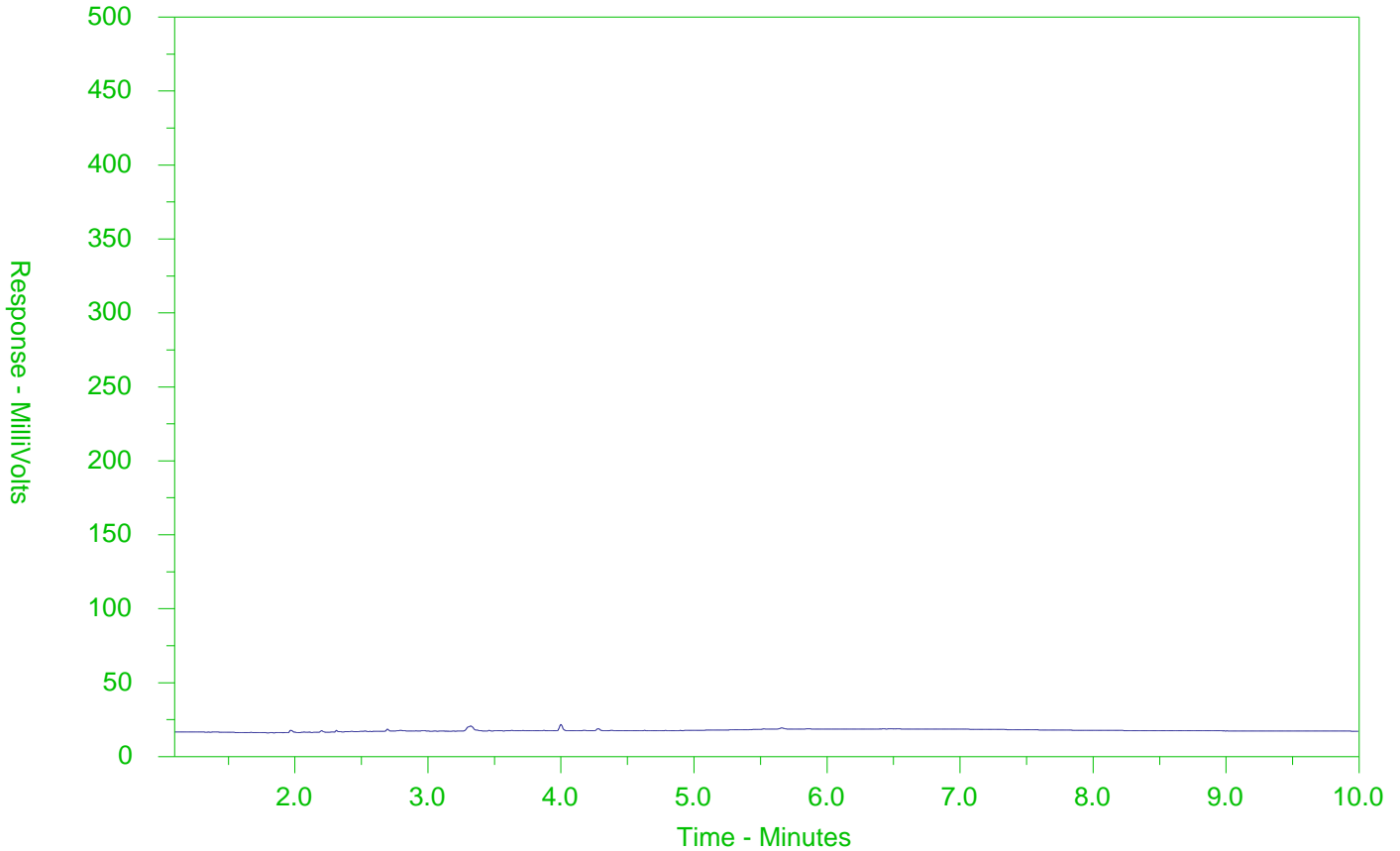
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2014021-9
 Client Sample ID: BH203-SA2



← 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.

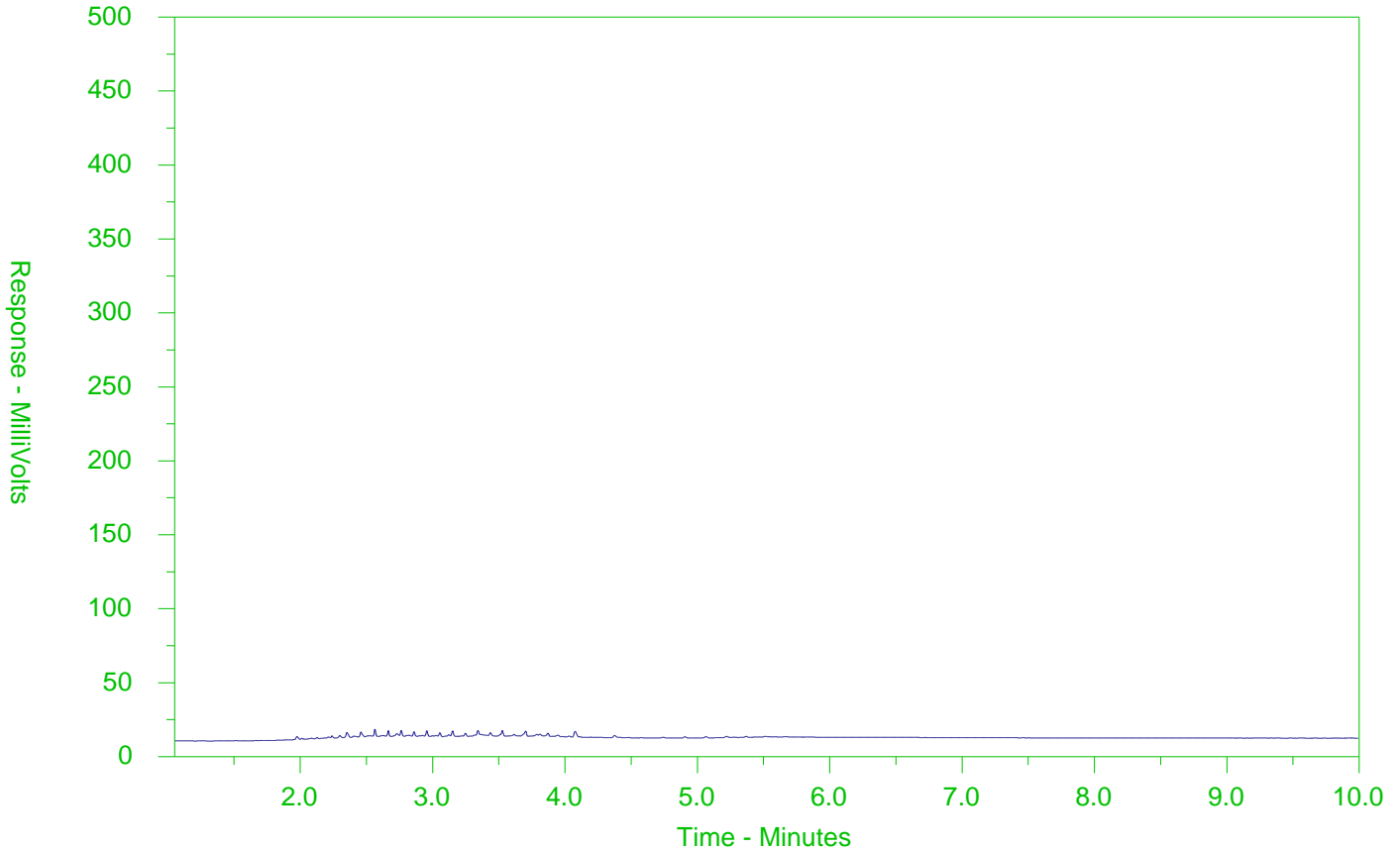
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2014021-13
 Client Sample ID: BH203-SA9



← 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.

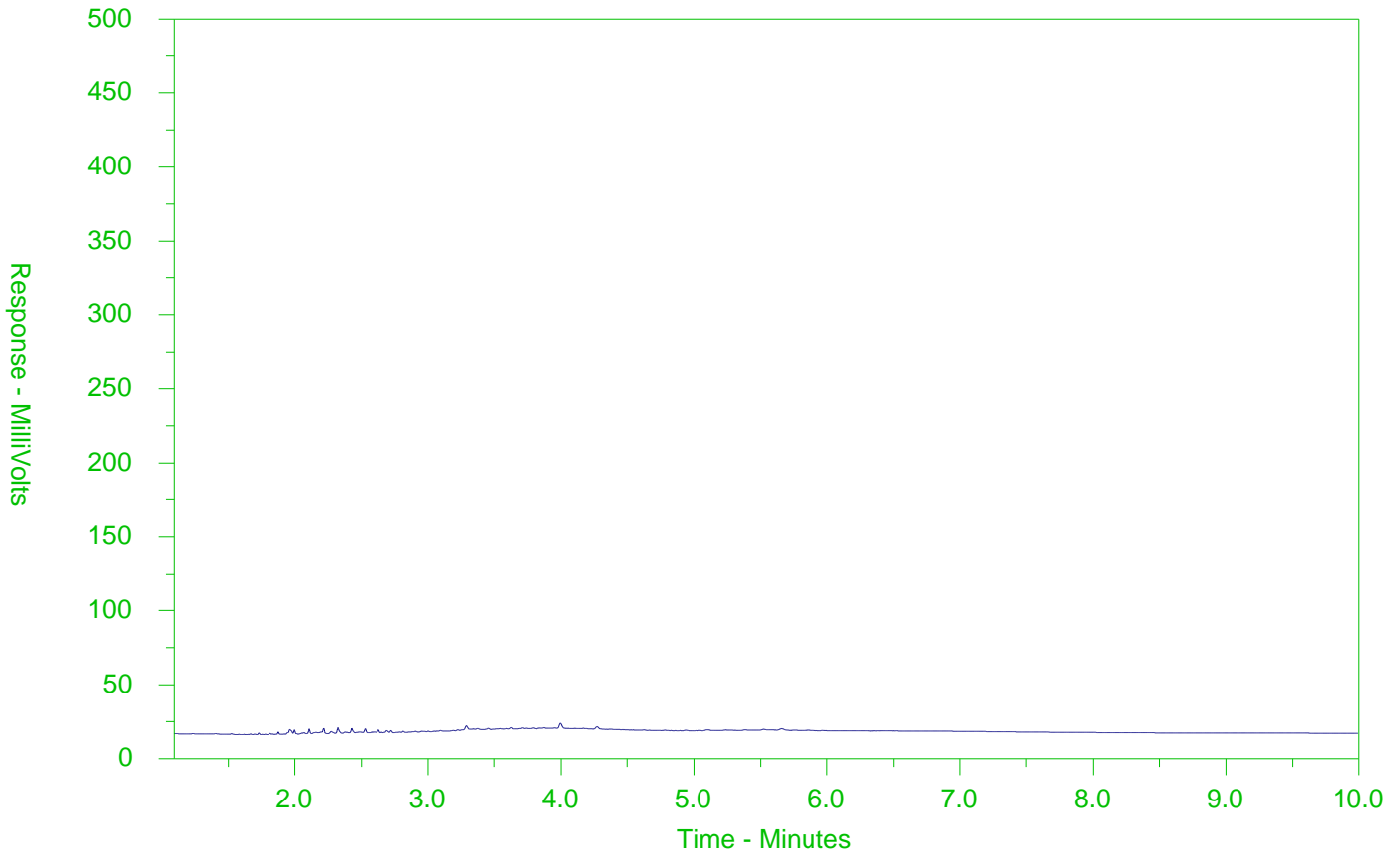
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2014021-15
 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.



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 type="checkbox"/> PDF <input 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:	Suvish Melanta	Quality Control (QC) Report with Report <input 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 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 type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				2 day [P2] <input type="checkbox"/>					
Street:	11 Indell Ln.	Email 1 or Fax smelanta@terraprobe.ca			Date and Time Required for all E&P TATs:				dd-mmm-yy hh:mm		
City/Province:	Brampton, ON	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 type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input checked="" type="checkbox"/> FAX									
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax smelanta@terraprobe.ca									
Company: Terraprobe		Email 2 lrossi@terraprobe.ca									
Contact: Lorena Rossi											
Project Information				Oil and Gas Required Fields (client use)							
ALS Account # / Quote #:				AFE/Cost Center:		PO#					
Job #: 1-17-0481- 42				Major/Minor Code:		Routing Code:					
PO / AFE:				Requisitioner:							
LSD:				Location:							
ALS Lab Work Order # (lab use only)		ALS Contact:		Mathy		Sampler:					
L2014021											
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	VOC	BTX	F1	F2-F4	PAH	Number of Containers
1	BH201-SA2	23-09-17	AM	S	X	X	X	X	X	X	
2	BH201-SA9	↓	PM	S	X	X	X	X	X	X	
3	BH201-SM0	↓	PM	S	X	X	X	X	X	X	
4	BH201-SA12	↓	PM	S	X					X	
5	BH201-SA13	↓	PM	S	X					X	
6	BH202-SA7	24-09-17	PM	S	X					X	
7	BH202-SA8	↓	PM	S	X	X	X	X	X	X	
8	BH202-SA9	↓	PM	S	X	X	X	X	X	X	
9	BH203-SA2	25-09-17	PM	S	X	X	X	X	X	X	
10	BH203-SA3	↓	PM	S	X					X	
11	BH203-SA4	↓	PM	S	X					X	
12	BH203-SA8	↓	PM	S	X					X	
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		RSC Res/Park (RPI) - Table 2				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		Course				Ice Packs <input type="checkbox"/> Ice Cubes <input 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		
									5.6		
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)			
Released by: NICHOLAS GARIBAY		Date: 10/26/17		Time: 9:30		Received by: AP		Date: 10-26-17		Time: 17:45	



ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2014021-COFC

COC Number: 15 -

Page of

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 type="checkbox"/> PDF <input 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: Suvish Melanta		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (business days)		4 day [P4] <input type="checkbox"/>			1 Business day [E1] <input type="checkbox"/>																																																																																																									
Phone: 905-796-2650		<input 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 type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs:					dd-mmm-yy hh:mm																																																																																																									
Street: 11 Indell Ln.		Email 1 or Fax: smelanta@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																														
City/Province: Brampton, ON		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 type="checkbox"/> NO		Invoice Distribution			<table border="1"> <tr> <td rowspan="10">Metals and Inorganics</td> <td>VOC</td> <td>BTX</td> <td>F1</td> <td>F2-F4</td> <td>PAH</td> <td colspan="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> <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> <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	VOC	BTX	F1	F2-F4	PAH	Number of Containers																																																																																														
Metals and Inorganics	VOC	BTX	F1	F2-F4												PAH	Number of Containers																																																																																																		
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input checked="" type="checkbox"/> FAX																																																																																																																	
Company: Terraprobe		Email 1 or Fax: smelanta@terraprobe.ca																																																																																																																	
Contact: Lorena Rossi		Email 2: lrossi@terraprobe.ca																																																																																																																	
Project Information		Oil and Gas Required Fields (client use)																																																																																																																	
ALS Account # / Quote #:		AFE/Cost Center:	PO#																																																																																																																
Job #: 1-17-0481-42		Major/Minor Code:	Routing Code:																																																																																																																
PO / AFE:		Requisitioner:																																																																																																																	
LSD:		Location:																																																																																																																	
ALS Lab Work Order # (lab use only): L2014021		ALS Contact: Mathy	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																																																																																																															
13	BH203-5A9	17-02-17	PM	S																																																																																																															
14	BH203-5A10		PM	S																																																																																																															
15	DUP1		PM	S																																																																																																															
16	DUP2		PM	S																																																																																																															
17	DUP3		PM	S																																																																																																															
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)			SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																														
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		RSC Res/Prk (RPI) - Table 2			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		Course			Ice Packs <input type="checkbox"/> Ice Cubes <input 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																																																																																																									
										5.6																																																																																																									
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)																																																																																																											
Released by: NICHOLAS GARROU		Date: 10/26/17		Time: 9:31		Received by:		Date: 10-26-17		Time: 17:45																																																																																																									

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.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT



TERRAPROBE-BRAMPTON
ATTN: SUVISH MELANTA
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 08-DEC-17
Report Date: 20-DEC-17 14:46 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2033273
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 14-465139
Legal Site Desc:



Mathy Mahadera
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		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)							
L2033273-2		BH102/SS8	Saturated Paste Extractables	SAR	5.72	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)							
L2033273-2		BH102/SS8	Saturated Paste Extractables	SAR	5.72	5	SAR

Saturated Paste Extractables - SOIL

Lab ID	L2033273-1	L2033273-2
Sample Date	23-OCT-17	04-AUG-17
Sample ID	BH201/SS12	BH102/SS8

Analyte	Unit	Guide Limits			
		#1	#2		
SAR	SAR	5	5	0.13	5.72
Calcium (Ca)	mg/L	-	-	98.3	57.8
Magnesium (Mg)	mg/L	-	-	10.1	9.5
Sodium (Na)	mg/L	-	-	5.2	178

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

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

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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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:

14-465139

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.



Quality Control Report

Workorder: L2033273

Report Date: 20-DEC-17

Page 1 of 2

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R3916751							
WG2686758-4	DUP	WG2686758-3						
Calcium (Ca)		31.8	29.3		mg/L	8.4	30	19-DEC-17
Sodium (Na)		210	215		mg/L	2.6	30	19-DEC-17
Magnesium (Mg)		44.2	39.4		mg/L	11	30	19-DEC-17
WG2686758-2	IRM	WT SAR1						
Calcium (Ca)			87.1		%		70-130	19-DEC-17
Sodium (Na)			89.8		%		70-130	19-DEC-17
Magnesium (Mg)			95.4		%		70-130	19-DEC-17
WG2686758-1	MB							
Calcium (Ca)			<1.0		mg/L		1	19-DEC-17
Sodium (Na)			<1.0		mg/L		1	19-DEC-17
Magnesium (Mg)			<1.0		mg/L		1	19-DEC-17

Quality Control Report

Workorder: L2033273

Report Date: 20-DEC-17

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

Page 2 of 2

Contact: SUVISH MELANTA

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.



L2033273-COFC

Report To		Report Format / Distribution			Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)			
Company: <u>Terraprise Inc</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)			R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3pm)			
Contact: <u>Sunish Melanta</u>		Quality Control (QC) Report with Report <input type="checkbox"/> Yes <input type="checkbox"/> No			P <input type="checkbox"/> Priority (2-4 business days if received by 3pm)			
Address: <u>11 Inceell Lane, Brampton, ON</u>		<input type="checkbox"/> Criteria on Report - provide details below if box checked			E <input type="checkbox"/> Emergency (1-2 business days if received by 3pm)			
Phone: <u>905-796-2250</u>		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			E2 <input type="checkbox"/> Same day or weekend emergency if received by 10am - contact ALS for surcharge.			
Invoice To: Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Email 1 or Fax			Specify Date Required for E2, E or P:			
Copy of Invoice with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Email 2			Analysis Request			
Company:		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below			
Contact:		Email 1 or Fax						
Project Information		Email 2						
ALS Quote #:		Oil and Gas Required Fields (client use)						
Job #: <u>-17-0481-42</u>		Approver ID:						
PO / AFE:		GL Account:						
LSD:		Activity Code:						
ALS Lab Work Order # (lab use only) <u>L2033273</u>		Location:						
		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	Number of Containers			
<u>L</u>	<u>BH201/SS12</u>	<u>03-10-17</u>		<u>Soil</u>				
<u>L</u>	<u>BH102/SS8</u>	<u>04-08-17</u>		<u>Soil</u>				
Drinking Water (DW) Samples' (client use)		Special Instructions / Specify Criteria to add on report (client Use)			SAMPLE CONDITION AS RECEIVED (lab use only)			
Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input type="checkbox"/> No		<u>(Table 2, RPI, CT) -> Std</u>			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 Yes <input type="checkbox"/> No <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>			
					Cooling Initiated <input type="checkbox"/>			
					INITIAL COOLER TEMPERATURES °C: <u>6.0</u> FINAL COOLER TEMPERATURES °C: <u>5.8</u>			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)			
Released by: <u>Tommy Wong</u>	Date: <u>Dec 5/17</u>	Time: <u>16:00</u>	Received by: <u>[Signature]</u>	Date: <u>08/12/17</u>	Time: <u>14:43</u>	Received by: <u>[Signature]</u>	Date: <u>08/12/17</u>	Time: <u>18:20</u>

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS Form 1000-001 Rev 7/2004 January 2014

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.

MM1



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 14-NOV-17
Report Date: 26-JUN-18 13:39 (MT)
Version: FINAL REV. 2

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2022921
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 15-612843
Legal Site Desc:

Comments: JUN-13-18:
Sample 10 results displayed only.
WS/WT 26-JUN-18 Revised to include sample fractions 1,2,3,4,7,8,9.



Mathy Mahadeva
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



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1	#2	#3	#4
L2022921-1	BH101-SA4									
Sampled By: CLIENT on 31-JUL-17										
Matrix: SOIL										
Physical Tests										
Conductivity		1.49		0.0040	mS/cm	23-NOV-17	*0.7	*0.7	*1.4	*1.4
Saturated Paste Extractables										
SAR		21.3	SAR:M	0.10	SAR	23-NOV-17	*5	*5	*12	*12
Calcium (Ca)		14.2		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		<1.0		1.0	mg/L	23-NOV-17				
Sodium (Na)		291		1.0	mg/L	23-NOV-17				
L2022921-2	BH101-SA7									
Sampled By: CLIENT on 31-JUL-17										
Matrix: SOIL										
Physical Tests										
Conductivity		0.135		0.0040	mS/cm	23-NOV-17	0.7	0.7	1.4	1.4
Saturated Paste Extractables										
SAR		1.05	SAR:M	0.10	SAR	23-NOV-17	5	5	12	12
Calcium (Ca)		4.6		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		<1.0		1.0	mg/L	23-NOV-17				
Sodium (Na)		8.2		1.0	mg/L	23-NOV-17				
L2022921-3	BH102-SA6									
Sampled By: CLIENT on 01-AUG-17										
Matrix: SOIL										
Physical Tests										
Conductivity		0.337		0.0040	mS/cm	23-NOV-17	0.7	0.7	1.4	1.4
Saturated Paste Extractables										
SAR		7.53	SAR:M	0.10	SAR	23-NOV-17	*5	*5	12	12
Calcium (Ca)		3.4		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		<1.0		1.0	mg/L	23-NOV-17				
Sodium (Na)		50.7		1.0	mg/L	23-NOV-17				
L2022921-4	BH103-SA6									
Sampled By: CLIENT on 31-JUL-17										
Matrix: SOIL										
Physical Tests										
Conductivity		0.180		0.0040	mS/cm	23-NOV-17	0.7	0.7	1.4	1.4
Saturated Paste Extractables										
SAR		0.86		0.10	SAR	23-NOV-17	5	5	12	12
Calcium (Ca)		8.1		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		1.0		1.0	mg/L	23-NOV-17				
Sodium (Na)		9.8		1.0	mg/L	23-NOV-17				
L2022921-7	BH201-SA5									
Sampled By: CLIENT on 23-OCT-17										
Matrix: SOIL										
Physical Tests										
Conductivity		0.550		0.0040	mS/cm	23-NOV-17	0.7	0.7	1.4	1.4

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T2-SOIL-ALL

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

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

#3: T2-Soil-Ind/Com/Commu Property Use (Coarse)

#4: T2-Soil-Ind/Com/Commu Property Use (Fine)



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1	#2	#3	#4
L2022921-7	BH201-SA5									
Sampled By: CLIENT on 23-OCT-17										
Matrix: SOIL										
Saturated Paste Extractables										
SAR		>17.	SAR:L	0.10	SAR	23-NOV-17	*5	*5	*12	*12
Calcium (Ca)		<1.0		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		<1.0		1.0	mg/L	23-NOV-17				
Sodium (Na)		101		1.0	mg/L	23-NOV-17				
L2022921-8	BH202-SA1									
Sampled By: CLIENT on 24-OCT-17										
Matrix: SOIL										
Physical Tests										
Conductivity		0.279		0.0040	mS/cm	23-NOV-17	0.7	0.7	1.4	1.4
Saturated Paste Extractables										
SAR		1.71		0.10	SAR	23-NOV-17	5	5	12	12
Calcium (Ca)		9.7		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		2.9		1.0	mg/L	23-NOV-17				
Sodium (Na)		23.6		1.0	mg/L	23-NOV-17				
L2022921-9	BH203-SA6									
Sampled By: CLIENT on 25-OCT-17										
Matrix: SOIL										
Physical Tests										
Conductivity		0.592		0.0040	mS/cm	23-NOV-17	0.7	0.7	1.4	1.4
Saturated Paste Extractables										
SAR		3.36		0.10	SAR	23-NOV-17	5	5	12	12
Calcium (Ca)		24.1		1.0	mg/L	23-NOV-17				
Magnesium (Mg)		2.1		1.0	mg/L	23-NOV-17				
Sodium (Na)		63.9		1.0	mg/L	23-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - ON-511-T2-SOIL-ALL

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

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

#3: T2-Soil-Ind/Com/Commu Property Use (Coarse)

#4: T2-Soil-Ind/Com/Commu Property Use (Fine)

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
SAR:L	SAR is incalculable due to Ca and Mg below DL. Lowest possible SAR is reported as minimum value.
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***
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).

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:

15-612843

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	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 vwt - 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.



Quality Control Report

Workorder: L2022921

Report Date: 28-JUN-18

Page 1 of 4

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT		Soil						
Batch R3893548								
WG2669727-4	DUP	WG2669727-3						
Conductivity		0.580	0.604		mS/cm	4.1	20	23-NOV-17
WG2670064-2	LCS							
Conductivity			98.0		%		90-110	23-NOV-17
WG2669727-1	MB							
Conductivity			<0.0040		mS/cm		0.004	23-NOV-17
Batch R3893553								
WG2669732-8	DUP	WG2669732-7						
Conductivity		0.279	0.288		mS/cm	3.2	20	23-NOV-17
WG2670069-1	LCS							
Conductivity			98.0		%		90-110	23-NOV-17
WG2669732-5	MB							
Conductivity			<0.0040		mS/cm		0.004	23-NOV-17
SAR-R511-WT		Soil						
Batch R3893474								
WG2669727-4	DUP	WG2669727-3						
Calcium (Ca)		3.3	4.2		mg/L	25	30	23-NOV-17
Sodium (Na)		122	116		mg/L	4.9	30	23-NOV-17
Magnesium (Mg)		1.2	1.8	J	mg/L	0.5	2	23-NOV-17
WG2669727-2	IRM	WT SAR1						
Calcium (Ca)			112.1		%		70-130	23-NOV-17
Sodium (Na)			102.9		%		70-130	23-NOV-17
Magnesium (Mg)			108.3		%		70-130	23-NOV-17
WG2669727-1	MB							
Calcium (Ca)			<1.0		mg/L		1	23-NOV-17
Sodium (Na)			<1.0		mg/L		1	23-NOV-17
Magnesium (Mg)			<1.0		mg/L		1	23-NOV-17
Batch R3894080								
WG2669732-8	DUP	WG2669732-7						
Calcium (Ca)		9.5	9.7		mg/L	2.0	30	23-NOV-17
Sodium (Na)		23.5	23.6		mg/L	0.2	30	23-NOV-17
Magnesium (Mg)		2.8	2.9		mg/L	1.9	30	23-NOV-17
WG2669732-6	IRM	WT SAR1						
Calcium (Ca)			108.0		%		70-130	23-NOV-17
Sodium (Na)			97.7		%		70-130	23-NOV-17
Magnesium (Mg)			106.0		%		70-130	23-NOV-17
WG2669732-5	MB							



Quality Control Report

Workorder: L2022921

Report Date: 28-JUN-18

Page 2 of 4

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch	R3894080							
WG2669732-5	MB							
Calcium (Ca)			<1.0		mg/L		1	23-NOV-17
Sodium (Na)			<1.0		mg/L		1	23-NOV-17
Magnesium (Mg)			<1.0		mg/L		1	23-NOV-17

Quality Control Report

Workorder: L2022921

Report Date: 28-JUN-18

Client: TERRAPROBE-BRAMPTON

11 Indell Lane

Brampton ON L6T 3Y3

Page 3 of 4

Contact: Suvish Melanta

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.

Quality Control Report

Workorder: L2022921

Report Date: 28-JUN-18

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

Page 4 of 4

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Conductivity (EC)	1	31-JUL-17	23-NOV-17 06:00	30	115	days	EHTR
	2	31-JUL-17	23-NOV-17 06:00	30	115	days	EHTR
	3	01-AUG-17	23-NOV-17 06:00	30	114	days	EHTR
	4	31-JUL-17	23-NOV-17 06:00	30	115	days	EHTR
	7	23-OCT-17	23-NOV-17 06:00	30	31	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2022921 were received on 14-NOV-17 16:00.

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.



L2022921-COFC

Canada Toll Free: 1 800 668 9878

Report To Contact and company name below will appear on the final report Company: <u>Tereprobe inc.</u> Contact: <u>Suvish Melanta</u> Phone: <u>905-796-2250</u> Company address below will appear on the final report Street: <u>11 indeell lane</u> City/Province: <u>Brampton, ON</u> Postal Code: <u>L6T 3Y8</u>		Report Format / Distribution Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO <input 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 Email 1 or Fax Email 2 Email 3		Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply 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"/> Date and Time Required for all E&P TATs:																																																																																									
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Company: Contact:		Invoice Distribution Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax Email 2		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1"> <tr> <th>ALS Sample # (lab use only)</th> <th>Sample Identification and/or Coordinates (This description will appear on the report)</th> <th>Date (dd-mmm-yy)</th> <th>Time (hh:mm)</th> <th>Sample Type</th> <th>EC</th> <th>SAR</th> <th>Number of Containers</th> </tr> <tr><td>1</td><td>BH101-SA4</td><td>31-07-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>2</td><td>BH101-SA7</td><td>31-07-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>3</td><td>BH102-SAG</td><td>01-08-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>4</td><td>BH103-SAG</td><td>31-07-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>5</td><td>BH104-SAG</td><td>03-08-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>6</td><td>BH105-SAG</td><td>02-08-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>7</td><td>BH201-SAS</td><td>23-10-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>8</td><td>BH202-SAI</td><td>24-10-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>9</td><td>BH203-SAG</td><td>25-10-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> <tr><td>10</td><td>BH206-SAS</td><td>26-10-17</td><td></td><td>Soil</td><td>✓</td><td>✓</td><td>1</td></tr> </table>		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	EC	SAR	Number of Containers	1	BH101-SA4	31-07-17		Soil	✓	✓	1	2	BH101-SA7	31-07-17		Soil	✓	✓	1	3	BH102-SAG	01-08-17		Soil	✓	✓	1	4	BH103-SAG	31-07-17		Soil	✓	✓	1	5	BH104-SAG	03-08-17		Soil	✓	✓	1	6	BH105-SAG	02-08-17		Soil	✓	✓	1	7	BH201-SAS	23-10-17		Soil	✓	✓	1	8	BH202-SAI	24-10-17		Soil	✓	✓	1	9	BH203-SAG	25-10-17		Soil	✓	✓	1	10	BH206-SAS	26-10-17		Soil	✓	✓	1
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	EC	SAR	Number of Containers																																																																																						
1	BH101-SA4	31-07-17		Soil	✓	✓	1																																																																																						
2	BH101-SA7	31-07-17		Soil	✓	✓	1																																																																																						
3	BH102-SAG	01-08-17		Soil	✓	✓	1																																																																																						
4	BH103-SAG	31-07-17		Soil	✓	✓	1																																																																																						
5	BH104-SAG	03-08-17		Soil	✓	✓	1																																																																																						
6	BH105-SAG	02-08-17		Soil	✓	✓	1																																																																																						
7	BH201-SAS	23-10-17		Soil	✓	✓	1																																																																																						
8	BH202-SAI	24-10-17		Soil	✓	✓	1																																																																																						
9	BH203-SAG	25-10-17		Soil	✓	✓	1																																																																																						
10	BH206-SAS	26-10-17		Soil	✓	✓	1																																																																																						
Project Information ALS Account # / Quote #: <u>1-17-0481-42</u> Job #: <u>1-17-0481-42</u> PO / AFE: LSD: <u>16B</u>		AFE/Cost Center: <u>PO#</u> Major/Minor Code: Requisitioner: Location:		ALS Lab Work Order # (lab use only): <u>L2022921 DR</u> ALS Contact: Sampler:																																																																																									
Drinking Water (DW) Samples¹ (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) <u>(PZ, RPI, CT) → Stnd Table 2</u>		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 type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/> INITIAL COOLER TEMPERATURES °C: <u>7.4</u> FINAL COOLER TEMPERATURES °C: <u>5.8</u>																																																																																									
SHIPMENT RELEASE (client use) Released by: <u>Jelani Watson (Palani)</u> Date: <u>Nov 14, 2017</u> Time: <u>16:00</u>		INITIAL SHIPMENT RECEPTION (lab use only) Received by: <u>AK</u> Date: <u>14/11/17</u> Time: <u>16:00</u>		FINAL SHIPMENT RECEPTION (lab use only) Received by: <u>AK</u> Date: <u>15/11/17</u> Time: <u>14:45</u>																																																																																									

Handwritten signature/initials



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 21-AUG-17
Report Date: 28-AUG-17 14:52 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L1977878
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 15-574190
Legal Site Desc: n/a

Emerson Perez, B.S.E
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L1977878-2	BH102	Anions and Nutrients	Chloride (Cl)	3040	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1080000	490000	ug/L
L1977878-3	BH103	Anions and Nutrients	Chloride (Cl)	2530	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1630	1000	ug/L
			Sodium (Na)-Dissolved	542000	490000	ug/L
L1977878-4	DUP1	Anions and Nutrients	Chloride (Cl)	2730	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1640	1000	ug/L
			Sodium (Na)-Dissolved	543000	490000	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use						
L1977878-2	BH102	Anions and Nutrients	Chloride (Cl)	3040	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1080000	490000	ug/L
L1977878-3	BH103	Anions and Nutrients	Chloride (Cl)	2530	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1630	1000	ug/L
			Sodium (Na)-Dissolved	542000	490000	ug/L
L1977878-4	DUP1	Anions and Nutrients	Chloride (Cl)	2730	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1640	1000	ug/L
			Sodium (Na)-Dissolved	543000	490000	ug/L

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

Physical Tests - WATER

Analyte	Unit	Guide Limits					
		#1	#2				
Conductivity	mS/cm	-	-	0.997	8.51	6.92	6.88
pH	pH units	-	-	7.83 ^{PEHR}	7.61 ^{PEHR}	7.51 ^{PEHR}	7.60 ^{PEHR}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

ANALYTICAL REPORT

Anions and Nutrients - WATER

		Lab ID				
	Sample Date	L1977878-1	L1977878-2	L1977878-3	L1977878-4	
	Sample ID	11-AUG-17	11-AUG-17	11-AUG-17	11-AUG-17	
		BH101	BH102	BH103	DUP1	
		Guide Limits				
Analyte	Unit	#1	#2			
Chloride (Cl)	mg/L	790	790	122	3040 ^{DLHC}	2530 ^{DLHC}
					2730 ^{DLHC}	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Cyanides - WATER

Lab ID	L1977878-1	L1977878-2	L1977878-3	L1977878-4
Sample Date	11-AUG-17	11-AUG-17	11-AUG-17	11-AUG-17
Sample ID	BH101	BH102	BH103	DUP1

Analyte	Unit	Guide Limits					
		#1	#2				
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0	<2.0	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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



ANALYTICAL REPORT

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID
		#1	#2	L1977878-1	11-AUG-17	BH101	L1977878-2	11-AUG-17	BH102	L1977878-3	11-AUG-17	BH103	L1977878-4	11-AUG-17	DUP1
Dissolved Mercury Filtration Location	-	-		FIELD			FIELD			FIELD			FIELD		
Dissolved Metals Filtration Location	-	-		FIELD			FIELD			FIELD			FIELD		
Antimony (Sb)-Dissolved	ug/L	6	6	0.45	<1.0	DLHC	<1.0	DLHC	<1.0	DLHC			<1.0	DLHC	
Arsenic (As)-Dissolved	ug/L	25	25	1.14	<1.0	DLHC	<1.0	DLHC	<1.0	DLHC			<1.0	DLHC	
Barium (Ba)-Dissolved	ug/L	1000	1000	210	517	DLHC	1630	DLHC	1640	DLHC			1630	DLHC	1640
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10	<1.0	DLHC	<1.0	DLHC	<1.0	DLHC			<1.0	DLHC	
Boron (B)-Dissolved	ug/L	5000	5000	77	<100	DLHC	<100	DLHC	<100	DLHC			<100	DLHC	
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010	<0.10	DLHC	<0.10	DLHC	<0.10	DLHC			<0.10	DLHC	
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50	<5.0	DLHC	<5.0	DLHC	<5.0	DLHC			<5.0	DLHC	
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.16	2.7	DLHC	1.4	DLHC	1.3	DLHC			1.4	DLHC	1.3
Copper (Cu)-Dissolved	ug/L	87	87	1.93	<2.0	DLHC	3.1	DLHC	2.8	DLHC			3.1	DLHC	2.8
Lead (Pb)-Dissolved	ug/L	10	10	0.303	<0.50	DLHC	<0.50	DLHC	<0.50	DLHC			<0.50	DLHC	
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010	<0.010		<0.010		<0.010				<0.010		
Molybdenum (Mo)-Dissolved	ug/L	70	70	8.33	6.15	DLHC	5.85	DLHC	5.81	DLHC			5.85	DLHC	5.81
Nickel (Ni)-Dissolved	ug/L	100	100	0.72	<5.0	DLHC	<5.0	DLHC	<5.0	DLHC			<5.0	DLHC	
Selenium (Se)-Dissolved	ug/L	10	10	1.61	<0.50	DLHC	0.86	DLHC	0.79	DLHC			0.86	DLHC	0.79
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050	<0.50	DLHC	<0.50	DLHC	<0.50	DLHC			<0.50	DLHC	
Sodium (Na)-Dissolved	ug/L	490000	490000	61500	1080000	DLHC	542000	DLHC	543000	DLHC			542000	DLHC	543000
Thallium (Tl)-Dissolved	ug/L	2	2	0.031	<0.10	DLHC	<0.10	DLHC	<0.10	DLHC			<0.10	DLHC	
Uranium (U)-Dissolved	ug/L	20	20	2.89	2.13	DLHC	2.85	DLHC	2.86	DLHC			2.85	DLHC	2.86
Vanadium (V)-Dissolved	ug/L	6.2	6.2	1.64	<5.0	DLHC	<5.0	DLHC	<5.0	DLHC			<5.0	DLHC	
Zinc (Zn)-Dissolved	ug/L	1100	1100	3.0	<10	DLHC	<10	DLHC	<10	DLHC			<10	DLHC	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Speciated Metals - WATER

		Lab ID	L1977878-1	L1977878-2	L1977878-3	L1977878-4
	Sample Date	11-AUG-17	11-AUG-17	11-AUG-17	11-AUG-17	
Sample ID	BH101	BH102	BH103	DUP1		
Guide Limits						
Analyte	Unit	Guide Limits				
		#1	#2			
Chromium, Hexavalent	ug/L	25	25	<1.0	<1.0	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	
		#1	#2	L1977878-1	L1977878-2	L1977878-3	L1977878-4
Acetone	ug/L	2700	2700	<30	<30	<30	<30
Benzene	ug/L	5	5	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	ug/L	16	16	<2.0	<2.0	<2.0	<2.0
Bromoform	ug/L	25	25	<5.0	<5.0	<5.0	<5.0
Bromomethane	ug/L	0.89	0.89	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	0.79	5	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	30	30	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	25	25	<2.0	<2.0	<2.0	<2.0
Chloroform	ug/L	2.4	22	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	3	3	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	59	59	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	1	1	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	590	590	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	ug/L	5	5	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	1.6	5	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	1.6	14	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	50	50	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	ug/L	5	5	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	2.4	2.4	<0.50	<0.50	<0.50	<0.50
n-Hexane	ug/L	51	520	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800	<20	<20	<20	<20
Methyl Isobutyl Ketone	ug/L	640	640	<20	<20	<20	<20
MTBE	ug/L	15	15	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	5.4	5.4	<0.50	<0.50	<0.50	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L1977878-1	L1977878-2	L1977878-3	L1977878-4
		#1	#2	Sample Date	11-AUG-17	11-AUG-17	11-AUG-17	11-AUG-17
				Sample ID	BH101	BH102	BH103	DUP1
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	24	24	<0.50	0.64	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	200	200	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	1.6	5	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	ug/L	150	150	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes	ug/L	-	-	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	ug/L	300	300	<0.50	<0.50	<0.50	<0.50	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	101.2	101.0	102.3	100.2	
Surrogate: 1,4-Difluorobenzene	%	-	-	102.7	102.4	102.1	102.2	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Hydrocarbons - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	
		#1	#2	L1977878-1	L1977878-2	L1977878-3	L1977878-4
F1 (C6-C10)	ug/L	750	750	<25	<25	<25	<25
F1-BTEX	ug/L	750	750	<25	<25	<25	<25
F2 (C10-C16)	ug/L	150	150	<100	<100	<100	<100
F3 (C16-C34)	ug/L	500	500	<250	<250	<250	<250
F4 (C34-C50)	ug/L	500	500	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	<370	<370	<370
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	100.7	101.4	91.1	90.1
Surrogate: 3,4-Dichlorotoluene	%	-	-	87.3	84.3	82.2	74.9

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
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).

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.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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)	MOE DECPH-E3398/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>			
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
<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:

15-574190

Reference Information

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.



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 1 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R3807878							
WG2597952-13	DUP	WG2597952-15						
Chloride (Cl)		91.9	92.4		mg/L	0.5	20	22-AUG-17
WG2597952-12	LCS							
Chloride (Cl)			102.7		%		90-110	22-AUG-17
WG2597952-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	22-AUG-17
WG2597952-14	MS	WG2597952-15						
Chloride (Cl)			100.1		%		75-125	22-AUG-17
CN-WAD-R511-WT		Water						
Batch	R3808557							
WG2599523-3	DUP	L1977046-2						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	22-AUG-17
WG2599523-2	LCS							
Cyanide, Weak Acid Diss			98.4		%		80-120	22-AUG-17
WG2599523-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	22-AUG-17
WG2599523-4	MS	L1977046-2						
Cyanide, Weak Acid Diss			109.4		%		70-130	22-AUG-17
CR-CR6-IC-R511-WT		Water						
Batch	R3808304							
WG2598566-10	DUP	WG2598566-8						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	23-AUG-17
WG2598566-4	DUP	WG2598566-3						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	23-AUG-17
WG2598566-2	LCS							
Chromium, Hexavalent			101.3		%		80-120	23-AUG-17
WG2598566-7	LCS							
Chromium, Hexavalent			101.9		%		80-120	23-AUG-17
WG2598566-1	MB							
Chromium, Hexavalent			<1.0		ug/L		1	23-AUG-17
WG2598566-6	MB							
Chromium, Hexavalent			<1.0		ug/L		1	23-AUG-17
WG2598566-5	MS	WG2598566-3						
Chromium, Hexavalent			100.4		%		70-130	23-AUG-17
WG2598566-9	MS	WG2598566-8						
Chromium, Hexavalent			101.4		%		70-130	23-AUG-17
EC-R511-WT	Water							



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 2 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-R511-WT								
	Water							
Batch	R3807375							
WG2597919-4	DUP	WG2597919-3						
Conductivity		3.31	3.31		mS/cm	0.0	10	22-AUG-17
WG2597919-2	LCS							
Conductivity			102.4		%		90-110	22-AUG-17
WG2597919-1	MB							
Conductivity			<0.0030		mS/cm		0.003	22-AUG-17
F1-HS-511-WT								
	Water							
Batch	R3806697							
WG2591234-1	LCS							
F1 (C6-C10)			97.8		%		80-120	22-AUG-17
WG2591234-2	MB							
F1 (C6-C10)			<25		ug/L		25	22-AUG-17
Surrogate: 3,4-Dichlorotoluene			81.5		%		60-140	22-AUG-17
F2-F4-511-WT								
	Water							
Batch	R3806693							
WG2597882-2	LCS							
F2 (C10-C16)			95.3		%		70-130	22-AUG-17
F3 (C16-C34)			92.2		%		70-130	22-AUG-17
F4 (C34-C50)			105.8		%		70-130	22-AUG-17
WG2597882-3	LCSD	WG2597882-2						
F2 (C10-C16)		95.3	91.8		%	3.7	50	22-AUG-17
F3 (C16-C34)		92.2	99.2		%	7.3	50	22-AUG-17
F4 (C34-C50)		105.8	106.7		%	0.9	50	22-AUG-17
WG2597882-1	MB							
F2 (C10-C16)			<100		ug/L		100	22-AUG-17
F3 (C16-C34)			<250		ug/L		250	22-AUG-17
F4 (C34-C50)			<250		ug/L		250	22-AUG-17
Surrogate: 2-Bromobenzotrifluoride			87.9		%		60-140	22-AUG-17
HG-D-UG/L-CVAA-WT								
	Water							
Batch	R3805985							
WG2597871-3	DUP	L1978121-6						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	22-AUG-17
WG2597871-2	LCS							
Mercury (Hg)-Dissolved			102.0		%		80-120	22-AUG-17
WG2597871-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 3 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3805985							
WG2597871-4	MS	L1977878-1						
Mercury (Hg)-Dissolved			96.8		%		70-130	22-AUG-17
MET-D-UG/L-MS-WT Water								
Batch	R3807374							
WG2597695-4	DUP	WG2597695-3						
Antimony (Sb)-Dissolved		0.45	0.44		ug/L	1.2	20	22-AUG-17
Arsenic (As)-Dissolved		1.14	1.16		ug/L	1.1	20	22-AUG-17
Barium (Ba)-Dissolved		210	211		ug/L	0.6	20	22-AUG-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	22-AUG-17
Boron (B)-Dissolved		77	78		ug/L	1.6	20	22-AUG-17
Cadmium (Cd)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	22-AUG-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	22-AUG-17
Cobalt (Co)-Dissolved		0.16	0.16		ug/L	3.2	20	22-AUG-17
Copper (Cu)-Dissolved		1.93	1.90		ug/L	1.7	20	22-AUG-17
Lead (Pb)-Dissolved		0.303	0.303		ug/L	0.2	20	22-AUG-17
Molybdenum (Mo)-Dissolved		8.33	8.33		ug/L	0.0	20	22-AUG-17
Nickel (Ni)-Dissolved		0.72	0.71		ug/L	1.4	20	22-AUG-17
Selenium (Se)-Dissolved		1.61	1.57		ug/L	2.1	20	22-AUG-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	22-AUG-17
Sodium (Na)-Dissolved		61500	61700		ug/L	0.4	20	22-AUG-17
Thallium (Tl)-Dissolved		0.031	0.031		ug/L	1.6	20	22-AUG-17
Uranium (U)-Dissolved		2.89	2.83		ug/L	1.8	20	22-AUG-17
Vanadium (V)-Dissolved		1.64	1.63		ug/L	0.2	20	22-AUG-17
Zinc (Zn)-Dissolved		3.0	3.0		ug/L	0.3	20	22-AUG-17
WG2597695-2 LCS								
Antimony (Sb)-Dissolved			98.6		%		80-120	22-AUG-17
Arsenic (As)-Dissolved			97.8		%		80-120	22-AUG-17
Barium (Ba)-Dissolved			101.5		%		80-120	22-AUG-17
Beryllium (Be)-Dissolved			99.6		%		80-120	22-AUG-17
Boron (B)-Dissolved			96.1		%		80-120	22-AUG-17
Cadmium (Cd)-Dissolved			99.6		%		80-120	22-AUG-17
Chromium (Cr)-Dissolved			99.0		%		80-120	22-AUG-17
Cobalt (Co)-Dissolved			98.8		%		80-120	22-AUG-17
Copper (Cu)-Dissolved			97.8		%		80-120	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 4 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3807374							
WG2597695-2	LCS							
Copper (Cu)-Dissolved			97.8		%		80-120	22-AUG-17
Lead (Pb)-Dissolved			105.1		%		80-120	22-AUG-17
Molybdenum (Mo)-Dissolved			101.9		%		80-120	22-AUG-17
Nickel (Ni)-Dissolved			97.3		%		80-120	22-AUG-17
Selenium (Se)-Dissolved			98.0		%		80-120	22-AUG-17
Silver (Ag)-Dissolved			104.7		%		80-120	22-AUG-17
Sodium (Na)-Dissolved			100.6		%		80-120	22-AUG-17
Thallium (Tl)-Dissolved			100.9		%		80-120	22-AUG-17
Uranium (U)-Dissolved			106.1		%		80-120	22-AUG-17
Vanadium (V)-Dissolved			99.7		%		80-120	22-AUG-17
Zinc (Zn)-Dissolved			93.5		%		80-120	22-AUG-17
WG2597695-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	22-AUG-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	22-AUG-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	22-AUG-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	22-AUG-17
Boron (B)-Dissolved			<10		ug/L		10	22-AUG-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	22-AUG-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	22-AUG-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	22-AUG-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	22-AUG-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	22-AUG-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	22-AUG-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	22-AUG-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	22-AUG-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	22-AUG-17
Sodium (Na)-Dissolved			<500		ug/L		500	22-AUG-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	22-AUG-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	22-AUG-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	22-AUG-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	22-AUG-17
WG2597695-5	MS	WG2597695-3						
Antimony (Sb)-Dissolved			96.3		%		70-130	22-AUG-17
Arsenic (As)-Dissolved			101.5		%		70-130	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 5 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3807374							
WG2597695-5 MS		WG2597695-3						
Barium (Ba)-Dissolved			N/A	MS-B	%		-	22-AUG-17
Beryllium (Be)-Dissolved			102.9		%		70-130	22-AUG-17
Boron (B)-Dissolved			N/A	MS-B	%		-	22-AUG-17
Cadmium (Cd)-Dissolved			103.0		%		70-130	22-AUG-17
Chromium (Cr)-Dissolved			97.1		%		70-130	22-AUG-17
Cobalt (Co)-Dissolved			95.8		%		70-130	22-AUG-17
Copper (Cu)-Dissolved			91.4		%		70-130	22-AUG-17
Lead (Pb)-Dissolved			95.7		%		70-130	22-AUG-17
Molybdenum (Mo)-Dissolved			93.8		%		70-130	22-AUG-17
Nickel (Ni)-Dissolved			92.5		%		70-130	22-AUG-17
Selenium (Se)-Dissolved			103.8		%		70-130	22-AUG-17
Silver (Ag)-Dissolved			83.4		%		70-130	22-AUG-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	22-AUG-17
Thallium (Tl)-Dissolved			93.0		%		70-130	22-AUG-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	22-AUG-17
Vanadium (V)-Dissolved			102.8		%		70-130	22-AUG-17
Zinc (Zn)-Dissolved			95.9		%		70-130	22-AUG-17
PH-WT								
	Water							
Batch	R3807375							
WG2597919-4 DUP		WG2597919-3						
pH			7.99	J	pH units	0.00	0.2	22-AUG-17
WG2597919-2 LCS								
pH			6.99		pH units		6.9-7.1	22-AUG-17
VOC-511-HS-WT								
	Water							
Batch	R3806697							
WG2591234-4 DUP		WG2591234-3						
1,1,1,2-Tetrachloroethane			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,1,2,2-Tetrachloroethane			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,1,1-Trichloroethane			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,1,2-Trichloroethane			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,1-Dichloroethane			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,1-Dichloroethylene			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,2-Dibromoethane			<0.20	RPD-NA	ug/L	N/A	30	22-AUG-17
1,2-Dichlorobenzene			<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 6 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3806697							
WG2591234-4	DUP	WG2591234-3						
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	22-AUG-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-AUG-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	22-AUG-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	22-AUG-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	22-AUG-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	22-AUG-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-AUG-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	22-AUG-17
Ethylbenzene		18.2	18.5		ug/L	1.9	30	22-AUG-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
m+p-Xylenes		17.1	17.4		ug/L	1.4	30	22-AUG-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	22-AUG-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	22-AUG-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	22-AUG-17
MTBE		37.2	37.9		ug/L	1.9	30	22-AUG-17
o-Xylene		1.49	1.51		ug/L	1.3	30	22-AUG-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
Toluene		8.40	8.76		ug/L	4.2	30	22-AUG-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	22-AUG-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	22-AUG-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	22-AUG-17
WG2591234-1	LCS							
1,1,1,2-Tetrachloroethane			91.7		%		70-130	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 7 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3806697							
WG2591234-1	LCS							
1,1,2,2-Tetrachloroethane			101.4		%		70-130	22-AUG-17
1,1,1-Trichloroethane			94.3		%		70-130	22-AUG-17
1,1,2-Trichloroethane			95.7		%		70-130	22-AUG-17
1,1-Dichloroethane			95.7		%		70-130	22-AUG-17
1,1-Dichloroethylene			90.5		%		70-130	22-AUG-17
1,2-Dibromoethane			94.2		%		70-130	22-AUG-17
1,2-Dichlorobenzene			93.8		%		70-130	22-AUG-17
1,2-Dichloroethane			98.4		%		70-130	22-AUG-17
1,2-Dichloropropane			97.8		%		70-130	22-AUG-17
1,3-Dichlorobenzene			91.7		%		70-130	22-AUG-17
1,4-Dichlorobenzene			93.6		%		70-130	22-AUG-17
Acetone			105.9		%		60-140	22-AUG-17
Benzene			97.0		%		70-130	22-AUG-17
Bromodichloromethane			100.2		%		70-130	22-AUG-17
Bromoform			99.7		%		70-130	22-AUG-17
Bromomethane			103.2		%		60-140	22-AUG-17
Carbon tetrachloride			92.3		%		70-130	22-AUG-17
Chlorobenzene			94.6		%		70-130	22-AUG-17
Chloroform			96.7		%		70-130	22-AUG-17
cis-1,2-Dichloroethylene			99.6		%		70-130	22-AUG-17
cis-1,3-Dichloropropene			99.4		%		70-130	22-AUG-17
Dibromochloromethane			105.3		%		70-130	22-AUG-17
Dichlorodifluoromethane			108.5		%		50-140	22-AUG-17
Ethylbenzene			92.5		%		70-130	22-AUG-17
n-Hexane			106.1		%		70-130	22-AUG-17
m+p-Xylenes			93.9		%		70-130	22-AUG-17
Methyl Ethyl Ketone			101.3		%		60-140	22-AUG-17
Methyl Isobutyl Ketone			96.3		%		60-140	22-AUG-17
Methylene Chloride			98.8		%		70-130	22-AUG-17
MTBE			94.6		%		70-130	22-AUG-17
o-Xylene			95.5		%		70-130	22-AUG-17
Styrene			95.4		%		70-130	22-AUG-17
Tetrachloroethylene			88.3		%		70-130	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 8 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3806697							
WG2591234-1	LCS							
Toluene			92.0		%		70-130	22-AUG-17
trans-1,2-Dichloroethylene			95.5		%		70-130	22-AUG-17
trans-1,3-Dichloropropene			99.9		%		70-130	22-AUG-17
Trichloroethylene			93.8		%		70-130	22-AUG-17
Trichlorofluoromethane			98.3		%		60-140	22-AUG-17
Vinyl chloride			100.7		%		60-140	22-AUG-17
WG2591234-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	22-AUG-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	22-AUG-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	22-AUG-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	22-AUG-17
1,1-Dichloroethane			<0.50		ug/L		0.5	22-AUG-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	22-AUG-17
1,2-Dibromoethane			<0.20		ug/L		0.2	22-AUG-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	22-AUG-17
1,2-Dichloroethane			<0.50		ug/L		0.5	22-AUG-17
1,2-Dichloropropane			<0.50		ug/L		0.5	22-AUG-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	22-AUG-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	22-AUG-17
Acetone			<30		ug/L		30	22-AUG-17
Benzene			<0.50		ug/L		0.5	22-AUG-17
Bromodichloromethane			<2.0		ug/L		2	22-AUG-17
Bromoform			<5.0		ug/L		5	22-AUG-17
Bromomethane			<0.50		ug/L		0.5	22-AUG-17
Carbon tetrachloride			<0.20		ug/L		0.2	22-AUG-17
Chlorobenzene			<0.50		ug/L		0.5	22-AUG-17
Chloroform			<1.0		ug/L		1	22-AUG-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-AUG-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	22-AUG-17
Dibromochloromethane			<2.0		ug/L		2	22-AUG-17
Dichlorodifluoromethane			<2.0		ug/L		2	22-AUG-17
Ethylbenzene			<0.50		ug/L		0.5	22-AUG-17
n-Hexane			<0.50		ug/L		0.5	22-AUG-17
m+p-Xylenes			<0.40		ug/L		0.4	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 9 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3806697							
WG2591234-2 MB								
Methyl Ethyl Ketone			<20		ug/L		20	22-AUG-17
Methyl Isobutyl Ketone			<20		ug/L		20	22-AUG-17
Methylene Chloride			<5.0		ug/L		5	22-AUG-17
MTBE			<2.0		ug/L		2	22-AUG-17
o-Xylene			<0.30		ug/L		0.3	22-AUG-17
Styrene			<0.50		ug/L		0.5	22-AUG-17
Tetrachloroethylene			<0.50		ug/L		0.5	22-AUG-17
Toluene			<0.50		ug/L		0.5	22-AUG-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-AUG-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	22-AUG-17
Trichloroethylene			<0.50		ug/L		0.5	22-AUG-17
Trichlorofluoromethane			<5.0		ug/L		5	22-AUG-17
Vinyl chloride			<0.50		ug/L		0.5	22-AUG-17
Surrogate: 1,4-Difluorobenzene			102.1		%		70-130	22-AUG-17
Surrogate: 4-Bromofluorobenzene			103.9		%		70-130	22-AUG-17
WG2591234-5 MS		WG2591234-3						
1,1,1,2-Tetrachloroethane			92.5		%		50-140	22-AUG-17
1,1,1,2,2-Tetrachloroethane			111.4		%		50-140	22-AUG-17
1,1,1-Trichloroethane			89.2		%		50-140	22-AUG-17
1,1,2-Trichloroethane			98.5		%		50-140	22-AUG-17
1,1-Dichloroethane			101.3		%		50-140	22-AUG-17
1,1-Dichloroethylene			82.9		%		50-140	22-AUG-17
1,2-Dibromoethane			97.2		%		50-140	22-AUG-17
1,2-Dichlorobenzene			93.9		%		50-140	22-AUG-17
1,2-Dichloroethane			99.8		%		50-140	22-AUG-17
1,2-Dichloropropane			98.1		%		50-140	22-AUG-17
1,3-Dichlorobenzene			91.2		%		50-140	22-AUG-17
1,4-Dichlorobenzene			93.0		%		50-140	22-AUG-17
Acetone			116.3		%		50-140	22-AUG-17
Benzene			N/A	MS-B	%		-	22-AUG-17
Bromodichloromethane			99.4		%		50-140	22-AUG-17
Bromoform			100.9		%		50-140	22-AUG-17
Bromomethane			89.5		%		50-140	22-AUG-17
Carbon tetrachloride			86.7		%		50-140	22-AUG-17



Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

Page 10 of 12

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
------	--------	-----------	--------	-----------	-------	-----	-------	----------

VOC-511-HS-WT **Water**

Batch **R3806697**

WG2591234-5 **MS** **WG2591234-3**

Chlorobenzene			94.9		%		50-140	22-AUG-17
Chloroform			94.8		%		50-140	22-AUG-17
cis-1,2-Dichloroethylene			96.5		%		50-140	22-AUG-17
cis-1,3-Dichloropropene			97.9		%		50-140	22-AUG-17
Dibromochloromethane			106.8		%		50-140	22-AUG-17
Dichlorodifluoromethane			63.6		%		50-140	22-AUG-17
Ethylbenzene			90.7		%		50-140	22-AUG-17
n-Hexane			91.4		%		50-140	22-AUG-17
m+p-Xylenes			92.5		%		50-140	22-AUG-17
Methyl Ethyl Ketone			110.4		%		50-140	22-AUG-17
Methyl Isobutyl Ketone			99.9		%		50-140	22-AUG-17
Methylene Chloride			97.3		%		50-140	22-AUG-17
MTBE			92.2		%		50-140	22-AUG-17
o-Xylene			94.9		%		50-140	22-AUG-17
Styrene			92.7		%		50-140	22-AUG-17
Tetrachloroethylene			86.7		%		50-140	22-AUG-17
Toluene			91.6		%		50-140	22-AUG-17
trans-1,2-Dichloroethylene			90.7		%		50-140	22-AUG-17
trans-1,3-Dichloropropene			100.7		%		50-140	22-AUG-17
Trichloroethylene			90.9		%		50-140	22-AUG-17
Trichlorofluoromethane			84.9		%		50-140	22-AUG-17
Vinyl chloride			82.6		%		50-140	22-AUG-17

Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

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

Page 11 of 12

Contact: Suvish Melanta

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.

Quality Control Report

Workorder: L1977878

Report Date: 28-AUG-17

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

Page 12 of 12

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	11-AUG-17 12:00	22-AUG-17 00:00	4	11	days	EHTR
	2	11-AUG-17 12:00	22-AUG-17 00:00	4	11	days	EHTR
	3	11-AUG-17	22-AUG-17 00:00	4	11	days	EHTR
	4	11-AUG-17	22-AUG-17 00:00	4	11	days	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L1977878 were received on 21-AUG-17 09:00.

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.

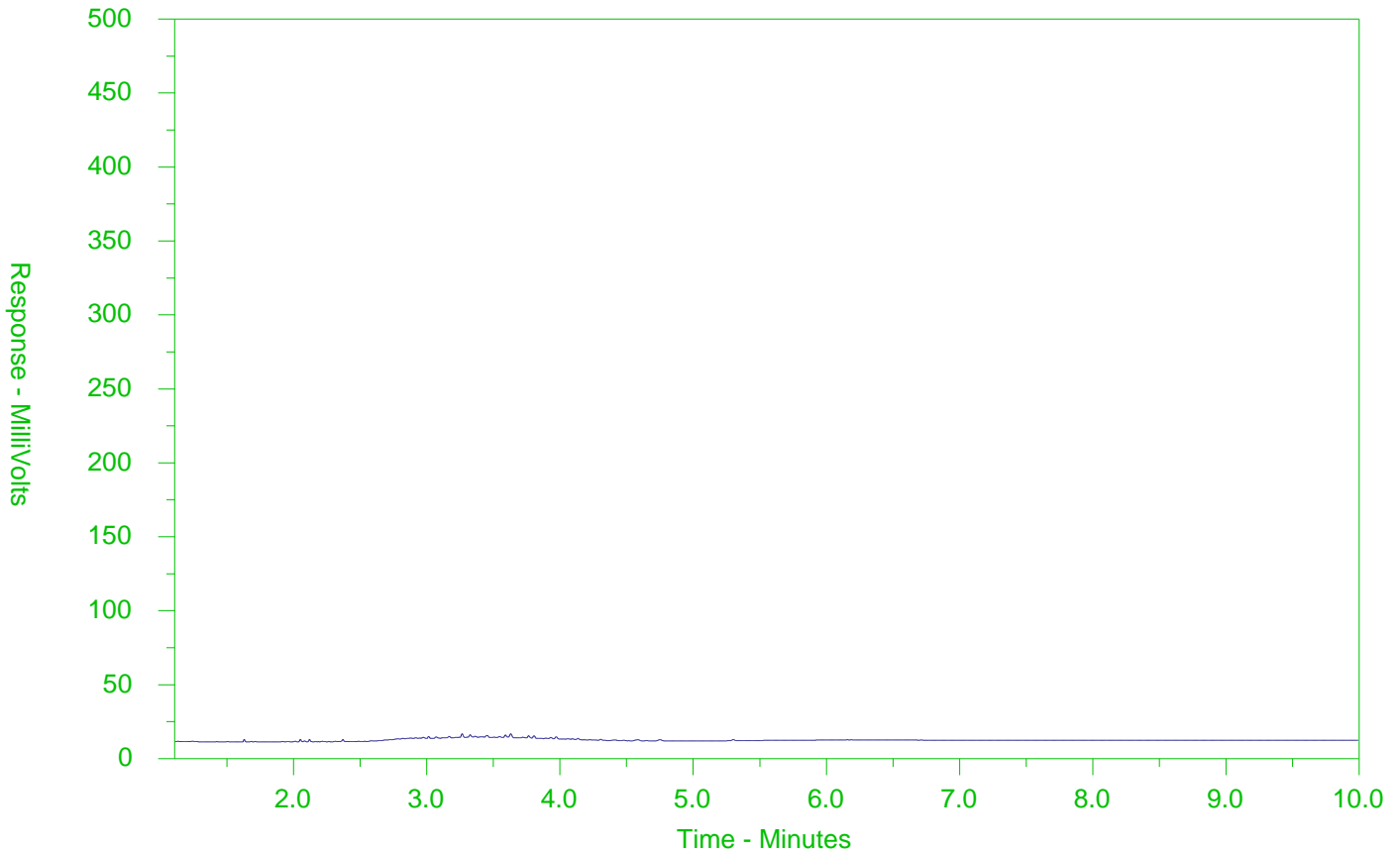
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L1977878-1
 Client Sample ID: BH101



← 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.

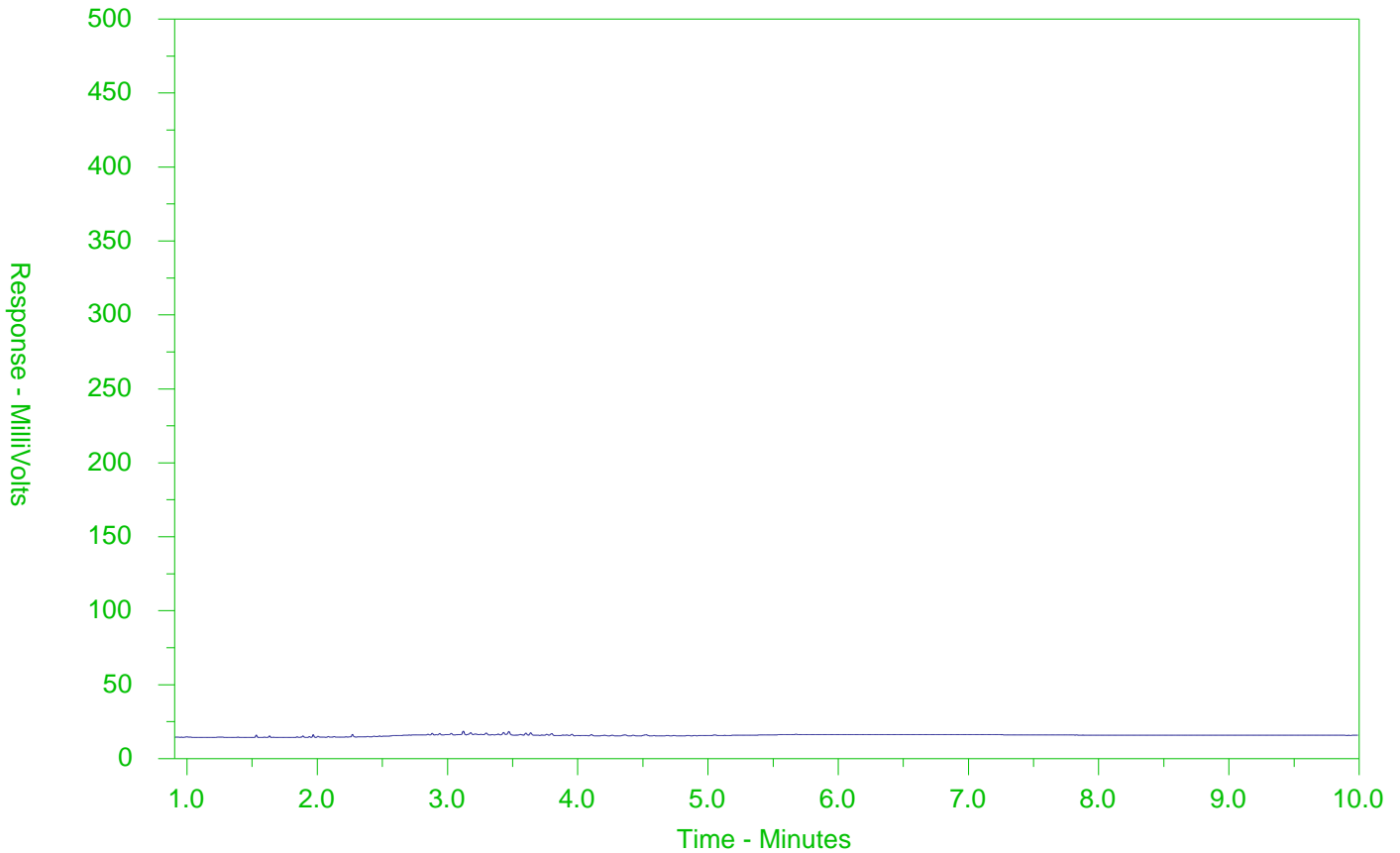
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1977878-2
 Client Sample ID: BH102



← 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.

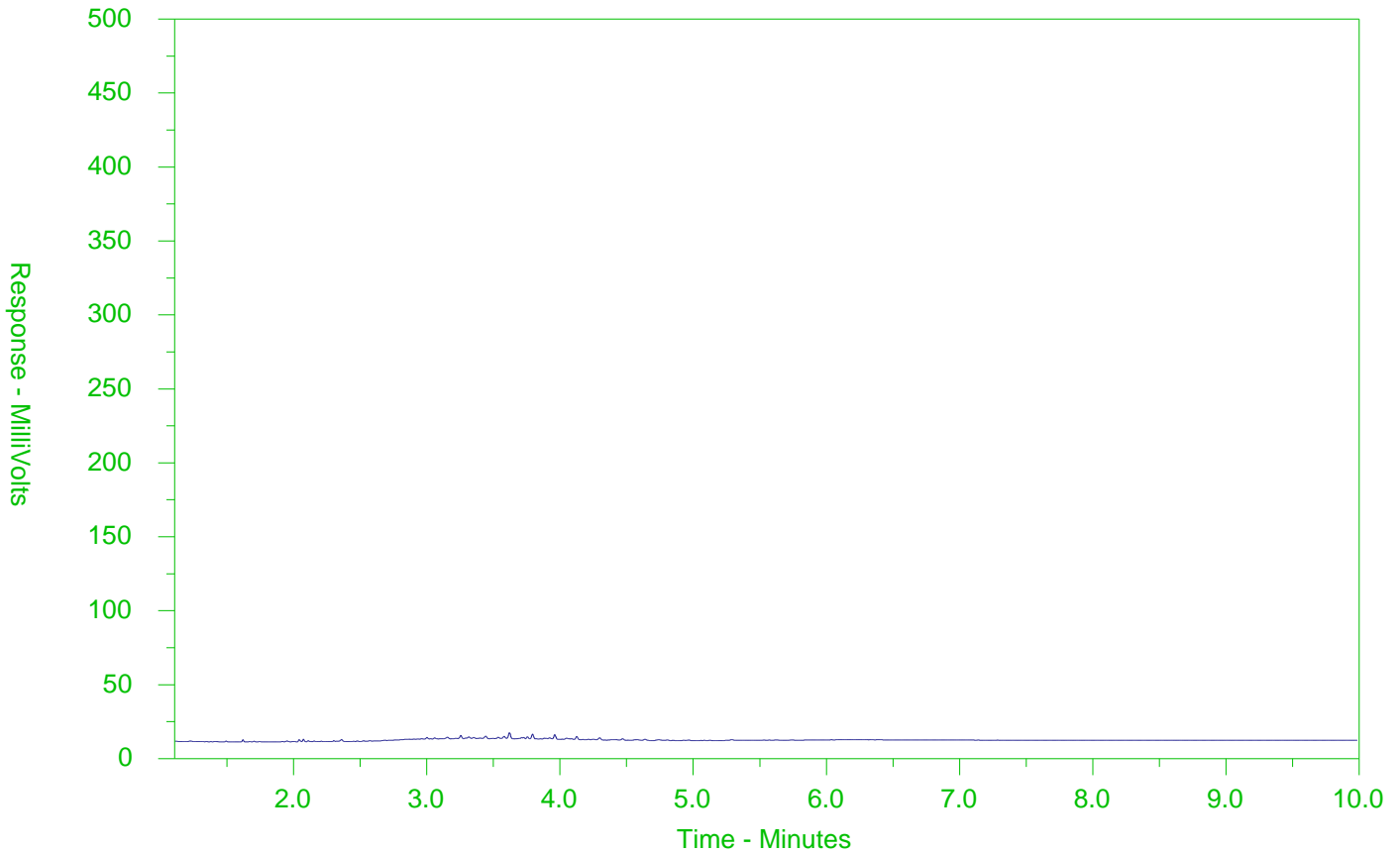
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1977878-3
 Client Sample ID: BH103



← 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.

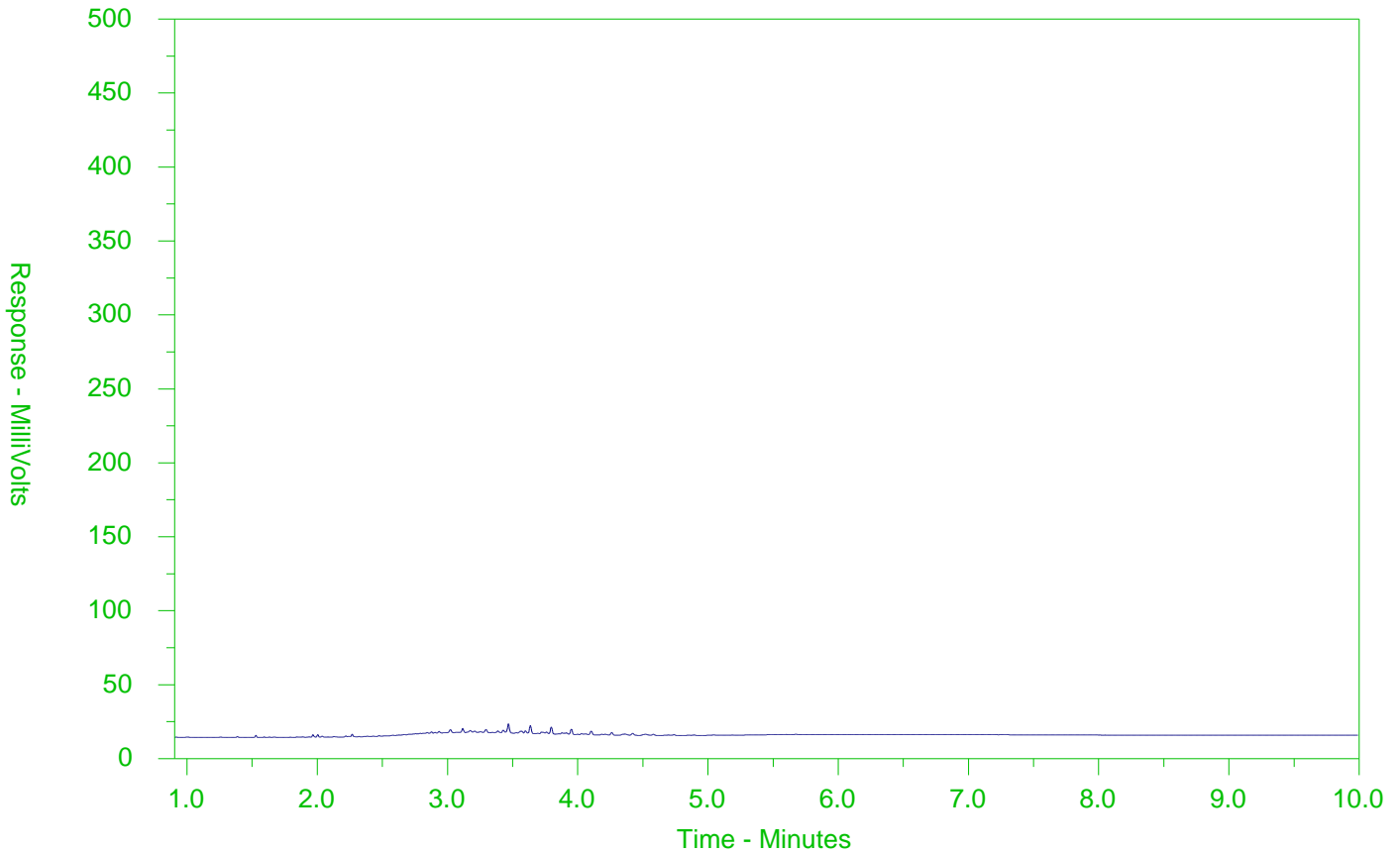
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L1977878-4
 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.

Report To Contact and company name below will appear on the final report Company: TerraProbe Contact: Sirish Melast Phone: 905 746 2850 Company address below will appear on the final report		Report Format / Distribution 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 <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 Email 1 or Fax: smelast@terraprobe.ca Email 2: Melast@terraprobe.ca Email 3:			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply 4 day [P4] <input type="checkbox"/> 1 Business day [E1] <input type="checkbox"/> 3 day [P3] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/> 2 day [P2] <input type="checkbox"/>																																																														
Street: 11 Inzell Lane City/Province: Brampton ON Postal Code: L6T3Y8 Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO Company: TerraProbe Contact: General Accounting Project Information		Invoice Distribution Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: Accounting@terraprobe.ca Email 2: Oil and Gas Required Fields (client use) AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:			Date and Time Required for all E&P 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 (F/P) below																																																														
ALS Account # / Quote #: F17-048442 Job #: F17-048442 PO / AFE: LSD:		ALS Lab Work Order # (lab use only): L1977878 KR ALS Contact: Sampler:			<table border="1"> <thead> <tr> <th>ALS Sample # (lab use only)</th> <th>Sample Identification and/or Coordinates (This description will appear on the report)</th> <th>Date (dd-mmm-yy)</th> <th>Time (hh:mm)</th> <th>Sample Type</th> <th>VOC</th> <th>PHC (FI-F4)</th> <th>Nitrate (mg/L as N)</th> <th>Md: Cyanide</th> <th>OML: Crb+</th> <th>Md: Mercury</th> <th>Md: EC, pH, Chl a</th> <th>Number of Containers</th> </tr> </thead> <tbody> <tr> <td>-1</td> <td>BH101</td> <td>11-Aug-17</td> <td>PM</td> <td>GW</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td rowspan="4">1000</td> </tr> <tr> <td>-2</td> <td>BH102</td> <td>11-Aug-17</td> <td>PM</td> <td>GW</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>-3</td> <td>BH103</td> <td>11-Aug-17</td> <td>PM</td> <td>GW</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>-4</td> <td>BH DUPI</td> <td>11-Aug-17</td> <td>PM</td> <td>GW</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>				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	VOC	PHC (FI-F4)	Nitrate (mg/L as N)	Md: Cyanide	OML: Crb+	Md: Mercury	Md: EC, pH, Chl a	Number of Containers	-1	BH101	11-Aug-17	PM	GW	X	X	X	X	X	X	X	1000	-2	BH102	11-Aug-17	PM	GW	X	X	X	X	X	X	-3	BH103	11-Aug-17	PM	GW	X	X	X	X	X	X	-4	BH DUPI	11-Aug-17	PM	GW	X	X	X	X	X	X
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	VOC	PHC (FI-F4)	Nitrate (mg/L as N)	Md: Cyanide	OML: Crb+	Md: Mercury	Md: EC, pH, Chl a	Number of Containers																																																							
-1	BH101	11-Aug-17	PM	GW	X	X	X	X	X	X	X	1000																																																							
-2	BH102	11-Aug-17	PM	GW	X	X	X	X	X	X																																																									
-3	BH103	11-Aug-17	PM	GW	X	X	X	X	X	X																																																									
-4	BH DUPI	11-Aug-17	PM	GW	X	X	X	X	X	X																																																									
Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) -PSC RPI - 0.6g 153/01 Table 2			SAMPLE CONDITION AS RECEIVED (lab use only) 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 checked="" type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/> INITIAL COOLER TEMPERATURES °C: 0.6° FINAL COOLER TEMPERATURES °C:																																																														
SHIPMENT RELEASE (client use) Released by: NICHOLAS GAWRZEN Date: 08/14/17 Time: 7:42p		INITIAL SHIPMENT RECEPTION (lab use only) Received by: KR Date: Aug 21/17 Time: 9:00			FINAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time:																																																														

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: SUVISH MELANTA
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-SEP-17
Report Date: 21-SEP-17 14:46 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L1993774
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0401-42
C of C Numbers: 15-574206
Legal Site Desc:

Emerson Perez, B.S.E
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						

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

Volatile Organic Compounds - WATER

Lab ID L1993774-5
Sample Date 18-SEP-17
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
Acetone	ug/L	2700	2700	<30
Benzene	ug/L	5	5	<0.50
Bromodichloromethane	ug/L	16	16	<2.0
Bromoform	ug/L	25	25	<5.0
Bromomethane	ug/L	0.89	0.89	<0.50
Carbon tetrachloride	ug/L	0.79	5	<0.20
Chlorobenzene	ug/L	30	30	<0.50
Dibromochloromethane	ug/L	25	25	<2.0
Chloroform	ug/L	2.4	22	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2	<0.20
1,2-Dichlorobenzene	ug/L	3	3	<0.50
1,3-Dichlorobenzene	ug/L	59	59	<0.50
1,4-Dichlorobenzene	ug/L	1	1	<0.50
Dichlorodifluoromethane	ug/L	590	590	<2.0
1,1-Dichloroethane	ug/L	5	5	<0.50
1,2-Dichloroethane	ug/L	1.6	5	<0.50
1,1-Dichloroethylene	ug/L	1.6	14	<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	50	50	<5.0
1,2-Dichloropropane	ug/L	5	5	<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	0.5	0.5	<0.50
Ethylbenzene	ug/L	2.4	2.4	<0.50
n-Hexane	ug/L	51	520	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800	<20
Methyl Isobutyl Ketone	ug/L	640	640	<20
MTBE	ug/L	15	15	<2.0
Styrene	ug/L	5.4	5.4	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Volatile Organic Compounds - WATER

Lab ID L1993774-5
Sample Date 18-SEP-17
Sample ID TRIP BLANK

Analyte	Unit	Guide Limits		
		#1	#2	
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50
Toluene	ug/L	24	24	<0.50
1,1,1-Trichloroethane	ug/L	200	200	<0.50
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50
Trichloroethylene	ug/L	1.6	5	<0.50
Trichlorofluoromethane	ug/L	150	150	<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	300	300	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	99.6
Surrogate: 1,4-Difluorobenzene	%	-	-	101.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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

Polycyclic Aromatic Hydrocarbons - WATER

Analyte	Unit	Guide Limits		Lab ID	L1993774-1	L1993774-2	L1993774-3	L1993774-4
		#1	#2	Sample Date	18-SEP-17	18-SEP-17	18-SEP-17	18-SEP-17
				Sample ID	BH101	BH102	BH103	DUP
Acenaphthene	ug/L	4.1	4.1	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	ug/L	2.4	2.4	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	ug/L	0.01	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	ug/L	0.41	0.41	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	ug/L	120	120	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	ug/L	3.2	3.2	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	ug/L	3.2	3.2	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	ug/L	3.2	3.2	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	ug/L	11	11	<0.050	<0.070 ^{DLM}	<0.050	<0.050	<0.050
Phenanthrene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	ug/L	4.1	4.1	<0.020	<0.020	<0.020	<0.020	<0.020
Surrogate: d10-Acenaphthene	%	-	-	79.1	86.6	87.8	88.9	
Surrogate: d12-Chrysene	%	-	-	86.3	84.4	94.2	94.5	
Surrogate: d8-Naphthalene	%	-	-	95.3	92.8	93.7	100.7	
Surrogate: d10-Phenanthrene	%	-	-	127.1	104.1	106.9	112.7	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance 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).

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:

15-574206

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

L1993774 CONT'D....
Job Reference: 1-17-0401-42
PAGE 7 of 7
21-SEP-17 14:46 (MT)

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.



Environmental

Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 1 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3833476							
WG2620098-2	LCS							
1-Methylnaphthalene			80.6		%		50-140	20-SEP-17
2-Methylnaphthalene			84.9		%		50-140	20-SEP-17
Acenaphthene			82.4		%		50-140	20-SEP-17
Acenaphthylene			82.4		%		50-140	20-SEP-17
Anthracene			98.3		%		50-140	20-SEP-17
Benzo(a)anthracene			89.7		%		50-140	20-SEP-17
Benzo(a)pyrene			98.2		%		50-140	20-SEP-17
Benzo(b)fluoranthene			95.9		%		50-140	20-SEP-17
Benzo(g,h,i)perylene			105.2		%		50-140	20-SEP-17
Benzo(k)fluoranthene			102.6		%		50-140	20-SEP-17
Chrysene			78.7		%		50-140	20-SEP-17
Dibenzo(ah)anthracene			92.6		%		50-140	20-SEP-17
Fluoranthene			93.6		%		50-140	20-SEP-17
Fluorene			97.0		%		50-140	20-SEP-17
Indeno(1,2,3-cd)pyrene			108.6		%		50-140	20-SEP-17
Naphthalene			82.7		%		50-140	20-SEP-17
Phenanthrene			94.6		%		50-140	20-SEP-17
Pyrene			93.1		%		50-140	20-SEP-17
WG2620098-3	LCS		WG2620098-2					
1-Methylnaphthalene		80.6	95.8		%	17	50	20-SEP-17
2-Methylnaphthalene		84.9	101.3		%	18	50	20-SEP-17
Acenaphthene		82.4	86.8		%	5.2	50	20-SEP-17
Acenaphthylene		82.4	87.3		%	5.8	50	20-SEP-17
Anthracene		98.3	102.5		%	4.1	50	20-SEP-17
Benzo(a)anthracene		89.7	95.4		%	6.2	50	20-SEP-17
Benzo(a)pyrene		98.2	106.0		%	7.6	50	20-SEP-17
Benzo(b)fluoranthene		95.9	97.9		%	2.1	50	20-SEP-17
Benzo(g,h,i)perylene		105.2	111.8		%	6.0	50	20-SEP-17
Benzo(k)fluoranthene		102.6	108.8		%	5.8	50	20-SEP-17
Chrysene		78.7	84.8		%	7.4	50	20-SEP-17
Dibenzo(ah)anthracene		92.6	98.8		%	6.4	50	20-SEP-17
Fluoranthene		93.6	99.6		%	6.2	50	20-SEP-17
Fluorene		97.0	100.7		%	3.8	50	20-SEP-17



Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 2 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3833476							
WG2620098-3	LCSD	WG2620098-2						
Indeno(1,2,3-cd)pyrene		108.6	119.2		%	9.3	50	20-SEP-17
Naphthalene		82.7	96.1		%	15	50	20-SEP-17
Phenanthrene		94.6	98.2		%	3.7	50	20-SEP-17
Pyrene		93.1	100.0		%	7.1	50	20-SEP-17
WG2620098-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	20-SEP-17
2-Methylnaphthalene			<0.020		ug/L		0.02	20-SEP-17
Acenaphthene			<0.020		ug/L		0.02	20-SEP-17
Acenaphthylene			<0.020		ug/L		0.02	20-SEP-17
Anthracene			<0.020		ug/L		0.02	20-SEP-17
Benzo(a)anthracene			<0.020		ug/L		0.02	20-SEP-17
Benzo(a)pyrene			<0.010		ug/L		0.01	20-SEP-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	20-SEP-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	20-SEP-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	20-SEP-17
Chrysene			<0.020		ug/L		0.02	20-SEP-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	20-SEP-17
Fluoranthene			<0.020		ug/L		0.02	20-SEP-17
Fluorene			<0.020		ug/L		0.02	20-SEP-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	20-SEP-17
Naphthalene			<0.050		ug/L		0.05	20-SEP-17
Phenanthrene			<0.020		ug/L		0.02	20-SEP-17
Pyrene			<0.020		ug/L		0.02	20-SEP-17
Surrogate: d8-Naphthalene			96.4		%		60-140	20-SEP-17
Surrogate: d10-Phenanthrene			113.2		%		60-140	20-SEP-17
Surrogate: d12-Chrysene			92.1		%		60-140	20-SEP-17
Surrogate: d10-Acenaphthene			87.7		%		60-140	20-SEP-17
VOC-511-HS-WT		Water						
Batch	R3833028							
WG2616834-4	DUP	WG2616834-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17



Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 3 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3833028							
WG2616834-4	DUP	WG2616834-3						
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-SEP-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	20-SEP-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-SEP-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-SEP-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	20-SEP-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	20-SEP-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-SEP-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-SEP-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-SEP-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	20-SEP-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-SEP-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	20-SEP-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-SEP-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	20-SEP-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-SEP-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
trans-1,3-Dichloropropene		<0.30	<0.30		ug/L			20-SEP-17



Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 4 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3833028							
WG2616834-4	DUP	WG2616834-3						
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	20-SEP-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	20-SEP-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	20-SEP-17
WG2616834-1	LCS							
1,1,1,2-Tetrachloroethane			89.9		%		70-130	20-SEP-17
1,1,1,2-Tetrachloroethane			99.6		%		70-130	20-SEP-17
1,1,1-Trichloroethane			91.6		%		70-130	20-SEP-17
1,1,2-Trichloroethane			91.3		%		70-130	20-SEP-17
1,1-Dichloroethane			104.5		%		70-130	20-SEP-17
1,1-Dichloroethylene			91.9		%		70-130	20-SEP-17
1,2-Dibromoethane			89.8		%		70-130	20-SEP-17
1,2-Dichlorobenzene			92.1		%		70-130	20-SEP-17
1,2-Dichloroethane			95.3		%		70-130	20-SEP-17
1,2-Dichloropropane			94.9		%		70-130	20-SEP-17
1,3-Dichlorobenzene			90.6		%		70-130	20-SEP-17
1,4-Dichlorobenzene			92.8		%		70-130	20-SEP-17
Acetone			109.1		%		60-140	20-SEP-17
Benzene			95.8		%		70-130	20-SEP-17
Bromodichloromethane			88.6		%		70-130	20-SEP-17
Bromoform			83.9		%		70-130	20-SEP-17
Bromomethane			96.9		%		60-140	20-SEP-17
Carbon tetrachloride			90.0		%		70-130	20-SEP-17
Chlorobenzene			93.7		%		70-130	20-SEP-17
Chloroform			95.6		%		70-130	20-SEP-17
cis-1,2-Dichloroethylene			86.9		%		70-130	20-SEP-17
cis-1,3-Dichloropropene			91.7		%		70-130	20-SEP-17
Dibromochloromethane			89.8		%		70-130	20-SEP-17
Dichlorodifluoromethane			89.4		%		50-140	20-SEP-17
Ethylbenzene			92.8		%		70-130	20-SEP-17
n-Hexane			108.7		%		70-130	20-SEP-17
m+p-Xylenes			94.2		%		70-130	20-SEP-17
Methyl Ethyl Ketone			97.4		%		60-140	20-SEP-17
Methyl Isobutyl Ketone			101.8				60-140	



Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 5 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3833028							
WG2616834-1	LCS							
Methyl Isobutyl Ketone			101.8		%		60-140	20-SEP-17
Methylene Chloride			94.1		%		70-130	20-SEP-17
MTBE			94.8		%		70-130	20-SEP-17
o-Xylene			95.4		%		70-130	20-SEP-17
Styrene			91.4		%		70-130	20-SEP-17
Tetrachloroethylene			88.2		%		70-130	20-SEP-17
Toluene			91.3		%		70-130	20-SEP-17
trans-1,2-Dichloroethylene			95.0		%		70-130	20-SEP-17
trans-1,3-Dichloropropene			94.5		%		70-130	20-SEP-17
Trichloroethylene			90.4		%		70-130	20-SEP-17
Trichlorofluoromethane			94.2		%		60-140	20-SEP-17
Vinyl chloride			91.9		%		60-140	20-SEP-17
WG2616834-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	20-SEP-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	20-SEP-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	20-SEP-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	20-SEP-17
1,1-Dichloroethane			<0.50		ug/L		0.5	20-SEP-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	20-SEP-17
1,2-Dibromoethane			<0.20		ug/L		0.2	20-SEP-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	20-SEP-17
1,2-Dichloroethane			<0.50		ug/L		0.5	20-SEP-17
1,2-Dichloropropane			<0.50		ug/L		0.5	20-SEP-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	20-SEP-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	20-SEP-17
Acetone			<30		ug/L		30	20-SEP-17
Benzene			<0.50		ug/L		0.5	20-SEP-17
Bromodichloromethane			<2.0		ug/L		2	20-SEP-17
Bromoform			<5.0		ug/L		5	20-SEP-17
Bromomethane			<0.50		ug/L		0.5	20-SEP-17
Carbon tetrachloride			<0.20		ug/L		0.2	20-SEP-17
Chlorobenzene			<0.50		ug/L		0.5	20-SEP-17
Chloroform			<1.0		ug/L		1	20-SEP-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-SEP-17



Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 6 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3833028							
WG2616834-2 MB								
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	20-SEP-17
Dibromochloromethane			<2.0		ug/L		2	20-SEP-17
Dichlorodifluoromethane			<2.0		ug/L		2	20-SEP-17
Ethylbenzene			<0.50		ug/L		0.5	20-SEP-17
n-Hexane			<0.50		ug/L		0.5	20-SEP-17
m+p-Xylenes			<0.40		ug/L		0.4	20-SEP-17
Methyl Ethyl Ketone			<20		ug/L		20	20-SEP-17
Methyl Isobutyl Ketone			<20		ug/L		20	20-SEP-17
Methylene Chloride			<5.0		ug/L		5	20-SEP-17
MTBE			<2.0		ug/L		2	20-SEP-17
o-Xylene			<0.30		ug/L		0.3	20-SEP-17
Styrene			<0.50		ug/L		0.5	20-SEP-17
Tetrachloroethylene			<0.50		ug/L		0.5	20-SEP-17
Toluene			<0.50		ug/L		0.5	20-SEP-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	20-SEP-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	20-SEP-17
Trichloroethylene			<0.50		ug/L		0.5	20-SEP-17
Trichlorofluoromethane			<5.0		ug/L		5	20-SEP-17
Vinyl chloride			<0.50		ug/L		0.5	20-SEP-17
Surrogate: 1,4-Difluorobenzene			101.3		%		70-130	20-SEP-17
Surrogate: 4-Bromofluorobenzene			98.8		%		70-130	20-SEP-17
WG2616834-5 MS		WG2616834-3						
1,1,1,2-Tetrachloroethane			91.3		%		50-140	20-SEP-17
1,1,2,2-Tetrachloroethane			98.0		%		50-140	20-SEP-17
1,1,1-Trichloroethane			91.1		%		50-140	20-SEP-17
1,1,2-Trichloroethane			92.5		%		50-140	20-SEP-17
1,1-Dichloroethane			102.7		%		50-140	20-SEP-17
1,1-Dichloroethylene			83.6		%		50-140	20-SEP-17
1,2-Dibromoethane			90.8		%		50-140	20-SEP-17
1,2-Dichlorobenzene			92.4		%		50-140	20-SEP-17
1,2-Dichloroethane			96.4		%		50-140	20-SEP-17
1,2-Dichloropropane			96.3		%		50-140	20-SEP-17
1,3-Dichlorobenzene			90.1		%		50-140	20-SEP-17
1,4-Dichlorobenzene			91.8		%		50-140	20-SEP-17



Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

Page 7 of 8

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3833028							
WG2616834-5 MS		WG2616834-3						
Acetone			110.5		%		50-140	20-SEP-17
Benzene			95.6		%		50-140	20-SEP-17
Bromodichloromethane			89.9		%		50-140	20-SEP-17
Bromoform			83.3		%		50-140	20-SEP-17
Bromomethane			81.6		%		50-140	20-SEP-17
Carbon tetrachloride			88.3		%		50-140	20-SEP-17
Chlorobenzene			93.9		%		50-140	20-SEP-17
Chloroform			96.8		%		50-140	20-SEP-17
cis-1,2-Dichloroethylene			87.0		%		50-140	20-SEP-17
cis-1,3-Dichloropropene			88.9		%		50-140	20-SEP-17
Dibromochloromethane			90.1		%		50-140	20-SEP-17
Dichlorodifluoromethane			43.4	MES	%		50-140	20-SEP-17
Ethylbenzene			93.6		%		50-140	20-SEP-17
n-Hexane			93.8		%		50-140	20-SEP-17
m+p-Xylenes			93.9		%		50-140	20-SEP-17
Methyl Ethyl Ketone			98.4		%		50-140	20-SEP-17
Methyl Isobutyl Ketone			101.2		%		50-140	20-SEP-17
Methylene Chloride			92.3		%		50-140	20-SEP-17
MTBE			94.0		%		50-140	20-SEP-17
o-Xylene			96.1		%		50-140	20-SEP-17
Styrene			90.8		%		50-140	20-SEP-17
Tetrachloroethylene			86.8		%		50-140	20-SEP-17
Toluene			91.7		%		50-140	20-SEP-17
trans-1,2-Dichloroethylene			89.7		%		50-140	20-SEP-17
trans-1,3-Dichloropropene			91.4		%		50-140	20-SEP-17
Trichloroethylene			89.7		%		50-140	20-SEP-17
Trichlorofluoromethane			81.0		%		50-140	20-SEP-17
Vinyl chloride			69.9		%		50-140	20-SEP-17

Quality Control Report

Workorder: L1993774

Report Date: 21-SEP-17

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

Page 8 of 8

Contact: SUVISH MELANTA

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
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
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.



L1993774-COFC

Report To <small>Contact and company name below will appear on the final report</small>			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 type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply						EMERGENCY								
Contact: Swiss			Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>			3 day [P3] <input type="checkbox"/>			2 day [P2] <input type="checkbox"/>			1 Business day [E1] <input checked="" type="checkbox"/>					
Phone: 705 725 8855			<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>														
<small>Company address below will appear on the final report</small>			Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs: dd-mm-yy hh:mm						For tests that can not be performed according to the service level selected, you will be contacted.								
Street: 220 Bayview Dr Unit 25			Email 1 or Fax: smelanta@terraprobe.ca			Analysis Request														
City/Province: Burnie ON			Email 2: Matto@terraprobe.ca			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below														
Postal Code: L4N 4Y9			Email 3:																	
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			Invoice Distribution																	
Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																	
Company:			Email 1 or Fax: Accounting@terraprobe.ca																	
Contact: General Account.NJ			Email 2:																	
<small>Project Information</small>			<small>Oil and Gas Required Fields (client use)</small>																	
ALS Account # / Quote #:			AFE/Cost Center: PO#																	
Job #: H7-0401-42			Major/Minor Code: Routing Code:																	
PO / AFE:			Requisitioner:																	
LSD:			Location:																	
ALS Lab Work Order # (lab use only) L1993774 RW			ALS Contact: E			Sampler:			PATH						VOC					
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													Number of Containers
1	BH101				18-Sep-17	PM	GW													1
2	BH102				↓	↓	GW													1
3	BH103				↓	↓	GW													1
4	DUP				↓	↓	GW													1
5	Trip Blank																			2
Drinking Water (DW) Samples ¹ (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)														
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO			Table 2, RPA, CRSC			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>						Ice Packs <input type="checkbox"/> Ice Cubes <input 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: 10.00						FINAL COOLER TEMPERATURES °C: 12.3		
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)														
Released by: NICHOLAN GAUDEAN		Date: 09/18/17	Time: 20:40	Received by: JS		Date: Sep 19 / 17	Time: 7:00	Received by: JK				Date: 19/09/2017		Time: 17:00						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FORM 1

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.

DA



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 09-NOV-17
Report Date: 17-NOV-17 10:42 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2020783
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers:
Legal Site Desc:



Mathy Mahadera
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



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Table with columns: Sample Details Grouping, Analyte, Result, Qualifier, D.L., Units, Analyzed, Guideline Limits #1, #2. Rows include Physical Tests (Conductivity, pH), Anions and Nutrients (Chloride), Cyanides (Cyanide), Dissolved Metals (Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Sodium, Thallium, Uranium, Vanadium, Zinc), and Volatile Organic Compounds (Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon tetrachloride, Chlorobenzene, Dibromochloromethane, Chloroform, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene).

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-1	BH201-S							
Sampled By: CLIENT on 08-NOV-17 @ 10:00								
Matrix: WATER								
Volatile Organic Compounds								
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-NOV-17	590	590
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-NOV-17	5	5
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-NOV-17	1.6	5
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	14
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Methylene Chloride	<5.0		5.0	ug/L	13-NOV-17	50	50
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-NOV-17	5	5
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-NOV-17		
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-NOV-17		
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-NOV-17	0.5	0.5
	Ethylbenzene	<0.50		0.50	ug/L	13-NOV-17	2.4	2.4
	n-Hexane	<0.50		0.50	ug/L	13-NOV-17	51	520
	Methyl Ethyl Ketone	<20		20	ug/L	13-NOV-17	1800	1800
	Methyl Isobutyl Ketone	<20		20	ug/L	13-NOV-17	640	640
	MTBE	<2.0		2.0	ug/L	13-NOV-17	15	15
	Styrene	<0.50		0.50	ug/L	13-NOV-17	5.4	5.4
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1.1	1.1
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1	1
	Tetrachloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Toluene	<0.50		0.50	ug/L	13-NOV-17	24	24
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	200	200
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	4.7	5
	Trichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	5
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-NOV-17	150	150
	Vinyl chloride	<0.50		0.50	ug/L	13-NOV-17	0.5	1.7
	o-Xylene	<0.30		0.30	ug/L	13-NOV-17		
	m+p-Xylenes	<0.40		0.40	ug/L	13-NOV-17		
	Xylenes (Total)	<0.50		0.50	ug/L	13-NOV-17	300	300
	Surrogate: 4-Bromofluorobenzene	97.3		70-130	%	13-NOV-17		
	Surrogate: 1,4-Difluorobenzene	98.9		70-130	%	13-NOV-17		
Hydrocarbons								
	F1 (C6-C10)	<25		25	ug/L	13-NOV-17	750	750
	F1-BTEX	<25		25	ug/L	16-NOV-17	750	750
	F2 (C10-C16)	<100		100	ug/L	14-NOV-17	150	150
	F2-Naphth	<100		100	ug/L	16-NOV-17		
	F3 (C16-C34)	<250		250	ug/L	14-NOV-17	500	500
	F3-PAH	<250		250	ug/L	16-NOV-17		
	F4 (C34-C50)	<250		250	ug/L	14-NOV-17	500	500
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	16-NOV-17		
	Chrom. to baseline at nC50	YES			No Unit	14-NOV-17		
	Surrogate: 2-Bromobenzotrifluoride	96.5		60-140	%	14-NOV-17		
	Surrogate: 3,4-Dichlorotoluene	94.8		60-140	%	13-NOV-17		
Polycyclic Aromatic Hydrocarbons								
	Acenaphthene	<0.020		0.020	ug/L	16-NOV-17	4.1	4.1
	Acenaphthylene	<0.020		0.020	ug/L	16-NOV-17	1	1

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte							
L2020783-1 BH201-S Sampled By: CLIENT on 08-NOV-17 @ 10:00 Matrix: WATER							#1	#2
Polycyclic Aromatic Hydrocarbons								
	Anthracene	<0.020		0.020	ug/L	16-NOV-17	2.4	2.4
	Benzo(a)anthracene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Benzo(a)pyrene	<0.010		0.010	ug/L	16-NOV-17	0.01	0.01
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Chrysene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	Fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.41	0.41
	Fluorene	<0.020		0.020	ug/L	16-NOV-17	120	120
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	16-NOV-17	3.2	3.2
	1-Methylnaphthalene	<0.020		0.020	ug/L	16-NOV-17	3.2	3.2
	2-Methylnaphthalene	0.024		0.020	ug/L	16-NOV-17	3.2	3.2
	Naphthalene	<0.050		0.050	ug/L	16-NOV-17	11	11
	Phenanthrene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Pyrene	<0.020		0.020	ug/L	16-NOV-17	4.1	4.1
	Surrogate: d10-Acenaphthene	99.1		60-140	%	16-NOV-17		
	Surrogate: d12-Chrysene	103.1		60-140	%	16-NOV-17		
	Surrogate: d8-Naphthalene	94.4		60-140	%	16-NOV-17		
	Surrogate: d10-Phenanthrene	114.1		60-140	%	16-NOV-17		
L2020783-2 BH201-D Sampled By: CLIENT on 08-NOV-17 @ 08:30 Matrix: WATER							#1	#2
Physical Tests								
	Conductivity	2.68		0.0030	mS/cm	10-NOV-17		
	pH	8.88		0.10	pH units	10-NOV-17		
Anions and Nutrients								
	Chloride (Cl)	31.5		0.50	mg/L	10-NOV-17	790	790
Cyanides								
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	10-NOV-17	66	66
Dissolved Metals								
	Dissolved Mercury Filtration Location	FIELD			No Unit	10-NOV-17		
	Dissolved Metals Filtration Location	FIELD			No Unit	10-NOV-17		
	Antimony (Sb)-Dissolved	0.21		0.10	ug/L	10-NOV-17	6	6
	Arsenic (As)-Dissolved	0.97		0.10	ug/L	10-NOV-17	25	25
	Barium (Ba)-Dissolved	22.0		0.10	ug/L	10-NOV-17	1000	1000
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	10-NOV-17	4	4
	Boron (B)-Dissolved	23		10	ug/L	10-NOV-17	5000	5000
	Cadmium (Cd)-Dissolved	0.013		0.010	ug/L	10-NOV-17	2.7	2.7
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	10-NOV-17	50	50
	Cobalt (Co)-Dissolved	0.10		0.10	ug/L	10-NOV-17	3.8	3.8
	Copper (Cu)-Dissolved	3.10		0.20	ug/L	10-NOV-17	87	87
	Lead (Pb)-Dissolved	0.128		0.050	ug/L	10-NOV-17	10	10
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	13-NOV-17		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-2	BH201-D							
Sampled By: CLIENT on 08-NOV-17 @ 08:30								
Matrix: WATER								
Dissolved Metals								
	Molybdenum (Mo)-Dissolved	3.05		0.050	ug/L	10-NOV-17	0.29	1
	Nickel (Ni)-Dissolved	1.08		0.50	ug/L	10-NOV-17	70	70
	Selenium (Se)-Dissolved	0.187		0.050	ug/L	10-NOV-17	100	100
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	10-NOV-17	10	10
	Sodium (Na)-Dissolved	23500		500	ug/L	10-NOV-17	1.5	1.5
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	10-NOV-17	490000	490000
	Uranium (U)-Dissolved	0.673		0.010	ug/L	10-NOV-17	2	2
	Vanadium (V)-Dissolved	0.92		0.50	ug/L	10-NOV-17	20	20
	Zinc (Zn)-Dissolved	3.1		1.0	ug/L	10-NOV-17	6.2	6.2
Speciated Metals								
	Chromium, Hexavalent	<1.0		1.0	ug/L	16-NOV-17	1100	1100
Volatile Organic Compounds								
	Acetone	<30		30	ug/L	13-NOV-17	2700	2700
	Benzene	<0.50		0.50	ug/L	13-NOV-17	5	5
	Bromodichloromethane	4.5		2.0	ug/L	13-NOV-17	16	16
	Bromoform	<5.0		5.0	ug/L	13-NOV-17	25	25
	Bromomethane	<0.50		0.50	ug/L	13-NOV-17	0.89	0.89
	Carbon tetrachloride	<0.20		0.20	ug/L	13-NOV-17	0.79	5
	Chlorobenzene	<0.50		0.50	ug/L	13-NOV-17	30	30
	Dibromochloromethane	2.9		2.0	ug/L	13-NOV-17	25	25
	Chloroform	14.1		1.0	ug/L	13-NOV-17	*2.4	22
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-NOV-17	0.2	0.2
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-NOV-17	3	3
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-NOV-17	59	59
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-NOV-17	1	1
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-NOV-17	590	590
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-NOV-17	5	5
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-NOV-17	1.6	5
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	14
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Methylene Chloride	<5.0		5.0	ug/L	13-NOV-17	50	50
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-NOV-17	5	5
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-NOV-17		
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-NOV-17		
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-NOV-17	0.5	0.5
	Ethylbenzene	<0.50		0.50	ug/L	13-NOV-17	2.4	2.4
	n-Hexane	<0.50		0.50	ug/L	13-NOV-17	51	520
	Methyl Ethyl Ketone	<20		20	ug/L	13-NOV-17	1800	1800
	Methyl Isobutyl Ketone	<20		20	ug/L	13-NOV-17	640	640
	MTBE	<2.0		2.0	ug/L	13-NOV-17	15	15
	Styrene	<0.50		0.50	ug/L	13-NOV-17	5.4	5.4
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1.1	1.1
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1	1

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-2 BH201-D								
Sampled By: CLIENT on 08-NOV-17 @ 08:30								
Matrix: WATER								
Volatile Organic Compounds								
	Tetrachloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Toluene	<0.50		0.50	ug/L	13-NOV-17	24	24
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	200	200
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	4.7	5
	Trichloroethylene	1.06		0.50	ug/L	13-NOV-17	1.6	5
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-NOV-17	150	150
	Vinyl chloride	<0.50		0.50	ug/L	13-NOV-17	0.5	1.7
	o-Xylene	<0.30		0.30	ug/L	13-NOV-17		
	m+p-Xylenes	<0.40		0.40	ug/L	13-NOV-17		
	Xylenes (Total)	<0.50		0.50	ug/L	13-NOV-17	300	300
	Surrogate: 4-Bromofluorobenzene	97.3		70-130	%	13-NOV-17		
	Surrogate: 1,4-Difluorobenzene	99.7		70-130	%	13-NOV-17		
Hydrocarbons								
	F1 (C6-C10)	<25		25	ug/L	13-NOV-17	750	750
	F1-BTEX	<25		25	ug/L	16-NOV-17	750	750
	F2 (C10-C16)	<100		100	ug/L	14-NOV-17	150	150
	F2-Naphth	<100		100	ug/L	16-NOV-17		
	F3 (C16-C34)	<250		250	ug/L	14-NOV-17	500	500
	F3-PAH	<250		250	ug/L	16-NOV-17		
	F4 (C34-C50)	<250		250	ug/L	14-NOV-17	500	500
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	16-NOV-17		
	Chrom. to baseline at nC50	YES			No Unit	14-NOV-17		
	Surrogate: 2-Bromobenzotrifluoride	95.3		60-140	%	14-NOV-17		
	Surrogate: 3,4-Dichlorotoluene	110.4		60-140	%	13-NOV-17		
Polycyclic Aromatic Hydrocarbons								
	Acenaphthene	<0.020		0.020	ug/L	16-NOV-17	4.1	4.1
	Acenaphthylene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Anthracene	<0.020		0.020	ug/L	16-NOV-17	2.4	2.4
	Benzo(a)anthracene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Benzo(a)pyrene	<0.010		0.010	ug/L	16-NOV-17	0.01	0.01
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Chrysene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	Fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.41	0.41
	Fluorene	<0.020		0.020	ug/L	16-NOV-17	120	120
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	16-NOV-17	3.2	3.2
	1-Methylnaphthalene	<0.020		0.020	ug/L	16-NOV-17	3.2	3.2
	2-Methylnaphthalene	<0.020		0.020	ug/L	16-NOV-17	3.2	3.2
	Naphthalene	<0.050		0.050	ug/L	16-NOV-17	11	11
	Phenanthrene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Pyrene	<0.020		0.020	ug/L	16-NOV-17	4.1	4.1
	Surrogate: d10-Acenaphthene	96.3		60-140	%	16-NOV-17		
	Surrogate: d12-Chrysene	99.4		60-140	%	16-NOV-17		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Table with columns: Sample Details Grouping, Analyte, Result, Qualifier, D.L., Units, Analyzed, Guideline Limits #1, #2. Rows include Polycyclic Aromatic Hydrocarbons, Physical Tests, Anions and Nutrients, Dissolved Metals, Speciated Metals, and Volatile Organic Compounds.

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-3	BH202							
Sampled By: CLIENT on 08-NOV-17 @ 13:00								
Matrix: WATER								
Volatile Organic Compounds								
	Chlorobenzene	<0.50		0.50	ug/L	13-NOV-17	30	30
	Dibromochloromethane	<2.0		2.0	ug/L	13-NOV-17	25	25
	Chloroform	<1.0		1.0	ug/L	13-NOV-17	2.4	22
	1,2-Dibromoethane	<0.20		0.20	ug/L	13-NOV-17	0.2	0.2
	1,2-Dichlorobenzene	<0.50		0.50	ug/L	13-NOV-17	3	3
	1,3-Dichlorobenzene	<0.50		0.50	ug/L	13-NOV-17	59	59
	1,4-Dichlorobenzene	<0.50		0.50	ug/L	13-NOV-17	1	1
	Dichlorodifluoromethane	<2.0		2.0	ug/L	13-NOV-17	590	590
	1,1-Dichloroethane	<0.50		0.50	ug/L	13-NOV-17	5	5
	1,2-Dichloroethane	<0.50		0.50	ug/L	13-NOV-17	1.6	5
	1,1-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	14
	cis-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	trans-1,2-Dichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Methylene Chloride	<5.0		5.0	ug/L	13-NOV-17	50	50
	1,2-Dichloropropane	<0.50		0.50	ug/L	13-NOV-17	5	5
	cis-1,3-Dichloropropene	<0.30		0.30	ug/L	13-NOV-17		
	trans-1,3-Dichloropropene	<0.30		0.30	ug/L	13-NOV-17		
	1,3-Dichloropropene (cis & trans)	<0.50		0.50	ug/L	13-NOV-17	0.5	0.5
	Ethylbenzene	<0.50		0.50	ug/L	13-NOV-17	2.4	2.4
	n-Hexane	<0.50		0.50	ug/L	13-NOV-17	51	520
	Methyl Ethyl Ketone	<20		20	ug/L	13-NOV-17	1800	1800
	Methyl Isobutyl Ketone	<20		20	ug/L	13-NOV-17	640	640
	MTBE	<2.0		2.0	ug/L	13-NOV-17	15	15
	Styrene	<0.50		0.50	ug/L	13-NOV-17	5.4	5.4
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1.1	1.1
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1	1
	Tetrachloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Toluene	<0.50		0.50	ug/L	13-NOV-17	24	24
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	200	200
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	4.7	5
	Trichloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	5
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-NOV-17	150	150
	Vinyl chloride	<0.50		0.50	ug/L	13-NOV-17	0.5	1.7
	o-Xylene	<0.30		0.30	ug/L	13-NOV-17		
	m+p-Xylenes	<0.40		0.40	ug/L	13-NOV-17		
	Xylenes (Total)	<0.50		0.50	ug/L	13-NOV-17	300	300
	Surrogate: 4-Bromofluorobenzene	96.5		70-130	%	13-NOV-17		
	Surrogate: 1,4-Difluorobenzene	98.6		70-130	%	13-NOV-17		
Hydrocarbons								
	F1 (C6-C10)	<25		25	ug/L	13-NOV-17	750	750
	F1-BTEX	<25		25	ug/L	16-NOV-17	750	750
	F2 (C10-C16)	<100		100	ug/L	14-NOV-17	150	150
	F2-Naphth	<100		100	ug/L	16-NOV-17		
	F3 (C16-C34)	<250		250	ug/L	14-NOV-17	500	500
	F3-PAH	<250		250	ug/L	16-NOV-17		
	F4 (C34-C50)	<250		250	ug/L	14-NOV-17	500	500

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1		#2	
L2020783-3 BH202										
Sampled By: CLIENT on 08-NOV-17 @ 13:00										
Matrix: WATER										
Hydrocarbons										
Total Hydrocarbons (C6-C50)		<370		370	ug/L	16-NOV-17				
Chrom. to baseline at nC50		YES			No Unit	14-NOV-17				
Surrogate: 2-Bromobenzotrifluoride		99.8		60-140	%	14-NOV-17				
Surrogate: 3,4-Dichlorotoluene		108.3		60-140	%	13-NOV-17				
Polycyclic Aromatic Hydrocarbons										
Acenaphthene		<0.020		0.020	ug/L	16-NOV-17	4.1	4.1		
Acenaphthylene		<0.020		0.020	ug/L	16-NOV-17	1	1		
Anthracene		<0.020		0.020	ug/L	16-NOV-17	2.4	2.4		
Benzo(a)anthracene		<0.020		0.020	ug/L	16-NOV-17	1	1		
Benzo(a)pyrene		<0.010		0.010	ug/L	16-NOV-17	0.01	0.01		
Benzo(b)fluoranthene		<0.020		0.020	ug/L	16-NOV-17	0.1	0.1		
Benzo(g,h,i)perylene		<0.020		0.020	ug/L	16-NOV-17	0.2	0.2		
Benzo(k)fluoranthene		<0.020		0.020	ug/L	16-NOV-17	0.1	0.1		
Chrysene		<0.020		0.020	ug/L	16-NOV-17	0.1	0.1		
Dibenzo(ah)anthracene		<0.020		0.020	ug/L	16-NOV-17	0.2	0.2		
Fluoranthene		<0.020		0.020	ug/L	16-NOV-17	0.41	0.41		
Fluorene		<0.020		0.020	ug/L	16-NOV-17	120	120		
Indeno(1,2,3-cd)pyrene		<0.020		0.020	ug/L	16-NOV-17	0.2	0.2		
1+2-Methylnaphthalenes		<0.028		0.028	ug/L	16-NOV-17	3.2	3.2		
1-Methylnaphthalene		<0.020		0.020	ug/L	16-NOV-17	3.2	3.2		
2-Methylnaphthalene		0.024		0.020	ug/L	16-NOV-17	3.2	3.2		
Naphthalene		<0.050		0.050	ug/L	16-NOV-17	11	11		
Phenanthrene		<0.020		0.020	ug/L	16-NOV-17	1	1		
Pyrene		<0.020		0.020	ug/L	16-NOV-17	4.1	4.1		
Surrogate: d10-Acenaphthene		107.1		60-140	%	16-NOV-17				
Surrogate: d12-Chrysene		116.2		60-140	%	16-NOV-17				
Surrogate: d8-Naphthalene		107.3		60-140	%	16-NOV-17				
Surrogate: d10-Phenanthrene		119.3		60-140	%	16-NOV-17				
L2020783-4 BH203										
Sampled By: CLIENT on 08-NOV-17 @ 16:00										
Matrix: WATER										
Physical Tests										
Conductivity		0.302		0.0030	mS/cm	10-NOV-17				
pH		8.09		0.10	pH units	10-NOV-17				
Anions and Nutrients										
Chloride (Cl)		5.20		0.50	mg/L	10-NOV-17	790	790		
Cyanides										
Cyanide, Weak Acid Diss		<2.0		2.0	ug/L	10-NOV-17	66	66		
Dissolved Metals										
Dissolved Mercury Filtration Location		FIELD			No Unit	10-NOV-17				
Dissolved Metals Filtration Location		FIELD			No Unit	10-NOV-17				
Antimony (Sb)-Dissolved		<0.10		0.10	ug/L	10-NOV-17	6	6		
Arsenic (As)-Dissolved		1.01		0.10	ug/L	10-NOV-17	25	25		
Barium (Ba)-Dissolved		61.5		0.10	ug/L	10-NOV-17	1000	1000		
Beryllium (Be)-Dissolved		<0.10		0.10	ug/L	10-NOV-17	4	4		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Table with columns: Sample Details Grouping, Analyte, Result, Qualifier, D.L., Units, Analyzed, Guideline Limits #1, #2. Rows include Dissolved Metals (Boron, Cadmium, Chromium, etc.) and Speciated Metals (Chromium, Hexavalent).

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-4	BH203							
Sampled By: CLIENT on 08-NOV-17 @ 16:00								
Matrix: WATER								
Volatile Organic Compounds								
	Methyl Ethyl Ketone	<20		20	ug/L	13-NOV-17	1800	1800
	Methyl Isobutyl Ketone	<20		20	ug/L	13-NOV-17	640	640
	MTBE	<2.0		2.0	ug/L	13-NOV-17	15	15
	Styrene	<0.50		0.50	ug/L	13-NOV-17	5.4	5.4
	1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1.1	1.1
	1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L	13-NOV-17	1	1
	Tetrachloroethylene	<0.50		0.50	ug/L	13-NOV-17	1.6	17
	Toluene	<0.50		0.50	ug/L	13-NOV-17	24	24
	1,1,1-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	200	200
	1,1,2-Trichloroethane	<0.50		0.50	ug/L	13-NOV-17	4.7	5
	Trichloroethylene	0.86		0.50	ug/L	13-NOV-17	1.6	5
	Trichlorofluoromethane	<5.0		5.0	ug/L	13-NOV-17	150	150
	Vinyl chloride	<0.50		0.50	ug/L	13-NOV-17	0.5	1.7
	o-Xylene	<0.30		0.30	ug/L	13-NOV-17		
	m+p-Xylenes	<0.40		0.40	ug/L	13-NOV-17		
	Xylenes (Total)	<0.50		0.50	ug/L	13-NOV-17	300	300
	Surrogate: 4-Bromofluorobenzene	96.3		70-130	%	13-NOV-17		
	Surrogate: 1,4-Difluorobenzene	99.2		70-130	%	13-NOV-17		
Hydrocarbons								
	F1 (C6-C10)	<25		25	ug/L	13-NOV-17	750	750
	F1-BTEX	<25		25	ug/L	16-NOV-17	750	750
	F2 (C10-C16)	<100		100	ug/L	14-NOV-17	150	150
	F2-Naphth	<100		100	ug/L	16-NOV-17		
	F3 (C16-C34)	<250		250	ug/L	14-NOV-17	500	500
	F3-PAH	<250		250	ug/L	16-NOV-17		
	F4 (C34-C50)	<250		250	ug/L	14-NOV-17	500	500
	Total Hydrocarbons (C6-C50)	<370		370	ug/L	16-NOV-17		
	Chrom. to baseline at nC50	YES			No Unit	14-NOV-17		
	Surrogate: 2-Bromobenzotrifluoride	98.8		60-140	%	14-NOV-17		
	Surrogate: 3,4-Dichlorotoluene	101.8		60-140	%	13-NOV-17		
Polycyclic Aromatic Hydrocarbons								
	Acenaphthene	<0.020		0.020	ug/L	16-NOV-17	4.1	4.1
	Acenaphthylene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Anthracene	<0.020		0.020	ug/L	16-NOV-17	2.4	2.4
	Benzo(a)anthracene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Benzo(a)pyrene	<0.010		0.010	ug/L	16-NOV-17	0.01	0.01
	Benzo(b)fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Benzo(g,h,i)perylene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	Benzo(k)fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Chrysene	<0.020		0.020	ug/L	16-NOV-17	0.1	0.1
	Dibenzo(ah)anthracene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	Fluoranthene	<0.020		0.020	ug/L	16-NOV-17	0.41	0.41
	Fluorene	<0.020		0.020	ug/L	16-NOV-17	120	120
	Indeno(1,2,3-cd)pyrene	<0.020		0.020	ug/L	16-NOV-17	0.2	0.2
	1+2-Methylnaphthalenes	<0.028		0.028	ug/L	16-NOV-17	3.2	3.2
	1-Methylnaphthalene	<0.020		0.020	ug/L	16-NOV-17	3.2	3.2

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-4	BH203							
Sampled By: CLIENT on 08-NOV-17 @ 16:00								
Matrix: WATER								
Polycyclic Aromatic Hydrocarbons								
	2-Methylnaphthalene	<0.020		0.020	ug/L	16-NOV-17	3.2	3.2
	Naphthalene	<0.050		0.050	ug/L	16-NOV-17	11	11
	Phenanthrene	<0.020		0.020	ug/L	16-NOV-17	1	1
	Pyrene	<0.020		0.020	ug/L	16-NOV-17	4.1	4.1
	Surrogate: d10-Acenaphthene	99.5		60-140	%	16-NOV-17		
	Surrogate: d12-Chrysene	98.0		60-140	%	16-NOV-17		
	Surrogate: d8-Naphthalene	112.8		60-140	%	16-NOV-17		
	Surrogate: d10-Phenanthrene	116.5		60-140	%	16-NOV-17		
L2020783-5	DUP1							
Sampled By: CLIENT on 08-NOV-17 @ 08:30								
Matrix: WATER								
Physical Tests								
	Conductivity	0.358		0.0030	mS/cm	10-NOV-17		
	pH	7.99		0.10	pH units	10-NOV-17		
Anions and Nutrients								
	Chloride (Cl)	31.4		0.50	mg/L	10-NOV-17	790	790
Cyanides								
	Cyanide, Weak Acid Diss	<2.0		2.0	ug/L	10-NOV-17	66	66
Dissolved Metals								
	Dissolved Mercury Filtration Location	FIELD			No Unit	10-NOV-17		
	Dissolved Metals Filtration Location	FIELD			No Unit	10-NOV-17		
	Antimony (Sb)-Dissolved	0.21		0.10	ug/L	10-NOV-17	6	6
	Arsenic (As)-Dissolved	0.95		0.10	ug/L	10-NOV-17	25	25
	Barium (Ba)-Dissolved	18.9		0.10	ug/L	10-NOV-17	1000	1000
	Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	10-NOV-17	4	4
	Boron (B)-Dissolved	22		10	ug/L	10-NOV-17	5000	5000
	Cadmium (Cd)-Dissolved	<0.010		0.010	ug/L	10-NOV-17	2.7	2.7
	Chromium (Cr)-Dissolved	<0.50		0.50	ug/L	10-NOV-17	50	50
	Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	10-NOV-17	3.8	3.8
	Copper (Cu)-Dissolved	1.75		0.20	ug/L	10-NOV-17	87	87
	Lead (Pb)-Dissolved	<0.050		0.050	ug/L	10-NOV-17	10	10
	Mercury (Hg)-Dissolved	<0.010		0.010	ug/L	13-NOV-17	0.29	1
	Molybdenum (Mo)-Dissolved	2.96		0.050	ug/L	10-NOV-17	70	70
	Nickel (Ni)-Dissolved	0.94		0.50	ug/L	10-NOV-17	100	100
	Selenium (Se)-Dissolved	0.190		0.050	ug/L	10-NOV-17	10	10
	Silver (Ag)-Dissolved	<0.050		0.050	ug/L	10-NOV-17	1.5	1.5
	Sodium (Na)-Dissolved	23200		500	ug/L	10-NOV-17	490000	490000
	Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	10-NOV-17	2	2
	Uranium (U)-Dissolved	0.644		0.010	ug/L	10-NOV-17	20	20
	Vanadium (V)-Dissolved	0.86		0.50	ug/L	10-NOV-17	6.2	6.2
	Zinc (Zn)-Dissolved	1.7		1.0	ug/L	10-NOV-17	1100	1100
Speciated Metals								
	Chromium, Hexavalent	<1.0		1.0	ug/L	16-NOV-17	25	25
Volatile Organic Compounds								

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2020783-5	DUP1							
Sampled By: CLIENT on 08-NOV-17 @ 08:30								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	13-NOV-17	2700	2700
Benzene		<0.50		0.50	ug/L	13-NOV-17	5	5
Bromodichloromethane		4.4		2.0	ug/L	13-NOV-17	16	16
Bromoform		<5.0		5.0	ug/L	13-NOV-17	25	25
Bromomethane		<0.50		0.50	ug/L	13-NOV-17	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	13-NOV-17	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	13-NOV-17	30	30
Dibromochloromethane		2.8		2.0	ug/L	13-NOV-17	25	25
Chloroform		13.9		1.0	ug/L	13-NOV-17	*2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	13-NOV-17	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	13-NOV-17	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	13-NOV-17	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	13-NOV-17	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	13-NOV-17	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	13-NOV-17	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	13-NOV-17	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	13-NOV-17	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	13-NOV-17	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	13-NOV-17	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	13-NOV-17	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	13-NOV-17	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	13-NOV-17		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	13-NOV-17		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	13-NOV-17	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	13-NOV-17	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	13-NOV-17	51	520
Methyl Ethyl Ketone		<20		20	ug/L	13-NOV-17	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	13-NOV-17	640	640
MTBE		<2.0		2.0	ug/L	13-NOV-17	15	15
Styrene		<0.50		0.50	ug/L	13-NOV-17	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	13-NOV-17	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	13-NOV-17	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	13-NOV-17	1.6	17
Toluene		<0.50		0.50	ug/L	13-NOV-17	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	13-NOV-17	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	13-NOV-17	4.7	5
Trichloroethylene		1.03		0.50	ug/L	13-NOV-17	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	13-NOV-17	150	150
Vinyl chloride		<0.50		0.50	ug/L	13-NOV-17	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	13-NOV-17		
m+p-Xylenes		<0.40		0.40	ug/L	13-NOV-17		
Xylenes (Total)		<0.50		0.50	ug/L	13-NOV-17	300	300
Surrogate: 4-Bromofluorobenzene		96.8		70-130	%	13-NOV-17		
Surrogate: 1,4-Difluorobenzene		98.6		70-130	%	13-NOV-17		
Hydrocarbons								
F1 (C6-C10)		<25		25	ug/L	13-NOV-17	750	750

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte						#1	#2		
L2020783-5	DUP1									
Sampled By: CLIENT on 08-NOV-17 @ 08:30										
Matrix: WATER										
Hydrocarbons										
F1-BTEX		<25		25	ug/L	16-NOV-17	750	750		
F2 (C10-C16)		<100		100	ug/L	14-NOV-17	150	150		
F2-Naphth		<100		100	ug/L	16-NOV-17				
F3 (C16-C34)		<250		250	ug/L	14-NOV-17	500	500		
F3-PAH		<250		250	ug/L	16-NOV-17				
F4 (C34-C50)		<250		250	ug/L	14-NOV-17	500	500		
Total Hydrocarbons (C6-C50)		<370		370	ug/L	16-NOV-17				
Chrom. to baseline at nC50		YES			No Unit	14-NOV-17				
Surrogate: 2-Bromobenzotrifluoride		94.1		60-140	%	14-NOV-17				
Surrogate: 3,4-Dichlorotoluene		105.1		60-140	%	13-NOV-17				
Polycyclic Aromatic Hydrocarbons										
Acenaphthene		<0.020		0.020	ug/L	16-NOV-17	4.1	4.1		
Acenaphthylene		<0.020		0.020	ug/L	16-NOV-17	1	1		
Anthracene		<0.020		0.020	ug/L	16-NOV-17	2.4	2.4		
Benzo(a)anthracene		<0.020		0.020	ug/L	16-NOV-17	1	1		
Benzo(a)pyrene		<0.010		0.010	ug/L	16-NOV-17	0.01	0.01		
Benzo(b)fluoranthene		<0.020		0.020	ug/L	16-NOV-17	0.1	0.1		
Benzo(g,h,i)perylene		<0.020		0.020	ug/L	16-NOV-17	0.2	0.2		
Benzo(k)fluoranthene		<0.020		0.020	ug/L	16-NOV-17	0.1	0.1		
Chrysene		<0.020		0.020	ug/L	16-NOV-17	0.1	0.1		
Dibenzo(ah)anthracene		<0.020		0.020	ug/L	16-NOV-17	0.2	0.2		
Fluoranthene		<0.020		0.020	ug/L	16-NOV-17	0.41	0.41		
Fluorene		<0.020		0.020	ug/L	16-NOV-17	120	120		
Indeno(1,2,3-cd)pyrene		<0.020		0.020	ug/L	16-NOV-17	0.2	0.2		
1+2-Methylnaphthalenes		<0.028		0.028	ug/L	16-NOV-17	3.2	3.2		
1-Methylnaphthalene		<0.020		0.020	ug/L	16-NOV-17	3.2	3.2		
2-Methylnaphthalene		<0.020		0.020	ug/L	16-NOV-17	3.2	3.2		
Naphthalene		<0.050		0.050	ug/L	16-NOV-17	11	11		
Phenanthrene		<0.020		0.020	ug/L	16-NOV-17	1	1		
Pyrene		<0.020		0.020	ug/L	16-NOV-17	4.1	4.1		
Surrogate: d10-Acenaphthene		100.7		60-140	%	16-NOV-17				
Surrogate: d12-Chrysene		96.9		60-140	%	16-NOV-17				
Surrogate: d8-Naphthalene		102.5		60-140	%	16-NOV-17				
Surrogate: d10-Phenanthrene		123.3		60-140	%	16-NOV-17				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use

Reference Information

Sample Parameter Qualifier key 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).

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).

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
--------------	-------	--------------------------------	----------------------

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).

Reference Information

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. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.

Analysis conducted in accordance 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.

Analysis conducted in accordance 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	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.



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 1 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R3882479							
WG2661467-9	DUP	WG2661467-10						
Chloride (Cl)		31.3	31.4		mg/L	0.1	20	10-NOV-17
WG2661467-7	LCS							
Chloride (Cl)			101.5		%		90-110	10-NOV-17
WG2661467-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	10-NOV-17
WG2661467-8	MS	WG2661467-10						
Chloride (Cl)			101.1		%		75-125	10-NOV-17
CN-WAD-R511-WT		Water						
Batch	R3883219							
WG2660773-3	DUP	L2020209-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	10-NOV-17
WG2660773-2	LCS							
Cyanide, Weak Acid Diss			92.9		%		80-120	10-NOV-17
WG2660773-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	10-NOV-17
WG2660773-4	MS	L2020209-1						
Cyanide, Weak Acid Diss			95.5		%		70-130	10-NOV-17
Batch	R3884722							
WG2662749-3	DUP	L2020783-1						
Cyanide, Weak Acid Diss		<20	<20	RPD-NA	ug/L	N/A	20	13-NOV-17
WG2662749-2	LCS							
Cyanide, Weak Acid Diss			92.2		%		80-120	13-NOV-17
WG2662749-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	13-NOV-17
WG2662749-4	MS	L2020783-1						
Cyanide, Weak Acid Diss			92.9		%		70-130	13-NOV-17
CR-CR6-IC-R511-WT		Water						
Batch	R3886833							
WG2665049-4	DUP	WG2665049-3						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	16-NOV-17
WG2665049-2	LCS							
Chromium, Hexavalent			104.1		%		80-120	16-NOV-17
WG2665049-1	MB							
Chromium, Hexavalent			<1.0		ug/L		1	16-NOV-17
WG2665049-5	MS	WG2665049-3						
Chromium, Hexavalent			100.9		%		70-130	16-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 2 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-R511-WT		Water						
Batch	R3881371							
WG2661381-4	DUP	WG2661381-3						
Conductivity		0.158	0.154		mS/cm	2.7	10	10-NOV-17
WG2661381-2	LCS							
Conductivity			98.3		%		90-110	10-NOV-17
WG2661381-1	MB							
Conductivity			<0.0030		mS/cm		0.003	10-NOV-17
F1-HS-511-WT		Water						
Batch	R3882712							
WG2654808-4	DUP	WG2654808-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	13-NOV-17
WG2654808-1	LCS							
F1 (C6-C10)			95.7		%		80-120	13-NOV-17
WG2654808-2	MB							
F1 (C6-C10)			<25		ug/L		25	13-NOV-17
Surrogate: 3,4-Dichlorotoluene			103.9		%		60-140	13-NOV-17
WG2654808-5	MS	WG2654808-3						
F1 (C6-C10)			82.7		%		60-140	13-NOV-17
F2-F4-511-WT		Water						
Batch	R3884825							
WG2662851-2	LCS							
F2 (C10-C16)			92.5		%		70-130	14-NOV-17
F3 (C16-C34)			94.0		%		70-130	14-NOV-17
F4 (C34-C50)			99.4		%		70-130	14-NOV-17
WG2662851-3	LCSD	WG2662851-2						
F2 (C10-C16)		92.5	94.1		%	1.7	50	14-NOV-17
F3 (C16-C34)		94.0	101.6		%	7.8	50	14-NOV-17
F4 (C34-C50)		99.4	105.4		%	5.9	50	14-NOV-17
WG2662851-1	MB							
F2 (C10-C16)			<100		ug/L		100	14-NOV-17
F3 (C16-C34)			<250		ug/L		250	14-NOV-17
F4 (C34-C50)			<250		ug/L		250	14-NOV-17
Surrogate: 2-Bromobenzotrifluoride			99.4		%		60-140	14-NOV-17
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 3 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R3883212							
WG2661687-4	DUP	WG2661687-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	13-NOV-17
WG2661687-2	LCS							
Mercury (Hg)-Dissolved			99.4		%		80-120	13-NOV-17
WG2661687-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	13-NOV-17
WG2661687-6	MS	WG2661687-5						
Mercury (Hg)-Dissolved			97.9		%		70-130	13-NOV-17
MET-D-UG/L-MS-WT		Water						
Batch	R3883267							
WG2661844-4	DUP	WG2661844-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	10-NOV-17
Arsenic (As)-Dissolved		1.95	2.00		ug/L	2.4	20	10-NOV-17
Barium (Ba)-Dissolved		67.4	67.0		ug/L	0.7	20	10-NOV-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	10-NOV-17
Boron (B)-Dissolved		100	102		ug/L	2.1	20	10-NOV-17
Cadmium (Cd)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	10-NOV-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	10-NOV-17
Cobalt (Co)-Dissolved		0.31	0.33		ug/L	5.6	20	10-NOV-17
Copper (Cu)-Dissolved		<0.20	<0.20	RPD-NA	ug/L	N/A	20	13-NOV-17
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	10-NOV-17
Molybdenum (Mo)-Dissolved		1.44	1.46		ug/L	1.4	20	10-NOV-17
Nickel (Ni)-Dissolved		0.55	1.05	J	ug/L	0.50	1	10-NOV-17
Selenium (Se)-Dissolved		0.172	0.189		ug/L	9.5	20	10-NOV-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	10-NOV-17
Sodium (Na)-Dissolved		44000	43700		ug/L	0.7	20	10-NOV-17
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	10-NOV-17
Uranium (U)-Dissolved		0.351	0.341		ug/L	2.8	20	10-NOV-17
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	10-NOV-17
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	10-NOV-17
WG2661844-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	10-NOV-17
Arsenic (As)-Dissolved			101.7		%		80-120	10-NOV-17
Barium (Ba)-Dissolved			100.9		%		80-120	10-NOV-17
Beryllium (Be)-Dissolved			98.6		%		80-120	10-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 4 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3883267							
WG2661844-2	LCS							
Boron (B)-Dissolved			96.2		%		80-120	10-NOV-17
Cadmium (Cd)-Dissolved			99.99		%		80-120	10-NOV-17
Chromium (Cr)-Dissolved			98.9		%		80-120	10-NOV-17
Cobalt (Co)-Dissolved			99.8		%		80-120	10-NOV-17
Copper (Cu)-Dissolved			99.1		%		80-120	10-NOV-17
Lead (Pb)-Dissolved			103.7		%		80-120	10-NOV-17
Molybdenum (Mo)-Dissolved			101.1		%		80-120	10-NOV-17
Nickel (Ni)-Dissolved			99.6		%		80-120	10-NOV-17
Selenium (Se)-Dissolved			98.4		%		80-120	10-NOV-17
Silver (Ag)-Dissolved			103.4		%		80-120	10-NOV-17
Sodium (Na)-Dissolved			100.2		%		80-120	10-NOV-17
Thallium (Tl)-Dissolved			101.6		%		80-120	10-NOV-17
Uranium (U)-Dissolved			101.9		%		80-120	10-NOV-17
Vanadium (V)-Dissolved			100.0		%		80-120	10-NOV-17
Zinc (Zn)-Dissolved			93.9		%		80-120	10-NOV-17
WG2661844-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	10-NOV-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	10-NOV-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	10-NOV-17
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	10-NOV-17
Boron (B)-Dissolved			<10		ug/L		10	10-NOV-17
Cadmium (Cd)-Dissolved			<0.010		ug/L		0.01	10-NOV-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	10-NOV-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	10-NOV-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	10-NOV-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	10-NOV-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	10-NOV-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	10-NOV-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	10-NOV-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	10-NOV-17
Sodium (Na)-Dissolved			<500		ug/L		500	10-NOV-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	10-NOV-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	10-NOV-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	10-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 5 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3883267							
WG2661844-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	10-NOV-17
WG2661844-5 MS		WG2661844-6						
Antimony (Sb)-Dissolved			96.3		%		70-130	10-NOV-17
Arsenic (As)-Dissolved			100.4		%		70-130	10-NOV-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	10-NOV-17
Beryllium (Be)-Dissolved			97.2		%		70-130	10-NOV-17
Boron (B)-Dissolved			N/A	MS-B	%		-	10-NOV-17
Cadmium (Cd)-Dissolved			96.0		%		70-130	10-NOV-17
Chromium (Cr)-Dissolved			96.1		%		70-130	10-NOV-17
Cobalt (Co)-Dissolved			91.8		%		70-130	10-NOV-17
Copper (Cu)-Dissolved			89.0		%		70-130	10-NOV-17
Lead (Pb)-Dissolved			94.4		%		70-130	10-NOV-17
Molybdenum (Mo)-Dissolved			96.5		%		70-130	10-NOV-17
Nickel (Ni)-Dissolved			90.2		%		70-130	10-NOV-17
Selenium (Se)-Dissolved			99.4		%		70-130	10-NOV-17
Silver (Ag)-Dissolved			72.0		%		70-130	13-NOV-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	10-NOV-17
Thallium (Tl)-Dissolved			93.7		%		70-130	10-NOV-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	10-NOV-17
Vanadium (V)-Dissolved			97.5		%		70-130	10-NOV-17
Zinc (Zn)-Dissolved			94.0		%		70-130	10-NOV-17
PAH-511-WT								
	Water							
Batch	R3886142							
WG2662851-2 LCS								
1-Methylnaphthalene			83.4		%		50-140	16-NOV-17
2-Methylnaphthalene			83.0		%		50-140	16-NOV-17
Acenaphthene			83.0		%		50-140	16-NOV-17
Acenaphthylene			86.2		%		50-140	16-NOV-17
Anthracene			88.0		%		50-140	16-NOV-17
Benzo(a)anthracene			89.7		%		50-140	16-NOV-17
Benzo(a)pyrene			92.4		%		50-140	16-NOV-17
Benzo(b)fluoranthene			89.3		%		50-140	16-NOV-17
Benzo(g,h,i)perylene			99.4		%		50-140	16-NOV-17
Benzo(k)fluoranthene			99.9		%		50-140	16-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 6 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3886142							
WG2662851-2	LCS							
Chrysene			92.6		%		50-140	16-NOV-17
Dibenzo(ah)anthracene			96.4		%		50-140	16-NOV-17
Fluoranthene			88.6		%		50-140	16-NOV-17
Fluorene			89.4		%		50-140	16-NOV-17
Indeno(1,2,3-cd)pyrene			100.0		%		50-140	16-NOV-17
Naphthalene			85.6		%		50-140	16-NOV-17
Phenanthrene			97.5		%		50-140	16-NOV-17
Pyrene			95.6		%		50-140	16-NOV-17
WG2662851-3	LCSD	WG2662851-2						
1-Methylnaphthalene		83.4	76.6		%	8.5	50	16-NOV-17
2-Methylnaphthalene		83.0	76.6		%	8.0	50	16-NOV-17
Acenaphthene		83.0	83.9		%	1.2	50	16-NOV-17
Acenaphthylene		86.2	88.6		%	2.7	50	16-NOV-17
Anthracene		88.0	82.9		%	6.0	50	16-NOV-17
Benzo(a)anthracene		89.7	93.4		%	4.0	50	16-NOV-17
Benzo(a)pyrene		92.4	95.8		%	3.6	50	16-NOV-17
Benzo(b)fluoranthene		89.3	87.8		%	1.6	50	16-NOV-17
Benzo(g,h,i)perylene		99.4	101.0		%	1.6	50	16-NOV-17
Benzo(k)fluoranthene		99.9	103.0		%	3.0	50	16-NOV-17
Chrysene		92.6	95.5		%	3.1	50	16-NOV-17
Dibenzo(ah)anthracene		96.4	98.6		%	2.3	50	16-NOV-17
Fluoranthene		88.6	92.1		%	3.8	50	16-NOV-17
Fluorene		89.4	91.4		%	2.3	50	16-NOV-17
Indeno(1,2,3-cd)pyrene		100.0	102.9		%	2.8	50	16-NOV-17
Naphthalene		85.6	72.9		%	16	50	16-NOV-17
Phenanthrene		97.5	85.8		%	13	50	16-NOV-17
Pyrene		95.6	97.8		%	2.3	50	16-NOV-17
WG2662851-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	16-NOV-17
2-Methylnaphthalene			<0.020		ug/L		0.02	16-NOV-17
Acenaphthene			<0.020		ug/L		0.02	16-NOV-17
Acenaphthylene			<0.020		ug/L		0.02	16-NOV-17
Anthracene			<0.020		ug/L		0.02	16-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 7 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3886142							
WG2662851-1 MB								
Benzo(a)anthracene			<0.020		ug/L		0.02	16-NOV-17
Benzo(a)pyrene			<0.010		ug/L		0.01	16-NOV-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	16-NOV-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	16-NOV-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	16-NOV-17
Chrysene			<0.020		ug/L		0.02	16-NOV-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	16-NOV-17
Fluoranthene			<0.020		ug/L		0.02	16-NOV-17
Fluorene			<0.020		ug/L		0.02	16-NOV-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	16-NOV-17
Naphthalene			<0.050		ug/L		0.05	16-NOV-17
Phenanthrene			<0.020		ug/L		0.02	16-NOV-17
Pyrene			<0.020		ug/L		0.02	16-NOV-17
Surrogate: d8-Naphthalene			117.0		%		60-140	16-NOV-17
Surrogate: d10-Phenanthrene			119.9		%		60-140	16-NOV-17
Surrogate: d12-Chrysene			107.9		%		60-140	16-NOV-17
Surrogate: d10-Acenaphthene			103.3		%		60-140	16-NOV-17
PH-WT		Water						
Batch	R3881371							
WG2661381-4 DUP		WG2661381-3						
pH		7.66	7.73	J	pH units	0.07	0.2	10-NOV-17
WG2661381-2 LCS								
pH			7.01		pH units		6.9-7.1	10-NOV-17
VOC-511-HS-WT		Water						
Batch	R3882712							
WG2654808-4 DUP		WG2654808-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-NOV-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 8 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3882712							
WG2654808-4	DUP	WG2654808-3						
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	13-NOV-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-NOV-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-NOV-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-NOV-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	13-NOV-17
cis-1,2-Dichloroethylene		0.56	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-NOV-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-NOV-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-NOV-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	13-NOV-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-NOV-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-NOV-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-NOV-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-NOV-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-NOV-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-NOV-17
Trichloroethylene		22.8	22.1		ug/L	3.1	30	13-NOV-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-NOV-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-NOV-17
WG2654808-1	LCS							



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 9 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3882712							
WG2654808-1	LCS							
1,1,1,2-Tetrachloroethane			101.5		%		70-130	13-NOV-17
1,1,2,2-Tetrachloroethane			108.4		%		70-130	13-NOV-17
1,1,1-Trichloroethane			106.0		%		70-130	13-NOV-17
1,1,2-Trichloroethane			101.2		%		70-130	13-NOV-17
1,1-Dichloroethane			108.6		%		70-130	13-NOV-17
1,1-Dichloroethylene			92.6		%		70-130	13-NOV-17
1,2-Dibromoethane			99.9		%		70-130	13-NOV-17
1,2-Dichlorobenzene			98.8		%		70-130	13-NOV-17
1,2-Dichloroethane			103.4		%		70-130	13-NOV-17
1,2-Dichloropropane			103.1		%		70-130	13-NOV-17
1,3-Dichlorobenzene			97.0		%		70-130	13-NOV-17
1,4-Dichlorobenzene			98.8		%		70-130	13-NOV-17
Acetone			116.4		%		60-140	13-NOV-17
Benzene			102.3		%		70-130	13-NOV-17
Bromodichloromethane			99.9		%		70-130	13-NOV-17
Bromoform			100.0		%		70-130	13-NOV-17
Bromomethane			99.7		%		60-140	13-NOV-17
Carbon tetrachloride			103.3		%		70-130	13-NOV-17
Chlorobenzene			101.7		%		70-130	13-NOV-17
Chloroform			104.9		%		70-130	13-NOV-17
cis-1,2-Dichloroethylene			94.4		%		70-130	13-NOV-17
cis-1,3-Dichloropropene			100.7		%		70-130	13-NOV-17
Dibromochloromethane			103.4		%		70-130	13-NOV-17
Dichlorodifluoromethane			80.2		%		50-140	13-NOV-17
Ethylbenzene			94.1		%		70-130	13-NOV-17
n-Hexane			111.0		%		70-130	13-NOV-17
m+p-Xylenes			98.3		%		70-130	13-NOV-17
Methyl Ethyl Ketone			108.1		%		60-140	13-NOV-17
Methyl Isobutyl Ketone			95.9		%		60-140	13-NOV-17
Methylene Chloride			106.6		%		70-130	13-NOV-17
MTBE			99.9		%		70-130	13-NOV-17
o-Xylene			95.1		%		70-130	13-NOV-17
Styrene			95.6		%		70-130	13-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 10 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3882712							
WG2654808-1	LCS							
Tetrachloroethylene			98.0		%		70-130	13-NOV-17
Toluene			95.1		%		70-130	13-NOV-17
trans-1,2-Dichloroethylene			101.9		%		70-130	13-NOV-17
trans-1,3-Dichloropropene			97.7		%		70-130	13-NOV-17
Trichloroethylene			102.5		%		70-130	13-NOV-17
Trichlorofluoromethane			102.4		%		60-140	13-NOV-17
Vinyl chloride			93.7		%		60-140	13-NOV-17
WG2654808-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	13-NOV-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	13-NOV-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	13-NOV-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	13-NOV-17
1,1-Dichloroethane			<0.50		ug/L		0.5	13-NOV-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	13-NOV-17
1,2-Dibromoethane			<0.20		ug/L		0.2	13-NOV-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	13-NOV-17
1,2-Dichloroethane			<0.50		ug/L		0.5	13-NOV-17
1,2-Dichloropropane			<0.50		ug/L		0.5	13-NOV-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	13-NOV-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	13-NOV-17
Acetone			<30		ug/L		30	13-NOV-17
Benzene			<0.50		ug/L		0.5	13-NOV-17
Bromodichloromethane			<2.0		ug/L		2	13-NOV-17
Bromoform			<5.0		ug/L		5	13-NOV-17
Bromomethane			<0.50		ug/L		0.5	13-NOV-17
Carbon tetrachloride			<0.20		ug/L		0.2	13-NOV-17
Chlorobenzene			<0.50		ug/L		0.5	13-NOV-17
Chloroform			<1.0		ug/L		1	13-NOV-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-NOV-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	13-NOV-17
Dibromochloromethane			<2.0		ug/L		2	13-NOV-17
Dichlorodifluoromethane			<2.0		ug/L		2	13-NOV-17
Ethylbenzene			<0.50		ug/L		0.5	13-NOV-17
n-Hexane			<0.50		ug/L		0.5	13-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 11 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3882712							
WG2654808-2 MB								
m+p-Xylenes			<0.40		ug/L		0.4	13-NOV-17
Methyl Ethyl Ketone			<20		ug/L		20	13-NOV-17
Methyl Isobutyl Ketone			<20		ug/L		20	13-NOV-17
Methylene Chloride			<5.0		ug/L		5	13-NOV-17
MTBE			<2.0		ug/L		2	13-NOV-17
o-Xylene			<0.30		ug/L		0.3	13-NOV-17
Styrene			<0.50		ug/L		0.5	13-NOV-17
Tetrachloroethylene			<0.50		ug/L		0.5	13-NOV-17
Toluene			<0.50		ug/L		0.5	13-NOV-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-NOV-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	13-NOV-17
Trichloroethylene			<0.50		ug/L		0.5	13-NOV-17
Trichlorofluoromethane			<5.0		ug/L		5	13-NOV-17
Vinyl chloride			<0.50		ug/L		0.5	13-NOV-17
Surrogate: 1,4-Difluorobenzene			98.3		%		70-130	13-NOV-17
Surrogate: 4-Bromofluorobenzene			96.2		%		70-130	13-NOV-17
WG2654808-5 MS		WG2654808-3						
1,1,1,2-Tetrachloroethane			71.5		%		50-140	13-NOV-17
1,1,2,2-Tetrachloroethane			103.4		%		50-140	13-NOV-17
1,1,1-Trichloroethane			91.0		%		50-140	13-NOV-17
1,1,2-Trichloroethane			98.4		%		50-140	13-NOV-17
1,1-Dichloroethane			102.2		%		50-140	13-NOV-17
1,1-Dichloroethylene			91.0		%		50-140	13-NOV-17
1,2-Dibromoethane			97.0		%		50-140	13-NOV-17
1,2-Dichlorobenzene			101.5		%		50-140	13-NOV-17
1,2-Dichloroethane			98.0		%		50-140	13-NOV-17
1,2-Dichloropropane			100.5		%		50-140	13-NOV-17
1,3-Dichlorobenzene			101.5		%		50-140	13-NOV-17
1,4-Dichlorobenzene			102.4		%		50-140	13-NOV-17
Acetone			153.5	RRQC	%		50-140	13-NOV-17
Benzene			102.0		%		50-140	13-NOV-17
Bromodichloromethane			98.3		%		50-140	13-NOV-17
Bromoform			97.4		%		50-140	13-NOV-17
Bromomethane			90.5		%		50-140	13-NOV-17



Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

Page 12 of 13

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3882712							
WG2654808-5 MS		WG2654808-3						
Carbon tetrachloride			86.1		%		50-140	13-NOV-17
Chlorobenzene			102.7		%		50-140	13-NOV-17
Chloroform			104.5		%		50-140	13-NOV-17
cis-1,2-Dichloroethylene			72.9		%		50-140	13-NOV-17
cis-1,3-Dichloropropene			87.4		%		50-140	13-NOV-17
Dibromochloromethane			103.9		%		50-140	13-NOV-17
Dichlorodifluoromethane			71.5		%		50-140	13-NOV-17
Ethylbenzene			93.1		%		50-140	13-NOV-17
n-Hexane			109.8		%		50-140	13-NOV-17
m+p-Xylenes			96.9		%		50-140	13-NOV-17
Methyl Ethyl Ketone			108.5		%		50-140	13-NOV-17
Methyl Isobutyl Ketone			87.0		%		50-140	13-NOV-17
Methylene Chloride			101.1		%		50-140	13-NOV-17
MTBE			98.4		%		50-140	13-NOV-17
o-Xylene			92.7		%		50-140	13-NOV-17
Styrene			89.0		%		50-140	13-NOV-17
Tetrachloroethylene			104.7		%		50-140	13-NOV-17
Toluene			97.0		%		50-140	13-NOV-17
trans-1,2-Dichloroethylene			99.6		%		50-140	13-NOV-17
trans-1,3-Dichloropropene			86.2		%		50-140	13-NOV-17
Trichloroethylene			106.0		%		50-140	13-NOV-17
Trichlorofluoromethane			99.9		%		50-140	13-NOV-17
Vinyl chloride			87.4		%		50-140	13-NOV-17

COMMENTS: -Matrix spike recovery was above ALS DQO. LCS results were acceptable.

Quality Control Report

Workorder: L2020783

Report Date: 17-NOV-17

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

Page 13 of 13

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.
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.

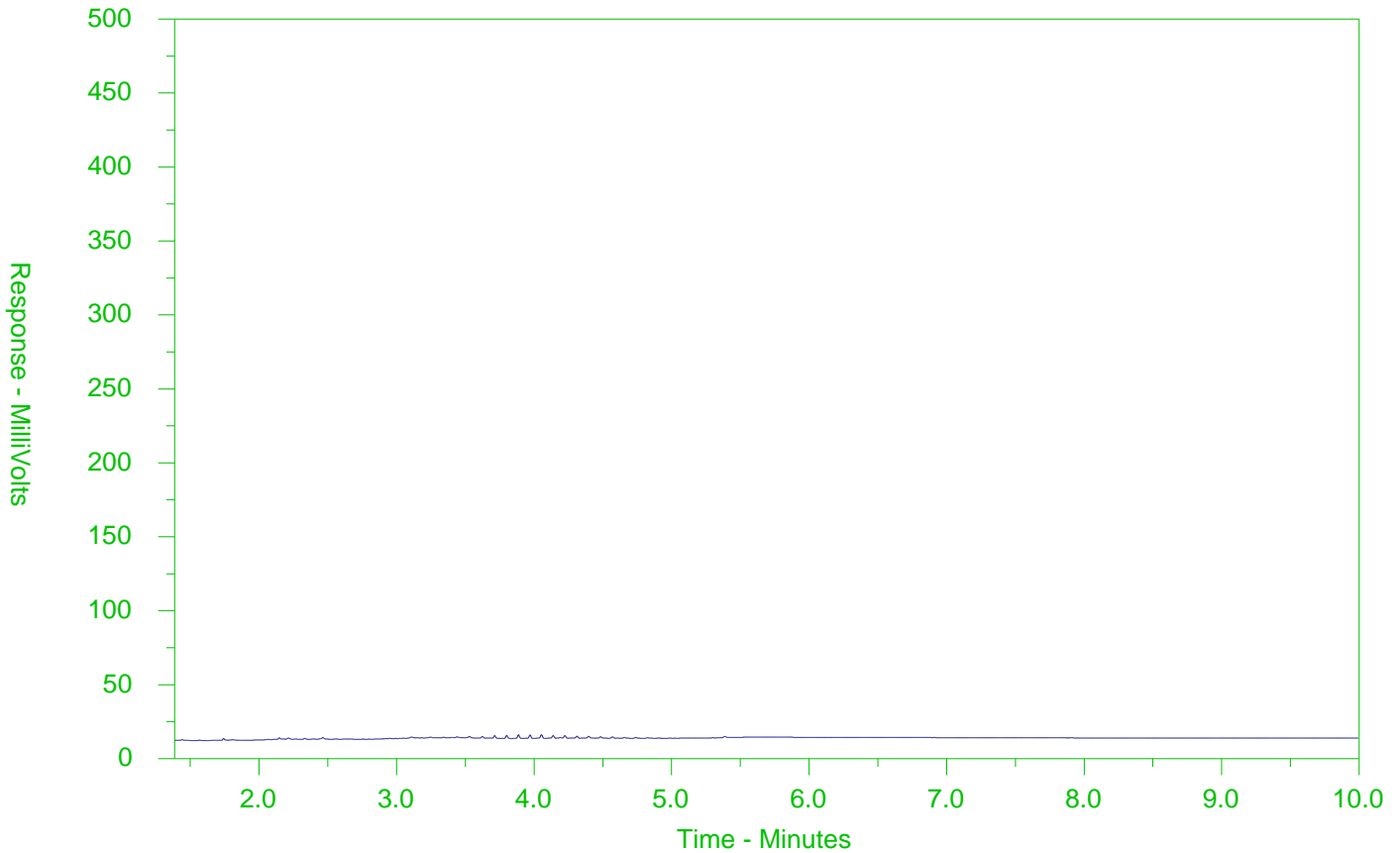
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2020783-1
 Client Sample ID: BH201-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.

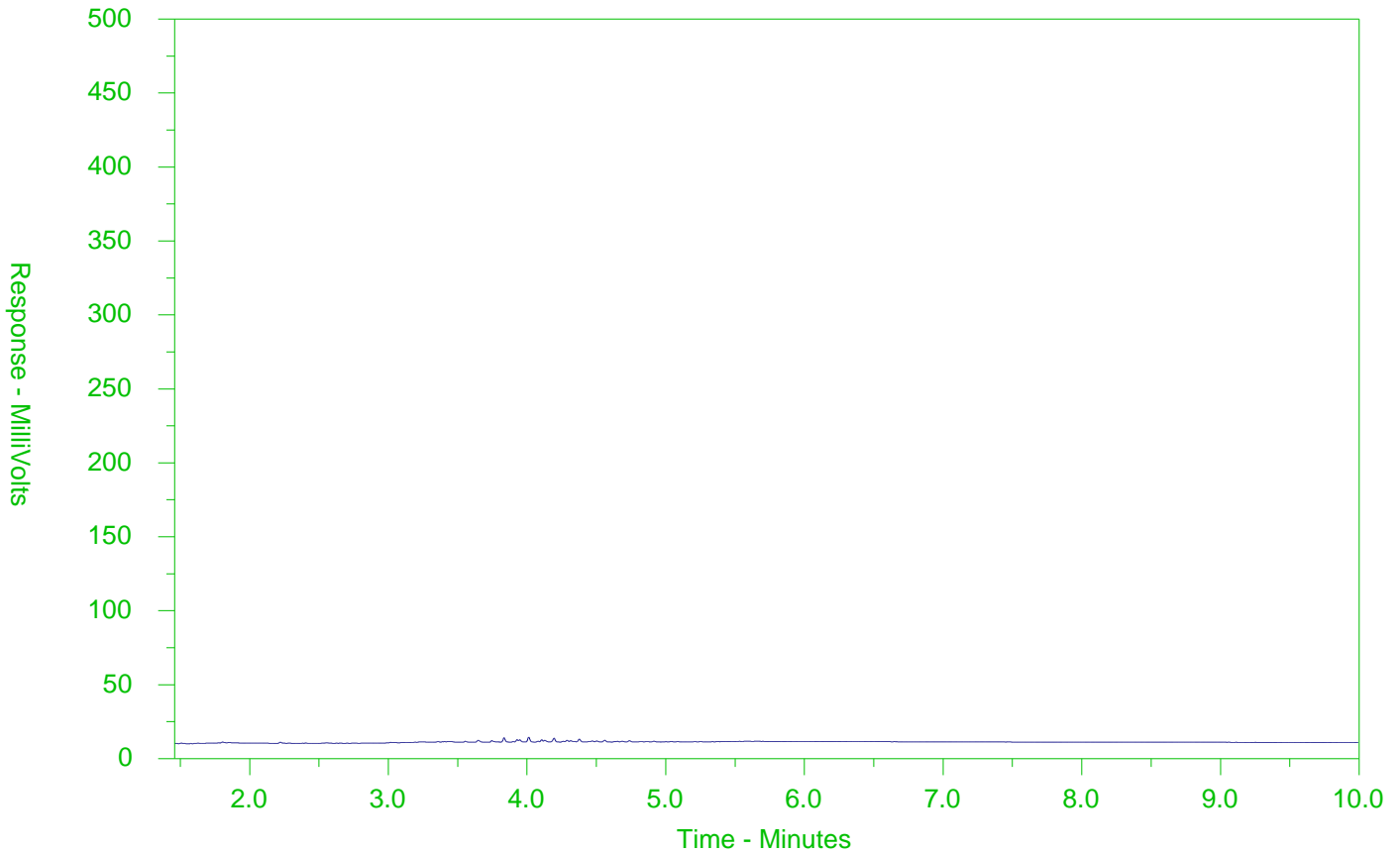
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2020783-2
 Client Sample ID: BH201-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.

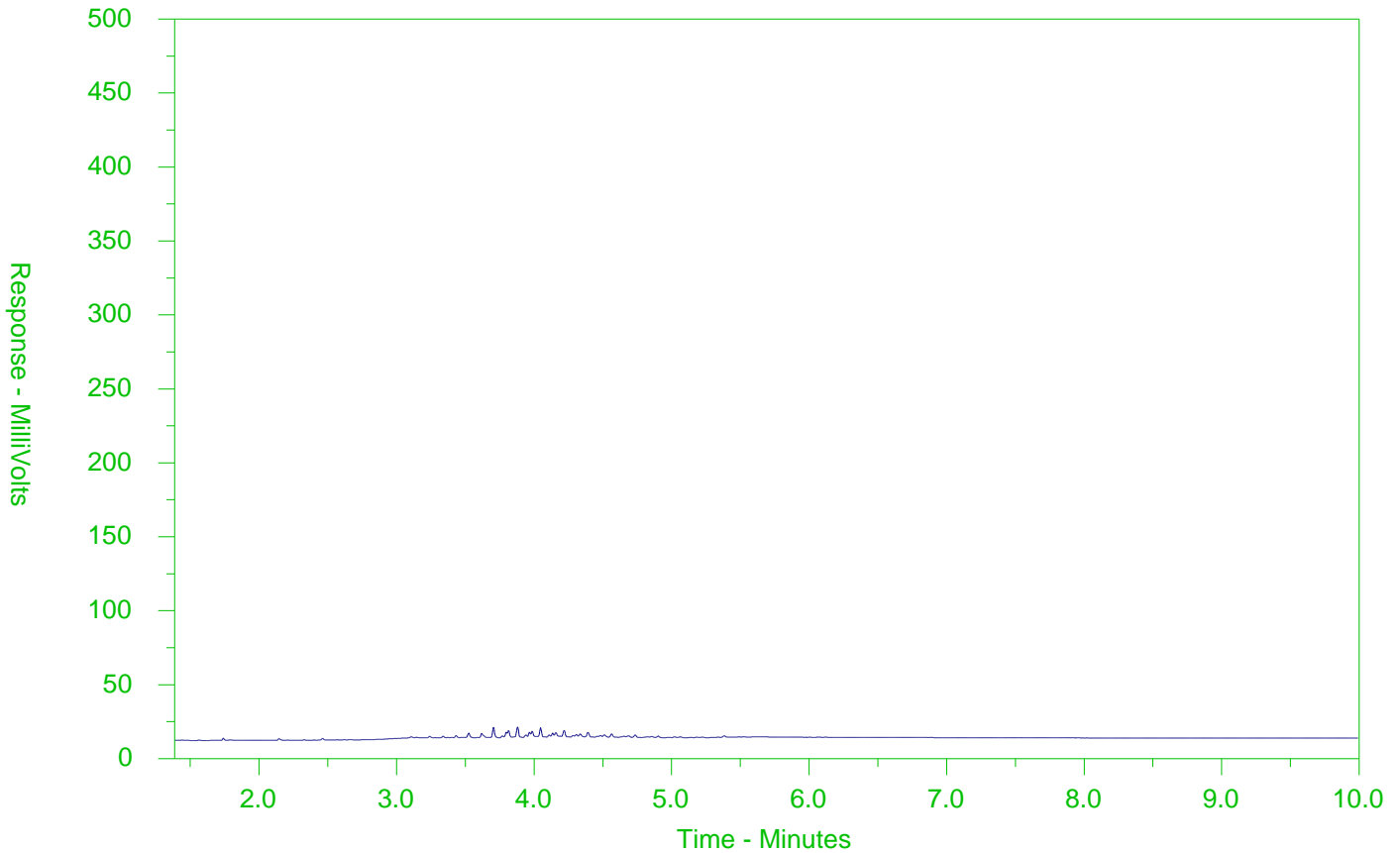
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2020783-3
 Client Sample ID: BH202



← 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.

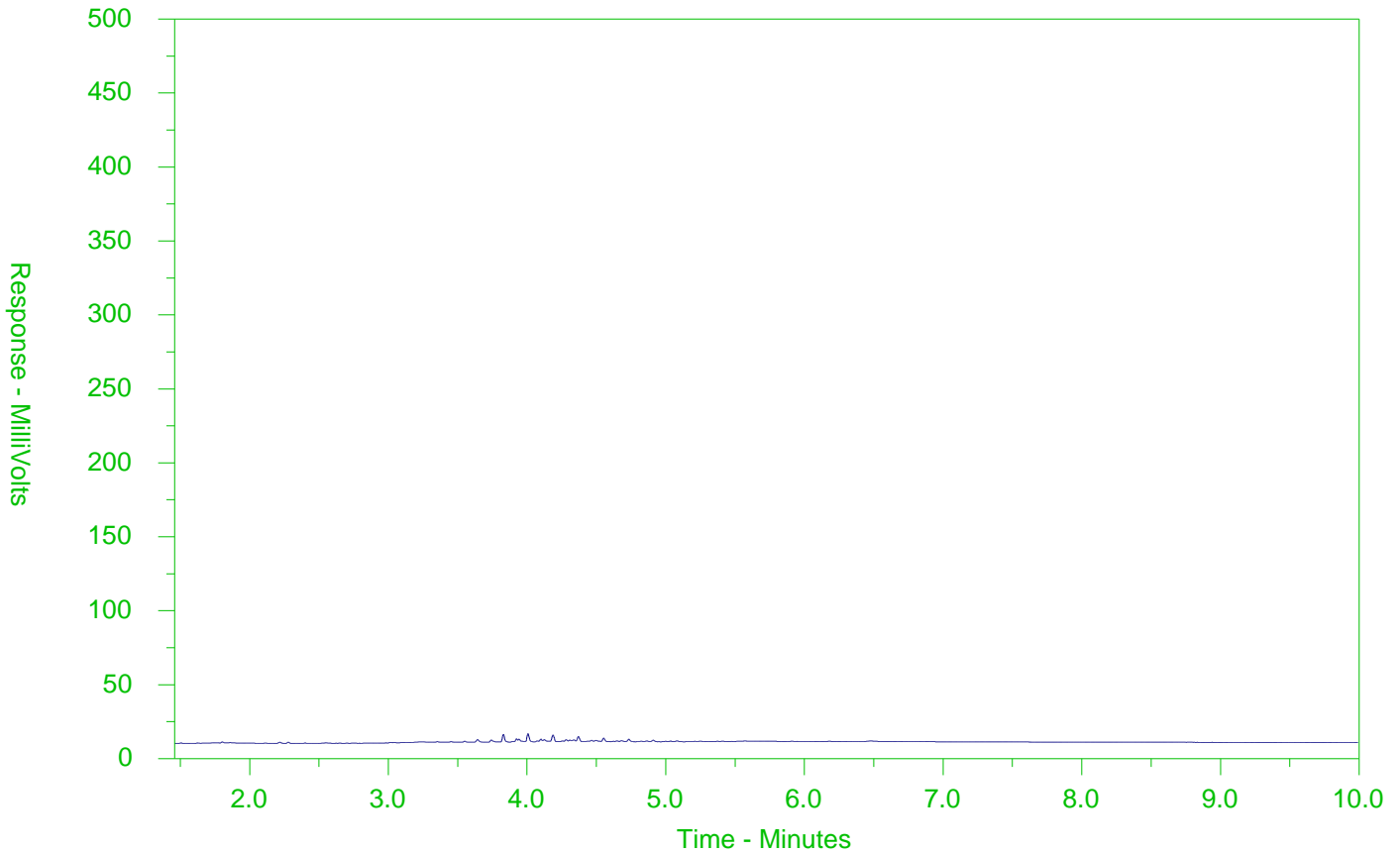
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2020783-4
 Client Sample ID: BH203



← 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.

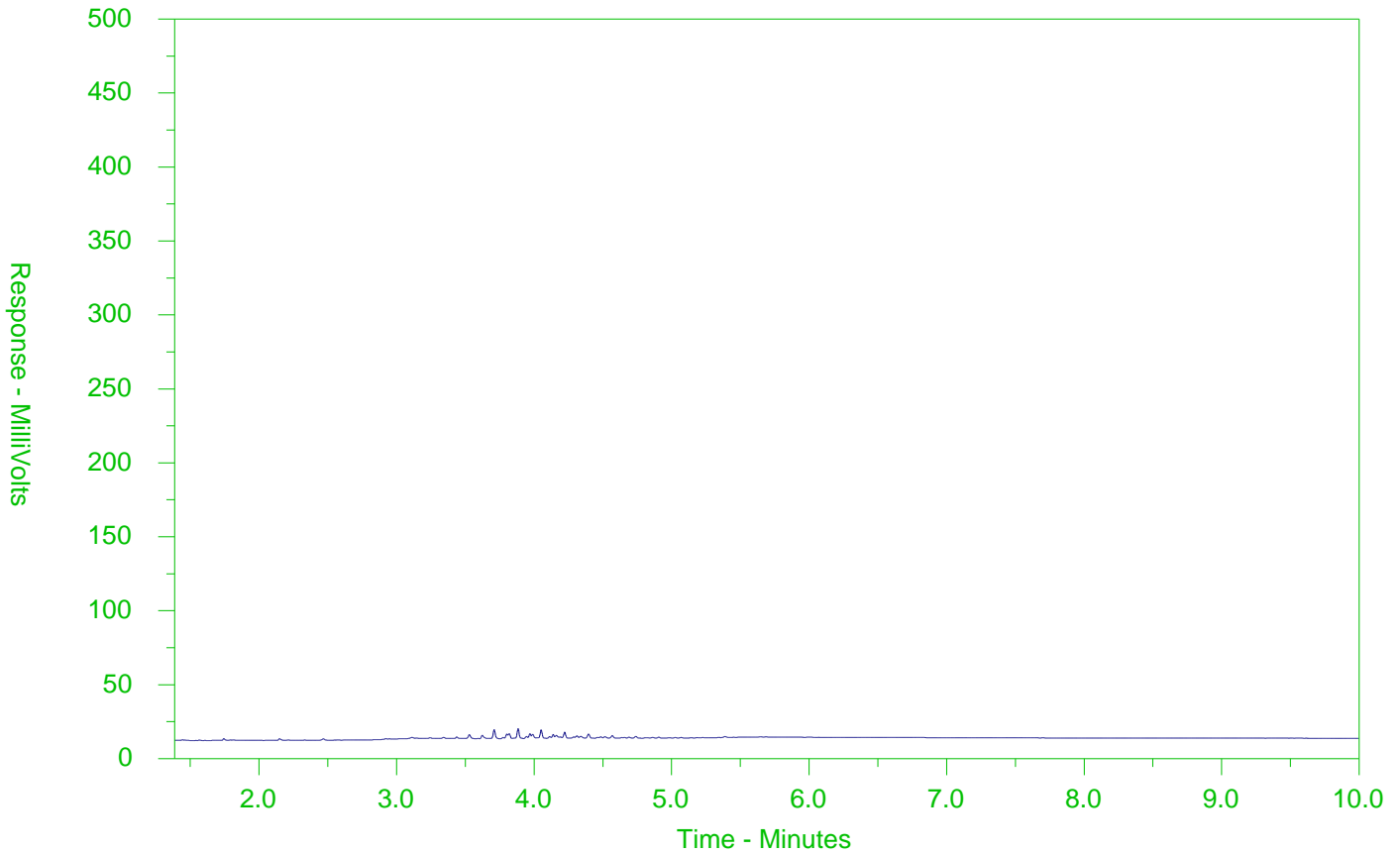
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2020783-5
 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2020783-COFC

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			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: Suvish Melanta			Quality Control (QC) Report with Report <input 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 Ln.			Email 1 or Fax: smelanta@terraprobe.ca			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm								
City/Province: Brampton, ON			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 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 type="checkbox"/> NO			Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input checked="" type="checkbox"/> FAX											
Company: Terraprobe			Email 1 or Fax: smelanta@terraprobe.ca											
Contact: Lorena Rossi			Email 2: lrossi@terraprobe.ca											
Project Information			Oil and Gas Required Fields (client use)											
ALS Account # / Quote #:			AFE/Cost Center: PO#											
Job #: 1-17-0481-42			Major/Minor Code: Routing Code:											
PO / AFE:			Requisitioner:			Number of Containers								
LSD: 09B			Location:											
ALS Lab Work Order # (lab use only) L2020783			ALS Contact: Mathy 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	VOC, BTEX, F1	P2-F4	PAH	Metals and Inorganics						
1	BH201-S	08-Nov-17	10:00	GW	X	X	X	X				9		
2	BH201-D		8:30	GW	X	X	X	X				9		
3	BH202		13:00	GW	X	X	X	X				9		
4	BH203		16:00	GW	X	X	X	X				9		
5	DUPI		8:30	PW	X	X	X	X				9		
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			RSC, RPI - Table 2			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 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		
									6.2					
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)								
Released by: NICHOLAS GAURAN Date: 09-NOV-17 Time: 11:00			Received by: _____ Date: _____ Time: _____			Received by: WJS Date: NOV-9/17 Time: 16:50								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

01/2009P/2015 FSC/1T

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: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 11-DEC-17
Report Date: 19-DEC-17 12:51 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2033776
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers:
Legal Site Desc:



Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2033776-2	BH102	Anions and Nutrients	Chloride (Cl)	5650	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1450000	490000	ug/L
L2033776-3	BH103	Anions and Nutrients	Chloride (Cl)	2670	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1740	1000	ug/L
			Sodium (Na)-Dissolved	857000	490000	ug/L
L2033776-5	BH201-D	Volatile Organic Compounds	Chloroform	10.0	2.4	ug/L
			Trichloroethylene	2.56	1.6	ug/L
L2033776-7	BH203	Volatile Organic Compounds	Trichloroethylene	2.83	1.6	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use						
L2033776-2	BH102	Anions and Nutrients	Chloride (Cl)	5650	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1450000	490000	ug/L
L2033776-3	BH103	Anions and Nutrients	Chloride (Cl)	2670	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1740	1000	ug/L
			Sodium (Na)-Dissolved	857000	490000	ug/L

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

ANALYTICAL REPORT

Physical Tests - WATER

Analyte	Unit	Guide Limits									
				#1		#2					
Conductivity	mS/cm	-	-	0.832	11.2	6.58	2.31	0.668	0.988	0.382	2.32
pH	pH units	-	-	8.08 ^{PEHR}	7.63 ^{PEHR}	7.75 ^{PEHR}	7.73 ^{PEHR}	7.82 ^{PEHR}	8.02 ^{PEHR}	8.10 ^{PEHT}	7.65 ^{PEHR}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

ANALYTICAL REPORT

Anions and Nutrients - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID				
		#1	#2	L2033776-1	07-DEC-17	BH101	L2033776-2	07-DEC-17	BH102	L2033776-3	07-DEC-17	BH103	L2033776-4	07-DEC-17	BH201-S	L2033776-5	07-DEC-17	BH201-D	L2033776-6	07-DEC-17	BH202	L2033776-7	07-DEC-17	BH203	L2033776-8
Chloride (Cl)	mg/L	790	790	110	5650 ^{DLHC}	2670 ^{DLHC}	559 ^{DLHC}	113	132	26.2	583 ^{DLHC}														

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Cyanides - WATER

	Lab ID	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
	Sample Date	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17
	Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP
	Guide Limits								
Analyte	Unit	#1	#2						
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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



ANALYTICAL REPORT

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
		#1	#2	Sample Date	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP
Dissolved Mercury Filtration Location	-	-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	-	-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	0.20	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	0.21	<0.10	0.16	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	25	1.01	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	1.03	0.37	0.76	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	1000	357	439 ^{DLHC}	1740 ^{DLHC}	300 ^{DLHC}	41.6	203	143	301	301 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<0.10	<0.10	<0.10	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	5000	75	<100 ^{DLHC}	<100 ^{DLHC}	<100 ^{DLHC}	21	15	64	<100	<100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	0.012	0.064 ^{DLHC}	<0.050 ^{DLHC}	<0.050 ^{DLHC}	0.013	<0.010	<0.010	<0.010	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50	<5.0 ^{DLHC}	<5.0 ^{DLHC}	<5.0 ^{DLHC}	<0.50	0.77	<0.50	<5.0	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.39	3.8 ^{DLHC}	1.6 ^{DLHC}	<1.0 ^{DLHC}	<0.10	0.20	0.27	<1.0	<1.0 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	0.59	<2.0 ^{DLHC}	<2.0 ^{DLHC}	<2.0 ^{DLHC}	1.49	0.32	0.55	<2.0	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	10	0.069	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<0.050	<0.050	0.055	<0.50	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	8.24	6.18 ^{DLHC}	13.2 ^{DLHC}	1.06 ^{DLHC}	3.65	1.60	6.64	0.86	0.86 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	100	0.91	7.4 ^{DLHC}	<5.0 ^{DLHC}	<5.0 ^{DLHC}	0.81	0.56	0.75	<5.0	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	10	0.781	<0.50 ^{DLHC}	0.97 ^{DLHC}	1.81 ^{DLHC}	0.193	0.119	0.595	1.73	1.73 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<0.050	<0.050	<0.050	<0.50	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	490000	172000	1450000 ^{DLHC}	857000 ^{DLHC}	302000 ^{DLHC}	70100	29200	61600	306000	306000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010	<0.10 ^{DLHC}	<0.10 ^{DLHC}	<0.10 ^{DLHC}	<0.010	<0.010	<0.010	<0.10	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	20	3.50	3.35 ^{DLHC}	3.23 ^{DLHC}	0.66 ^{DLHC}	0.729	2.54	2.91	0.68	0.68 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	6.2	1.58	<5.0 ^{DLHC}	<5.0 ^{DLHC}	<5.0 ^{DLHC}	1.38	1.14	1.29	<5.0	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	1.7	40 ^{DLHC}	<10 ^{DLHC}	<10 ^{DLHC}	1.3	1.3	1.1	<10	<10 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Speciated Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID	Lab ID	Sample Date	Sample ID						
		#1	#2	L2033776-1	07-DEC-17	BH101	L2033776-2	07-DEC-17	BH102	L2033776-3	07-DEC-17	BH103	L2033776-4	07-DEC-17	BH201-S	L2033776-5	07-DEC-17	BH201-D	L2033776-6	07-DEC-17	BH202	L2033776-7	07-DEC-17	BH203	L2033776-8	07-DEC-17	DUP
Chromium, Hexavalent	ug/L	25	25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
		#1	#2	Sample Date	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP
Acetone	ug/L	2700	2700		<30	<30	<30	<30	<30	<30	<30	<30
Benzene	ug/L	5	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	ug/L	16	16		<2.0	<2.0	<2.0	<2.0	2.9	<2.0	<2.0	<2.0
Bromoform	ug/L	25	25		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	ug/L	0.89	0.89		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	0.79	5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	30	30		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	25	25		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	ug/L	2.4	22		<1.0	<1.0	<1.0	<1.0	10.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	3	3		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	59	59		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	1	1		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	590	590		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	ug/L	5	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	1.6	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	1.6	14		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	50	50		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	ug/L	5	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	2.4	2.4		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	ug/L	51	520		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800		<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	ug/L	640	640		<20	<20	<20	<20	<20	<20	<20	<20
MTBE	ug/L	15	15		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	5.4	5.4		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
		#1	#2	Sample Date	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	1	1		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	24	24		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	200	200		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	4.7	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	1.6	5		<0.50	<0.50	<0.50	<0.50	2.56	<0.50	2.83	<0.50
Trichlorofluoromethane	ug/L	150	150		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	ug/L	0.5	1.7		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes	ug/L	-	-		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	ug/L	300	300		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-		95.7	95.6	97.2	95.7	96.5	96.4	96.4	94.1
Surrogate: 1,4-Difluorobenzene	%	-	-		99.6	99.2	99.5	100.0	100.1	99.9	99.6	98.7

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Hydrocarbons - WATER

Analyte	Unit	Guide Limits		Lab ID	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
		#1	#2	Sample Date	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP
F1 (C6-C10)	ug/L	750	750	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX	ug/L	750	750	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	ug/L	150	150	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-Naphth	ug/L	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	ug/L	500	500	<250	<250	<250	<250	<250	<250	<250	<250	<250
F3-PAH	ug/L	-	-	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	ug/L	500	500	<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	<370	<370	<370	<370	<370	<370	<370	<370
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	88.1	92.6	94.0	93.8	94.0	92.5	91.0	89.0	
Surrogate: 3,4-Dichlorotoluene	%	-	-	89.4	83.4	81.7	78.2	94.4	95.3	94.2	85.5	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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



ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - WATER

Analyte	Unit	Guide Limits		Lab ID	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
		#1	#2	Sample Date	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17	07-DEC-17
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP
Acenaphthene	ug/L	4.1	4.1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	ug/L	1	1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	ug/L	2.4	2.4		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	ug/L	1	1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	ug/L	0.01	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	ug/L	0.1	0.1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	ug/L	0.1	0.1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	ug/L	0.1	0.1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	ug/L	0.2	0.2		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	ug/L	0.41	0.41		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	ug/L	120	120		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	ug/L	3.2	3.2		<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	ug/L	3.2	3.2		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	ug/L	3.2	3.2		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	ug/L	11	11		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/L	1	1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	ug/L	4.1	4.1		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Surrogate: d10-Acenaphthene	%	-	-		102.7	105.2	104.7	106.4	98.3	101.9	100.3	99.5
Surrogate: d12-Chrysene	%	-	-		80.7	82.0	75.9	85.6	67.1	69.5	74.9	73.8
Surrogate: d8-Naphthalene	%	-	-		104.6	107.7	107.2	107.9	99.1	104.0	101.4	98.3
Surrogate: d10-Phenanthrene	%	-	-		102.0	106.5	105.0	107.6	97.2	101.2	98.5	98.5

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
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).

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.

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.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
		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. Depending on the analytical GC/MS column used benzo(j)fluoranthene may chromatographically co-elute with benzo(b)fluoranthene or benzo(k)fluoranthene.	
		Analysis conducted in accordance 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.	
		Analysis conducted in accordance 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	

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

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.



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 1 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R3913376							
WG2683402-9	DUP	WG2683402-10						
Chloride (Cl)		51.2	51.4		mg/L	0.4	20	13-DEC-17
WG2683402-7	LCS							
Chloride (Cl)			99.98		%		90-110	13-DEC-17
WG2683402-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	13-DEC-17
WG2683402-8	MS	WG2683402-10						
Chloride (Cl)			100.0		%		75-125	13-DEC-17
CN-WAD-R511-WT		Water						
Batch	R3912374							
WG2682629-3	DUP	L2033776-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	12-DEC-17
WG2682629-2	LCS							
Cyanide, Weak Acid Diss			104.9		%		80-120	12-DEC-17
WG2682629-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	12-DEC-17
WG2682629-4	MS	L2033776-1						
Cyanide, Weak Acid Diss			102.2		%		70-130	12-DEC-17
CR-CR6-IC-R511-WT		Water						
Batch	R3913807							
WG2684839-4	DUP	WG2684839-3						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	14-DEC-17
WG2684839-2	LCS							
Chromium, Hexavalent			100.9		%		80-120	14-DEC-17
WG2684839-1	MB							
Chromium, Hexavalent			<1.0		ug/L		1	14-DEC-17
WG2684839-5	MS	WG2684839-3						
Chromium, Hexavalent			98.3		%		70-130	14-DEC-17
EC-R511-WT		Water						
Batch	R3912164							
WG2682235-48	DUP	WG2682235-47						
Conductivity		1.20	1.20		mS/cm	0.3	10	12-DEC-17
WG2682235-46	LCS							
Conductivity			98.4		%		90-110	12-DEC-17
WG2682235-45	MB							
Conductivity			<0.0030		mS/cm		0.003	12-DEC-17
F1-HS-511-WT		Water						



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 2 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT		Water						
Batch R3912159								
WG2682355-4	DUP	WG2682355-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	13-DEC-17
WG2682355-1	LCS							
F1 (C6-C10)			110.4		%		80-120	13-DEC-17
WG2682355-2	MB							
F1 (C6-C10)			<25		ug/L		25	13-DEC-17
Surrogate: 3,4-Dichlorotoluene			106.3		%		60-140	13-DEC-17
WG2682355-5	MS	WG2682355-3						
F1 (C6-C10)			82.3		%		60-140	13-DEC-17
Batch R3912915								
WG2680237-4	DUP	WG2680237-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	14-DEC-17
WG2680237-1	LCS							
F1 (C6-C10)			91.8		%		80-120	13-DEC-17
WG2680237-2	MB							
F1 (C6-C10)			<25		ug/L		25	14-DEC-17
Surrogate: 3,4-Dichlorotoluene			105.4		%		60-140	14-DEC-17
WG2680237-5	MS	WG2680237-3						
F1 (C6-C10)			91.4		%		60-140	13-DEC-17
F2-F4-511-WT		Water						
Batch R3913150								
WG2682962-2	LCS							
F2 (C10-C16)			95.2		%		70-130	13-DEC-17
F3 (C16-C34)			100.6		%		70-130	13-DEC-17
F4 (C34-C50)			92.3		%		70-130	13-DEC-17
WG2682962-3	LCSD	WG2682962-2						
F2 (C10-C16)		95.2	99.8		%	4.7	50	13-DEC-17
F3 (C16-C34)		100.6	101.5		%	0.9	50	13-DEC-17
F4 (C34-C50)		92.3	98.7		%	6.6	50	13-DEC-17
WG2682962-1	MB							
F2 (C10-C16)			<100		ug/L		100	13-DEC-17
F3 (C16-C34)			<250		ug/L		250	13-DEC-17
F4 (C34-C50)			<250		ug/L		250	13-DEC-17
Surrogate: 2-Bromobenzotrifluoride			91.5		%		60-140	13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 3 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT		Water						
Batch	R3913211							
WG2683164-2	LCS							
F2 (C10-C16)			112.9		%		70-130	13-DEC-17
F3 (C16-C34)			117.8		%		70-130	13-DEC-17
F4 (C34-C50)			110.1		%		70-130	13-DEC-17
WG2683164-3	LCSD	WG2683164-2						
F2 (C10-C16)		112.9	104.1		%	8.1	50	13-DEC-17
F3 (C16-C34)		117.8	110.0		%	6.9	50	13-DEC-17
F4 (C34-C50)		110.1	102.3		%	7.4	50	13-DEC-17
WG2683164-1	MB							
F2 (C10-C16)			<100		ug/L		100	13-DEC-17
F3 (C16-C34)			<250		ug/L		250	13-DEC-17
F4 (C34-C50)			<250		ug/L		250	13-DEC-17
Surrogate: 2-Bromobenzotrifluoride			96.6		%		60-140	13-DEC-17
HG-D-UG/L-CVAA-WT		Water						
Batch	R3912440							
WG2683380-3	DUP	L2033776-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	13-DEC-17
WG2683380-2	LCS							
Mercury (Hg)-Dissolved			110.0		%		80-120	13-DEC-17
WG2683380-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	13-DEC-17
WG2683380-4	MS	L2033776-2						
Mercury (Hg)-Dissolved			94.6		%		70-130	13-DEC-17
MET-D-UG/L-MS-WT		Water						
Batch	R3911189							
WG2682461-4	DUP	WG2682461-3						
Antimony (Sb)-Dissolved		0.20	0.19		ug/L	1.2	20	12-DEC-17
Arsenic (As)-Dissolved		1.01	1.00		ug/L	1.6	20	12-DEC-17
Barium (Ba)-Dissolved		357	356		ug/L	0.3	20	12-DEC-17
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	12-DEC-17
Boron (B)-Dissolved		75	75		ug/L	0.6	20	12-DEC-17
Cadmium (Cd)-Dissolved		0.0121	0.0092	J	ug/L	0.0029	0.01	12-DEC-17
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	12-DEC-17
Cobalt (Co)-Dissolved		0.39	0.41		ug/L	3.6	20	12-DEC-17
Copper (Cu)-Dissolved		0.59	0.67		ug/L	13	20	12-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 4 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3911189							
WG2682461-4 DUP		WG2682461-3						
Lead (Pb)-Dissolved		0.069	0.138	J	ug/L	0.069	0.1	12-DEC-17
Molybdenum (Mo)-Dissolved		8.24	8.44		ug/L	2.5	20	12-DEC-17
Nickel (Ni)-Dissolved		0.91	0.89		ug/L	2.4	20	12-DEC-17
Selenium (Se)-Dissolved		0.781	0.852		ug/L	8.7	20	12-DEC-17
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	12-DEC-17
Sodium (Na)-Dissolved		172000	172000		ug/L	0.2	20	12-DEC-17
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	12-DEC-17
Uranium (U)-Dissolved		3.50	3.47		ug/L	0.9	20	12-DEC-17
Vanadium (V)-Dissolved		1.58	1.61		ug/L	1.8	20	12-DEC-17
Zinc (Zn)-Dissolved		1.7	1.7		ug/L	2.8	20	12-DEC-17
WG2682461-2 LCS								
Antimony (Sb)-Dissolved			94.4		%		80-120	12-DEC-17
Arsenic (As)-Dissolved			101.1		%		80-120	12-DEC-17
Barium (Ba)-Dissolved			96.5		%		80-120	12-DEC-17
Beryllium (Be)-Dissolved			95.8		%		80-120	12-DEC-17
Boron (B)-Dissolved			94.9		%		80-120	12-DEC-17
Cadmium (Cd)-Dissolved			99.7		%		80-120	12-DEC-17
Chromium (Cr)-Dissolved			101.6		%		80-120	12-DEC-17
Cobalt (Co)-Dissolved			100.8		%		80-120	12-DEC-17
Copper (Cu)-Dissolved			98.2		%		80-120	12-DEC-17
Lead (Pb)-Dissolved			98.4		%		80-120	12-DEC-17
Molybdenum (Mo)-Dissolved			100.7		%		80-120	12-DEC-17
Nickel (Ni)-Dissolved			99.8		%		80-120	12-DEC-17
Selenium (Se)-Dissolved			98.2		%		80-120	12-DEC-17
Silver (Ag)-Dissolved			99.8		%		80-120	12-DEC-17
Sodium (Na)-Dissolved			104.0		%		80-120	12-DEC-17
Thallium (Tl)-Dissolved			99.1		%		80-120	12-DEC-17
Uranium (U)-Dissolved			97.9		%		80-120	12-DEC-17
Vanadium (V)-Dissolved			102.9		%		80-120	12-DEC-17
Zinc (Zn)-Dissolved			92.3		%		80-120	12-DEC-17
WG2682461-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	12-DEC-17
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	12-DEC-17
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	12-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 5 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3911189							
WG2682461-1 MB								
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	12-DEC-17
Boron (B)-Dissolved			<10		ug/L		10	12-DEC-17
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	12-DEC-17
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	12-DEC-17
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	12-DEC-17
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	12-DEC-17
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	12-DEC-17
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	12-DEC-17
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	12-DEC-17
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	12-DEC-17
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	12-DEC-17
Sodium (Na)-Dissolved			<500		ug/L		500	12-DEC-17
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	12-DEC-17
Uranium (U)-Dissolved			<0.010		ug/L		0.01	12-DEC-17
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	12-DEC-17
Zinc (Zn)-Dissolved			<1.0		ug/L		1	12-DEC-17
WG2682461-5 MS		WG2682461-6						
Antimony (Sb)-Dissolved			89.2		%		70-130	12-DEC-17
Arsenic (As)-Dissolved			100.7		%		70-130	12-DEC-17
Barium (Ba)-Dissolved			N/A	MS-B	%		-	12-DEC-17
Beryllium (Be)-Dissolved			99.5		%		70-130	12-DEC-17
Boron (B)-Dissolved			N/A	MS-B	%		-	12-DEC-17
Cadmium (Cd)-Dissolved			94.5		%		70-130	12-DEC-17
Chromium (Cr)-Dissolved			97.0		%		70-130	12-DEC-17
Cobalt (Co)-Dissolved			70.6		%		70-130	12-DEC-17
Copper (Cu)-Dissolved			79.6		%		70-130	12-DEC-17
Lead (Pb)-Dissolved			90.2		%		70-130	12-DEC-17
Selenium (Se)-Dissolved			96.0		%		70-130	12-DEC-17
Silver (Ag)-Dissolved			90.7		%		70-130	12-DEC-17
Sodium (Na)-Dissolved			N/A	MS-B	%		-	12-DEC-17
Thallium (Tl)-Dissolved			91.4		%		70-130	12-DEC-17
Uranium (U)-Dissolved			N/A	MS-B	%		-	12-DEC-17
Vanadium (V)-Dissolved			103.7		%		70-130	12-DEC-17
Zinc (Zn)-Dissolved			N/A	MS-B	%		-	12-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 6 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Water							
Batch	R3915646							
WG2682962-2 LCS								
1-Methylnaphthalene			89.8		%		50-140	19-DEC-17
2-Methylnaphthalene			89.8		%		50-140	19-DEC-17
Acenaphthene			93.4		%		50-140	19-DEC-17
Acenaphthylene			96.2		%		50-140	19-DEC-17
Anthracene			93.8		%		50-140	19-DEC-17
Benzo(a)anthracene			97.0		%		50-140	19-DEC-17
Benzo(a)pyrene			100.1		%		50-140	19-DEC-17
Benzo(b)fluoranthene			92.7		%		50-140	19-DEC-17
Benzo(g,h,i)perylene			97.7		%		50-140	19-DEC-17
Benzo(k)fluoranthene			105.9		%		50-140	19-DEC-17
Chrysene			101.2		%		50-140	19-DEC-17
Dibenzo(ah)anthracene			99.2		%		50-140	19-DEC-17
Fluoranthene			99.8		%		50-140	19-DEC-17
Fluorene			92.4		%		50-140	19-DEC-17
Indeno(1,2,3-cd)pyrene			92.3		%		50-140	19-DEC-17
Naphthalene			89.4		%		50-140	19-DEC-17
Phenanthrene			98.2		%		50-140	19-DEC-17
Pyrene			102.2		%		50-140	19-DEC-17
WG2682962-3 LCSD		WG2682962-2						
1-Methylnaphthalene		89.8	91.8		%	2.1	50	19-DEC-17
2-Methylnaphthalene		89.8	91.5		%	1.9	50	19-DEC-17
Acenaphthene		93.4	96.2		%	3.0	50	19-DEC-17
Acenaphthylene		96.2	98.6		%	2.4	50	19-DEC-17
Anthracene		93.8	96.2		%	2.4	50	19-DEC-17
Benzo(a)anthracene		97.0	99.1		%	2.1	50	19-DEC-17
Benzo(a)pyrene		100.1	103.4		%	3.2	50	19-DEC-17
Benzo(b)fluoranthene		92.7	95.9		%	3.4	50	19-DEC-17
Benzo(g,h,i)perylene		97.7	96.5		%	1.2	50	19-DEC-17
Benzo(k)fluoranthene		105.9	109.0		%	2.9	50	19-DEC-17
Chrysene		101.2	100.9		%	0.3	50	19-DEC-17
Dibenzo(ah)anthracene		99.2	100.6		%	1.4	50	19-DEC-17
Fluoranthene		99.8	103.8		%	3.9	50	19-DEC-17
Fluorene		92.4	94.9		%	2.6	50	19-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 7 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3915646							
WG2682962-3	LCS	WG2682962-2						
Indeno(1,2,3-cd)pyrene		92.3	91.6		%	0.8	50	19-DEC-17
Naphthalene		89.4	91.6		%	2.4	50	19-DEC-17
Phenanthrene		98.2	101.0		%	2.8	50	19-DEC-17
Pyrene		102.2	104.6		%	2.2	50	19-DEC-17
WG2682962-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	19-DEC-17
2-Methylnaphthalene			<0.020		ug/L		0.02	19-DEC-17
Acenaphthene			<0.020		ug/L		0.02	19-DEC-17
Acenaphthylene			<0.020		ug/L		0.02	19-DEC-17
Anthracene			<0.020		ug/L		0.02	19-DEC-17
Benzo(a)anthracene			<0.020		ug/L		0.02	19-DEC-17
Benzo(a)pyrene			<0.010		ug/L		0.01	19-DEC-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	19-DEC-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	19-DEC-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	19-DEC-17
Chrysene			<0.020		ug/L		0.02	19-DEC-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	19-DEC-17
Fluoranthene			<0.020		ug/L		0.02	19-DEC-17
Fluorene			<0.020		ug/L		0.02	19-DEC-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	19-DEC-17
Naphthalene			<0.050		ug/L		0.05	19-DEC-17
Phenanthrene			<0.020		ug/L		0.02	19-DEC-17
Pyrene			<0.020		ug/L		0.02	19-DEC-17
Surrogate: d8-Naphthalene			114.7		%		60-140	19-DEC-17
Surrogate: d10-Phenanthrene			113.4		%		60-140	19-DEC-17
Surrogate: d12-Chrysene			92.2		%		60-140	19-DEC-17
Surrogate: d10-Acenaphthene			112.1		%		60-140	19-DEC-17
Batch	R3915702							
WG2683164-2	LCS							
1-Methylnaphthalene			97.8		%		50-140	19-DEC-17
2-Methylnaphthalene			97.9		%		50-140	19-DEC-17
Acenaphthene			99.5		%		50-140	19-DEC-17
Acenaphthylene			101.1		%		50-140	19-DEC-17
Anthracene			95.0		%		50-140	19-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 8 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3915702							
WG2683164-2 LCS								
	Benzo(a)anthracene		97.5		%		50-140	19-DEC-17
	Benzo(a)pyrene		101.5		%		50-140	19-DEC-17
	Benzo(b)fluoranthene		91.5		%		50-140	19-DEC-17
	Benzo(g,h,i)perylene		98.2		%		50-140	19-DEC-17
	Benzo(k)fluoranthene		108.7		%		50-140	19-DEC-17
	Chrysene		104.4		%		50-140	19-DEC-17
	Dibenzo(ah)anthracene		100.4		%		50-140	19-DEC-17
	Fluoranthene		104.8		%		50-140	19-DEC-17
	Fluorene		96.0		%		50-140	19-DEC-17
	Indeno(1,2,3-cd)pyrene		90.5		%		50-140	19-DEC-17
	Naphthalene		98.2		%		50-140	19-DEC-17
	Phenanthrene		101.0		%		50-140	19-DEC-17
	Pyrene		105.5		%		50-140	19-DEC-17
WG2683164-3 LCSD		WG2683164-2						
	1-Methylnaphthalene	97.8	99.3		%	1.5	50	19-DEC-17
	2-Methylnaphthalene	97.9	99.8		%	1.9	50	19-DEC-17
	Acenaphthene	99.5	100.5		%	1.0	50	19-DEC-17
	Acenaphthylene	101.1	102.2		%	1.0	50	19-DEC-17
	Anthracene	95.0	96.9		%	2.0	50	19-DEC-17
	Benzo(a)anthracene	97.5	96.5		%	1.1	50	19-DEC-17
	Benzo(a)pyrene	101.5	104.2		%	2.6	50	19-DEC-17
	Benzo(b)fluoranthene	91.5	96.2		%	5.0	50	19-DEC-17
	Benzo(g,h,i)perylene	98.2	103.3		%	5.0	50	19-DEC-17
	Benzo(k)fluoranthene	108.7	112.2		%	3.2	50	19-DEC-17
	Chrysene	104.4	101.5		%	2.8	50	19-DEC-17
	Dibenzo(ah)anthracene	100.4	108.5		%	7.7	50	19-DEC-17
	Fluoranthene	104.8	106.0		%	1.1	50	19-DEC-17
	Fluorene	96.0	97.4		%	1.5	50	19-DEC-17
	Indeno(1,2,3-cd)pyrene	90.5	92.7		%	2.4	50	19-DEC-17
	Naphthalene	98.2	99.9		%	1.8	50	19-DEC-17
	Phenanthrene	101.0	102.7		%	1.6	50	19-DEC-17
	Pyrene	105.5	106.4		%	0.8	50	19-DEC-17
WG2683164-1 MB								



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 9 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R3915702							
WG2683164-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	19-DEC-17
2-Methylnaphthalene			<0.020		ug/L		0.02	19-DEC-17
Acenaphthene			<0.020		ug/L		0.02	19-DEC-17
Acenaphthylene			<0.020		ug/L		0.02	19-DEC-17
Anthracene			<0.020		ug/L		0.02	19-DEC-17
Benzo(a)anthracene			<0.020		ug/L		0.02	19-DEC-17
Benzo(a)pyrene			<0.010		ug/L		0.01	19-DEC-17
Benzo(b)fluoranthene			<0.020		ug/L		0.02	19-DEC-17
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	19-DEC-17
Benzo(k)fluoranthene			<0.020		ug/L		0.02	19-DEC-17
Chrysene			<0.020		ug/L		0.02	19-DEC-17
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	19-DEC-17
Fluoranthene			<0.020		ug/L		0.02	19-DEC-17
Fluorene			<0.020		ug/L		0.02	19-DEC-17
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	19-DEC-17
Naphthalene			<0.050		ug/L		0.05	19-DEC-17
Phenanthrene			<0.020		ug/L		0.02	19-DEC-17
Pyrene			<0.020		ug/L		0.02	19-DEC-17
Surrogate: d8-Naphthalene			102.6		%		60-140	19-DEC-17
Surrogate: d10-Phenanthrene			100.2		%		60-140	19-DEC-17
Surrogate: d12-Chrysene			78.9		%		60-140	19-DEC-17
Surrogate: d10-Acenaphthene			100.1		%		60-140	19-DEC-17
PH-WT		Water						
Batch	R3912164							
WG2682235-48 DUP	WG2682235-47							
pH		8.23	8.14	J	pH units	0.09	0.2	12-DEC-17
WG2682235-46 LCS								
pH			6.99		pH units		6.9-7.1	12-DEC-17
VOC-511-HS-WT		Water						
Batch	R3912159							
WG2682355-4 DUP	WG2682355-3							
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 10 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912159							
WG2682355-4	DUP	WG2682355-3						
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-DEC-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-DEC-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-DEC-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	13-DEC-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	13-DEC-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-DEC-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-DEC-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-DEC-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	13-DEC-17
Methyl Ethyl Ketone		99	92		ug/L	7.8	30	13-DEC-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	13-DEC-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-DEC-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	13-DEC-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-DEC-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
trans-1,3-Dichloropropene		<0.30	<0.30		ug/L			13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 11 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912159							
WG2682355-4	DUP	WG2682355-3						
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-DEC-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	13-DEC-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-DEC-17
WG2682355-1	LCS							
1,1,1,2-Tetrachloroethane			99.4		%		70-130	13-DEC-17
1,1,1,2,2-Tetrachloroethane			101.8		%		70-130	13-DEC-17
1,1,1-Trichloroethane			101.6		%		70-130	13-DEC-17
1,1,2-Trichloroethane			100.3		%		70-130	13-DEC-17
1,1-Dichloroethane			103.8		%		70-130	13-DEC-17
1,1-Dichloroethylene			96.5		%		70-130	13-DEC-17
1,2-Dibromoethane			99.6		%		70-130	13-DEC-17
1,2-Dichlorobenzene			101.9		%		70-130	13-DEC-17
1,2-Dichloroethane			101.5		%		70-130	13-DEC-17
1,2-Dichloropropane			105.0		%		70-130	13-DEC-17
1,3-Dichlorobenzene			100.0		%		70-130	13-DEC-17
1,4-Dichlorobenzene			102.9		%		70-130	13-DEC-17
Acetone			102.2		%		60-140	13-DEC-17
Benzene			104.8		%		70-130	13-DEC-17
Bromodichloromethane			99.97		%		70-130	13-DEC-17
Bromoform			97.1		%		70-130	13-DEC-17
Bromomethane			103.3		%		60-140	13-DEC-17
Carbon tetrachloride			101.3		%		70-130	13-DEC-17
Chlorobenzene			101.3		%		70-130	13-DEC-17
Chloroform			103.9		%		70-130	13-DEC-17
cis-1,2-Dichloroethylene			104.2		%		70-130	13-DEC-17
cis-1,3-Dichloropropene			105.5		%		70-130	13-DEC-17
Dibromochloromethane			103.0		%		70-130	13-DEC-17
Dichlorodifluoromethane			86.0		%		50-140	13-DEC-17
Ethylbenzene			96.8		%		70-130	13-DEC-17
n-Hexane			85.8		%		70-130	13-DEC-17
m+p-Xylenes			99.4		%		70-130	13-DEC-17
Methyl Ethyl Ketone			98.3		%		60-140	13-DEC-17
Methyl Isobutyl Ketone			90.5				60-140	



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 12 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912159							
WG2682355-1	LCS							
Methyl Isobutyl Ketone			90.5		%		60-140	13-DEC-17
Methylene Chloride			107.6		%		70-130	13-DEC-17
MTBE			100.5		%		70-130	13-DEC-17
o-Xylene			97.0		%		70-130	13-DEC-17
Styrene			96.7		%		70-130	13-DEC-17
Tetrachloroethylene			97.9		%		70-130	13-DEC-17
Toluene			98.5		%		70-130	13-DEC-17
trans-1,2-Dichloroethylene			105.1		%		70-130	13-DEC-17
trans-1,3-Dichloropropene			101.2		%		70-130	13-DEC-17
Trichloroethylene			105.1		%		70-130	13-DEC-17
Trichlorofluoromethane			100.9		%		60-140	13-DEC-17
Vinyl chloride			99.7		%		60-140	13-DEC-17
WG2682355-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	13-DEC-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	13-DEC-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	13-DEC-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	13-DEC-17
1,1-Dichloroethane			<0.50		ug/L		0.5	13-DEC-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	13-DEC-17
1,2-Dibromoethane			<0.20		ug/L		0.2	13-DEC-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	13-DEC-17
1,2-Dichloroethane			<0.50		ug/L		0.5	13-DEC-17
1,2-Dichloropropane			<0.50		ug/L		0.5	13-DEC-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	13-DEC-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	13-DEC-17
Acetone			<30		ug/L		30	13-DEC-17
Benzene			<0.50		ug/L		0.5	13-DEC-17
Bromodichloromethane			<2.0		ug/L		2	13-DEC-17
Bromoform			<5.0		ug/L		5	13-DEC-17
Bromomethane			<0.50		ug/L		0.5	13-DEC-17
Carbon tetrachloride			<0.20		ug/L		0.2	13-DEC-17
Chlorobenzene			<0.50		ug/L		0.5	13-DEC-17
Chloroform			<1.0		ug/L		1	13-DEC-17
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 13 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912159							
WG2682355-2 MB								
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	13-DEC-17
Dibromochloromethane			<2.0		ug/L		2	13-DEC-17
Dichlorodifluoromethane			<2.0		ug/L		2	13-DEC-17
Ethylbenzene			<0.50		ug/L		0.5	13-DEC-17
n-Hexane			<0.50		ug/L		0.5	13-DEC-17
m+p-Xylenes			<0.40		ug/L		0.4	13-DEC-17
Methyl Ethyl Ketone			<20		ug/L		20	13-DEC-17
Methyl Isobutyl Ketone			<20		ug/L		20	13-DEC-17
Methylene Chloride			<5.0		ug/L		5	13-DEC-17
MTBE			<2.0		ug/L		2	13-DEC-17
o-Xylene			<0.30		ug/L		0.3	13-DEC-17
Styrene			<0.50		ug/L		0.5	13-DEC-17
Tetrachloroethylene			<0.50		ug/L		0.5	13-DEC-17
Toluene			<0.50		ug/L		0.5	13-DEC-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	13-DEC-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	13-DEC-17
Trichloroethylene			<0.50		ug/L		0.5	13-DEC-17
Trichlorofluoromethane			<5.0		ug/L		5	13-DEC-17
Vinyl chloride			<0.50		ug/L		0.5	13-DEC-17
Surrogate: 1,4-Difluorobenzene			99.9		%		70-130	13-DEC-17
Surrogate: 4-Bromofluorobenzene			97.4		%		70-130	13-DEC-17
WG2682355-5 MS		WG2682355-3						
1,1,1,2-Tetrachloroethane			99.3		%		50-140	13-DEC-17
1,1,2,2-Tetrachloroethane			102.1		%		50-140	13-DEC-17
1,1,1-Trichloroethane			100.5		%		50-140	13-DEC-17
1,1,2-Trichloroethane			101.7		%		50-140	13-DEC-17
1,1-Dichloroethane			103.9		%		50-140	13-DEC-17
1,1-Dichloroethylene			94.3		%		50-140	13-DEC-17
1,2-Dibromoethane			101.2		%		50-140	13-DEC-17
1,2-Dichlorobenzene			97.6		%		50-140	13-DEC-17
1,2-Dichloroethane			103.6		%		50-140	13-DEC-17
1,2-Dichloropropane			106.0		%		50-140	13-DEC-17
1,3-Dichlorobenzene			95.4		%		50-140	13-DEC-17
1,4-Dichlorobenzene			98.4		%		50-140	13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 14 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3912159							
WG2682355-5	MS	WG2682355-3						
Acetone			N/A	MS-B	%		-	13-DEC-17
Benzene			104.9		%		50-140	13-DEC-17
Bromodichloromethane			99.9		%		50-140	13-DEC-17
Bromoform			96.8		%		50-140	13-DEC-17
Bromomethane			101.1		%		50-140	13-DEC-17
Carbon tetrachloride			99.5		%		50-140	13-DEC-17
Chlorobenzene			100.8		%		50-140	13-DEC-17
Chloroform			104.5		%		50-140	13-DEC-17
cis-1,2-Dichloroethylene			104.6		%		50-140	13-DEC-17
cis-1,3-Dichloropropene			107.1		%		50-140	13-DEC-17
Dibromochloromethane			103.4		%		50-140	13-DEC-17
Dichlorodifluoromethane			79.2		%		50-140	13-DEC-17
Ethylbenzene			95.2		%		50-140	13-DEC-17
n-Hexane			81.0		%		50-140	13-DEC-17
m+p-Xylenes			98.3		%		50-140	13-DEC-17
Methyl Ethyl Ketone			94.6		%		50-140	13-DEC-17
Methyl Isobutyl Ketone			92.2		%		50-140	13-DEC-17
Methylene Chloride			108.9		%		50-140	13-DEC-17
MTBE			98.7		%		50-140	13-DEC-17
o-Xylene			95.6		%		50-140	13-DEC-17
Styrene			96.0		%		50-140	13-DEC-17
Tetrachloroethylene			95.3		%		50-140	13-DEC-17
Toluene			97.0		%		50-140	13-DEC-17
trans-1,2-Dichloroethylene			104.0		%		50-140	13-DEC-17
trans-1,3-Dichloropropene			101.0		%		50-140	13-DEC-17
Trichloroethylene			104.9		%		50-140	13-DEC-17
Trichlorofluoromethane			97.3		%		50-140	13-DEC-17
Vinyl chloride			94.7		%		50-140	13-DEC-17
Batch	R3912915							
WG2680237-4	DUP	WG2680237-3						
1,1,1,2-Tetrachloroethane			<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,1,2,2-Tetrachloroethane			<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,1,1-Trichloroethane			<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,1,2-Trichloroethane			<0.50					



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 15 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912915							
WG2680237-4	DUP	WG2680237-3						
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-17
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	14-DEC-17
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-17
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-17
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	14-DEC-17
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	14-DEC-17
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-17
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-17
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-17
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	14-DEC-17
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-17
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	14-DEC-17
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-17
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	14-DEC-17
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-17
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Toluene		0.51	0.50		ug/L	2.0	30	14-DEC-17
trans-1,2-Dichloroethylene		<0.50	<0.50		ug/L			14-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 16 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912915							
WG2680237-4	DUP	WG2680237-3						
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	14-DEC-17
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	14-DEC-17
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	14-DEC-17
WG2680237-1	LCS							
1,1,1,2-Tetrachloroethane			98.9		%		70-130	13-DEC-17
1,1,2,2-Tetrachloroethane			98.2		%		70-130	13-DEC-17
1,1,1-Trichloroethane			99.9		%		70-130	13-DEC-17
1,1,2-Trichloroethane			104.5		%		70-130	13-DEC-17
1,1-Dichloroethane			102.3		%		70-130	13-DEC-17
1,1-Dichloroethylene			96.9		%		70-130	13-DEC-17
1,2-Dibromoethane			100.6		%		70-130	13-DEC-17
1,2-Dichlorobenzene			102.8		%		70-130	13-DEC-17
1,2-Dichloroethane			105.7		%		70-130	13-DEC-17
1,2-Dichloropropane			108.7		%		70-130	13-DEC-17
1,3-Dichlorobenzene			101.3		%		70-130	13-DEC-17
1,4-Dichlorobenzene			102.6		%		70-130	13-DEC-17
Acetone			113.8		%		60-140	13-DEC-17
Benzene			105.6		%		70-130	13-DEC-17
Bromodichloromethane			98.5		%		70-130	13-DEC-17
Bromoform			92.2		%		70-130	13-DEC-17
Bromomethane			100.4		%		60-140	13-DEC-17
Carbon tetrachloride			96.8		%		70-130	13-DEC-17
Chlorobenzene			102.9		%		70-130	13-DEC-17
Chloroform			103.4		%		70-130	13-DEC-17
cis-1,2-Dichloroethylene			94.1		%		70-130	13-DEC-17
cis-1,3-Dichloropropene			108.5		%		70-130	13-DEC-17
Dibromochloromethane			101.8		%		70-130	13-DEC-17
Dichlorodifluoromethane			81.4		%		50-140	13-DEC-17
Ethylbenzene			99.1		%		70-130	13-DEC-17
n-Hexane			87.1		%		70-130	13-DEC-17
m+p-Xylenes			101.5		%		70-130	13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 17 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3912915							
WG2680237-1	LCS							
Methyl Ethyl Ketone			100.3		%		60-140	13-DEC-17
Methyl Isobutyl Ketone			98.1		%		60-140	13-DEC-17
Methylene Chloride			104.4		%		70-130	13-DEC-17
MTBE			101.1		%		70-130	13-DEC-17
o-Xylene			98.6		%		70-130	13-DEC-17
Styrene			93.9		%		70-130	13-DEC-17
Tetrachloroethylene			95.1		%		70-130	13-DEC-17
Toluene			101.3		%		70-130	13-DEC-17
trans-1,2-Dichloroethylene			105.0		%		70-130	13-DEC-17
trans-1,3-Dichloropropene			109.9		%		70-130	13-DEC-17
Trichloroethylene			99.5		%		70-130	13-DEC-17
Trichlorofluoromethane			98.2		%		60-140	13-DEC-17
Vinyl chloride			102.3		%		60-140	13-DEC-17
WG2680237-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-17
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	14-DEC-17
1,1,1-Trichloroethane			<0.50		ug/L		0.5	14-DEC-17
1,1,2-Trichloroethane			<0.50		ug/L		0.5	14-DEC-17
1,1-Dichloroethane			<0.50		ug/L		0.5	14-DEC-17
1,1-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-17
1,2-Dibromoethane			<0.20		ug/L		0.2	14-DEC-17
1,2-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-17
1,2-Dichloroethane			<0.50		ug/L		0.5	14-DEC-17
1,2-Dichloropropane			<0.50		ug/L		0.5	14-DEC-17
1,3-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-17
1,4-Dichlorobenzene			<0.50		ug/L		0.5	14-DEC-17
Acetone			<30		ug/L		30	14-DEC-17
Benzene			<0.50		ug/L		0.5	14-DEC-17
Bromodichloromethane			<2.0		ug/L		2	14-DEC-17
Bromoform			<5.0		ug/L		5	14-DEC-17
Bromomethane			<0.50		ug/L		0.5	14-DEC-17
Carbon tetrachloride			<0.20		ug/L		0.2	14-DEC-17
Chlorobenzene			<0.50		ug/L		0.5	14-DEC-17
Chloroform			<1.0		ug/L		1	14-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 18 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3912915							
WG2680237-2 MB								
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-17
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-17
Dibromochloromethane			<2.0		ug/L		2	14-DEC-17
Dichlorodifluoromethane			<2.0		ug/L		2	14-DEC-17
Ethylbenzene			<0.50		ug/L		0.5	14-DEC-17
n-Hexane			<0.50		ug/L		0.5	14-DEC-17
m+p-Xylenes			<0.40		ug/L		0.4	14-DEC-17
Methyl Ethyl Ketone			<20		ug/L		20	14-DEC-17
Methyl Isobutyl Ketone			<20		ug/L		20	14-DEC-17
Methylene Chloride			<5.0		ug/L		5	14-DEC-17
MTBE			<2.0		ug/L		2	14-DEC-17
o-Xylene			<0.30		ug/L		0.3	14-DEC-17
Styrene			<0.50		ug/L		0.5	14-DEC-17
Tetrachloroethylene			<0.50		ug/L		0.5	14-DEC-17
Toluene			<0.50		ug/L		0.5	14-DEC-17
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-DEC-17
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	14-DEC-17
Trichloroethylene			<0.50		ug/L		0.5	14-DEC-17
Trichlorofluoromethane			<5.0		ug/L		5	14-DEC-17
Vinyl chloride			<0.50		ug/L		0.5	14-DEC-17
Surrogate: 1,4-Difluorobenzene			97.9		%		70-130	14-DEC-17
Surrogate: 4-Bromofluorobenzene			93.6		%		70-130	14-DEC-17
WG2680237-5 MS		WG2680237-3						
1,1,1,2-Tetrachloroethane			99.6		%		50-140	13-DEC-17
1,1,1,2,2-Tetrachloroethane			99.4		%		50-140	13-DEC-17
1,1,1-Trichloroethane			99.5		%		50-140	13-DEC-17
1,1,2-Trichloroethane			104.2		%		50-140	13-DEC-17
1,1-Dichloroethane			101.0		%		50-140	13-DEC-17
1,1-Dichloroethylene			93.4		%		50-140	13-DEC-17
1,2-Dibromoethane			100.6		%		50-140	13-DEC-17
1,2-Dichlorobenzene			104.1		%		50-140	13-DEC-17
1,2-Dichloroethane			101.4		%		50-140	13-DEC-17
1,2-Dichloropropane			108.4		%		50-140	13-DEC-17
1,3-Dichlorobenzene			100.8		%		50-140	13-DEC-17



Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

Page 19 of 21

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3912915							
WG2680237-5 MS		WG2680237-3						
1,4-Dichlorobenzene			101.7		%		50-140	13-DEC-17
Acetone			109.8		%		50-140	13-DEC-17
Benzene			104.6		%		50-140	13-DEC-17
Bromodichloromethane			97.7		%		50-140	13-DEC-17
Bromoform			90.0		%		50-140	13-DEC-17
Bromomethane			90.8		%		50-140	13-DEC-17
Carbon tetrachloride			96.4		%		50-140	13-DEC-17
Chlorobenzene			102.5		%		50-140	13-DEC-17
Chloroform			102.3		%		50-140	13-DEC-17
cis-1,2-Dichloroethylene			91.2		%		50-140	13-DEC-17
cis-1,3-Dichloropropene			100.5		%		50-140	13-DEC-17
Dibromochloromethane			101.2		%		50-140	13-DEC-17
Dichlorodifluoromethane			72.4		%		50-140	13-DEC-17
Ethylbenzene			99.5		%		50-140	13-DEC-17
n-Hexane			82.4		%		50-140	13-DEC-17
m+p-Xylenes			100.8		%		50-140	13-DEC-17
Methyl Ethyl Ketone			94.0		%		50-140	13-DEC-17
Methyl Isobutyl Ketone			95.5		%		50-140	13-DEC-17
Methylene Chloride			101.4		%		50-140	13-DEC-17
MTBE			101.2		%		50-140	13-DEC-17
o-Xylene			99.4		%		50-140	13-DEC-17
Styrene			91.1		%		50-140	13-DEC-17
Tetrachloroethylene			93.7		%		50-140	13-DEC-17
Toluene			102.1		%		50-140	13-DEC-17
trans-1,2-Dichloroethylene			100.3		%		50-140	13-DEC-17
trans-1,3-Dichloropropene			100.6		%		50-140	13-DEC-17
Trichloroethylene			97.7		%		50-140	13-DEC-17
Trichlorofluoromethane			94.7		%		50-140	13-DEC-17
Vinyl chloride			95.8		%		50-140	13-DEC-17

Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

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

Page 20 of 21

Contact: Suvish Melanta

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.

Quality Control Report

Workorder: L2033776

Report Date: 19-DEC-17

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

Page 21 of 21

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	4	07-DEC-17 10:30	12-DEC-17 00:00	4	5	days	EHTR
	5	07-DEC-17 11:30	12-DEC-17 00:00	4	5	days	EHTR
	8	07-DEC-17 10:30	12-DEC-17 00:00	4	5	days	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2033776 were received on 11-DEC-17 17:30.

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.

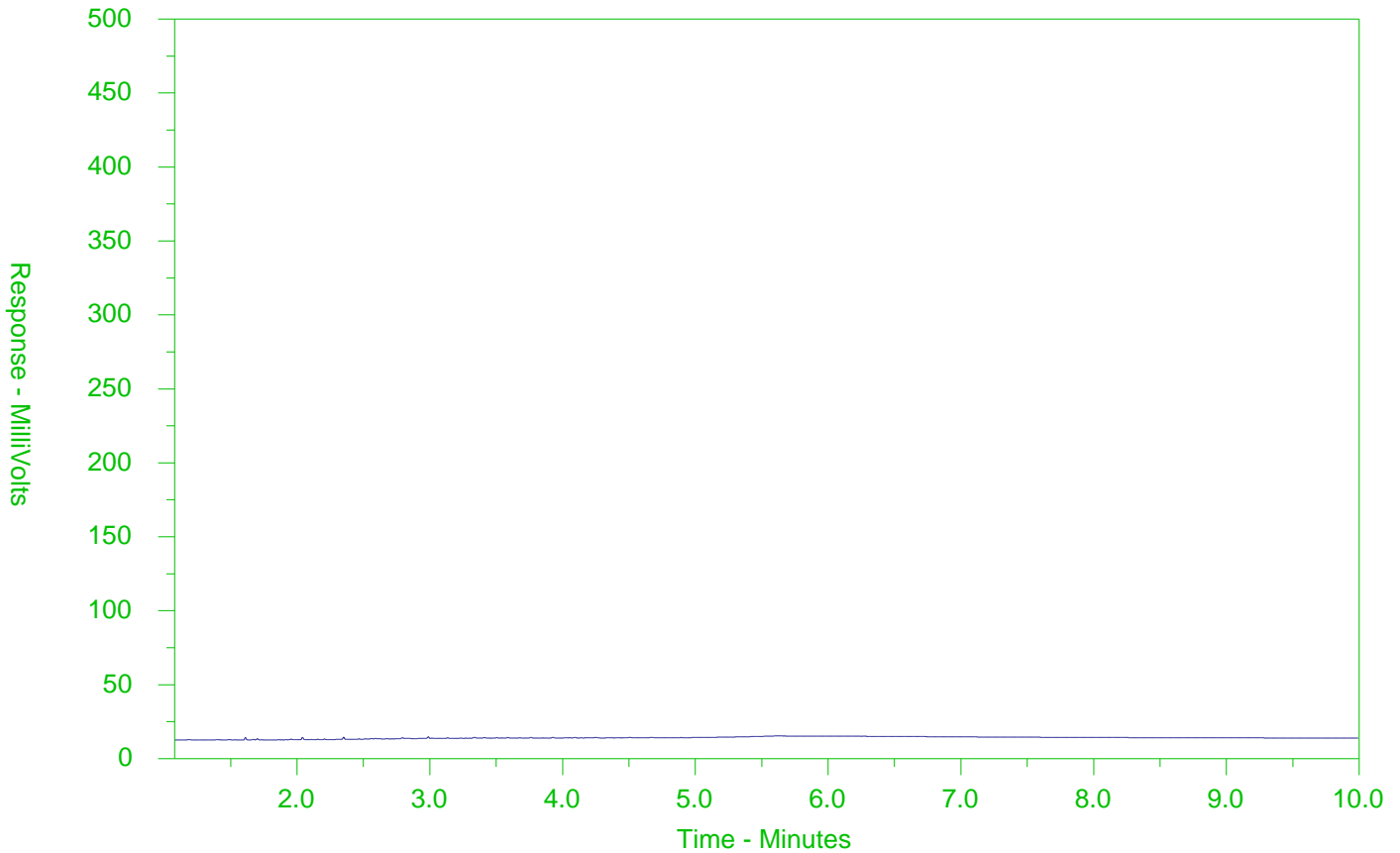
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2033776-1
 Client Sample ID: BH101



← 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.

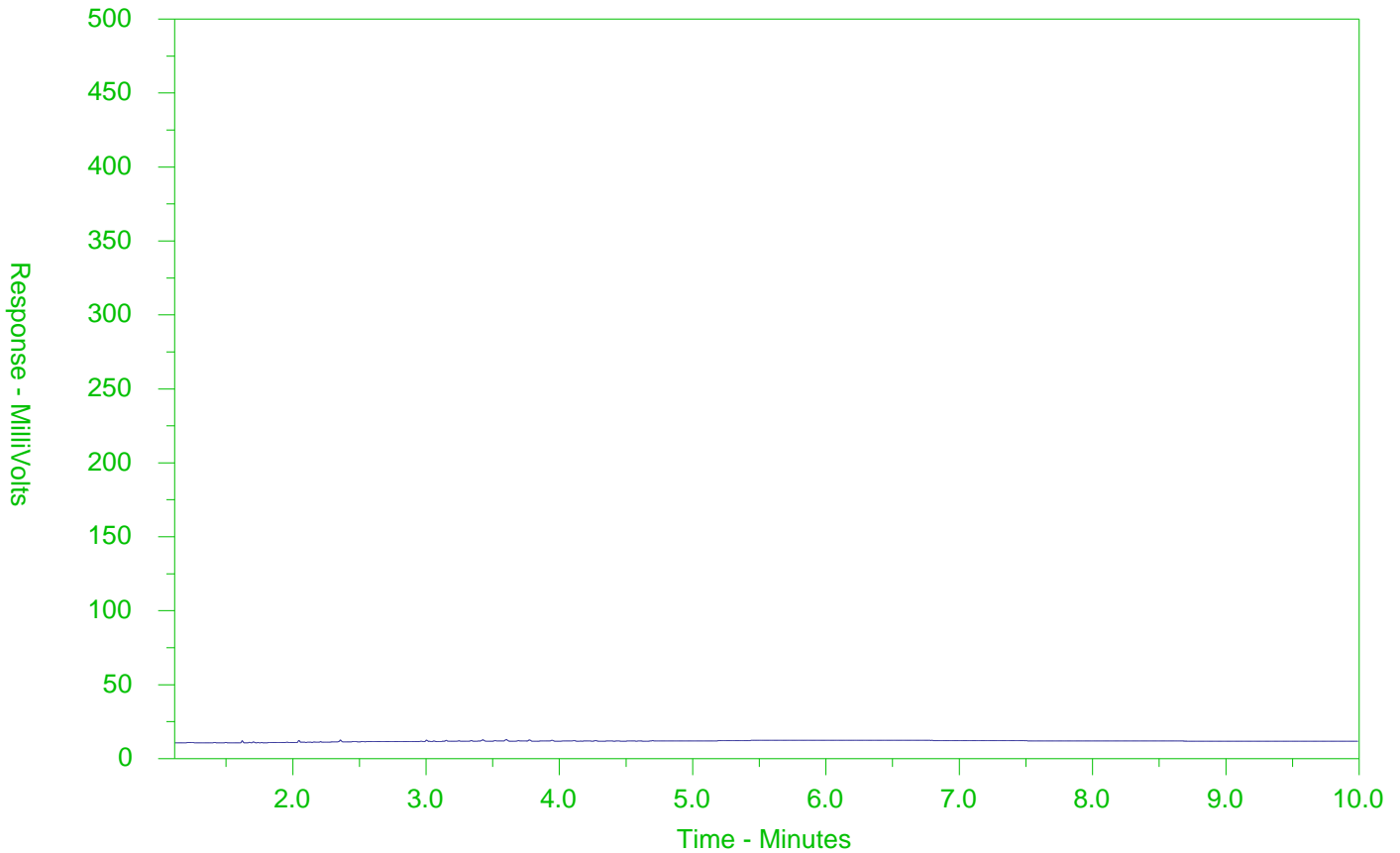
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2033776-2
 Client Sample ID: BH102



← 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.

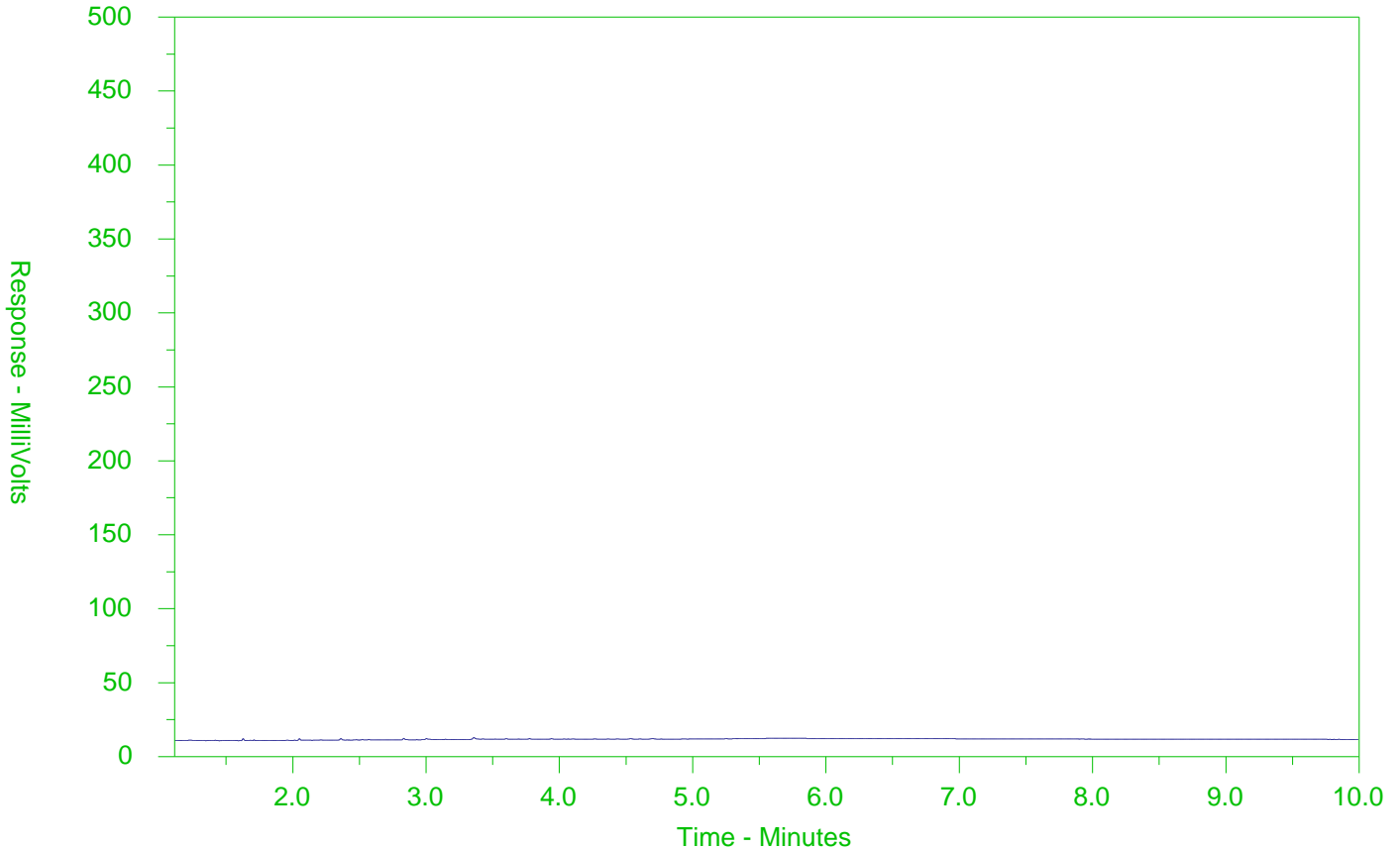
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2033776-3
 Client Sample ID: BH103



← 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.

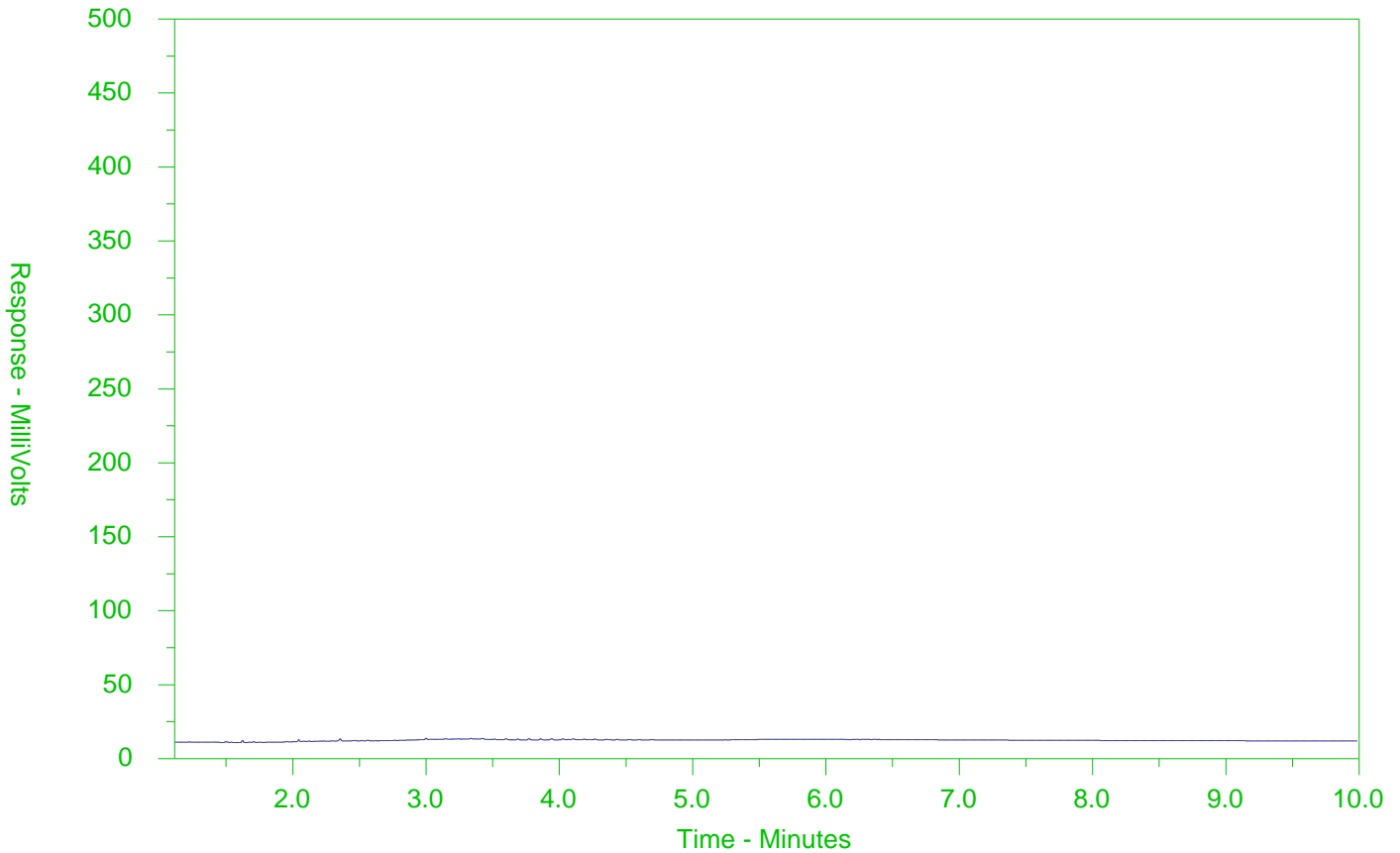
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2033776-4
 Client Sample ID: BH201-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.

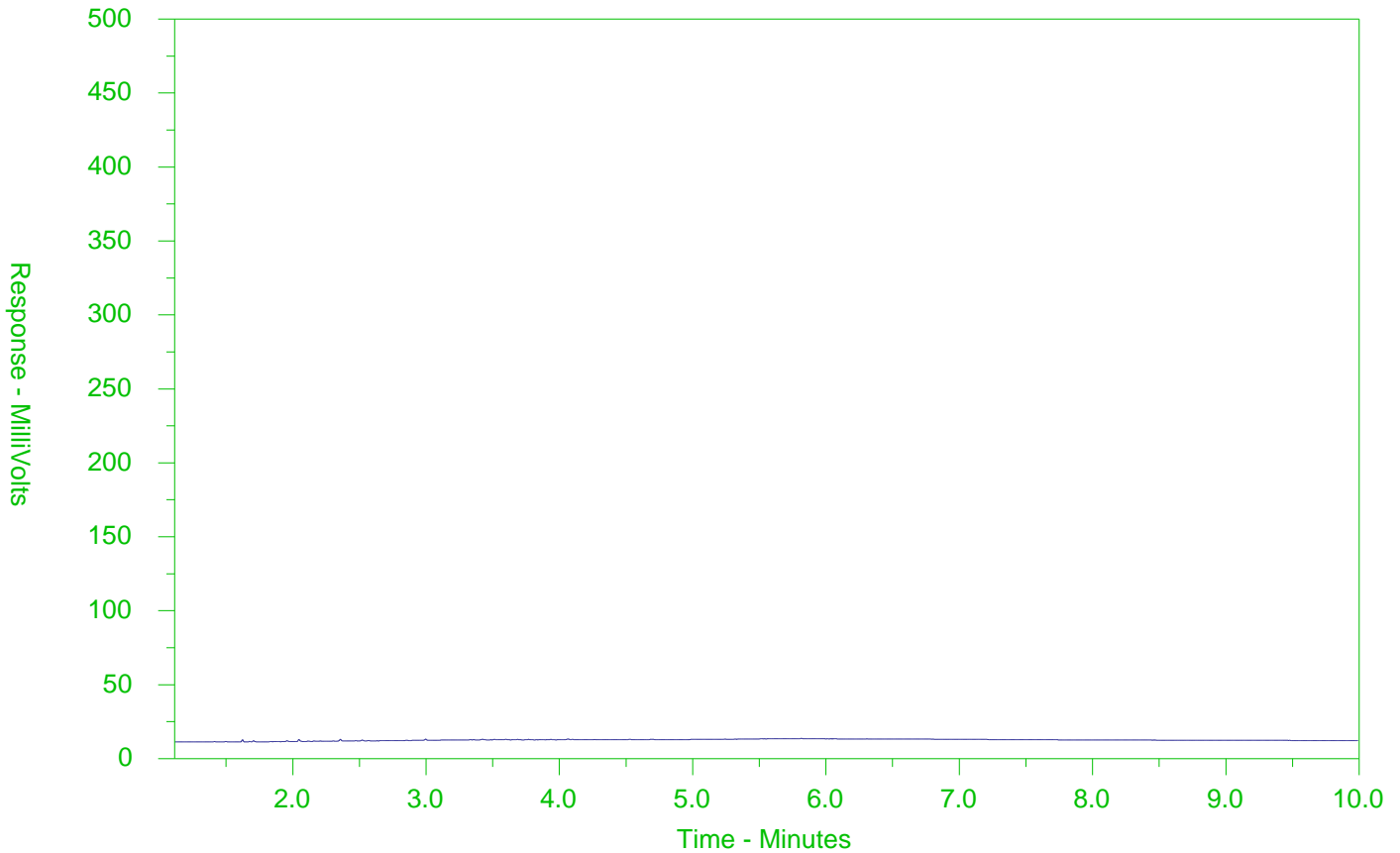
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2033776-5
 Client Sample ID: BH201-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.

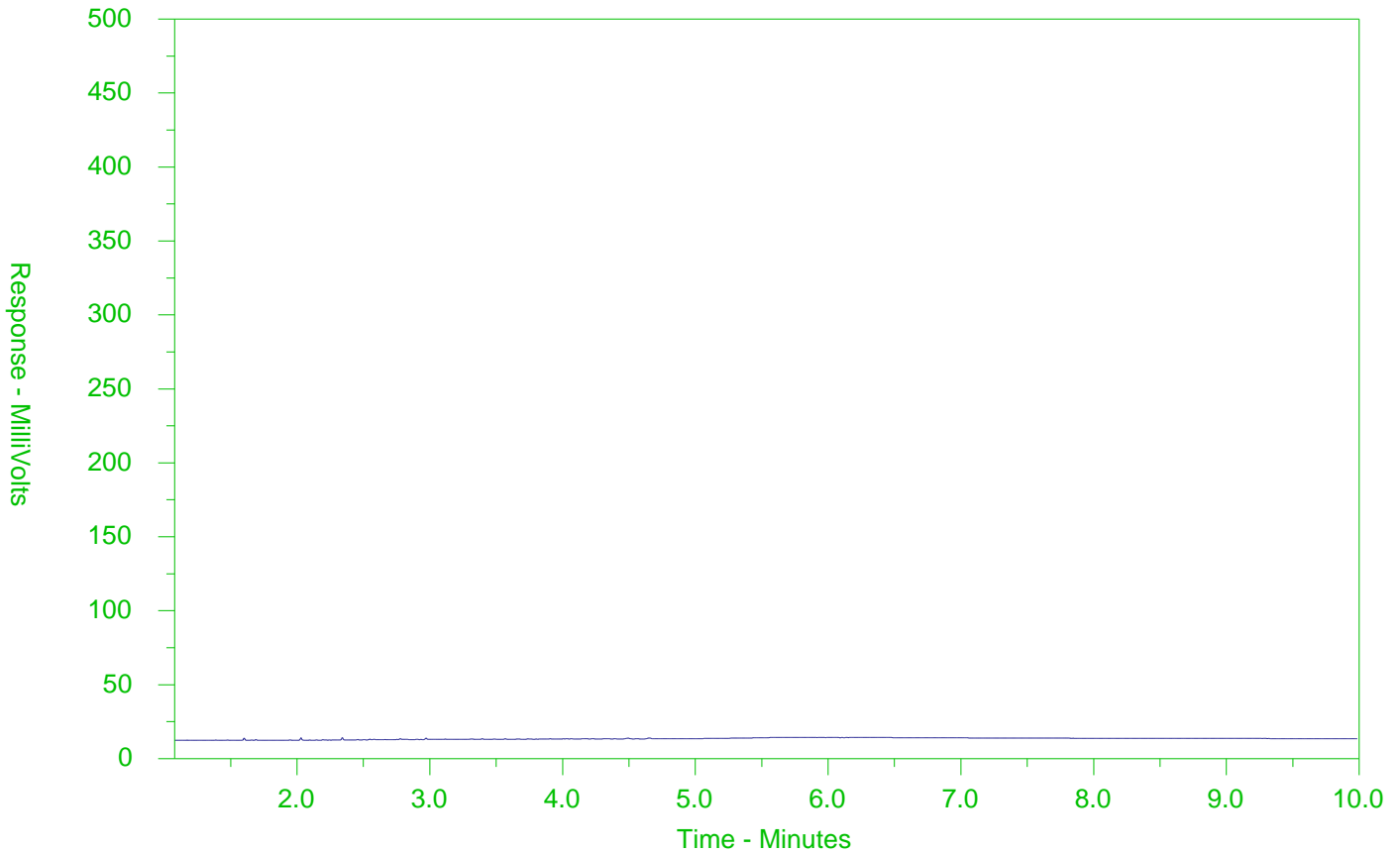
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2033776-6
 Client Sample ID: BH202



← 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.

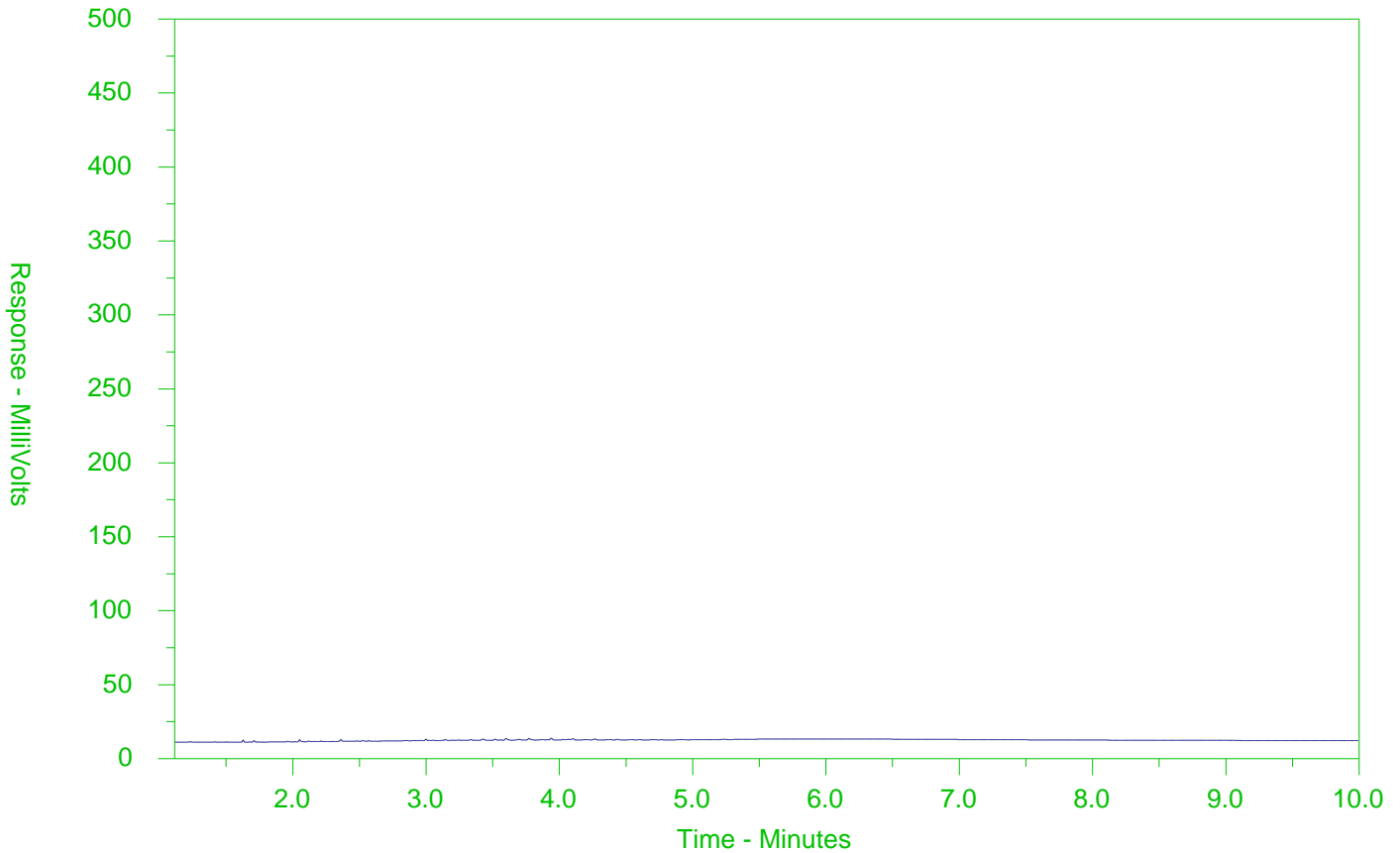
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2033776-7
 Client Sample ID: BH203



← 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.

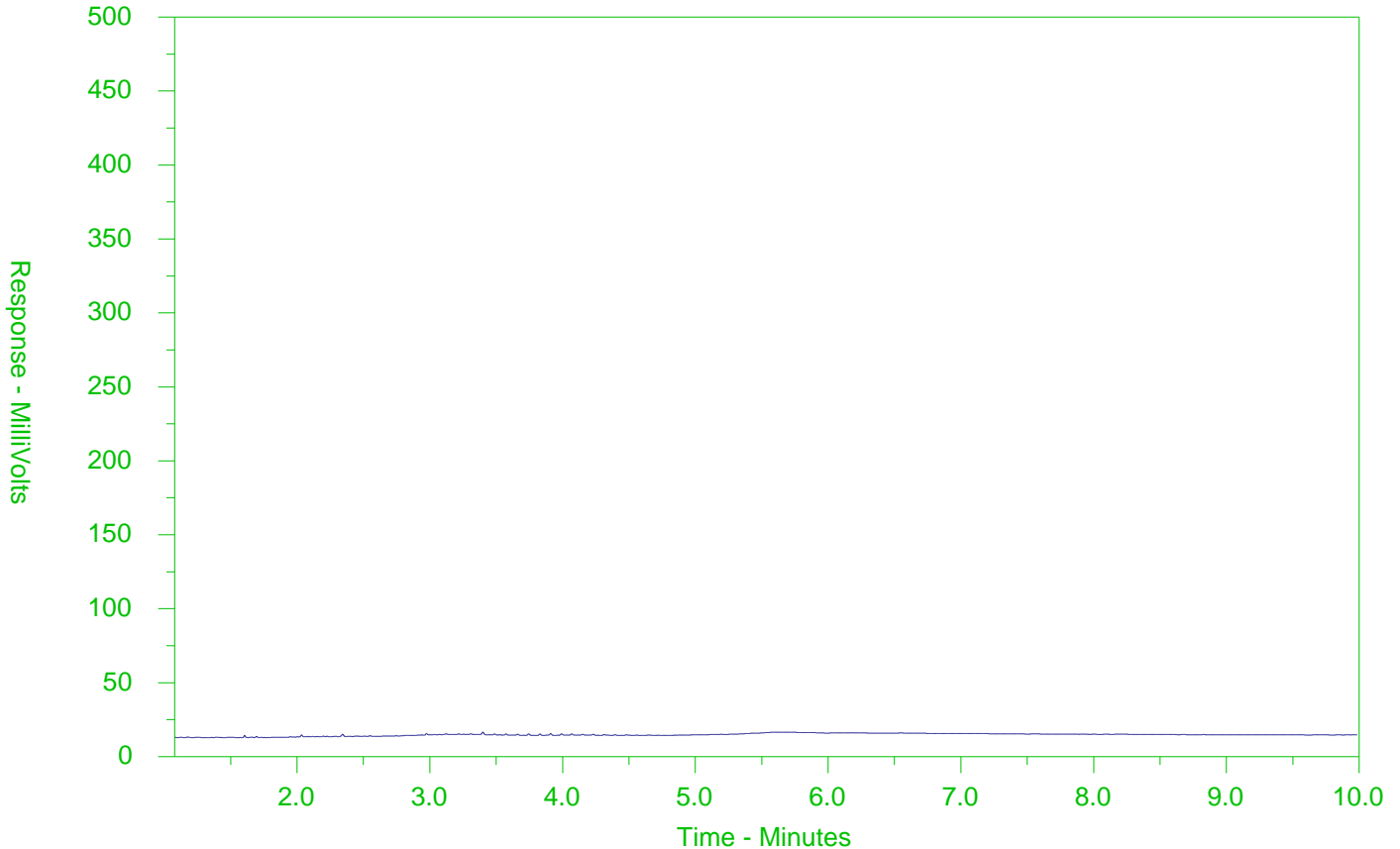
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

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: L2033776-8
 Client Sample ID: DUP



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

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2033776-COFC

COC Number: 15 -

Page | of |

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:	Suvish Melanta	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 Ln.	Email 1 or Fax:	smelanta@terraprobe.ca			Date and Time Required for all E&P TATs:			dd-mmm-yy hh:mm						
City/Province:	Brampton, ON	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 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 type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input checked="" type="checkbox"/> FAX												
Company:	Terraprobe	Email 1 or Fax:	smelanta@terraprobe.ca												
Contact:	Lorena Rossi	Email 2:	lrossi@terraprobe.ca												
Project Information		Oil and Gas Required Fields (client use)													
ALS Account # / Quote #:		AFE/Cost Center:	PO#												
Job #:	1-17-0481- 42	Major/Minor Code:	Routing Code:												
PO / AFE:		Requisitioner:													
LSD:		Location:													
ALS Lab Work Order # (lab use only)	L2033776 SM	ALS Contact:	Mathy	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	VOC	BTX	F1	F2-F4	PAH					Number of Containers
1	BH101	07-Dec-17	2:30	GW	X	X	X	X	X	X					13
2	BH102	07-Dec-17	12:30	GW	X	X	X	X	X	X					13
3	BH103	07-Dec-17	1:30	GW	X	X	X	X	X	X					13
4	BH201-S	07-Dec-17	10:30	GW	X	X	X	X	X	X					13
5	BH201-D	07-Dec-17	11:30	GW	X	X	X	X	X	X					13
6	BH202	07-Dec-17	4:00	GW	X	X	X	X	X	X					13
7	BH203	07-Dec-17	5:30	GW	X	X	X	X	X	X					13
8	DWP	07-Dec-17	10:30	GW	X	X	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		Tub 2- RPI- RSC			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 type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>										
					Cooling Initiated <input type="checkbox"/>										
					INITIAL COOLER TEMPERATURES °C: 9.4 FINAL COOLER TEMPERATURES °C: 9.8										
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)										
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:							
NICHOLAS GAUREAU	07-Dec-17	6:30					11-Dec-17	17:30							

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: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 05-JAN-18
Report Date: 10-JAN-18 12:42 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2042320
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 17-617961
Legal Site Desc:

Comments: JUN-13-18:
Samples 1,2, 4 results displayed only.

Mathy Mahadeva
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



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2042320-1	BH201-D							
Sampled By: N.G. on 04-JAN-18								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	09-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	09-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	09-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	09-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	09-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	09-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	09-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	09-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	09-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	09-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	09-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	09-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	09-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	09-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	09-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	09-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	09-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	09-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	09-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	09-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	09-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	09-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	09-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	09-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	09-JAN-18	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	09-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	09-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	09-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	09-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	09-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	09-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	09-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	09-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	09-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		98.9		70-130	%	09-JAN-18		
Surrogate: 1,4-Difluorobenzene		97.7		70-130	%	09-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2042320-2	BH203							
Sampled By:	N.G. on 04-JAN-18							
Matrix:	WATER							
Volatile Organic Compounds								
Acetone		<30		30	ug/L	09-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	09-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	09-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	09-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	09-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	09-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	09-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	09-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	09-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	09-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	09-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	09-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	09-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	09-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	09-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	09-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	09-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	09-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	09-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	09-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	09-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	09-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	09-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	09-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	09-JAN-18	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	09-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	09-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	09-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	09-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	09-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	09-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	09-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	09-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	09-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		100.6		70-130	%	09-JAN-18		
Surrogate: 1,4-Difluorobenzene		97.7		70-130	%	09-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2042320-4	DUP1							
Sampled By: N.G. on 04-JAN-18								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	09-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	09-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	09-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	09-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	09-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	09-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	09-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	09-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	09-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	09-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	09-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	09-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	09-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	09-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	09-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	09-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	09-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	09-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	09-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	09-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	09-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	09-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	09-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	09-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	09-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	09-JAN-18	1.1	1.1
1,1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	09-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	09-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	09-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	09-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	09-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	09-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	09-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	09-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	09-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	09-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		98.4		70-130	%	09-JAN-18		
Surrogate: 1,4-Difluorobenzene		95.9		70-130	%	09-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use

Reference Information

Methods Listed (if applicable):

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

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:

17-617961

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	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.



Quality Control Report

Workorder: L2042320

Report Date: 13-JUN-18

Page 1 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3931458							
WG2684375-4	DUP	WG2684375-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	09-JAN-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	09-JAN-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-JAN-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	09-JAN-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	09-JAN-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	09-JAN-18
cis-1,2-Dichloroethylene		7.79	7.60		ug/L	2.5	30	09-JAN-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	09-JAN-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-JAN-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-JAN-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	09-JAN-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	09-JAN-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	09-JAN-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	09-JAN-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	09-JAN-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	09-JAN-18
Styrene		<0.50	<0.50		ug/L			09-JAN-18



Quality Control Report

Workorder: L2042320

Report Date: 13-JUN-18

Page 2 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3931458							
WG2684375-4	DUP	WG2684375-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	09-JAN-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	09-JAN-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	09-JAN-18
Vinyl chloride		5.07	4.72		ug/L	7.2	30	09-JAN-18
WG2684375-1	LCS							
1,1,1,2-Tetrachloroethane			89.9		%		70-130	09-JAN-18
1,1,2,2-Tetrachloroethane			83.8		%		70-130	09-JAN-18
1,1,1-Trichloroethane			96.6		%		70-130	09-JAN-18
1,1,2-Trichloroethane			89.9		%		70-130	09-JAN-18
1,1-Dichloroethane			94.5		%		70-130	09-JAN-18
1,1-Dichloroethylene			90.3		%		70-130	09-JAN-18
1,2-Dibromoethane			88.7		%		70-130	09-JAN-18
1,2-Dichlorobenzene			91.0		%		70-130	09-JAN-18
1,2-Dichloroethane			91.3		%		70-130	09-JAN-18
1,2-Dichloropropane			92.8		%		70-130	09-JAN-18
1,3-Dichlorobenzene			91.6		%		70-130	09-JAN-18
1,4-Dichlorobenzene			93.0		%		70-130	09-JAN-18
Acetone			104.7		%		60-140	09-JAN-18
Benzene			93.8		%		70-130	09-JAN-18
Bromodichloromethane			89.1		%		70-130	09-JAN-18
Bromoform			82.5		%		70-130	09-JAN-18
Bromomethane			96.7		%		60-140	09-JAN-18
Carbon tetrachloride			92.9		%		70-130	09-JAN-18
Chlorobenzene			94.0		%		70-130	09-JAN-18
Chloroform			93.5		%		70-130	09-JAN-18
cis-1,2-Dichloroethylene			92.4		%		70-130	09-JAN-18
cis-1,3-Dichloropropene			95.2		%		70-130	09-JAN-18
Dibromochloromethane			89.7		%		70-130	09-JAN-18
Dichlorodifluoromethane			94.5		%		50-140	09-JAN-18



Quality Control Report

Workorder: L2042320

Report Date: 13-JUN-18

Page 3 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3931458							
WG2684375-1	LCS							
Ethylbenzene			92.3		%		70-130	09-JAN-18
n-Hexane			102.0		%		70-130	09-JAN-18
m+p-Xylenes			94.9		%		70-130	09-JAN-18
Methyl Ethyl Ketone			86.7		%		60-140	09-JAN-18
Methyl Isobutyl Ketone			82.8		%		60-140	09-JAN-18
Methylene Chloride			94.6		%		70-130	09-JAN-18
MTBE			91.4		%		70-130	09-JAN-18
o-Xylene			91.6		%		70-130	09-JAN-18
Styrene			88.7		%		70-130	09-JAN-18
Tetrachloroethylene			91.8		%		70-130	09-JAN-18
Toluene			92.4		%		70-130	09-JAN-18
trans-1,2-Dichloroethylene			94.2		%		70-130	09-JAN-18
trans-1,3-Dichloropropene			94.9		%		70-130	09-JAN-18
Trichloroethylene			95.8		%		70-130	09-JAN-18
Trichlorofluoromethane			96.0		%		60-140	09-JAN-18
Vinyl chloride			94.4		%		60-140	09-JAN-18
WG2684375-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	09-JAN-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	09-JAN-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	09-JAN-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	09-JAN-18
1,1-Dichloroethane			<0.50		ug/L		0.5	09-JAN-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	09-JAN-18
1,2-Dibromoethane			<0.20		ug/L		0.2	09-JAN-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	09-JAN-18
1,2-Dichloroethane			<0.50		ug/L		0.5	09-JAN-18
1,2-Dichloropropane			<0.50		ug/L		0.5	09-JAN-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	09-JAN-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	09-JAN-18
Acetone			<30		ug/L		30	09-JAN-18
Benzene			<0.50		ug/L		0.5	09-JAN-18
Bromodichloromethane			<2.0		ug/L		2	09-JAN-18
Bromoform			<5.0		ug/L		5	09-JAN-18
Bromomethane			<0.50		ug/L		0.5	09-JAN-18



Quality Control Report

Workorder: L2042320

Report Date: 13-JUN-18

Page 4 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3931458							
WG2684375-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	09-JAN-18
Chlorobenzene			<0.50		ug/L		0.5	09-JAN-18
Chloroform			<1.0		ug/L		1	09-JAN-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	09-JAN-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	09-JAN-18
Dibromochloromethane			<2.0		ug/L		2	09-JAN-18
Dichlorodifluoromethane			<2.0		ug/L		2	09-JAN-18
Ethylbenzene			<0.50		ug/L		0.5	09-JAN-18
n-Hexane			<0.50		ug/L		0.5	09-JAN-18
m+p-Xylenes			<0.40		ug/L		0.4	09-JAN-18
Methyl Ethyl Ketone			<20		ug/L		20	09-JAN-18
Methyl Isobutyl Ketone			<20		ug/L		20	09-JAN-18
Methylene Chloride			<5.0		ug/L		5	09-JAN-18
MTBE			<2.0		ug/L		2	09-JAN-18
o-Xylene			<0.30		ug/L		0.3	09-JAN-18
Styrene			<0.50		ug/L		0.5	09-JAN-18
Tetrachloroethylene			<0.50		ug/L		0.5	09-JAN-18
Toluene			<0.50		ug/L		0.5	09-JAN-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	09-JAN-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	09-JAN-18
Trichloroethylene			<0.50		ug/L		0.5	09-JAN-18
Trichlorofluoromethane			<5.0		ug/L		5	09-JAN-18
Vinyl chloride			<0.50		ug/L		0.5	09-JAN-18
Surrogate: 1,4-Difluorobenzene			96.6		%		70-130	09-JAN-18
Surrogate: 4-Bromofluorobenzene			97.1		%		70-130	09-JAN-18
WG2684375-5 MS		WG2684375-3						
1,1,1,2-Tetrachloroethane			89.2		%		50-140	09-JAN-18
1,1,2,2-Tetrachloroethane			74.6		%		50-140	09-JAN-18
1,1,1-Trichloroethane			99.4		%		50-140	09-JAN-18
1,1,2-Trichloroethane			83.3		%		50-140	09-JAN-18
1,1-Dichloroethane			93.0		%		50-140	09-JAN-18
1,1-Dichloroethylene			92.5		%		50-140	09-JAN-18
1,2-Dibromoethane			80.8		%		50-140	09-JAN-18
1,2-Dichlorobenzene			91.5		%		50-140	09-JAN-18



Quality Control Report

Workorder: L2042320

Report Date: 13-JUN-18

Page 5 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3931458							
WG2684375-5 MS		WG2684375-3						
1,2-Dichloroethane			85.1		%		50-140	09-JAN-18
1,2-Dichloropropane			87.3		%		50-140	09-JAN-18
1,3-Dichlorobenzene			95.8		%		50-140	09-JAN-18
1,4-Dichlorobenzene			96.2		%		50-140	09-JAN-18
Acetone			79.8		%		50-140	09-JAN-18
Benzene			91.3		%		50-140	09-JAN-18
Bromodichloromethane			83.0		%		50-140	09-JAN-18
Bromoform			74.5		%		50-140	09-JAN-18
Bromomethane			94.2		%		50-140	09-JAN-18
Carbon tetrachloride			97.0		%		50-140	09-JAN-18
Chlorobenzene			94.4		%		50-140	09-JAN-18
Chloroform			91.2		%		50-140	09-JAN-18
cis-1,2-Dichloroethylene			100.2		%		50-140	09-JAN-18
cis-1,3-Dichloropropene			89.4		%		50-140	09-JAN-18
Dibromochloromethane			84.1		%		50-140	09-JAN-18
Dichlorodifluoromethane			92.6		%		50-140	09-JAN-18
Ethylbenzene			96.8		%		50-140	09-JAN-18
n-Hexane			106.2		%		50-140	09-JAN-18
m+p-Xylenes			99.3		%		50-140	09-JAN-18
Methyl Ethyl Ketone			70.3		%		50-140	09-JAN-18
Methyl Isobutyl Ketone			64.6		%		50-140	09-JAN-18
Methylene Chloride			89.2		%		50-140	09-JAN-18
MTBE			90.9		%		50-140	09-JAN-18
o-Xylene			93.2		%		50-140	09-JAN-18
Styrene			87.1		%		50-140	09-JAN-18
Tetrachloroethylene			99.4		%		50-140	09-JAN-18
Toluene			94.7		%		50-140	09-JAN-18
trans-1,2-Dichloroethylene			95.3		%		50-140	09-JAN-18
trans-1,3-Dichloropropene			91.4		%		50-140	09-JAN-18
Trichloroethylene			98.7		%		50-140	09-JAN-18
Trichlorofluoromethane			99.9		%		50-140	09-JAN-18
Vinyl chloride			92.8		%		50-140	09-JAN-18

Quality Control Report

Workorder: L2042320

Report Date: 13-JUN-18

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

Page 6 of 6

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.

Report To		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)					
Company: Terraprobe		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					
Contact: SUVISH		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4-20%] <input type="checkbox"/>		EMERGENCY	1 Business day [E-100%] <input type="checkbox"/>	
Phone: 905 746 2650		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3-25%] <input checked="" type="checkbox"/>			Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply) <input type="checkbox"/>	
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL MAIL <input type="checkbox"/> FAX				2 day [P2-50%] <input type="checkbox"/>				
Street: 11 Indell Lane		Email 1 or Fax: SMelanta@terraprobe.ca			Date and Time Required for all E&P TATs: _____					
City/Province: Brampton ON		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 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 type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX								
Company: _____		Email 1 or Fax: accounting@terraprobe.ca								
Contact: _____		Email 2: _____								
Project Information		Oil and Gas Required Fields (client use)								
ALS Account # / Quote #: 059976		AFE/Cost Center: _____ PO#: _____								
Job #: F7-0481-92		Major/Minor Code: _____ Routing Code: _____								
PO / AFE: _____		Requisitioner: _____								
LSD: _____		Location: _____								
ALS Lab Work Order # (lab use only): L2042320		ALS Contact: _____			Sampler: N.G			VOCs		PAHs
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	BH201-D	04-Jan-18		GW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				2
-2	BH203	04-Jan-18		GW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				2
-3	BH206	04-Jan-18		GW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				2
-4	DUP1	04-Jan-18		GW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				2
-5	DUP2	04-Jan-18		GW	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				2
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)					
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		Table 2 - RPI			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>					
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>					
					Cooling Initiated <input type="checkbox"/>					
					INITIAL COOLER TEMPERATURES °C: 6.1					
					FINAL COOLER TEMPERATURES °C: _____					
SHIPPING RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)				
Released by: NICHOLAS GAURDEAU	Date: 05-JAN-2018	Time: 15:51	Received by: [Signature]	Date: Jan 05/18	Time: 15:50	Received by: _____	Date: _____	Time: _____		

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.

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated in and form part of the Agreement between ALS Group's Environmental Division and the party named in the Offer (the "Client").

1. **Definitions.** Capitalized Terms not defined in these Terms and Conditions have the definitions set out in the other Agreement documents.
2. **The Services.** ALS will provide the Services to the Client as described in the Offer and in any chain of custody form provided with any sample.
3. **Prices.** ALS may review and change all prices, fees, surcharges or other charges set out in the Agreement if there are changes to ALS's cost beyond ALS's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding Condition 3, all quotations expire after three years.
4. **Payment Terms.** The Client shall pay ALS within 30 days of the invoice date OAC. ALS may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. **Quotation Numbers.** The Client shall provide the quotation number to ALS (where applicable) to ensure correct pricing.
6. **Taxes.** Applicable taxes are not included in prices, surcharges and additional fees will be added at the time of invoicing.
7. **Quality Control.** ALS has an extensive QA/QC program. Clients' samples are analyzed using approved, referenced procedures followed by thorough data validation prior to reporting the analytical results.
8. **Test Results are Not Guaranteed.** Results are obtained from analytical measurements that are subject to inherent variability. Measurement results reflect characteristics of submitted test samples at time of analysis. The Client is responsible for informing itself on the limitation of test results and acknowledges that test results are not guaranteed.
9. **Standard of Care.** ALS will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested.
10. **Storage.** Where possible, ALS will store; soil and water samples for 45 days from date of receipt, tissue/biota samples for 6 months from date of receipt, air samples or re-usable media for 14 days from date of receipt, and microbiological samples for 3 days from date of receipt.
11. **Holds.** If the Client requests a sample to be placed on hold, ALS will store the samples according to paragraph 10, after which ALS will invoice the Client and discard the sample. Each sample is subject to a minimum \$5.00 hold fee. Longer hold periods are available upon request. See paragraph 12.
12. **Archives.** If the Client requests a sample be archived, ALS will invoice in advance and store the sample for the period requested, after which ALS may discard the sample.
13. **Handling Protocol.** Legal sample handling protocol must be arranged before samples are collected. ALS charges a surcharge on the list price plus the hourly technologist or chemist rates for legal sample protocol. Additional charges will apply for samples that require storage by ALS.
14. **Samples.** The quality, condition, content and source of samples stored and tested are not known to ALS except as declared and described on the chain of custody form completed and submitted by the Client and accompanying the sample.
15. **Risk of Loss.** ALS will use reasonable care to protect samples during storage, however all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the Client releases ALS from any claim the Client may have for any loss or damage to the sample.
16. **Environmental.** The Client must comply with all applicable environment legislation, including labeling all hazardous samples to comply with GHS and TDG regulations, and must provide appropriate Safety Data that include the nature of the hazard and a contact name and phone number to call for information. The Client will indemnify ALS for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
17. **Hazardous Materials Disposal.** ALS may return, at the Client's cost, hazardous material to the Client for disposal.
18. **Hazardous Materials Surcharge.** ALS may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials (NORM), H2S, CN, etc.
19. **Sample Containers.** ALS may ship sample containers to the Client's location by the most cost effective means using ALS preferred courier suppliers, within the specified project timeline.
20. **Additional Charges.** ALS may charge the Client (a) its cost for emergency bottle shipments and shipments to and from a remote site, and (b) where pick up and delivery services are provided, subject in each instance to a minimum charge of \$25.00.
21. **Re-Tests.** ALS reserves the right to re-test any samples that remains in its possession. Re-tests requested by the Client may be charged.
22. **Waiver.** The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any claims against ALS it may have as a result of the interpretation of the results. The Client shall indemnify ALS for all claims made by any third party against ALS in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
23. **Limitation of Liability.** In no event shall ALS be liable for any consequential, indirect, incidental, special, exemplary or punitive damages, whether foreseeable or unforeseeable, (including claims for loss of profits or revenue or losses caused by stoppage of other work or impairment of other assets) incurred by the Client arising out of breach or failure of express or implied warranty, breach of contract, breach of warranty, misrepresentation, negligence, strict liability in tort or otherwise. In any event, the liability of ALS to the Client shall be limited to the cost of testing the sample as requested in the chain of custody form under which the sample was originally deposited. For the purposes of this paragraph and paragraphs 8, 15, 16, 22 and 24, as the applicable, "ALS" includes without limitations its directors, officers, employees and affiliates and the "Client" includes without limitation any third party that may have a claim against ALS through the Client.
24. **Notice of Liability.** Notwithstanding paragraph 23, ALS shall not be liable to the Client unless the Client provides notice in writing to ALS of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk under the Agreement between the Client and ALS, and the fees to be paid by the Client to ALS reflect this allocation of risks and the limitations of liability in this Agreement.
25. **Third Party Service Provider Indemnity.** Should the Client require ALS to forward samples and/or obtain services from a third party service provider, the Client will provide ALS notice in writing. The Client indemnifies ALS against any breach of this Agreement, all liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
26. **Third Party Service Provider Indemnity.** If ALS is required to engage a third party service provider for whatever reason, the Client indemnifies ALS against any breach of this Agreement, liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
27. **Entire Agreement.** The Agreement is the entire agreement between the parties and supersedes and takes precedence over any terms and conditions contained in any documentation provided by the Client. ALS's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein. If there is a conflict between these terms and conditions and any other Agreement document, these terms and conditions prevail.
28. **Term.** Providing the first batch of samples to which this tender refers is submitted within three months of the starting date of this quotation, the following prices, terms and conditions will remain firm until the closing date. This offer, and terms and conditions will automatically lapse if the offer has not been accepted, and samples not delivered to ALS, within the Closing Date.
29. **Termination.** (a) Either party may terminate this Agreement for any reason by giving the other party thirty (30) days written notice (Notice Period). (b) If the Agreement is terminated pursuant to clause (a), then the Client must pay ALS for all Services performed up to the expiry of the Notice Period.



TERRAPROBE-BRAMPTON
ATTN: NICHOLAS GAUVREAU
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 18-JAN-18
Report Date: 23-JAN-18 14:35 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2046388
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers:
Legal Site Desc:

Comments: JUN-13-18:
Samples 1,2,3,6,7,8,9,13 displayed only.

Mathy Mahadeva
Account Manager

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

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2046388-1	BH101	Anions and Nutrients	Chloride (Cl)	2930	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1330	1000	ug/L
			Sodium (Na)-Dissolved	660000	490000	ug/L
L2046388-2	BH102	Anions and Nutrients	Chloride (Cl)	2280	790	mg/L
L2046388-9	BH203	Volatile Organic Compounds	Trichloroethylene	2.43	1.6	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use						
L2046388-1	BH101	Anions and Nutrients	Chloride (Cl)	2930	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1330	1000	ug/L
			Sodium (Na)-Dissolved	660000	490000	ug/L
L2046388-2	BH102	Anions and Nutrients	Chloride (Cl)	2280	790	mg/L

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

Physical Tests - WATER

		Lab ID	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
		Sample Date	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18
		Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2
		Guide Limits								
Analyte	Unit		#1	#2						
Conductivity	mS/cm	-	8.10	5.97	0.859	2.27	0.676	0.990	0.952	2.32
pH	pH units	-	7.48	7.66	7.93	7.73	8.02	8.02	8.00	7.76

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

Analyte	Unit	Guide Limits									
		#1		#2							
Chloride (Cl)	mg/L	790	790	2930 ^{DLHC}	2280 ^{DLHC}	111	590 ^{DLHC}	53.8	137	173	541 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Cyanides - WATER

Analyte	Unit	Guide Limits																
		#1	#2															
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
		#1	#2	Sample Date	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2
Dissolved Mercury Filtration Location	-	-		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	-	-		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<1.0 ^{DLHC}	<1.0 ^{DLHC}	0.18	<1.0 ^{DLHC}	<0.10	<0.10	<0.10	<0.10	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	25	<1.0 ^{DLHC}	<1.0 ^{DLHC}	1.04	<1.0 ^{DLHC}	0.35	0.19	0.95	<1.0 ^{DLHC}	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	1000	1330 ^{DLHC}	222 ^{DLHC}	145	319 ^{DLHC}	243	286	101	305 ^{DLHC}	<1.0 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	4	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<0.10	<1.0 ^{DLHC}	<0.10	<0.10	<0.10	<0.10	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	5000	<100 ^{DLHC}	<100 ^{DLHC}	71	<100 ^{DLHC}	27	<10	26	<100 ^{DLHC}	<100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050 ^{DLHC}	<0.050 ^{DLHC}	<0.010	<0.050 ^{DLHC}	<0.010	<0.010	<0.010	<0.010	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	50	<5.0 ^{DLHC}	<5.0 ^{DLHC}	<0.50	<5.0 ^{DLHC}	0.79	<0.50	<0.50	<0.50	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	<1.0 ^{DLHC}	1.0 ^{DLHC}	0.12	<1.0 ^{DLHC}	0.23	0.12	0.11	<1.0 ^{DLHC}	<1.0 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	6.0 ^{DLHC}	<2.0 ^{DLHC}	1.38	2.4 ^{DLHC}	0.92	0.81	0.64	<2.0 ^{DLHC}	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	10	<0.50 ^{DLHC}	<0.50 ^{DLHC}	0.061	<0.50 ^{DLHC}	0.099	0.099	<0.050	<0.50 ^{DLHC}	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	5.43 ^{DLHC}	2.34 ^{DLHC}	5.31	<0.50 ^{DLHC}	0.511	0.501	3.32	<0.50 ^{DLHC}	<0.50 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	100	<5.0 ^{DLHC}	<5.0 ^{DLHC}	0.61	<5.0 ^{DLHC}	0.64	<0.50	0.51	<5.0 ^{DLHC}	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	10	0.72 ^{DLHC}	<0.50 ^{DLHC}	0.733	1.63 ^{DLHC}	1.60	0.092	0.097	1.86 ^{DLHC}	<5.0 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<0.050	<0.50 ^{DLHC}	<0.050	<0.050	<0.050	<0.50 ^{DLHC}	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	490000	660000 ^{DLHC}	287000 ^{DLHC}	53300	290000 ^{DLHC}	214000 ^{DLHC}	17600	110000 ^{DLHC}	290000 ^{DLHC}	<5.0 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	2	<0.10 ^{DLHC}	<0.10 ^{DLHC}	0.013	<0.10 ^{DLHC}	<0.010	<0.010	<0.010	<0.10 ^{DLHC}	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	20	2.45 ^{DLHC}	2.86 ^{DLHC}	3.40	0.59 ^{DLHC}	0.646	3.19	1.24	0.61 ^{DLHC}	<5.0 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<5.0 ^{DLHC}	<5.0 ^{DLHC}	1.64	<5.0 ^{DLHC}	0.85	1.02	0.82	<5.0 ^{DLHC}	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10 ^{DLHC}	<10 ^{DLHC}	2.2	<10 ^{DLHC}	2.9	2.3	2.2	<10 ^{DLHC}	<10 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

Analyte	Unit	Guide Limits											
		#1		#2		#3		#4		#5		#6	
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
Chromium, Hexavalent	ug/L	25	25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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



ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
		#1	#2	Sample Date	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2
Acetone	ug/L	2700	2700		<30	<30	<30	<30	<30	<30	<30	<30
Benzene	ug/L	5	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	ug/L	16	16		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	ug/L	25	25		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	ug/L	0.89	0.89		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	0.79	5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	30	30		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	25	25		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	ug/L	2.4	22		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	3	3		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	59	59		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	1	1		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	590	590		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	ug/L	5	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	1.6	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	1.6	14		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	50	50		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	ug/L	5	5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	2.4	2.4		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	ug/L	51	520		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800		<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	ug/L	640	640		<20	<20	<20	<20	<20	<20	<20	<20
MTBE	ug/L	15	15		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	5.4	5.4		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2046388-1	L2046388-2	L2046388-3	L2046388-6	L2046388-7	L2046388-8	L2046388-9	L2046388-13
		#1	#2	Sample Date	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18	17-JAN-18
				Sample ID	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP2
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	24	24	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	200	200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	1.6	5	<0.50	<0.50	<0.50	<0.50	0.58	<0.50	2.43	<0.50	<0.50
Trichlorofluoromethane	ug/L	150	150	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes	ug/L	-	-	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	ug/L	300	300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	99.6	98.4	100.3	99.0	99.1	99.5	98.6	98.7	98.7
Surrogate: 1,4-Difluorobenzene	%	-	-	94.8	94.8	94.8	94.3	94.9	94.7	95.5	94.9	94.9

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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.



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 1 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R3941753							
WG2701494-14	DUP	WG2701494-13						
Chloride (Cl)		2.51	2.51		mg/L	0.1	20	19-JAN-18
WG2701494-9	DUP	WG2701494-8						
Chloride (Cl)		110	111		mg/L	0.7	20	19-JAN-18
WG2701494-12	LCS							
Chloride (Cl)			100.9		%		90-110	19-JAN-18
WG2701494-7	LCS							
Chloride (Cl)			101.3		%		90-110	19-JAN-18
WG2701494-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-JAN-18
WG2701494-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-JAN-18
WG2701494-10	MS	WG2701494-8						
Chloride (Cl)			N/A	MS-B	%		-	19-JAN-18
WG2701494-15	MS	WG2701494-13						
Chloride (Cl)			101.3		%		75-125	19-JAN-18
CN-WAD-R511-WT		Water						
Batch	R3941816							
WG2701571-3	DUP	L2046388-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	19-JAN-18
WG2701571-2	LCS							
Cyanide, Weak Acid Diss			96.6		%		80-120	19-JAN-18
WG2701571-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	19-JAN-18
WG2701571-4	MS	L2046388-1						
Cyanide, Weak Acid Diss			74.2		%		70-130	19-JAN-18
CR-CR6-IC-R511-WT		Water						
Batch	R3941821							
WG2702717-10	DUP	WG2702717-8						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	22-JAN-18
WG2702717-4	DUP	WG2702717-3						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	22-JAN-18
WG2702717-2	LCS							
Chromium, Hexavalent			101.5		%		80-120	22-JAN-18
WG2702717-7	LCS							
Chromium, Hexavalent			100.2		%		80-120	22-JAN-18
WG2702717-1	MB							
Chromium, Hexavalent			<1.0		ug/L		1	22-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 2 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT Water								
Batch R3941821								
WG2702717-6 MB								
Chromium, Hexavalent			<1.0		ug/L		1	22-JAN-18
WG2702717-5 MS		WG2702717-3						
Chromium, Hexavalent			98.5		%		70-130	22-JAN-18
WG2702717-9 MS		WG2702717-8						
Chromium, Hexavalent			99.1		%		70-130	22-JAN-18
EC-R511-WT Water								
Batch R3941756								
WG2701432-4 DUP		WG2701432-3						
Conductivity		8.10	8.10		mS/cm	0.0	10	19-JAN-18
WG2701432-2 LCS								
Conductivity			98.3		%		90-110	19-JAN-18
WG2701432-1 MB								
Conductivity			<0.0030		mS/cm		0.003	19-JAN-18
HG-D-UG/L-CVAA-WT Water								
Batch R3939602								
WG2701322-9 DUP		WG2701322-8						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-JAN-18
WG2701322-2 LCS								
Mercury (Hg)-Dissolved			97.2		%		80-120	19-JAN-18
WG2701322-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	19-JAN-18
WG2701322-7 MS		WG2701322-6						
Mercury (Hg)-Dissolved			82.9		%		70-130	19-JAN-18
MET-D-UG/L-MS-WT Water								
Batch R3939290								
WG2701019-4 DUP		WG2701019-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Barium (Ba)-Dissolved		1330	1350		ug/L	1.6	20	18-JAN-18
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	18-JAN-18
Cadmium (Cd)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	18-JAN-18
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Copper (Cu)-Dissolved		6.0	5.9		ug/L	1.2	20	18-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 3 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3939290							
WG2701019-4	DUP	WG2701019-3						
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	18-JAN-18
Molybdenum (Mo)-Dissolved		5.43	5.24		ug/L	3.6	20	18-JAN-18
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Selenium (Se)-Dissolved		0.72	0.72		ug/L	0.3	20	18-JAN-18
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	18-JAN-18
Sodium (Na)-Dissolved		660000	675000		ug/L	2.3	20	18-JAN-18
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	18-JAN-18
Uranium (U)-Dissolved		2.45	2.46		ug/L	0.5	20	18-JAN-18
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	18-JAN-18
Zinc (Zn)-Dissolved		<10	10	RPD-NA	ug/L	N/A	20	18-JAN-18
WG2701019-2	LCS							
Antimony (Sb)-Dissolved			95.5		%		80-120	18-JAN-18
Arsenic (As)-Dissolved			95.0		%		80-120	18-JAN-18
Barium (Ba)-Dissolved			100.2		%		80-120	18-JAN-18
Beryllium (Be)-Dissolved			94.0		%		80-120	18-JAN-18
Boron (B)-Dissolved			92.9		%		80-120	18-JAN-18
Cadmium (Cd)-Dissolved			95.9		%		80-120	18-JAN-18
Chromium (Cr)-Dissolved			98.9		%		80-120	18-JAN-18
Cobalt (Co)-Dissolved			97.0		%		80-120	18-JAN-18
Copper (Cu)-Dissolved			94.9		%		80-120	18-JAN-18
Lead (Pb)-Dissolved			100.4		%		80-120	18-JAN-18
Molybdenum (Mo)-Dissolved			100.4		%		80-120	18-JAN-18
Nickel (Ni)-Dissolved			96.1		%		80-120	18-JAN-18
Selenium (Se)-Dissolved			99.8		%		80-120	18-JAN-18
Silver (Ag)-Dissolved			98.1		%		80-120	18-JAN-18
Sodium (Na)-Dissolved			100.9		%		80-120	18-JAN-18
Thallium (Tl)-Dissolved			98.9		%		80-120	18-JAN-18
Uranium (U)-Dissolved			101.4		%		80-120	18-JAN-18
Vanadium (V)-Dissolved			97.4		%		80-120	18-JAN-18
Zinc (Zn)-Dissolved			90.7		%		80-120	18-JAN-18
WG2701019-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	18-JAN-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	18-JAN-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	18-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 4 of 11

Client: TERRAPROBE-BRAMPTON
 11 Indel Lane
 Brampton ON L6T 3Y3
 Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R3939290							
WG2701019-1	MB							
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	18-JAN-18
Boron (B)-Dissolved			<10		ug/L		10	18-JAN-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	18-JAN-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	18-JAN-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	18-JAN-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	18-JAN-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	18-JAN-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	18-JAN-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	18-JAN-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	18-JAN-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	18-JAN-18
Sodium (Na)-Dissolved			<500		ug/L		500	18-JAN-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	18-JAN-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	18-JAN-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	18-JAN-18
Zinc (Zn)-Dissolved			<1.0		ug/L		1	18-JAN-18
WG2701019-5	MS	WG2701019-6						
Antimony (Sb)-Dissolved			89.1		%		70-130	18-JAN-18
Arsenic (As)-Dissolved			92.4		%		70-130	18-JAN-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	18-JAN-18
Beryllium (Be)-Dissolved			92.0		%		70-130	18-JAN-18
Cadmium (Cd)-Dissolved			90.1		%		70-130	18-JAN-18
Chromium (Cr)-Dissolved			92.6		%		70-130	18-JAN-18
Cobalt (Co)-Dissolved			83.9		%		70-130	18-JAN-18
Copper (Cu)-Dissolved			78.1		%		70-130	18-JAN-18
Lead (Pb)-Dissolved			93.7		%		70-130	18-JAN-18
Molybdenum (Mo)-Dissolved			76.2		%		70-130	18-JAN-18
Nickel (Ni)-Dissolved			80.0		%		70-130	18-JAN-18
Selenium (Se)-Dissolved			94.6		%		70-130	18-JAN-18
Silver (Ag)-Dissolved			91.7		%		70-130	18-JAN-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	18-JAN-18
Thallium (Tl)-Dissolved			93.4		%		70-130	18-JAN-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	18-JAN-18
Vanadium (V)-Dissolved			93.1		%		70-130	18-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 5 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT Water								
Batch	R3939290							
WG2701019-5 MS		WG2701019-6						
Zinc (Zn)-Dissolved			75.8		%		70-130	18-JAN-18
PH-WT Water								
Batch	R3941756							
WG2701432-4 DUP		WG2701432-3						
pH		7.48	7.46	J	pH units	0.01	0.2	19-JAN-18
WG2701432-2 LCS			6.97		pH units		6.9-7.1	19-JAN-18
VOC-511-HS-WT Water								
Batch	R3939402							
WG2698684-4 DUP		WG2698684-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	19-JAN-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	19-JAN-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	19-JAN-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	19-JAN-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	19-JAN-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	19-JAN-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	19-JAN-18
Dibromochloromethane		<2.0	<2.0		ug/L			19-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 6 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3939402							
WG2698684-4	DUP	WG2698684-3						
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	19-JAN-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	19-JAN-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	19-JAN-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	19-JAN-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	19-JAN-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	19-JAN-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	19-JAN-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	19-JAN-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	19-JAN-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	19-JAN-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	19-JAN-18
WG2698684-1	LCS							
1,1,1,2-Tetrachloroethane			94.0		%		70-130	19-JAN-18
1,1,2,2-Tetrachloroethane			96.0		%		70-130	19-JAN-18
1,1,1-Trichloroethane			93.3		%		70-130	19-JAN-18
1,1,2-Trichloroethane			99.8		%		70-130	19-JAN-18
1,1-Dichloroethane			99.2		%		70-130	19-JAN-18
1,1-Dichloroethylene			84.2		%		70-130	19-JAN-18
1,2-Dibromoethane			101.3		%		70-130	19-JAN-18
1,2-Dichlorobenzene			92.8		%		70-130	19-JAN-18
1,2-Dichloroethane			102.1		%		70-130	19-JAN-18
1,2-Dichloropropane			99.96		%		70-130	19-JAN-18
1,3-Dichlorobenzene			88.4		%		70-130	19-JAN-18
1,4-Dichlorobenzene			89.6		%		70-130	19-JAN-18
Acetone			112.0		%		60-140	19-JAN-18
Benzene			95.5		%		70-130	19-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 7 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3939402							
WG2698684-1	LCS							
Bromodichloromethane			94.2		%		70-130	19-JAN-18
Bromoform			96.0		%		70-130	19-JAN-18
Bromomethane			89.7		%		60-140	19-JAN-18
Carbon tetrachloride			89.8		%		70-130	19-JAN-18
Chlorobenzene			93.2		%		70-130	19-JAN-18
Chloroform			95.9		%		70-130	19-JAN-18
cis-1,2-Dichloroethylene			93.3		%		70-130	19-JAN-18
cis-1,3-Dichloropropene			95.5		%		70-130	19-JAN-18
Dibromochloromethane			100.3		%		70-130	19-JAN-18
Dichlorodifluoromethane			81.7		%		50-140	19-JAN-18
Ethylbenzene			90.3		%		70-130	19-JAN-18
n-Hexane			96.6		%		70-130	19-JAN-18
m+p-Xylenes			91.9		%		70-130	19-JAN-18
Methyl Ethyl Ketone			112.9		%		60-140	19-JAN-18
Methyl Isobutyl Ketone			108.8		%		60-140	19-JAN-18
Methylene Chloride			98.2		%		70-130	19-JAN-18
MTBE			96.9		%		70-130	19-JAN-18
o-Xylene			91.8		%		70-130	19-JAN-18
Styrene			93.0		%		70-130	19-JAN-18
Tetrachloroethylene			87.4		%		70-130	19-JAN-18
Toluene			92.0		%		70-130	19-JAN-18
trans-1,2-Dichloroethylene			91.3		%		70-130	19-JAN-18
trans-1,3-Dichloropropene			94.1		%		70-130	19-JAN-18
Trichloroethylene			93.5		%		70-130	19-JAN-18
Trichlorofluoromethane			89.7		%		60-140	19-JAN-18
Vinyl chloride			90.1		%		60-140	19-JAN-18
WG2698684-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	19-JAN-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	19-JAN-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	19-JAN-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	19-JAN-18
1,1-Dichloroethane			<0.50		ug/L		0.5	19-JAN-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	19-JAN-18
1,2-Dibromoethane			<0.20		ug/L		0.2	19-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 8 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3939402							
WG2698684-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	19-JAN-18
1,2-Dichloroethane			<0.50		ug/L		0.5	19-JAN-18
1,2-Dichloropropane			<0.50		ug/L		0.5	19-JAN-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	19-JAN-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	19-JAN-18
Acetone			<30		ug/L		30	19-JAN-18
Benzene			<0.50		ug/L		0.5	19-JAN-18
Bromodichloromethane			<2.0		ug/L		2	19-JAN-18
Bromoform			<5.0		ug/L		5	19-JAN-18
Bromomethane			<0.50		ug/L		0.5	19-JAN-18
Carbon tetrachloride			<0.20		ug/L		0.2	19-JAN-18
Chlorobenzene			<0.50		ug/L		0.5	19-JAN-18
Chloroform			<1.0		ug/L		1	19-JAN-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	19-JAN-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	19-JAN-18
Dibromochloromethane			<2.0		ug/L		2	19-JAN-18
Dichlorodifluoromethane			<2.0		ug/L		2	19-JAN-18
Ethylbenzene			<0.50		ug/L		0.5	19-JAN-18
n-Hexane			<0.50		ug/L		0.5	19-JAN-18
m+p-Xylenes			<0.40		ug/L		0.4	19-JAN-18
Methyl Ethyl Ketone			<20		ug/L		20	19-JAN-18
Methyl Isobutyl Ketone			<20		ug/L		20	19-JAN-18
Methylene Chloride			<5.0		ug/L		5	19-JAN-18
MTBE			<2.0		ug/L		2	19-JAN-18
o-Xylene			<0.30		ug/L		0.3	19-JAN-18
Styrene			<0.50		ug/L		0.5	19-JAN-18
Tetrachloroethylene			<0.50		ug/L		0.5	19-JAN-18
Toluene			<0.50		ug/L		0.5	19-JAN-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	19-JAN-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	19-JAN-18
Trichloroethylene			<0.50		ug/L		0.5	19-JAN-18
Trichlorofluoromethane			<5.0		ug/L		5	19-JAN-18
Vinyl chloride			<0.50		ug/L		0.5	19-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 9 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3939402							
WG2698684-2	MB							
Surrogate: 1,4-Difluorobenzene			94.0		%		70-130	19-JAN-18
Surrogate: 4-Bromofluorobenzene			98.8		%		70-130	19-JAN-18
WG2698684-5	MS	WG2698684-3						
1,1,1,2-Tetrachloroethane			95.1		%		50-140	19-JAN-18
1,1,2,2-Tetrachloroethane			88.3		%		50-140	19-JAN-18
1,1,1-Trichloroethane			95.6		%		50-140	19-JAN-18
1,1,2-Trichloroethane			98.1		%		50-140	19-JAN-18
1,1-Dichloroethane			92.9		%		50-140	19-JAN-18
1,1-Dichloroethylene			83.3		%		50-140	19-JAN-18
1,2-Dibromoethane			98.6		%		50-140	19-JAN-18
1,2-Dichlorobenzene			93.5		%		50-140	19-JAN-18
1,2-Dichloroethane			98.8		%		50-140	19-JAN-18
1,2-Dichloropropane			99.7		%		50-140	19-JAN-18
1,3-Dichlorobenzene			89.5		%		50-140	19-JAN-18
1,4-Dichlorobenzene			89.7		%		50-140	19-JAN-18
Acetone			95.5		%		50-140	19-JAN-18
Benzene			95.2		%		50-140	19-JAN-18
Bromodichloromethane			92.0		%		50-140	19-JAN-18
Bromoform			90.3		%		50-140	19-JAN-18
Bromomethane			80.7		%		50-140	19-JAN-18
Carbon tetrachloride			91.5		%		50-140	19-JAN-18
Chlorobenzene			94.1		%		50-140	19-JAN-18
Chloroform			96.4		%		50-140	19-JAN-18
cis-1,2-Dichloroethylene			92.5		%		50-140	19-JAN-18
cis-1,3-Dichloropropene			85.7		%		50-140	19-JAN-18
Dibromochloromethane			98.2		%		50-140	19-JAN-18
Dichlorodifluoromethane			59.8		%		50-140	19-JAN-18
Ethylbenzene			92.8		%		50-140	19-JAN-18
n-Hexane			96.5		%		50-140	19-JAN-18
m+p-Xylenes			92.5		%		50-140	19-JAN-18
Methyl Ethyl Ketone			97.1		%		50-140	19-JAN-18
Methyl Isobutyl Ketone			95.6		%		50-140	19-JAN-18
Methylene Chloride			96.2		%		50-140	19-JAN-18
MTBE			96.7		%		50-140	19-JAN-18



Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Page 10 of 11

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

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3939402							
WG2698684-5	MS	WG2698684-3						
o-Xylene			93.4		%		50-140	19-JAN-18
Styrene			92.1		%		50-140	19-JAN-18
Tetrachloroethylene			88.7		%		50-140	19-JAN-18
Toluene			94.4		%		50-140	19-JAN-18
trans-1,2-Dichloroethylene			88.6		%		50-140	19-JAN-18
trans-1,3-Dichloropropene			83.8		%		50-140	19-JAN-18
Trichloroethylene			93.5		%		50-140	19-JAN-18
Trichlorofluoromethane			88.5		%		50-140	19-JAN-18
Vinyl chloride			81.9		%		50-140	19-JAN-18

Quality Control Report

Workorder: L2046388

Report Date: 13-JUN-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: NICHOLAS GAUVREAU

Page 11 of 11

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.



ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 15-

Page 1 of 2

Report To Contact and company name below will appear on the final report

Company: Terraprobe
Contact: Nicholas Gauvreau
Phone: 905-796-2650

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

Select Service Level Below - Please confirm all EAP TATs with your AM - surcharges will apply

Regular [R] Standard TAT if received by 3 pm - business days - no surcharges apply

Priority (Business Days):
4 day [P4]
3 day [P3]
2 day [P2]

EMERGENCY
1 Business day [E1]
Same Day, Weekend or Statutory holiday [E0]

Date and Time Required for all EAP TATs: dd-mmm-yy hh:mm

Project Information

Company: Terraprobe
Contact: Lorena Rossi

Street: 11 Indell Ln.
City/Province: Brampton, ON
Postal Code: L6T 3Y3

Invoice To: Same as Report To YES NO
Copy of Invoice with Report YES NO

ALS Account # / Quote #:
Job #: 1-17-0481-42
PO / AFE:
LSD:

AFE/Cost Center:
Major/Minor Code:
Requisitioner:
Location:

Invoice Distribution
Select Invoice Distribution: EMAIL MAIL FAX

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only) L2046388 KR ALS Contact: Mathy 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	VOC	PAH	Number of Containers
1	BH101	17-Jun-18	PM	GW	X	X		7
2	BH102		PM	GW	X	X		7
3	BH103		PM	GW	X	X		7
4	BH104		PM	GW	X	X		7
5	BH105		PM	GW	X	X		7
6	BH201-1		AM	GW	X	X		7
7	BH201-D		AM	GW	X	X		7
8	BH202		PM	GW	X	X		7
9	BH203		PM	GW	X	X		7
10	Bit 205		PM	GW	X	X		9
11	BH206		PM	GW	X	X	X	9
12	DUP1		PM	GW	X	X	X	

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

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)

Table 2 - RPI

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen
Ice Packs
Cooling Initiated

SIF Observations Yes No
Ice Cubes
Custody seal intact Yes No

INITIAL COOLER TEMPERATURES °C: 1.9
FINAL COOLER TEMPERATURES °C:

SHIPMENT RELEASE (client use)

Released by: NICHOLAS GAUVREAU
Date: 17-Jun-18
Time: 6:33

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: [Signature]
Date: Jun 18/18
Time: 9:00

FINAL SHIPMENT RECEPTION (lab use only)

Received by:
Date:
Time:



TERRAPROBE-BRAMPTON
ATTN: NICHOLAS GAUVREAU
220 BAYVIEW DRIVE
UNIT 25
BARRIE ON L4N 4Y8

Date Received: 26-JAN-18
Report Date: 29-JAN-18 08:47 (MT)
Version: FINAL

Client Phone: 705-739-8355

Certificate of Analysis

Lab Work Order #: L2049614
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers:
Legal Site Desc:



Mathy Mahadera
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



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2049614-1	BH203							
Sampled By: CLIENT on 25-JAN-18 @ 12:30								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	29-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	29-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	29-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	29-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	29-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	29-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	29-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	29-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	29-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	29-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	29-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	29-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	29-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	29-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	29-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	29-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	29-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	29-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	29-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	29-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	29-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	29-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	29-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	29-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	29-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	29-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	29-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	29-JAN-18	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	29-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	29-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	29-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	29-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	29-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	29-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	29-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	29-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	29-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		99.4		70-130	%	29-JAN-18		
Surrogate: 1,4-Difluorobenzene		94.9		70-130	%	29-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2049614-2	DUP1							
Sampled By: CLIENT on 25-JAN-18 @ 12:30								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	29-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	29-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	29-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	29-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	29-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	29-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	29-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	29-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	29-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	29-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	29-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	29-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	29-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	29-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	29-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	29-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	29-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	29-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	29-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	29-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	29-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	29-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	29-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	29-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	29-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	29-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	29-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	29-JAN-18	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	29-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	29-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	29-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	29-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	29-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	29-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	29-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	29-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	29-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	29-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		99.6		70-130	%	29-JAN-18		
Surrogate: 1,4-Difluorobenzene		94.3		70-130	%	29-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use

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	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.



Quality Control Report

Workorder: L2049614

Report Date: 29-JAN-18

Page 1 of 5

Client: TERRAPROBE-BRAMPTON
 220 BAYVIEW DRIVE UNIT 25
 BARRIE ON L4N 4Y8

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3946305							
WG2705395-4	DUP	WG2705395-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	29-JAN-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	29-JAN-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	29-JAN-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	29-JAN-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	29-JAN-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	29-JAN-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	29-JAN-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	29-JAN-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	29-JAN-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	29-JAN-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	29-JAN-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	29-JAN-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	29-JAN-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	29-JAN-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	29-JAN-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	29-JAN-18
Styrene		<0.50	<0.50		ug/L			29-JAN-18



Quality Control Report

Workorder: L2049614

Report Date: 29-JAN-18

Page 3 of 5

Client: TERRAPROBE-BRAMPTON
 220 BAYVIEW DRIVE UNIT 25
 BARRIE ON L4N 4Y8

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3946305							
WG2705395-2	MB							
Ethylbenzene			<0.50		ug/L		0.5	29-JAN-18
n-Hexane			<0.50		ug/L		0.5	29-JAN-18
m+p-Xylenes			<0.40		ug/L		0.4	29-JAN-18
Methyl Ethyl Ketone			<20		ug/L		20	29-JAN-18
Methyl Isobutyl Ketone			<20		ug/L		20	29-JAN-18
Methylene Chloride			<5.0		ug/L		5	29-JAN-18
MTBE			<2.0		ug/L		2	29-JAN-18
o-Xylene			<0.30		ug/L		0.3	29-JAN-18
Styrene			<0.50		ug/L		0.5	29-JAN-18
Tetrachloroethylene			<0.50		ug/L		0.5	29-JAN-18
Toluene			<0.50		ug/L		0.5	29-JAN-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	29-JAN-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	29-JAN-18
Trichloroethylene			<0.50		ug/L		0.5	29-JAN-18
Trichlorofluoromethane			<5.0		ug/L		5	29-JAN-18
Vinyl chloride			<0.50		ug/L		0.5	29-JAN-18
Surrogate: 1,4-Difluorobenzene			94.7		%		70-130	29-JAN-18
Surrogate: 4-Bromofluorobenzene			97.7		%		70-130	29-JAN-18
WG2705395-5	MS	WG2705395-3						
1,1,1,2-Tetrachloroethane			97.1		%		50-140	29-JAN-18
1,1,1,2,2-Tetrachloroethane			100.8		%		50-140	29-JAN-18
1,1,1-Trichloroethane			93.5		%		50-140	29-JAN-18
1,1,2-Trichloroethane			107.4		%		50-140	29-JAN-18
1,1-Dichloroethane			90.9		%		50-140	29-JAN-18
1,1-Dichloroethylene			84.0		%		50-140	29-JAN-18
1,2-Dibromoethane			110.0		%		50-140	29-JAN-18
1,2-Dichlorobenzene			94.3		%		50-140	29-JAN-18
1,2-Dichloroethane			111.2		%		50-140	29-JAN-18
1,2-Dichloropropane			108.3		%		50-140	29-JAN-18
1,3-Dichlorobenzene			91.3		%		50-140	29-JAN-18
1,4-Dichlorobenzene			93.6		%		50-140	29-JAN-18
Acetone			122.9		%		50-140	29-JAN-18
Benzene			99.4		%		50-140	29-JAN-18
Bromodichloromethane			99.4		%		50-140	29-JAN-18



Quality Control Report

Workorder: L2049614

Report Date: 29-JAN-18

Page 4 of 5

Client: TERRAPROBE-BRAMPTON
 220 BAYVIEW DRIVE UNIT 25
 BARRIE ON L4N 4Y8

Contact: NICHOLAS GAUVREAU

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3946305							
WG2705395-5 MS		WG2705395-3						
Bromoform			100.7		%		50-140	29-JAN-18
Bromomethane			94.9		%		50-140	29-JAN-18
Carbon tetrachloride			89.5		%		50-140	29-JAN-18
Chlorobenzene			96.9		%		50-140	29-JAN-18
Chloroform			101.5		%		50-140	29-JAN-18
cis-1,2-Dichloroethylene			98.9		%		50-140	29-JAN-18
cis-1,3-Dichloropropene			109.5		%		50-140	29-JAN-18
Dibromochloromethane			106.3		%		50-140	29-JAN-18
Dichlorodifluoromethane			66.1		%		50-140	29-JAN-18
Ethylbenzene			90.1		%		50-140	29-JAN-18
n-Hexane			87.5		%		50-140	29-JAN-18
m+p-Xylenes			92.7		%		50-140	29-JAN-18
Methyl Ethyl Ketone			124.2		%		50-140	29-JAN-18
Methyl Isobutyl Ketone			117.7		%		50-140	29-JAN-18
Methylene Chloride			106.4		%		50-140	29-JAN-18
MTBE			97.8		%		50-140	29-JAN-18
o-Xylene			91.7		%		50-140	29-JAN-18
Styrene			93.8		%		50-140	29-JAN-18
Tetrachloroethylene			89.6		%		50-140	29-JAN-18
Toluene			92.7		%		50-140	29-JAN-18
trans-1,2-Dichloroethylene			97.4		%		50-140	29-JAN-18
trans-1,3-Dichloropropene			111.3		%		50-140	29-JAN-18
Trichloroethylene			98.0		%		50-140	29-JAN-18
Trichlorofluoromethane			84.0		%		50-140	29-JAN-18
Vinyl chloride			85.1		%		50-140	29-JAN-18

Quality Control Report

Workorder: L2049614

Report Date: 29-JAN-18

Client: TERRAPROBE-BRAMPTON
220 BAYVIEW DRIVE UNIT 25
BARRIE ON L4N 4Y8
Contact: NICHOLAS GAUVREAU

Page 5 of 5

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: 1 800 666 9878



L2049614-COCF

COC Number: 17 -

Page of

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)													
Company:	Terraprobe	Select Report Format:	<input checked="" type="checkbox"/> EXCEL	<input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply													
Contact:	Nicholas Gauvreau	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	4 day [P4-20%] <input type="checkbox"/>			1 Business day [E1 - 100%] <input type="checkbox"/>										
Phone:	705 739 8355	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3-25%] <input checked="" type="checkbox"/>			Same Day, Weekend or Statutory holiday [E2 -200%] <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 [P2-50%] <input type="checkbox"/>			(Laboratory opening fees may apply) <input type="checkbox"/>									
Street:	220 Bayview Drive, Unit 25	Email 1 or Fax:	smelanta@terraprobe.ca			Date and Time Required for all E&P TATs:												
City/Province:	Barrie, Ontario	Email 2:	ngauvreau@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.												
Postal Code:	L4N 4Y8	Email 3:	twong@terraprobe.ca			Analysis Request												
Invoice To	Same as Report To <input type="checkbox"/>	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
	Copy of Invoice with Report <input type="checkbox"/>	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:	ngauvreau@terraprobe.ca															
Project Information		Oil and Gas Required Fields (client use)																
ALS Account # / Quote #:		AFE/Cost Center:	PO#															
Job #:	1-17-0481-42	Major/Minor Code:	Routing Code:															
PO / AFE:		Requisitioner:																
LSD:		Location:																
ALS Lab Work Order # (lab use only):	L2049614	ALS Contact:	mm		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	VOCs							SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS				
	BH203	25-Jan-18	12:30	GW	<input checked="" type="checkbox"/>													2
	DUP1	25-Jan-18	12:30	GW	<input checked="" type="checkbox"/>													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		Table 2 - RPI -RSC				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>												
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO						Ice Packs <input type="checkbox"/> Ice Cubes <input 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							
											2.0							
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)												
Released by:	NICHOLAS GAUVREAU	Date:	25 Jun-18	Time:	4:30	Received by:		Date:		Time:		Received by:	AP	Date:	01-26-18	Time:	11:30	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 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: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 31-JAN-18 10:04 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050901
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers:
Legal Site Desc:



Mathy Mahadera
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



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2050901-1	BH203							
Sampled By: CLIENT on 29-JAN-18 @ 15:30								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	31-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	31-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	31-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	31-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	31-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	31-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	31-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	31-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	31-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	31-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	31-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	31-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	31-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	31-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	31-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	31-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	31-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	31-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	31-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	31-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	31-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	31-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	31-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	31-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	31-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	31-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	31-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	31-JAN-18	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	31-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	31-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	31-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	31-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	31-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	31-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	31-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	31-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	31-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		99.3		70-130	%	31-JAN-18		
Surrogate: 1,4-Difluorobenzene		94.5		70-130	%	31-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL GUIDELINE REPORT

1-17-0481-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2050901-2	DUP1							
Sampled By: CLIENT on 29-JAN-18 @ 15:30								
Matrix: WATER								
Volatile Organic Compounds								
Acetone		<30		30	ug/L	31-JAN-18	2700	2700
Benzene		<0.50		0.50	ug/L	31-JAN-18	5	5
Bromodichloromethane		<2.0		2.0	ug/L	31-JAN-18	16	16
Bromoform		<5.0		5.0	ug/L	31-JAN-18	25	25
Bromomethane		<0.50		0.50	ug/L	31-JAN-18	0.89	0.89
Carbon tetrachloride		<0.20		0.20	ug/L	31-JAN-18	0.79	5
Chlorobenzene		<0.50		0.50	ug/L	31-JAN-18	30	30
Dibromochloromethane		<2.0		2.0	ug/L	31-JAN-18	25	25
Chloroform		<1.0		1.0	ug/L	31-JAN-18	2.4	22
1,2-Dibromoethane		<0.20		0.20	ug/L	31-JAN-18	0.2	0.2
1,2-Dichlorobenzene		<0.50		0.50	ug/L	31-JAN-18	3	3
1,3-Dichlorobenzene		<0.50		0.50	ug/L	31-JAN-18	59	59
1,4-Dichlorobenzene		<0.50		0.50	ug/L	31-JAN-18	1	1
Dichlorodifluoromethane		<2.0		2.0	ug/L	31-JAN-18	590	590
1,1-Dichloroethane		<0.50		0.50	ug/L	31-JAN-18	5	5
1,2-Dichloroethane		<0.50		0.50	ug/L	31-JAN-18	1.6	5
1,1-Dichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	14
cis-1,2-Dichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	17
trans-1,2-Dichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	17
Methylene Chloride		<5.0		5.0	ug/L	31-JAN-18	50	50
1,2-Dichloropropane		<0.50		0.50	ug/L	31-JAN-18	5	5
cis-1,3-Dichloropropene		<0.30		0.30	ug/L	31-JAN-18		
trans-1,3-Dichloropropene		<0.30		0.30	ug/L	31-JAN-18		
1,3-Dichloropropene (cis & trans)		<0.50		0.50	ug/L	31-JAN-18	0.5	0.5
Ethylbenzene		<0.50		0.50	ug/L	31-JAN-18	2.4	2.4
n-Hexane		<0.50		0.50	ug/L	31-JAN-18	51	520
Methyl Ethyl Ketone		<20		20	ug/L	31-JAN-18	1800	1800
Methyl Isobutyl Ketone		<20		20	ug/L	31-JAN-18	640	640
MTBE		<2.0		2.0	ug/L	31-JAN-18	15	15
Styrene		<0.50		0.50	ug/L	31-JAN-18	5.4	5.4
1,1,1,2-Tetrachloroethane		<0.50		0.50	ug/L	31-JAN-18	1.1	1.1
1,1,2,2-Tetrachloroethane		<0.50		0.50	ug/L	31-JAN-18	1	1
Tetrachloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	17
Toluene		<0.50		0.50	ug/L	31-JAN-18	24	24
1,1,1-Trichloroethane		<0.50		0.50	ug/L	31-JAN-18	200	200
1,1,2-Trichloroethane		<0.50		0.50	ug/L	31-JAN-18	4.7	5
Trichloroethylene		<0.50		0.50	ug/L	31-JAN-18	1.6	5
Trichlorofluoromethane		<5.0		5.0	ug/L	31-JAN-18	150	150
Vinyl chloride		<0.50		0.50	ug/L	31-JAN-18	0.5	1.7
o-Xylene		<0.30		0.30	ug/L	31-JAN-18		
m+p-Xylenes		<0.40		0.40	ug/L	31-JAN-18		
Xylenes (Total)		<0.50		0.50	ug/L	31-JAN-18	300	300
Surrogate: 4-Bromofluorobenzene		101.0		70-130	%	31-JAN-18		
Surrogate: 1,4-Difluorobenzene		94.8		70-130	%	31-JAN-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-POTABLE-GROUNDWATER-ALL-TYPES-OF-PROPERTY-USE

#1: T2-Ground Water (Coarse Soil)-All Types of Property Use

#2: T2-Ground Water (Fine Soil)-All Types of Property Use

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	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.



Quality Control Report

Workorder: L2050901

Report Date: 31-JAN-18

Page 1 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3947524							
WG2705398-4	DUP	WG2705398-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	31-JAN-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	31-JAN-18
Benzene		2.55	2.47		ug/L	3.2	30	31-JAN-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-JAN-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	31-JAN-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	31-JAN-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	31-JAN-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	31-JAN-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-JAN-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-JAN-18
Ethylbenzene		23.8	23.7		ug/L	0.3	30	31-JAN-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
m+p-Xylenes		4.08	4.07		ug/L	0.2	30	31-JAN-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	31-JAN-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	31-JAN-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	31-JAN-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	31-JAN-18
o-Xylene		2.38	2.37		ug/L	0.4	30	31-JAN-18
Styrene		<0.50	<0.50		ug/L			31-JAN-18



Quality Control Report

Workorder: L2050901

Report Date: 31-JAN-18

Page 2 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3947524							
WG2705398-4	DUP	WG2705398-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	31-JAN-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	31-JAN-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	31-JAN-18
WG2705398-1	LCS							
1,1,1,2-Tetrachloroethane			92.7		%		70-130	31-JAN-18
1,1,2,2-Tetrachloroethane			89.4		%		70-130	31-JAN-18
1,1,1-Trichloroethane			97.2		%		70-130	31-JAN-18
1,1,2-Trichloroethane			91.5		%		70-130	31-JAN-18
1,1-Dichloroethane			95.8		%		70-130	31-JAN-18
1,1-Dichloroethylene			89.0		%		70-130	31-JAN-18
1,2-Dibromoethane			95.2		%		70-130	31-JAN-18
1,2-Dichlorobenzene			93.2		%		70-130	31-JAN-18
1,2-Dichloroethane			96.6		%		70-130	31-JAN-18
1,2-Dichloropropane			94.3		%		70-130	31-JAN-18
1,3-Dichlorobenzene			92.5		%		70-130	31-JAN-18
1,4-Dichlorobenzene			93.1		%		70-130	31-JAN-18
Acetone			98.8		%		60-140	31-JAN-18
Benzene			95.0		%		70-130	31-JAN-18
Bromodichloromethane			92.8		%		70-130	31-JAN-18
Bromoform			92.4		%		70-130	31-JAN-18
Bromomethane			89.1		%		60-140	31-JAN-18
Carbon tetrachloride			95.3		%		70-130	31-JAN-18
Chlorobenzene			94.4		%		70-130	31-JAN-18
Chloroform			94.7		%		70-130	31-JAN-18
cis-1,2-Dichloroethylene			85.8		%		70-130	31-JAN-18
cis-1,3-Dichloropropene			91.0		%		70-130	31-JAN-18
Dibromochloromethane			92.5		%		70-130	31-JAN-18
Dichlorodifluoromethane			85.7		%		50-140	31-JAN-18



Quality Control Report

Workorder: L2050901

Report Date: 31-JAN-18

Page 3 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R3947524							
WG2705398-1	LCS							
Ethylbenzene			94.2		%		70-130	31-JAN-18
n-Hexane			104.2		%		70-130	31-JAN-18
m+p-Xylenes			94.1		%		70-130	31-JAN-18
Methyl Ethyl Ketone			87.6		%		60-140	31-JAN-18
Methyl Isobutyl Ketone			81.7		%		60-140	31-JAN-18
Methylene Chloride			94.0		%		70-130	31-JAN-18
MTBE			97.5		%		70-130	31-JAN-18
o-Xylene			93.1		%		70-130	31-JAN-18
Styrene			93.0		%		70-130	31-JAN-18
Tetrachloroethylene			97.1		%		70-130	31-JAN-18
Toluene			94.8		%		70-130	31-JAN-18
trans-1,2-Dichloroethylene			96.0		%		70-130	31-JAN-18
trans-1,3-Dichloropropene			85.3		%		70-130	31-JAN-18
Trichloroethylene			98.2		%		70-130	31-JAN-18
Trichlorofluoromethane			96.0		%		60-140	31-JAN-18
Vinyl chloride			92.8		%		60-140	31-JAN-18
WG2705398-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	31-JAN-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	31-JAN-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	31-JAN-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	31-JAN-18
1,1-Dichloroethane			<0.50		ug/L		0.5	31-JAN-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	31-JAN-18
1,2-Dibromoethane			<0.20		ug/L		0.2	31-JAN-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	31-JAN-18
1,2-Dichloroethane			<0.50		ug/L		0.5	31-JAN-18
1,2-Dichloropropane			<0.50		ug/L		0.5	31-JAN-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	31-JAN-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	31-JAN-18
Acetone			<30		ug/L		30	31-JAN-18
Benzene			<0.50		ug/L		0.5	31-JAN-18
Bromodichloromethane			<2.0		ug/L		2	31-JAN-18
Bromoform			<5.0		ug/L		5	31-JAN-18
Bromomethane			<0.50		ug/L		0.5	31-JAN-18



Quality Control Report

Workorder: L2050901

Report Date: 31-JAN-18

Page 4 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3947524							
WG2705398-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	31-JAN-18
Chlorobenzene			<0.50		ug/L		0.5	31-JAN-18
Chloroform			<1.0		ug/L		1	31-JAN-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	31-JAN-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	31-JAN-18
Dibromochloromethane			<2.0		ug/L		2	31-JAN-18
Dichlorodifluoromethane			<2.0		ug/L		2	31-JAN-18
Ethylbenzene			<0.50		ug/L		0.5	31-JAN-18
n-Hexane			<0.50		ug/L		0.5	31-JAN-18
m+p-Xylenes			<0.40		ug/L		0.4	31-JAN-18
Methyl Ethyl Ketone			<20		ug/L		20	31-JAN-18
Methyl Isobutyl Ketone			<20		ug/L		20	31-JAN-18
Methylene Chloride			<5.0		ug/L		5	31-JAN-18
MTBE			<2.0		ug/L		2	31-JAN-18
o-Xylene			<0.30		ug/L		0.3	31-JAN-18
Styrene			<0.50		ug/L		0.5	31-JAN-18
Tetrachloroethylene			<0.50		ug/L		0.5	31-JAN-18
Toluene			<0.50		ug/L		0.5	31-JAN-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	31-JAN-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	31-JAN-18
Trichloroethylene			<0.50		ug/L		0.5	31-JAN-18
Trichlorofluoromethane			<5.0		ug/L		5	31-JAN-18
Vinyl chloride			<0.50		ug/L		0.5	31-JAN-18
Surrogate: 1,4-Difluorobenzene			95.2		%		70-130	31-JAN-18
Surrogate: 4-Bromofluorobenzene			98.6		%		70-130	31-JAN-18
WG2705398-5 MS		WG2705398-3						
1,1,1,2-Tetrachloroethane			102.0		%		50-140	31-JAN-18
1,1,2,2-Tetrachloroethane			102.9		%		50-140	31-JAN-18
1,1,1-Trichloroethane			103.4		%		50-140	31-JAN-18
1,1,2-Trichloroethane			102.7		%		50-140	31-JAN-18
1,1-Dichloroethane			107.7		%		50-140	31-JAN-18
1,1-Dichloroethylene			94.8		%		50-140	31-JAN-18
1,2-Dibromoethane			107.8		%		50-140	31-JAN-18
1,2-Dichlorobenzene			103.6		%		50-140	31-JAN-18



Quality Control Report

Workorder: L2050901

Report Date: 31-JAN-18

Page 5 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R3947524							
WG2705398-5 MS		WG2705398-3						
1,2-Dichloroethane			108.4		%		50-140	31-JAN-18
1,2-Dichloropropane			104.9		%		50-140	31-JAN-18
1,3-Dichlorobenzene			101.3		%		50-140	31-JAN-18
1,4-Dichlorobenzene			103.1		%		50-140	31-JAN-18
Acetone			95.4		%		50-140	31-JAN-18
Benzene			103.0		%		50-140	31-JAN-18
Bromodichloromethane			102.7		%		50-140	31-JAN-18
Bromoform			104.1		%		50-140	31-JAN-18
Bromomethane			99.1		%		50-140	31-JAN-18
Carbon tetrachloride			101.0		%		50-140	31-JAN-18
Chlorobenzene			103.8		%		50-140	31-JAN-18
Chloroform			103.1		%		50-140	31-JAN-18
cis-1,2-Dichloroethylene			107.5		%		50-140	31-JAN-18
cis-1,3-Dichloropropene			109.9		%		50-140	31-JAN-18
Dibromochloromethane			103.3		%		50-140	31-JAN-18
Dichlorodifluoromethane			97.5		%		50-140	31-JAN-18
Ethylbenzene			100.1		%		50-140	31-JAN-18
n-Hexane			106.3		%		50-140	31-JAN-18
m+p-Xylenes			103.6		%		50-140	31-JAN-18
Methyl Ethyl Ketone			93.6		%		50-140	31-JAN-18
Methyl Isobutyl Ketone			94.7		%		50-140	31-JAN-18
Methylene Chloride			101.9		%		50-140	31-JAN-18
MTBE			105.2		%		50-140	31-JAN-18
o-Xylene			101.4		%		50-140	31-JAN-18
Styrene			103.1		%		50-140	31-JAN-18
Tetrachloroethylene			103.6		%		50-140	31-JAN-18
Toluene			102.1		%		50-140	31-JAN-18
trans-1,2-Dichloroethylene			103.9		%		50-140	31-JAN-18
trans-1,3-Dichloropropene			106.4		%		50-140	31-JAN-18
Trichloroethylene			106.0		%		50-140	31-JAN-18
Trichlorofluoromethane			104.5		%		50-140	31-JAN-18
Vinyl chloride			86.0		%		50-140	31-JAN-18

Quality Control Report

Workorder: L2050901

Report Date: 31-JAN-18

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

Page 6 of 6

Contact: Suvish Melanta

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



L2050901-COFC

COC Number: 17 -

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 - Contact your AM to confirm all E&P TATs (surcharges may apply)						
Company:	Terraprobe	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply						
Contact:	Suvish Melanta	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (business days)	4 day [P4-20%] <input type="checkbox"/>		EMERGENCY	1 Business day [E1 - 100%] <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 [P3-25%] <input checked="" type="checkbox"/>			Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <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 [P2-50%] <input type="checkbox"/>					
Street:	11 Indell Lane	Email 1 or Fax smelanta@terraprobe.ca			Date and Time Required for all E&P TATs:						
City/Province:	Brampton, ON	Email 2 ngauvreau@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.						
Postal Code:	L6T 3Y3	Email 3 twong@terraprobe.ca			Analysis Request						
Invoice To	Same as Report To <input type="checkbox"/> <input type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below						
	Copy of Invoice with Report <input type="checkbox"/> <input 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 smelanta@terraprobe.ca									
Project Information		Oil and Gas Required Fields (client use)									
ALS Account # / Quote #:	Q59976	AFE/Cost Center:		PO#							
Job #:	1-17-0481-42	Major/Minor Code:		Routing Code:							
PO / AFE:		Requisitioner:									
LSD:		Location:									
ALS Lab Work Order # (lab use only): L2050901 DA		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	VOCs				SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
2	BH203	29-Jan-18	15:30	GW							
2	DUP1	29-Jan-18	15:30	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		Table 2, -RPI RSC			Frozen <input type="checkbox"/>		SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>				
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/>		Custody seat intact Yes <input type="checkbox"/> No <input type="checkbox"/>		Cooling Initiated <input type="checkbox"/>		
					INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C				
							00				
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)					
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:			
NICHOLAS GAUREN	30-JAN-18						01/18		1200		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 FROXT

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: SUVISH MELANTA
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 20-JUN-18
Report Date: 22-JUN-18 14:19 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2116071
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers:
Legal Site Desc:

Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)							

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

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2116071-1	L2116071-2	L2116071-3	L2116071-4
		#1	#2	Sample Date	18-JUN-18	18-JUN-18	18-JUN-18	18-JUN-18
				Sample ID	BH201-D	BH203	DUP	TRIP BLANK
Acetone	ug/L	2700	2700		<30 ^{OWP}	<30 ^{OWP}	<30 ^{OWP}	<30
Benzene	ug/L	5	5		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Bromodichloromethane	ug/L	16	16		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0
Bromoform	ug/L	25	25		<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0
Bromomethane	ug/L	0.89	0.89		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Carbon tetrachloride	ug/L	0.79	5		<0.20 ^{OWP}	<0.20 ^{OWP}	<0.20 ^{OWP}	<0.20
Chlorobenzene	ug/L	30	30		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Dibromochloromethane	ug/L	25	25		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0
Chloroform	ug/L	2.4	22		<1.0 ^{OWP}	<1.0 ^{OWP}	<1.0 ^{OWP}	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2		<0.20 ^{OWP}	<0.20 ^{OWP}	<0.20 ^{OWP}	<0.20
1,2-Dichlorobenzene	ug/L	3	3		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,3-Dichlorobenzene	ug/L	59	59		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,4-Dichlorobenzene	ug/L	1	1		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Dichlorodifluoromethane	ug/L	590	590		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0
1,1-Dichloroethane	ug/L	5	5		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,2-Dichloroethane	ug/L	1.6	5		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,1-Dichloroethylene	ug/L	1.6	14		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Methylene Chloride	ug/L	50	50		<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0
1,2-Dichloropropane	ug/L	5	5		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
cis-1,3-Dichloropropene	ug/L	-	-		<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30
trans-1,3-Dichloropropene	ug/L	-	-		<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5		<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	2.4	2.4		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
n-Hexane	ug/L	51	520		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800		<20 ^{OWP}	<20 ^{OWP}	<20 ^{OWP}	<20
Methyl Isobutyl Ketone	ug/L	640	640		<20 ^{OWP}	<20 ^{OWP}	<20 ^{OWP}	<20
MTBE	ug/L	15	15		<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0 ^{OWP}	<2.0
Styrene	ug/L	5.4	5.4		<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Volatile Organic Compounds - WATER

		Lab ID	L2116071-1	L2116071-2	L2116071-3	L2116071-4	
		Sample Date	18-JUN-18	18-JUN-18	18-JUN-18	18-JUN-18	
		Sample ID	BH201-D	BH203	DUP	TRIP BLANK	
Analyte	Unit	Guide Limits					
		#1	#2				
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Toluene	ug/L	24	24	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,1,1-Trichloroethane	ug/L	200	200	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Trichloroethylene	ug/L	1.6	5	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
Trichlorofluoromethane	ug/L	150	150	<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0 ^{OWP}	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50 ^{OWP}	<0.50
o-Xylene	ug/L	-	-	<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30 ^{OWP}	<0.30
m+p-Xylenes	ug/L	-	-	<0.40 ^{OWP}	<0.40 ^{OWP}	<0.40 ^{OWP}	<0.40
Xylenes (Total)	ug/L	300	300	<0.50	<0.50	<0.50	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	91.0	91.4	91.2	91.6
Surrogate: 1,4-Difluorobenzene	%	-	-	96.4	96.0	96.6	97.1

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
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.

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.



Quality Control Report

Workorder: L2116071

Report Date: 22-JUN-18

Page 1 of 4

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4095135							
WG2793948-1	LCS							
1,1,1,2-Tetrachloroethane			107.2		%		70-130	22-JUN-18
1,1,2,2-Tetrachloroethane			102.9		%		70-130	22-JUN-18
1,1,1-Trichloroethane			107.9		%		70-130	22-JUN-18
1,1,2-Trichloroethane			107.2		%		70-130	22-JUN-18
1,1-Dichloroethane			110.9		%		70-130	22-JUN-18
1,1-Dichloroethylene			98.3		%		70-130	22-JUN-18
1,2-Dibromoethane			107.8		%		70-130	22-JUN-18
1,2-Dichlorobenzene			106.2		%		70-130	22-JUN-18
1,2-Dichloroethane			105.9		%		70-130	22-JUN-18
1,2-Dichloropropane			113.3		%		70-130	22-JUN-18
1,3-Dichlorobenzene			102.1		%		70-130	22-JUN-18
1,4-Dichlorobenzene			103.7		%		70-130	22-JUN-18
Acetone			120.8		%		60-140	22-JUN-18
Benzene			111.5		%		70-130	22-JUN-18
Bromodichloromethane			104.9		%		70-130	22-JUN-18
Bromoform			100.9		%		70-130	22-JUN-18
Bromomethane			103.0		%		60-140	22-JUN-18
Carbon tetrachloride			106.4		%		70-130	22-JUN-18
Chlorobenzene			107.0		%		70-130	22-JUN-18
Chloroform			108.5		%		70-130	22-JUN-18
cis-1,2-Dichloroethylene			108.3		%		70-130	22-JUN-18
cis-1,3-Dichloropropene			105.3		%		70-130	22-JUN-18
Dibromochloromethane			110.3		%		70-130	22-JUN-18
Dichlorodifluoromethane			82.8		%		50-140	22-JUN-18
Ethylbenzene			104.8		%		70-130	22-JUN-18
n-Hexane			118.7		%		70-130	22-JUN-18
m+p-Xylenes			103.2		%		70-130	22-JUN-18
Methyl Ethyl Ketone			118.6		%		60-140	22-JUN-18
Methyl Isobutyl Ketone			107.3		%		60-140	22-JUN-18
Methylene Chloride			111.8		%		70-130	22-JUN-18
MTBE			108.0		%		70-130	22-JUN-18
o-Xylene			106.4		%		70-130	22-JUN-18
Styrene			104.4		%		70-130	22-JUN-18



Quality Control Report

Workorder: L2116071

Report Date: 22-JUN-18

Page 2 of 4

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4095135							
WG2793948-1	LCS							
Tetrachloroethylene			103.0		%		70-130	22-JUN-18
Toluene			106.2		%		70-130	22-JUN-18
trans-1,2-Dichloroethylene			104.8		%		70-130	22-JUN-18
trans-1,3-Dichloropropene			101.8		%		70-130	22-JUN-18
Trichloroethylene			108.6		%		70-130	22-JUN-18
Trichlorofluoromethane			109.6		%		60-140	22-JUN-18
Vinyl chloride			104.2		%		60-140	22-JUN-18
WG2793948-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	22-JUN-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	22-JUN-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	22-JUN-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	22-JUN-18
1,1-Dichloroethane			<0.50		ug/L		0.5	22-JUN-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	22-JUN-18
1,2-Dibromoethane			<0.20		ug/L		0.2	22-JUN-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	22-JUN-18
1,2-Dichloroethane			<0.50		ug/L		0.5	22-JUN-18
1,2-Dichloropropane			<0.50		ug/L		0.5	22-JUN-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	22-JUN-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	22-JUN-18
Acetone			<30		ug/L		30	22-JUN-18
Benzene			<0.50		ug/L		0.5	22-JUN-18
Bromodichloromethane			<2.0		ug/L		2	22-JUN-18
Bromoform			<5.0		ug/L		5	22-JUN-18
Bromomethane			<0.50		ug/L		0.5	22-JUN-18
Carbon tetrachloride			<0.20		ug/L		0.2	22-JUN-18
Chlorobenzene			<0.50		ug/L		0.5	22-JUN-18
Chloroform			<1.0		ug/L		1	22-JUN-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-JUN-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	22-JUN-18
Dibromochloromethane			<2.0		ug/L		2	22-JUN-18
Dichlorodifluoromethane			<2.0		ug/L		2	22-JUN-18
Ethylbenzene			<0.50		ug/L		0.5	22-JUN-18
n-Hexane			<0.50		ug/L		0.5	22-JUN-18



Quality Control Report

Workorder: L2116071

Report Date: 22-JUN-18

Page 3 of 4

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

Contact: SUVISH MELANTA

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4095135							
WG2793948-2	MB							
m+p-Xylenes			<0.40		ug/L		0.4	22-JUN-18
Methyl Ethyl Ketone			<20		ug/L		20	22-JUN-18
Methyl Isobutyl Ketone			<20		ug/L		20	22-JUN-18
Methylene Chloride			<5.0		ug/L		5	22-JUN-18
MTBE			<2.0		ug/L		2	22-JUN-18
o-Xylene			<0.30		ug/L		0.3	22-JUN-18
Styrene			<0.50		ug/L		0.5	22-JUN-18
Tetrachloroethylene			<0.50		ug/L		0.5	22-JUN-18
Toluene			<0.50		ug/L		0.5	22-JUN-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	22-JUN-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	22-JUN-18
Trichloroethylene			<0.50		ug/L		0.5	22-JUN-18
Trichlorofluoromethane			<5.0		ug/L		5	22-JUN-18
Vinyl chloride			<0.50		ug/L		0.5	22-JUN-18
Surrogate: 1,4-Difluorobenzene			97.0		%		70-130	22-JUN-18
Surrogate: 4-Bromofluorobenzene			92.3		%		70-130	22-JUN-18

Quality Control Report

Workorder: L2116071

Report Date: 22-JUN-18

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

Page 4 of 4

Contact: SUVISH MELANTA

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.



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: Suvish Melanta		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Day)	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: dd-mmm-yy hh:mm						
Street: 11 Indell Ln.		Email 1 or Fax: smelanta@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.						
City/Province: Brampton, ON		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 type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input checked="" type="checkbox"/> FAX									
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax: smelanta@terraprobe.ca									
Company: Terraprobe		Email 2: lrossi@terraprobe.ca									
Contact: Lorena Rossi		Email 3:									
Project Information		Oil and Gas Required Fields (client use)									
ALS Account # / Quote #:		AFE/Cost Center:	PO#								
Job #: 1-17-0481- 42		Major/Minor Code:	Routing Code:								
PO / AFE:		Requisitioner:									
LSD:		Location:									
ALS Lab Work Order # (lab use only)		ALS Contact: Mathy	Sampler: B.H								
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	VOC				
①	BH201-D		18-06-18	AM	GW	✓					
②	BH 203		18-06-18	AM	GW	✓					
③	Dup		18-06-18	AM	GW	✓					
④	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		Table 2 - RPL			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 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			
								5.7°C			
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)					
Released by: Bo Hwang	Date: June 19 / 18	Time:	Received by:	Date:	Time:	Received by: [Signature]	Date: JUNE 20, 2018	Time: 16:40			

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.

with 393 [Signature]

OCTOBER 2015 FROM



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: Suvish Melanta			Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Day)	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 type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm							
Street: 11 Indell Ln.			Email 1 or Fax smelanta@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.							
City/Province: Brampton, ON			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 type="checkbox"/> NO			Invoice Distribution			Number of Containers							
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input checked="" type="checkbox"/> FAX										
Company: Terraprobe			Email 1 or Fax smelanta@terraprobe.ca										
Contact: Lorena Rossi			Email 2 lrossi@terraprobe.ca										
Project Information			Oil and Gas Required Fields (client use)										
ALS Account # / Quote #:			AFE/Cost Center: PO#										
Job #: 1-17-0481- 42			Major/Minor Code: Routing Code:										
PO / AFE:			Requisitioner:										
LSD:			Location:										
ALS Lab Work Order # (lab use only) L2116071 RE 2018			ALS Contact: Mathy		Sampler: B.H								
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	VOC						
①	BH201-D			18-06-18	AM	GW	✓						
②	BH 203			18-06-18	AM	GW	✓						
③	Dup			18-06-18	AM	GW	✓						
④	Trip Blank						✓						
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			Table 2 - RPL			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 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				
									5.7°C				
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)							
Released by: Bo Hwang		Date: June 19/18	Time:	Received by:		Date: JUNE 20, 2018	Time: 10:40						

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.

with 393 [Signature]



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 20-SEP-18
Report Date: 25-SEP-18 08:34 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2168350
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-42
C of C Numbers: 17-616279
Legal Site Desc:



Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						



ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2168350-1	L2168350-2	L2168350-3	L2168350-4
		#1	#2	Sample Date	19-SEP-18	19-SEP-18	19-SEP-18	19-SEP-18
				Sample ID	BH201-D	BH203	DUP	TRIP BLANK
Acetone	ug/L	2700	2700		<30	<30	<30	<30
Benzene	ug/L	5	5		<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	ug/L	16	16		<2.0	<2.0	<2.0	<2.0
Bromoform	ug/L	25	25		<5.0	<5.0	<5.0	<5.0
Bromomethane	ug/L	0.89	0.89		<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	ug/L	0.79	5		<0.20	<0.20	<0.20	<0.20
Chlorobenzene	ug/L	30	30		<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	ug/L	25	25		<2.0	<2.0	<2.0	<2.0
Chloroform	ug/L	2.4	22		<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	ug/L	0.2	0.2		<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	ug/L	3	3		<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	ug/L	59	59		<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	ug/L	1	1		<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	ug/L	590	590		<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	ug/L	5	5		<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	ug/L	1.6	5		<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/L	1.6	14		<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	ug/L	1.6	17		<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ug/L	50	50		<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	ug/L	5	5		<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5		<0.50	<0.50	<0.50	<0.50
Ethylbenzene	ug/L	2.4	2.4		<0.50	<0.50	<0.50	<0.50
n-Hexane	ug/L	51	520		<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	ug/L	1800	1800		<20	<20	<20	<20
Methyl Isobutyl Ketone	ug/L	640	640		<20	<20	<20	<20
MTBE	ug/L	15	15		<2.0	<2.0	<2.0	<2.0
Styrene	ug/L	5.4	5.4		<0.50	<0.50	<0.50	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use
 Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use



ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	L2168350-1	L2168350-2	L2168350-3	L2168350-4
		#1	#2	Sample Date	19-SEP-18	19-SEP-18	19-SEP-18	19-SEP-18
				Sample ID	BH201-D	BH203	DUP	TRIP BLANK
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	ug/L	1.6	17	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	ug/L	24	24	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	ug/L	200	200	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ug/L	1.6	5	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	ug/L	150	150	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	ug/L	0.5	1.7	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30	<0.30
m+p-Xylenes	ug/L	-	-	<0.40	<0.40	<0.40	<0.40	<0.40
Xylenes (Total)	ug/L	300	300	<0.50	<0.50	<0.50	<0.50	<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	101.2	101.7	101.8	100.5	
Surrogate: 1,4-Difluorobenzene	%	-	-	100.6	100.8	102.3	103.0	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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:

17-616279

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: L2168350

Report Date: 25-SEP-18

Page 1 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4238207							
WG2881576-4	DUP	WG2881576-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	25-SEP-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	25-SEP-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	25-SEP-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	25-SEP-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	25-SEP-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	25-SEP-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	25-SEP-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	25-SEP-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-18
Styrene		<0.50	<0.50		ug/L			25-SEP-18



Quality Control Report

Workorder: L2168350

Report Date: 25-SEP-18

Page 2 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4238207							
WG2881576-4	DUP	WG2881576-3						
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	25-SEP-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	25-SEP-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	25-SEP-18
WG2881576-1	LCS							
1,1,1,2-Tetrachloroethane			106.5		%		70-130	25-SEP-18
1,1,2,2-Tetrachloroethane			84.8		%		70-130	25-SEP-18
1,1,1-Trichloroethane			108.4		%		70-130	25-SEP-18
1,1,2-Trichloroethane			97.3		%		70-130	25-SEP-18
1,1-Dichloroethane			100.2		%		70-130	25-SEP-18
1,1-Dichloroethylene			102.7		%		70-130	25-SEP-18
1,2-Dibromoethane			95.7		%		70-130	25-SEP-18
1,2-Dichlorobenzene			110.3		%		70-130	25-SEP-18
1,2-Dichloroethane			98.2		%		70-130	25-SEP-18
1,2-Dichloropropane			96.8		%		70-130	25-SEP-18
1,3-Dichlorobenzene			116.7		%		70-130	25-SEP-18
1,4-Dichlorobenzene			118.1		%		70-130	25-SEP-18
Acetone			84.6		%		60-140	25-SEP-18
Benzene			104.2		%		70-130	25-SEP-18
Bromodichloromethane			101.2		%		70-130	25-SEP-18
Bromoform			98.6		%		70-130	25-SEP-18
Bromomethane			84.2		%		60-140	25-SEP-18
Carbon tetrachloride			111.5		%		70-130	25-SEP-18
Chlorobenzene			110.2		%		70-130	25-SEP-18
Chloroform			103.6		%		70-130	25-SEP-18
cis-1,2-Dichloroethylene			103.7		%		70-130	25-SEP-18
cis-1,3-Dichloropropene			116.9		%		70-130	25-SEP-18
Dibromochloromethane			101.2		%		70-130	25-SEP-18
Dichlorodifluoromethane			111.9		%		50-140	25-SEP-18



Quality Control Report

Workorder: L2168350

Report Date: 25-SEP-18

Page 3 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R4238207							
WG2881576-1	LCS							
Ethylbenzene			116.5		%		70-130	25-SEP-18
n-Hexane			126.4		%		70-130	25-SEP-18
m+p-Xylenes			118.9		%		70-130	25-SEP-18
Methyl Ethyl Ketone			84.1		%		60-140	25-SEP-18
Methyl Isobutyl Ketone			82.1		%		60-140	25-SEP-18
Methylene Chloride			98.6		%		70-130	25-SEP-18
MTBE			107.6		%		70-130	25-SEP-18
o-Xylene			112.5		%		70-130	25-SEP-18
Styrene			112.6		%		70-130	25-SEP-18
Tetrachloroethylene			123.0		%		70-130	25-SEP-18
Toluene			111.5		%		70-130	25-SEP-18
trans-1,2-Dichloroethylene			109.6		%		70-130	25-SEP-18
trans-1,3-Dichloropropene			119.2		%		70-130	25-SEP-18
Trichloroethylene			118.0		%		70-130	25-SEP-18
Trichlorofluoromethane			116.6		%		60-140	25-SEP-18
Vinyl chloride			94.5		%		60-140	25-SEP-18
WG2881576-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	25-SEP-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	25-SEP-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	25-SEP-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	25-SEP-18
1,1-Dichloroethane			<0.50		ug/L		0.5	25-SEP-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-18
1,2-Dibromoethane			<0.20		ug/L		0.2	25-SEP-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-18
1,2-Dichloroethane			<0.50		ug/L		0.5	25-SEP-18
1,2-Dichloropropane			<0.50		ug/L		0.5	25-SEP-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	25-SEP-18
Acetone			<30		ug/L		30	25-SEP-18
Benzene			<0.50		ug/L		0.5	25-SEP-18
Bromodichloromethane			<2.0		ug/L		2	25-SEP-18
Bromoform			<5.0		ug/L		5	25-SEP-18
Bromomethane			<0.50		ug/L		0.5	25-SEP-18



Quality Control Report

Workorder: L2168350

Report Date: 25-SEP-18

Page 4 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4238207							
WG2881576-2 MB								
Carbon tetrachloride			<0.20		ug/L		0.2	25-SEP-18
Chlorobenzene			<0.50		ug/L		0.5	25-SEP-18
Chloroform			<1.0		ug/L		1	25-SEP-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	25-SEP-18
Dibromochloromethane			<2.0		ug/L		2	25-SEP-18
Dichlorodifluoromethane			<2.0		ug/L		2	25-SEP-18
Ethylbenzene			<0.50		ug/L		0.5	25-SEP-18
n-Hexane			<0.50		ug/L		0.5	25-SEP-18
m+p-Xylenes			<0.40		ug/L		0.4	25-SEP-18
Methyl Ethyl Ketone			<20		ug/L		20	25-SEP-18
Methyl Isobutyl Ketone			<20		ug/L		20	25-SEP-18
Methylene Chloride			<5.0		ug/L		5	25-SEP-18
MTBE			<2.0		ug/L		2	25-SEP-18
o-Xylene			<0.30		ug/L		0.3	25-SEP-18
Styrene			<0.50		ug/L		0.5	25-SEP-18
Tetrachloroethylene			<0.50		ug/L		0.5	25-SEP-18
Toluene			<0.50		ug/L		0.5	25-SEP-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	25-SEP-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	25-SEP-18
Trichloroethylene			<0.50		ug/L		0.5	25-SEP-18
Trichlorofluoromethane			<5.0		ug/L		5	25-SEP-18
Vinyl chloride			<0.50		ug/L		0.5	25-SEP-18
Surrogate: 1,4-Difluorobenzene			102.9		%		70-130	25-SEP-18
Surrogate: 4-Bromofluorobenzene			100.9		%		70-130	25-SEP-18
WG2881576-5 MS		WG2881576-3						
1,1,1,2-Tetrachloroethane			106.9		%		50-140	25-SEP-18
1,1,1,2,2-Tetrachloroethane			96.5		%		50-140	25-SEP-18
1,1,1-Trichloroethane			107.9		%		50-140	25-SEP-18
1,1,2-Trichloroethane			103.5		%		50-140	25-SEP-18
1,1-Dichloroethane			103.4		%		50-140	25-SEP-18
1,1-Dichloroethylene			99.3		%		50-140	25-SEP-18
1,2-Dibromoethane			102.9		%		50-140	25-SEP-18
1,2-Dichlorobenzene			110.5		%		50-140	25-SEP-18



Quality Control Report

Workorder: L2168350

Report Date: 25-SEP-18

Page 5 of 6

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT								
	Water							
Batch	R4238207							
WG2881576-5 MS		WG2881576-3						
1,2-Dichloroethane			112.9		%		50-140	25-SEP-18
1,2-Dichloropropane			102.8		%		50-140	25-SEP-18
1,3-Dichlorobenzene			112.3		%		50-140	25-SEP-18
1,4-Dichlorobenzene			115.6		%		50-140	25-SEP-18
Acetone			106.8		%		50-140	25-SEP-18
Benzene			105.7		%		50-140	25-SEP-18
Bromodichloromethane			109.6		%		50-140	25-SEP-18
Bromoform			107.1		%		50-140	25-SEP-18
Bromomethane			81.9		%		50-140	25-SEP-18
Carbon tetrachloride			109.2		%		50-140	25-SEP-18
Chlorobenzene			108.1		%		50-140	25-SEP-18
Chloroform			107.6		%		50-140	25-SEP-18
cis-1,2-Dichloroethylene			106.7		%		50-140	25-SEP-18
cis-1,3-Dichloropropene			122.9		%		50-140	25-SEP-18
Dibromochloromethane			106.7		%		50-140	25-SEP-18
Dichlorodifluoromethane			100.5		%		50-140	25-SEP-18
Ethylbenzene			110.1		%		50-140	25-SEP-18
n-Hexane			116.8		%		50-140	25-SEP-18
m+p-Xylenes			113.4		%		50-140	25-SEP-18
Methyl Ethyl Ketone			94.4		%		50-140	25-SEP-18
Methyl Isobutyl Ketone			101.6		%		50-140	25-SEP-18
Methylene Chloride			102.5		%		50-140	25-SEP-18
MTBE			109.1		%		50-140	25-SEP-18
o-Xylene			108.9		%		50-140	25-SEP-18
Styrene			111.8		%		50-140	25-SEP-18
Tetrachloroethylene			113.0		%		50-140	25-SEP-18
Toluene			106.0		%		50-140	25-SEP-18
trans-1,2-Dichloroethylene			108.2		%		50-140	25-SEP-18
trans-1,3-Dichloropropene			123.6		%		50-140	25-SEP-18
Trichloroethylene			114.8		%		50-140	25-SEP-18
Trichlorofluoromethane			110.5		%		50-140	25-SEP-18
Vinyl chloride			90.2		%		50-140	25-SEP-18

Quality Control Report

Workorder: L2168350

Report Date: 25-SEP-18

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

Page 6 of 6

Contact: Suvish Melanta

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.



L2168350-COFC

Report To		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may 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: Suvish M.		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PROPERTY (Business Days)		4 day [P4-20%] <input type="checkbox"/>		EMERGENCY		1 Business day [E-100%] <input type="checkbox"/>																																																																																																								
Phone: 905-706-2650		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked					3 day [P3-25%] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply) <input type="checkbox"/>																																																																																																								
Street: 11 Indell Lane		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																														
City/Province: Brampton, ON		Email 1 or Fax: Smelanta@terraprobe.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																														
Postal Code: L6T 3Y3		Email 2			Analysis Request																																																																																																														
Invoice To: Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution			<table border="1" style="width:100%; height: 100%; border-collapse: collapse;"> <tr> <th colspan="10">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below</th> <th rowspan="10" style="writing-mode: vertical-rl; text-align: center;">SAMPLES ON HOLD</th> <th rowspan="10" style="writing-mode: vertical-rl; text-align: center;">Sample is hazardous (please provide further details)</th> <th rowspan="10" style="writing-mode: vertical-rl; text-align: center;">NUMBER OF CONTAINERS</th> </tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> <tr><td colspan="10"></td></tr> </table>								Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below										SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS																																																																																										
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below													SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS																																																																																																				
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																																																																																	
Company:		Email 1 or Fax: rossi@terraprobe.ca																																																																																																																	
Contact:		Email 2																																																																																																																	
Project Information		Oil and Gas Required Fields (client use)																																																																																																																	
ALS Account # / Quote #:		AFE/Cost Center:		PO#																																																																																																															
Job #: 1-17-0401-42		Major/Minor Code:		Routing Code:																																																																																																															
PO / AFE:		Requisitioner:																																																																																																																	
LSD:		Location:																																																																																																																	
ALS Lab Work Order # (lab use only): L2168350		ALS Contact:		Sampler: M.C.																																																																																																															
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																																																																																																															
	BH201-D	19-Sep-18	14:00	GW	X									2																																																																																																					
	BH203	↓	15:00	GW	X									2																																																																																																					
	DUP	↓	14:00	GW	X									2																																																																																																					
	TRIPBLANK				X									2																																																																																																					
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																														
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		- Table 2 RPI - RSC			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																														
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Ice Packs <input type="checkbox"/> Ice Cubes <input 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																																																																																																						
									11.1																																																																																																										
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																																																																													
Released by: Mark Carhart		Date: Sept. 19 / 2018	Time: 16:00	Received by:		Date:	Time:	Received by: Ana George		Date: Sept. 20 / 2018	Time: 2:30 pm																																																																																																								



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-DEC-18
Report Date: 24-DEC-18 08:54 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2212837
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732309
Legal Site Desc:

Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)							

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

Physical Tests - WATER

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	0.841
pH	pH units	-	-	7.58

Lab ID	L2212837-1	L2212837-2	L2212837-3
Sample Date	19-DEC-18	19-DEC-18	19-DEC-18
Sample ID	BH202	BH201-S	BH201-D

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

Analyte	Unit	Guide Limits				
		#1	#2			
Chloride (Cl)	mg/L	790	-	109	452 ^{DLHC}	92.8

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Cyanides - WATER

Lab ID	L2212837-1	L2212837-2	L2212837-3
Sample Date	19-DEC-18	19-DEC-18	19-DEC-18
Sample ID	BH202	BH201-S	BH201-D

Analyte	Unit	Guide Limits				
		#1	#2	#3	#4	
Cyanide, Weak Acid Diss	ug/L	66	-	<2.0	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	L2212837-1	L2212837-2	L2212837-3
		#1	#2	Sample Date	19-DEC-18	19-DEC-18	19-DEC-18
				Sample ID	BH202	BH201-S	BH201-D
Dissolved Mercury Filtration Location	-	-		FIELD	FIELD	FIELD	
Dissolved Metals Filtration Location	-	-		FIELD	FIELD	FIELD	
Antimony (Sb)-Dissolved	ug/L	6	-	<0.10	<0.10	<0.10	
Arsenic (As)-Dissolved	ug/L	25	-	0.17	0.23	0.31	
Barium (Ba)-Dissolved	ug/L	1000	-	298	293	210	
Beryllium (Be)-Dissolved	ug/L	4	-	<0.10	<0.10	<0.10	
Boron (B)-Dissolved	ug/L	5000	-	<10	38	<10	
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.010	<0.010	<0.010	
Chromium (Cr)-Dissolved	ug/L	50	-	<0.50	1.28	<0.50	
Cobalt (Co)-Dissolved	ug/L	3.8	-	<0.10	0.13	<0.10	
Copper (Cu)-Dissolved	ug/L	87	-	0.32	0.95	0.27	
Lead (Pb)-Dissolved	ug/L	10	-	<0.050	0.270	<0.050	
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010	<0.010	<0.010	
Molybdenum (Mo)-Dissolved	ug/L	70	-	0.661	0.235	0.808	
Nickel (Ni)-Dissolved	ug/L	100	-	<0.50	0.58	<0.50	
Selenium (Se)-Dissolved	ug/L	10	-	0.087	2.11	<0.050	
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.050	<0.050	<0.050	
Sodium (Na)-Dissolved	ug/L	490000	-	11400	226000 ^{DLHC}	31900	
Thallium (Tl)-Dissolved	ug/L	2	-	<0.010	<0.010	<0.010	
Uranium (U)-Dissolved	ug/L	20	-	3.24	0.522	1.11	
Vanadium (V)-Dissolved	ug/L	6.2	-	1.03	1.25	0.76	
Zinc (Zn)-Dissolved	ug/L	1100	-	<1.0	1.4	<1.0	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

		Lab ID			
		L2212837-1	L2212837-2	L2212837-3	
		Sample Date			
		19-DEC-18	19-DEC-18	19-DEC-18	
		Sample ID			
		BH202	BH201-S	BH201-D	
Guide Limits					
Analyte	Unit	#1		#2	
Chromium, Hexavalent	ug/L	25	-	<0.50	1.00 <0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

Reference Information

17-732309

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.



Environmental

Quality Control Report

Workorder: L2212837

Report Date: 24-DEC-18

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4406767							
WG2957443-20	DUP	WG2957443-18						
Chloride (Cl)		60.0	60.6		mg/L	1.1	20	19-DEC-18
WG2957443-17	LCS							
Chloride (Cl)			101.7		%		90-110	19-DEC-18
WG2957443-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-18
WG2957443-19	MS	WG2957443-18						
Chloride (Cl)			96.7		%		75-125	19-DEC-18
CN-WAD-R511-WT		Water						
Batch	R4412529							
WG2960133-3	DUP	L2213488-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-DEC-18
WG2960133-2	LCS							
Cyanide, Weak Acid Diss			108.2		%		80-120	21-DEC-18
WG2960133-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-DEC-18
WG2960133-4	MS	L2213488-1						
Cyanide, Weak Acid Diss			92.8		%		75-125	21-DEC-18
CR-CR6-IC-R511-WT		Water						
Batch	R4405909							
WG2958180-4	DUP	WG2958180-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2958180-2	LCS							
Chromium, Hexavalent			93.4		%		80-120	20-DEC-18
WG2958180-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	20-DEC-18
WG2958180-5	MS	WG2958180-3						
Chromium, Hexavalent			93.1		%		70-130	20-DEC-18
EC-R511-WT		Water						
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
Conductivity		0.794	0.799		mS/cm	0.6	10	20-DEC-18
WG2957928-2	LCS							
Conductivity			98.1		%		90-110	20-DEC-18
WG2957928-1	MB							
Conductivity			<0.0030		mS/cm		0.003	20-DEC-18
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2212837

Report Date: 24-DEC-18

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4405651							
WG2957934-4	DUP	WG2957934-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2957934-2	LCS							
Mercury (Hg)-Dissolved			95.2		%		80-120	20-DEC-18
WG2957934-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	20-DEC-18
WG2957934-6	MS	WG2957934-5						
Mercury (Hg)-Dissolved			91.6		%		70-130	20-DEC-18
MET-D-UG/L-MS-WT		Water						
Batch	R4404611							
WG2957751-4	DUP	WG2957751-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Arsenic (As)-Dissolved		0.17	0.14	J	ug/L	0.04	0.2	19-DEC-18
Barium (Ba)-Dissolved		298	299		ug/L	0.5	20	19-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	19-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	19-DEC-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Copper (Cu)-Dissolved		0.32	0.33		ug/L	3.0	20	19-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Molybdenum (Mo)-Dissolved		0.661	0.644		ug/L	2.7	20	19-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Selenium (Se)-Dissolved		0.087	0.088		ug/L	0.6	20	19-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Sodium (Na)-Dissolved		11400	11500		ug/L	0.6	20	19-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-18
Uranium (U)-Dissolved		3.24	3.24		ug/L	0.0	20	19-DEC-18
Vanadium (V)-Dissolved		1.03	1.04		ug/L	1.3	20	19-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-18
WG2957751-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	19-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	19-DEC-18
Barium (Ba)-Dissolved			107.9		%		80-120	19-DEC-18
Beryllium (Be)-Dissolved			97.5		%		80-120	19-DEC-18



Quality Control Report

Workorder: L2212837

Report Date: 24-DEC-18

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-2	LCS							
Boron (B)-Dissolved			98.9		%		80-120	19-DEC-18
Cadmium (Cd)-Dissolved			99.2		%		80-120	19-DEC-18
Chromium (Cr)-Dissolved			96.2		%		80-120	19-DEC-18
Cobalt (Co)-Dissolved			96.2		%		80-120	19-DEC-18
Copper (Cu)-Dissolved			94.2		%		80-120	19-DEC-18
Lead (Pb)-Dissolved			102.3		%		80-120	19-DEC-18
Molybdenum (Mo)-Dissolved			103.2		%		80-120	19-DEC-18
Nickel (Ni)-Dissolved			94.6		%		80-120	19-DEC-18
Selenium (Se)-Dissolved			98.0		%		80-120	19-DEC-18
Silver (Ag)-Dissolved			103.8		%		80-120	19-DEC-18
Sodium (Na)-Dissolved			93.5		%		80-120	19-DEC-18
Thallium (Tl)-Dissolved			100.8		%		80-120	19-DEC-18
Uranium (U)-Dissolved			103.4		%		80-120	19-DEC-18
Vanadium (V)-Dissolved			99.0		%		80-120	19-DEC-18
Zinc (Zn)-Dissolved			95.0		%		80-120	19-DEC-18
WG2957751-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-18



Quality Control Report

Workorder: L2212837

Report Date: 24-DEC-18

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-18
WG2957751-5 MS		WG2957751-6						
Antimony (Sb)-Dissolved			91.8		%		70-130	19-DEC-18
Arsenic (As)-Dissolved			106.3		%		70-130	19-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Beryllium (Be)-Dissolved			98.1		%		70-130	19-DEC-18
Boron (B)-Dissolved			92.3		%		70-130	19-DEC-18
Cadmium (Cd)-Dissolved			94.8		%		70-130	19-DEC-18
Chromium (Cr)-Dissolved			94.7		%		70-130	19-DEC-18
Cobalt (Co)-Dissolved			92.9		%		70-130	19-DEC-18
Copper (Cu)-Dissolved			89.7		%		70-130	19-DEC-18
Lead (Pb)-Dissolved			94.9		%		70-130	19-DEC-18
Molybdenum (Mo)-Dissolved			101.1		%		70-130	19-DEC-18
Nickel (Ni)-Dissolved			89.9		%		70-130	19-DEC-18
Selenium (Se)-Dissolved			112.2		%		70-130	19-DEC-18
Silver (Ag)-Dissolved			96.3		%		70-130	19-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Thallium (Tl)-Dissolved			93.1		%		70-130	19-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Vanadium (V)-Dissolved			101.1		%		70-130	19-DEC-18
Zinc (Zn)-Dissolved			90.3		%		70-130	19-DEC-18
PH-WT								
	Water							
Batch	R4405667							
WG2957928-4 DUP		WG2957928-3						
pH		7.48	7.46	J	pH units	0.02	0.2	20-DEC-18
WG2957928-2 LCS								
pH			6.99		pH units		6.9-7.1	20-DEC-18

Quality Control Report

Workorder: L2212837

Report Date: 24-DEC-18

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

Page 5 of 5

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2212837-COFC

COC Number: 17 - 732309

Page | of |

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																												
Company: <u>Tetra Probe</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply				<input checked="" type="checkbox"/> EMERGENCY 1 Business day [E-100%] Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)																								
Contact: <u>Sudish M.</u>		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days) 4 day [P4-20%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/>																												
Phone: <u>905-796-2650</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																												
Company address below will appear on the final report					Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			For tests that can not be performed according to the service level selected, you will be contacted.																									
Street: <u>11 Indell Lane</u>		Email 1 or Fax: <u>Smelanta@tetraprobe.ca</u>			Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1" style="width:100%; height: 200px;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																												
City/Province: <u>Brampton, ON</u>		Email 2																															
Postal Code: <u>L6T 1Y3</u>		Email 3																															
Invoice To: Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Invoice Distribution																															
Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																															
Company: <u>TETRAPROBE</u>		Email 1 or Fax: <u>(rossi@tetraprobe.ca)</u>			SAMPLES ON HOLD Sample is hazardous (please provide further details) NUMBER OF CONTAINERS M+I																												
Contact: <u>LORENA ROSSI</u>		Email 2																															
Project Information		Oil and Gas Required Fields (client use)																															
ALS Account # / Quote #:		AFE/Cost Center:																															
Job #: <u>17-0401-44</u>		Major/Minor Code:																															
PO / AFE:		Routing Code:																															
LSD:		Requisitioner:																															
ALS Lab Work Order # (lab use only): <u>12212837</u>		Location:																															
ALS Contact:		Sampler: <u>H.C</u>																															
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		X		S												
		<u>BH202</u>			<u>19-DEC-18</u>		<u>12:30</u>		<u>GW</u>		<u>X</u>		<u>5</u>																				
		<u>BH201-S</u>			<u>19-DEC-18</u>		<u>11:30</u>		<u>GW</u>		<u>X</u>		<u>5</u>																				
		<u>BH201-P</u>			<u>19-DEC-18</u>		<u>12:00</u>		<u>GW</u>		<u>X</u>		<u>5</u>																				
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)			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 type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/>																												
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<u>Table 2, RPI, Coerse, RSC</u> <u>Filtered-Cr6+, Hg, metals</u>			INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C																								
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					<u>11.9</u>				<u>7.8</u>																								
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																												
Released by: <u>Mark Colfax</u>		Received by: <u>ES</u>			Date: <u>Dec 19/2018</u>				Date: <u>Dec 19-18</u>																								
Time: <u>15:00</u>		Time: <u>15:00</u>			Time: <u>17:00</u>				Time: <u>17:00</u>																								



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-DEC-18
Report Date: 24-DEC-18 08:54 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2212841
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732481
Legal Site Desc:



Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)							

Physical Tests - WATER

Lab ID L2212841-1
Sample Date 19-DEC-18
Sample ID BH203

Guide Limits

Analyte	Unit	#1	#2	
Conductivity	mS/cm	-	-	0.936
pH	pH units	-	-	7.61

Analyte	Unit	#1	#2	
Conductivity	mS/cm	-	-	0.936
pH	pH units	-	-	7.61

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Anions and Nutrients - WATER

Lab ID L2212841-1
Sample Date 19-DEC-18
Sample ID BH203

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2
Chloride (Cl)	mg/L	790	- 150

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Cyanides - WATER

Lab ID L2212841-1
Sample Date 19-DEC-18
Sample ID BH203

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2
Cyanide, Weak Acid Diss	ug/L	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Dissolved Metals - WATER

Lab ID L2212841-1
Sample Date 19-DEC-18
Sample ID BH203

Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<0.10
Arsenic (As)-Dissolved	ug/L	25	-	0.22
Barium (Ba)-Dissolved	ug/L	1000	-	180
Beryllium (Be)-Dissolved	ug/L	4	-	<0.10
Boron (B)-Dissolved	ug/L	5000	-	11
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.010
Chromium (Cr)-Dissolved	ug/L	50	-	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	-	<0.10
Copper (Cu)-Dissolved	ug/L	87	-	0.25
Lead (Pb)-Dissolved	ug/L	10	-	<0.050
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	-	0.828
Nickel (Ni)-Dissolved	ug/L	100	-	<0.50
Selenium (Se)-Dissolved	ug/L	10	-	<0.050
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.050
Sodium (Na)-Dissolved	ug/L	490000	-	55300
Thallium (Tl)-Dissolved	ug/L	2	-	<0.010
Uranium (U)-Dissolved	ug/L	20	-	1.56
Vanadium (V)-Dissolved	ug/L	6.2	-	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	-	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Speciated Metals - WATER

Lab ID L2212841-1
Sample Date 19-DEC-18
Sample ID BH203

Guide Limits

Analyte	Unit	#1	#2
Chromium, Hexavalent	ug/L	25	<0.50

Analyte	Unit	#1	#2
Chromium, Hexavalent	ug/L	25	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</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	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
<p>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.</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-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 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. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.</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-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
<p>Water samples can be measured directly by immersing the conductivity cell into 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).</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>			
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>			

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-732481

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

Reference Information

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: L2212841

Report Date: 24-DEC-18

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4406767							
WG2957443-20	DUP	WG2957443-18						
Chloride (Cl)		60.0	60.6		mg/L	1.1	20	19-DEC-18
WG2957443-17	LCS							
Chloride (Cl)			101.7		%		90-110	19-DEC-18
WG2957443-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-18
WG2957443-19	MS	WG2957443-18						
Chloride (Cl)			96.7		%		75-125	19-DEC-18
CN-WAD-R511-WT		Water						
Batch	R4412529							
WG2960133-3	DUP	L2213488-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-DEC-18
WG2960133-2	LCS							
Cyanide, Weak Acid Diss			108.2		%		80-120	21-DEC-18
WG2960133-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-DEC-18
WG2960133-4	MS	L2213488-1						
Cyanide, Weak Acid Diss			92.8		%		75-125	21-DEC-18
CR-CR6-IC-R511-WT		Water						
Batch	R4405909							
WG2958180-4	DUP	WG2958180-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2958180-2	LCS							
Chromium, Hexavalent			93.4		%		80-120	20-DEC-18
WG2958180-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	20-DEC-18
WG2958180-5	MS	WG2958180-3						
Chromium, Hexavalent			93.1		%		70-130	20-DEC-18
EC-R511-WT		Water						
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
Conductivity		0.794	0.799		mS/cm	0.6	10	20-DEC-18
WG2957928-2	LCS							
Conductivity			98.1		%		90-110	20-DEC-18
WG2957928-1	MB							
Conductivity			<0.0030		mS/cm		0.003	20-DEC-18
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2212841

Report Date: 24-DEC-18

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4405651							
WG2957934-4	DUP	WG2957934-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2957934-2	LCS							
Mercury (Hg)-Dissolved			95.2		%		80-120	20-DEC-18
WG2957934-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	20-DEC-18
WG2957934-6	MS	WG2957934-5						
Mercury (Hg)-Dissolved			91.6		%		70-130	20-DEC-18
MET-D-UG/L-MS-WT		Water						
Batch	R4404611							
WG2957751-4	DUP	WG2957751-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Arsenic (As)-Dissolved		0.17	0.14	J	ug/L	0.04	0.2	19-DEC-18
Barium (Ba)-Dissolved		298	299		ug/L	0.5	20	19-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	19-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	19-DEC-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Copper (Cu)-Dissolved		0.32	0.33		ug/L	3.0	20	19-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Molybdenum (Mo)-Dissolved		0.661	0.644		ug/L	2.7	20	19-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Selenium (Se)-Dissolved		0.087	0.088		ug/L	0.6	20	19-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Sodium (Na)-Dissolved		11400	11500		ug/L	0.6	20	19-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-18
Uranium (U)-Dissolved		3.24	3.24		ug/L	0.0	20	19-DEC-18
Vanadium (V)-Dissolved		1.03	1.04		ug/L	1.3	20	19-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-18
WG2957751-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	19-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	19-DEC-18
Barium (Ba)-Dissolved			107.9		%		80-120	19-DEC-18
Beryllium (Be)-Dissolved			97.5		%		80-120	19-DEC-18



Quality Control Report

Workorder: L2212841

Report Date: 24-DEC-18

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-2	LCS							
Boron (B)-Dissolved			98.9		%		80-120	19-DEC-18
Cadmium (Cd)-Dissolved			99.2		%		80-120	19-DEC-18
Chromium (Cr)-Dissolved			96.2		%		80-120	19-DEC-18
Cobalt (Co)-Dissolved			96.2		%		80-120	19-DEC-18
Copper (Cu)-Dissolved			94.2		%		80-120	19-DEC-18
Lead (Pb)-Dissolved			102.3		%		80-120	19-DEC-18
Molybdenum (Mo)-Dissolved			103.2		%		80-120	19-DEC-18
Nickel (Ni)-Dissolved			94.6		%		80-120	19-DEC-18
Selenium (Se)-Dissolved			98.0		%		80-120	19-DEC-18
Silver (Ag)-Dissolved			103.8		%		80-120	19-DEC-18
Sodium (Na)-Dissolved			93.5		%		80-120	19-DEC-18
Thallium (Tl)-Dissolved			100.8		%		80-120	19-DEC-18
Uranium (U)-Dissolved			103.4		%		80-120	19-DEC-18
Vanadium (V)-Dissolved			99.0		%		80-120	19-DEC-18
Zinc (Zn)-Dissolved			95.0		%		80-120	19-DEC-18
WG2957751-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-18



Quality Control Report

Workorder: L2212841

Report Date: 24-DEC-18

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-18
WG2957751-5 MS		WG2957751-6						
Antimony (Sb)-Dissolved			91.8		%		70-130	19-DEC-18
Arsenic (As)-Dissolved			106.3		%		70-130	19-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Beryllium (Be)-Dissolved			98.1		%		70-130	19-DEC-18
Boron (B)-Dissolved			92.3		%		70-130	19-DEC-18
Cadmium (Cd)-Dissolved			94.8		%		70-130	19-DEC-18
Chromium (Cr)-Dissolved			94.7		%		70-130	19-DEC-18
Cobalt (Co)-Dissolved			92.9		%		70-130	19-DEC-18
Copper (Cu)-Dissolved			89.7		%		70-130	19-DEC-18
Lead (Pb)-Dissolved			94.9		%		70-130	19-DEC-18
Molybdenum (Mo)-Dissolved			101.1		%		70-130	19-DEC-18
Nickel (Ni)-Dissolved			89.9		%		70-130	19-DEC-18
Selenium (Se)-Dissolved			112.2		%		70-130	19-DEC-18
Silver (Ag)-Dissolved			96.3		%		70-130	19-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Thallium (Tl)-Dissolved			93.1		%		70-130	19-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Vanadium (V)-Dissolved			101.1		%		70-130	19-DEC-18
Zinc (Zn)-Dissolved			90.3		%		70-130	19-DEC-18
PH-WT								
	Water							
Batch	R4405667							
WG2957928-4 DUP		WG2957928-3						
pH		7.48	7.46	J	pH units	0.02	0.2	20-DEC-18
WG2957928-2 LCS								
pH			6.99		pH units		6.9-7.1	20-DEC-18

Quality Control Report

Workorder: L2212841

Report Date: 24-DEC-18

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

Page 5 of 5

Contact: Suvish Melanta

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.



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-DEC-18
Report Date: 24-DEC-18 08:55 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2212844
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732483
Legal Site Desc:



Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2212844-1	BH102	Anions and Nutrients	Chloride (Cl)	4780	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1690000	490000	ug/L

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

Physical Tests - WATER

Lab ID L2212844-1
Sample Date 19-DEC-18
Sample ID BH102

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	10.5
pH	pH units	-	-	6.98

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

Lab ID	L2212844-1
Sample Date	19-DEC-18
Sample ID	BH102

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	790	-	4780 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Cyanides - WATER

Lab ID L2212844-1
Sample Date 19-DEC-18
Sample ID BH102

Guide Limits

Analyte	Unit	#1	#2
Cyanide, Weak Acid Diss	ug/L	66	<2.0

Analyte	Unit	#1	#2
Cyanide, Weak Acid Diss	ug/L	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Dissolved Metals - WATER

		Lab ID	L2212844-1	
		Sample Date	19-DEC-18	
		Sample ID	BH102	
Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	-	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	-	251 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	-	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	-	<100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	-	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	-	3.8 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	-	<2.0 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	-	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010 ^{DLHC}
Molybdenum (Mo)-Dissolved	ug/L	70	-	2.64 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	-	6.9 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	-	<0.50 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	-	1690000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	-	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	-	4.29 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	-	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	-	<10 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

Lab ID L2212844-1
Sample Date 19-DEC-18
Sample ID BH102

Analyte	Unit	Guide Limits		
		#1	#2	
Chromium, Hexavalent	ug/L	25	-	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

Reference Information

17-732483

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: L2212844

Report Date: 24-DEC-18

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4406767							
WG2957443-20	DUP	WG2957443-18						
Chloride (Cl)		60.0	60.6		mg/L	1.1	20	19-DEC-18
WG2957443-17	LCS							
Chloride (Cl)			101.7		%		90-110	19-DEC-18
WG2957443-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-18
WG2957443-19	MS	WG2957443-18						
Chloride (Cl)			96.7		%		75-125	19-DEC-18
CN-WAD-R511-WT		Water						
Batch	R4412529							
WG2960133-3	DUP	L2213488-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-DEC-18
WG2960133-2	LCS							
Cyanide, Weak Acid Diss			108.2		%		80-120	21-DEC-18
WG2960133-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-DEC-18
WG2960133-4	MS	L2213488-1						
Cyanide, Weak Acid Diss			92.8		%		75-125	21-DEC-18
CR-CR6-IC-R511-WT		Water						
Batch	R4405909							
WG2958180-4	DUP	WG2958180-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2958180-2	LCS							
Chromium, Hexavalent			93.4		%		80-120	20-DEC-18
WG2958180-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	20-DEC-18
WG2958180-5	MS	WG2958180-3						
Chromium, Hexavalent			93.1		%		70-130	20-DEC-18
EC-R511-WT		Water						
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
Conductivity		0.794	0.799		mS/cm	0.6	10	20-DEC-18
WG2957928-2	LCS							
Conductivity			98.1		%		90-110	20-DEC-18
WG2957928-1	MB							
Conductivity			<0.0030		mS/cm		0.003	20-DEC-18
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2212844

Report Date: 24-DEC-18

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4405651							
WG2957934-4	DUP	WG2957934-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2957934-2	LCS							
Mercury (Hg)-Dissolved			95.2		%		80-120	20-DEC-18
WG2957934-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	20-DEC-18
WG2957934-6	MS	WG2957934-5						
Mercury (Hg)-Dissolved			91.6		%		70-130	20-DEC-18
MET-D-UG/L-MS-WT		Water						
Batch	R4404611							
WG2957751-4	DUP	WG2957751-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Arsenic (As)-Dissolved		0.17	0.14	J	ug/L	0.04	0.2	19-DEC-18
Barium (Ba)-Dissolved		298	299		ug/L	0.5	20	19-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	19-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	19-DEC-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Copper (Cu)-Dissolved		0.32	0.33		ug/L	3.0	20	19-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Molybdenum (Mo)-Dissolved		0.661	0.644		ug/L	2.7	20	19-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Selenium (Se)-Dissolved		0.087	0.088		ug/L	0.6	20	19-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Sodium (Na)-Dissolved		11400	11500		ug/L	0.6	20	19-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-18
Uranium (U)-Dissolved		3.24	3.24		ug/L	0.0	20	19-DEC-18
Vanadium (V)-Dissolved		1.03	1.04		ug/L	1.3	20	19-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-18
WG2957751-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	19-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	19-DEC-18
Barium (Ba)-Dissolved			107.9		%		80-120	19-DEC-18
Beryllium (Be)-Dissolved			97.5		%		80-120	19-DEC-18



Quality Control Report

Workorder: L2212844

Report Date: 24-DEC-18

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-2	LCS							
Boron (B)-Dissolved			98.9		%		80-120	19-DEC-18
Cadmium (Cd)-Dissolved			99.2		%		80-120	19-DEC-18
Chromium (Cr)-Dissolved			96.2		%		80-120	19-DEC-18
Cobalt (Co)-Dissolved			96.2		%		80-120	19-DEC-18
Copper (Cu)-Dissolved			94.2		%		80-120	19-DEC-18
Lead (Pb)-Dissolved			102.3		%		80-120	19-DEC-18
Molybdenum (Mo)-Dissolved			103.2		%		80-120	19-DEC-18
Nickel (Ni)-Dissolved			94.6		%		80-120	19-DEC-18
Selenium (Se)-Dissolved			98.0		%		80-120	19-DEC-18
Silver (Ag)-Dissolved			103.8		%		80-120	19-DEC-18
Sodium (Na)-Dissolved			93.5		%		80-120	19-DEC-18
Thallium (Tl)-Dissolved			100.8		%		80-120	19-DEC-18
Uranium (U)-Dissolved			103.4		%		80-120	19-DEC-18
Vanadium (V)-Dissolved			99.0		%		80-120	19-DEC-18
Zinc (Zn)-Dissolved			95.0		%		80-120	19-DEC-18
WG2957751-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-18



Quality Control Report

Workorder: L2212844

Report Date: 24-DEC-18

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-1	MB							
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-18
WG2957751-5	MS	WG2957751-6						
Antimony (Sb)-Dissolved			91.8		%		70-130	19-DEC-18
Arsenic (As)-Dissolved			106.3		%		70-130	19-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Beryllium (Be)-Dissolved			98.1		%		70-130	19-DEC-18
Boron (B)-Dissolved			92.3		%		70-130	19-DEC-18
Cadmium (Cd)-Dissolved			94.8		%		70-130	19-DEC-18
Chromium (Cr)-Dissolved			94.7		%		70-130	19-DEC-18
Cobalt (Co)-Dissolved			92.9		%		70-130	19-DEC-18
Copper (Cu)-Dissolved			89.7		%		70-130	19-DEC-18
Lead (Pb)-Dissolved			94.9		%		70-130	19-DEC-18
Molybdenum (Mo)-Dissolved			101.1		%		70-130	19-DEC-18
Nickel (Ni)-Dissolved			89.9		%		70-130	19-DEC-18
Selenium (Se)-Dissolved			112.2		%		70-130	19-DEC-18
Silver (Ag)-Dissolved			96.3		%		70-130	19-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Thallium (Tl)-Dissolved			93.1		%		70-130	19-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Vanadium (V)-Dissolved			101.1		%		70-130	19-DEC-18
Zinc (Zn)-Dissolved			90.3		%		70-130	19-DEC-18
PH-WT								
	Water							
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
pH		7.48	7.46	J	pH units	0.02	0.2	20-DEC-18
WG2957928-2	LCS							
pH			6.99		pH units		6.9-7.1	20-DEC-18

Quality Control Report

Workorder: L2212844

Report Date: 24-DEC-18

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

Page 5 of 5

Contact: Suvish Melanta

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2212844-COFC

OC Number: 17 - 732483

Page 1 of 1

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)		
Company:	Terraprobe	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/> Standard TAT If received by 3 pm - business days - no surcharges apply		
Contact:	Suvish M.	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PRIORITY (Business Days) 4 day [P4-20%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/>	EMERGENCY 1 Business day [E-100%] Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)	
Phone:	905-796-2650	<input 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:	5Mplants@terraprobe.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm		
City/Province:	Brampton ON	Email 2:		For tests that can not be performed according to the service level selected, you will be contacted.		
Postal Code:	LOT 3X3	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 checked="" type="checkbox"/> YES <input 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 #:		AFE/Cost Center:	PO#			
Job #:	1-17-0481-44	Major/Minor Code:	Routing Code:			
PO / AFE:		Requisitioner:				
LSD:		Location:				
ALS Lab Work Order # (lab use only):	L2212844	ALS Contact:				
		Sampler:	M. C.			
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		
	BH102	19-Dec-18	13:00	GW	X	
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)		SAMPLE CONDITION AS RECEIVED (lab use only)		
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Table 2, RPI, Coarse, RSC Filtered - Cr6+, Hg, metals		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>		
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>		
				Cooling Initiated <input type="checkbox"/>		
				INITIAL COOLER TEMPERATURES °C: 11.9		
				FINAL COOLER TEMPERATURES °C: 7.8		
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)		
Released by: MARK CHARHART	Date: Dec 19/2018	Received by: [Signature]	Date: Dec 19/18	Received by: AP	Date: 19-12-18	
					Time: 17:00	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-DEC-18
Report Date: 24-DEC-18 08:59 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2212851
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732482
Legal Site Desc:

Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use							
(No parameter exceedances)							

Physical Tests - WATER

Lab ID L2212851-1
Sample Date 19-DEC-18
Sample ID DUP

Guide Limits

Analyte	Unit	#1	#2	
Conductivity	mS/cm	-	-	0.794
pH	pH units	-	-	7.48

Analyte	Unit	#1	#2	
Conductivity	mS/cm	-	-	0.794
pH	pH units	-	-	7.48

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Anions and Nutrients - WATER

Lab ID L2212851-1
Sample Date 19-DEC-18
Sample ID DUP

Guide Limits

Analyte	Unit	#1	#2
Chloride (Cl)	mg/L	790	- 108

Analyte	Unit	#1	#2
Chloride (Cl)	mg/L	790	- 108

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Cyanides - WATER

Lab ID L2212851-1
Sample Date 19-DEC-18
Sample ID DUP

Guide Limits

Analyte	Unit	#1	#2
---------	------	----	----

Cyanide, Weak Acid Diss	ug/L	66	-	<2.0
-------------------------	------	----	---	------

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Dissolved Metals - WATER

		Lab ID	L2212851-1	
		Sample Date	19-DEC-18	
		Sample ID	DUP	
Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<0.10
Arsenic (As)-Dissolved	ug/L	25	-	1.08
Barium (Ba)-Dissolved	ug/L	1000	-	151
Beryllium (Be)-Dissolved	ug/L	4	-	<0.10
Boron (B)-Dissolved	ug/L	5000	-	73
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.010
Chromium (Cr)-Dissolved	ug/L	50	-	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	-	<0.10
Copper (Cu)-Dissolved	ug/L	87	-	1.28
Lead (Pb)-Dissolved	ug/L	10	-	0.067
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	-	3.11
Nickel (Ni)-Dissolved	ug/L	100	-	<0.50
Selenium (Se)-Dissolved	ug/L	10	-	0.188
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.050
Sodium (Na)-Dissolved	ug/L	490000	-	48800
Thallium (Tl)-Dissolved	ug/L	2	-	0.012
Uranium (U)-Dissolved	ug/L	20	-	2.11
Vanadium (V)-Dissolved	ug/L	6.2	-	1.95
Zinc (Zn)-Dissolved	ug/L	1100	-	1.7

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Speciated Metals - WATER

Lab ID L2212851-1
Sample Date 19-DEC-18
Sample ID DUP

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	-	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</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	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
<p>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.</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-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 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. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.</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-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
<p>Water samples can be measured directly by immersing the conductivity cell into 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).</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>			
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>			

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-732482

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

Reference Information

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: L2212851

Report Date: 24-DEC-18

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4406767							
WG2957443-20	DUP	WG2957443-18						
Chloride (Cl)		60.0	60.6		mg/L	1.1	20	19-DEC-18
WG2957443-17	LCS							
Chloride (Cl)			101.7		%		90-110	19-DEC-18
WG2957443-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-18
WG2957443-19	MS	WG2957443-18						
Chloride (Cl)			96.7		%		75-125	19-DEC-18
CN-WAD-R511-WT		Water						
Batch	R4412529							
WG2960133-3	DUP	L2213488-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-DEC-18
WG2960133-2	LCS							
Cyanide, Weak Acid Diss			108.2		%		80-120	21-DEC-18
WG2960133-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-DEC-18
WG2960133-4	MS	L2213488-1						
Cyanide, Weak Acid Diss			92.8		%		75-125	21-DEC-18
CR-CR6-IC-R511-WT		Water						
Batch	R4405909							
WG2958180-4	DUP	WG2958180-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2958180-2	LCS							
Chromium, Hexavalent			93.4		%		80-120	20-DEC-18
WG2958180-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	20-DEC-18
WG2958180-5	MS	WG2958180-3						
Chromium, Hexavalent			93.1		%		70-130	20-DEC-18
EC-R511-WT		Water						
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
Conductivity		0.794	0.799		mS/cm	0.6	10	20-DEC-18
WG2957928-2	LCS							
Conductivity			98.1		%		90-110	20-DEC-18
WG2957928-1	MB							
Conductivity			<0.0030		mS/cm		0.003	20-DEC-18
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2212851

Report Date: 24-DEC-18

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4405651							
WG2957934-4	DUP	WG2957934-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2957934-2	LCS							
Mercury (Hg)-Dissolved			95.2		%		80-120	20-DEC-18
WG2957934-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	20-DEC-18
WG2957934-6	MS	WG2957934-5						
Mercury (Hg)-Dissolved			91.6		%		70-130	20-DEC-18
MET-D-UG/L-MS-WT		Water						
Batch	R4404611							
WG2957751-4	DUP	WG2957751-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Arsenic (As)-Dissolved		0.17	0.14	J	ug/L	0.04	0.2	19-DEC-18
Barium (Ba)-Dissolved		298	299		ug/L	0.5	20	19-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	19-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	19-DEC-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Copper (Cu)-Dissolved		0.32	0.33		ug/L	3.0	20	19-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Molybdenum (Mo)-Dissolved		0.661	0.644		ug/L	2.7	20	19-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Selenium (Se)-Dissolved		0.087	0.088		ug/L	0.6	20	19-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Sodium (Na)-Dissolved		11400	11500		ug/L	0.6	20	19-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-18
Uranium (U)-Dissolved		3.24	3.24		ug/L	0.0	20	19-DEC-18
Vanadium (V)-Dissolved		1.03	1.04		ug/L	1.3	20	19-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-18
WG2957751-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	19-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	19-DEC-18
Barium (Ba)-Dissolved			107.9		%		80-120	19-DEC-18
Beryllium (Be)-Dissolved			97.5		%		80-120	19-DEC-18



Quality Control Report

Workorder: L2212851

Report Date: 24-DEC-18

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-2	LCS							
Boron (B)-Dissolved			98.9		%		80-120	19-DEC-18
Cadmium (Cd)-Dissolved			99.2		%		80-120	19-DEC-18
Chromium (Cr)-Dissolved			96.2		%		80-120	19-DEC-18
Cobalt (Co)-Dissolved			96.2		%		80-120	19-DEC-18
Copper (Cu)-Dissolved			94.2		%		80-120	19-DEC-18
Lead (Pb)-Dissolved			102.3		%		80-120	19-DEC-18
Molybdenum (Mo)-Dissolved			103.2		%		80-120	19-DEC-18
Nickel (Ni)-Dissolved			94.6		%		80-120	19-DEC-18
Selenium (Se)-Dissolved			98.0		%		80-120	19-DEC-18
Silver (Ag)-Dissolved			103.8		%		80-120	19-DEC-18
Sodium (Na)-Dissolved			93.5		%		80-120	19-DEC-18
Thallium (Tl)-Dissolved			100.8		%		80-120	19-DEC-18
Uranium (U)-Dissolved			103.4		%		80-120	19-DEC-18
Vanadium (V)-Dissolved			99.0		%		80-120	19-DEC-18
Zinc (Zn)-Dissolved			95.0		%		80-120	19-DEC-18
WG2957751-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-18



Quality Control Report

Workorder: L2212851

Report Date: 24-DEC-18

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-18
WG2957751-5 MS		WG2957751-6						
Antimony (Sb)-Dissolved			91.8		%		70-130	19-DEC-18
Arsenic (As)-Dissolved			106.3		%		70-130	19-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Beryllium (Be)-Dissolved			98.1		%		70-130	19-DEC-18
Boron (B)-Dissolved			92.3		%		70-130	19-DEC-18
Cadmium (Cd)-Dissolved			94.8		%		70-130	19-DEC-18
Chromium (Cr)-Dissolved			94.7		%		70-130	19-DEC-18
Cobalt (Co)-Dissolved			92.9		%		70-130	19-DEC-18
Copper (Cu)-Dissolved			89.7		%		70-130	19-DEC-18
Lead (Pb)-Dissolved			94.9		%		70-130	19-DEC-18
Molybdenum (Mo)-Dissolved			101.1		%		70-130	19-DEC-18
Nickel (Ni)-Dissolved			89.9		%		70-130	19-DEC-18
Selenium (Se)-Dissolved			112.2		%		70-130	19-DEC-18
Silver (Ag)-Dissolved			96.3		%		70-130	19-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Thallium (Tl)-Dissolved			93.1		%		70-130	19-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Vanadium (V)-Dissolved			101.1		%		70-130	19-DEC-18
Zinc (Zn)-Dissolved			90.3		%		70-130	19-DEC-18
PH-WT								
	Water							
Batch	R4405667							
WG2957928-4 DUP		WG2957928-3						
pH		7.48	7.46	J	pH units	0.02	0.2	20-DEC-18
WG2957928-2 LCS								
pH			6.99		pH units		6.9-7.1	20-DEC-18

Quality Control Report

Workorder: L2212851

Report Date: 24-DEC-18

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

Page 5 of 5

Contact: Suvish Melanta

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.



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-DEC-18
Report Date: 24-DEC-18 09:23 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2212853
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732480
Legal Site Desc:

Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2212853-1	BH103	Anions and Nutrients	Chloride (Cl)	3510	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1650	1000	ug/L
			Sodium (Na)-Dissolved	757000	490000	ug/L

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

Physical Tests - WATER

Lab ID L2212853-1
Sample Date 19-DEC-18
Sample ID BH103

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	8.13
pH	pH units	-	-	7.31

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

Lab ID L2212853-1
Sample Date 19-DEC-18
Sample ID BH103

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chloride (Cl)	mg/L	790	-	3510 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Cyanides - WATER

Lab ID	L2212853-1
Sample Date	19-DEC-18
Sample ID	BH103

Analyte	Unit	Guide Limits	
		#1	#2

Cyanide, Weak Acid Diss	ug/L	66	-	<2.0
-------------------------	------	----	---	------

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Dissolved Metals - WATER

		Lab ID	L2212853-1	
		Sample Date	19-DEC-18	
		Sample ID	BH103	
Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	-	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	-	1650 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	-	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	-	<100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	-	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	-	<1.0 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	-	2.2 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	-	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	-	4.19 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	-	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	-	0.70 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	-	757000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	-	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	-	2.38 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	-	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	-	<10 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

Lab ID L2212853-1
Sample Date 19-DEC-18
Sample ID BH103

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	-	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

Reference Information

17-732480

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.



Environmental

Quality Control Report

Workorder: L2212853

Report Date: 24-DEC-18

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4406767							
WG2957443-20	DUP	WG2957443-18						
Chloride (Cl)		60.0	60.6		mg/L	1.1	20	19-DEC-18
WG2957443-17	LCS							
Chloride (Cl)			101.7		%		90-110	19-DEC-18
WG2957443-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-18
WG2957443-19	MS	WG2957443-18						
Chloride (Cl)			96.7		%		75-125	19-DEC-18
CN-WAD-R511-WT		Water						
Batch	R4412529							
WG2960133-3	DUP	L2213488-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-DEC-18
WG2960133-2	LCS							
Cyanide, Weak Acid Diss			108.2		%		80-120	21-DEC-18
WG2960133-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-DEC-18
WG2960133-4	MS	L2213488-1						
Cyanide, Weak Acid Diss			92.8		%		75-125	21-DEC-18
CR-CR6-IC-R511-WT		Water						
Batch	R4405909							
WG2958180-4	DUP	WG2958180-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2958180-2	LCS							
Chromium, Hexavalent			93.4		%		80-120	20-DEC-18
WG2958180-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	20-DEC-18
WG2958180-5	MS	WG2958180-3						
Chromium, Hexavalent			93.1		%		70-130	20-DEC-18
EC-R511-WT		Water						
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
Conductivity		0.794	0.799		mS/cm	0.6	10	20-DEC-18
WG2957928-2	LCS							
Conductivity			98.1		%		90-110	20-DEC-18
WG2957928-1	MB							
Conductivity			<0.0030		mS/cm		0.003	20-DEC-18
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2212853

Report Date: 24-DEC-18

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4405651							
WG2957934-4	DUP	WG2957934-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2957934-2	LCS							
Mercury (Hg)-Dissolved			95.2		%		80-120	20-DEC-18
WG2957934-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	20-DEC-18
WG2957934-6	MS	WG2957934-5						
Mercury (Hg)-Dissolved			91.6		%		70-130	20-DEC-18
MET-D-UG/L-MS-WT		Water						
Batch	R4404611							
WG2957751-4	DUP	WG2957751-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Arsenic (As)-Dissolved		0.17	0.14	J	ug/L	0.04	0.2	19-DEC-18
Barium (Ba)-Dissolved		298	299		ug/L	0.5	20	19-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	19-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	19-DEC-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Copper (Cu)-Dissolved		0.32	0.33		ug/L	3.0	20	19-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Molybdenum (Mo)-Dissolved		0.661	0.644		ug/L	2.7	20	19-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Selenium (Se)-Dissolved		0.087	0.088		ug/L	0.6	20	19-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Sodium (Na)-Dissolved		11400	11500		ug/L	0.6	20	19-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-18
Uranium (U)-Dissolved		3.24	3.24		ug/L	0.0	20	19-DEC-18
Vanadium (V)-Dissolved		1.03	1.04		ug/L	1.3	20	19-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-18
WG2957751-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	19-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	19-DEC-18
Barium (Ba)-Dissolved			107.9		%		80-120	19-DEC-18
Beryllium (Be)-Dissolved			97.5		%		80-120	19-DEC-18



Quality Control Report

Workorder: L2212853

Report Date: 24-DEC-18

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-2	LCS							
Boron (B)-Dissolved			98.9		%		80-120	19-DEC-18
Cadmium (Cd)-Dissolved			99.2		%		80-120	19-DEC-18
Chromium (Cr)-Dissolved			96.2		%		80-120	19-DEC-18
Cobalt (Co)-Dissolved			96.2		%		80-120	19-DEC-18
Copper (Cu)-Dissolved			94.2		%		80-120	19-DEC-18
Lead (Pb)-Dissolved			102.3		%		80-120	19-DEC-18
Molybdenum (Mo)-Dissolved			103.2		%		80-120	19-DEC-18
Nickel (Ni)-Dissolved			94.6		%		80-120	19-DEC-18
Selenium (Se)-Dissolved			98.0		%		80-120	19-DEC-18
Silver (Ag)-Dissolved			103.8		%		80-120	19-DEC-18
Sodium (Na)-Dissolved			93.5		%		80-120	19-DEC-18
Thallium (Tl)-Dissolved			100.8		%		80-120	19-DEC-18
Uranium (U)-Dissolved			103.4		%		80-120	19-DEC-18
Vanadium (V)-Dissolved			99.0		%		80-120	19-DEC-18
Zinc (Zn)-Dissolved			95.0		%		80-120	19-DEC-18
WG2957751-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-18



Quality Control Report

Workorder: L2212853

Report Date: 24-DEC-18

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-1	MB							
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-18
WG2957751-5	MS	WG2957751-6						
Antimony (Sb)-Dissolved			91.8		%		70-130	19-DEC-18
Arsenic (As)-Dissolved			106.3		%		70-130	19-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Beryllium (Be)-Dissolved			98.1		%		70-130	19-DEC-18
Boron (B)-Dissolved			92.3		%		70-130	19-DEC-18
Cadmium (Cd)-Dissolved			94.8		%		70-130	19-DEC-18
Chromium (Cr)-Dissolved			94.7		%		70-130	19-DEC-18
Cobalt (Co)-Dissolved			92.9		%		70-130	19-DEC-18
Copper (Cu)-Dissolved			89.7		%		70-130	19-DEC-18
Lead (Pb)-Dissolved			94.9		%		70-130	19-DEC-18
Molybdenum (Mo)-Dissolved			101.1		%		70-130	19-DEC-18
Nickel (Ni)-Dissolved			89.9		%		70-130	19-DEC-18
Selenium (Se)-Dissolved			112.2		%		70-130	19-DEC-18
Silver (Ag)-Dissolved			96.3		%		70-130	19-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Thallium (Tl)-Dissolved			93.1		%		70-130	19-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Vanadium (V)-Dissolved			101.1		%		70-130	19-DEC-18
Zinc (Zn)-Dissolved			90.3		%		70-130	19-DEC-18
PH-WT								
	Water							
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
pH		7.48	7.46	J	pH units	0.02	0.2	20-DEC-18
WG2957928-2	LCS							
pH			6.99		pH units		6.9-7.1	20-DEC-18

Quality Control Report

Workorder: L2212853

Report Date: 24-DEC-18

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

Page 5 of 5

Contact: Suvish Melanta

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2212853-COFC

COC Number: 17 - 732480

Page 1 of 1

www.alsglobal.com

Report To		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)											
Company:	Terraprobe	Select Report Format:	<input checked="" type="checkbox"/> PDF	<input checked="" type="checkbox"/> EXCEL	<input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/>		Standard TAT if received by 3 pm - business days - no surcharges apply								
Contact:	Suvish M.	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		4 day [P4-20%] <input type="checkbox"/>		1 Business day [E-100%] <input checked="" type="checkbox"/>							
Phone:	905-746-2650	Select Distribution:	<input checked="" type="checkbox"/> EMAIL	<input type="checkbox"/> MAIL	<input type="checkbox"/> FAX	3 day [P3-25%] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply) <input type="checkbox"/>								
Company address below will appear on the final report		Email 1 or Fax:	sme.tanta@terraprobe.ca			2 day [P2-50%] <input type="checkbox"/>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm								
Street:	11 Indell Lane	Email 2:				For tests that can not be performed according to the service level selected, you will be contacted.										
City/Province:	Brampton, ON	Email 3:				Analysis Request										
Postal Code:	L7T 3Y3	Invoice To		Invoice Distribution		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	Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX							SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS			
Company:	Terraprobe	Company:		Email 1 or Fax: LOSS: @terraprobe.ca												
Contact:	LORENA ROSSI	Contact:		Email 2:												
Project Information		Oil and Gas Required Fields (client use)														
ALS Account # / Quote #:		AFE/Cost Center:		PO#:												
Job #:		Major/Minor Code:		Routing Code:												
PO / AFE:		Requisitioner:		Location:												
LSD:		ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler:										
ALS Lab Work Order # (lab use only):		L2212853				M.C.										
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												
	BH103	19-Dec-18	13:20	GW	X											
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 checked="" type="checkbox"/> NO		Table 2, RPI, Coarse, RSC Filtered - Cr6+, Hg, Metals			Frozen <input checked="" type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>											
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input 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			
					11.9				7.8							
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)											
Released by:	Mark Carhart	Date:	Dec 19 / 2018	Time:	Received by:	LS	Date:	Dec 19 / 18	Time:	15:00	Received by:	AF	Date:	19-12-18	Time:	17:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2011 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: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 19-DEC-18
Report Date: 24-DEC-18 09:24 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2212854
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732484
Legal Site Desc:

Mathy Mahadera
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)							

Physical Tests - WATER

Lab ID L2212854-1
Sample Date 19-DEC-18
Sample ID BH101

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	0.796
pH	pH units	-	-	7.49

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Anions and Nutrients - WATER

Lab ID L2212854-1
Sample Date 19-DEC-18
Sample ID BH101

Guide Limits

Analyte	Unit	#1	#2
Chloride (Cl)	mg/L	790	- 107

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Cyanides - WATER

Lab ID L2212854-1
Sample Date 19-DEC-18
Sample ID BH101

Guide Limits

Analyte	Unit	#1	#2
---------	------	----	----

Cyanide, Weak Acid Diss	ug/L	66	-	<2.0
-------------------------	------	----	---	------

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Dissolved Metals - WATER

Lab ID L2212854-1
Sample Date 19-DEC-18
Sample ID BH101

Guide Limits
#1 #2

Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-		FIELD
Dissolved Metals Filtration Location	-	-		FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	0.10
Arsenic (As)-Dissolved	ug/L	25	-	1.07
Barium (Ba)-Dissolved	ug/L	1000	-	151
Beryllium (Be)-Dissolved	ug/L	4	-	<0.10
Boron (B)-Dissolved	ug/L	5000	-	74
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.010
Chromium (Cr)-Dissolved	ug/L	50	-	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	-	<0.10
Copper (Cu)-Dissolved	ug/L	87	-	1.27
Lead (Pb)-Dissolved	ug/L	10	-	0.066
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	-	3.28
Nickel (Ni)-Dissolved	ug/L	100	-	<0.50
Selenium (Se)-Dissolved	ug/L	10	-	0.218
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.050
Sodium (Na)-Dissolved	ug/L	490000	-	49200
Thallium (Tl)-Dissolved	ug/L	2	-	0.013
Uranium (U)-Dissolved	ug/L	20	-	2.19
Vanadium (V)-Dissolved	ug/L	6.2	-	1.95
Zinc (Zn)-Dissolved	ug/L	1100	-	1.8

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Speciated Metals - WATER

Lab ID L2212854-1
Sample Date 19-DEC-18
Sample ID BH101

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2
Chromium, Hexavalent	ug/L	25	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</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	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
<p>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.</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-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 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. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.</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-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
<p>Water samples can be measured directly by immersing the conductivity cell into 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).</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>			
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>			

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-732484

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
----------------------------	---------------------

Reference Information

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: L2212854

Report Date: 24-DEC-18

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4406767							
WG2957443-20	DUP	WG2957443-18						
Chloride (Cl)		60.0	60.6		mg/L	1.1	20	19-DEC-18
WG2957443-17	LCS							
Chloride (Cl)			101.7		%		90-110	19-DEC-18
WG2957443-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-DEC-18
WG2957443-19	MS	WG2957443-18						
Chloride (Cl)			96.7		%		75-125	19-DEC-18
CN-WAD-R511-WT		Water						
Batch	R4412529							
WG2960133-3	DUP	L2213488-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	21-DEC-18
WG2960133-2	LCS							
Cyanide, Weak Acid Diss			108.2		%		80-120	21-DEC-18
WG2960133-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	21-DEC-18
WG2960133-4	MS	L2213488-1						
Cyanide, Weak Acid Diss			92.8		%		75-125	21-DEC-18
CR-CR6-IC-R511-WT		Water						
Batch	R4405909							
WG2958180-4	DUP	WG2958180-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2958180-2	LCS							
Chromium, Hexavalent			93.4		%		80-120	20-DEC-18
WG2958180-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	20-DEC-18
WG2958180-5	MS	WG2958180-3						
Chromium, Hexavalent			93.1		%		70-130	20-DEC-18
EC-R511-WT		Water						
Batch	R4405667							
WG2957928-4	DUP	WG2957928-3						
Conductivity		0.794	0.799		mS/cm	0.6	10	20-DEC-18
WG2957928-2	LCS							
Conductivity			98.1		%		90-110	20-DEC-18
WG2957928-1	MB							
Conductivity			<0.0030		mS/cm		0.003	20-DEC-18
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2212854

Report Date: 24-DEC-18

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4405651							
WG2957934-4	DUP	WG2957934-3						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	20-DEC-18
WG2957934-2	LCS							
Mercury (Hg)-Dissolved			95.2		%		80-120	20-DEC-18
WG2957934-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	20-DEC-18
WG2957934-6	MS	WG2957934-5						
Mercury (Hg)-Dissolved			91.6		%		70-130	20-DEC-18
MET-D-UG/L-MS-WT		Water						
Batch	R4404611							
WG2957751-4	DUP	WG2957751-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Arsenic (As)-Dissolved		0.17	0.14	J	ug/L	0.04	0.2	19-DEC-18
Barium (Ba)-Dissolved		298	299		ug/L	0.5	20	19-DEC-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Boron (B)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	19-DEC-18
Cadmium (Cd)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	19-DEC-18
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	19-DEC-18
Copper (Cu)-Dissolved		0.32	0.33		ug/L	3.0	20	19-DEC-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Molybdenum (Mo)-Dissolved		0.661	0.644		ug/L	2.7	20	19-DEC-18
Nickel (Ni)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	19-DEC-18
Selenium (Se)-Dissolved		0.087	0.088		ug/L	0.6	20	19-DEC-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	19-DEC-18
Sodium (Na)-Dissolved		11400	11500		ug/L	0.6	20	19-DEC-18
Thallium (Tl)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	19-DEC-18
Uranium (U)-Dissolved		3.24	3.24		ug/L	0.0	20	19-DEC-18
Vanadium (V)-Dissolved		1.03	1.04		ug/L	1.3	20	19-DEC-18
Zinc (Zn)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	19-DEC-18
WG2957751-2	LCS							
Antimony (Sb)-Dissolved			101.1		%		80-120	19-DEC-18
Arsenic (As)-Dissolved			100.9		%		80-120	19-DEC-18
Barium (Ba)-Dissolved			107.9		%		80-120	19-DEC-18
Beryllium (Be)-Dissolved			97.5		%		80-120	19-DEC-18



Quality Control Report

Workorder: L2212854

Report Date: 24-DEC-18

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-2	LCS							
Boron (B)-Dissolved			98.9		%		80-120	19-DEC-18
Cadmium (Cd)-Dissolved			99.2		%		80-120	19-DEC-18
Chromium (Cr)-Dissolved			96.2		%		80-120	19-DEC-18
Cobalt (Co)-Dissolved			96.2		%		80-120	19-DEC-18
Copper (Cu)-Dissolved			94.2		%		80-120	19-DEC-18
Lead (Pb)-Dissolved			102.3		%		80-120	19-DEC-18
Molybdenum (Mo)-Dissolved			103.2		%		80-120	19-DEC-18
Nickel (Ni)-Dissolved			94.6		%		80-120	19-DEC-18
Selenium (Se)-Dissolved			98.0		%		80-120	19-DEC-18
Silver (Ag)-Dissolved			103.8		%		80-120	19-DEC-18
Sodium (Na)-Dissolved			93.5		%		80-120	19-DEC-18
Thallium (Tl)-Dissolved			100.8		%		80-120	19-DEC-18
Uranium (U)-Dissolved			103.4		%		80-120	19-DEC-18
Vanadium (V)-Dissolved			99.0		%		80-120	19-DEC-18
Zinc (Zn)-Dissolved			95.0		%		80-120	19-DEC-18
WG2957751-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Boron (B)-Dissolved			<10		ug/L		10	19-DEC-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	19-DEC-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	19-DEC-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	19-DEC-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	19-DEC-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	19-DEC-18
Sodium (Na)-Dissolved			<50		ug/L		50	19-DEC-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	19-DEC-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	19-DEC-18



Quality Control Report

Workorder: L2212854

Report Date: 24-DEC-18

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4404611							
WG2957751-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	19-DEC-18
WG2957751-5 MS		WG2957751-6						
Antimony (Sb)-Dissolved			91.8		%		70-130	19-DEC-18
Arsenic (As)-Dissolved			106.3		%		70-130	19-DEC-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Beryllium (Be)-Dissolved			98.1		%		70-130	19-DEC-18
Boron (B)-Dissolved			92.3		%		70-130	19-DEC-18
Cadmium (Cd)-Dissolved			94.8		%		70-130	19-DEC-18
Chromium (Cr)-Dissolved			94.7		%		70-130	19-DEC-18
Cobalt (Co)-Dissolved			92.9		%		70-130	19-DEC-18
Copper (Cu)-Dissolved			89.7		%		70-130	19-DEC-18
Lead (Pb)-Dissolved			94.9		%		70-130	19-DEC-18
Molybdenum (Mo)-Dissolved			101.1		%		70-130	19-DEC-18
Nickel (Ni)-Dissolved			89.9		%		70-130	19-DEC-18
Selenium (Se)-Dissolved			112.2		%		70-130	19-DEC-18
Silver (Ag)-Dissolved			96.3		%		70-130	19-DEC-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Thallium (Tl)-Dissolved			93.1		%		70-130	19-DEC-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	19-DEC-18
Vanadium (V)-Dissolved			101.1		%		70-130	19-DEC-18
Zinc (Zn)-Dissolved			90.3		%		70-130	19-DEC-18
PH-WT								
	Water							
Batch	R4405667							
WG2957928-4 DUP		WG2957928-3						
pH		7.48	7.46	J	pH units	0.02	0.2	20-DEC-18
WG2957928-2 LCS								
pH			6.99		pH units		6.9-7.1	20-DEC-18

Quality Control Report

Workorder: L2212854

Report Date: 24-DEC-18

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

Page 5 of 5

Contact: Suvish Melanta

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.



L2212854-COFC

Report To Contact and company name below will appear on the final report Company: <u>Terraprobe</u> Contact: <u>Suvish M.</u> Phone: <u>905-796-2650</u> Company address below will appear on the final report Street: <u>11 INBELL LANE</u> City/Province: <u>Brampton, ON</u> Postal Code: <u>LOT 3X3</u>		Report Format / L. 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 <input 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 Email 1 or Fax: <u>smelanta@terraprobe.ca</u> Email 2: Email 3:		Contact your AM to confirm all E&P TATs (surcharges may apply) Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply PRIORITY (Business Days) 4 day [P4-20%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/> EMERGENCY <input checked="" type="checkbox"/> 1 Business day [E-100%] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2-200%] (Laboratory opening fees may apply)	
Invoice To: Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Company: <u>Terraprobe</u> Contact: <u>LORENA ROSSI</u>		Invoice Distribution Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: <u>lrossi@terraprobe.ca</u> Email 2:		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
Project Information ALS Account # / Quote #: _____ Job #: <u>17-0481-44</u> PO / AFE: _____ LSD: _____		Oil and Gas Required Fields (client use) AFE/Cost Center: _____ PO#: _____ Major/Minor Code: _____ Routing Code: _____ Requisitioner: _____ Location: _____		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below	
ALS Lab Work Order # (lab use only): <u>L2212854</u>		ALS Contact: _____		Sampler: <u>M.C.</u>	
Drinking Water (DW) Samples¹ (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) <u>Table 2, RPI, Coarse, RSC</u> <u>Filtered - Cr6+, Hg, Metals</u>		SAMPLE CONDITION AS RECEIVED (lab use only) Frozen <input checked="" type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/> INITIAL COOLER TEMPERATURES °C: <u>11.9</u> FINAL COOLER TEMPERATURES °C: <u>7.8</u>	
SHIPMENT RELEASE (client use) Released by: <u>Mark Cathart</u> Date: <u>Dec 19 / 2018</u> Time: _____		INITIAL SHIPMENT RECEPTION (lab use only) Received by: <u>OS</u> Date: <u>Dec 19 / 18</u> Time: <u>15:00</u>		FINAL SHIPMENT RECEPTION (lab use only) Received by: <u>AP</u> Date: <u>12-18</u> Time: <u>17:00</u>	

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	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below				SAMPLES ON HOLD	NUMBER OF CONTAINERS
	<u>BH101</u>	<u>19-Dec-18</u>	<u>13:46</u>	<u>GW</u>	<input checked="" type="checkbox"/>					<u>5</u>



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 04-JAN-19
Report Date: 07-JAN-19 14:33 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2216676
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-638404
Legal Site Desc:



Mathy Mahadeva
Account Manager

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

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)							

Physical Tests - WATER

Lab ID L2216676-1
Sample Date 04-JAN-19
Sample ID BH101

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	0.912
pH	pH units	-	-	7.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Anions and Nutrients - WATER

Lab ID L2216676-1
Sample Date 04-JAN-19
Sample ID BH101

Guide Limits

Analyte	Unit	#1	#2
Chloride (Cl)	mg/L	790	- 104

Analyte	Unit	#1	#2
Chloride (Cl)	mg/L	790	- 104

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Cyanides - WATER

Lab ID L2216676-1
Sample Date 04-JAN-19
Sample ID BH101

Guide Limits

Analyte	Unit	#1	#2
---------	------	----	----

Cyanide, Weak Acid Diss	ug/L	66	-	<2.0
-------------------------	------	----	---	------

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Dissolved Metals - WATER

Lab ID L2216676-1
Sample Date 04-JAN-19
Sample ID BH101

Guide Limits
#1 #2

Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-		FIELD
Dissolved Metals Filtration Location	-	-		FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<0.10
Arsenic (As)-Dissolved	ug/L	25	-	1.67
Barium (Ba)-Dissolved	ug/L	1000	-	151
Beryllium (Be)-Dissolved	ug/L	4	-	<0.10
Boron (B)-Dissolved	ug/L	5000	-	79
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.010
Chromium (Cr)-Dissolved	ug/L	50	-	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	-	<0.10
Copper (Cu)-Dissolved	ug/L	87	-	3.26
Lead (Pb)-Dissolved	ug/L	10	-	0.245
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	-	3.00
Nickel (Ni)-Dissolved	ug/L	100	-	0.70
Selenium (Se)-Dissolved	ug/L	10	-	0.299
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.050
Sodium (Na)-Dissolved	ug/L	490000	-	51600
Thallium (Tl)-Dissolved	ug/L	2	-	0.013
Uranium (U)-Dissolved	ug/L	20	-	2.02
Vanadium (V)-Dissolved	ug/L	6.2	-	1.80
Zinc (Zn)-Dissolved	ug/L	1100	-	3.6

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Speciated Metals - WATER

Lab ID L2216676-1
Sample Date 04-JAN-19
Sample ID BH101

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2
Chromium, Hexavalent	ug/L	25	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</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	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
<p>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.</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-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 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. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.</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-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
<p>Water samples can be measured directly by immersing the conductivity cell into 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).</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>			
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>			

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-638404

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

Reference Information

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.



Environmental

Quality Control Report

Workorder: L2216676

Report Date: 07-JAN-19

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4431067							
WG2964138-9	DUP	WG2964138-8						
Chloride (Cl)		221	225		mg/L	1.7	20	04-JAN-19
WG2964138-7	LCS							
Chloride (Cl)			100.5		%		90-110	04-JAN-19
WG2964138-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JAN-19
WG2964138-10	MS	WG2964138-8						
Chloride (Cl)			N/A	MS-B	%		-	04-JAN-19
CN-WAD-R511-WT		Water						
Batch	R4430527							
WG2964945-3	DUP	L2216676-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	07-JAN-19
WG2964945-2	LCS							
Cyanide, Weak Acid Diss			93.9		%		80-120	07-JAN-19
WG2964945-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	07-JAN-19
WG2964945-4	MS	L2216676-1						
Cyanide, Weak Acid Diss			90.1		%		75-125	07-JAN-19
CR-CR6-IC-R511-WT		Water						
Batch	R4430569							
WG2964981-4	DUP	WG2964981-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-JAN-19
WG2964981-2	LCS							
Chromium, Hexavalent			97.1		%		80-120	07-JAN-19
WG2964981-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	07-JAN-19
WG2964981-5	MS	WG2964981-3						
Chromium, Hexavalent			92.2		%		70-130	07-JAN-19
EC-R511-WT		Water						
Batch	R4430172							
WG2964970-4	DUP	WG2964970-3						
Conductivity		3.50	3.48		mS/cm	0.6	10	07-JAN-19
WG2964970-2	LCS							
Conductivity			102.2		%		90-110	07-JAN-19
WG2964970-1	MB							
Conductivity			<0.0030		mS/cm		0.003	07-JAN-19
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2216676

Report Date: 07-JAN-19

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch R4430607								
WG2965023-3 DUP		L2216968-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	07-JAN-19
WG2965023-2 LCS								
Mercury (Hg)-Dissolved			106.0		%		80-120	07-JAN-19
WG2965023-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	07-JAN-19
WG2965023-4 MS		L2216968-2						
Mercury (Hg)-Dissolved			82.8		%		70-130	07-JAN-19
MET-D-UG/L-MS-WT Water								
Batch R4427889								
WG2964420-4 DUP		WG2964420-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	04-JAN-19
Arsenic (As)-Dissolved		1.67	1.65		ug/L	1.3	20	04-JAN-19
Barium (Ba)-Dissolved		151	149		ug/L	1.3	20	04-JAN-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	04-JAN-19
Boron (B)-Dissolved		79	79		ug/L	0.4	20	04-JAN-19
Cadmium (Cd)-Dissolved		0.0052	0.0058		ug/L	11	20	04-JAN-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	04-JAN-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	04-JAN-19
Copper (Cu)-Dissolved		3.26	3.22		ug/L	1.2	20	04-JAN-19
Lead (Pb)-Dissolved		0.245	0.232		ug/L	5.2	20	04-JAN-19
Molybdenum (Mo)-Dissolved		3.00	3.00		ug/L	0.0	20	04-JAN-19
Nickel (Ni)-Dissolved		0.70	0.69		ug/L	1.5	20	04-JAN-19
Selenium (Se)-Dissolved		0.299	0.337		ug/L	12	20	04-JAN-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	04-JAN-19
Sodium (Na)-Dissolved		51600	52000		ug/L	0.7	20	04-JAN-19
Thallium (Tl)-Dissolved		0.013	0.012		ug/L	9.8	20	04-JAN-19
Uranium (U)-Dissolved		2.02	2.02		ug/L	0.1	20	04-JAN-19
Vanadium (V)-Dissolved		1.80	1.82		ug/L	0.8	20	04-JAN-19
Zinc (Zn)-Dissolved		3.6	3.4		ug/L	3.9	20	04-JAN-19
WG2964420-2 LCS								
Antimony (Sb)-Dissolved			100.8		%		80-120	04-JAN-19
Arsenic (As)-Dissolved			95.6		%		80-120	04-JAN-19
Barium (Ba)-Dissolved			97.3		%		80-120	04-JAN-19
Beryllium (Be)-Dissolved			97.6		%		80-120	04-JAN-19



Quality Control Report

Workorder: L2216676

Report Date: 07-JAN-19

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4427889							
WG2964420-2	LCS							
Boron (B)-Dissolved			102.6		%		80-120	04-JAN-19
Cadmium (Cd)-Dissolved			98.3		%		80-120	04-JAN-19
Chromium (Cr)-Dissolved			96.8		%		80-120	04-JAN-19
Cobalt (Co)-Dissolved			95.9		%		80-120	04-JAN-19
Copper (Cu)-Dissolved			93.7		%		80-120	04-JAN-19
Lead (Pb)-Dissolved			99.3		%		80-120	04-JAN-19
Molybdenum (Mo)-Dissolved			103.8		%		80-120	04-JAN-19
Nickel (Ni)-Dissolved			96.6		%		80-120	04-JAN-19
Selenium (Se)-Dissolved			97.8		%		80-120	04-JAN-19
Silver (Ag)-Dissolved			103.3		%		80-120	04-JAN-19
Sodium (Na)-Dissolved			101.6		%		80-120	04-JAN-19
Thallium (Tl)-Dissolved			100.7		%		80-120	04-JAN-19
Uranium (U)-Dissolved			98.2		%		80-120	04-JAN-19
Vanadium (V)-Dissolved			98.5		%		80-120	04-JAN-19
Zinc (Zn)-Dissolved			95.5		%		80-120	04-JAN-19
WG2964420-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Boron (B)-Dissolved			<10		ug/L		10	04-JAN-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	04-JAN-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	04-JAN-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	04-JAN-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	04-JAN-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Sodium (Na)-Dissolved			<50		ug/L		50	04-JAN-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	04-JAN-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	04-JAN-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	04-JAN-19



Quality Control Report

Workorder: L2216676

Report Date: 07-JAN-19

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4427889							
WG2964420-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	04-JAN-19
WG2964420-5 MS		WG2964420-6						
Antimony (Sb)-Dissolved			95.8		%		70-130	04-JAN-19
Arsenic (As)-Dissolved			93.2		%		70-130	04-JAN-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Beryllium (Be)-Dissolved			91.3		%		70-130	04-JAN-19
Boron (B)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Cadmium (Cd)-Dissolved			92.9		%		70-130	04-JAN-19
Chromium (Cr)-Dissolved			84.0		%		70-130	04-JAN-19
Cobalt (Co)-Dissolved			88.1		%		70-130	04-JAN-19
Lead (Pb)-Dissolved			87.8		%		70-130	04-JAN-19
Nickel (Ni)-Dissolved			82.8		%		70-130	04-JAN-19
Selenium (Se)-Dissolved			94.7		%		70-130	04-JAN-19
Silver (Ag)-Dissolved			91.8		%		70-130	04-JAN-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Thallium (Tl)-Dissolved			91.6		%		70-130	04-JAN-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Vanadium (V)-Dissolved			94.9		%		70-130	04-JAN-19
PH-WT								
	Water							
Batch	R4429115							
WG2964540-3 DUP		WG2964540-2						
pH		8.29	8.29	J	pH units	0.00	0.2	05-JAN-19
WG2964540-1 LCS								
pH			7.02		pH units		6.9-7.1	05-JAN-19

Quality Control Report

Workorder: L2216676

Report Date: 07-JAN-19

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

Page 5 of 5

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.

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated in and form part of the Agreement between ALS Group's Environmental Division and the party named in the Offer (the "Client").

1. Definitions. Capitalized Terms not defined in these Terms and Conditions have the definitions set out in the other Agreement documents.
2. The Services. ALS will provide the Services to the Client as described in the Offer and in any chain of custody form provided with any sample.
3. Prices. ALS may review and change all prices, fees, surcharges or other charges set out in the Agreement if there are changes to ALS's cost beyond ALS's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding Condition 3, all quotations expire after three years.
4. Payment Terms. The Client shall pay ALS within 30 days of the invoice date OAC. ALS may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. Quotation Numbers. The Client shall provide the quotation number to ALS (where applicable) to ensure correct pricing.
6. Taxes. Applicable taxes are not included in prices, surcharges and additional fees will be added at the time of invoicing.
7. Quality Control. ALS has an extensive QA/QC program. Clients' samples are analyzed using approved, referenced procedures followed by thorough data validation prior to reporting the analytical results.
8. Test Results are Not Guaranteed. Results are obtained from analytical measurements that are subject to inherent variability. Measurement results reflect characteristics of submitted test samples at time of analysis. The Client is responsible for informing itself on the limitation of test results and acknowledges that test results are not guaranteed.
9. Standard of Care. ALS will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested.
10. Storage. Where possible, ALS will store; soil and water samples for 45 days from date of receipt, tissue/biota samples for 6 months from date of receipt, air samples or re-usable media for 14 days from date of receipt, and microbiological samples for 3 days from date of receipt.
11. Holds. If the Client requests a sample to be placed on hold, ALS will store the samples according to paragraph 10, after which ALS will invoice the Client and discard the sample. Each sample is subject to a minimum \$5.00 hold fee. Longer hold periods are available upon request. See paragraph 12.
12. Archives. If the Client requests a sample be archived, ALS will invoice in advance and store the sample for the period requested, after which ALS may discard the sample.
13. Handling Protocol. Legal sample handling protocol must be arranged before samples are collected. ALS charges a surcharge on the list price plus the hourly technologist or chemist rates for legal sample protocol. Additional charges will apply for samples that require storage by ALS.
14. Samples. The quality, condition, content and source of samples stored and tested are not known to ALS except as declared and described on the chain of custody form completed and submitted by the Client and accompanying the sample.
15. Risk of Loss. ALS will use reasonable care to protect samples during storage, however all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the Client releases ALS from any claim the Client may have for any loss or damage to the sample.
16. Environmental. The Client must comply with all applicable environment legislation, including labeling all hazardous samples to comply with GHS and TDG regulations, and must provide appropriate Safety Data that include the nature of the hazard and a contact name and phone number to call for information. The Client will indemnify ALS for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
17. Hazardous Materials Disposal. ALS may return, at the Client's cost, hazardous material to the Client for disposal.
18. Hazardous Materials Surcharge. ALS may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials (NORM), H2S, CN, etc.
19. Sample Containers. ALS may ship sample containers to the Client's location by the most cost effective means using ALS preferred courier suppliers, within the specified project timeline.
20. Additional Charges. ALS may charge the Client (a) its cost for emergency bottle shipments and shipments to and from a remote site, and (b) where pick up and delivery services are provided, subject in each instance to a minimum charge of \$25.00.
21. Re-Tests. ALS reserves the right to re-test any samples that remains in its possession. Re-tests requested by the Client may be charged.
22. Waiver. The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any claims against ALS it may have as a result of the interpretation of the results. The Client shall indemnify ALS for all claims made by any third party against ALS in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
23. Limitation of Liability. In no event shall ALS be liable for any consequential, indirect, incidental, special, exemplary or punitive damages, whether foreseeable or unforeseeable, (including claims for loss of profits or revenue or losses caused by stoppage of other work or impairment of other assets) incurred by the Client arising out of breach or failure of express or implied warranty, breach of contract, breach of warranty, misrepresentation, negligence, strict liability in tort or otherwise. In any event, the liability of ALS to the Client shall be limited to the cost of testing the sample as requested in the chain of custody form under which the sample was originally deposited. For the purposes of this paragraph and paragraphs 8, 15, 16, 22 and 24, as the applicable, "ALS" includes without limitations its directors, officers, employees and affiliates and the "Client" includes without limitation any third party that may have a claim against ALS through the Client.
24. Notice of Liability. Notwithstanding paragraph 23, ALS shall not be liable to the Client unless the Client provides notice in writing to ALS of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk under the Agreement between the Client and ALS, and the fees to be paid by the Client to ALS reflect this allocation of risks and the limitations of liability in this Agreement.
25. Third Party Service Provider Indemnity. Should the Client require ALS to forward samples and/or obtain services from a third party service provider, the Client will provide ALS notice in writing. The Client indemnifies ALS against any breach of this Agreement, all liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
26. Third Party Service Provider Indemnity. If ALS is required to engage a third party service provider for whatever reason, the Client indemnifies ALS against any breach of this Agreement, liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
27. Entire Agreement. The Agreement is the entire agreement between the parties and supersedes and takes precedence over any terms and conditions contained in any documentation provided by the Client. ALS's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein. If there is a conflict between these terms and conditions and any other Agreement document, these terms and conditions prevail.
28. Term. Providing the first batch of samples to which this tender refers is submitted within three months of the starting date of this quotation, the following prices, terms and conditions will remain firm until the closing date. This offer, and terms and conditions will automatically lapse if the offer has not been accepted, and samples not delivered to ALS, within the Closing Date.
29. Termination. (a) Either party may terminate this Agreement for any reason by giving the other party thirty (30) days written notice (Notice Period). (b) If the Agreement is terminated pursuant to clause (a), then the Client must pay ALS for all Services performed up to the expiry of the Notice Period.



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 04-JAN-19
Report Date: 07-JAN-19 14:35 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2216707
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-638405
Legal Site Desc:



Mathy Mahadeva
Account Manager

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

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2216707-1	BH103	Anions and Nutrients	Chloride (Cl)	2850	790	mg/L

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

Physical Tests - WATER

Lab ID L2216707-1
Sample Date 04-JAN-19
Sample ID BH103

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	8.78
pH	pH units	-	-	7.20

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

Lab ID	L2216707-1
Sample Date	04-JAN-19
Sample ID	BH103

Guide Limits

	Unit	#1	#2	
--	-------------	-----------	-----------	--

Analyte	Unit	#1	#2	Result
Chloride (Cl)	mg/L	790	-	2850 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Cyanides - WATER

Lab ID L2216707-1
Sample Date 04-JAN-19
Sample ID BH103

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2
Cyanide, Weak Acid Diss	ug/L	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

Dissolved Metals - WATER

		Lab ID	L2216707-1	
		Sample Date	04-JAN-19	
		Sample ID	BH103	
Analyte	Unit	Guide Limits		
		#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	-	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	-	67.5 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	-	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	-	<100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	-	0.051 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	-	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	-	<1.0 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	-	8.9 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	-	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010 ^{DLHC}
Molybdenum (Mo)-Dissolved	ug/L	70	-	2.05 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	-	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	-	<0.50 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	-	406000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	-	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	-	0.28 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	-	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	-	13 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

Lab ID L2216707-1
Sample Date 04-JAN-19
Sample ID BH103

Guide Limits
Unit #1 #2

Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	-	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

Reference Information

17-638405

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: L2216707

Report Date: 07-JAN-19

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4431067							
WG2964138-9	DUP	WG2964138-8						
Chloride (Cl)		221	225		mg/L	1.7	20	04-JAN-19
WG2964138-7	LCS							
Chloride (Cl)			100.5		%		90-110	04-JAN-19
WG2964138-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-JAN-19
WG2964138-10	MS	WG2964138-8						
Chloride (Cl)			N/A	MS-B	%		-	04-JAN-19
CN-WAD-R511-WT		Water						
Batch	R4430527							
WG2964945-3	DUP	L2216676-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	07-JAN-19
WG2964945-2	LCS							
Cyanide, Weak Acid Diss			93.9		%		80-120	07-JAN-19
WG2964945-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	07-JAN-19
WG2964945-4	MS	L2216676-1						
Cyanide, Weak Acid Diss			90.1		%		75-125	07-JAN-19
CR-CR6-IC-R511-WT		Water						
Batch	R4430569							
WG2964981-4	DUP	WG2964981-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	07-JAN-19
WG2964981-2	LCS							
Chromium, Hexavalent			97.1		%		80-120	07-JAN-19
WG2964981-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	07-JAN-19
WG2964981-5	MS	WG2964981-3						
Chromium, Hexavalent			92.2		%		70-130	07-JAN-19
EC-R511-WT		Water						
Batch	R4430172							
WG2964970-4	DUP	WG2964970-3						
Conductivity		3.50	3.48		mS/cm	0.6	10	07-JAN-19
WG2964970-2	LCS							
Conductivity			102.2		%		90-110	07-JAN-19
WG2964970-1	MB							
Conductivity			<0.0030		mS/cm		0.003	07-JAN-19
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2216707

Report Date: 07-JAN-19

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch R4430607								
WG2965023-3 DUP		L2216968-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	07-JAN-19
WG2965023-2 LCS								
Mercury (Hg)-Dissolved			106.0		%		80-120	07-JAN-19
WG2965023-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	07-JAN-19
WG2965023-4 MS		L2216968-2						
Mercury (Hg)-Dissolved			82.8		%		70-130	07-JAN-19
MET-D-UG/L-MS-WT Water								
Batch R4427889								
WG2964420-4 DUP		WG2964420-3						
Antimony (Sb)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	04-JAN-19
Arsenic (As)-Dissolved		1.67	1.65		ug/L	1.3	20	04-JAN-19
Barium (Ba)-Dissolved		151	149		ug/L	1.3	20	04-JAN-19
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	04-JAN-19
Boron (B)-Dissolved		79	79		ug/L	0.4	20	04-JAN-19
Cadmium (Cd)-Dissolved		0.0052	0.0058		ug/L	11	20	04-JAN-19
Chromium (Cr)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	04-JAN-19
Cobalt (Co)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	04-JAN-19
Copper (Cu)-Dissolved		3.26	3.22		ug/L	1.2	20	04-JAN-19
Lead (Pb)-Dissolved		0.245	0.232		ug/L	5.2	20	04-JAN-19
Molybdenum (Mo)-Dissolved		3.00	3.00		ug/L	0.0	20	04-JAN-19
Nickel (Ni)-Dissolved		0.70	0.69		ug/L	1.5	20	04-JAN-19
Selenium (Se)-Dissolved		0.299	0.337		ug/L	12	20	04-JAN-19
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	04-JAN-19
Sodium (Na)-Dissolved		51600	52000		ug/L	0.7	20	04-JAN-19
Thallium (Tl)-Dissolved		0.013	0.012		ug/L	9.8	20	04-JAN-19
Uranium (U)-Dissolved		2.02	2.02		ug/L	0.1	20	04-JAN-19
Vanadium (V)-Dissolved		1.80	1.82		ug/L	0.8	20	04-JAN-19
Zinc (Zn)-Dissolved		3.6	3.4		ug/L	3.9	20	04-JAN-19
WG2964420-2 LCS								
Antimony (Sb)-Dissolved			100.8		%		80-120	04-JAN-19
Arsenic (As)-Dissolved			95.6		%		80-120	04-JAN-19
Barium (Ba)-Dissolved			97.3		%		80-120	04-JAN-19
Beryllium (Be)-Dissolved			97.6		%		80-120	04-JAN-19



Quality Control Report

Workorder: L2216707

Report Date: 07-JAN-19

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4427889							
WG2964420-2	LCS							
Boron (B)-Dissolved			102.6		%		80-120	04-JAN-19
Cadmium (Cd)-Dissolved			98.3		%		80-120	04-JAN-19
Chromium (Cr)-Dissolved			96.8		%		80-120	04-JAN-19
Cobalt (Co)-Dissolved			95.9		%		80-120	04-JAN-19
Copper (Cu)-Dissolved			93.7		%		80-120	04-JAN-19
Lead (Pb)-Dissolved			99.3		%		80-120	04-JAN-19
Molybdenum (Mo)-Dissolved			103.8		%		80-120	04-JAN-19
Nickel (Ni)-Dissolved			96.6		%		80-120	04-JAN-19
Selenium (Se)-Dissolved			97.8		%		80-120	04-JAN-19
Silver (Ag)-Dissolved			103.3		%		80-120	04-JAN-19
Sodium (Na)-Dissolved			101.6		%		80-120	04-JAN-19
Thallium (Tl)-Dissolved			100.7		%		80-120	04-JAN-19
Uranium (U)-Dissolved			98.2		%		80-120	04-JAN-19
Vanadium (V)-Dissolved			98.5		%		80-120	04-JAN-19
Zinc (Zn)-Dissolved			95.5		%		80-120	04-JAN-19
WG2964420-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Boron (B)-Dissolved			<10		ug/L		10	04-JAN-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	04-JAN-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	04-JAN-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	04-JAN-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	04-JAN-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	04-JAN-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	04-JAN-19
Sodium (Na)-Dissolved			<50		ug/L		50	04-JAN-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	04-JAN-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	04-JAN-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	04-JAN-19



Quality Control Report

Workorder: L2216707

Report Date: 07-JAN-19

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4427889							
WG2964420-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	04-JAN-19
WG2964420-5 MS		WG2964420-6						
Antimony (Sb)-Dissolved			95.8		%		70-130	04-JAN-19
Arsenic (As)-Dissolved			93.2		%		70-130	04-JAN-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Beryllium (Be)-Dissolved			91.3		%		70-130	04-JAN-19
Boron (B)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Cadmium (Cd)-Dissolved			92.9		%		70-130	04-JAN-19
Chromium (Cr)-Dissolved			84.0		%		70-130	04-JAN-19
Cobalt (Co)-Dissolved			88.1		%		70-130	04-JAN-19
Lead (Pb)-Dissolved			87.8		%		70-130	04-JAN-19
Nickel (Ni)-Dissolved			82.8		%		70-130	04-JAN-19
Selenium (Se)-Dissolved			94.7		%		70-130	04-JAN-19
Silver (Ag)-Dissolved			91.8		%		70-130	04-JAN-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Thallium (Tl)-Dissolved			91.6		%		70-130	04-JAN-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	04-JAN-19
Vanadium (V)-Dissolved			94.9		%		70-130	04-JAN-19
PH-WT								
	Water							
Batch	R4429115							
WG2964540-3 DUP		WG2964540-2						
pH		8.29	8.29	J	pH units	0.00	0.2	05-JAN-19
WG2964540-1 LCS								
pH			7.02		pH units		6.9-7.1	05-JAN-19

Quality Control Report

Workorder: L2216707

Report Date: 07-JAN-19

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

Page 5 of 5

Contact: Suvish Melanta

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.

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)					
Company: <u>Terraprobe</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					
Contact: <u>Suvish M.</u>		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Day)	4 day [P4-20%] <input type="checkbox"/>		EMERGENCY	1 Business day [E-100%] <input checked="" type="checkbox"/>	
Phone: <u>905-796-2650</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3-25%] <input type="checkbox"/>			Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] <input type="checkbox"/>	
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL MAIL <input type="checkbox"/> FAX				2 day [P2-50%] <input type="checkbox"/>				
Street: <u>11 INDELL LANE</u>		Email 1 or Fax: <u>smelanta@terraprobe.ca</u>			Date and Time Required for all E&P TATs: _____ dd-mmm-yy hh:mm					
City/Province: <u>Brampton ON</u>		Email 2: <u>adubhussein@terraprobe.ca</u>			For tests that can not be performed according to the service level selected, you will be contacted.					
Postal Code: <u>L6T 3X3</u>		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 checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX								
Company: <u>Terraprobe</u>		Email 1 or Fax: <u>lrossi@terraprobe.ca</u>			Metals + Inorganics					
Contact: <u>LORENA ROSSI</u>		Email 2: _____								
Project Information		Oil and Gas Required Fields (client use)								
ALS Account # / Quote #:		AFE/Cost Center: _____ PO# _____								
Job #: <u>1-17-0481-44</u>		Major/Minor Code: _____ Routing Code: _____			SAMPLES ON HOLD					
PO / AFE:		Requisitioner: _____								
LSD:		Location: _____			Sample is hazardous (please provide further details)					
ALS Lab Work Order # (lab use only): <u>L2216707</u>		ALS Contact: <u>Mathy</u> Sampler: <u>M.C.</u>								NUMBER OF CONTAINERS
ALS Sample # (lab use only): <u>1</u>		Sample Identification and/or Coordinates (This description will appear on the report): <u>BH103</u>		Date (dd-mmm-yy): <u>04-JAN-19</u>	Time (hh:mm): <u>10:45</u>	Sample Type: <u>GW</u>				
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 checked="" type="checkbox"/> NO		<u>Table 2, RPI, Coarse, RSC</u> <u>Field Filtered - Cr6T, Hg, Metals</u>			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>					
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>					
					Cooling Initiated <input type="checkbox"/>		INITIAL COOLER TEMPERATURES °C: <u>10.6</u>		FINAL COOLER TEMPERATURES °C: _____	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)					
Released by: <u>Mark Carhart</u>		Date: <u>JAN 4 / 2019</u>	Time: <u>13:15</u>	Received by: <u>CS</u>	Date: <u>Jan 4 / 19</u>	Time: <u>13:15</u>	Received by: _____		Date: _____	

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated in and form part of the Agreement between ALS Group's Environmental Division and the party named in the Offer (the "Client").

1. Definitions. Capitalized Terms not defined in these Terms and Conditions have the definitions set out in the other Agreement documents.
2. The Services. ALS will provide the Services to the Client as described in the Offer and in any chain of custody form provided with any sample.
3. Prices. ALS may review and change all prices, fees, surcharges or other charges set out in the Agreement if there are changes to ALS's cost beyond ALS's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding Condition 3, all quotations expire after three years.
4. Payment Terms. The Client shall pay ALS within 30 days of the invoice date OAC. ALS may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. Quotation Numbers. The Client shall provide the quotation number to ALS (where applicable) to ensure correct pricing.
6. Taxes. Applicable taxes are not included in prices, surcharges and additional fees will be added at the time of invoicing.
7. Quality Control. ALS has an extensive QA/QC program. Clients' samples are analyzed using approved, referenced procedures followed by thorough data validation prior to reporting the analytical results.
8. Test Results are Not Guaranteed. Results are obtained from analytical measurements that are subject to inherent variability. Measurement results reflect characteristics of submitted test samples at time of analysis. The Client is responsible for informing itself on the limitation of test results and acknowledges that test results are not guaranteed.
9. Standard of Care. ALS will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested.
10. Storage. Where possible, ALS will store; soil and water samples for 45 days from date of receipt, tissue/biota samples for 6 months from date of receipt, air samples or re-usable media for 14 days from date of receipt, and microbiological samples for 3 days from date of receipt.
11. Holds. If the Client requests a sample to be placed on hold, ALS will store the samples according to paragraph 10, after which ALS will invoice the Client and discard the sample. Each sample is subject to a minimum \$5.00 hold fee. Longer hold periods are available upon request. See paragraph 12.
12. Archives. If the Client requests a sample be archived, ALS will invoice in advance and store the sample for the period requested, after which ALS may discard the sample.
13. Handling Protocol. Legal sample handling protocol must be arranged before samples are collected. ALS charges a surcharge on the list price plus the hourly technologist or chemist rates for legal sample protocol. Additional charges will apply for samples that require storage by ALS.
14. Samples. The quality, condition, content and source of samples stored and tested are not known to ALS except as declared and described on the chain of custody form completed and submitted by the Client and accompanying the sample.
15. Risk of Loss. ALS will use reasonable care to protect samples during storage, however all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the Client releases ALS from any claim the Client may have for any loss or damage to the sample.
16. Environmental. The Client must comply with all applicable environment legislation, including labeling all hazardous samples to comply with GHS and TDG regulations, and must provide appropriate Safety Data that include the nature of the hazard and a contact name and phone number to call for information. The Client will indemnify ALS for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
17. Hazardous Materials Disposal. ALS may return, at the Client's cost, hazardous material to the Client for disposal.
18. Hazardous Materials Surcharge. ALS may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials (NORM), H2S, CN, etc.
19. Sample Containers. ALS may ship sample containers to the Client's location by the most cost effective means using ALS preferred courier suppliers, within the specified project timeline.
20. Additional Charges. ALS may charge the Client (a) its cost for emergency bottle shipments and shipments to and from a remote site, and (b) where pick up and delivery services are provided, subject in each instance to a minimum charge of \$25.00.
21. Re-Tests. ALS reserves the right to re-test any samples that remains in its possession. Re-tests requested by the Client may be charged.
22. Waiver. The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any claims against ALS it may have as a result of the interpretation of the results. The Client shall indemnify ALS for all claims made by any third party against ALS in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
23. Limitation of Liability. In no event shall ALS be liable for any consequential, indirect, incidental, special, exemplary or punitive damages, whether foreseeable or unforeseeable, (including claims for loss of profits or revenue or losses caused by stoppage of other work or impairment of other assets) incurred by the Client arising out of breach or failure of express or implied warranty, breach of contract, breach of warranty, misrepresentation, negligence, strict liability in tort or otherwise. In any event, the liability of ALS to the Client shall be limited to the cost of testing the sample as requested in the chain of custody form under which the sample was originally deposited. For the purposes of this paragraph and paragraphs 8, 15, 16, 22 and 24, as the applicable, "ALS" includes without limitations its directors, officers, employees and affiliates and the "Client" includes without limitation any third party that may have a claim against ALS through the Client.
24. Notice of Liability. Notwithstanding paragraph 23, ALS shall not be liable to the Client unless the Client provides notice in writing to ALS of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk under the Agreement between the Client and ALS, and the fees to be paid by the Client to ALS reflect this allocation of risks and the limitations of liability in this Agreement.
25. Third Party Service Provider Indemnity. Should the Client require ALS to forward samples and/or obtain services from a third party service provider, the Client will provide ALS notice in writing. The Client indemnifies ALS against any breach of this Agreement, all liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
26. Third Party Service Provider Indemnity. If ALS is required to engage a third party service provider for whatever reason, the Client indemnifies ALS against any breach of this Agreement, liabilities or losses incurred in connection with the third party service provider, including but not limited to courier services, testing turn-around time, and any additional costs associated with such third party.
27. Entire Agreement. The Agreement is the entire agreement between the parties and supersedes and takes precedence over any terms and conditions contained in any documentation provided by the Client. ALS's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein. If there is a conflict between these terms and conditions and any other Agreement document, these terms and conditions prevail.
28. Term. Providing the first batch of samples to which this tender refers is submitted within three months of the starting date of this quotation, the following prices, terms and conditions will remain firm until the closing date. This offer, and terms and conditions will automatically lapse if the offer has not been accepted, and samples not delivered to ALS, within the Closing Date.
29. Termination. (a) Either party may terminate this Agreement for any reason by giving the other party thirty (30) days written notice (Notice Period). (b) If the Agreement is terminated pursuant to clause (a), then the Client must pay ALS for all Services performed up to the expiry of the Notice Period.



TERRAPROBE-BRAMPTON
ATTN: Suvish Melanta
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 10-JAN-19
Report Date: 11-JAN-19 13:46 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2218841
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-732563
Legal Site Desc:



Mathy Mahadeva
Account Manager

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

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2218841-1	BH103	Anions and Nutrients	Chloride (Cl)	3800	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1730	1000	ug/L
			Sodium (Na)-Dissolved	946000	490000	ug/L
L2218841-2	DUP	Anions and Nutrients	Chloride (Cl)	3320	790	mg/L
		Dissolved Metals	Barium (Ba)-Dissolved	1710	1000	ug/L
			Sodium (Na)-Dissolved	946000	490000	ug/L

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

Physical Tests - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
Lab ID L2218841-1 L2218841-2 Sample Date 10-JAN-19 10-JAN-19 Sample ID BH103 DUP					
Conductivity	mS/cm	-	-	8.79	8.77
pH	pH units	-	-	7.45	7.44

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

Analyte	Unit	Guide Limits			
		#1	#2	#1	#2
Chloride (Cl)	mg/L	790	-	3800 ^{DLHC}	3320 ^{DLHC}

Lab ID	L2218841-1	L2218841-2
Sample Date	10-JAN-19	10-JAN-19
Sample ID	BH103	DUP

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Cyanides - WATER

Lab ID	L2218841-1	L2218841-2
Sample Date	10-JAN-19	10-JAN-19
Sample ID	BH103	DUP

Analyte	Unit	Guide Limits			
		#1	#2	#3	#4
Cyanide, Weak Acid Diss	ug/L	66	-	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID
		#1	#2	L2218841-1	L2218841-2	
Dissolved Mercury Filtration Location	-	-		FIELD	FIELD	
Dissolved Metals Filtration Location	-	-		FIELD	FIELD	
Antimony (Sb)-Dissolved	ug/L	6	-	<1.0 ^{DLHC}	<1.0 ^{DLHC}	
Arsenic (As)-Dissolved	ug/L	25	-	<1.0 ^{DLHC}	<1.0 ^{DLHC}	
Barium (Ba)-Dissolved	ug/L	1000	-	1730 ^{DLHC}	1710 ^{DLHC}	
Beryllium (Be)-Dissolved	ug/L	4	-	<1.0 ^{DLHC}	<1.0 ^{DLHC}	
Boron (B)-Dissolved	ug/L	5000	-	<100 ^{DLHC}	<100 ^{DLHC}	
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.050 ^{DLHC}	<0.050 ^{DLHC}	
Chromium (Cr)-Dissolved	ug/L	50	-	<5.0 ^{DLHC}	<5.0 ^{DLHC}	
Cobalt (Co)-Dissolved	ug/L	3.8	-	1.0 ^{DLHC}	<1.0 ^{DLHC}	
Copper (Cu)-Dissolved	ug/L	87	-	20.6 ^{DLHC}	20.9 ^{DLHC}	
Lead (Pb)-Dissolved	ug/L	10	-	1.03 ^{DLHC}	1.01 ^{DLHC}	
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010 ^{DLHC}	<0.010 ^{DLHC}	
Molybdenum (Mo)-Dissolved	ug/L	70	-	4.93 ^{DLHC}	4.57 ^{DLHC}	
Nickel (Ni)-Dissolved	ug/L	100	-	<5.0 ^{DLHC}	<5.0 ^{DLHC}	
Selenium (Se)-Dissolved	ug/L	10	-	0.94 ^{DLHC}	0.81 ^{DLHC}	
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.50 ^{DLHC}	<0.50 ^{DLHC}	
Sodium (Na)-Dissolved	ug/L	490000	-	946000 ^{DLHC}	946000 ^{DLHC}	
Thallium (Tl)-Dissolved	ug/L	2	-	<0.10 ^{DLHC}	<0.10 ^{DLHC}	
Uranium (U)-Dissolved	ug/L	20	-	1.77 ^{DLHC}	1.71 ^{DLHC}	
Vanadium (V)-Dissolved	ug/L	6.2	-	<5.0 ^{DLHC}	<5.0 ^{DLHC}	
Zinc (Zn)-Dissolved	ug/L	1100	-	10 ^{DLHC}	<10 ^{DLHC}	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

Analyte	Unit	Guide Limits			
		#1	#2	#1	#2
Chromium, Hexavalent	ug/L	25	-	<0.50	<0.50

Lab ID	L2218841-1	L2218841-2
Sample Date	10-JAN-19	10-JAN-19
Sample ID	BH103	DUP

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

Reference Information

17-732563

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: L2218841

Report Date: 11-JAN-19

Page 1 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4441467							
WG2968221-4	DUP	L2218505-1						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	11-JAN-19
WG2968221-2	LCS							
Chloride (Cl)			101.6		%		90-110	11-JAN-19
WG2968221-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-JAN-19
WG2968221-5	MS	L2218505-1						
Chloride (Cl)			101.4		%		75-125	11-JAN-19
CN-WAD-R511-WT		Water						
Batch	R4441228							
WG2967873-3	DUP	L2218837-2						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	11-JAN-19
WG2967873-2	LCS							
Cyanide, Weak Acid Diss			100.3		%		80-120	11-JAN-19
WG2967873-1	MB							
Cyanide, Weak Acid Diss			<2.0		ug/L		2	11-JAN-19
WG2967873-4	MS	L2218837-2						
Cyanide, Weak Acid Diss			97.0		%		75-125	11-JAN-19
CR-CR6-IC-R511-WT		Water						
Batch	R4440667							
WG2967991-4	DUP	WG2967991-3						
Chromium, Hexavalent		31.5	30.6		ug/L	2.7	20	11-JAN-19
WG2967991-2	LCS							
Chromium, Hexavalent			93.6		%		80-120	11-JAN-19
WG2967991-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	11-JAN-19
WG2967991-5	MS	WG2967991-3						
Chromium, Hexavalent			89.8		%		70-130	11-JAN-19
EC-R511-WT		Water						
Batch	R4440831							
WG2967801-4	DUP	WG2967801-3						
Conductivity		8.77	8.73		mS/cm	0.5	10	11-JAN-19
WG2967801-2	LCS							
Conductivity			100.1		%		90-110	11-JAN-19
WG2967801-1	MB							
Conductivity			<0.0030		mS/cm		0.003	11-JAN-19
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2218841

Report Date: 11-JAN-19

Page 2 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R4441202							
WG2967820-3	DUP	L2218837-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	11-JAN-19
WG2967820-2	LCS							
Mercury (Hg)-Dissolved			100.0		%		80-120	11-JAN-19
WG2967820-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	11-JAN-19
WG2967820-4	MS	L2218837-2						
Mercury (Hg)-Dissolved			81.6		%		70-130	11-JAN-19
MET-D-UG/L-MS-WT		Water						
Batch	R4440888							
WG2967740-4	DUP	WG2967740-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Barium (Ba)-Dissolved		304	311		ug/L	2.3	20	11-JAN-19
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	11-JAN-19
Cadmium (Cd)-Dissolved		0.057	0.068		ug/L	16	20	11-JAN-19
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Cobalt (Co)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Copper (Cu)-Dissolved		6.1	6.2		ug/L	1.7	20	11-JAN-19
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-JAN-19
Molybdenum (Mo)-Dissolved		7.04	7.21		ug/L	2.4	20	11-JAN-19
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Selenium (Se)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-JAN-19
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-JAN-19
Sodium (Na)-Dissolved		2420000	2410000		ug/L	0.6	20	11-JAN-19
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	11-JAN-19
Uranium (U)-Dissolved		0.34	0.32		ug/L	4.4	20	11-JAN-19
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	11-JAN-19
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	11-JAN-19
WG2967740-2	LCS							
Antimony (Sb)-Dissolved			98.2		%		80-120	11-JAN-19
Arsenic (As)-Dissolved			100.1		%		80-120	11-JAN-19
Barium (Ba)-Dissolved			99.2		%		80-120	11-JAN-19
Beryllium (Be)-Dissolved			99.2		%		80-120	11-JAN-19



Quality Control Report

Workorder: L2218841

Report Date: 11-JAN-19

Page 3 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4440888							
WG2967740-2	LCS							
Boron (B)-Dissolved			96.1		%		80-120	11-JAN-19
Cadmium (Cd)-Dissolved			95.6		%		80-120	11-JAN-19
Chromium (Cr)-Dissolved			97.9		%		80-120	11-JAN-19
Cobalt (Co)-Dissolved			96.1		%		80-120	11-JAN-19
Copper (Cu)-Dissolved			95.6		%		80-120	11-JAN-19
Lead (Pb)-Dissolved			97.9		%		80-120	11-JAN-19
Molybdenum (Mo)-Dissolved			99.9		%		80-120	11-JAN-19
Nickel (Ni)-Dissolved			96.3		%		80-120	11-JAN-19
Selenium (Se)-Dissolved			96.9		%		80-120	11-JAN-19
Silver (Ag)-Dissolved			97.4		%		80-120	11-JAN-19
Sodium (Na)-Dissolved			96.8		%		80-120	11-JAN-19
Thallium (Tl)-Dissolved			98.0		%		80-120	11-JAN-19
Uranium (U)-Dissolved			97.5		%		80-120	11-JAN-19
Vanadium (V)-Dissolved			99.5		%		80-120	11-JAN-19
Zinc (Zn)-Dissolved			93.4		%		80-120	11-JAN-19
WG2967740-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	11-JAN-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	11-JAN-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	11-JAN-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	11-JAN-19
Boron (B)-Dissolved			<10		ug/L		10	11-JAN-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	11-JAN-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	11-JAN-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	11-JAN-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	11-JAN-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	11-JAN-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	11-JAN-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	11-JAN-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	11-JAN-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	11-JAN-19
Sodium (Na)-Dissolved			<50		ug/L		50	11-JAN-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	11-JAN-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	11-JAN-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	11-JAN-19



Quality Control Report

Workorder: L2218841

Report Date: 11-JAN-19

Page 4 of 5

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

Contact: Suvish Melanta

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4440888							
WG2967740-1	MB							
Zinc (Zn)-Dissolved			<1.0		ug/L		1	11-JAN-19
WG2967740-5	MS	WG2967740-6						
Antimony (Sb)-Dissolved			91.3		%		70-130	11-JAN-19
Arsenic (As)-Dissolved			92.4		%		70-130	11-JAN-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	11-JAN-19
Beryllium (Be)-Dissolved			95.6		%		70-130	11-JAN-19
Cadmium (Cd)-Dissolved			87.1		%		70-130	11-JAN-19
Chromium (Cr)-Dissolved			85.9		%		70-130	11-JAN-19
Cobalt (Co)-Dissolved			85.5		%		70-130	11-JAN-19
Lead (Pb)-Dissolved			88.9		%		70-130	11-JAN-19
Nickel (Ni)-Dissolved			77.5		%		70-130	11-JAN-19
Selenium (Se)-Dissolved			86.3		%		70-130	11-JAN-19
Silver (Ag)-Dissolved			89.1		%		70-130	11-JAN-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	11-JAN-19
Thallium (Tl)-Dissolved			85.0		%		70-130	11-JAN-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	11-JAN-19
Vanadium (V)-Dissolved			94.2		%		70-130	11-JAN-19
PH-WT								
	Water							
Batch	R4440830							
WG2967800-3	DUP	WG2967800-2						
pH		8.18	8.20	J	pH units	0.02	0.2	11-JAN-19
WG2967800-1	LCS							
pH			7.04		pH units		6.9-7.1	11-JAN-19

Quality Control Report

Workorder: L2218841

Report Date: 11-JAN-19

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

Page 5 of 5

Contact: Suvish Melanta

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.



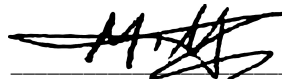
TERRAPROBE-BRAMPTON
ATTN: SUVISH M
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 10-APR-19
Report Date: 11-APR-19 14:18 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2256179
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0481-44
C of C Numbers: 17-725601
Legal Site Desc:



Mathy Mahadeva
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 - T2-Ground Water (Coarse Soil)-All Types of Property Use						
L2256179-1	BH101	Anions and Nutrients	Chloride (Cl)	3630	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1720000	490000	ug/L
L2256179-2	DUP	Anions and Nutrients	Chloride (Cl)	3630	790	mg/L
		Dissolved Metals	Sodium (Na)-Dissolved	1640000	490000	ug/L

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

Physical Tests - WATER

Analyte	Unit	Guide Limits			
		#1	#2		
Conductivity	mS/cm	-	-	10.8	10.7
pH	pH units	-	-	7.25	7.26

	Lab ID	Sample Date	Sample ID
	L2256179-1	10-APR-19	BH101
	L2256179-2	10-APR-19	DUP

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Anions and Nutrients - WATER

		Lab ID	L2256179-1	L2256179-2
		Sample Date	10-APR-19	10-APR-19
		Sample ID	BH101	DUP
		Guide Limits		
Analyte	Unit	#1	#2	
Chloride (Cl)	mg/L	790	-	3630 ^{DLHC}
				3630 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Cyanides - WATER

Lab ID	L2256179-1	L2256179-2
Sample Date	10-APR-19	10-APR-19
Sample ID	BH101	DUP

Analyte	Unit	Guide Limits			
		#1	#2	#3	#4
Cyanide, Weak Acid Diss	ug/L	66	-	<2.0	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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



ANALYTICAL REPORT

Dissolved Metals - WATER

Analyte	Unit	Guide Limits		Lab ID	
		#1	#2	L2256179-1	L2256179-2
Dissolved Mercury Filtration Location	-	-	-	FIELD	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD	FIELD
Antimony (Sb)-Dissolved	ug/L	6	-	<1.0 ^{DLHC}	<1.0 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	-	<1.0 ^{DLHC}	<1.0 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	-	526 ^{DLHC}	539 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	-	<1.0 ^{DLHC}	<1.0 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	-	<100 ^{DLHC}	<100 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.050 ^{DLHC}	<0.050 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	-	<5.0 ^{DLHC}	<5.0 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	-	3.2 ^{DLHC}	2.8 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	-	3.0 ^{DLHC}	3.1 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	-	<0.50 ^{DLHC}	<0.50 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	-	3.31 ^{DLHC}	3.39 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	-	<5.0 ^{DLHC}	<5.0 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	-	0.50 ^{DLHC}	<0.50 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.50 ^{DLHC}	<0.50 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	-	1720000 ^{DLHC}	1640000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	-	<0.10 ^{DLHC}	<0.10 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	-	5.90 ^{DLHC}	6.09 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	-	<5.0 ^{DLHC}	<5.0 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	-	<10 ^{DLHC}	<10 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Speciated Metals - WATER

Analyte	Unit	Guide Limits			
		#1	#2	#1	#2
Chromium, Hexavalent	ug/L	25	-	<0.50	0.69

Lab ID	L2256179-1	L2256179-2
Sample Date	10-APR-19	10-APR-19
Sample ID	BH101	DUP

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

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

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

Reference Information

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**
---------------	--------	------------------	--------------------

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).

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).

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

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

Reference Information

17-725601

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: L2256179

Report Date: 11-APR-19

Page 1 of 5

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

Contact: SUVISH M

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT		Water						
Batch	R4596200							
WG3024788-14	DUP	WG3024788-13						
Chloride (Cl)		168	168		mg/L	0.1	20	10-APR-19
WG3024788-12	LCS		100.5		%		90-110	10-APR-19
Chloride (Cl)								
WG3024788-11	MB		<0.50		mg/L		0.5	10-APR-19
Chloride (Cl)								
WG3024788-15	MS	WG3024788-13	N/A	MS-B	%		-	10-APR-19
Chloride (Cl)								
CN-WAD-R511-WT		Water						
Batch	R4596148							
WG3025518-3	DUP	L2256179-1						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	11-APR-19
WG3025518-2	LCS		96.3		%		80-120	11-APR-19
Cyanide, Weak Acid Diss								
WG3025518-1	MB		<2.0		ug/L		2	11-APR-19
Cyanide, Weak Acid Diss								
WG3025518-4	MS	L2256179-1	99.9		%		75-125	11-APR-19
Cyanide, Weak Acid Diss								
CR-CR6-IC-R511-WT		Water						
Batch	R4595726							
WG3025680-4	DUP	WG3025680-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	11-APR-19
WG3025680-2	LCS		100.7		%		80-120	11-APR-19
Chromium, Hexavalent								
WG3025680-1	MB		<0.50		ug/L		0.5	11-APR-19
Chromium, Hexavalent								
WG3025680-5	MS	WG3025680-3	98.2		%		70-130	11-APR-19
Chromium, Hexavalent								
EC-R511-WT		Water						
Batch	R4596168							
WG3025430-4	DUP	WG3025430-3						
Conductivity		10.7	10.6		mS/cm	0.8	10	11-APR-19
WG3025430-2	LCS		100.4		%		90-110	11-APR-19
Conductivity								
WG3025430-1	MB		<0.0030		mS/cm		0.003	11-APR-19
Conductivity								
HG-D-UG/L-CVAA-WT		Water						



Quality Control Report

Workorder: L2256179

Report Date: 11-APR-19

Page 2 of 5

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

Contact: SUVISH M

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT								
	Water							
Batch	R4596260							
WG3025581-3	DUP	L2256179-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	11-APR-19
WG3025581-2	LCS							
Mercury (Hg)-Dissolved			96.5		%		80-120	11-APR-19
WG3025581-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	11-APR-19
WG3025581-4	MS	L2256179-2						
Mercury (Hg)-Dissolved			97.6		%		70-130	11-APR-19
MET-D-UG/L-MS-WT								
	Water							
Batch	R4593538							
WG3025255-4	DUP	WG3025255-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	10-APR-19
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	10-APR-19
Barium (Ba)-Dissolved		526	517		ug/L	1.8	20	10-APR-19
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	10-APR-19
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	10-APR-19
Cadmium (Cd)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	10-APR-19
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	10-APR-19
Cobalt (Co)-Dissolved		3.2	3.2		ug/L	1.6	20	10-APR-19
Copper (Cu)-Dissolved		3.0	2.9		ug/L	4.8	20	10-APR-19
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	10-APR-19
Molybdenum (Mo)-Dissolved		3.31	3.14		ug/L	5.1	20	10-APR-19
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	10-APR-19
Selenium (Se)-Dissolved		0.50	0.51		ug/L	2.3	20	10-APR-19
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	10-APR-19
Sodium (Na)-Dissolved		1720000	1700000		ug/L	0.9	20	10-APR-19
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	10-APR-19
Uranium (U)-Dissolved		5.90	5.85		ug/L	0.7	20	10-APR-19
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	10-APR-19
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	10-APR-19
WG3025255-2	LCS							
Antimony (Sb)-Dissolved			102.0		%		80-120	10-APR-19
Arsenic (As)-Dissolved			96.4		%		80-120	10-APR-19
Barium (Ba)-Dissolved			99.3		%		80-120	10-APR-19
Beryllium (Be)-Dissolved			97.8		%		80-120	10-APR-19



Quality Control Report

Workorder: L2256179

Report Date: 11-APR-19

Page 3 of 5

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

Contact: SUVISH M

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4593538							
WG3025255-2	LCS							
Boron (B)-Dissolved			99.3		%		80-120	10-APR-19
Cadmium (Cd)-Dissolved			93.2		%		80-120	10-APR-19
Chromium (Cr)-Dissolved			98.0		%		80-120	10-APR-19
Cobalt (Co)-Dissolved			96.1		%		80-120	10-APR-19
Copper (Cu)-Dissolved			92.8		%		80-120	10-APR-19
Lead (Pb)-Dissolved			93.8		%		80-120	10-APR-19
Molybdenum (Mo)-Dissolved			99.2		%		80-120	10-APR-19
Nickel (Ni)-Dissolved			94.1		%		80-120	10-APR-19
Selenium (Se)-Dissolved			94.3		%		80-120	10-APR-19
Silver (Ag)-Dissolved			96.0		%		80-120	10-APR-19
Sodium (Na)-Dissolved			99.6		%		80-120	10-APR-19
Thallium (Tl)-Dissolved			96.4		%		80-120	10-APR-19
Uranium (U)-Dissolved			94.0		%		80-120	10-APR-19
Vanadium (V)-Dissolved			99.0		%		80-120	10-APR-19
Zinc (Zn)-Dissolved			93.4		%		80-120	10-APR-19
WG3025255-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	10-APR-19
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	10-APR-19
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	10-APR-19
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	10-APR-19
Boron (B)-Dissolved			<10		ug/L		10	10-APR-19
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	10-APR-19
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	10-APR-19
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	10-APR-19
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	10-APR-19
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	10-APR-19
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	10-APR-19
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	10-APR-19
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	10-APR-19
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	10-APR-19
Sodium (Na)-Dissolved			<50		ug/L		50	10-APR-19
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	10-APR-19
Uranium (U)-Dissolved			<0.010		ug/L		0.01	10-APR-19
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	10-APR-19



Quality Control Report

Workorder: L2256179

Report Date: 11-APR-19

Page 4 of 5

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

Contact: SUVISH M

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT								
	Water							
Batch	R4593538							
WG3025255-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	10-APR-19
WG3025255-5 MS		WG3025255-6						
Antimony (Sb)-Dissolved			101.4		%		70-130	10-APR-19
Arsenic (As)-Dissolved			99.8		%		70-130	10-APR-19
Barium (Ba)-Dissolved			N/A	MS-B	%		-	10-APR-19
Beryllium (Be)-Dissolved			100.7		%		70-130	10-APR-19
Boron (B)-Dissolved			N/A	MS-B	%		-	10-APR-19
Cadmium (Cd)-Dissolved			96.7		%		70-130	10-APR-19
Chromium (Cr)-Dissolved			99.1		%		70-130	10-APR-19
Cobalt (Co)-Dissolved			77.0		%		70-130	10-APR-19
Copper (Cu)-Dissolved			71.0		%		70-130	10-APR-19
Lead (Pb)-Dissolved			92.3		%		70-130	10-APR-19
Molybdenum (Mo)-Dissolved			78.1		%		70-130	10-APR-19
Nickel (Ni)-Dissolved			90.0		%		70-130	10-APR-19
Selenium (Se)-Dissolved			97.4		%		70-130	10-APR-19
Silver (Ag)-Dissolved			93.5		%		70-130	10-APR-19
Sodium (Na)-Dissolved			N/A	MS-B	%		-	10-APR-19
Thallium (Tl)-Dissolved			91.8		%		70-130	10-APR-19
Uranium (U)-Dissolved			N/A	MS-B	%		-	10-APR-19
Vanadium (V)-Dissolved			101.1		%		70-130	10-APR-19
Zinc (Zn)-Dissolved			82.4		%		70-130	10-APR-19
PH-WT								
	Water							
Batch	R4596168							
WG3025430-4 DUP		WG3025430-3						
pH		7.26	7.27	J	pH units	0.01	0.2	11-APR-19
WG3025430-2 LCS								
pH			7.00		pH units		6.9-7.1	11-APR-19

Quality Control Report

Workorder: L2256179

Report Date: 11-APR-19

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

Page 5 of 5

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.

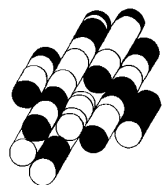
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

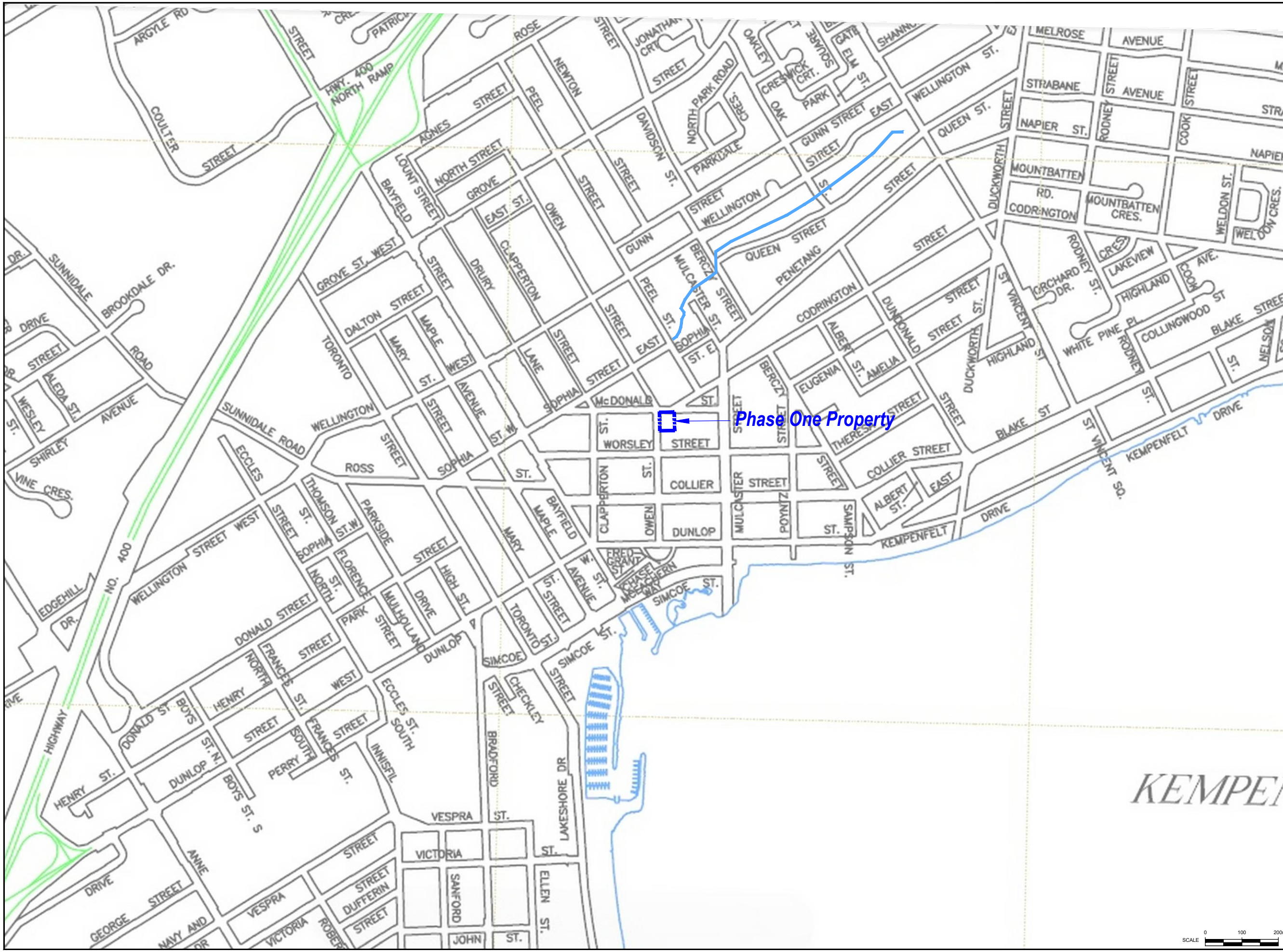
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

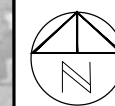
APPENDIX F

TERRAPROBE INC.





Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\01 - Phase One ESA\A - Dwg - Log\Map\AutoCAD\W5 Parcels_Jan 2018\1-17-0481-41_North Parcel_11Nov 2017 Dec 2018.dwg, MW



Reference:
 Google Earth 2017

Notes:
PCA - Potentially Contaminating Activity
#00 - PCA Causing APEC
#00 - PCA Not Causing APEC
APEC - Areas of Potential Environmental Concern

Legend:

	Approximate Phase One Property Boundary
	Electrical
	Manhole
	Catch Basin
	Light Standard

Project Title:
 Phase One Environmental Site Assessment

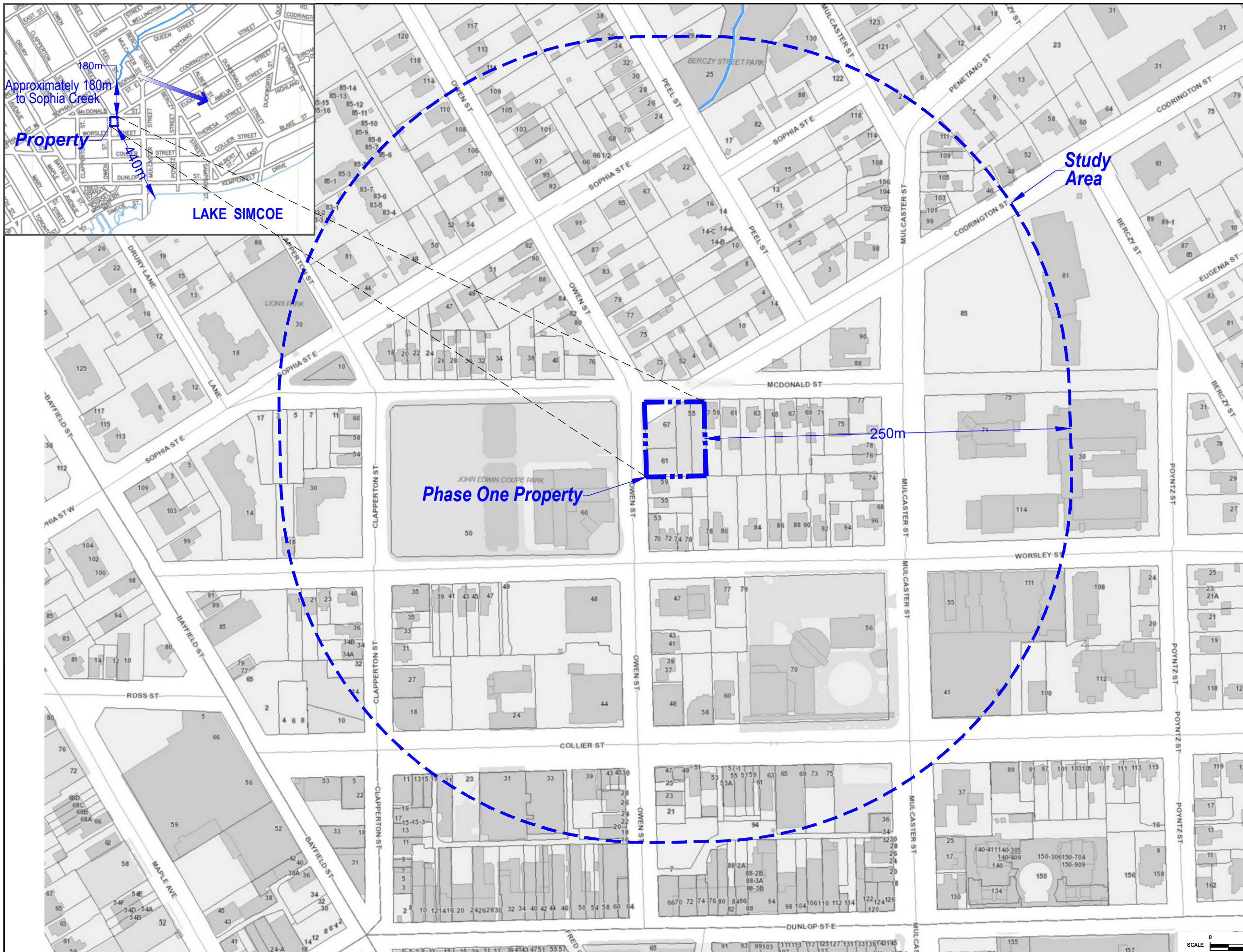
Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 PHASE ONE PROPERTY

Designed By: SM	File No.: 1-17-0481-41
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 2
Date: December 2018	



Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\01 - Phase One ESA\A - Dwg - Log\AutoCAD\W5 Parets_Jan 2018\1-17-0481-41_North Parcel_1(Nov 2017) Dec 2018.dwg, MW





Reference:

Barrie Maps

Notes:

Legend:

- Phase One Property Boundary
- Residential Land Use
- Community Land Use (Roads)
- Commercial Land Use

Project Title:

Phase One Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

ADJACENT PROPERTY LAND USES

Designed By:

SM

File No.:

1-17-0481-41

Drawn By:

MV

Scale:

As Shown

Reviewed By:

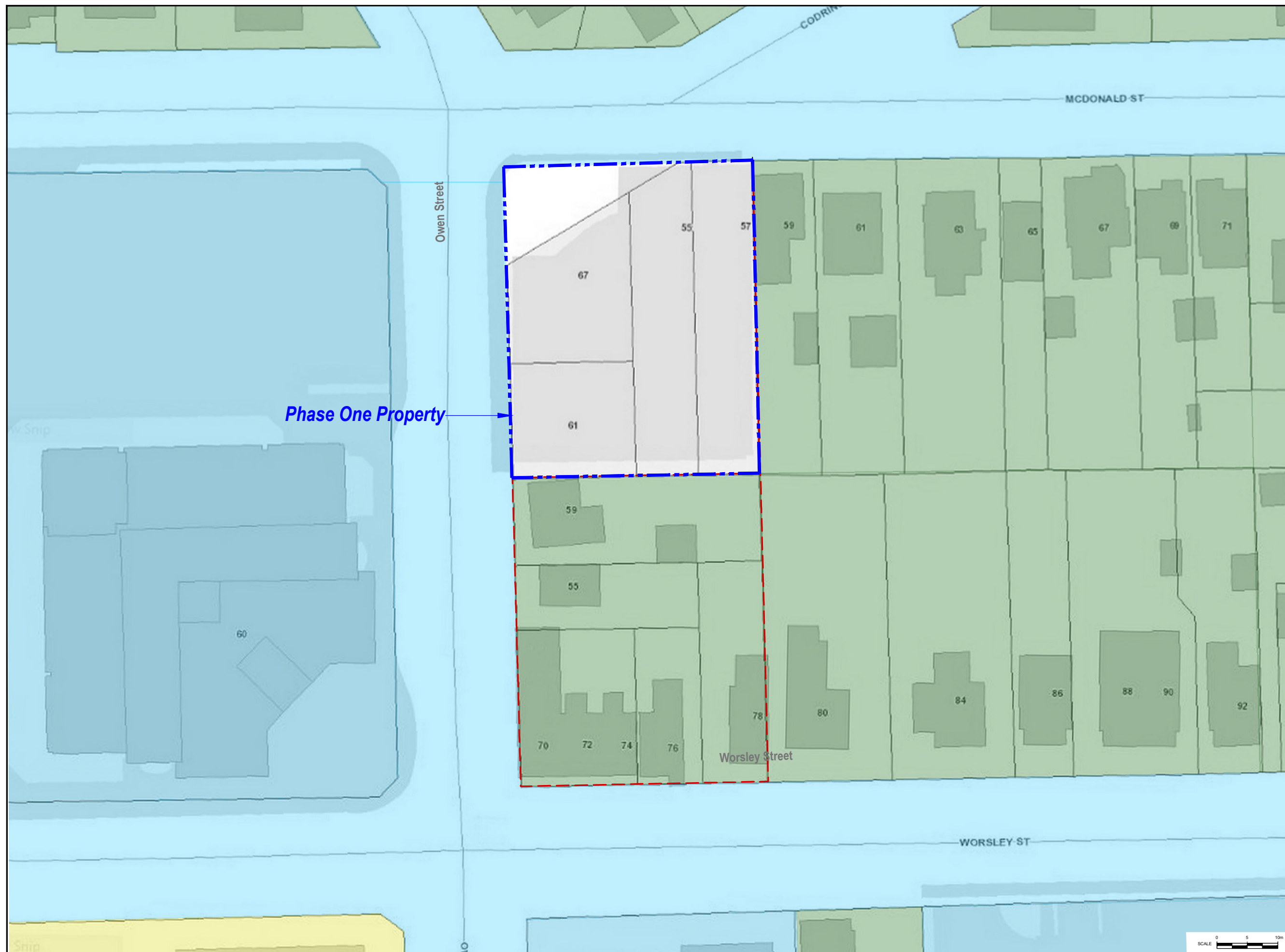
MB

Figure No.:

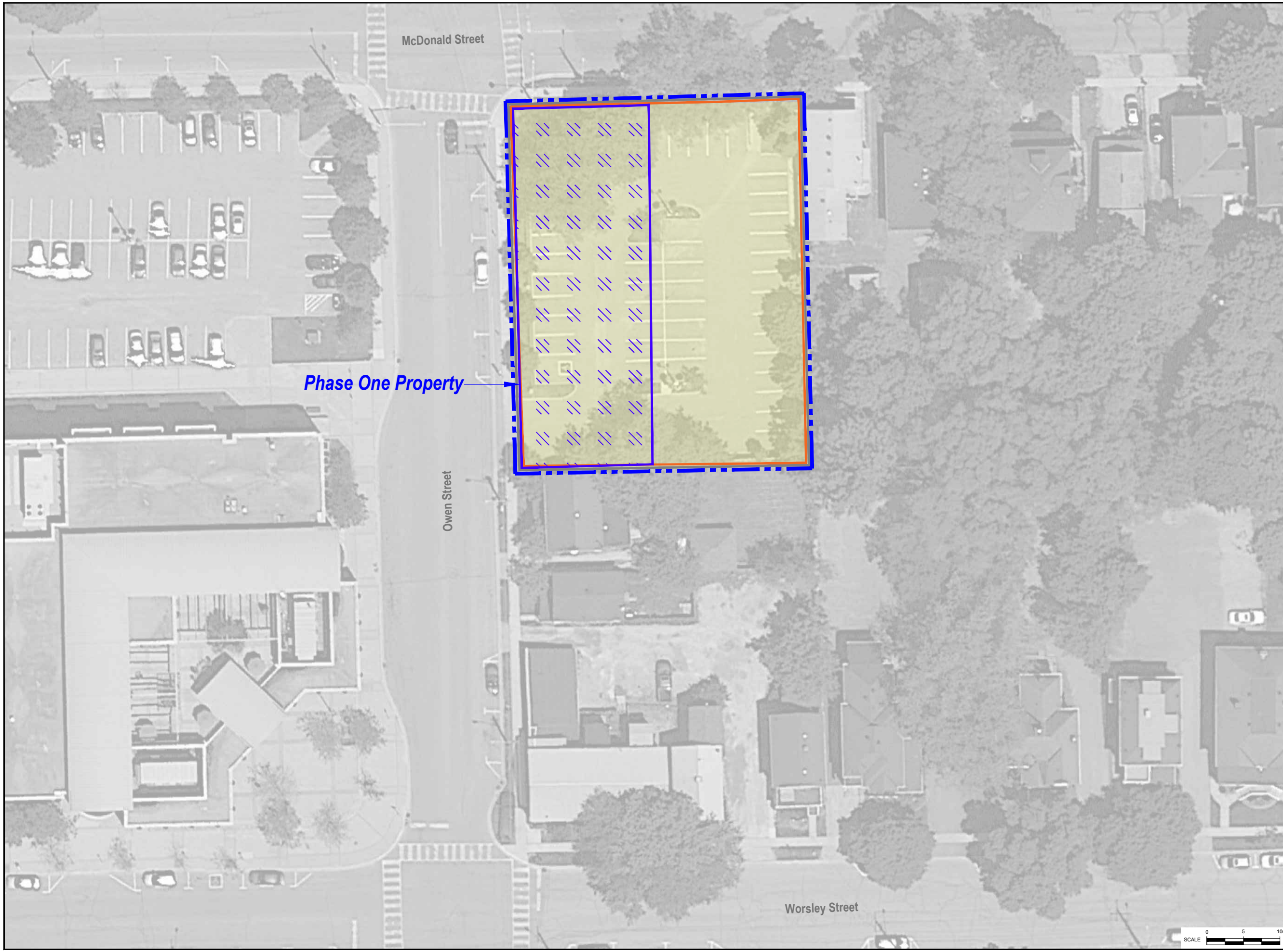
4

Date:

December 2018



Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\41 - Phase One ESA\A - Dwg - Log\AutoCAD\W5 Pareils_Jan 2018\1-17-0481-41_North Parcel_(Nov 2017) Dec 2018.dwg, MW



Reference:
 Google Earth 2017

Notes:
 APEC - Areas of Potential Environmental Concern

Legend:

	Approximate Phase One Property Boundary
	APEC 1 (Entire Site)
	APEC 2 (West Portion of Site)

Project Title:
 Phase One Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 APEC LOCATIONS

Designed By: SM	File No.: 1-17-0481-41
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 6
Date: December 2018	

Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\41 - Phase One ESA\A - Dwg - Log\AutoCAD\W5 Parets_Jan 2018\1-17-0481-41_North Parcel_(Nov 2017) Dec 2018.dwg, MW



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

CONCEPTUAL SITE MODEL PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 61-67 OWEN STREET AND 55-57 MCDONALD STREET BARRIE, ONTARIO

The following are included in this Conceptual Site Model

- **Phase Two Conceptual Site Model** – From Terraprobe Report “*Phase Two Environmental Site Assessment, 61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario*”

Terraprobe Inc.

Greater Toronto

11 Indell Lane
Brampton, Ontario L6T 3Y3
(905) 796-2650 Fax: 796-2250

Hamilton – Niagara

903 Barton Street, Unit 22
Stoney Creek, Ontario L8E 5P5
(905) 643-7560 Fax: 643-7559

Central Ontario

220 Bayview Drive, Unit 25
Barrie, Ontario L4N 4Y8
(705) 739-8355 Fax: 739-8369

Northern Ontario

1012 Kelly Lake Rd., Unit 1
Sudbury, Ontario P3E 5P4
(705) 670-0460 Fax: 670-0558

www.terraprobe.ca

TABLE OF CONTENTS

SECTION	PAGE
1.0 INTRODUCTION	2
1.1 Property Description	2
1.2 Summary of Previous Investigations	3
2.0 INFORMATION FROM THE PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	6
2.1 Areas Where Potentially Contaminating Activity has occurred	6
2.2 Areas of Potential Environmental Concern	8
2.3 Subsurface Structures and Utilities	<u>98</u>
3.0 PHYSICAL SETTING OF THE PHASE TWO PROPERTY	<u>109</u>
3.1 Site Stratigraphy	<u>109</u>
3.1.1 Geological Unit Thickness (Estimate)	<u>109</u>
3.1.2 Elevations of Geological Units	<u>109</u>
3.1.3 Material in Geological Units	<u>114</u>
3.2 Approximate Depth to Water Table	<u>124</u>
3.3 Site Hydrogeological Characteristics	<u>134</u>
3.3.1 Hydraulic Conductivity	<u>134</u>
3.3.2 Horizontal Hydraulic Gradient	<u>134</u>
3.3.3 Vertical Hydraulic Gradient	<u>143</u>
3.4 Approximate Depth to Bedrock	<u>143</u>
3.5 Section 41 or 43.1	<u>143</u>
3.6 Soils Placed On, In or Under the Phase Two Property	<u>154</u>
3.7 Proposed Buildings	<u>154</u>
4.0 CONTAMINATION IN OR UNDER THE PHASE TWO PROPERTY	<u>164</u>
4.1 Applicable Site Condition Standard	<u>164</u>
4.2 Media Investigated	<u>164</u>
4.3 Sampling Rationale and Areas Where Contaminants are Present	<u>164</u>
4.3.1 Location and Depth of Soil Samples	<u>184</u>
4.3.2 Location and Depth of Ground Water Samples	<u>198</u>
4.4 Contaminants Associated with Each Area	<u>198</u>
4.5 Medium in Which Contaminants are Associated	<u>210</u>
4.6 Information Known about Each Contaminated Area	<u>224</u>
4.7 Distribution of Contaminant	<u>224</u>
4.8 Reasons for Discharge of Contaminant	<u>232</u>
4.9 Migration of Contaminant	<u>232</u>
4.10 Climatic or Meteorological Influences on Migration	<u>232</u>
4.11 Soil Vapour Intrusion into Buildings	<u>242</u>
4.12 Relevant Construction Features of Buildings	<u>242</u>
4.13 Building HVAC	<u>242</u>
4.14 Subsurface Structures and Utilities	<u>242</u>
5.0 POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS	<u>252</u>
5.1 Description of All Components	<u>252</u>
5.2 Receptor Human Health	<u>262</u>
5.3 Receptor Terrestrial Environment	<u>262</u>
5.4 Receptor Aquatic Environment	<u>272</u>
5.5 Summary of Potential Receptor Risks	<u>272</u>



FIGURES

Figure 1	Phase Two ESA Property Location
Figure 2	PCA and APEC Locations
Figure 3	Monitoring Well Location
Figure 4	Ground Water Elevation
Figure 5	Cross Section Locations
Figure 6	EC Exceedances in Soil - Plan View
Figure 7	EC Exceedances in Soil - Cross Section A-A'
Figure 8	EC Exceedances in Soil - Cross Section B-B'
Figure 9	SAR Exceedances in Soil - Plan View
Figure 10	SAR Exceedances in Soil - Cross Section A-A'
Figure 11	SAR Exceedances in Soil - Cross Section B-B'
Figure 12	Metal Exceedances in Ground Water - Plan View
Figure 13	Metal Exceedances in Ground Water - Cross Section A-A'
Figure 14	Metal Exceedances in Ground Water - Cross Section B-B'
Figure 15	Chloride Exceedances in Ground Water - Plan View
Figure 16	Chloride Exceedances in Ground Water - Cross Section A-A'
Figure 17	Chloride Exceedances in Ground Water - Cross Section B-B'
Figure 18	Sodium Exceedances in Ground Water - Plan View
Figure 19	Sodium Exceedances in Ground Water - Cross Section A-A'
Figure 20	Sodium Exceedances in Ground Water - Cross Section B-B'
Figure 21 A	VOC Exceedances in Ground Water - Plan View (Historical)
Figure 22 A	VOC Exceedances in Ground Water - Cross Section A-A' (Historical)
Figure 23 A	VOC Exceedances in Ground Water - Cross Section B-B' (Historical)
Figure 21B	Table 6 VOC Exceedances in Ground Water - Plan View (Historical)
Figure 22B	Table 6 VOC Exceedances in Ground Water - Cross Section A-A' (Historical)
Figure 23B	Table 6 VOC Exceedances in Ground Water - Cross Section B-B' (Historical)
Figure C1	Human Health Conceptual Site Model (CSM) – Without Risk Management Measures
Figure C2	Terrestrial and Aquatic Ecological CSM - Without Risk Management Measures

TABLES

Table 1	Ground Water Levels
---------	---------------------



1.0 INTRODUCTION

The following document presents the Phase Two Conceptual Site Model for the Property located at the municipal addresses 61-67 Owen Street and 55-57 McDonald Street in Barrie, Ontario. The Phase Two Conceptual Site Model is part of the report titled “Phase Two Environmental Site Assessment, Northeast of Worsley & Owen Streets, Barrie, Ontario” prepared by Terraprobe Inc. for Barrie Owen Services Inc.

1.1 Property Description

The Property is roughly rectangular in shape, with a total area of approximately 0.2 ha. Property is currently developed as municipal asphalt parking lot. The Property is considered to be in Commercial Land Use by the Ontario Ministry of the Environment ~~and Climate Change (MOECC)~~, [Conservation and Parks \(MECP\)](#).

The proposed future land use for the Property includes multi-storey residential towers, resting on a two (2) level underground parking structure shared with the future structure adjacent to the south. Under O.Reg. 153/04 the future Land Use of the Property would be considered Residential Land Use. The general location of the Site is presented on Figure 1.

Phase Two Property Information

Legal Description	<p>55 McDonald Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO1420694; S/T & T/W RO1420694; S/T Interest In RO1287454; Barrie</p> <p>57 McDonald Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO1327580; T/W RO1327580; Barrie</p> <p>61 Owen Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO653238; Barrie</p> <p>67 Owen Street: Part Lot 124 S/S Macdonald Street, Plan 2 Barrie As In RO1287119; Barrie & Part James Street, Plan 31 Barrie, Part 1, 51R32355; Barrie</p>
PIN	<p>55 McDonald Street: 58817-0026 (LT)</p> <p>57 McDonald Street: 58817-0027 (LT)</p> <p>61 Owen Street: 58817-0025 (LT)</p> <p>67 Owen Street: 58817-0024 (LT) & 58817-0174 (LT)</p>
Assessment Roll Number	<p>55 McDonald Street: 43 42 022 009 050 00</p> <p>57 McDonald Street: 43 42 022 009 049 00</p> <p>61 Owen Street: 43 42 022 009 052 00</p> <p>67 Owen Street: 43 42 022 009 051 00</p>
Municipal Address	61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario
Zoning	Transation Centre Commercial (C2 and C2-1)
Area	0.2 ha



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

Property Owner Information	61-67 Owen Street & 55-57 McDonald Street: Corporation of the City of Barrie
-----------------------------------	---

1.2 Summary of Previous Investigations

Previous investigations for the Property, which were provided to Terraprobe, are summarized below:

Report Title	Phase One Environmental Site Assessment, 55-57 McDonald Street and 61-67 Owen Street, Barrie, Ontario
Report Date	March 29, 2017
Prepared By	Ramboll Environ Canada Inc. (Ramboll)
Prepared For	The Corporation of the City of Barrie

- The Phase One ESA was completed by Ramboll in general accordance with O.Reg 153/04 and CSA Standards for the Phase One Property.
- Historical activities at the site included private residential ownership and commercial ownership (bank, numbered company, public parking lot). At the time of the site inspection in November 2016, the site was operating a municipal parking lot.
- The Phase One identified the following two (2) areas of potential environmental concern (APECs):
 - APEC 1 (entire site) – Potential fuel oil use in historical onsite buildings with Potential Contaminants of Concern (PCoCs) in soil and ground water:
 - Petroleum Hydrocarbons (PHCs)
 - Volatile Organic Compounds II (BTEX)
 - Polycyclic Aromatic Hydrocarbons (PAHs)
 - APEC 2 (western portion of site) – Hydraulic oil spill at 60 Worsley Street with PCoCs in ground water:
 - PHCs
 - BTEX
 - PAHs
- The Phase One ESA report concluded that a Phase Two ESA would be required to determine the quality of the soil and ground water at the site and prior to filing for an RSC.

[Terraprobe's review of the historical documents did not find any specific evidence of historical fuel oil or spills at the former buildings present onsite between 1915 to 2001. In addition, 1917 and 1946 FIPs obtained for the Property did not show any tanks present within the former buildings.](#)



Based on the review of all available historical information, there is no evidence to suggest the presence of historical fuel tanks at the Property. The Qualified Person does not believe that the assumptions made in the Ramboll report accurately reflects the historical environmental conditions of the Property. As such, the Qualified Person does not believe that this PCA (#28 – Gasoline and Associated Products Storage in Fixed Tanks) exists or will cause and APEC on the Property.

Report Title	Phase One Environmental Site Assessment, 61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario
Report Date	September 19, 2017 (revised November 28, 2017 January 21, 2019)
Prepared By	Terraprobe Inc. (Terraprobe)
Prepared For	Barrie Owen Services Inc.

- The Phase One ESA was completed for the Phase One Property by Terraprobe in accordance with O.Reg 153/04.
- Historical activities at the site included private residential ownership and commercial ownership (parking lot). At the time of the site inspection in July 2017, the Property was operating as a parking lot.
- The Phase One identified the following ~~three-two~~ (32) areas of potential environmental concern (APECs):
 - APEC 1 - Historical use of fill material of unknown quality at the Property during redevelopment.
 - Location on the Property
 - Entire Property
 - Potential Contaminants of Concern (PCoCs)
 - Metals
 - Hydride Metals
 - Selected ORPs – Boron (HWS), Cyanide, Electrical Conductivity (EC), Hexavalent Chromium, Mercury, pH and Sodium Adsorption Ratio (SAR)
 - Polycyclic Aromatic Hydrocarbons (PAHs)
 - Media Potentially Impacted
 - Soil
 - Ground water
 - ~~○ APEC 2 - Potential historical use and storage of fuel oil at the former buildings at 61-67 Worsley Street and 55-57 McDonald Street (Property).~~
 - ~~▪ Location on the Property~~
 - ~~• Entire Property~~
 - ~~▪ Potential Contaminants of Concern (PCoCs)~~



- ~~PHCs~~
- ~~VOCs II (BTEX)~~
- ~~VOCs I~~
- ~~Media Potentially Impacted~~
 - ~~Soil~~
 - ~~Ground water~~
- APEC ~~3-2~~ – Historical spill of unknown quantity transmission oil in 2003 and 75 L hydraulic oil in 2015 at 60 Worsley Street
 - Location on the Property
 - West portion of Property
 - Potential Contaminants of Concern (PCoCs)
 - PHCs
 - VOCs II (BTEX)
 - VOCs I
 - Media Potentially Impacted
 - Ground water
- The Phase One ESA report concluded that a Phase Two ESA would be required to determine the quality of the soil and ground water at the site and prior to filing for an RSC.



2.0 INFORMATION FROM THE PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

2.1 Areas Where Potentially Contaminating Activity has occurred

Potentially Contaminating Activities (PCAs) were identified within the Phase One ESA for the Property. The PCAs were identified as being on the Property. Justification regarding if the PCAs have the potential to cause and Area of Potential Environmental Concern (APEC) on the Property and further information regarding the PCAs are provided below.

Location of PCA	PCA	Potential APEC (Yes/No)	Justification
Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Yes (APEC 1)	PCA has potential to cause an APEC on the Property
Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Yes (APEC 2)	PCA has potential to cause an APEC on the Property
53 Owen Street 25 m south	#10 – Commercial Autobody Shops	No	Based on the down-gradient location from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
60 Worsley Street 20 m West	#Other - Spill	Yes (APEC 32)	Cross-gradient PCA has potential to cause an APEC on the Property based on proximity and unknown location of historical spills.
56 Mulcaster Street 85 m Southeast	#10 - Commercial Autobody Shops	No	Based on the cross/down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
65 Collier Street 210 m Southeast	#10 - Commercial Autobody Shops	No	Based on the cross/down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property



Location of PCA	PCA	Potential APEC (Yes/No)	Justification
55 Collier Street 200 m South	#10 - Commercial Autobody Shops	No	Based on the down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
51 Collier Street 200 m South	#37 - Operation of Dry Cleaning Equipment (where chemicals are used)	No	Based on the down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
49 Collier Street 200 m South	#37 - Operation of Dry Cleaning Equipment (where chemicals are used)	No	Based on the down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
71-75 Collier Street 162 m Southeast	#10 - Commercial Autobody Shops	No	Based on the cross/down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
29 Collier Street 215 m Southwest	#10 - Commercial Autobody Shops	No	Based on the cross/down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property
23 Collier Street (current 31 Collier Street) 230 m Southwest	#10 - Commercial Autobody Shops	No	Based on the cross/down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property



Location of PCA	PCA	Potential APEC (Yes/No)	Justification
90 Collier Street 195 m Southeast	#Other - Spill	No	Based on the cross/down-gradient distance from the Property, ground water impacts, if present, would be unlikely to cause contamination on the Property. The QP does not believe this PCA will cause and APEC on the Property

The locations of the PCAs which were deemed to cause a potential APEC on the Property are shown on Figure 2.

The PCAs that were deemed to cause the APECs carried forward into Section 2.2 and are listed in the Table of Areas of Potential Environmental Concern.

2.2 Areas of Potential Environmental Concern

The following areas of potential environmental concern (APECs) resulting from PCAs were identified by the Phase One ESA, the locations of APECs, the Potential Contaminants of Concern (PCOCs) and the media affected are described below. The specific locations of each APEC and the location of the associated PCA are shown Figure 2.

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Potential Contaminants of Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 1	Across Entire Property	#30 – Importation of Fill Material of Unknown Quality	On-site	Metals As, Sb, Se EC SAR B-HWS Cl CN- Hg Cr(VI) Low or high pH Na PAHs	Soil & Ground Water Soil & Ground Water Soil Soil Soil Ground Water Soil & Ground Water Soil & Ground Water Soil & Ground Water Soil & Ground Water Ground Water Soil & Ground Water
APEC 2	Across Entire Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	On-site	PHCs VOCs BTEX	Soil and Ground water Soil and Ground water Soil and Ground water



Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Potential Contaminants of Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 32	West Portion of Property	#Other 1 – Spill	Off-site	PHCs VOCs BTEX	Ground water Ground water Ground water

2.3 Subsurface Structures and Utilities

The Phase One ESA site inspection of the Property and the utility locates conducted as part of the Phase Two ESA found the following information regarding utilities and services at the Property:

- The Phase One ESA site inspection found evidence of subsurface structures or utilities on the Property.
- Underground utilities are located on the Property including sewer, water and electrical.

Buried utilities are located on the Property above the static water table (approximately 7 m below grade). As such, it is unlikely that the buried utilities influence the ground water flow or serve as preferential pathways for the migration of Potential Contaminants of Concern.



3.0 PHYSICAL SETTING OF THE PHASE TWO PROPERTY

3.1 Site Stratigraphy

Detailed geological information for the Property is presented on the geologic cross sections shown in Figures 7 to 20. The geology at the Property is summarized below.

3.1.1 Geological Unit Thickness (Estimate)

The geological unit thicknesses are presented below.

Borehole	BH101 to BH103
	Thickness Range (m)
Earth Fill	1.7 to 2.3
Upper Silts and Sands	8.4 to 12
Clayey Silt	2.7 to 3.6
Bedrock	Not encountered (Estimated to be at beyond 50 m below grade)

Borehole	BH201 to BH203
	Thickness Range (m)
Earth Fill	1.5 to 3.0
Upper Silts and Sands	6.1 to 13.7
Clayey Silt	3.1 to 12.2
Bedrock	Not encountered (Estimated to be at beyond 50 m below grade)

3.1.2 Elevations of Geological Units

The geological unit elevations are presented below.

Borehole	BH101 to BH103	
	Elev. Top Range (masl)	Elev. Bottom Range (masl)
Earth Fill	234.5	232.1
Upper Silts and Sands	232.8	220.2
Clayey Silt	223.7	220.1
Bedrock	Not Encountered (Estimated to be at an approximate elevation of 184 masl)	



Borehole	BH201 to BH203	
	Elev. Top Range (masl)	Elev. Bottom Range (masl)
Earth Fill	235.0	231.5
Upper Silts and Sands	233.5	219.8
Clayey Silt	225.4	213.2
Bedrock	Not Encountered (Estimated to be at an approximate elevation of 184 masl)	

3.1.3 Material in Geological Units

Pavement, Topsoil & Earth Fill

Surficial asphalt concrete was encountered in all boreholes. The asphalt was 125 to 150 mm thick, and no granular was encountered underneath. Granular type parking lot base and sub-base full soils were identified below the asphalt topping in Boreholes 101 to 103. The granular type base and sub-base fill had a thickness of 460 to 600 mm.

Earth fill was encountered in each borehole location. The fill generally consisted of sand with variable amounts of silt and clay, and contains gravel, glass rubble, asphalt rubble, brick rubble, and trace organics at various locations and depths. The fill extended to depths of 1.5 m to 3.0 m below grade (Elev. 233.5 to 231.5 ± masl) and was generally brown and moist.

Native Soils

The boreholes encountered an upper unit of cohesionless deposits underlying the earth fill at depths of 1.5 m to 3.0 m below grade (Elev. 233.5 to 231.5 ± masl). The unit generally consisted of silty sand, to sand, to sand and silt, and extended to depths varying from 9.1 m to 21.3 m below grade (Elev. 225.4 to 213.0 ± masl). Zones of sandy gravel to gravelly sand were interbedded within the deposit, and cobbles and boulders were also present in these zones. The deposits were brown to grey, and were moist becoming wet with depth.

Underlying the upper cohesionless unit, the boreholes generally encountered a cohesive deposit of clay and silt to silty clay, with trace sand, and layering. The clay and silt was encountered at depths varying from 9.1 m to 21.3 m below grade (Elev. 225.4 to 213.0 ± masl) and extended to depths of 18.3 m to 23.2 m below grade (Elev. 216.7 to 211.1 ± masl). It was grey and moist.

Boreholes 201 to 203 encountered a lower sand deposit underlying the clay and silt. The sand was encountered at depths of 18.3 m to 23.2 m below grade (Elev. 216.7 to 211.1 ± masl) and extended beyond the vertical depth of investigation at 24.6 m to 25.0 m below grade (Elev. 210.4 to 209.3 ± masl). The sand was grey and wet.



Bedrock

Although not encountered within the advanced boreholes at the Property, the area is underlain by bedrock of the Verulam Formation of the Simcoe Group (Trenton-Black River). The surface of the bedrock formation is identified to be located at a depth of ± 90 to ± 120 masl, below ground surface as based on drift thickness mapping for the area. None of the boreholes were advanced to the anticipated bedrock levels.

3.2 Approximate Depth to Water Table

Ground water levels were measured in each borehole as they were drilled and after completion. Ground water levels were measured by Terraprobe in the monitoring wells using a Solinst interface probe on the following dates, where possible:

- August 8, 2017
- August 11, 2017
- August 24, 2017
- September 7, 2017
- October 25, 2017
- November 10, 2017
- December 7, 2017
- January 17, 2018
- [December 20, 2018](#)

The ground water levels are presented in Table 1 and Figure 4. As shown in Table 1, the shallowest measured depth to groundwater of 7.5 m below grade (Elev. 227.5 masl) was noted in BH201-S located on the north side of the Property during the December, 2017 monitoring event.

The locations of the wells were placed with sufficient spatial variation across the Property to estimate the ground water flow direction. Seven (7) monitoring wells have been installed by Terraprobe and were used to identify the general direction of the ground water flow.

Based upon the current ground water elevations, the local and regional ground water flow direction within the upper sands and clayey silt layers was determined to be typically in a south to southeastern direction, towards Lake Simcoe.

To calculate the ground water elevation in the monitoring well, the following calculation was completed:

$$\begin{aligned} & \textit{Geodetic Ground Elevation (masl)} - \textit{Measured Depth to Water Table (m)} + \textit{Stick up of Well (m)} \\ & = \textit{Groundwater Elevation (masl)} \end{aligned}$$

The local ground water flow direction may fluctuate seasonally depending on the magnitude of precipitation and surface runoff, which will affect infiltration of surface water in particular at times such as significant snowmelt and rainfall events.



Based on the local topography and the dense development level of the Property and the surrounding properties, only minor fluctuations of the natural ground water flow direction were encountered. Ground water elevations and contours are presented on Figure 4.

It is noted that the clayey silt strata observed within the boreholes were generally interbedded with sand seams or sand. In addition, based on geotechnical investigations completed at the Property and the adjacent properties to the south (53-59 Owen Street and 70-78 Worsely Street), the clayey silt layer was determined to be varying in thickness from north to south. Based on the available soil stratigraphy information ~~Based on the varying thickness of the clayey silt aquitard~~ and the observed ground water levels in the monitoring wells screened in the upper sand/silt and lower sand aquifers, it was determined that these units are hydraulically connected regionally. As such, the native cohesionless sand units are considered to be an unconfined aquifer. The shallow wells and the deep wells have stabilized. Based on the current ground water levels, the ground water within the aquifer is encountered at an elevation of approximately ± 222 to 228 masl.

3.3 Site Hydrogeological Characteristics

3.3.1 Hydraulic Conductivity

According to Freeze and Cherry (1979) and the Ministry of the Environment and Climate Change (1997), the typical hydraulic conductivities of the strata at the Property based upon grain size analysis are:

- Native Soil (Sand) 10^{-4} m/s to 10^{-6} m/s
- Native Soil (Clayey Silt) 10^{-6} m/s to 10^{-9} m/s

3.3.2 Horizontal Hydraulic Gradient

The ground water table is within the upper sands and clayey silt layer. The horizontal gradient was determined to be approximately 0.06 - 0.11 m/m based on the ground water elevations observed in BH101, BH102 and BH103 which were screened in the upper sands and clayey silt layer. The calculations are shown below:

<u>Monitoring Well ID</u>	<u>Ground Water Elevations (masl)</u>	<u>Difference in Elevation, dH (m)</u>	<u>Horizontal Distance Between Monitoring Wells, x (m)</u>	<u>Hydraulic Gradient, dH/x (m/m)</u>
<u>BH103 & BH101</u>	<u>BH101: 223.2</u> <u>BH103: 225.5</u>	<u>dH: 2.03</u>	<u>30</u>	<u>0.08</u>
<u>BH102 & BH101</u>	<u>BH101: 223.2</u> <u>BH102: 225.6</u>	<u>dH: 2.4</u>	<u>42</u>	<u>0.06</u>
<u>BH201-S & BH101</u>	<u>BH101: 223.2</u> <u>BH201S: 227.3</u>	<u>dH: 4.1</u>	<u>38</u>	<u>0.11</u>



3.3.3 Vertical Hydraulic Gradient

The vertical gradient was determined to be approximately 0.04 m/m to 0.1 m/m based on the ground water elevations observed in BH102, BH103, BH201-S, BH201-D, BH202 and BH203. The calculations are shown below:

<u>Monitoring Well ID</u>	<u>Ground Water Elevations (masl)</u>	<u>Difference in Elevation, dH (m)</u>	<u>Vertical Distance Between Monitoring Wells, y (m)</u>	<u>Vertical Gradient, dH/y (m/m)</u>
<u>BH201-S & BH201-D</u>	<u>BH201-S: 227.3</u> <u>BH201-D: 226.7</u>	<u>dH: 0.6</u>	<u>16</u>	<u>0.04</u>
<u>BH102 & BH202</u>	<u>BH102: 225.6</u> <u>BH202: 226.4</u>	<u>dH: 0.8</u>	<u>12</u>	<u>0.07</u>
<u>BH103 & BH203</u>	<u>BH103: 225.5</u> <u>BH203: 226.6</u>	<u>dH: 1.1</u>	<u>11</u>	<u>0.1</u>

3.4 Approximate Depth to Bedrock

Although not encountered within the advanced boreholes at this property, the area is underlain by bedrock of the Verulam Formation of the Simcoe Group (Trenton-Black River). The surface of bedrock formation is identified to be located at a depth of ±90 to ±120 masl, below ground surface as based on drift thickness mapping for the area. None of the boreholes were advanced to the anticipated bedrock levels.

3.5 Section 41 or 43.1

Section 41 of the Regulation does not apply to the Phase Two Property based on the following rationale:

- The Property is not located within an area of natural significance;
- The Property does not include or is not adjacent to an area of natural significance or part of such an area;
- The Property does not include land that is within 30 m of an area of natural significance or part of such an area;
- The surface soil at the Property has a pH value that is not less than 5 or greater than 9; and
- The sub-surface soil at the Property has a pH value that is not less than 5 or greater than 11.



Section 43.1 of the Regulation does not apply to the Phase Two Property based on the following rationale:

- The Property is not considered a shallow soil property; or
- The Property does not include all or part of a water body and is not adjacent to a water body and does not include land that is within 30 m of a water body.

3.6 Soils Placed On, In or Under the Phase Two Property

No soils have been imported or placed on, in or under the Phase Two Property since the site reconnaissance completed for the Phase One ESA in July 2017. Fill was encountered in all boreholes at the Property during the 2017 Terraprobe subsurface investigation.

3.7 Proposed Buildings

The proposed future land use for the Property is a multi-storey residential towers resting on a two (2) level underground parking structure shared with the proposed structure adjacent to the south.



4.0 CONTAMINATION IN OR UNDER THE PHASE TWO PROPERTY

4.1 Applicable Site Condition Standard

The applicable soil and ground water Standards for the Property were determined to be those in Table 2 of the April 15, 2011 Ontario Ministry of the Environment, [Conservation and Parks \(MECP\) and Climate Change \(MOECC\)](#)—“*Soil, Ground Water and Sediment Standards for use under part XV.1 of the Environmental Protection Act*” for Residential, Parkland, Institutional Land Use in a potable ground water condition for coarse textured soil (Table 2 RPI Standards).

These are considered to be the applicable Standards for the following reasons:

- The current use for the parcel is for Commercial Land Use.
- If developed, the parcel will be Residential in Land Use.
- Bedrock is located at a depth of greater than 2 m.
- The Property is located within the 5 and 25 year capture zone of various municipal supply wells. Thus, ground water conditions in the vicinity of the Property are considered to be potable water conditions.
- The parcel is not located within 30 m of a surface water body.
- The parcel is not located in or adjacent to a provincial park or an area of natural significance.

4.2 Media Investigated

Based upon the Potentially Contaminating Activities identified in the Phase One ESA for the Property, it was determined by the Qualified Person that sampling and analysis was required for soil and ground water on the Property. Sample locations were selected to investigate all APECs as identified in the Phase One ESA. No surface water was present on the Property; therefore, surface water and sediment sampling was not conducted.

4.3 Sampling Rationale and Areas Where Contaminants are Present

The table below lists all APECs that were identified in the Phase One ESA. The type of activity is indicated, along with the potential contaminants of concern and the media potentially impacted. The boreholes that were used to evaluate each APEC are indicated, along with the findings with respect to any contaminant noted.



Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Potential Contaminants of Concern	Media Potentially Impacted (Ground water, soil and/or sediment)	Borehole or Well for Sampling	Exceedances
APEC 1	Across Entire Property	#30 – Importation of Fill Material of Unknown Quality	Metals As, Sb, Se EC SAR B-HWS Cl CN- Hg Cr(VI) Low or high pH Na PAHs	Soil & Ground Water Soil & Ground Water Soil Soil Soil Ground Water Soil & Ground Water Soil & Ground Water Soil & Ground Water Soil & Ground Water Ground Water Soil & Ground Water	BH101 to BH103 BH201 to BH203	Soil: EC SAR Ground Water: Metals Cl Na
APEC 2	Across Entire Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs VOCs BTEX	Soil & Ground Water Soil & Ground Water Soil & Ground Water	BH101 to BH103 BH201 to BH203	Soil: None Ground Water: VOC
APEC 3	West Portion of Property	#Other 1 – Spill	PHCs VOCs BTEX	Ground water Ground water Ground water	BH102, BH103, BH202	Soil: None Ground Water: None

PCOCs identified in the soil are indicated in Figures 6 to 11 and the PCOCs identified in the ground water are indicated in Figures 12 to 20. The cross sections of the soil and ground water exceedances are found in Figures 7, 8, 10, 11, 13, 14, 16, 17, 19 and 20.



4.3.1 Location and Depth of Soil Samples

Sample ID	Depth (m)	Elevation (masl)	Strata	M	H-M	ORPs	PAH	PHC	VOC I	VOC II (BTEX)	THM
BH101-SA2	0.8 - 1.4	233.8 - 233.2	Fill				✓	✓	✓	✓	✓
BH101-SA3	1.7 - 2.3	232.9 - 232.2	Native	✓	✓	✓					
BH101-SA4	2.3 - 2.9	232.3 - 231.6	Native			✓					
BH101-SA7	6.1 - 6.7	228.4 - 227.8	Native			✓					
BH101-SA10B	10.9 - 11.3	223.7 - 223.3	Native				✓				
BH101-SA11	12.2 - 12.8	222.3 - 221.7	Native	✓	✓	✓		✓	✓	✓	✓
BH102-SA2	0.8 - 1.4	233.7 - 233.1	Fill	✓	✓	✓		✓	✓	✓	✓
BH102-SA3	1.5 - 2.1	233.0 - 232.4	Fill				✓				
BH102-SA6	4.6 - 5.0	229.9 - 229.5	Native			✓					
BH102-SA8	7.6 - 8.2	226.9 - 226.3	Native			✓					
BH102-SA11	12.2 - 12.8	222.3 - 221.7	Native	✓	✓	✓		✓	✓	✓	✓
BH102-SA12	13.7 - 14.3	220.8 - 220.2	Native				✓				
BH103-SA2	0.8 - 1.4	233.6 - 233.0	Fill	✓	✓	✓					
BH103-SA3	1.7 - 2.3	232.7 - 232.1	Fill				✓	✓	✓	✓	✓
BH103-SA6	4.6 - 4.9	229.8 - 229.5	Native			✓					
BH103-SA10	10.7 - 11.3	223.7 - 223.1	Native				✓	✓	✓	✓	✓
BH103-SA11	12.2 - 12.8	222.2 - 221.6	Native	✓	✓	✓					
BH201-SA2	0.8 - 1.4	234.3 - 233.7	Fill	✓	✓	✓	✓	✓	✓	✓	✓
BH201-SA5	3.1 - 3.7	232.0 - 231.4	Native			✓					
BH201-SA9	9.1 - 9.8	225.9 - 225.3	Native					✓	✓	✓	✓
BH201-SA10	10.7 - 11.3	224.4 - 223.8	Native	✓	✓	✓					
BH201-SA12	13.7 - 14.3	221.3 - 220.7	Native			✓	✓				
BH201-SA13	15.2 - 15.8	219.8 - 219.2	Native	✓	✓	✓					
BH202-SA1	9.1 - 9.8	225.2 - 224.6	Native			✓					
BH202-SA7	18.3 - 18.9	216.1 - 215.5	Native	✓	✓	✓	✓				
BH202-SA8	19.8 - 20.4	214.6 - 213.9	Native					✓	✓	✓	✓
BH202-SA9	21.3 - 21.6	213 - 212.8	Native	✓	✓	✓					
BH203-SA2	0.8 - 1.4	233.7 - 233.1	Fill					✓	✓	✓	✓
BH203-SA3	1.5 - 2.1	232.9 - 232.3	Fill	✓	✓	✓					
BH203-SA4	2.3 - 2.9	232.2 - 231.6	Fill				✓				
BH203-SA6	4.6 - 5.2	229.9 - 229.3	Native			✓					
BH203-SA8	7.6 - 8.2	226.8 - 226.2	Native	✓	✓	✓					
BH203-SA9	9.1 - 9.8	225.3 - 224.7	Native					✓	✓	✓	✓
BH203-SA10	10.7 - 11.3	223.8 - 223.2	Native	✓	✓	✓	✓				

Note: ORPs include boron (hot water soluble), cyanide, hexavalent chromium, electrical conductivity, sodium adsorption ratio, mercury, pH.



4.3.2 Location and Depth of Ground Water Samples

Sample ID	Screen Depth (m)	Screen Elevation (masl)	Strata	M	H-M	ORPs	PAH	PHC	VOCs	VOC II	THM
BH101	10.5 - 13.6	224 - 221	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH102	9.1 - 12.2	225.4 - 222.3	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH103	10.7 - 13.7	233.7 - 220.7	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH201-S	6.1 - 9.1	229 - 225.9	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH201-D	21.3 - 24.4	231.7 - 210.7	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH202	21.3 - 24.4	213.0 - 210.0	Native	✓	✓	✓	✓	✓	✓	✓	✓
BH203	21.3 - 24.4	213.1 - 210.1	Native	✓	✓	✓	✓	✓	✓	✓	✓

Note: ORPs include sodium, chloride, cyanide, hexavalent chromium, mercury, pH

4.4 Contaminants Associated with Each Area

The Phase Two ESA used the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (April 2011).

PCOCs were identified in the earth fill above the applicable Site Condition Standards at the following APECs upon completion of the investigation.

Associated Exceedances in APECs within Earth Fill at the Property

APEC 1	APEC 2	APEC 32
EC SAR	None	None

PCOCs were identified in the native soil above the applicable Site Condition Standards at the following APECs upon completion of the investigation.

Associated Exceedances in APECs within Native Soil at the Property

APEC 1	APEC 2	APEC 32
EC SAR	None	None

PCOCs were identified in the ground water above the applicable Site Condition Standards at the following APECs upon completion of the investigation.

Associated Exceedances in APECs within Ground Water at the Property

APEC 1	APEC 20	APEC 32
Metals (Barium) Chloride Sodium	VOC (Trichloroethylene)0	None



As noted in Table 25, trichloroethylene (TCE) exceedances were noted in BH201-D during 7 Dec 2017 sampling event and in BH203 during the 7 Dec 2017 & 17 Jan 2018 sampling events. These results were considered to be anomalies and therefore considered non-reliable by the QP_{ESA} for the following reasons:

- The Phase One ESA for the Property did not indicate any current or historical on- or off-site up-gradient sources for TCE.
- The results of the four (4) subsequent sampling events completed after additional development of BH201-D and BH203 wells indicated that TCE results met the SCS.
- The results from BH202 located upgradient and screened at approximately same depth as BH201-D and BH203 were non-detect for TCE in November 2017, December 2017 and January 2018. As well, the concentrations for TCE in all the other monitoring wells (BH101-BH103) on the property were also non-detect and met the SCS over all the sampling events.
- Results for BH201-D and BH203 from a total of at least four (4) sampling events over three (3) quarters indicated that the TCE concentrations in these wells meet the SCS as shown below.
 - BH201-D was sampled in Q4 2017 (Nov 2017), Q1, Q2 & Q3 2018 and met the SCS
 - BH203 was sampled in Q4 2017 (Nov 2017), Q1, Q2 & Q3 2018 and met the SCS

<u>Sample Name</u>	<u>Unit</u>	<u>MECP T2 RPI CT</u>	<u>BH201-D</u>	<u>BH201-D</u>	<u>BH201-D</u>	<u>BH201-D</u>	<u>BH201-D</u>	<u>BH201-D</u>
<u>Date</u>			<u>8-Nov-17</u>	<u>7-Dec-17</u>	<u>4-Jan-18</u>	<u>17-Jan-18</u>	<u>18-Jun-18</u>	<u>19-Sep-18</u>
<u>Quarter</u>			<u>Q4 2017</u>	<u>Q4 2017</u>	<u>Q1 2018</u>	<u>Q1 2018</u>	<u>Q2 2018</u>	<u>Q3 2018</u>
Trichloroethylene	<u>µg/L</u>	<u>1.6</u>	<u>1.06*</u>	<u>2.56*</u>	<u><0.50</u>	<u>0.58</u>	<u><0.50</u>	<u><0.50</u>
<u>*</u>	<u>Result not relied on</u>							

<u>Sample Name</u>	<u>Unit</u>	<u>MECP T2 RPI CT</u>	<u>BH203</u>	<u>BH203</u>	<u>BH203</u>	<u>BH203</u>	<u>BH203</u>	<u>BH203</u>	<u>BH203</u>	<u>BH203</u>
<u>Date</u>			<u>8-Nov-17</u>	<u>7-Dec-17</u>	<u>4-Jan-18</u>	<u>17-Jan-18</u>	<u>25-Jan-18</u>	<u>29-Jan-18</u>	<u>18-Jun-18</u>	<u>19-Sep-18</u>
<u>Quarter</u>			<u>Q4 2017</u>	<u>Q4 2017</u>	<u>Q1 2018</u>	<u>Q1 2018</u>	<u>Q1 2018</u>	<u>Q1 2018</u>	<u>Q2 2018</u>	<u>Q3 2018</u>
Trichloroethylene	<u>µg/L</u>	<u>1.6</u>	<u>0.86*</u>	<u>2.83*</u>	<u><0.50</u>	<u>2.43*</u>	<u><0.50</u>	<u><0.50</u>	<u><0.50</u>	<u><0.50</u>
<u>*</u>	<u>Result not relied on</u>									

Based on the above, the QP_{ESA} considered the exceedance of TCE in ground water in BH201-D during the December 7, 2017 event and in BH203 during the December 7, 2017 and January 17, 2018 events to be anomalies and these results was not relied on for the purpose to the Phase 2 ESA and MGRA. In addition due to QA/QC concerns, all the TCE results in BH201-D & BH203 prior to December 7, 2017 were considered non reliable and a maximum of 0.58 ug/L from the results of the subsequent sampling events were considered for the MGRA.

It should be noted that the concentrations of trichloroethylene within two monitoring wells (BH203 and BH201-D) exceeded the T2 RPI Standards during one or more of the sampling events. These concentrations were observed to be well below the T2 RPI Standards during the two subsequent sampling



~~events (January & February 2018). As the concentrations of trichloroethylene in these monitoring wells were intermittently detected, the QP has noted it to be included as a COC for the purposes of this Phase Two CSM. Additional seasonal confirmatory sampling may be conducted in these locations to further confirm the concentrations and to eliminate trichloroethylene as a COC.~~

In addition, as noted in the summary Table 15, the reported concentration of barium exceeded the applicable standard in BH101 during the January 17, 2018 sampling event. As BH101 had not exceeded during the previous two sampling events, the QP_{ESA} rejected the exceedance of barium in ground water in BH101 during the January 17, 2018 event based on the following:

- Prior to the January 17, 2018 sampling event, only BH103 had exceeded for barium at the Property.
- Two (2) subsequent sampling events completed in BH101 after the January 17, 2018 sampling event, indicated that the concentration of barium in ground water in BH101 were similar to the previous sampling events and well below the SCS.
- An additional sampling event was conducted in BH101 on April 10, 2019.
- Results for BH101 from sampling events over five (5) quarters indicated that the Barium concentrations in this well meets the SCS as shown below. BH101 was sampled in Q3 and Q4 2017, Q4 2018 and Q1 and Q2 2019, and met the SCS.

<u>Sample Name</u>	<u>Units</u>	<u>MOEC C T2 RPI CT</u>	<u>BH101</u>	<u>BH101</u>	<u>BH101</u>	<u>BH101</u>	<u>BH101</u>	<u>BH101</u>
<u>Date</u>			<u>11-Aug-17</u>	<u>7-Dec-17</u>	<u>17-Jan-18</u>	<u>19-Dec-18</u>	<u>4-Jan-19</u>	<u>10-Apr-19</u>
<u>Parameter</u>			<u>Q3 2017</u>	<u>Q4 2017</u>	<u>Q1 2018</u>	<u>Q4 2018</u>	<u>Q1 2019</u>	<u>Q2 2019</u>
<u>Barium</u>	<u>µg/L</u>	<u>1000</u>	<u>210</u>	<u>357</u>	<u>1330*</u>	<u>151</u>	<u>151</u>	<u>526</u>
<u>*</u>	<u>Result not relied on</u>							

Based on the results of the previous sampling event and the confirmatory sampling, the QP has rejected the previous barium exceedance that occurred in BH101 during the January 2018 event. Thus, barium has been omitted as a COC in the ground water.

It is concluded based upon the soil and ground water sampling conducted as part of the current investigation that there are COCs above the MOECCMECP Table 2 RPI Standards at the location of APEC 1 and APEC 2.

4.5 Medium in Which Contaminants are Associated

Fill, native soil, and ground water were investigated as part of the Phase Two ESA investigation. Based upon the investigation, COCs were identified in the following media for the contaminants listed, when compared to the SCS (Table 2 RPI).



Media Associated with Exceedances at the Property

Metals	Hydride Forming Metals	ORPs	Sodium	PAH	PHC (F1-F4)	VOCs BTEX THMs
Ground Water	None associated	Fill Material Native Soils Ground Water	Ground Water	None associated	None associated	Ground Water None associated

It is concluded based upon the soil and groundwater sampling conducted as part of the current investigation that there are COCs above the ~~MECP MOECC~~ Table 2 RPI CT Standards within the fill material, native soils and the ground water units identified on the Property.

4.6 Information Known about Each Contaminated Area

The EC and SAR soil impacts in the fill material and native soils are likely associated with de-icing activities on the paved/parking areas of the Property and adjacent roads.

The metal ground water impacts are located in the south~~west~~ portion of the Property and can be attributed to migration from low quality fill material used during historical development of the Property, as well as naturally occurring minerals.

The sodium and chloride impacts in the ground water are associated with de-icing activities on the paved/parking areas of the Property and adjacent roads.

~~The trichloroethylene impacts in the ground water are associated with potential unknown off site sources.~~

4.8.7 Distribution of Contaminant

Figures 6, 9, 12, 15 and 18 depict the location and concentration of each contaminant found at the Property for soil and groundwater, respectively. Figures 7, 8, 10, 11, 13, 14, 16, 17, 19 and 20 depict the vertical extent of soil and ground water contamination.

ORP contaminants EC and SAR was found within the fill soil at BH102, BH103, BH201 and BH203. ORP contaminant EC and SAR was found within the native soil at BH101, BH102 and BH201.

It should be noted that majority of the impacted fill material and native soils will likely be removed from the Property during construction earth works, and will be replaced with either clean fill or underground parking structures. As such it is unlikely that soil impacts will remain on the Property upon development of the proposed buildings.

Barium was found in the ground water at ~~BH101 and~~ BH103. Sodium and chloride was found in the ground water at BH101, BH102 and BH103.



~~Trichloroethylene was found in the ground water at BH201-D and BH203.~~

4.94.8 Reasons for Discharge of Contaminant

The origin of EC and SAR in the soil, and sodium and chloride in the ground water can be attributed to the long-term application of road salt for de-icing on the paved /parking areas present the Property and municipal roads adjacent to the Property. The origin of metals in the ground water can be attributed to the presence of low quality fill material used during historical development of the Property. ~~The origin of trichloroethylene in the ground water can be attributed to the presence of unknown off site sources located upgradient of the Property.~~

Based on the available soil and ground water information, it is possible that there may be discharges of contaminants onto the Property from upgradient off-site sources into the soil and ground water.

4.104.9 Migration of Contaminant

The EC and SAR impacts are expected to migrate down into the soil through cracks in the asphalt. The ORP contaminants within the fill material are unlikely to migrate substantial distances horizontally or vertically due to the nature of the contaminants. It should be noted that majority of the impacted fill material and native soils will likely be removed from the Property during construction earth works, and will be replaced with either clean fill or underground parking structures. As such it is unlikely that soil impacts will remain on the Property upon development of the proposed buildings.

The ground water contaminants (barium, sodium, ~~and chloride and trichloroethylene~~) are expected to migrate horizontally, in the direction of the ground water flow, where contaminants are expected to flow in a south to southeast direction.

There may be future migration of contaminants from the off-site sources.

4.114.10 Climatic or Meteorological Influences on Migration

The Property is currently covered by asphalt/concrete and has limited landscaped areas with a soft cover. Climatic or meteorological influence on migration of potential contamination on the Property is unlikely due to the asphalt/concrete cover. Limited influence may be possible through surface water infiltration through the areas with a soft cover. However, as the soil contaminants have limited mobility, it is unlikely the influence of climatic or meteorological effects would affect migration substantially.

Future migration of contaminants from the off-site sources may be possible due to climatic or meteorological influences.



4.124.11 Soil Vapour Intrusion into Buildings

~~Trichloroethylene (a volatile compound) exceeded the SCS (Table 2 RPI) during the initial ground water sampling events, but was eliminated as a CoC based on the results of additional sampling events, as explained in detail in Section 4.4. However, as the MGRA considered Table 6 RPI Standards and trichloroethylene exceedance was present in the ground water in BH201-D during one of the four most recent sampling events, this COC has been considered for the MGRA. As such, there is the possibility for soil vapour intrusion of contaminants into future proposed building. Contaminants of Concern were identified in the soil and ground water upon completion of the investigation. Volatile contaminants exceeding the SCS (Table 2 RPI) were identified during the initial ground water sampling events. As such, there is the possibility for soil vapour intrusion of contaminants into buildings.~~

4.134.12 Relevant Construction Features of Buildings

The metals, ORPs, sodium, chloride impacts are not expected to affect the relevant construction features of the building on site. ~~It is noted that trichloroethylene (a volatile compound) exceeded the SCS (Table 2 RPI) during the initial ground water sampling events but was eliminated as a CoC based on the results of additional sampling events, as explained in detail in Section 4.4. However, as the MGRA considered Table 6 RPI Standards and trichloroethylene exceedance was present in the ground water in BH201-D during one of the four most recent sampling events, this COC has been considered for the MGRA. As such, However,~~ the possible trichloroethylene impacts have the potential to affect the relevant construction features of the building on site.

4.144.13 Building HVAC

Future HVAC systems present in any buildings on the Property may affect the distribution and transport of contaminants because volatile COCs were previously identified.

4.154.14 Subsurface Structures and Utilities

There are underground utilities present on the Property. Buried utilities are located on the Property above the static water table (approximately 7 m below grade). As such, it is unlikely that the buried utilities will serve as preferential pathways for the migration of Contaminants of Concern.



5.0 POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS

5.1 Description of All Components

Following is the list of all risk based components of the potential exposure pathways and receptors. These components are used in this section as well as the graphical representation of the pathways and receptors presented on Figures C1 and C2.

GW1 – Ground water for drinking water purposes

GW2 – Ground water for protection from movement to indoor air

GW3 – Ground water for protection of aquatic life

S1 – Soil for protection of a residential receptor from direct contact with surface soil

S2 – Soil for protection from direct soil contact for a lower frequency and intensity exposure than residential surface soil, such as commercial or industrial scenarios

S3 – Soil for direct soil contact for a low-frequency, high-intensity, human health exposure scenario without children present that is protective of a worker digging in the soil

S-IA – Soil for protection of movement to indoor air and human exposure

S-OA – Soil for protection of movement to outdoor air and human exposure

S-Odour – Soil for protection of excessive odours

S-GW1 – Soil for protection from movement to ground water for drinking water purposes

S-GW3 – Soil for protection from movement to ground water and then to aquatic life

Plants and Soil Organisms – Soil for protection against adverse effects to plants and soil dwelling organisms

Mammals and Birds – Soil for protection against adverse effects through direct soil and food ingestion to mammals and birds



5.2 Receptor Human Health

Potential Pathway	Potential Risks Sources	Contaminant of Concern from Phase Two ESA	Potential Risks
GW1	Contamination present in ground water	Barium, Na, Cl	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
GW2	Contamination present in ground water	Barium, Na, Cl	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
GW3	Contamination present in ground water	Barium, Na, Cl	Risk – Source Present No Risk – No Pathway present No Risk – No Receptor present
S1	Contamination present in fill material	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
S2	Contamination present in fill material	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
S3	Contamination present in fill material	EC, SAR	Risk – Source Present Risk – Pathway present Risk – Receptor present
S-IA	Contamination present in fill material Contamination present in native soils	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
S-OA	Contamination present in fill material Contamination present in native soils	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
S-Odour	Contamination present in fill material Contamination present in native soils	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
S-GW1	Contamination present in native soil Contamination present in ground water	EC, SAR Barium, Na, Cl	Risk – Source present No Risk – No Pathway present Risk – Receptor present

5.3 Receptor Terrestrial Environment

Potential Pathway	Potential Risks Sources	Contaminant of Concern from Phase One ESA	Potential Risks
Plants and Soil Organisms	Contamination present in fill material	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present
Mammals and Birds	Contamination present in fill material	EC, SAR	Risk – Source Present No Risk – No Pathway present Risk – Receptor present



5.4 Receptor Aquatic Environment

Potential Pathway	Potential Risks Sources	Contaminant of Concern from Phase One ESA	Potential Risks
GW3	Contamination present in ground water	Barium, Na, Cl	Risk – Source Present No Risk – No Pathway No Risk – No Receptor
S-GW3	Contamination present in fill material Contamination present in native soils	EC, SAR EC, SAR	Risk – Source Present No Risk – No Pathway No Risk – No Receptor

5.5 Summary of Potential Receptor Risks

It should be noted that majority of the impacted fill material and native soils will likely be removed from the Property during construction earth works, and will be replaced with either clean fill or underground parking structures. As such it is unlikely that the soil impacts will remain on the Property upon development of the proposed buildings. Only impacted ground water will remain on the Property upon development of the proposed buildings.

~~It should be noted that the concentrations of trichloroethylene within two monitoring wells (BH203 and BH201-D) exceeded the T2 RPI Standards during one or more of the sampling events. These concentrations were observed to be well below the T2 RPI Standards during the two subsequent sampling events (January & February 2018). As the concentrations of trichloroethylene in these monitoring wells were intermittently detected, the QP has noted it to be included as a COC for the purposes of this Phase Two CSM. Additional seasonal confirmatory sampling may be conducted in these location to further confirm the concentrations and to eliminate trichloroethylene as a COC.~~

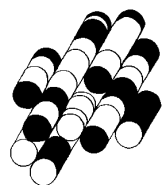
It is noted that the concentrations of trichloroethylene within two monitoring wells (BH203 and BH201-D) exceeded the T2 RPI Standards during the initial sampling events. As discussed in Section 3.15, the QP_{ESA} believed these exceedances to be anomalies. These monitoring wells were purged and resampled seasonally on four separate occasions (January, June and September, 2018). The TCE concentrations during all four sampling events was not detected or well below the Table 2 SCS. Due to the QA/QC concerns with the sampling results prior to these events (i.e. December 2017 & January 2018), the QP_{ESA} will only be relying on the results from the four most recent sampling events (January, June & September, 2018) for BH201-D & BH203 for the purposes of the Phase Two ESA & MGRA. Although the TCE concentrations from these sampling events meet the Table 2 SCS, it has been included as a COC in the MGRA which considers Table 6 Standards. As such, the maximum concentration of 0.58 ug/L (BH201-D during January 2018 event) for the TCE COC has been considered for the MGRA.

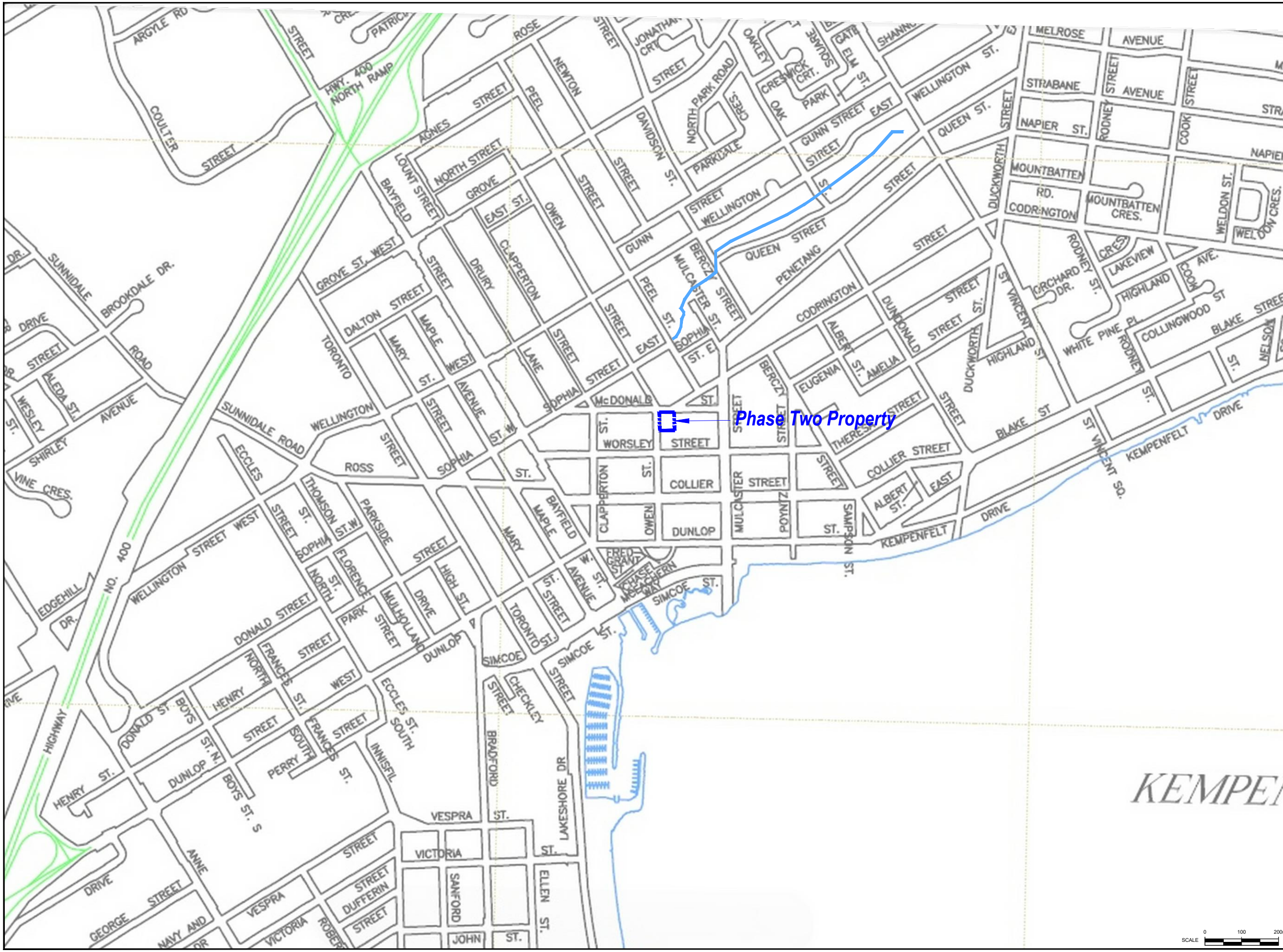
The MGRA will evaluate risk based on current soil and groundwater conditions, and Risk Management Measures will be proposed if necessary.



FIGURES

TERRAPROBE INC.





Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESA\A-Dwg - Logs\AutoCAD\1-17-0481-02_North Parcel_Dec 2018.dwg, XIV



Reference:

York Region Maps

Notes:

- PCA - Potentially Contaminating Activity
- #00 - PCA Causing APEC
- #00 - PCA Not Causing APEC
- APEC - Areas of Potential Environmental Concern

Legend:

- Approximate Phase Two Property Boundary
- Phase One Study Area, 250m
- Watercourse Within Study Area
- #10 Commercial Body Shops
- #28 Gasoline and Associated Products Storage in Fixed Tanks
- #30 Importation of Fill Material of Unknown Quality
- #37 Operation of Dry Cleaning Equipment (where chemicals are used)
- #01 Ontario Spills
- APEC 1 (Entire Site)
- APEC 2 (West Portion of Site)

Project Title:

Phase One Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

PCA AND APEC LOCATIONS

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

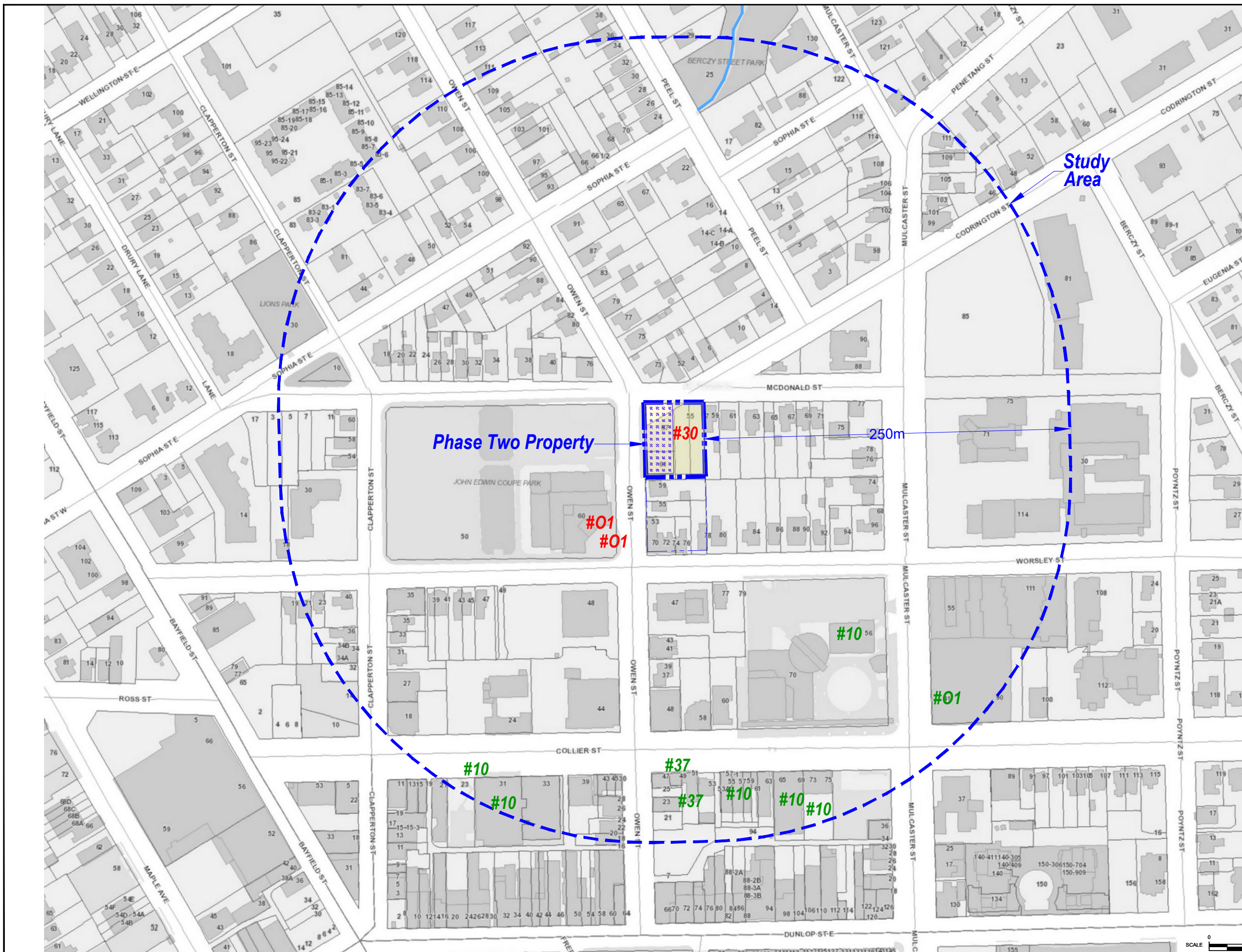
MB

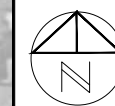
Figure No.:

2

Date:

December 2018





Reference:
 Google Earth 2017

Notes:
 PCA - Potentially Contaminating Activity
 #00 - PCA Causing APEC
 #00 - PCA Not Causing APEC
 APEC - Areas of Potential Environmental Concern

Legend:

	Approximate Phase Two Property Boundary
	Approximate Borehole Location with Monitoring Well (August 2017)
	Approximate Borehole Location with Monitoring Well (October 2017)
#30	Importation of Fill Material of Unknown Quality
#01	Ontario Spills
	APEC 1 (Entire Site)
	APEC 2 (West Portion of Site)

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 BOREHOLE/MONITORING WELL LOCATIONS

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 3
Date: December 2018	



Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESA\A - Dwg. - Logs\AutoCAD\1-17-0481-42_North Parcel_Dec 2018.dwg.MTV

Notes:

Legend:

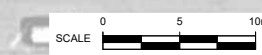
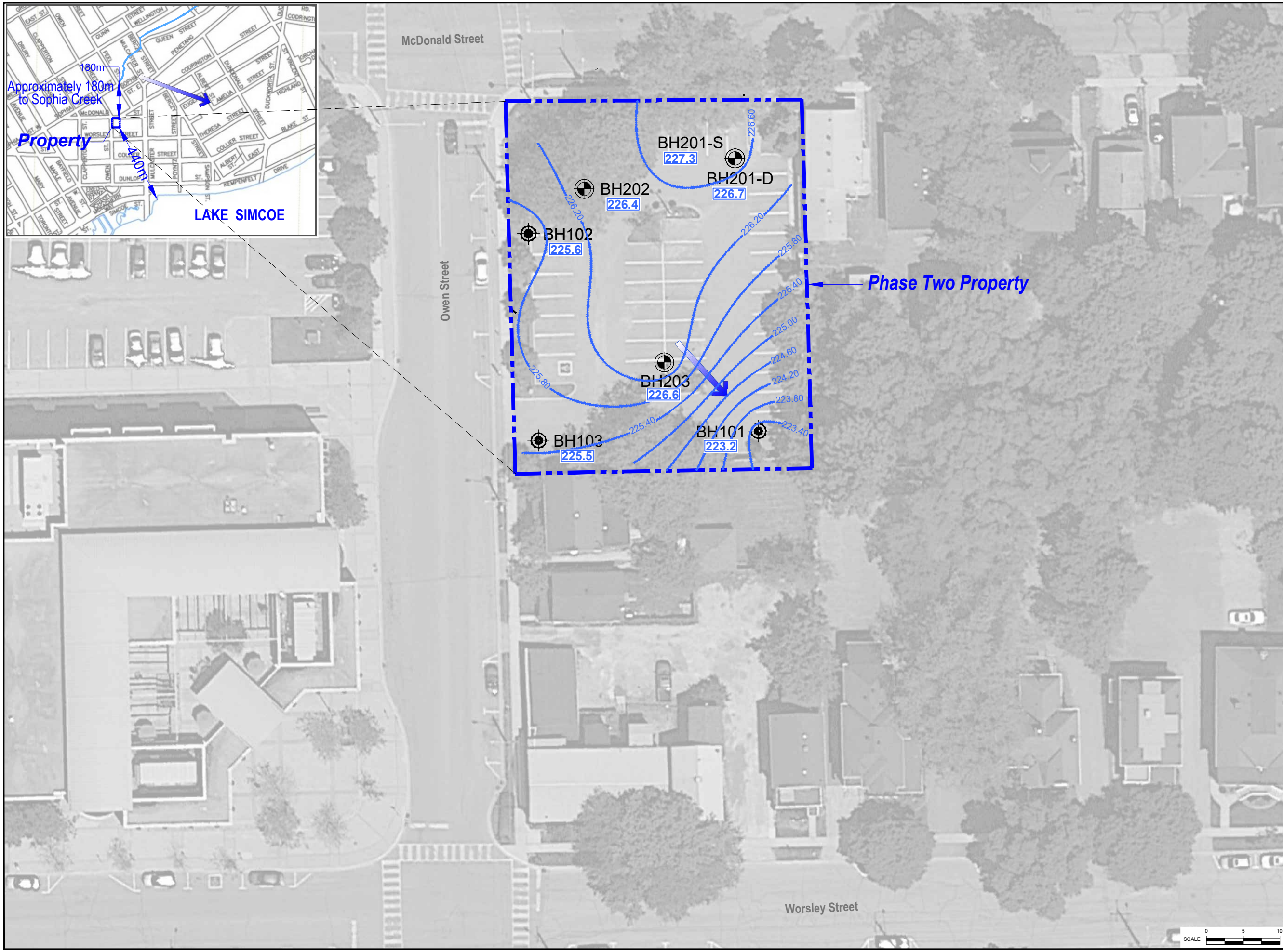
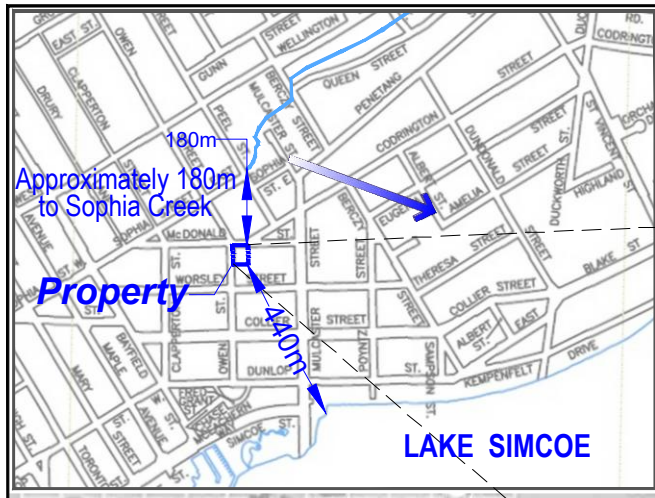
	Approximate Phase Two Property Boundary
	Approximate Borehole Location with Monitoring Well (August 2017)
	Approximate Borehole Location with Monitoring Well (October 2017)
	Ground Water Level (masl), January 17, 2018
	Ground Water Contour Line
	Approximate Ground Water Flow Direction
	Watercourse Within Study Area

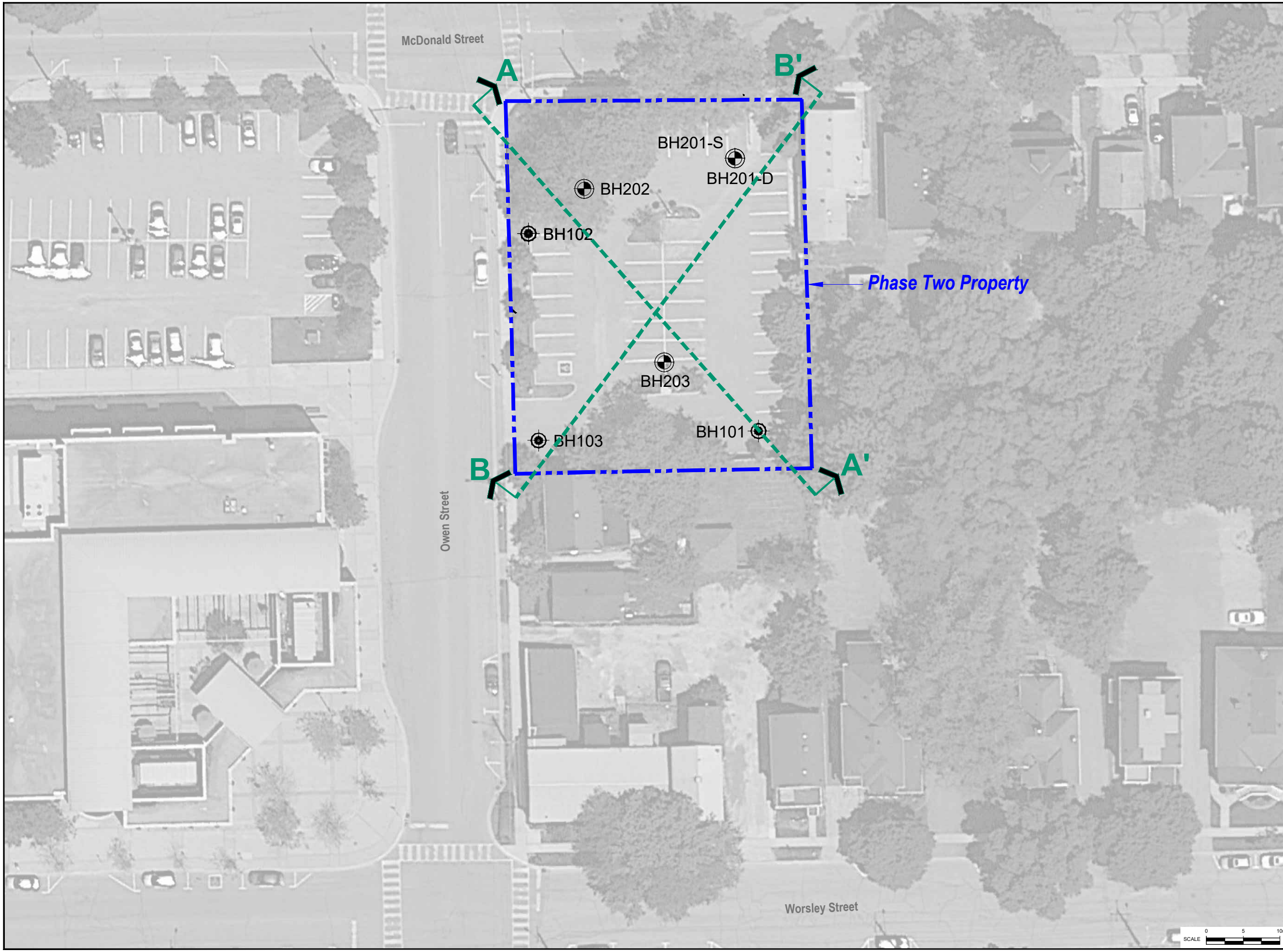
Project Title:
 Phase Two Environmental Site Assessment


Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 GROUND WATER ELEVATIONS





Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 4
Date: December 2018	





	Reference:
	Google Earth 2017

Notes:

Legend:	
	Approximate Phase Two Property Boundary
	Approximate Borehole Location with Monitoring Well (August 2017)
	Approximate Borehole Location with Monitoring Well (October 2017)
	Approximate Cross Section Location


Project Title:
Phase Two Environmental Site Assessment

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario







Figure Title:
CROSS SECTION LOCATIONS

Designed By: SM	File No.: 1-17-0481-42
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.: 5
Date: December 2018	

Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\2 - Phase Two ESA\A - Dwg. - Logs\AutoCAD\1-17-0481-42_North Parcel_Dec 2018.dwg.MV

Reference:
 Google Earth 2017

Notes:
 1. 0.592 = Parameter Result Meets 2011 T2 Standard, Coarse
 2. 2.86 = Parameter Result Exceeds 2011 T2 Standard, Coarse

- Legend:**
-  Approximate Phase Two Property Boundary
 -  Approximate Borehole Location with Monitoring Well (August 2017)
 -  Approximate Borehole Location with Monitoring Well (October 2017)
 -  Approximate Extent of Contaminant Impact
 -  Sample in Borehole Meets Standard
 -  Sample in Borehole Exceeds Standard

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 EC EXCEEDANCES IN SOIL
 PLAN VIEW

Designed By: SM **File No.:** 1-17-0481-42

Drawn By: MV **Scale:** As Shown

Reviewed By: MB

Date: December 2018 **Figure No.:** 6



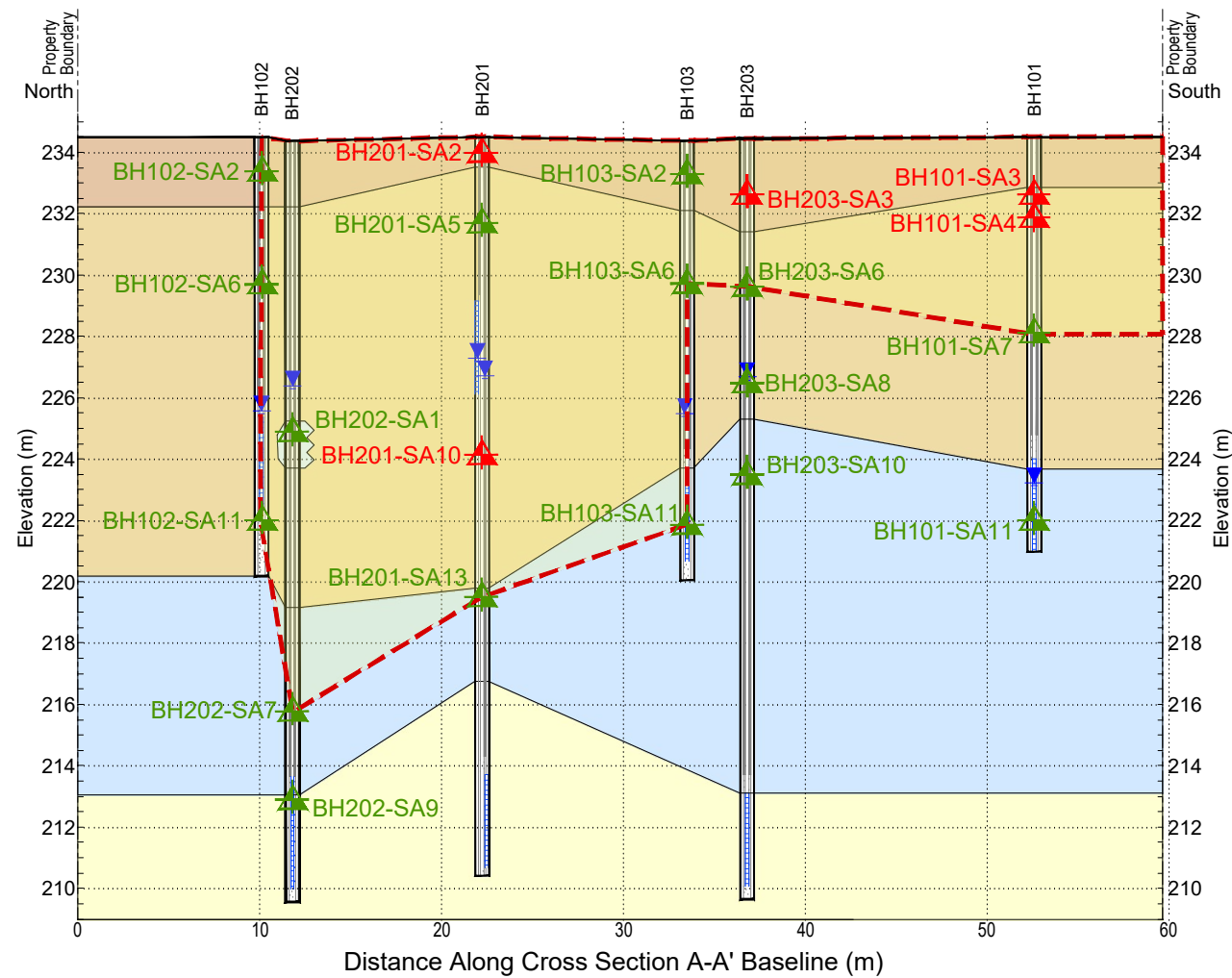
Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6	BH203-SA8	BH203-SA10
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	1-Aug-17	2-Aug-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	226.8-226.2	223.8-223.2
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	7.6-8.2	10.7-11.3
Parameter																									
Electrical Conductivity	mS/cm	0.7	0.951	1.49	0.135	0.201	0.661	0.337	0.372	0.527	0.18	0.679	0.498	1.15	0.55	0.757	0.242	0.279	0.241	0.31	2.86	2.88	0.592	0.118	0.226

Reference:

- Notes:**
- 0.592 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 2.86 = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
EC EXCEEDANCES IN SOIL
CROSS SECTION A-A'

Designed By: SM **File No.:**
1-17-0481-42

Drawn By: MV **Scale:**
As Shown

Reviewed By: MB **Figure No.:**
7

Date: December 2018

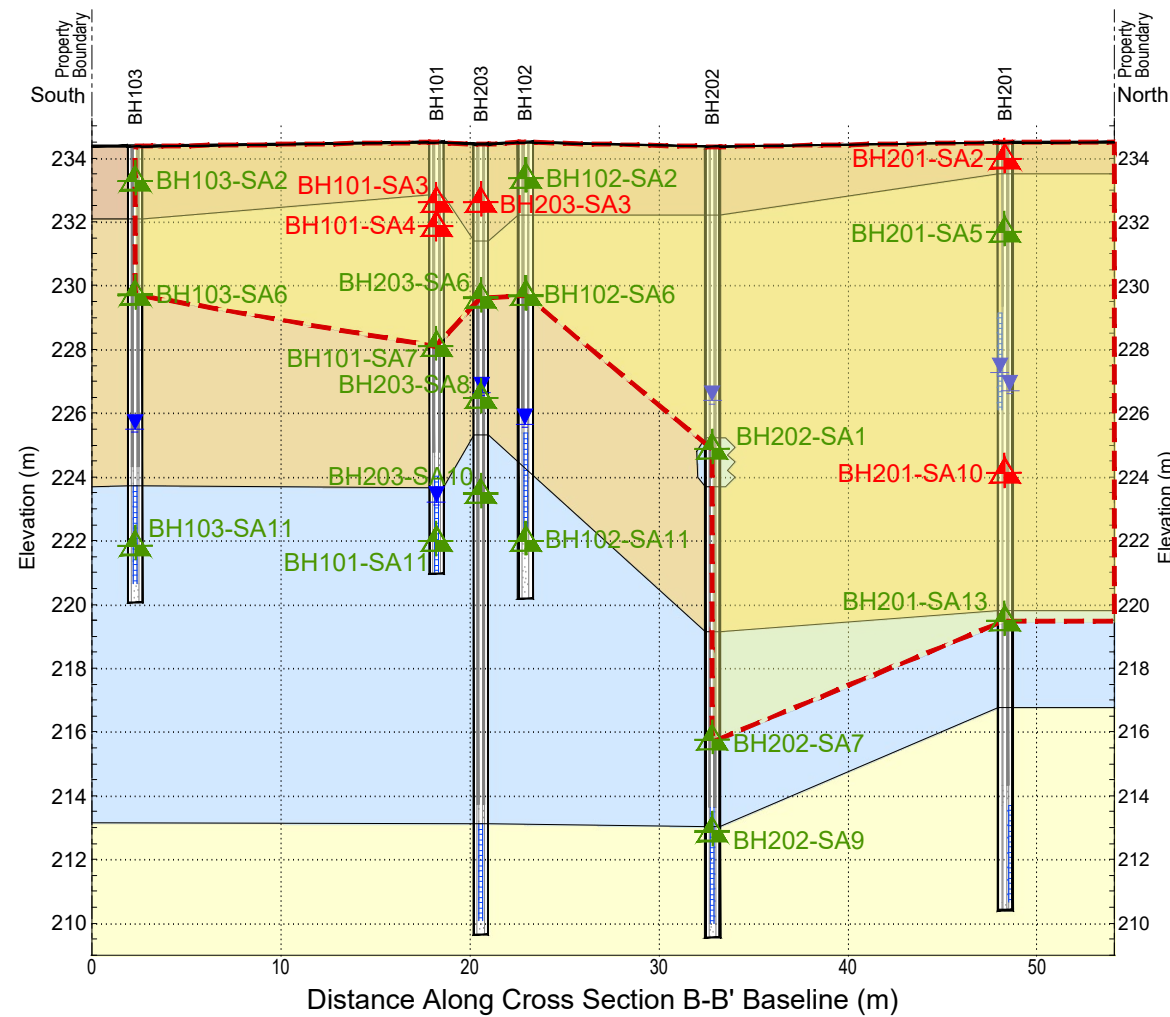
Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6	BH203-SA8	BH203-SA10
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	226.8-226.2	223.8-223.2
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	7.6-8.2	10.7-11.3
Parameter																									
Electrical Conductivity	mS/cm	0.7	0.951	1.49	0.135	0.201	0.661	0.337	0.372	0.527	0.18	0.679	0.498	1.15	0.55	0.757	0.242	0.279	0.241	0.31	2.86	2.88	0.592	0.118	0.226

Reference:

Notes:
 1. 0.592 = Parameter Result Meets 2011 T2 Standard, Coarse
 2. 2.86 = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:
 Phase Two Environmental Site Assessment Update

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 EC EXCEEDANCES IN SOIL
 CROSS SECTION B-B'

Designed By: SM **File No.:**
1-17-0481-42
Drawn By: MV **Scale:**
As Shown
Reviewed By: MB **Figure No.:**
8
Date: December 2018

Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6	BH203-SA8	BH203-SA10
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	226.8-226.2	223.8-223.2
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8		0.8-1.4	3.1-3.7	10.7-11.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	7.6-8.2	10.7-11.3
Parameter																									
Electrical Conductivity	mS/cm	0.7	0.951	1.49	0.135	0.201	0.661	0.337	0.372	0.527	0.18	0.679	0.498	1.15	0.55	0.757	0.242	0.279	0.241	0.31	2.86	2.88	0.592	0.118	0.226



Reference:

Google Earth 2017

Notes:

- 1. **0.86** = Parameter Result Meets 2011 T2 Standard, Coarse
- 2. **22.4** = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Approximate Phase Two Property Boundary
- Approximate Borehole Location with Monitoring Well (August 2017)
- Approximate Borehole Location with Monitoring Well (October 2017)
- Approximate Extent of Contaminant Impact
- Sample in Borehole Meets Standard
- Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

SAR EXCEEDANCES IN SOIL
 PLAN VIEW

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

9

Date:

December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA8	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA12	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	4-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	226.9-226.3	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	221.3-220.7	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3	
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	7.6-8.2	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	13.7-14.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2	
Parameter																										
Sodium Adsorption Ratio	---	5	6.79	21.3	1.05	1.93	9.64	7.53	5.72	4.18	22.4	0.86	2.88	2.35	>40	>17	26.1	0.13	1.51	1.71	0.85	4.34	18.9	20.9	3.36	

Sample Name	Units	MOECC T2 RPI CT	BH203-SA8	BH203-SA10
Date			25-Oct-17	25-Oct-17
Elev of Sample (masl)			226.8-226.2	223.8-223.2
Depth (m)			7.6-8.2	10.7-11.3
Parameter				
Sodium Adsorption Ratio	---	5	> 0.73	1.05

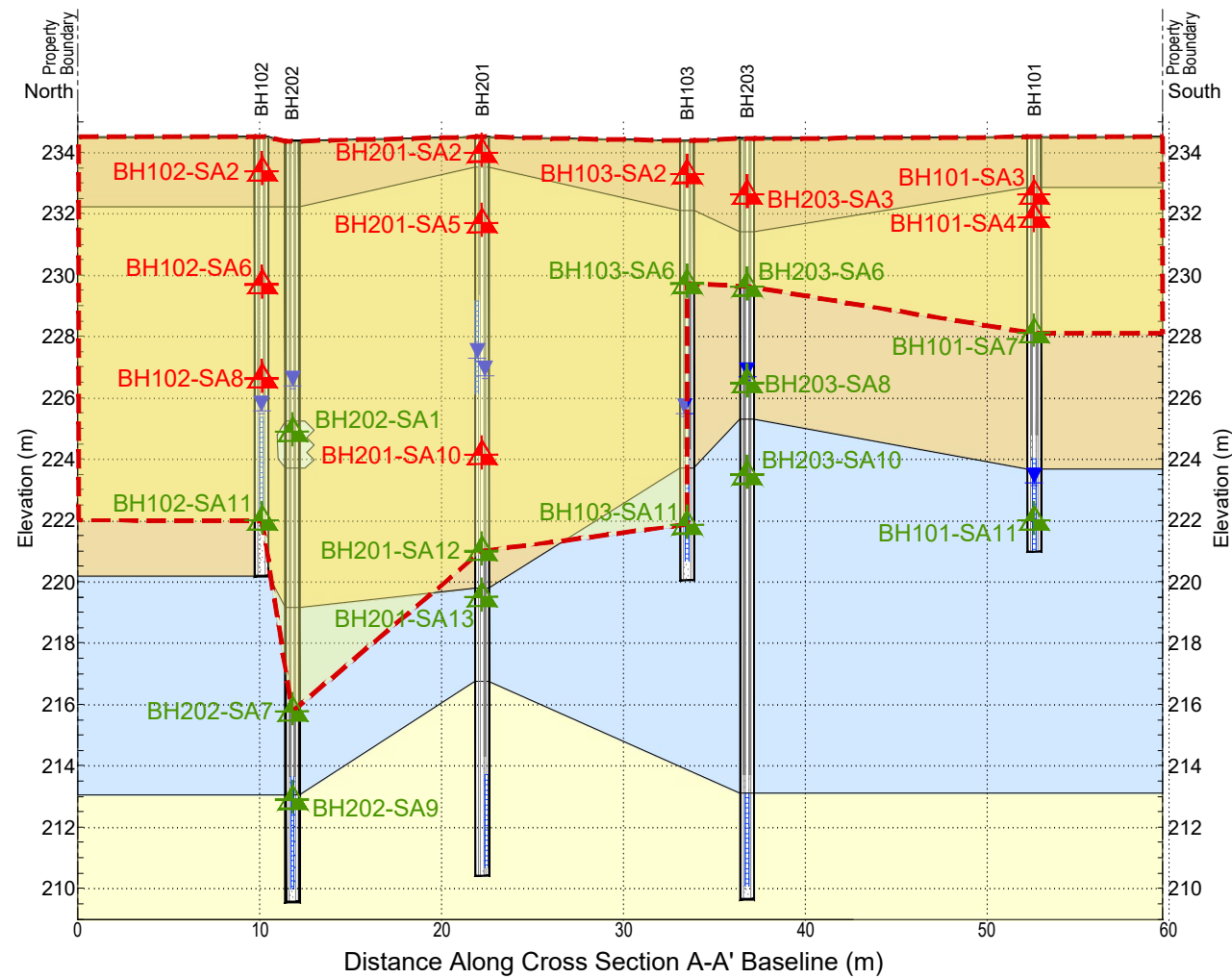


Reference:

Notes:
 1. **0.86** = Parameter Result Meets 2011 T2 Standard, Coarse
 2. **22.4** = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:
 Phase Two Environmental Site Assessment Update

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 SAR EXCEEDANCES IN SOIL
 CROSS SECTION A-A'

Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA8	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA12	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	4-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	DUP2 (BH203-SA3)	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	226.9-226.3	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	221.3-220.7	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	7.6-8.2	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	13.7-14.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2
Parameter																									
Sodium Adsorption Ratio	---	5	6.79	21.3	1.05	1.93	9.64	7.53	5.72	4.18	22.4	0.86	2.88	2.35	>40	>17	26.1	0.13	1.51	1.71	0.85	4.34	18.9	20.9	3.36

Sample Name	Units	MOECC T2 RPI CT	BH203-SA8	BH203-SA10
Date			25-Oct-17	25-Oct-17
Elev of Sample (masl)			226.8-226.2	223.8-223.2
Depth (m)			7.6-8.2	10.7-11.3
Parameter				
Sodium Adsorption Ratio	---	5	> 0.73	1.05

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB
Figure No.: 10

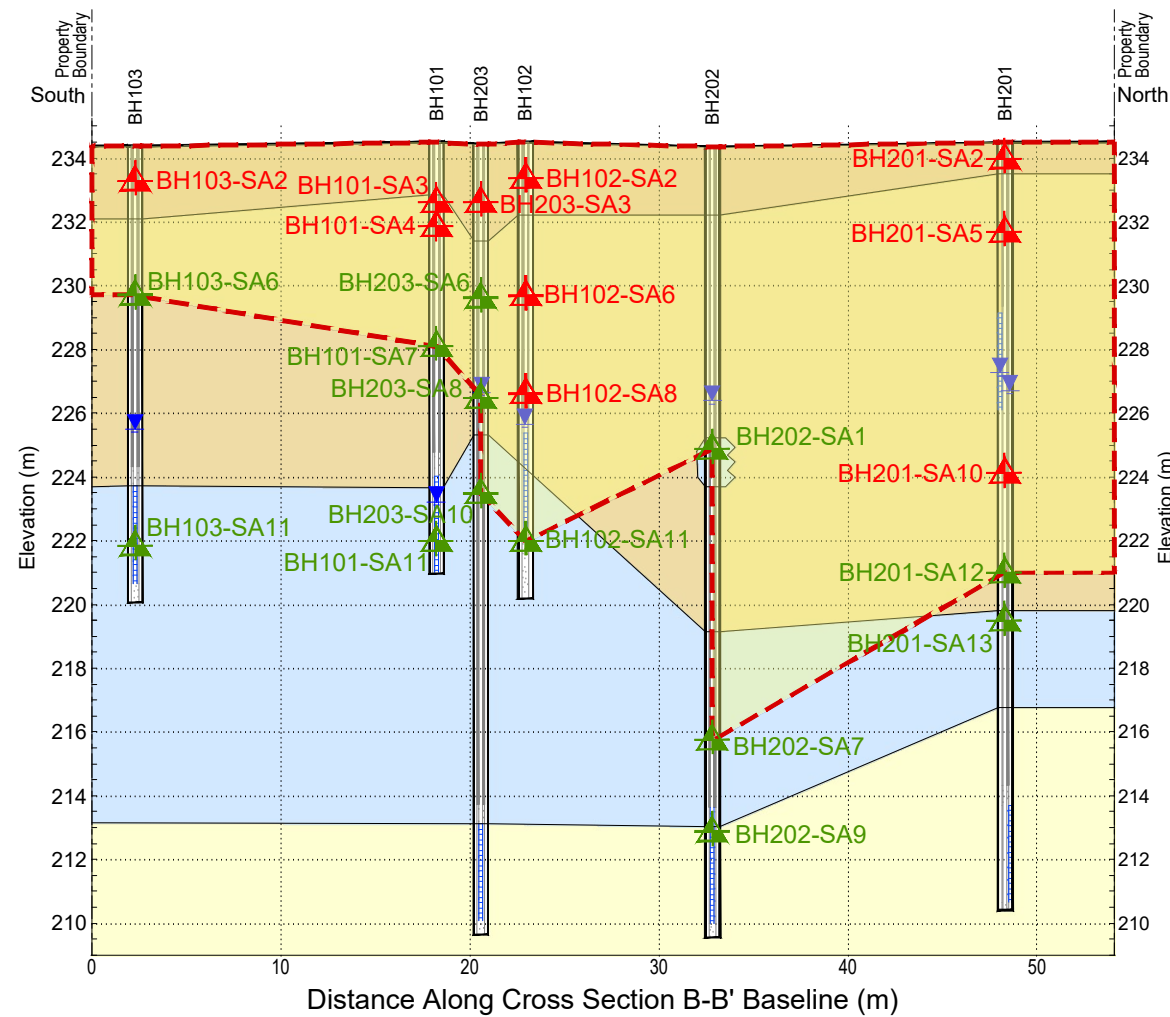
Date: December 2018

Reference:

Notes:
 1. **0.86** = Parameter Result Meets 2011 T2 Standard, Coarse
 2. **22.4** = Parameter Result Exceeds 2011 T2 Standard, Coarse

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:
 Phase Two Environmental Site Assessment Update

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 SAR EXCEEDANCES IN SOIL
 CROSS SECTION B-B'

Sample Name	Units	MOECC T2 RPI CT	BH101-SA3	BH101-SA4	BH101-SA7	BH101-SA11	BH102-SA2	BH102-SA6	BH102-SA8	BH102-SA11	BH103-SA2	BH103-SA6	BH103-SA11	DUP2 (BH103-SA11)	BH201-SA2	BH201-SA5	BH201-SA10	BH201-SA12	BH201-SA13	BH202-SA1	BH202-SA7	BH202-SA9	BH203-SA3	DUP2 (BH203-SA3)	BH203-SA6
Date			31-Jul-17	31-Jul-17	31-Jul-17	31-Jul-17	1-Aug-17	1-Aug-17	4-Aug-17	1-Aug-17	1-Aug-17	31-Jul-17	2-Aug-17	2-Aug-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	23-Oct-17	24-Oct-17	24-Oct-17	24-Oct-17	25-Oct-17	25-Oct-17	25-Oct-17
Elev of Sample (masl)			232.9-232.3	232.3-231.6	228.4-227.8	222.3-221.7	233.8-233.1	229.9-229.5	226.9-226.3	222.3-221.7	233.6-233	229.8-229.5	222.2-221.6	222.2-221.6	234.3-233.7	232-231.4	224.4-223.8	221.3-220.7	219.8-219.2	225.2-224.6	216.1-215.5	213-212.8	232.9-232.3	232.9-232.3	229.9-229.3
Depth (m)			1.7-2.3	2.3-2.9	6.1-6.7	12.2-12.8	0.8-1.4	4.6-5	7.6-8.2	12.2-12.8	0.8-1.4	4.6-4.9	12.2-12.8	12.2-12.8	0.8-1.4	3.1-3.7	10.7-11.3	13.7-14.3	15.2-15.9	9.1-9.8	18.3-18.9	21.3-21.6	1.5-2.1	1.5-2.1	4.6-5.2
Parameter																									
Sodium Adsorption Ratio	---	5	6.79	21.3	1.05	1.93	9.64	7.53	5.72	4.18	22.4	0.86	2.88	2.35	>40	>17	26.1	0.13	1.51	1.71	0.85	4.34	18.9	20.9	3.36

Sample Name	Units	MOECC T2 RPI CT	BH203-SA8	BH203-SA10
Date			25-Oct-17	25-Oct-17
Elev of Sample (masl)			226.8-226.2	223.8-223.2
Depth (m)			7.6-8.2	10.7-11.3
Parameter				
Sodium Adsorption Ratio	---	5	> 0.73	1.05

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 11



Reference:

Google Earth 2017

Notes:

- 1. 145 = Parameter Result Meets 2011 T2 Standard, Coarse
- 2. 1630 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Approximate Phase Two Property Boundary
- Approximate Borehole Location with Monitoring Well (August 2017)
- Approximate Borehole Location with Monitoring Well (October 2017)
- Approximate Extent of Contaminant Impact
- Sample in Borehole Meets Standard
- Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

METAL EXCEEDANCES IN GROUND WATER
 PLAN VIEW

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

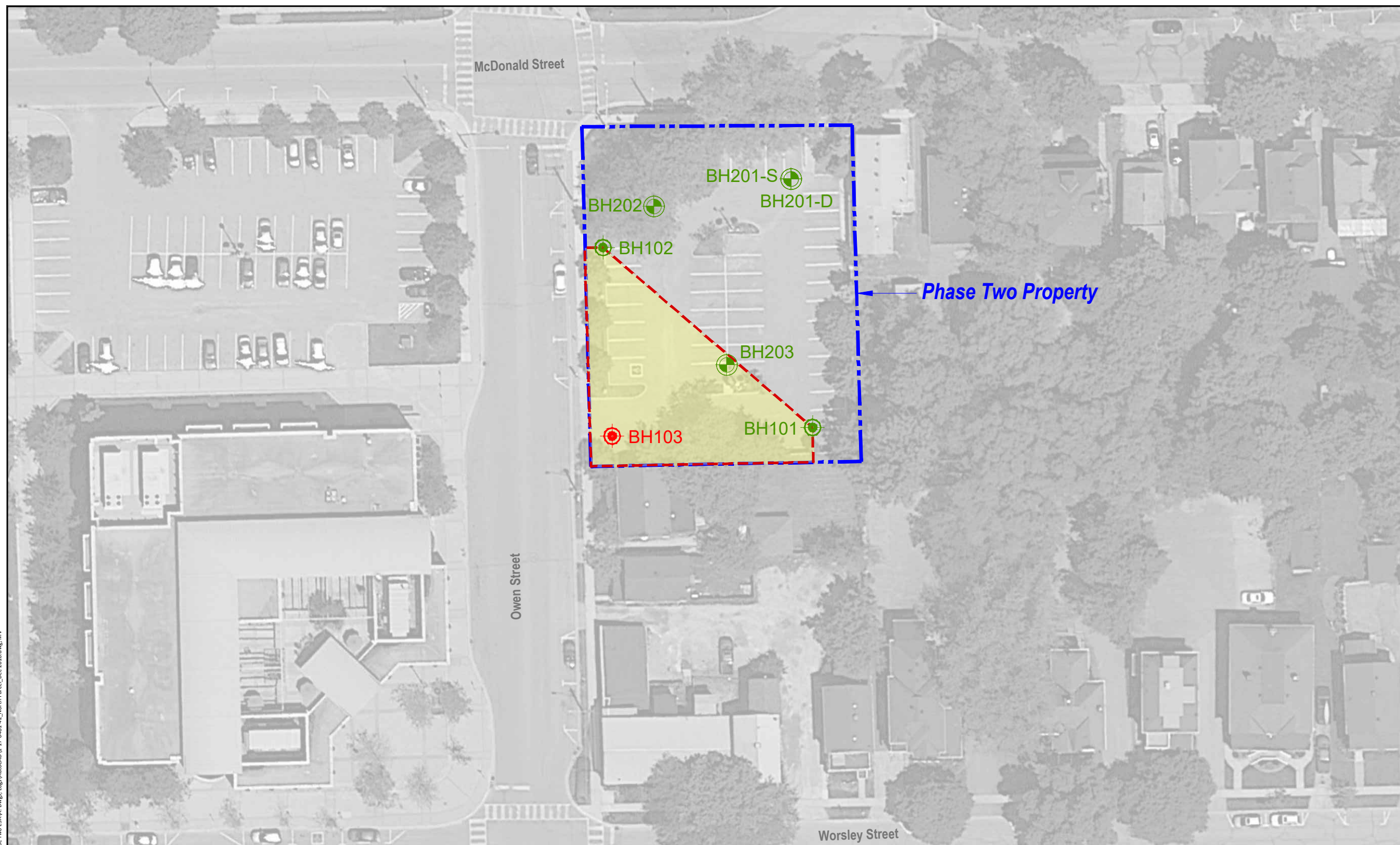
MB

Figure No.:

12

Date:

December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S	
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																									
Barium	µg/L	1000	210	357	1330*	151	151	151	517	439	222	251	1630	1640	1740	145	1650	1730	1710	250	300	301	319	305	293

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																		
Barium	µg/L	1000	22	19	42	243	210	130	203	286	298	62	143	101	180	526	539	

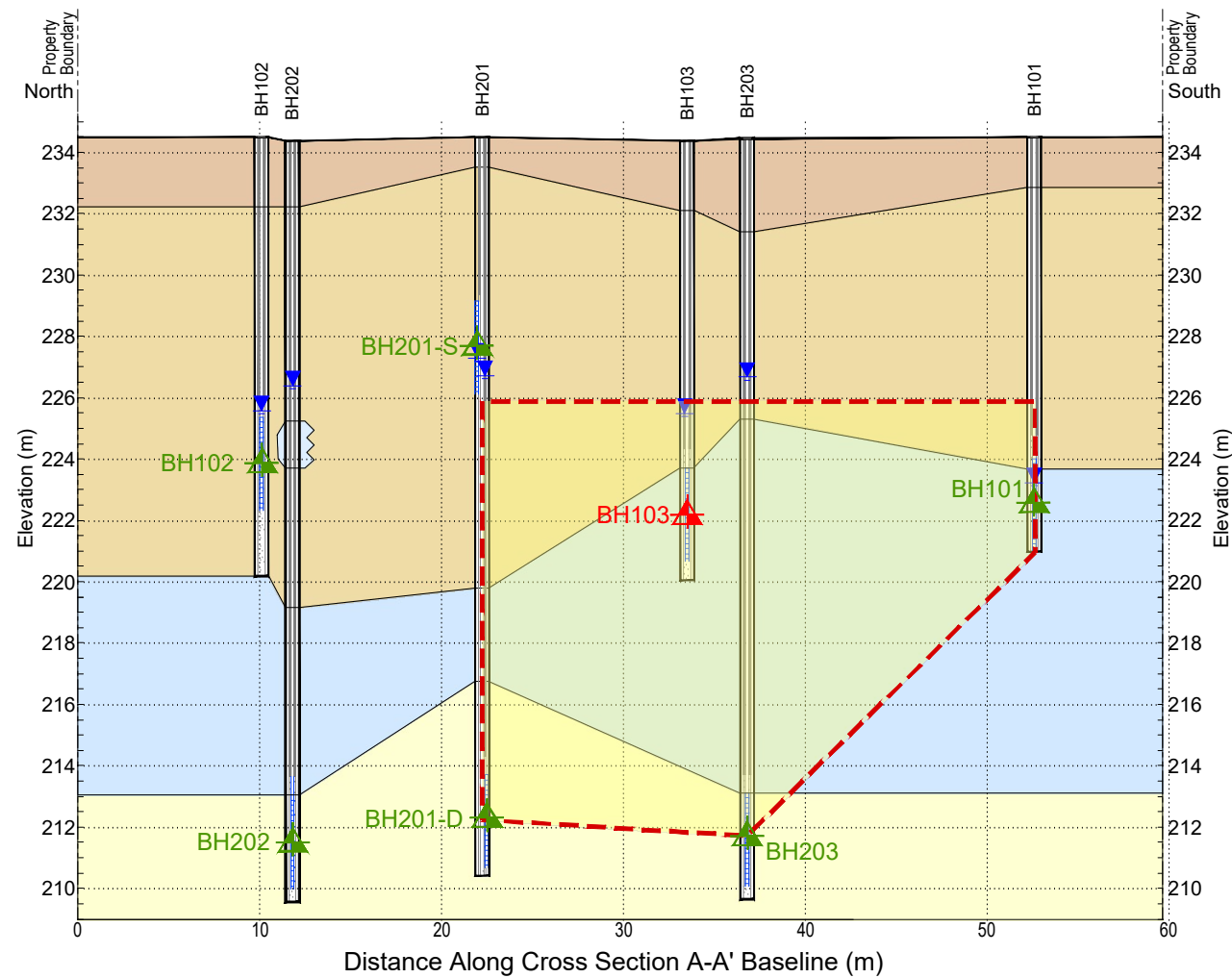
Reference:

- Notes:**
- 145 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 1630 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
**METAL EXCEEDANCES IN GROUND WATER
 CROSS SECTION A-A'**
Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:
13
Date:

December 2018

Z:\Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg, MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Barium	µg/L	1000	210	357	1330*	151	151	151	517	439	222	251	1630	1640	1740	145	1650	1730	1710	250	300	301	319	305	293	

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																		
Barium	µg/L	1000	22	19	42	243	210	130	203	286	298	62	143	101	180	526	539	

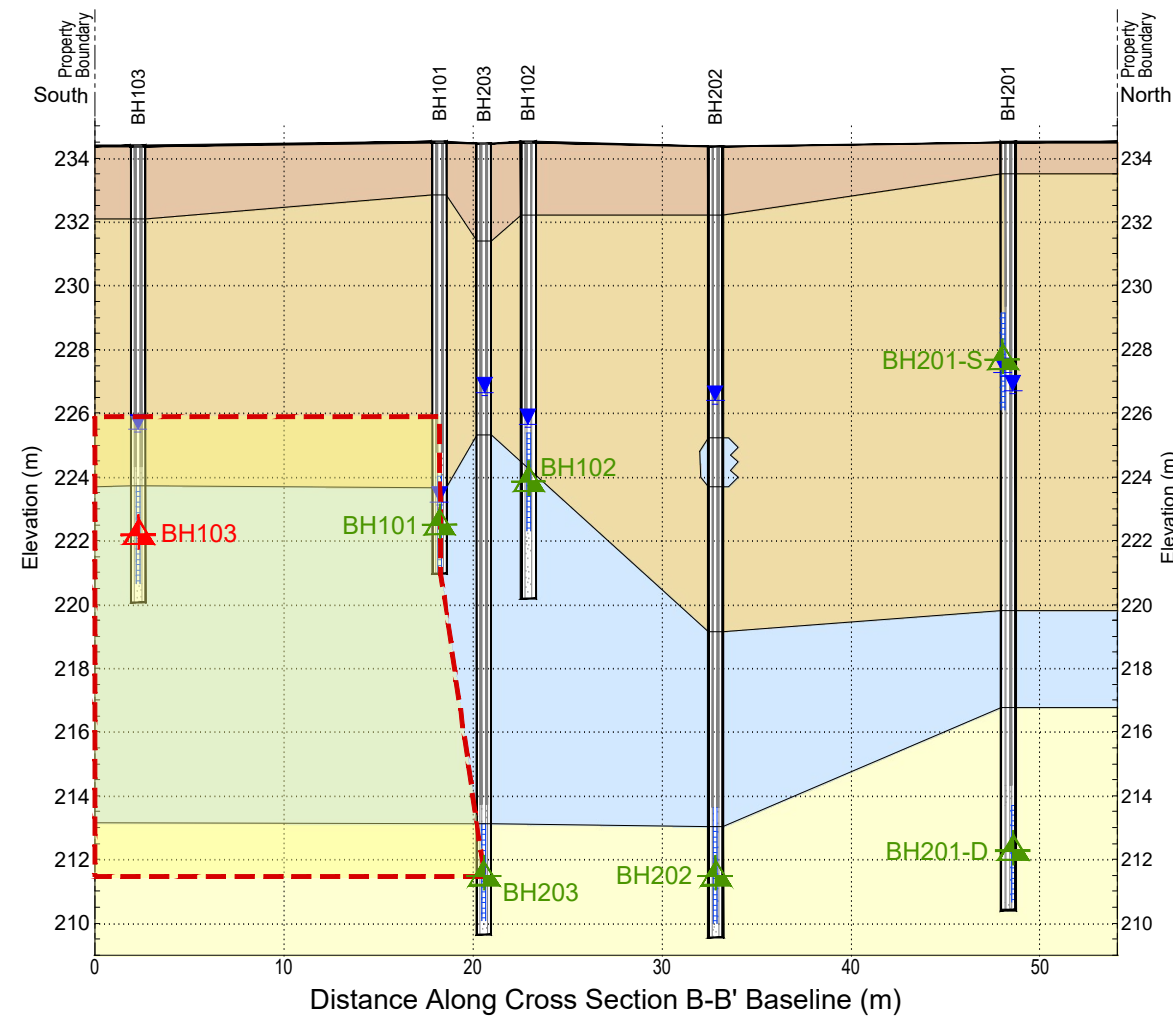
Reference:

- Notes:
- 145 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 1630 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
METAL EXCEEDANCES IN GROUND WATER
CROSS SECTION B-B'

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown


Reviewed By: MB

Date: December 2018
Figure No.: 14

Z:\L-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\2 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg.MV







Sample Name		MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18
Elev of Sample (masl)	Units		224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Barium	µg/L	1000	210	357	1330*	151	151	151	517	439	222	251	251	1630	1640	1740	145	1650	1730	1710	250	300	301	319	305	293

Sample Name		MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19			
Elev of Sample (masl)	Units		213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																					
Barium	µg/L	1000	22	19	42	243	210	130	203	286	298	62	143	101	180	526	539				

Reference:
 Google Earth 2017

Notes:
 1. 111,000 = Parameter Result Meets 2011 T2 Standard, Coarse
 2. 2,670,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

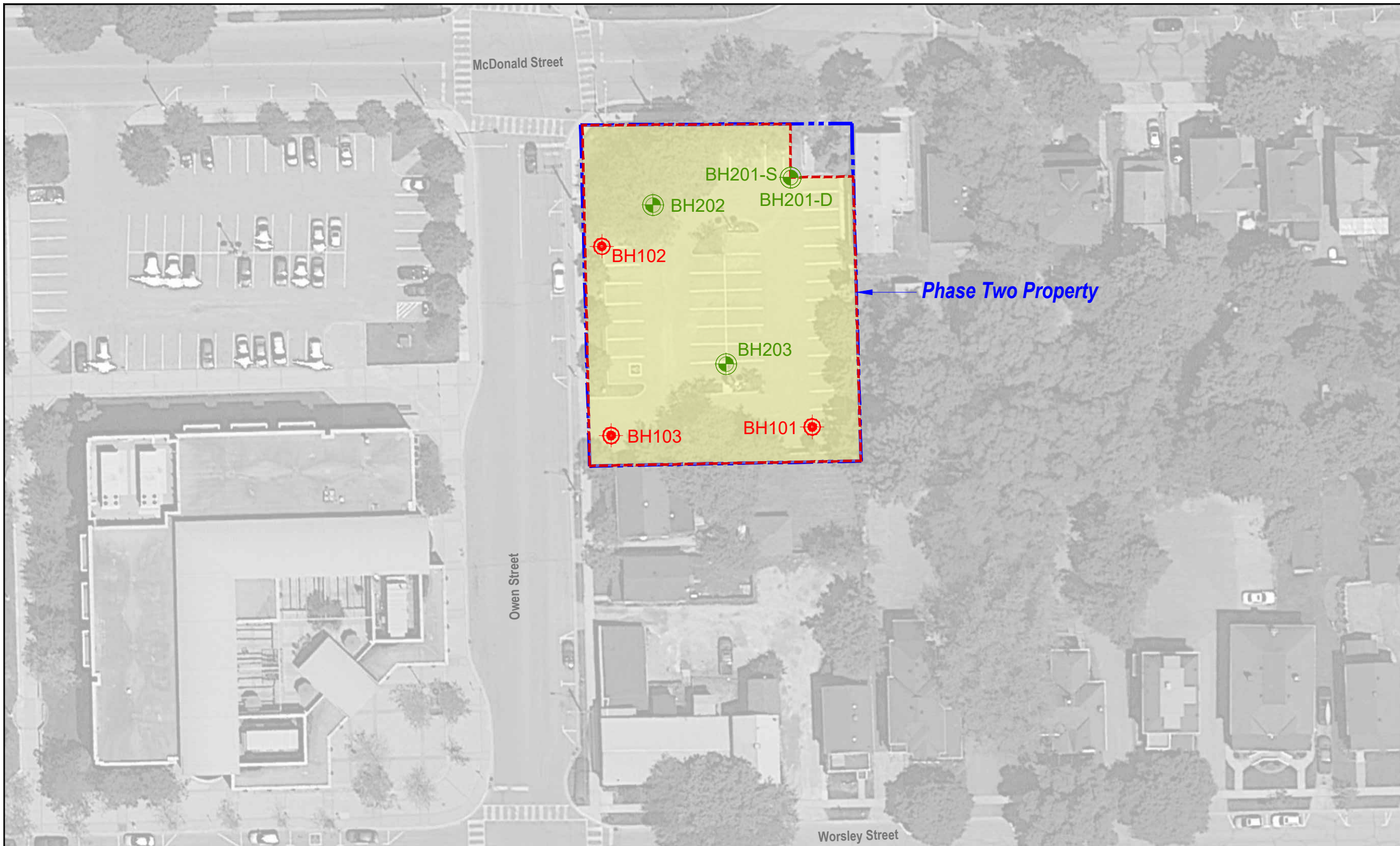
- Legend:
-  Approximate Phase Two Property Boundary
 -  Approximate Borehole Location with Monitoring Well (August 2017)
 -  Approximate Borehole Location with Monitoring Well (October 2017)
 -  Approximate Extent of Contaminant Impact
 -  Sample in Borehole Meets Standard
 -  Sample in Borehole Exceeds Standard

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:
 CHLORIDE EXCEEDANCES IN GROUND WATER
 PLAN VIEW

Designed By: SM	File No.:
Drawn By: MV	Scale: As Shown
Reviewed By: MB	Figure No.:
Date: December 2018	15



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18		
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																											
Chloride	ug/L	790000	122000	110000	2930000*	107000	108000	104000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000	3510000	3800000	3320000	617000	559000	583000	590000	541000	452000		

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH202	BH203	DUP (BH101)	
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																		
Chloride	ug/L	790000	31500	31400	113000	538000	92800	740000	132000	137000	109000	5200	26200	173000	150000	3630000	3630000	

Z:\L-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\62 - Phase Two ESAA - Dwg - Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg, MV

Reference:

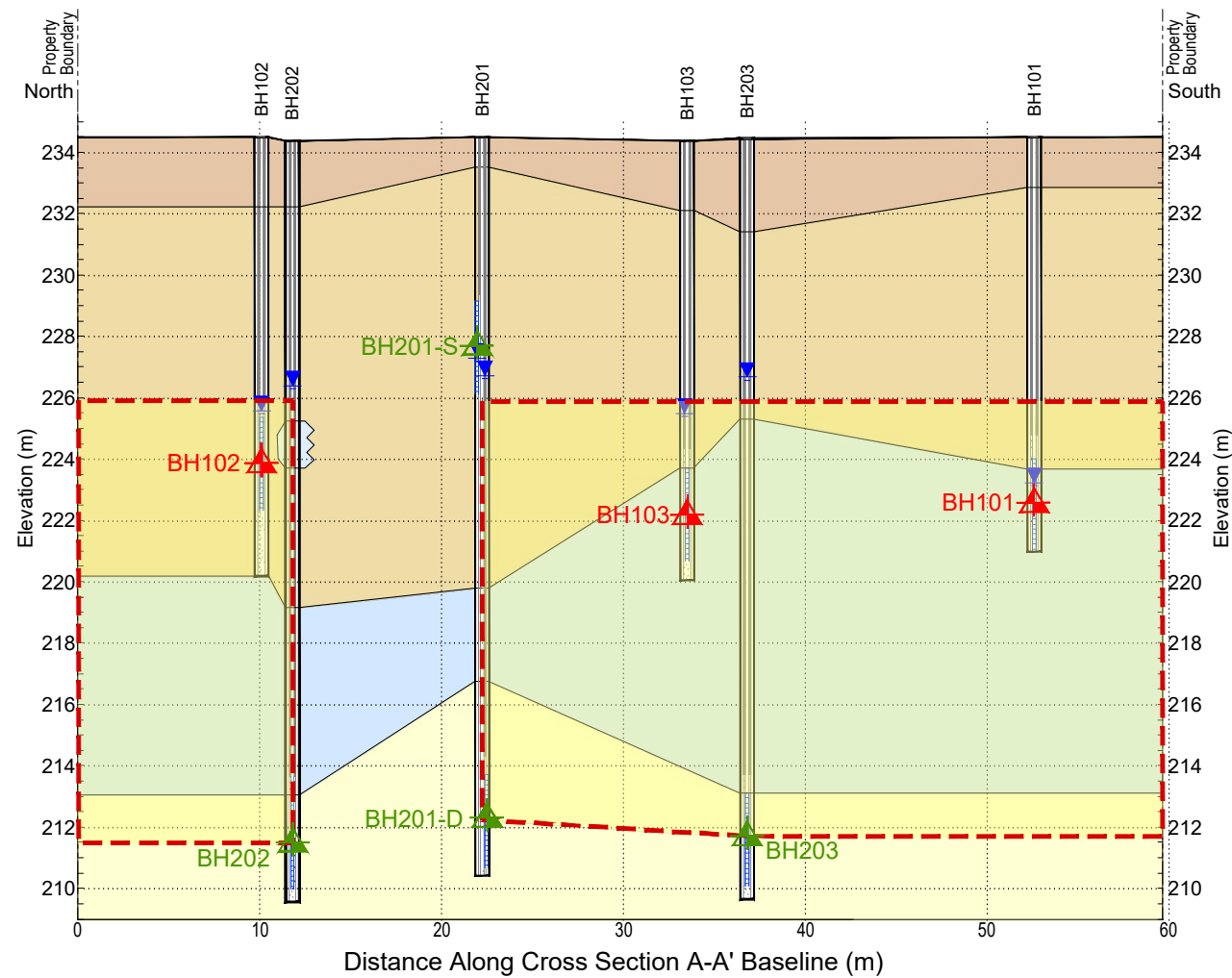
Notes:

- 111,000 = Parameter Result Meets 2011 T2 Standard, Coarse
- 2,670,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Z:\I-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-02 - North Parcel - Dec 2018.dwg, MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Chloride	ug/L	790000	122000	110000	2930000*	107000	108000	104000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000	3510000	3800000	3320000	617000	559000	583000	590000	541000	452000	

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																	
Chloride	ug/L	790000	31500	31400	113000	538000	92800	740000	132000	137000	109000	5200	26200	173000	150000	3630000	3630000

Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 CHLORIDE EXCEEDANCES IN GROUND WATER
 CROSS SECTION A-A'

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

16

Date:

December 2018

Reference:

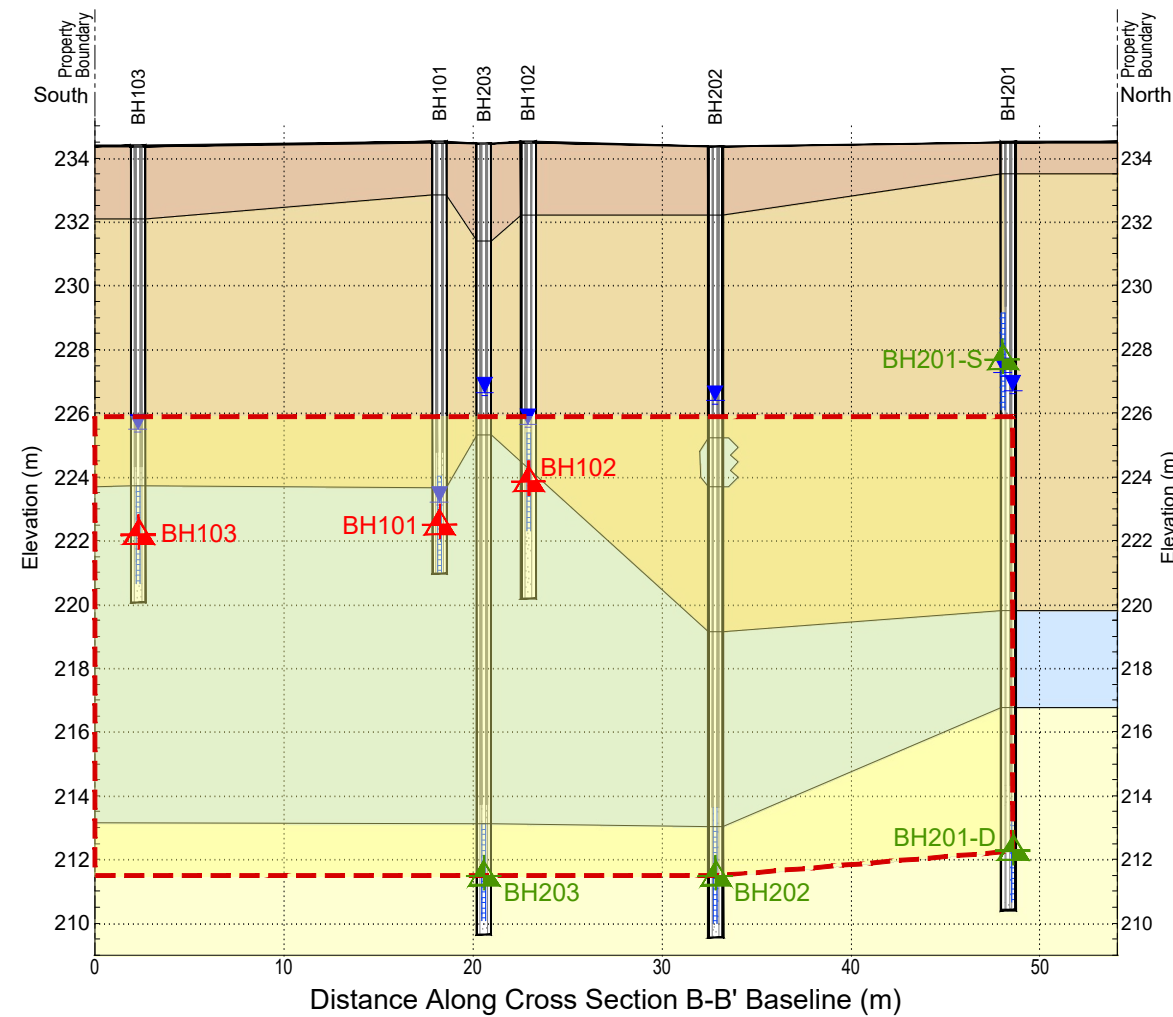
Notes:

- 111,000 = Parameter Result Meets 2011 T2 Standard, Coarse
- 2,670,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Z:\I-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-02 - North Parcel - Dec 2018.dwg.MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Chloride	ug/L	790000	122000	110000	2930000*	107000	108000	104000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000	3510000	3800000	3320000	617000	559000	583000	590000	541000	452000	

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19		
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																			
Chloride	ug/L	790000	31500	31400	113000	538000	92800	740000	132000	137000	109000	5200	26200	173000	150000	3630000	3630000		

Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 CHLORIDE EXCEEDANCES IN GROUND WATER
 CROSS SECTION B-B'

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

17

Date:

December 2018



Reference:

Google Earth 2017

Notes:

- 53,300 = Parameter Result Meets 2011 T2 Standard, Coarse
- 542,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Approximate Phase Two Property Boundary
- ⊙ Approximate Borehole Location with Monitoring Well (August 2017)
- ⊙ Approximate Borehole Location with Monitoring Well (October 2017)
- Approximate Extent of Contaminant Impact
- ⊕ Sample in Borehole Meets Standard
- ⊖ Sample in Borehole Exceeds Standard

Project Title:

Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

SODIUM EXCEEDANCES IN GROUND WATER
 PLAN VIEW

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

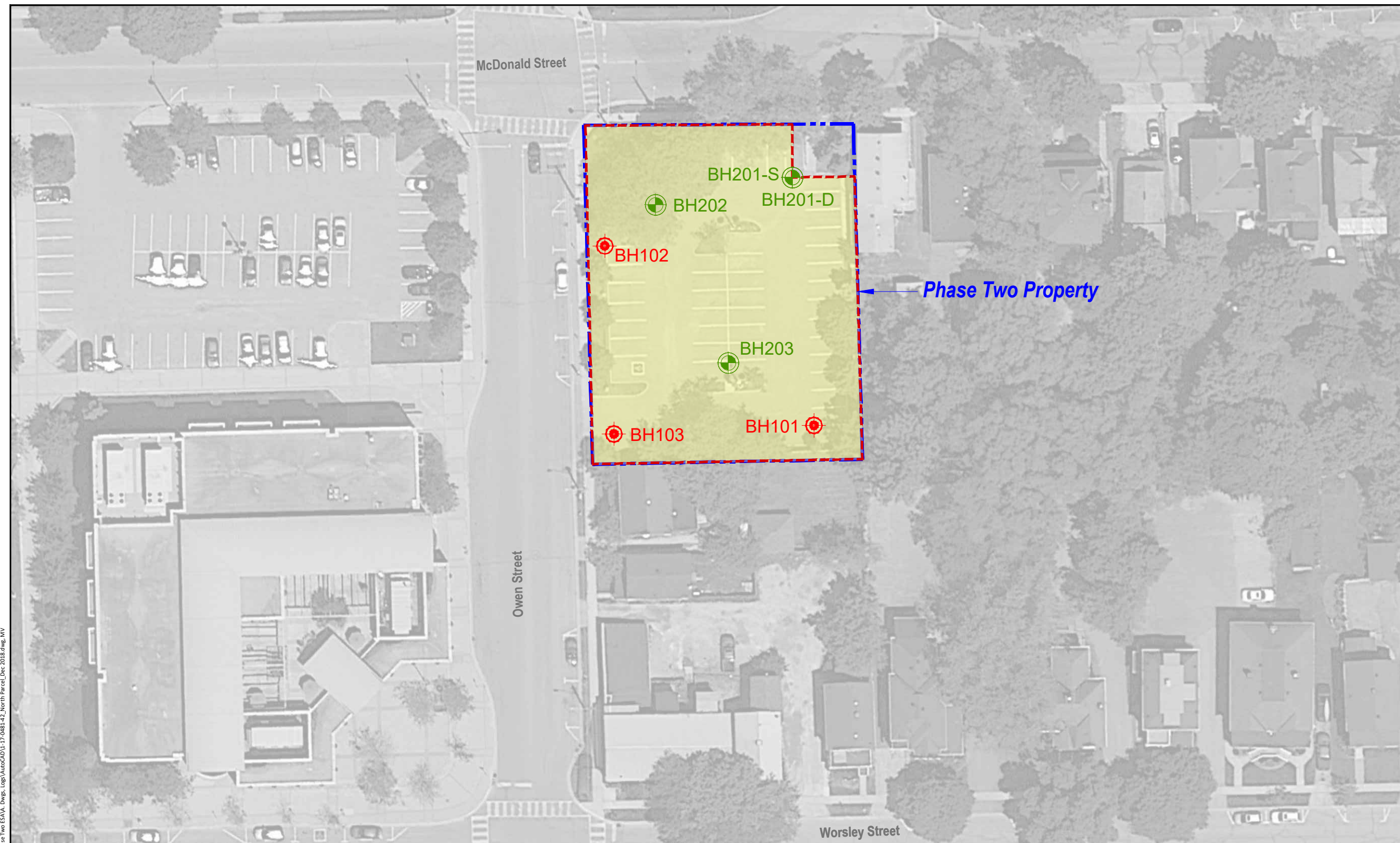
MB

Figure No.:

18

Date:

December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18		
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	
Parameter																											
Sodium	µg/L	490000	61500	172000	660000*	49200	48800	51600	1080000	1450000	287000	1690000	542000	543000	857000	53300	757000	946000	946000	288000	302000	306000	290000	290000	226000		

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19	
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221	
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6	
Parameter																		
Sodium	µg/L	490000	23500	23200	70100	214000	31900	419000	29200	17600	11400	40800	61600	110000	55300	1720000	1640000	

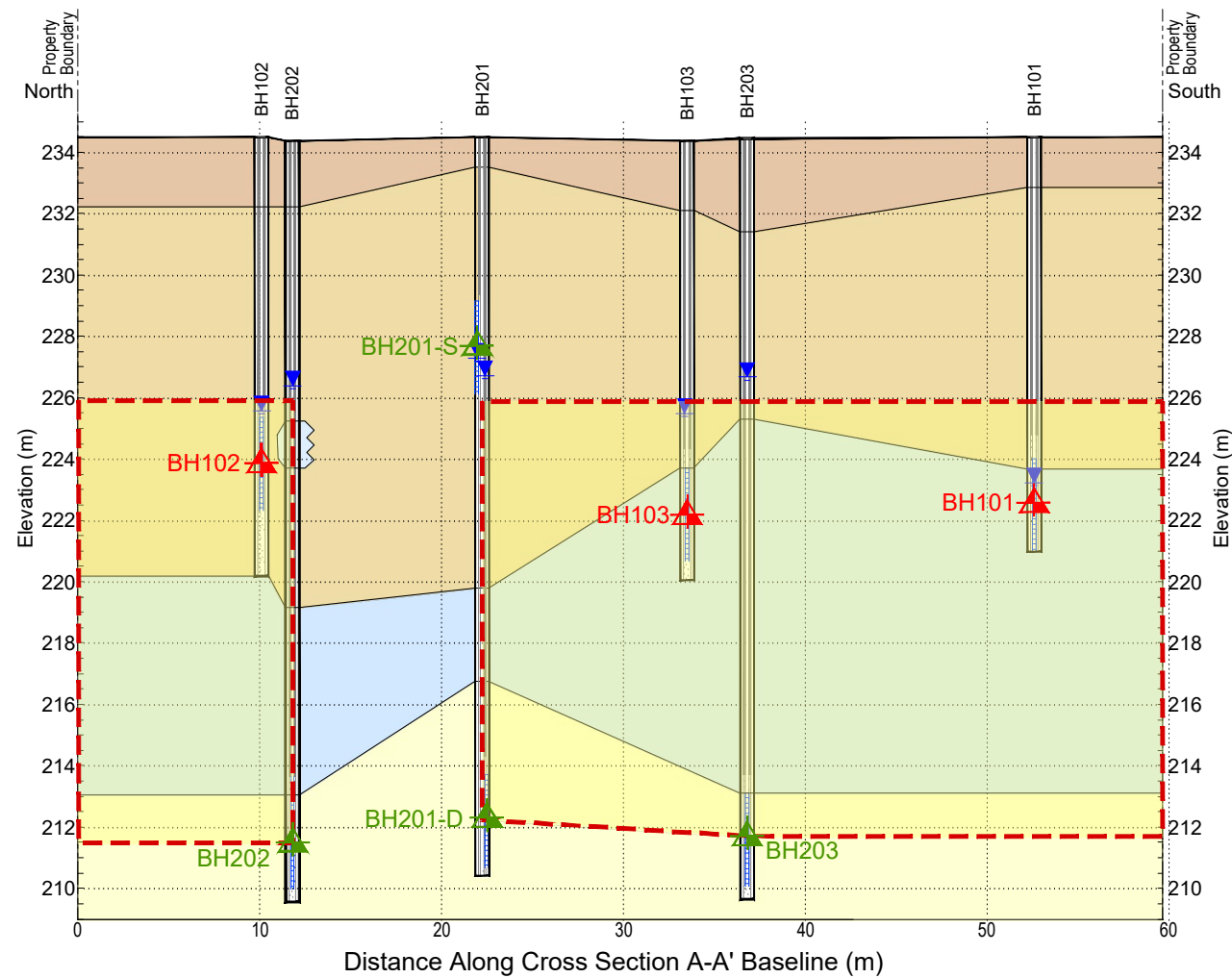
Reference:

- Notes:**
- 53,300 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 542,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Z:\L-Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\2 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg, MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																									
Sodium	µg/L	490000	61500	172000	660000*	49200	48800	51600	1080000	1450000	287000	1690000	542000	543000	857000	53300	757000	946000	946000	288000	302000	306000	290000	290000	226000

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																	
Sodium	µg/L	490000	23500	23200	70100	214000	31900	419000	29200	17600	11400	40800	61600	110000	55300	1720000	1640000

Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
SODIUM EXCEEDANCES IN GROUND WATER
CROSS SECTION A-A'

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB
Figure No.: 19

Date: December 2018

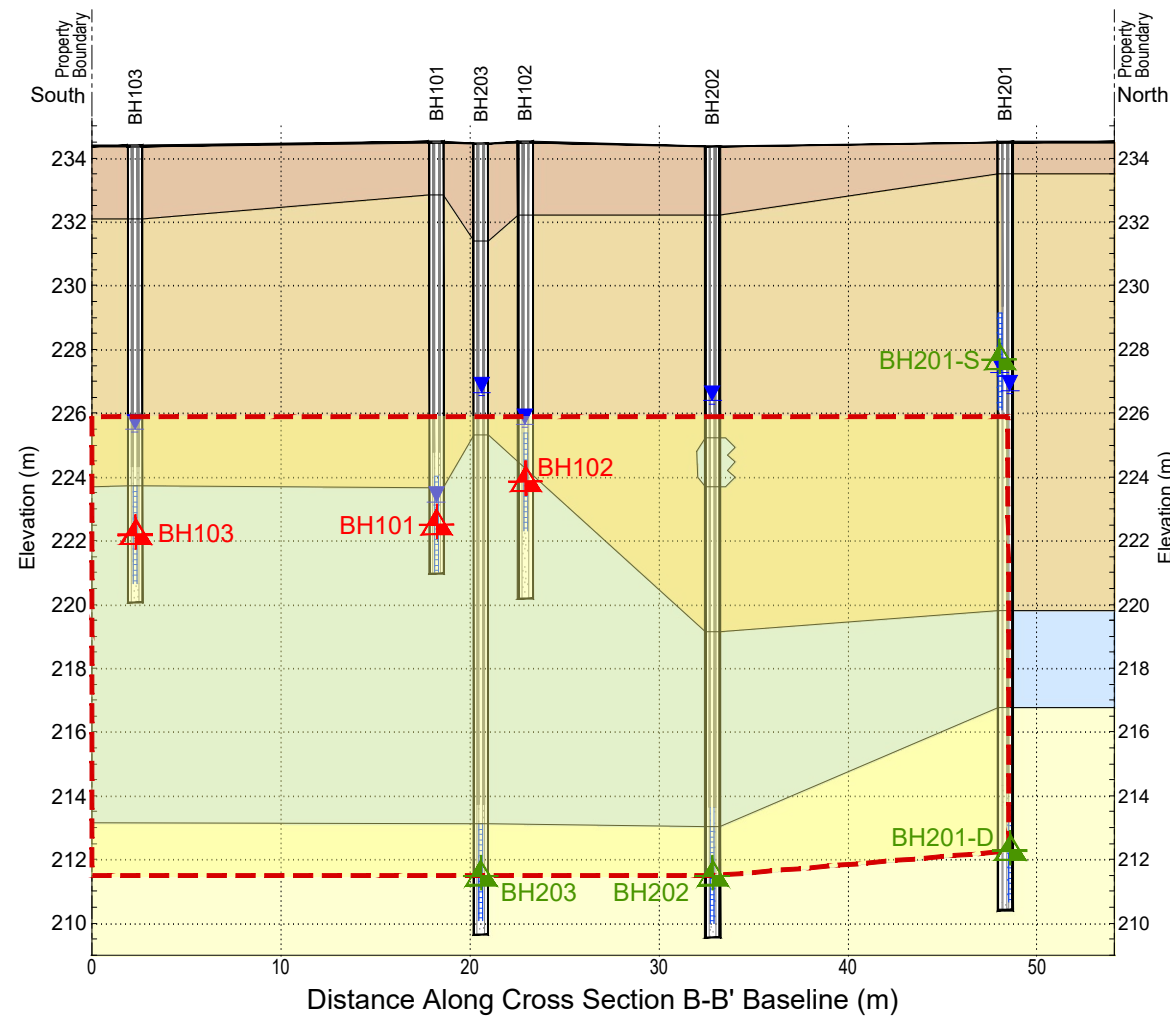
Reference:

- Notes:**
-
1. 53,300 = Parameter Result Meets 2011 T2 Standard, Coarse
-
2. 542,000 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

 SODIUM EXCEEDANCES IN GROUND WATER
 CROSS SECTION B-B'

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

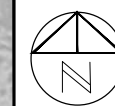
Figure No.:
20
Date:

December 2018

Z:\Project Files\2017\17-0481 - NE Worsley & Owen Streets, Barrie\2 - Phase Two ESAA - Dwg. Logs\AutoCAD\17-0481-42 - North Parcel - Dec 2018.dwg.MV

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH102	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-S
Date			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	19-Dec-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.14	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	
Parameter																										
Sodium	µg/L	490000	61500	172000	660000*	49200	48800	51600	1080000	1450000	287000	1690000	542000	543000	857000	53300	757000	946000	946000	288000	302000	306000	290000	290000	226000	

Sample Name	Units	MOECC T2 RPI CT	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH101	DUP (BH101)
Date			8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	10-Apr-19	10-Apr-19
Elev of Sample (masl)			213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.0-210	213.0-210	213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	224.0-221	224.0-221
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	10.5-13.6	10.5-13.6
Parameter																	
Sodium	µg/L	490000	23500	23200	70100	214000	31900	419000	29200	17600	11400	40800	61600	110000	55300	1720000	1640000



Reference:
 Google Earth 2017

Notes:
 1. 1.1 = Parameter Result Meets 2011 T2 Standard, Coarse
 2. 14.1 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

- Legend:
- Approximate Phase Two Property Boundary
 - Approximate Borehole Location with Monitoring Well (August 2017)
 - Approximate Borehole Location with Monitoring Well (October 2017)
 - Approximate Extent of Contaminant Impact
 - Sample in Borehole Meets Standard
 - Sample in Borehole Exceeds Standard

Project Title:
 Phase Two Environmental Site Assessment

Site Location:
 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

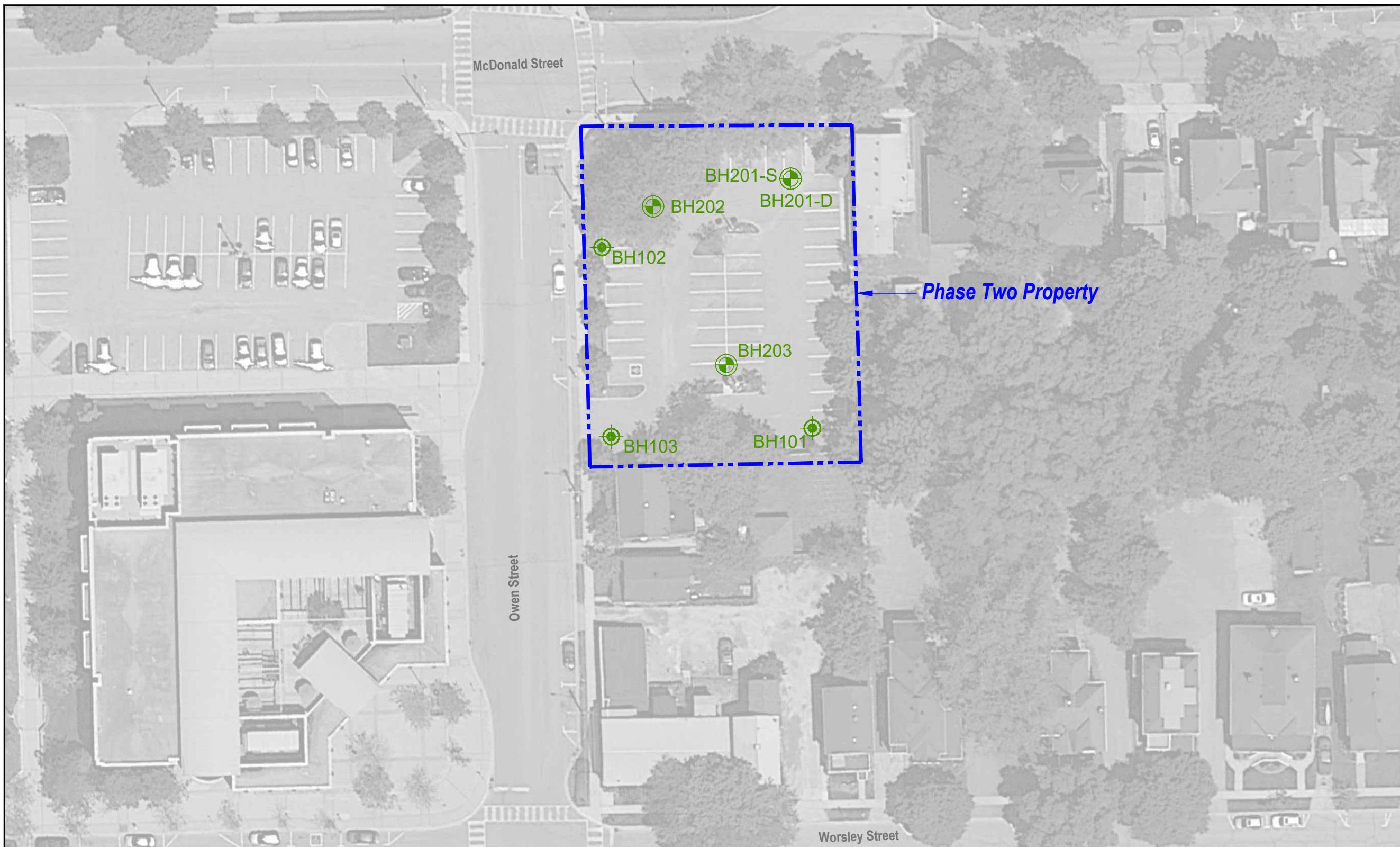
Figure Title:
 SCS VOC EXCEEDANCES IN GROUND WATER
 PLAN VIEW (Historical)

Designed By: SM
 File No.: 1-17-0481-42

Drawn By: MV
 Scale: As Shown

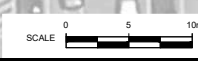
Reviewed By: MB
 Figure No.: 21A

Date: December 2018



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	19-Sep-18	19-Sep-18	19-Sep-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																														
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T2 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203	
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter															
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	



Z:\Project Files\2017\1-17-0481 - NE Worsley & Owen Streets, Barrie\02 - Phase Two ESIA.Dwg - Logs\AutoCAD\1-17-0481-42_North Parcel_Dec 2018.dwg, MV

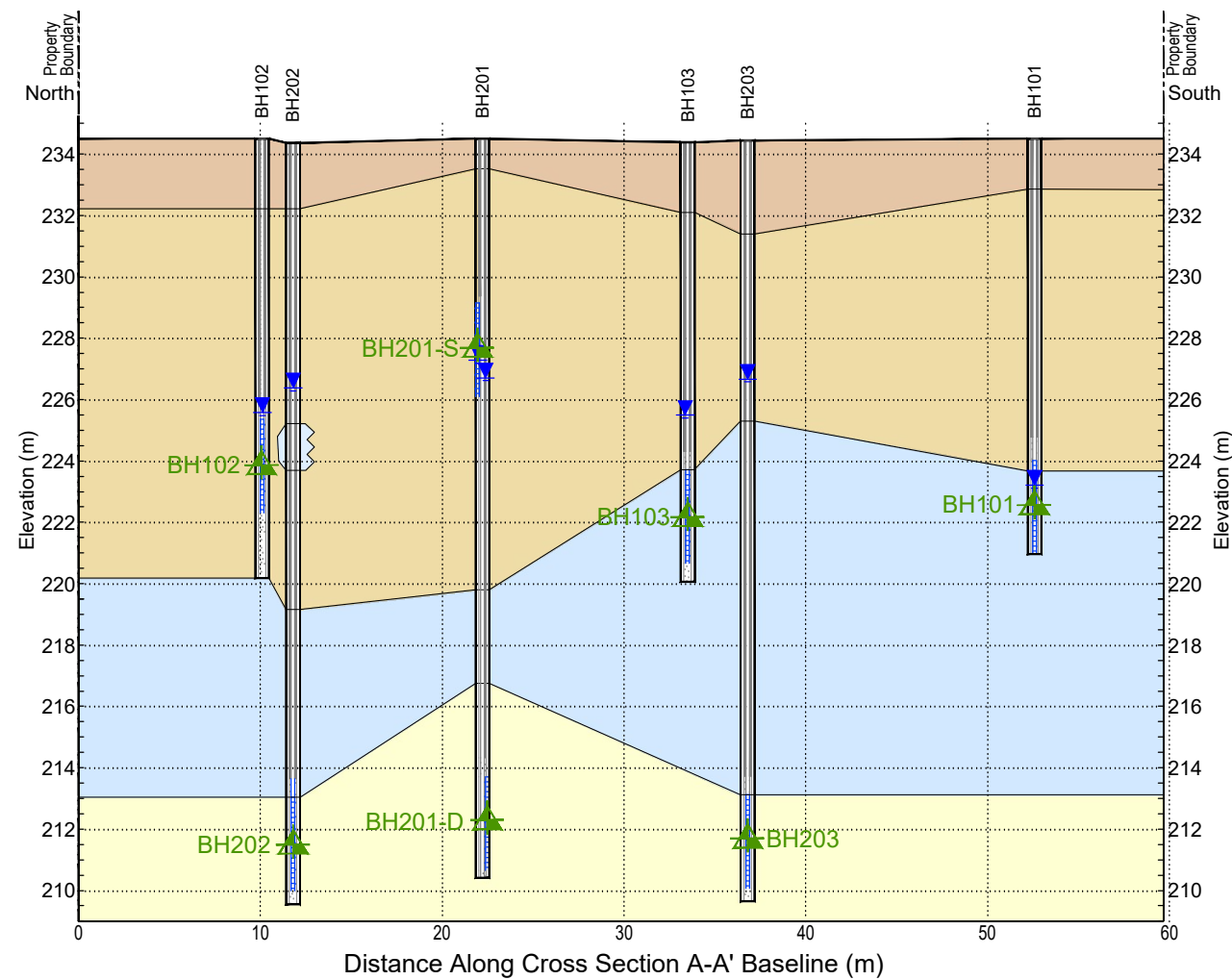
Reference:

- Notes:
- 1.1 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 14.1 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
SCS VOC EXCEEDANCES IN GROUND WATER
CROSS SECTION A-A' (Historical)

Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																											
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50

Sample Name	Units	MOECC T2 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter															
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 22A

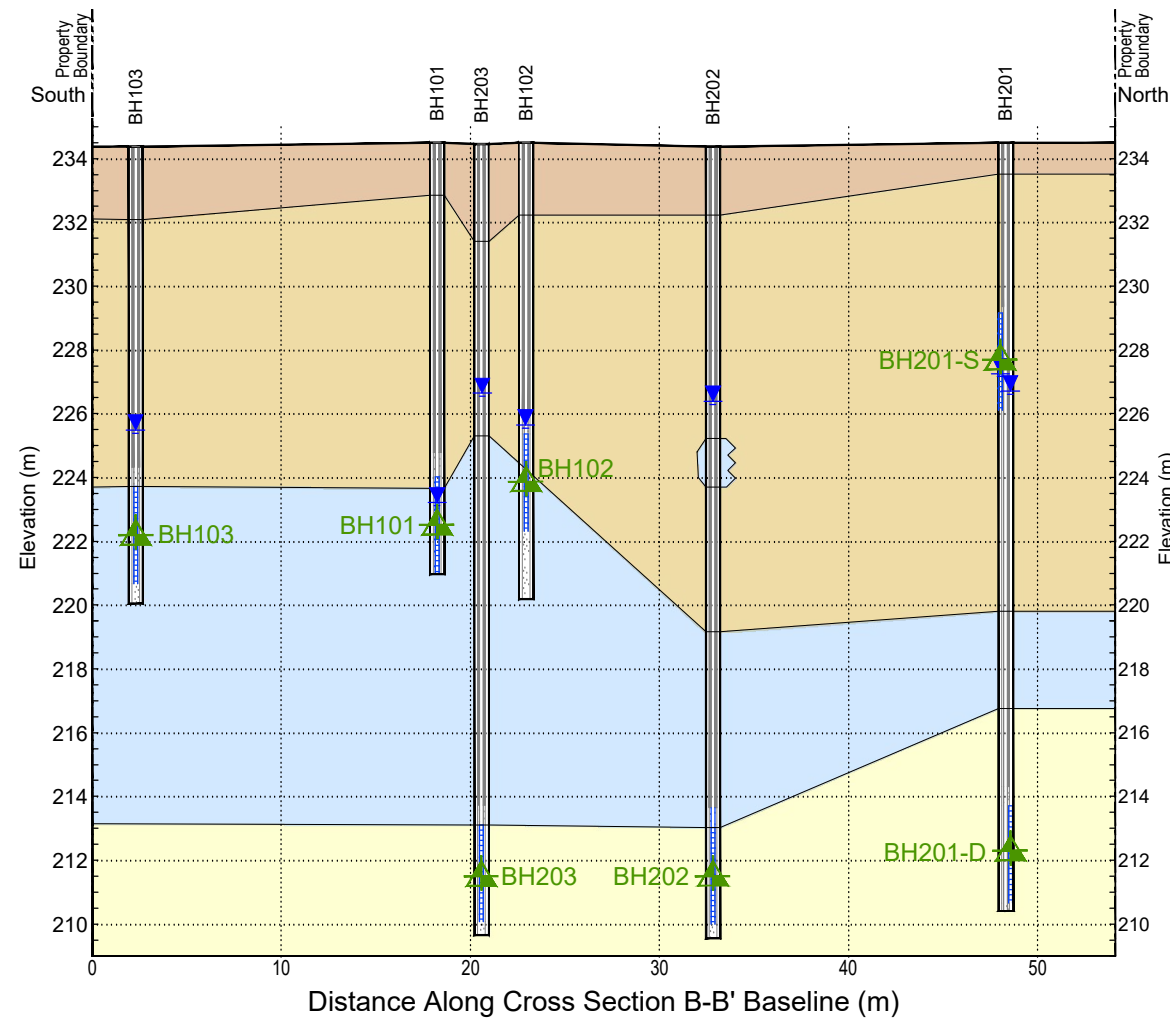
Reference:

- Notes:**
- 1.1 = Parameter Result Meets 2011 T2 Standard, Coarse
 - 14.1 = Parameter Result Exceeds 2011 T2 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard
- Approximate Extent of Contaminant Impact



Sample Name	Units	MOECC T2 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	19-Sep-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																													
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T2 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter															
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
SCS VOC EXCEEDANCES IN GROUND WATER
CROSS SECTION B-B' (Historical)

Designed By: SM
File No.: 1-17-0481-42

Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 23A



Reference:

Google Earth 2017

Notes:

- 1. 1.1 = Parameter Result Meets 2011 T6 Standard, Coarse
- 2. 14.1 = Parameter Result Exceeds 2011 T6 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Approximate Phase Two Property Boundary
- Approximate Borehole Location with Monitoring Well (August 2017)
- Approximate Borehole Location with Monitoring Well (October 2017)
- Sample in Borehole Meets Standard
- Sample in Borehole Exceeds Standard

Project Title:

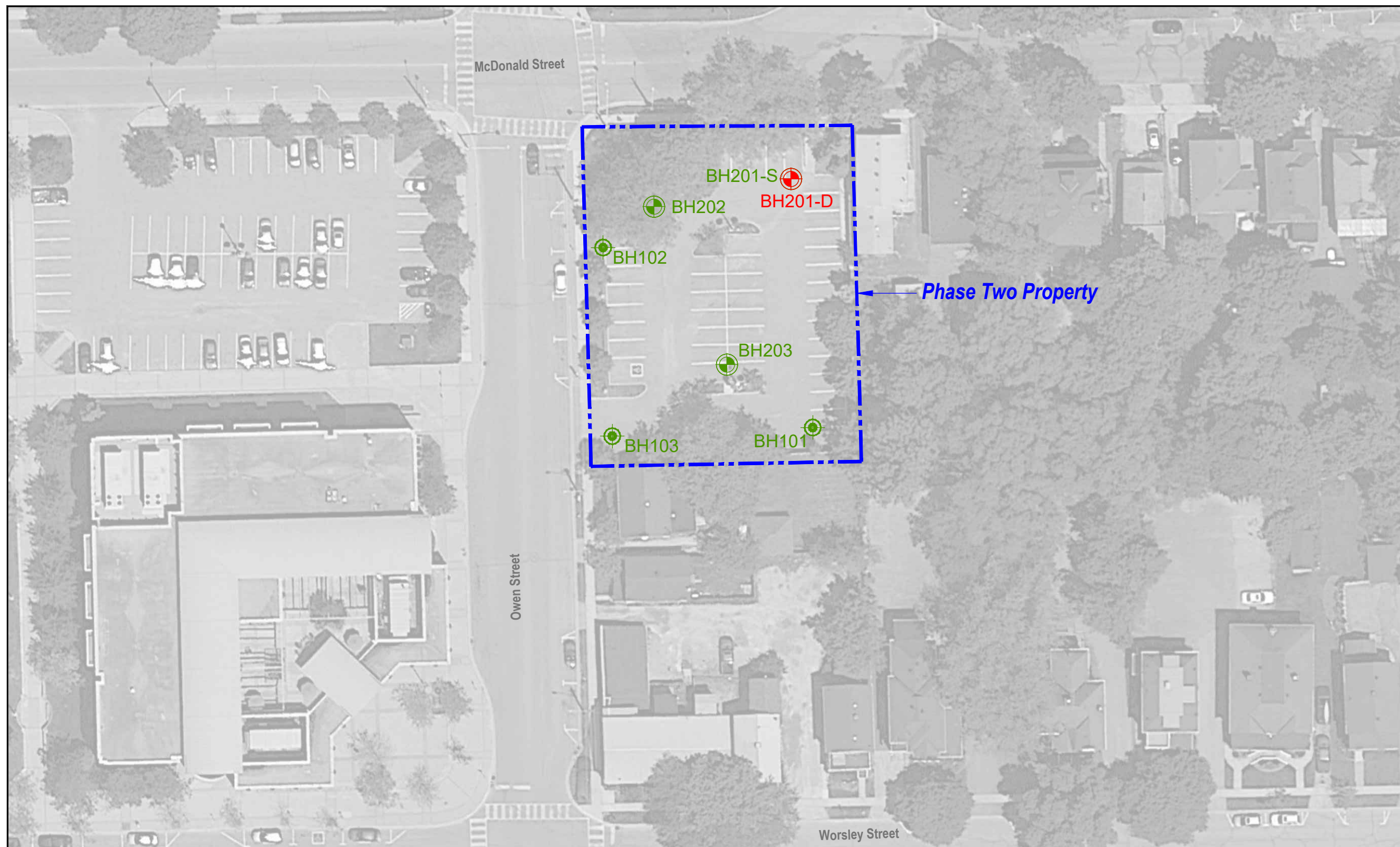
Phase Two Environmental Site Assessment

Site Location:

61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

TABLE 6 VOC EXCEEDANCES IN GROUND WATER PLAN VIEW (Historical)



Sample Name	Units	MOECC T6 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter																												
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T6 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter														
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50



Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:

21B

Date:

December 2018

Reference:

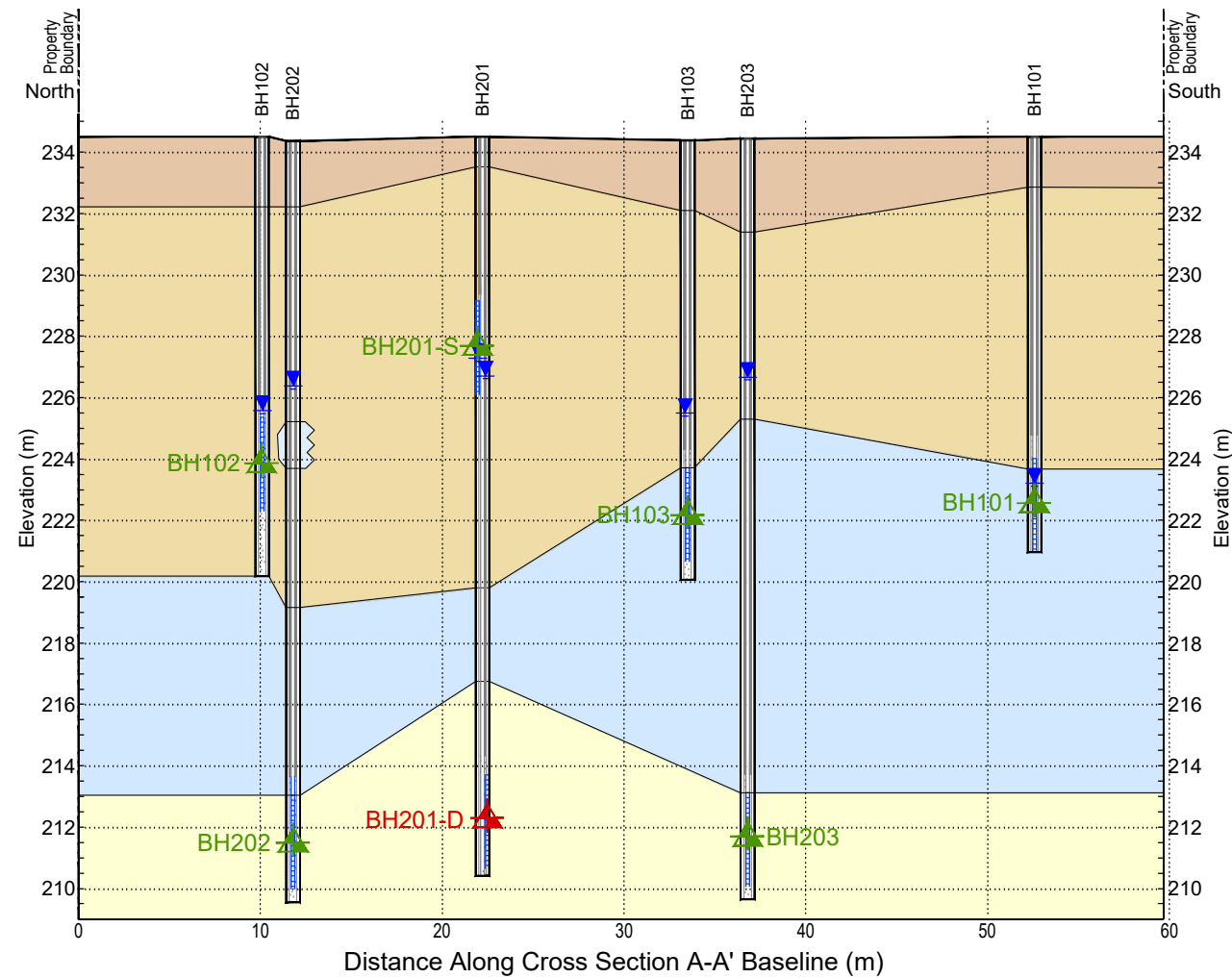
Notes:

1. 1.1 = Parameter Result Meets 2011 T6 Standard, Coarse
2. 14.1 = Parameter Result Exceeds 2011 T6 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard


Project Title:

Phase Two Environmental Site Assessment Update

Site Location:

 61-67 Owen Street &
 55-57 McDonald Street, Barrie, Ontario

Figure Title:

TABLE 6 VOC EXCEEDANCES IN GROUND WATER CROSS SECTION A-A' (Historical)

Sample Name	Units	MOECC T6 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																												
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Sample Name	Units	MOECC T6 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter															
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Designed By:

SM

File No.:

1-17-0481-42

Drawn By:

MV

Scale:

As Shown

Reviewed By:

MB

Figure No.:
22B
Date:

December 2018

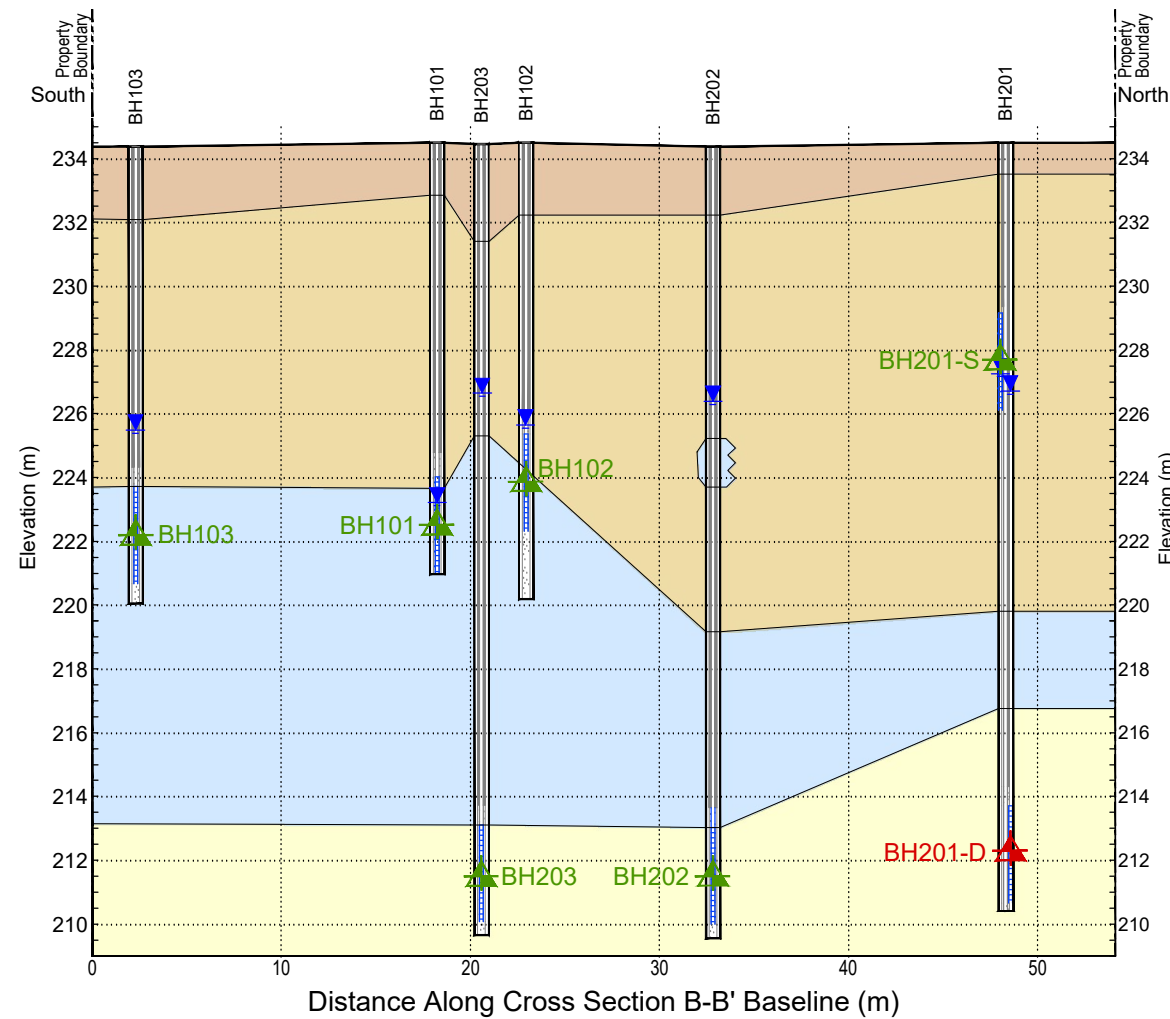
Reference:

- Notes:**
- 1.1 = Parameter Result Meets 2011 T6 Standard, Coarse
 - 14.1 = Parameter Result Exceeds 2011 T6 Standard, Coarse

* Not Considered an Exceedance Due to Additional Sampling Results. Refer to Report for Details.

Legend:

- Fill
- Upper Sands/Silts & Gravel
- Clayey Silt
- Lower Sands
- Monitoring Well Screen
- Average Ground Water Level (masl), January 17, 2018
- Sample Location Meets Standard
- Sample Location Exceeds Standard



Project Title:
Phase Two Environmental Site Assessment Update

Site Location:
61-67 Owen Street &
55-57 McDonald Street, Barrie, Ontario

Figure Title:
TABLE 6 VOC EXCEEDANCES IN GROUND WATER CROSS SECTION B-B' (Historical)

Sample Name	Units	MOECC T6 RPI CT	BH101	BH101	BH101	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)
Date			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	4-Jan-18	17-Jan-18	18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18
Elev of Sample (masl)			224.0-221	224.0-221	224.0-221	225.4-222.3	225.4-222.3	225.4-222.3	223.7-220.7	223.7-220.7	223.7-220.7	223.7-220.7	229-226	229-226	229-226	229-226	229-226	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7	213.7-210.7
Depth (m)			10.5-13.6	10.5-13.6	10.5-13.6	9.1-12.2	9.1-12.2	9.1-12.2	10.7-13.7	10.7-13.7	10.7-13.7	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	6.1-9.1	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4
Parameter																												
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.06 *	1.03	2.56 *	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Sample Name	Units	MOECC T6 RPI CT	BH202	BH202	BH202	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203	DUP1 (BH203)	BH203	BH203
Date			8-Nov-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18	29-Jan-18	18-Jun-18
Elev of Sample (masl)			213.0-210	213.0-210	213.0-210	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1	213.1-210.1
Depth (m)			21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	21.3-24.4	
Parameter														
Trichloroethylene	µg/L	0.5	<0.50	<0.50	<0.50	0.86 *	2.83 *	<0.50 *	2.43 *	<0.50	<0.50	<0.50	<0.50	

Designed By: SM
File No.: 1-17-0481-42

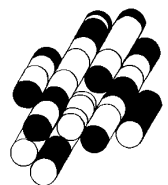
Drawn By: MV
Scale: As Shown

Reviewed By: MB

Date: December 2018
Figure No.: 23B

TABLES

TERRAPROBE INC.



Water Level Measurements
61-67 Owen Street and 55-57 McDonald Street
1-17-0481

Monitoring Well ID	Ground Surface Elevation	Strata Screened	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
			(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)	(mbgs)	(masl)
			8-Aug-17		11-Aug-17		24-Aug-17		7-Sep-17		25-Oct-17		10-Nov-17		7-Dec-17		17-Jan-18		20-Dec-18	
BH101	234.5	Clayey Silt	11.4	223.1	12.8	221.7	9	225.5	11.4	223.1	11.5	223	10.5	224	11.3	223.2	11.3	223.2	11.3	223.2
BH102	234.5	Sand	8.3	226.2	8.6	225.9	8.6	225.9	8.5	226	8.9	225.6	8.8	225.7	8.8	225.7	8.9	225.6	8.8	225.7
BH103	234.4	Clayey Silt	8.6	225.8	8.8	225.6	9	225.4	8.9	225.5	8.5	225.9	8.4	226	8.9	225.5	8.9	225.5	8.7	225.7
BH201-S	235.0	Sand and Gravel	-	-	-	-	-	-	-	-	-	-	-	-	7.5	227.5	7.7	227.3	7.9	227.1
BH201-D	235.0	Sand	-	-	-	-	-	-	-	-	-	-	8.6	226.4	8.1	226.9	8.3	226.7	8.3	226.7
BH202	234.4	Sand	-	-	-	-	-	-	-	-	-	-	8.5	225.9	7.9	226.5	8	226.4	8.3	226.1
BH203	234.5	Sand	-	-	-	-	-	-	-	-	-	-	8.5	226	7.9	226.6	7.9	226.6	8.2	226.3

SOIL AND GROUNDWATER DATA RELIED UPON IN THE RISK ASSESSMENT

REVISED TABLE D15

**GROUND WATER QUALITY ANALYSIS
METALS**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH101
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212854-1	L2212851-1	L2216676-1	L2256179-1
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter											
Barium	µg/L	1000	1	1740	210	357	1330*	151	151	151	526
Beryllium	µg/L	4	1	< 1	<0.10	<0.10	<1.0	<0.10	<0.10	<0.10	<1.0
Boron (total)	µg/L	5000	100	< 100	77	75	<100	74	73	79	<100
Cadmium	µg/L	2.7	0.1	< 0.1	<0.01	0.012	<0.050	<0.010	<0.010	<0.010	<0.050
Chromium Total	µg/L	50	5	17.4	<0.5	<0.05	<5.0	<0.50	<0.50	<0.50	<5.0
Cobalt	µg/L	3.8	1	3.8	0.16	0.39	<1.0	<0.10	<0.10	<0.10	3.2
Copper	µg/L	87	2	20.9	1.93	0.59	6.00	1.27	1.28	3.26	3
Lead	µg/L	10	0.05	1.03	0.303	0.069	<0.50	0.066	0.067	0.245	<0.50
Molybdenum	µg/L	70	0.05	13.2	8.33	8.24	5.43	3.28	3.11	3	3.31
Nickel	µg/L	100	0.5	7.4	0.72	0.91	<5.0	<0.50	<0.50	0.7	<5.0
Silver	µg/L	1.5	0.05	< 0.5	<0.05	<0.05	<0.50	<0.050	<0.050	<0.050	<0.50
Thallium	µg/L	2	0.01	< 0.1	0.031	<0.01	<0.10	0.013	0.012	0.013	<0.10
Uranium	µg/L	20	0.01	6.09	2.89	3.5	2.45	2.19	2.11	2.02	5.9
Vanadium	µg/L	6.2	0.5	< 5	1.64	1.58	<5.0	1.95	1.95	1.8	<5.0
Zinc	µg/L	1100	1	40	3	1.7	<10	1.8	1.7	3.6	<10

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard
 Result rejected by QP. Refer to Summary Phase One ESA and Summary Phase Two ESA in Revised Appendix D for details

REVISED TABLE D15

**GROUND WATER QUALITY ANALYSIS
METALS**

Sample Name	Units	MOECC	RDL	DUP (BH101)	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103
Lab ID #		Table 2		L2256179-2	L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3
Date		2011 Criteria		10-Apr-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17
Elev of Sample (masl)				224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66
Parameter		RPI CT									
Barium	µg/L	1000	1	539	517	439	222	251	1630*	1640*	1740
Beryllium	µg/L	4	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (total)	µg/L	5000	100	<100	<100	<100	<100	<100	<100	<100	<100
Cadmium	µg/L	2.7	0.1	<0.050	<0.1	0.064	<0.050	<0.050	<0.10	<0.1	<0.05
Chromium Total	µg/L	50	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cobalt	µg/L	3.8	1	2.8	2.70	3.8	1.0	3.8	1.40	1.30	1.6
Copper	µg/L	87	2	3.1	<2.0	<2.0	<2.0	<2.0	3.10	2.80	<2.0
Lead	µg/L	10	0.05	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50
Molybdenum	µg/L	70	0.05	3.39	6.15	6.18	2.34	2.64	5.85	5.81	13.20
Nickel	µg/L	100	0.5	<5.0	<5.0	7.40	<5.0	6.9	<5.0	<5.0	<5.0
Silver	µg/L	1.5	0.05	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Thallium	µg/L	2	0.01	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Uranium	µg/L	20	0.01	6.09	2.13	3.35	2.86	4.29	2.85	2.86	3.23
Vanadium	µg/L	6.2	0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Zinc	µg/L	1100	1	<10	<10	40.0	<10	<10	<10	<10	<10

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard
Result rejected by QP. Refer to Summary
Two ESA in Revised Appendix D for details

REVISED TABLE D15

GROUND WATER QUALITY ANALYSIS
METALS

Sample Name	Units	MOECC	RDL	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S
Lab ID #		Table 2		L2046388-3	L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6
Date		2011 Criteria		17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)				223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter		RPI CT									
Barium	µg/L	1000	1	145	1650	1730	1710	250	300	301	319
Beryllium	µg/L	4	1	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (total)	µg/L	5000	100	71	<100	<100	<100	<100	<100	<100	<100
Cadmium	µg/L	2.7	0.1	<0.010	<0.050	<0.050	<0.050	<0.10	<0.05	<0.05	<0.050
Chromium Total	µg/L	50	5	<0.50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cobalt	µg/L	3.8	1	0.1	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0
Copper	µg/L	87	2	1.4	2.2	20.6	20.9	2.2	<2.0	<2.0	2.40
Lead	µg/L	10	0.05	0.061	<0.50	1.03	1.01	<0.50	<0.50	<0.50	<0.50
Molybdenum	µg/L	70	0.05	5.31	4.19	4.93	4.57	1.61	1.06	0.86	<0.50
Nickel	µg/L	100	0.5	0.61	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver	µg/L	1.5	0.05	<0.050	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Thallium	µg/L	2	0.01	0.013	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Uranium	µg/L	20	0.01	3.4	2.38	1.77	1.71	0.85	0.66	0.68	0.59
Vanadium	µg/L	6.2	0.5	1.64	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Zinc	µg/L	1100	1	2.2	<10	10	<10	<10	<10	<10	<10

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard
Result rejected by QP. Refer to Summary
Two ESA in Revised Appendix D for details

REVISED TABLE D15

GROUND WATER QUALITY ANALYSIS
METALS

Sample Name	Units	MOECC	RDL	DUP2 (BH201-S)	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202
Lab ID #		Table 2		L2046388-13	L2212837-2	L2020783	L2020783	L2033776-5	L2212837-3	L2046388-7	L2020783
Date		2011 Criteria		17-Jan-18	19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	19-Dec-18	17-Jan-18	8-Nov-17
Elev of Sample (masl)				228.95-225.9	228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99
Parameter		RPI CT									
Barium	µg/L	1000	1	305	293	22	18.9	41.6	210	243	130
Beryllium	µg/L	4	1	<1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0
Boron (total)	µg/L	5000	100	<100	38	23	22	21	<10	27	<100
Cadmium	µg/L	2.7	0.1	<0.050	<0.010	0.013	<0.01	0.013	<0.010	<0.010	<0.10
Chromium Total	µg/L	50	5	<5.0	1.28	<0.50	<0.50	<0.50	<0.50	0.8	17.4
Cobalt	µg/L	3.8	1	<1.0	0.13	0.10	<0.10	<0.10	<0.10	0.23	<1.0
Copper	µg/L	87	2	<2.0	0.95	3.10	1.75	1.5	0.27	0.92	6.9
Lead	µg/L	10	0.05	<0.50	0.27	0.128	<0.05	<0.05	<0.050	0.099	0.55
Molybdenum	µg/L	70	0.05	<0.50	0.235	3.05	2.96	3.65	0.808	0.51	12.5
Nickel	µg/L	100	0.5	<5.0	0.58	1.08	0.94	0.81	<0.50	0.64	<5.0
Silver	µg/L	1.5	0.05	<0.50	<0.050	<0.05	0.19	<0.05	<0.050	<0.050	<0.50
Thallium	µg/L	2	0.01	<0.10	<0.010	<0.01	<0.01	<0.01	<0.010	<0.010	<0.10
Uranium	µg/L	20	0.01	0.61	0.522	0.673	0.644	0.729	1.11	0.646	3.43
Vanadium	µg/L	6.2	0.5	<5.0	1.25	0.92	0.86	1.38	0.76	0.85	6.8*
Zinc	µg/L	1100	1	<10	1.4	3.1	1.7	1.3	<1.0	2.9	<10

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard
Result rejected by QP. Refer to Summary
Two ESA in Revised Appendix D for details

REVISED TABLE D15

**GROUND WATER QUALITY ANALYSIS
METALS**

Sample Name	Units	MOECC	RDL	BH202	BH202	BH202	BH203	BH203	BH203	BH203
Lab ID #		Table 2		L2033776-6	L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Date		2011 Criteria		7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Elev of Sample (masl)		RPI CT		213.03-209.99	213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter										
Barium	µg/L	1000	1	203	286	298	61.5	143	101	180
Beryllium	µg/L	4	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron (total)	µg/L	5000	100	15	<10	<10	34	64	26	11
Cadmium	µg/L	2.7	0.1	<0.01	<0.010	<0.010	<0.01	<0.01	<0.010	<0.010
Chromium Total	µg/L	50	5	0.77	<0.50	<0.50	0.87	<0.50	<0.50	<0.50
Cobalt	µg/L	3.8	1	0.2	0.1	<0.10	0.16	0.27	0.11	<0.10
Copper	µg/L	87	2	0.32	0.8	0.32	1.53	0.55	0.64	0.25
Lead	µg/L	10	0.05	<0.05	0.099	<0.050	<0.05	0.055	<0.050	<0.050
Molybdenum	µg/L	70	0.05	1.60	0.50	0.661	4.06	6.64	3.32	0.828
Nickel	µg/L	100	0.5	0.56	<0.50	<0.50	<0.50	0.75	0.51	<0.50
Silver	µg/L	1.5	0.05	<0.05	<0.050	<0.050	<0.05	<0.05	<0.050	<0.050
Thallium	µg/L	2	0.01	<0.01	<0.010	<0.010	<0.01	<0.01	<0.010	<0.010
Uranium	µg/L	20	0.01	2.54	3.19	3.24	0.521	2.91	1.24	1.56
Vanadium	µg/L	6.2	0.5	1.14	1.0	1.03	1.3	1.29	0.82	<0.50
Zinc	µg/L	1100	1	1.3	2.3	<1.0	2.5	1.1	2.20	<1.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard
Result rejected by QP. Refer to Summary
Two ESA in Revised Appendix D for details

REVISED TABLE D16

**GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	DUP (BH101)	BH101	BH101	BH101
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212851-1	L2212854-1	L2216676-1	L2256179-1
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter											
Antimony	µg/L	6	0.1	< 1	0.45	0.2	<1.0	<0.10	0.1	<0.10	<1.0
Arsenic	µg/L	25	0.1	2.7	1.14	1.01	<1.0	1.08	1.07	1.67	<1.0
Selenium	µg/L	10	0.05	2.11	1.61	0.781	0.72	0.188	0.218	0.299	0.5

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D16

**GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS**

Sample Name	Units	MOECC	RDL	DUP (BH101)	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103
Lab ID #		Table 2		L2256179-2	L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3
Date		2011 Criteria		10-Apr-19	11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17
Elev of Sample (masl)		RPI CT		224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66
Parameter											
Antimony	µg/L	6	0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/L	25	0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	µg/L	10	0.05	<0.50	<0.50	<0.5	<0.50	<0.50	0.86	0.79	0.97

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D16

**GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS**

Sample Name	Units	MOECC	RDL	BH103	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S
Lab ID #		Table 2		L2046388-3	L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6
Date		2011 Criteria		17-Jan-18	19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT		223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter											
Antimony	µg/L	6	0.1	0.18	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/L	25	0.1	1.04	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	µg/L	10	0.05	0.733	0.7	0.94	0.81	1.66	1.81	1.73	1.63

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D16

**GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS**

Sample Name	Units	MOECC	RDL	DUP2 (BH201-S)	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202
Lab ID #		Table 2		L2046388-13	L2212837-2	L2020783	L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783
Date		2011 Criteria		17-Jan-18	19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17
Elev of Sample (masl)		RPI CT		228.95-225.9	228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99
Parameter											
Antimony	µg/L	6	0.1	<1.0	<0.10	0.21	0.21	0.21	<0.10	<0.10	<1.0
Arsenic	µg/L	25	0.1	<1.0	0.23	0.97	0.95	1.03	0.35	0.31	2.7
Selenium	µg/L	10	0.05	1.86	2.11	0.187	0.19	0.193	1.6	<0.050	0.57

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D16

**GROUND WATER QUALITY ANALYSIS
HYDRIDE METALS**

Sample Name	Units	MOECC	RDL	BH202	BH202	BH202	BH203	BH203	BH203	BH203
Lab ID #		Table 2		L2046388-8	L2033776-6	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Date		2011 Criteria		17-Jan-18	7-Dec-17	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Elev of Sample (masl)		RPI CT		213.03-209.99	213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter										
Antimony	µg/L	6	0.1	<0.10	<0.10	<0.10	<0.10	0.16	<0.10	<0.10
Arsenic	µg/L	25	0.1	0.19	0.37	0.17	1.01	0.76	0.95	0.22
Selenium	µg/L	10	0.05	0.092	0.119	0.087	0.083	0.595	0.097	<0.050

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D17

**GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	DUP (BH101)	BH101	BH101	BH101	DUP (BH101)
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212851-1	L2212854-1	L2216676-1	L2256179-1	L2256179-2
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter												
Chromium VI	µg/L	25	1	20	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	0.69

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D17

**GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103
Lab ID #		Table 2			L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3	L2046388-3
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66
Parameter												
Chromium VI	µg/L	25	1	20	<1.0	<1.0	1	<0.50	<1.0	<1.0	<1.0	0.12

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D17

**GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)
Lab ID #		Table 2			L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13
Date		2011 Criteria			19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter												
Chromium VI	µg/L	25	1	20	<0.50	<0.010	<0.010	<1.0	<1.0	<1.0	<1.0	<1.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D17

**GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202
		Table 2			L2212837-2	L2020783	L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783	L2033776-6
Lab ID #		2011 Criteria			19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17
Date					228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99
Elev of Sample (masl)		RPI CT										
Parameter												
Chromium VI	µg/L	25	1	20	1.00	<1.0	<1.0	<1.0	0.23	<0.50	20	<1.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D17

**GROUND WATER QUALITY ANALYSIS
HEXAVALENT CHROMIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH202	BH202	BH203	BH203	BH203	BH203
		Table 2			L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Lab ID #		2011 Criteria			17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Date					213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Elev of Sample (masl)		RPI CT								
Parameter										
Chromium VI	µg/L	25	1	20	0.12	<0.50	10.5	<1.0	0.11	<0.50

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D18
GROUND WATER QUALITY ANALYSIS
CYANIDE

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	DUP (BH101)	BH101	BH101	BH101	DUP (BH101)
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212851-1	L2212854-1	L2216676-1	L2256179-1	L2256179-2
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter												
Cyanide (CN-)	µg/L	66	2	< 20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

REVISED TABLE D18
GROUND WATER QUALITY ANALYSIS
CYANIDE

Sample Name	Units	MOECC	RDL	Maximum	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103
Lab ID #		Table 2			L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3	L2046388-3
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66
Parameter												
Cyanide (CN-)	µg/L	66	2	< 20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:
 Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

REVISED TABLE D18

**GROUND WATER QUALITY ANALYSIS
CYANIDE**

Sample Name	Units	MOECC	RDL	Maximum	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)
Lab ID #		Table 2			L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13
Date		2011 Criteria			19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter												
Cyanide (CN-)	µg/L	66	2	< 20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

REVISED TABLE D18
GROUND WATER QUALITY ANALYSIS
CYANIDE

Sample Name	Units	MOECC	RDL	Maximum	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202
Lab ID #		Table 2			L2212837-2	L2020783	L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783	L2033776-6
Date		2011 Criteria			19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17
Elev of Sample (masl)		RPI CT			228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99
Parameter												
Cyanide (CN-)	µg/L	66	2	< 20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:
 Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

REVISED TABLE D18
GROUND WATER QUALITY ANALYSIS
CYANIDE

Sample Name	Units	MOECC	RDL	Maximum	BH202	BH202	BH203	BH203	BH203	BH203
Lab ID #		Table 2			L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Date		2011 Criteria			17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Elev of Sample (masl)		RPI CT			213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter										
Cyanide (CN-)	µg/L	66	2	< 20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:
 Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

REVISED TABLE D19

**GROUND WATER QUALITY ANALYSIS
MERCURY**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH101	DUP (BH101)
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212854-1	L2212851-1	L2216676-1	L2256179-1	L2256179-2
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter												
Mercury	µg/L	0.29	0.01	< 0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D19

**GROUND WATER QUALITY ANALYSIS
MERCURY**

Sample Name	Units	MOECC	RDL	Maximum	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103
Lab ID #		Table 2			L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3	L2046388-3
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66
Parameter												
Mercury	µg/L	0.29	0.01	< 0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D19

**GROUND WATER QUALITY ANALYSIS
MERCURY**

Sample Name	Units	MOECC	RDL	Maximum	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)
Lab ID #		Table 2			L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13
Date		2011 Criteria			19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter												
Mercury	µg/L	0.29	0.01	< 0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D19

**GROUND WATER QUALITY ANALYSIS
MERCURY**

Sample Name	Units	MOECC	RDL	Maximum	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202
Lab ID #		Table 2			L2212837-2	L2020783	L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783	L2033776-6
Date		2011 Criteria			19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17
Elev of Sample (masl)		RPI CT			228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99
Parameter												
Mercury	µg/L	0.29	0.01	< 0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D19

**GROUND WATER QUALITY ANALYSIS
MERCURY**

Sample Name	Units	MOECC	RDL	Maximum	BH202	BH202	BH203	BH203	BH203	BH203
Lab ID #		Table 2			L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Date		2011 Criteria			17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Elev of Sample (masl)		RPI CT			213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter										
Mercury	µg/L	0.29	0.01	< 0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

REVISED TABLE D20

**GROUND WATER QUALITY ANALYSIS
CHLORIDE**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	DUP (BH101)	BH101	BH101	BH101	DUP (BH101)
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212851-1	L2212854-1	L2216676-1	L2256179-1	L2256179-2
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19	10-Apr-19
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Parameter												
Chloride	ug/L	790000	500	5650000	122000	110000	2930000	108000	107000	104000	3630000	3630000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard

REVISED TABLE D20

**GROUND WATER QUALITY ANALYSIS
CHLORIDE**

Sample Name	Units	MOECC	RDL	Maximum	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103
Lab ID #		Table 2			L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3	L2046388-3
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66
Parameter												
Chloride	ug/L	790000	500	5650000	3040000	5650000	2280000	4780000	2530000	2730000	2670000	111000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard

REVISED TABLE D20

**GROUND WATER QUALITY ANALYSIS
CHLORIDE**

Sample Name	Units	MOECC	RDL	Maximum	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)
Lab ID #		Table 2			L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13
Date		2011 Criteria			19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter												
Chloride	ug/L	790000	500	5650000	3510000	3800000	3320000	617000	559000	583000	590000	541000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard

REVISED TABLE D20

**GROUND WATER QUALITY ANALYSIS
CHLORIDE**

Sample Name	Units	MOECC	RDL	Maximum	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202
Lab ID #		Table 2			L2212837-2	L2020783	L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783	L2033776-6
Date		2011 Criteria			19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17
Elev of Sample (masl)		RPI CT			228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99
Parameter												
Chloride	ug/L	790000	500	5650000	452000	31500	31400	113000	538000	92800	740000	132000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard

REVISED TABLE D20

**GROUND WATER QUALITY ANALYSIS
CHLORIDE**

Sample Name	Units	MOECC	RDL	Maximum	BH202	BH202	BH203	BH203	BH203	BH203
Lab ID #		Table 2			L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Date		2011 Criteria			17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Elev of Sample (masl)		RPI CT			213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter										
Chloride	ug/L	790000	500	5650000	137000	109000	5200	26200	173000	150000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150 Sample result exceeded Standard

REVISED TABLE D21

**GROUND WATER QUALITY ANALYSIS
SODIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	BH101	DUP (BH101)	BH101	BH101	DUP (BH101)
		Table 2			L1977878-1	L2033776-1	L2046388-1	L2212854-1	L2212851-1	L2216676-1	L2256179-1	L2256179-2
Lab ID #		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	19-Dec-18	4-Jan-19	10-Apr-19	10-Apr-19
Date					224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97	224.02-220.97
Elev of Sample (masl)		RPI CT										
Parameter												
Sodium	µg/L	490000	500	1720000	61500	172000	660000	49200	48800	51600	1720000	1640000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

Detection limit raised, RDL = 5000µg/L, Dilution required due to high concentration of test analyte(s)

150 Sample result exceeded Standard

REVISED TABLE D21

**GROUND WATER QUALITY ANALYSIS
SODIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH102	BH102	BH102	BH102	BH103	DUP1 (BH103)	BH103	BH103
Lab ID #		Table 2			L1977878-2	L2033776-2	L2046388-2	L2212844-1	L1977878-3	L1977878-4	L2033776-3	L2046388-3
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	19-Dec-18	11-Aug-17	11-Aug-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			225.36-222.32	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66	223.71-220.66	223.71-220.66	223.71-220.66
Parameter												
Sodium	µg/L	490000	500	1720000	1080000	1450000	287000	1690000	542000	543000	857000	53300

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

Detection limit raised, RDL = 5000µg/L, Dilution required due to high concentration of test analyte(s)

150 Sample result exceeded Standard

REVISED TABLE D21

**GROUND WATER QUALITY ANALYSIS
SODIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH103	BH103	DUP (BH103)	BH201-S	BH201-S	DUP (BH201-S)	BH201-S	DUP2 (BH201-S)
Lab ID #		Table 2			L2212853-1	L2218841-1	L2218841-2	L2020783	L2033776-4	L2033776-8	L2046388-6	L2046388-13
Date		2011 Criteria			19-Dec-18	10-Jan-19	10-Jan-19	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter												
Sodium	µg/L	490000	500	1720000	757000	946000	946000	288000	302000	306000	290000	290000

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

Detection limit raised, RDL = 5000µg/L, Dilution required due to high concentration of test analyte(s)

150 Sample result exceeded Standard

REVISED TABLE D21

**GROUND WATER QUALITY ANALYSIS
SODIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH201-S	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	BH201-D	BH202	BH202
		Table 2			L2212837-2	L2020783	L2020783	L2033776-5	L2046388-7	L2212837-3	L2020783	L2033776-6
Lab ID #		2011 Criteria			19-Dec-18	8-Nov-17	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17
Date					228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99
Elev of Sample (masl)		RPI CT										
Parameter												
Sodium	µg/L	490000	500	1720000	226000	23500	23200	70100	214000	31900	419000	29200

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

Detection limit raised, RDL = 5000µg/L, Dilution required due to high concentration of test analyte(s)

150 Sample result exceeded Standard

REVISED TABLE D21

**GROUND WATER QUALITY ANALYSIS
SODIUM**

Sample Name	Units	MOECC	RDL	Maximum	BH202	BH202	BH203	BH203	BH203	BH203
Lab ID #		Table 2			L2046388-8	L2212837-1	L2020783	L2033776-7	L2046388-9	L2212841-1
Date		2011 Criteria			17-Jan-18	19-Dec-18	8-Nov-17	7-Dec-17	17-Jan-18	19-Dec-18
Elev of Sample (masl)		RPI CT			213.03-209.99	213.03-209.99	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter										
Sodium	µg/L	490000	500	1720000	17600	11400	40800	61600	110000	55300

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

Detection limit raised, RDL = 5000µg/L, Dilution required due to high concentration of test analyte(s)

150 Sample result exceeded Standard

TABLE D22
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203
Lab ID #		Table 2			L1993774-1	L1993774-2	L1993774-3	L1993774-4	L2020783	L2020783	L2020783	L2020783
Date		2011 Criteria			18-Sep-17	18-Sep-17	18-Sep-17	18-Sep-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Elev of Sample (masl)		RPI CT			224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07
Acenaphthene	µg/L	4.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	µg/L	1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	µg/L	2.4	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	µg/L	1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	µg/L	0.01	0.01	<	0.01	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Benzo(b)fluoranthene	µg/L	0.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	µg/L	0.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	µg/L	0.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	µg/L	0.2	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	µg/L	0.41	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	µg/L	120	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	0.028	<	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	µg/L	NR	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	µg/L	NR	0.02	<	0.024	<0.020	<0.020	<0.020	0.024	<0.020	0.024	<0.020
Naphthalene	µg/L	11	0.05	<	0.07	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/L	1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	µg/L	4.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

150*

Result not considered COC. Refer to report for more details.

NA-Not Analyzed

NR - Not Relevant. Refer to 1+2-Methylnaphthalenes

TABLE D22
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS

Sample Name	Units	MOECC	RDL	Maximum	DUP1 (BH201-D)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203
		Table 2 2011 Criteria			L2020783	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7
Lab ID #	Elev of Sample (masl)	RPI CT			8-Nov-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17
Date					213.71-210.66	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07
Elev of Sample (masl)												
Acenaphthene	µg/L	4.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	µg/L	1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	µg/L	2.4	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	µg/L	1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	µg/L	0.01	0.01	<	0.01	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	µg/L	0.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	µg/L	0.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	µg/L	0.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	µg/L	0.2	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	µg/L	0.41	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	µg/L	120	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	0.028	<	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	µg/L	NR	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	µg/L	NR	0.02	<	0.024	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	µg/L	11	0.05	<	0.07	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	µg/L	1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	µg/L	4.1	0.02	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

150*

Result not considered COC. Refer to report for more details.

NA-Not Analyzed

NR - Not Relevant. Refer to 1+2-Methylnaphthalenes

TABLE D22
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS

Sample Name	Units	MOECC	RDL	Maximum	DUP (BH201-S)	
Lab ID #		Table 2			L2033776-8	
Date		2011 Criteria			7-Dec-17	
Elev of Sample (masl)		RPI CT			228.95-225.9	
Parameter						
Acenaphthene	µg/L	4.1	0.02	<	0.02	<0.020
Acenaphthylene	µg/L	1	0.02	<	0.02	<0.020
Anthracene	µg/L	2.4	0.02	<	0.02	<0.020
Benzo(a)anthracene	µg/L	1	0.02	<	0.02	<0.020
Benzo(a)pyrene	µg/L	0.01	0.01	<	0.01	<0.010
Benzo(b)fluoranthene	µg/L	0.1	0.02	<	0.02	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	0.02	<	0.02	<0.020
Benzo(k)fluoranthene	µg/L	0.1	0.02	<	0.02	<0.020
Chrysene	µg/L	0.1	0.02	<	0.02	<0.020
Dibenzo(ah)anthracene	µg/L	0.2	0.02	<	0.02	<0.020
Fluoranthene	µg/L	0.41	0.02	<	0.02	<0.020
Fluorene	µg/L	120	0.02	<	0.02	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.02	<	0.02	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	0.028	<	0.028	<0.028
1-Methylnaphthalene	µg/L	NR	0.02	<	0.02	<0.020
2-Methylnaphthalene	µg/L	NR	0.02	<	0.024	<0.020
Naphthalene	µg/L	11	0.05	<	0.07	<0.050
Phenanthrene	µg/L	1	0.02	<	0.02	<0.020
Pyrene	µg/L	4.1	0.02	<	0.02	<0.020

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/I

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard

150 Sample result exceeded Standard

150*

Result not considered COC. Refer to report for more details.

NA-Not Analyzed

NR - Not Relevant. Refer to 1+2-Methylnaphthalenes

TABLE D23
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH102	BH103	DUP1 (BH103)	BH201-S	BH201-D	BH202	BH203
		Table 2			L1977878-1	L1977878-2	L1977878-3	L1977878-4	L2020783	L2020783	L2020783	L2020783
Lab ID #		2011 Criteria			11-Aug-17	11-Aug-17	11-Aug-17	11-Aug-17	8-Nov-17	8-Nov-17	8-Nov-17	8-Nov-17
Date					224.02-220.97	225.36-222.32	223.71-220.66	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07
Elev of Sample (masl)												
Parameter		RPI CT										
F1 (C6 to C10)	ug/L	750	25	< 25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX (C6-C10)	ug/L	750	25	< 25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	ug/L	150	100	< 100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	ug/L	500	250	< 250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34 to C50)	ug/L	500	250	< 250	<250	<250	<250	<250	<250	<250	<250	<250
Reached baseline at nC50	ug/L				YES	YES	YES	YES	YES	YES	YES	YES

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150 Detection limit exceeded Standard
150 Sample result exceeded Standard

NA-Not Analyzed

TABLE D23
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS

Sample Name	Units	MOECC	RDL	Maximum	DUP1 (BH201-D)	BH101	BH102	BH103	BH201-S	BH201-D	BH202	BH203	DUP (BH201-S)
		Table 2			L2020783	L2033776-1	L2033776-2	L2033776-3	L2033776-4	L2033776-5	L2033776-6	L2033776-7	L2033776-8
Lab ID #		2011 Criteria			8-Nov-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17	7-Dec-17
Date		RPI CT			213.71-210.66	224.02-220.97	225.36-222.32	223.71-220.66	228.95-225.9	213.71-210.66	213.03-209.99	213.11-210.07	228.95-225.9
Elev of Sample (masl)					Parameter								
F1 (C6 to C10)	ug/L	750	25	< 25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1-BTEX (C6-C10)	ug/L	750	25	< 25	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	ug/L	150	100	< 100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	ug/L	500	250	< 250	<250	<250	<250	<250	<250	<250	<250	<250	<250
F4 (C34 to C50)	ug/L	500	250	< 250	<250	<250	<250	<250	<250	<250	<250	<250	<250
Reached baseline at nC50	ug/L				YES	YES	YES	YES	YES	YES	YES	YES	YES

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit; G / S - Guideline / Standard

<150	Detection limit exceeded Standard
150	Sample result exceeded Standard

NA-Not Analyzed

REVISED TABLE D24

**GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE**

Sample Name	Units	MOECC	RDL	Maximum		BH101	BH101	BH101	BH102	BH102	BH102	BH103
Lab ID #		Table 2				L1977878-1	L2033776-1	L2046388-1	L1977878-2	L2033776-2	L2046388-2	L1977878-3
Date		2011 Criteria				11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17
Elev of Sample (masl)						224.02-220.97	224.02-220.97	224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66
Parameter		RPI CT										
Benzene	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	<	0.64	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	NR	0.4	<	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

NR - Not Relevant. Refer to Xylene Mixture

REVISED TABLE D24

**GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE**

Sample Name	Units	MOECC	RDL	Maximum		DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S
Lab ID #		Table 2				L1977878-4	L2033776-3	L2046388-3	L2020783	L2033776-4	L2033776-8	L2046388-6
Date		2011 Criteria				11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT				223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter												
Benzene	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	<	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	NR	0.4	<	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

NR - Not Relevant. Refer to Xylene Mixture

REVISED TABLE D24

**GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE**

Sample Name	Units	MOECC	RDL	Maximum		DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D
Lab ID #		Table 2				L2046388-13	L2020783	L2020783	L2033776-5	L2042320-1	L2042320-4	L2046388-7
Date		2011 Criteria				17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT				228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66
Parameter												
Benzene	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	<	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	NR	0.4	<	0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

NR - Not Relevant. Refer to Xylene Mixture

REVISED TABLE D24

**GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE**

Sample Name	Units	MOECC	RDL	Maximum	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH202	BH202	BH202
Lab ID #		Table 2			L2116071-1	L2116071-3	L2168350-1	L2168350-3	L2020783	L2033776-6	L2046388-8
Date		2011 Criteria			18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	8-Nov-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)					213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99	213.03-209.99
Parameter		RPI CT									
Benzene	µg/L	5	0.5	< 0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	< 0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	< 0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	< 0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	NR	0.4	< 0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	NR	0.3	< 0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

NR - Not Relevant. Refer to Xylene Mixture

REVISED TABLE D24

**GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE**

Sample Name	Units	MOECC	RDL	Maximum	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203
Lab ID #		Table 2			L2020783	L2033776-7	L2042320-2	L2046388-9	L2049614-1	L2049614-2	L2050901-1
Date		2011 Criteria			8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18
Elev of Sample (masl)					213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter		RPI CT									
Benzene	µg/L	5	0.5	< 0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	< 0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	< 0.64	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	< 0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m/p-xylene	µg/L	NR	0.4	< 0.4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene	µg/L	NR	0.3	< 0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

NR - Not Relevant. Refer to Xylene Mixture

REVISED TABLE D24

**GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYL BENZENE AND XYLENE**

Sample Name	Units	MOECC	RDL	Maximum	DUP1 (BH203)	BH203	BH203
Lab ID #		Table 2			L2050901-2	L2116071-2	L2168350-2
Date		2011 Criteria			29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)					213.11-210.07	213.11-210.07	213.11-210.07
Parameter		RPI CT					
Benzene	µg/L	5	0.5	< 0.5	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	0.5	< 0.5	<0.50	<0.50	<0.50
Toluene	µg/L	24	0.5	< 0.64	<0.50	<0.50	<0.50
Xylene Mixture	µg/L	300	0.5	< 0.5	<0.50	<0.50	<0.50
m/p-xylene	µg/L	NR	0.4	< 0.4	<0.40	<0.40	<0.40
o-xylene	µg/L	NR	0.3	< 0.3	<0.30	<0.30	<0.30

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

NR - Not Relevant. Refer to Xylene Mixture

REVISED TABLE D25

GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	BH102	BH102	BH102	BH103		
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L1977878-2	L2033776-2	L2046388-2	L1977878-3		
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17		
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66		
Parameter													
Acetone	µg/L	2700	30	<	30	<	30	<	30	<	30	<	30
Bromomethane	µg/L	0.89	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Carbon tetrachloride	µg/L	0.79	0.2	<	0.2	<	0.2	<	0.2	<	0.2	<	0.2
Chlorobenzene	µg/L	30	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Chloroform	µg/L	2.4	1	<	1	<	1	<	1	<	1	<	1
1,2-Dibromoethane	µg/L	0.2	0.2	<	0.2	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichlorobenzene	µg/L	3	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,3-Dichlorobenzene	µg/L	59	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,4-Dichlorobenzene	µg/L	1	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Dichlorodifluoromethane	µg/L	590	2	<	2	<	2	<	2	<	2	<	2
1,1-Dichloroethane	µg/L	5	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,2-Dichloroethane	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Methylene Chloride	µg/L	50	5	<	5	<	5	<	5	<	5	<	5
1,2-Dichloropropane	µg/L	5	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
cis-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<	0.3	<	0.3	<	0.3	<	0.3
trans-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<	0.3	<	0.3	<	0.3	<	0.3
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
n-Hexane	µg/L	51	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Methyl Ethyl Ketone	µg/L	1800	20	<	20	<	20	<	20	<	20	<	20
Methyl Isobutyl Ketone	µg/L	640	20	<	20	<	20	<	20	<	20	<	20
MTBE	µg/L	15	2	<	2	<	2	<	2	<	2	<	2
Styrene	µg/L	5.4	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Tetrachloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,1-Trichloroethane	µg/L	200	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,2-Trichloroethane	µg/L	4.7	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Trichloroethylene	µg/L	1.6	0.5		0.58	<	0.5	<	0.5	<	0.5	<	0.5
Trichlorofluoromethane	µg/L	150	5	<	5	<	5	<	5	<	5	<	5
Vinyl chloride	µg/L	0.5	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150*

Result rejected by QP. Refer to Summary Phase One ESA and Summary Phase Two ESA in Appendix D for details

NR - Not Relevant. Refer to 1,3-Dichloropropene (cis & trans).

REVISED TABLE D25

GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS

Sample Name	Units	MOECC	RDL	Maximum		DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S
		Table 2 2011 Criteria				L1977878-4	L2033776-3	L2046388-3	L2020783	L2033776-4	L2033776-8	L2046388-6
Lab ID #						11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18
Date						223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Elev of Sample (masl)												
Parameter		RPI CT										
Acetone	µg/L	2700	30	<	30	<30	<30	<30	<30	<30	<30	<30
Bromomethane	µg/L	0.89	0.5	<	0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50
Carbon tetrachloride	µg/L	0.79	0.2	<	0.2	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	30	0.5	<	0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50
Chloroform	µg/L	2.4	1	<	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	3	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	59	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	1	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	590	2	<	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50	5	<	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	51	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	µg/L	1800	20	<	20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	640	20	<	20	<20	<20	<20	<20	<20	<20	<20
MTBE	µg/L	15	2	<	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	µg/L	5.4	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	1.6	0.5		0.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	150	5	<	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	µg/L	0.5	0.5	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150*

Result rejected by QP. Refer to Summary Phase One ESA and Two ESA in Appendix D for details

NR - Not Relevant. Refer to 1,3-Dichloropropene (cis & trans).

REVISED TABLE D25

GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS

Sample Name	Units	MOECC	RDL	Maximum	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D
		Table 2 2011 Criteria			L2046388-13	L2020783	L2020783	L2033776-5	L2042320-1	L2042320-4	L2046388-7
Date					17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18
Elev of Sample (masl)					228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66
Parameter		RPI CT									
Acetone	µg/L	2700	30	<	<30	<30	<30	<30	<30	<30	<30
Bromomethane	µg/L	0.89	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	0.79	0.2	<	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	µg/L	30	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	µg/L	2.4	1	<	<1.0	14.1*	13.9*	10*	<1.0	<1.0	<1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	3	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	59	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	1	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	µg/L	590	2	<	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	µg/L	1.6	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	µg/L	1.6	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	µg/L	50	5	<	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	µg/L	5	0.5	<	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/L	NR	0.3	<	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NR	0.3	<	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	51	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	µg/L	1800	20	<	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	640	20	<	<20	<20	<20	<20	<20	<20	<20
MTBE	µg/L	15	2	<	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	µg/L	5.4	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	µg/L	1.6	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	1.6	0.5	<	<0.50	1.06*	1.03*	2.56*	<0.50	<0.50	0.58
Trichlorofluoromethane	µg/L	150	5	<	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	µg/L	0.5	0.5	<	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150*

Result rejected by QP. Refer to Summary Phase One ESA and Two ESA in Appendix D for details

NR - Not Relevant. Refer to 1,3-Dichloropropene (cis & trans).

REVISED TABLE D25

GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS

Sample Name	Units	MOECC	RDL	Maximum	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH202	BH202	BH202
		Table 2 2011 Criteria			L2116071-1	L2116071-3	L2168350-1	L2168350-3	L2020783	L2033776-6	L2046388-8
Date					18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	8-Nov-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)					213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99	213.03-209.99
Parameter		RPI CT									
Acetone	µg/L	2700	30	<	30	<	30	<	30	<	30
Bromomethane	µg/L	0.89	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Carbon tetrachloride	µg/L	0.79	0.2	<	0.2	<	0.2	<	0.2	<	0.2
Chlorobenzene	µg/L	30	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Chloroform	µg/L	2.4	1	<	1	<	1	<	1	<	1
1,2-Dibromoethane	µg/L	0.2	0.2	<	0.2	<	0.2	<	0.2	<	0.2
1,2-Dichlorobenzene	µg/L	3	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,3-Dichlorobenzene	µg/L	59	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,4-Dichlorobenzene	µg/L	1	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Dichlorodifluoromethane	µg/L	590	2	<	2	<	2	<	2	<	2
1,1-Dichloroethane	µg/L	5	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,2-Dichloroethane	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Methylene Chloride	µg/L	50	5	<	5	<	5	<	5	<	5
1,2-Dichloropropane	µg/L	5	0.5	<	0.5	<	0.5	<	0.5	<	0.5
cis-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<	0.3	<	0.3	<	0.3
trans-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<	0.3	<	0.3	<	0.3
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<	0.5	<	0.5	<	0.5	<	0.5
n-Hexane	µg/L	51	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Methyl Ethyl Ketone	µg/L	1800	20	<	20	<	20	<	20	<	20
Methyl Isobutyl Ketone	µg/L	640	20	<	20	<	20	<	20	<	20
MTBE	µg/L	15	2	<	2	<	2	<	2	<	2
Styrene	µg/L	5.4	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Tetrachloroethylene	µg/L	1.6	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,1-Trichloroethane	µg/L	200	0.5	<	0.5	<	0.5	<	0.5	<	0.5
1,1,2-Trichloroethane	µg/L	4.7	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Trichloroethylene	µg/L	1.6	0.5		0.58	<	0.5	<	0.5	<	0.5
Trichlorofluoromethane	µg/L	150	5	<	5	<	5	<	5	<	5
Vinyl chloride	µg/L	0.5	0.5	<	0.5	<	0.5	<	0.5	<	0.5

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150*

Result rejected by QP. Refer to Summary Phase One ESA a Two ESA in Appendix D for details

NR - Not Relevant. Refer to 1,3-Dichloropropene (cis & trans).

REVISED TABLE D25

GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS

Sample Name	Units	MOECC	RDL	Maximum	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203
Lab ID #		Table 2			L2020783	L2033776-7	L2042320-2	L2046388-9	L2049614-1	L2049614-2	L2050901-1
Date		2011 Criteria			8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18
Elev of Sample (masl)		RPI CT			213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Acetone	µg/L	2700	30	<	< 30	< 30	< 30	< 30	< 30	< 30	< 30
Bromomethane	µg/L	0.89	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	µg/L	0.79	0.2	<	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	µg/L	30	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	2.4	1	<	< 1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	µg/L	3	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	59	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	1	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	µg/L	590	2	<	< 2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloroethane	µg/L	5	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	1.6	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethylene	µg/L	1.6	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	50	5	<	< 5	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloropropane	µg/L	5	0.5	<	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	µg/L	NR	0.3	<	< 0.3	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
trans-1,3-Dichloropropene	µg/L	NR	0.3	<	< 0.3	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
n-Hexane	µg/L	51	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Methyl Ethyl Ketone	µg/L	1800	20	<	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Methyl Isobutyl Ketone	µg/L	640	20	<	< 20	< 20	< 20	< 20	< 20	< 20	< 20
MTBE	µg/L	15	2	<	< 2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Styrene	µg/L	5.4	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Tetrachloroethylene	µg/L	1.6	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloroethylene	µg/L	1.6	0.5	<	0.58	0.86*	2.83*	<0.50*	2.43*	<0.50	<0.50
Trichlorofluoromethane	µg/L	150	5	<	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	µg/L	0.5	0.5	<	< 0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150*

Result rejected by QP. Refer to Summary Phase One ESA and Two ESA in Appendix D for details

NR - Not Relevant. Refer to 1,3-Dichloropropene (cis & trans).

REVISED TABLE D25

**GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS**

Sample Name	Units	MOECC	RDL	Maximum	DUP1 (BH203)	BH203	BH203	
Lab ID #		Table 2			L2050901-2	L2116071-2	L2168350-2	
Date		2011 Criteria			29-Jan-18	18-Jun-18	19-Sep-18	
Elev of Sample (masl)					213.11-210.07	213.11-210.07	213.11-210.07	
Parameter		RPI CT						
Acetone	µg/L	2700	30	<	30	<30	<30	<30
Bromomethane	µg/L	0.89	0.5	<	0.5	<0.50	<0.50	<0.50
Carbon tetrachloride	µg/L	0.79	0.2	<	0.2	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	30	0.5	<	0.5	<0.50	<0.50	<0.50
Chloroform	µg/L	2.4	1	<	1	<1.0	<1.0	<1.0
1,2-Dibromoethane	µg/L	0.2	0.2	<	0.2	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	3	0.5	<	0.5	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	59	0.5	<	0.5	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	1	0.5	<	0.5	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	590	2	<	2	<2.0	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50
1,1-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50	5	<	5	<5.0	<5.0	<5.0
1,2-Dichloropropane	µg/L	5	0.5	<	0.5	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NR	0.3	<	0.3	<0.30	<0.30	<0.30
1,3-Dichloropropene (cis & trans)	µg/L	0.5	0.5	<	0.5	<0.50	<0.50	<0.50
n-Hexane	µg/L	51	0.5	<	0.5	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	µg/L	1800	20	<	20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	640	20	<	20	<20	<20	<20
MTBE	µg/L	15	2	<	2	<2.0	<2.0	<2.0
Styrene	µg/L	5.4	0.5	<	0.5	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.5	<	0.5	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	0.5	<	0.5	<0.50	<0.50	<0.50
Tetrachloroethylene	µg/L	1.6	0.5	<	0.5	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	200	0.5	<	0.5	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	0.5	<	0.5	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	1.6	0.5		0.58	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	150	5	<	5	<5.0	<5.0	<5.0
Vinyl chloride	µg/L	0.5	0.5	<	0.5	<0.50	<0.50	<0.50

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition

RDL - Reported Detection Limit

150*

Result rejected by QP. Refer to Summary Phase One ESA a

Two ESA in Appendix D for details

NR - Not Relevant. Refer to 1,3-Dichloropropene (cis & trans).

REVISED TABLE D26

**GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES**

Sample Name	Units	MOECC	RDL	Maximum	BH101	BH101	BH101	BH102	BH102	BH102	BH103
Lab ID #		Table 2			L1977878-1	L2033776-1	L2046388-1	L1977878-2	L2033776-2	L2046388-2	L1977878-3
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17	7-Dec-17	17-Jan-18	11-Aug-17
Elev of Sample (masl)		RPI CT			224.02-220.97	224.02-220.97	224.02-220.97	225.36-222.32	225.36-222.32	225.36-222.32	223.71-220.66
Parameter											
Bromodichloromethane	µg/L	16	2	4.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	<	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D26

**GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES**

Sample Name	Units	MOECC	RDL	Maximum	DUP1 (BH103)	BH103	BH103	BH201-S	BH201-S	DUP (BH201-S)	BH201-S
Lab ID #		Table 2			L1977878-4	L2033776-3	L2046388-3	L2020783	L2033776-4	L2033776-8	L2046388-6
Date		2011 Criteria			11-Aug-17	7-Dec-17	17-Jan-18	8-Nov-17	7-Dec-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			223.71-220.66	223.71-220.66	223.71-220.66	228.95-225.9	228.95-225.9	228.95-225.9	228.95-225.9
Parameter											
Bromodichloromethane	µg/L	16	2	4.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D26

**GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES**

Sample Name	Units	MOECC	RDL	Maximum	DUP2 (BH201-S)	BH201-D	DUP1 (BH201-D)	BH201-D	BH201-D	DUP1 (BH201-D)	BH201-D
Lab ID #		Table 2			L2046388-13	L2020783	L2020783	L2033776-5	L2042320-1	L2042320-4	L2046388-7
Date		2011 Criteria			17-Jan-18	8-Nov-17	8-Nov-17	7-Dec-17	4-Jan-18	4-Jan-18	17-Jan-18
Elev of Sample (masl)		RPI CT			228.95-225.9	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66
Parameter											
Bromodichloromethane	µg/L	16	2	4.5	<2.0	4.50	4.40	2.90	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.9	<2.0	2.90	2.80	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D26

**GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES**

Sample Name	Units	MOECC	RDL	Maximum	BH201-D	DUP (BH201-D)	BH201-D	DUP (BH201-D)	BH202	BH202	BH202
Lab ID #		Table 2			L2116071-1	L2116071-3	L2168350-1	L2168350-3	L2020783	L2033776-6	L2046388-8
Date		2011 Criteria			18-Jun-18	18-Jun-18	19-Sep-18	19-Sep-18	8-Nov-17	7-Dec-17	17-Jan-18
Elev of Sample (masl)		RPI CT			213.71-210.66	213.71-210.66	213.71-210.66	213.71-210.66	213.03-209.99	213.03-209.99	213.03-209.99
Parameter											
Bromodichloromethane	µg/L	16	2	4.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	< 5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D26

**GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES**

Sample Name	Units	MOECC	RDL	Maximum	BH203	BH203	BH203	BH203	BH203	DUP1 (BH203)	BH203
Lab ID #		Table 2			L2020783	L2033776-7	L2042320-2	L2046388-9	L2049614-1	L2049614-2	L2050901-1
Date		2011 Criteria			8-Nov-17	7-Dec-17	4-Jan-18	17-Jan-18	25-Jan-18	25-Jan-18	29-Jan-18
Elev of Sample (masl)		RPI CT			213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07	213.11-210.07
Parameter											
Bromodichloromethane	µg/L	16	2	4.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	<	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

REVISED TABLE D26

**GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES**

Sample Name	Units	MOECC	RDL	Maximum	DUP1 (BH203)	BH203	BH203
Lab ID #		Table 2			L2050901-2	L2116071-2	L2168350-2
Date		2011 Criteria			29-Jan-18	18-Jun-18	19-Sep-18
Elev of Sample (masl)					213.11-210.07	213.11-210.07	213.11-210.07
Parameter		RPI CT					
Bromodichloromethane	µg/L	16	2	4.5	<2.0	<2.0	<2.0
Bromoform	µg/L	25	5	< 5	<5.0	<5.0	<5.0
Dibromochloromethane	µg/L	25	2	2.9	<2.0	<2.0	<2.0

Comments:

Results compared to 2011 Table 2 Site Condition Standards for Residential/Parkland/Institutional Land Use in a Coarse-Textured Soil Condition
RDL - Reported Detection Limit

LIST OF DOCUMENTS RELIED UPON IN THE RISK ASSESSMENT

REVISED APPENDIX H: LIST OF DOCUMENTS RELIED UPON IN THE RISK ASSESSMENT

- *Phase One Environmental Site Assessment 55-57 and 61-67 Owen Street, Barrie, Ontario*, dated March 29, 2017
- *Summary Report Phase One ESA and Phase Two ESA 61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario*, dated ~~May 18, 2018, Revised January 21, 2019~~April 18, 2019 by Terraprobe Inc.; and
- *Conceptual Site Model Phase Two Environmental Site Assessment 61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario*, dated ~~January 21~~April 18, 2019 by Terraprobe Inc.

MECP COMMUNICATION

Steve E. Russell

From: Mo, Alexina (MECP) <Alexina.Mo@ontario.ca>
Sent: Wednesday, April 3, 2019 11:24 AM
To: Steve E. Russell
Cc: Peter.dyck@barrie.ca; Spink, Laura (MECP); Kaasalainen, John (MECP); Blok, Rebekah (MECP)
Subject: Request for Additional Information - MGRA for 61-67 Owen Street and 55-57 McDonald Street, Barrie, ON [MGRA1701-18b; IDS#4071-B2TUUT]

Hi Steve,

The ministry review of the above noted file is still on-going. In order for us to complete our review, the following clarifications are needed:

Comment #4 (RA)

Based on the reviewer's understanding, vinyl chloride is no longer considered a COC at the RA property and no PSS has been proposed. The QP_{RA} should note that if a contaminant is not identified as a COC in the RA (and a PSS not proposed in the RA), then the generic applicable Site Condition Standard (SCS) for that contaminant must be met at the time of RSC filing. The QP_{ESA} submitting the record of site condition (RSC) for the RA property will need to ensure that these PSS are met. If the QP_{ESA} finds that the RA does not support filing of the RSC (for example: the RA established PSS that are lower than concentrations found on-site; remediation has failed to reduce concentrations to below the PSS or applicable SCS), a new Pre-Submission Form (PSF) and RA must be submitted to the Ministry for review under the Regulation. RAs, once accepted under the Regulation, cannot be 'reopened' or revised. No response required unless vinyl chloride was taken out as a COC by mistake.

Comment #8 (P2CSM)

In Section 4.4 of the phase two CSM, the QP stated they believe matrix interference from sediment was the cause of TCE exceedences identified in ground water samples BH203 and BH201-D, based on additional sampling results being below the site condition standard. The Ministry requests additional rationale (i.e. including, but not limited to information from the analytical laboratory that performed the chemical analysis, the existence of field notes indicating that sediment was present, the presence or absence of VOCs in ground water in nearby properties at a similar well screen depth as MW201-D or MW203, etc).

In addition, the QP stated that they rejected the exceedance of barium in ground water in BH101 during the January 17, 2018 sampling event, based on the results of previous sampling event and the recent confirmation sampling. In this case, four quarterly confirmation sampling events (all below the SCS) are required in order to consider wells with previous exceedences as meeting the SCS. If the QP feels that the January 17, 2018 sampling result was an anomaly, then additional rationale (similar to the above) is required.

Please provide your response by April 16, 2019.

Regards,
Alexina Mo, P.Geo.
Streamlined Risk Assessment Reviewer
Technical Assessment and Standards Development Branch
Ministry of the Environment, Conservation and Parks
40 St. Clair Ave. West, Toronto
M4V 1M2

416-212-6923

**Responses to MECP Review Comments on “Modified Generic Risk Assessment Report for 61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario”, dated April 3, 2019
(received via email)**

Comments on Risk Assessment

	Comment (MECP)	Response (MTE)	Revised Information
4.	Based on the reviewer’s understanding, vinyl chloride is no longer considered a COC at the RA property and no PSS has been proposed. The QP _{RA} should note that if a contaminant is not identified as a COC in the RA (and a PSS not proposed in the RA), then the generic applicable Site Condition Standard (SCS) for that contaminant must be met at the time of RSC filing. The QP _{ESA} submitting the record of site condition (RSC) for the RA property will need to ensure that these PSS are met. If the QP _{ESA} finds that the RA does not support filing of the RSC (for example: the RA established PSS that are lower than concentrations found on-site; remediation has failed to reduce concentrations to below the PSS or applicable SCS), a new Pre-Submission Form (PSF) and RA must be submitted to the Ministry for review under the Regulation. RAs, once accepted under the Regulation, cannot be ‘reopened’ or revised. No response required unless vinyl chloride was taken out as a COC by mistake.	Acknowledged.	No revisions necessary.

Comments on P2CSM

	Comment (MECP)	Response (Terraprobe)	Revised Information
8	<p>In Section 4.4 of the phase two CSM, the QP stated they believe matrix interference from sediment was the cause of TCE exceedances identified in ground water samples BH203 and BH201-D, based on additional sampling results being below the site condition standard. The Ministry requests additional rationale (i.e. including, but not limited to information from the analytical laboratory that performed the chemical analysis, the existence of field notes indicating that sediment was present, the presence or absence of VOCs in ground water in nearby properties at a similar well screen depth as MW201-D or MW203, etc).</p> <p>In addition, the QP stated that they rejected the exceedance of barium in ground water in BH101 during the January 17, 2018 sampling event, based on the results of previous sampling event and the recent confirmation sampling. In this case, four quarterly confirmation sampling events (all below the SCS) are required in order to consider wells with previous exceedances as meeting the SCS. If the QP feels that the January 17, 2018 sampling result was an anomaly, then additional rationale (similar to the above) is</p>	<p>TCE exceedances were noted in BH201-D during the 7 Dec 2017 sampling event and in BH203 during the 7 Dec 2017 & 17 Jan 2018 sampling events. These results were considered to be anomalies and therefore non-reliable by the QPESA for the following reasons:</p> <ul style="list-style-type: none"> • The Phase One ESA for the property did not indicate any current or historical on or off-site up-gradient sources for TCE. • The results of the 4 subsequent sampling events completed after additional development of BH201-D & BH203 wells indicated that TCE results met the SCS. • The results from BH202 located upgradient and screened at approximately the same depth as BH201-D & BH203 were non-detect for TCE in November 2017, December 2017 and January 2018. As well, the concentrations for TCE in all the other monitoring wells (BH101-BH103) in the property were also non-detect and met the SCS over all 3 sampling events. • Results for BH201-D and BH203 from 4 sampling events over 3 quarters indicated that the TCE concentrations in these wells meet the SCS as noted below. 	Phase Two CSM – Sections 4.4, 5.5, Figures 12-23B ESA Summary – Sec 3.13, 3.15, 4.8 and Figures 12-23B

**Responses to MECP Review Comments on “Modified Generic Risk Assessment Report for 61-67 Owen Street and 55-57 McDonald Street, Barrie, Ontario”, dated April 3, 2019
(received via email)**

Comment (MECP)	Response (Terraprobe)	Revised Information
required.	<ul style="list-style-type: none"> ○ BH201-D was sampled in Q4 2017 (Nov 2017), Q1, Q2 & Q3 2018 and met the SCS ○ BH203 was sampled in Q4 2017 (Nov 2017), Q1, Q2 & Q3 2018 and met the SCS <p>Based on the above, the QPESA considered the exceedance of TCE in ground water in BH201-D during the Dec 7, 2017 event and in BH203 during the Dec 7, 2017 and 17 Jan 2018 events to be anomalies and these results was not relied on for the purpose of the Phase Two ESA & MGRA. In addition, due to QA/QC concerns, all the TCE results in BH201-D & BH203 prior to Dec 7, 2017 were considered non reliable and a maximum of 0.58 ug/L from the results of the subsequent sampling events were considered for the MGRA.</p> <p>The QP rejected the exceedance of barium in ground water in BH101 during the Jan 17, 2018 event based on the following:</p> <ul style="list-style-type: none"> • Prior to the Jan 17, 2018 sampling event, only BH103 exceeded for Barium at the Property. • Two (2) subsequent sampling events completed after the Jan 17, 2018 event, indicated that the concentration of Barium in ground water in BH101 were similar to the previous sampling events and well below the SCS. • An additional sampling event was conducted in BH101 on Apr 10, 2019. • Results for BH101 from sampling events over 5 quarters indicated that BH101 was sampled in Q3 & Q4 2017, Q4 2018 and Q1 & Q2 2019 and met the SCS. <p>Based on the above, the QP considers the exceedance of barium in ground water in BH101 during the Jan 17, 2018 event to be an anomaly and this result was not relied on for the purpose of the Phase Two ESA. Based on available results to date, the Barium exceedance at the property within the ground water in BH103 has been horizontally delineated with BH101, BH201-S & BH102, and vertically delineated by BH201-D & BH203.</p>	