



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

December 20, 2018

File No. 1-16-0679-42
Hamilton – Niagara Office

Carriage Gate Homes
421 Brant Street, Suite 200
Burlington, ON L7R 2G3

Attention: Mr. Mark Bales

**RE: GROUND WATER SAMPLING PROGRAM
2069 – 2079 LAKEHSHORE ROAD, BURLINGTON, ONTARIO**

This letter provides results of ground water sampling activities conducted in connection with the above noted Property.

Terraprobe Inc. (Terraprobe) was retained by Carriage Gate Homes to conduct ground water sampling at 2069 and 2079 Lakeshore Road and 383 and 385 Pearl Street in Burlington Ontario (the Property). The Property is rectangular in shape, with a total area of approximately 0.2 ha. The Property was developed with three (3) vacant buildings, 383 to 385 Pearl Street and 2069 Lakeshore Road, (formerly residential and commercial, respectively), a multi-tenant commercial plaza at 2079 Lakeshore Road and asphalt paved parking areas.

A number of previous investigations, including Phase One Environmental Site Assessments (ESA), geotechnical investigation and hydrogeological investigation have been completed by Terraprobe at the site. Based on correspondence with the City of Burlington, a Phase Two ESA is required to deem the development application complete. However, correspondence with the City also indicated that the submission of the development application could be completed if ground water information from the Property was provided to the City.

Based on the above comments, Terraprobe was requested to complete a Ground Water Sampling Program on the Property to satisfy the requirements of the City.

On December 18, 2018 a representative of Terraprobe collected one (1) ground water sample from monitoring well BH103 located at the northeast corner of the Property. Additional wells installed on the Property between December 14 and December 18 were dry and ground water could not be collected. The chemical parameter groups selected for analysis were chosen based on the contaminants of concern identified in the Phase One ESA completed by Terraprobe in 2016 and included the following.

Terraprobe Inc.

Greater Toronto

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

Hamilton – Niagara

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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

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ORGANIC PARAMETERS

- Petroleum Hydrocarbons (PHCs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Volatile Organic Compounds I (VOCs)
- Volatile Organic Compounds II: Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

INORGANIC PARAMETER GROUPS

- Calcium and Magnesium (Ca, Mg)
- Metals (M)
- Metals, Hydride-Forming As, Se and Sb (H-M)
- Other Regulated Parameters (ORPS):
 - boron, hot water soluble (HWS)
 - chloride
 - sodium
 - cyanide
 - electrical conductivity
 - hexavalent chromium
 - mercury
 - pH

The results of the chemical analysis were compared to the Ministry of Environment and Climate Change (MECP) Standards as found in the “*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*”, April 15, 2011. The Standards which the results were compared to were the following:

- Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use (**Table 2 Standards**)

The results were compared to the Table 2 Standards as those are the applicable Site Condition Standards (SCS) for the site. Those are the applicable SCS for the following reasons:

- The current use of the site is Commercial.
- Bedrock is located at a depth of greater than 2 m.
- The site is not located within 30 m of a surface water body.
- The site is not located in or adjacent to or within 30 m of an area of natural significance.

The sample exceeded the O.Reg. 153/04 Table 2 standards for the following parameters:

Sample ID	Screen Interval (m)/ Elev.(masl)	Strata	Parameter	Table 2 RPI	Result December 2018
BH103	5.1 – 8.15/ 78.1 – 75.0	Bedrock	Chloride	790000	<u>1590000</u>
			Sodium	490000	<u>575000</u>

Laboratory Certificates of Analysis are attached.

The results of the ground water indicate a chloride and sodium exceedance in the well located at the northeast corner of the Property. The five other monitoring wells installed on the Property were dry at the time of sampling. On this basis, the quality of the ground water for the remaining areas of the Property could not be assessed at this time. It should be noted that one well (BH2), previously installed by Terraprobe in 2016, was screened within the overburden soil at the southwest corner of the Property. The well has remained dry since installation in 2016. It is likely that there is little to no ground water present within the overburden soils at the Property. Ground water was found within the bedrock beneath the overburden soil.

We trust this information is sufficient for your present purposes. Should you have any questions concerning the above, please do not hesitate to contact the undersigned.

Yours truly,

Terraprobe Inc.



Amber Brooks, B.Sc.
Project Manager



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

Encl. Certificates of Analysis



CLIENT NAME: TERRAPROBE INC
903 Barton Street
Stoney Creek, ON L8E5P5
(905) 643-7560

ATTENTION TO: Amber Brooks

PROJECT: 1-16-0679-42

AGAT WORK ORDER: 18H421770

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Dec 19, 2018

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 18H421770

PROJECT: 1-16-0679-42

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC

ATTENTION TO: Amber Brooks

SAMPLING SITE:

SAMPLED BY: Amber Brooks

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2018-12-18

DATE REPORTED: 2018-12-19

SAMPLE DESCRIPTION:		BH103		
SAMPLE TYPE:		Water		
DATE SAMPLED:		2018-12-18		
Parameter	Unit	G / S	RDL	9796615
Naphthalene	µg/L	11	0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20
Phenanthrene	µg/L	1	0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10
Fluoranthene	µg/L	0.41	0.20	<0.20
Pyrene	µg/L	4.1	0.20	<0.20
Benz(a)anthracene	µg/L	1	0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	3.2	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9796615 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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Certificate of Analysis

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CLIENT NAME: TERRAPROBE INC

ATTENTION TO: Amber Brooks

SAMPLING SITE:

SAMPLED BY: Amber Brooks

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2018-12-18

DATE REPORTED: 2018-12-19

SAMPLE DESCRIPTION:		BH103		
SAMPLE TYPE:		Water		
DATE SAMPLED:		2018-12-18		
Parameter	Unit	G / S	RDL	9796615
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		76

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils

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9796615

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.

The chromatogram has returned to baseline by the retention time of nC50.

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.

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CLIENT NAME: TERRAPROBE INC

ATTENTION TO: Amber Brooks

SAMPLING SITE:

SAMPLED BY: Amber Brooks

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-12-18

DATE REPORTED: 2018-12-18

Parameter	Unit	SAMPLE DESCRIPTION:		BH103	Trip Blank
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-12-18	2018-12-18
	G / S	RDL	9796615	9796620	
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20
Benzene	µg/L	5.0	0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	0.81	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20
Toluene	µg/L	24	0.20	<0.20	<0.20
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20

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SAMPLING SITE:

SAMPLED BY: Amber Brooks

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-12-18

DATE REPORTED: 2018-12-18

Parameter	Unit	SAMPLE DESCRIPTION:		BH103	Trip Blank
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-12-18	2018-12-18
		G / S	RDL	9796615	9796620
Bromoform	µg/L	25	0.10	<0.10	<0.10
Styrene	µg/L	5.4	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30
Xylene Mixture	µg/L	300	0.20	<0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		89	75
4-Bromofluorobenzene	% Recovery	50-140		97	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
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Analysis performed at AGAT Toronto (unless marked by *)

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Certificate of Analysis

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CLIENT NAME: TERRAPROBE INC

ATTENTION TO: Amber Brooks

SAMPLING SITE:

SAMPLED BY: Amber Brooks

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2018-12-18

DATE REPORTED: 2018-12-19

Parameter	Unit	SAMPLE DESCRIPTION: BH103		
		G / S	RDL	9796615
Antimony	µg/L	6	1.0	<1.0
Arsenic	µg/L	25	1.0	7.0
Barium	µg/L	1000	2.0	168
Beryllium	µg/L	4.0	0.5	<0.5
Boron	µg/L	5000	10.0	1040
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	50	2.0	14.0
Cobalt	µg/L	3.8	0.5	0.8
Copper	µg/L	87	1.0	4.4
Lead	µg/L	10	0.5	0.9
Molybdenum	µg/L	70	0.5	21.1
Nickel	µg/L	100	1.0	2.8
Selenium	µg/L	10	1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	2	0.3	<0.3
Uranium	µg/L	20	0.5	7.2
Vanadium	µg/L	6.2	0.4	1.3
Zinc	µg/L	1100	5.0	18.2
Mercury	µg/L	0.29	0.02	<0.02
Chromium VI	µg/L	25	5	<5
Cyanide	µg/L	66	2	<2
Sodium	µg/L	490000	5000	575000
Chloride	µg/L	790000	5000	1590000
Electrical Conductivity	uS/cm		2	4960
pH	pH Units		NA	7.98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9796615 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.
Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Divine Basily



Guideline Violation

AGAT WORK ORDER: 18H421770

PROJECT: 1-16-0679-42

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CLIENT NAME: TERRAPROBE INC

ATTENTION TO: Amber Brooks

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9796615	BH103	ON T2 PGW CT	O. Reg. 153(511) - Metals & Inorganics (Water)	Chloride	µg/L	790000	1590000
9796615	BH103	ON T2 PGW CT	O. Reg. 153(511) - Metals & Inorganics (Water)	Sodium	µg/L	490000	575000

Quality Assurance

CLIENT NAME: TERRAPROBE INC
AGAT WORK ORDER: 18H421770
PROJECT: 1-16-0679-42
ATTENTION TO: Amber Brooks
SAMPLING SITE:
SAMPLED BY: Amber Brooks

Trace Organics Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

F1 (C6-C10)	9733535		< 25	< 25	NA	< 25	95%	60%	140%	86%	60%	140%	89%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	95%	60%	140%	91%	60%	140%	73%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	100%	60%	140%	109%	60%	140%	76%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	101%	60%	140%	97%	60%	140%	80%	60%	140%

O. Reg. 153(511) - VOCs (Water)

Dichlorodifluoromethane	9769835		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	105%	50%	140%	95%	50%	140%
Vinyl Chloride	9769835		< 0.17	< 0.17	NA	< 0.17	78%	50%	140%	118%	50%	140%	119%	50%	140%
Bromomethane	9769835		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	88%	50%	140%	82%	50%	140%
Trichlorofluoromethane	9769835		< 0.40	< 0.40	NA	< 0.40	96%	50%	140%	93%	50%	140%	95%	50%	140%
Acetone	9769835		< 1.0	< 1.0	NA	< 1.0	96%	50%	140%	94%	50%	140%	87%	50%	140%
1,1-Dichloroethylene	9769835		< 0.30	< 0.30	NA	< 0.30	84%	50%	140%	89%	60%	130%	92%	50%	140%
Methylene Chloride	9769835		< 0.30	< 0.30	NA	< 0.30	114%	50%	140%	107%	60%	130%	115%	50%	140%
trans- 1,2-Dichloroethylene	9769835		< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	93%	60%	130%	96%	50%	140%
Methyl tert-butyl ether	9769835		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	99%	60%	130%	111%	50%	140%
1,1-Dichloroethane	9769835		< 0.30	< 0.30	NA	< 0.30	76%	50%	140%	94%	60%	130%	96%	50%	140%
Methyl Ethyl Ketone	9769835		< 1.0	< 1.0	NA	< 1.0	75%	50%	140%	88%	50%	140%	80%	50%	140%
cis- 1,2-Dichloroethylene	9769835		< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	84%	60%	130%	88%	50%	140%
Chloroform	9769835		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	107%	60%	130%	107%	50%	140%
1,2-Dichloroethane	9769835		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	84%	60%	130%	95%	50%	140%
1,1,1-Trichloroethane	9769835		< 0.30	< 0.30	NA	< 0.30	94%	50%	140%	103%	60%	130%	102%	50%	140%
Carbon Tetrachloride	9769835		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	87%	60%	130%	92%	50%	140%
Benzene	9769835		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	83%	60%	130%	88%	50%	140%
1,2-Dichloropropane	9769835		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	79%	60%	130%	80%	50%	140%
Trichloroethylene	9769835		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	78%	60%	130%	74%	50%	140%
Bromodichloromethane	9769835		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	75%	60%	130%	74%	50%	140%
Methyl Isobutyl Ketone	9769835		< 1.0	< 1.0	NA	< 1.0	108%	50%	140%	82%	50%	140%	103%	50%	140%
1,1,2-Trichloroethane	9769835		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	98%	60%	130%	108%	50%	140%
Toluene	9769835		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	106%	60%	130%	109%	50%	140%
Dibromochloromethane	9769835		< 0.10	< 0.10	NA	< 0.10	74%	50%	140%	78%	60%	130%	82%	50%	140%
Ethylene Dibromide	9769835		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	91%	60%	130%	94%	50%	140%
Tetrachloroethylene	9769835		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	106%	60%	130%	106%	50%	140%
1,1,1,2-Tetrachloroethane	9769835		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	85%	60%	130%	91%	50%	140%
Chlorobenzene	9769835		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	100%	60%	130%	105%	50%	140%
Ethylbenzene	9769835		< 0.10	< 0.10	NA	< 0.10	100%	50%	140%	98%	60%	130%	99%	50%	140%
m & p-Xylene	9769835		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	106%	60%	130%	107%	50%	140%
Bromoform	9769835		< 0.10	< 0.10	NA	< 0.10	79%	50%	140%	78%	60%	130%	82%	50%	140%
Styrene	9769835		< 0.10	< 0.10	NA	< 0.10	78%	50%	140%	84%	60%	130%	95%	50%	140%
1,1,2,2-Tetrachloroethane	9769835		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	108%	60%	130%	117%	50%	140%
o-Xylene	9769835		< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	104%	60%	130%	108%	50%	140%

Quality Assurance

CLIENT NAME: TERRAPROBE INC
 PROJECT: 1-16-0679-42
 SAMPLING SITE:

AGAT WORK ORDER: 18H421770
 ATTENTION TO: Amber Brooks
 SAMPLED BY: Amber Brooks

Trace Organics Analysis (Continued)

RPT Date:			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
1,3-Dichlorobenzene	9769835		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	95%	60%	130%	99%	50%	140%	
1,4-Dichlorobenzene	9769835		< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	103%	60%	130%	107%	50%	140%	
1,2-Dichlorobenzene	9769835		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	93%	60%	130%	103%	50%	140%	
1,3-Dichloropropene	9769835		< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	82%	60%	130%	86%	50%	140%	
n-Hexane	9769835		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	107%	60%	130%	107%	50%	140%	
O. Reg. 153(511) - PAHs (Water)																
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	102%	50%	140%	103%	50%	140%	
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	102%	50%	140%	94%	50%	140%	
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	107%	50%	140%	98%	50%	140%	
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	105%	50%	140%	101%	50%	140%	
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	91%	50%	140%	93%	50%	140%	102%	50%	140%	
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	104%	50%	140%	102%	50%	140%	
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	97%	50%	140%	96%	50%	140%	
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	95%	50%	140%	96%	50%	140%	
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	91%	50%	140%	103%	50%	140%	
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	85%	50%	140%	88%	50%	140%	
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	107%	50%	140%	93%	50%	140%	
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	101%	50%	140%	99%	50%	140%	
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	104%	50%	140%	96%	50%	140%	106%	50%	140%	
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	108%	50%	140%	103%	50%	140%	
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	96%	50%	140%	92%	50%	140%	
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	108%	50%	140%	106%	50%	140%	
2-and 1-methyl Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	101%	50%	140%	102%	50%	140%	

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
 When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: _____



Quality Assurance

CLIENT NAME: TERRAPROBE INC
PROJECT: 1-16-0679-42
SAMPLING SITE:

AGAT WORK ORDER: 18H421770
ATTENTION TO: Amber Brooks
SAMPLED BY: Amber Brooks

Water Analysis															
RPT Date:			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

O. Reg. 153(511) - Metals & Inorganics (Water)

Antimony	9788477		<1.0	<1.0	NA	< 1.0	101%	70%	130%	101%	80%	120%	100%	70%	130%
Arsenic	9788477		<1.0	<1.0	NA	< 1.0	98%	70%	130%	100%	80%	120%	104%	70%	130%
Barium	9788477		85.0	88.4	4.0%	< 2.0	101%	70%	130%	101%	80%	120%	99%	70%	130%
Beryllium	9788477		<0.5	<0.5	NA	< 0.5	110%	70%	130%	110%	80%	120%	116%	70%	130%
Boron	9788477		432	473	9.1%	< 10.0	98%	70%	130%	109%	80%	120%	105%	70%	130%
Cadmium	9788477		<0.2	<0.2	NA	< 0.2	100%	70%	130%	106%	80%	120%	104%	70%	130%
Chromium	9788477		8.1	5.4	NA	< 2.0	99%	70%	130%	100%	80%	120%	99%	70%	130%
Cobalt	9788477		1.4	1.4	NA	< 0.5	100%	70%	130%	101%	80%	120%	98%	70%	130%
Copper	9788477		5.7	5.6	0.7%	< 1.0	104%	70%	130%	107%	80%	120%	97%	70%	130%
Lead	9788477		<0.5	<0.5	NA	< 0.5	104%	70%	130%	105%	80%	120%	101%	70%	130%
Molybdenum	9788477		13.7	14.0	2.4%	< 0.5	100%	70%	130%	102%	80%	120%	102%	70%	130%
Nickel	9788477		4.2	4.3	NA	< 1.0	102%	70%	130%	102%	80%	120%	97%	70%	130%
Selenium	9788477		<1.0	<1.0	NA	< 1.0	101%	70%	130%	102%	80%	120%	108%	70%	130%
Silver	9788477		<0.2	<0.2	NA	< 0.2	104%	70%	130%	107%	80%	120%	110%	70%	130%
Thallium	9788477		<0.3	<0.3	NA	< 0.3	101%	70%	130%	102%	80%	120%	99%	70%	130%
Uranium	9788477		4.0	4.2	3.9%	< 0.5	99%	70%	130%	102%	80%	120%	101%	70%	130%
Vanadium	9788477		<0.4	<0.4	NA	< 0.4	93%	70%	130%	95%	80%	120%	93%	70%	130%
Zinc	9788477		9.9	9.8	NA	< 5.0	103%	70%	130%	107%	80%	120%	103%	70%	130%
Mercury	9796615	9796615	<0.02	<0.02	NA	< 0.02	103%	70%	130%	99%	80%	120%	97%	70%	130%
Chromium VI	9796615	9796615	<5	<5	NA	< 5	103%	70%	130%	99%	80%	120%	107%	70%	130%
Cyanide	9796615	9796615	<2	<2	NA	< 2	106%	70%	130%	99%	80%	120%	87%	70%	130%
Sodium	9795562		2630	2610	0.6%	< 500	99%	70%	130%	100%	80%	120%	99%	70%	130%
Chloride	9794796		136000	146000	7.2%	< 100	97%	70%	130%	107%	70%	130%	102%	70%	130%
Electrical Conductivity	9796615	9796615	4960	4970	0.2%	< 2	98%	90%	110%						
pH	9796615	9796615	7.98	7.84	1.8%	NA	100%	90%	110%						

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: _____

Divine Basily


Method Summary

CLIENT NAME: TERRAPROBE INC
AGAT WORK ORDER: 18H421770
PROJECT: 1-16-0679-42
ATTENTION TO: Amber Brooks
SAMPLING SITE:
SAMPLED BY: Amber Brooks

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

Method Summary

CLIENT NAME: TERRAPROBE INC
AGAT WORK ORDER: 18H421770
PROJECT: 1-16-0679-42
ATTENTION TO: Amber Brooks
SAMPLING SITE:
SAMPLED BY: Amber Brooks

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE



Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Terraprobe Inc. 903 Barton Street, Unit 22
 Contact: Stoney Creek, Ontario L8E 5P5
 Address: Ph: (905) 643-7560 Fax: (905) 643-7559
Attn.: Amber Brooks abrooks@terraprobe.ca
 Phone: _____
 Reports to be sent to:
 1. Email: _____
 2. Email: _____

Regulatory Requirements:

No Regulatory Requirement
 (Please check all applicable boxes)

Regulation 153/04
 Table 2
 Ind./Com
 Res./Park
 Agriculture

Soil Texture (Check One)
 Coarse
 Fine

Region _____
 MISA

Sewer Use
 Sanitary
 Storm
 Regulation 558
 CCME
 Prov. Water Quality Objectives (PWQO)
 Other

Project Information:

Project: 1-16-0679-42
 Site Location: _____
 Sampled By: _____
 AGAT Quote #: _____ PO: _____
 Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a Record of Site Condition?

Yes No

Report Guideline on Certificate of Analysis

Yes No

Invoice Information:

Company: _____
 Contact: _____
 Address: _____
 Email: _____

Bill To Same: Yes No

Sample Matrix Legend

B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Laboratory Use Only

Work Order #: 18H421770
 Cooler Quantity: 5m & 1.6 cooler
 Arrival Temperatures: 4.2 4.9 4.8
 Custody Seal Intact: Yes No N/A
 Notes: OK ICE

Turnaround Time (TAT) Required:

Regular TAT 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
 3 Business Days 2 Business Days Next Business Day

OR Date Required (Rush Surcharges May Apply):

Wednesday Dec 19 5pm

Please provide prior notification for rush TAT
 *TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Field Filtered - Metals, Hg, CrVI	O. Reg 153	Metals and Inorganics	Nutrients	Volatiles	PHCs E1 - F4	ABNS	PAHS	PCBs: Total Aroclors	Organochlorine Pesticides	TCLP: M&I VOCs ABNS B(a)P PCBs	Sewer Use	
BH103 Trip blank	Dec 18/18	7:30am	13	GW					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> VOC <input checked="" type="checkbox"/> BTEX <input type="checkbox"/> THM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					

Samples Relinquished By (Print Name and Sign): <u>Amber Brooks</u>	Date: <u>Dec 18/18</u>	Time: <u>10:05</u>	Samples Received By (Print Name and Sign): <u>Daniella Jalic</u>	Date: <u>Dec 18/18</u>	Time: <u>12:05pm</u>
Samples Relinquished By (Print Name and Sign): _____	Date: _____	Time: _____	Samples Received By (Print Name and Sign): _____	Date: _____	Time: _____
Samples Relinquished By (Print Name and Sign): _____	Date: _____	Time: _____	Samples Received By (Print Name and Sign): _____	Date: _____	Time: _____

N: **T075764**