



# Terraprobe

Consulting Geotechnical & Environmental Engineering  
Construction Materials Inspection & Testing

June 19, 2012

File No. 31-12-8015

Meaford A2A Development Inc.  
c/o Friedman & Associates  
150 Ferrand Drive, Suite 801  
Toronto, Ontario  
M3C 3E5

Attention: Mr. Steven Warsh, President

Email: [stevenwarsh@rogers.com](mailto:stevenwarsh@rogers.com)

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**RE: ARSENIC/PESTICIDE ASSESSMENT  
OF TOPSOIL MATERIALS  
MEAFORD HIGHLANDS RESORT DEVELOPMENT  
MEAFORD, ONTARIO**

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Dear Sir;

We are pleased to present the results of the chemical analyses conducted on surficial topsoil samples obtained from the above mentioned site (see attached Figures 1 and 2).

On March 29, 2012, a technician from Terraprobe manually excavated ten (10) test pits to depths of 0.3 to 0.5 metres below existing grade. The locations of the test pits were selected based on the findings of the Phase 1 Environmental Site Assessment report completed by Terraprobe and reported November 23, 2010. A potential area of historical orchard was identified in the Phase 1 ESA which may have seen the use of pesticides in the past. The approximate test pit locations are shown on the updated Figure 2 as appended.

Arsenic and other pesticides have been used in fruit orchards historically and will accumulate at shallow depth in the surficial topsoil materials below the sprayed area.

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**Terraprobe Inc.**

**Greater Toronto**

11 Indell Lane  
Brampton, Ontario L6T 3Y3  
(905) 796-2650 Fax 796-2250  
[brampton@terraprobe.ca](mailto:brampton@terraprobe.ca)

**Hamilton - Niagara**

903 Barton Street, Unit 22  
Stoney Creek, Ontario L8E 5P5  
(905) 643-7560 Fax 643-7559  
[stoneycreek@terraprobe.ca](mailto:stoneycreek@terraprobe.ca)

**Central Ontario**

220 Bayview Drive, Unit 25  
Barrie, Ontario L4N 4Y8  
(705) 739-8355 Fax 739-8369  
[barrie@terraprobe.ca](mailto:barrie@terraprobe.ca)

**Northern Ontario**

1012 Kelly Lake Rd.  
Sudbury, Ontario P3E 5P4  
(705) 670-0460 Fax 670-0558  
[sudbury@terraprobe.ca](mailto:sudbury@terraprobe.ca)

[www.terraprobe.ca](http://www.terraprobe.ca)

Representative soil samples were obtained from within the topsoil at sample locations 1 to 10. There were no unusual odours or staining noted during sampling.

The ten (10) samples obtained were compared to the amended O. Reg. 153 Table 1 standards for arsenic. In addition, one (1) representative sample from sample location 4 was compared to the amended O. Reg. 153 Table 1 standards for Organochloride Pesticides (including DDD, DDE, DDT, etc.) and PCBs.

All of the samples analysed were found to be within the current Regulation criteria outlined in O.Reg.153 Table 1, indicating that the materials are suitable for residential development sites.

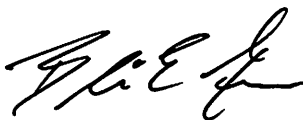
Please note that these samples do not guarantee that there are no further contamination issues. These samples are representative of their location and results may vary elsewhere.

Potential receivers of the soils if taken off-site, will need to confirm whether further testing is required to meet their site conditions.

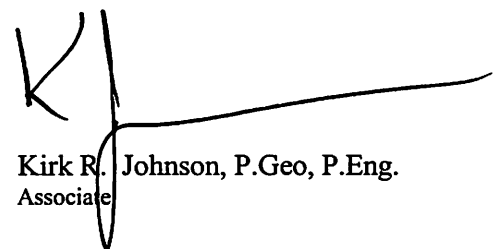
If you should have any further questions, or require additional information, please do not hesitate to contact this office.

Sincerely,

**Terraprobe Inc.**



Blair E. Goss, P.Eng.  
Associate

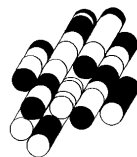


Kirk R. Johnson, P.Geo, P.Eng.  
Associate

Attached: Chemical Results  
Figures 1 and 2



# CHEMISTRY RESULTS



**Terraprobe Inc.**



**CLIENT NAME: TERRAPROBE INC.  
220 BAYVIEW DRIVE, UNIT 25  
BARRIE, ON L4N7T3**

**ATTENTION TO: Jessika Heinemann**

**PROJECT NO: 31-12-8015**

**AGAT WORK ORDER: 12T588106**

**SOIL ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst**

**TRACE ORGANICS REVIEWED BY: Jacky Takeuchi, BScH (Chem Eng), BSc (Bio), C.Chem, Laboratory Manager**

**DATE REPORTED: Apr 09, 2012**

**PAGES (INCLUDING COVER): 6**

**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: 12T588106

PROJECT NO: 31-12-8015

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Jessika Heinemann

## O. Reg. 153(511) - Metals (As) (Soil)

DATE SAMPLED: Mar 29, 2012		DATE RECEIVED: Apr 02, 2012		DATE REPORTED: Apr 09, 2012				SAMPLE TYPE: Soil			
Parameter	Unit	G / S	RDL	1	2	3	5	6	7	8	9
Arsenic	µg/g	18	1	3236093	3236113	3236114	3236117	3236119	3236120	3236123	3236125
				3	5	4	5	4	4	3	3
Parameter	Unit	G / S	RDL	10	4						
Arsenic	µg/g	18	1	3236126	3236129						
				3	4						

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(ALL) - Current

Certified By: \_\_\_\_\_



## Certificate of Analysis

AGAT WORK ORDER: 12T588106

PROJECT NO: 31-12-8015

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Jessika Heinemann

### O. Reg. 153(511) - OC Pesticides + PCBs (Soil)

DATE SAMPLED: Mar 29, 2012

DATE RECEIVED: Apr 02, 2012

DATE REPORTED: Apr 09, 2012

SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	3236129
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007
DDD	µg/g	0.05	0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005
Hexachlorobenzene	µg/g	0.01	0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01
Hexachloroethane	µg/g	0.01	0.01	<0.01
Aroclor 1242	µg/g		0.10	<0.10
Aroclor 1248	µg/g		0.10	<0.10
Aroclor 1254	µg/g		0.10	<0.10
Aroclor 1260	µg/g		0.10	<0.10
Polychlorinated Biphenyls	µg/g	0.3	0.10	<0.10
Moisture Content	%		0.1	36.5
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>		
TCMX	%	50-140		68
Decachlorobiphenyl	%	60-140		91

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T1(ALL) - Current

**3236129**

Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:

## Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 12T588106

PROJECT NO: 31-12-8015

ATTENTION TO: Jessika Heinemann

Soil Analysis																
RPT Date: Apr 09, 2012			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	
<b>O. Reg. 153(511) - Metals (As) (Soil)</b>																
Arsenic	1		3	3	0.0%	< 1	113%	70%	130%	107%	80%	120%	107%	70%	130%	

Certified By: \_\_\_\_\_



## Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 12T588106

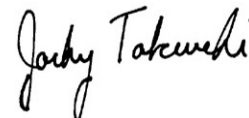
PROJECT NO: 31-12-8015

ATTENTION TO: Jessika Heinemann

### Trace Organics Analysis

RPT Date: Apr 09, 2012			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	
<b>O. Reg. 153(511) - OC Pesticides + PCBs (Soil)</b>																
Gamma-Hexachlorocyclohexane	1		< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	75%	50%	140%	118%	50%	140%	
Heptachlor	1		< 0.005	< 0.005	0.0%	< 0.005	98%	50%	140%	85%	50%	140%	117%	50%	140%	
Aldrin	1		< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	80%	50%	140%	104%	50%	140%	
Heptachlor Epoxide	1		< 0.005	< 0.005	0.0%	< 0.005	104%	50%	140%	85%	50%	140%	105%	50%	140%	
Endosulfan	1		< 0.005	< 0.005	0.0%	< 0.005	104%	50%	140%	85%	50%	140%	106%	50%	140%	
Chlordane	1		< 0.007	< 0.007	0.0%	< 0.007	101%	50%	140%	84%	50%	140%	114%	50%	140%	
DDD	1		< 0.007	< 0.007	0.0%	< 0.007	102%	50%	140%	80%	50%	140%	114%	50%	140%	
DDE	1		< 0.007	< 0.007	0.0%	< 0.007	98%	50%	140%	90%	50%	140%	106%	50%	140%	
DDT	1		< 0.007	< 0.007	0.0%	< 0.007	110%	50%	140%	98%	50%	140%	120%	50%	140%	
Dieldrin	1		< 0.005	< 0.005	0.0%	< 0.005	103%	50%	140%	83%	50%	140%	118%	50%	140%	
Endrin	1		< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	92%	50%	140%	105%	50%	140%	
Methoxychlor	1		< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	109%	50%	140%	109%	50%	140%	
Hexachlorobenzene	1		< 0.005	< 0.005	0.0%	< 0.005	115%	50%	140%	86%	50%	140%	115%	50%	140%	
Hexachlorobutadiene	1		< 0.01	< 0.01	0.0%	< 0.01	117%	50%	140%	111%	50%	140%	109%	50%	140%	
Hexachloroethane	1		< 0.01	< 0.01	0.0%	< 0.01	114%	50%	140%	77%	50%	140%	103%	50%	140%	
Polychlorinated Biphenyls	1		< 0.10	< 0.10	0.0%	< 0.10	112%	60%	140%	90%	60%	140%	112%	60%	140%	

Certified By: \_\_\_\_\_





## Method Summary

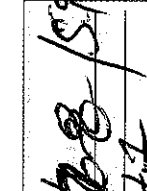
CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 12T588106

PROJECT NO: 31-12-8015

ATTENTION TO: Jessika Heinemann

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Soil Analysis</b>			
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
<b>Trace Organics Analysis</b>			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Aroclor 1242	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Aroclor 1248	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Aroclor 1254	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Aroclor 1260	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
Polychlorinated Biphenyls	ORG-91-5113	EPA SW-846 3541, 3620 & 8082	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541, 3620,8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541, 3620,8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



**AGAT Laboratories**  
 5835 Coopers Avenue  
 Mississauga, Ontario  
 L4Z 1Y2  
 www.agatlabs.com • webearth.agatlabs.com

**Laboratory Use Only**  
 Arrival Temperature: 6.4/20.5  
 AGAT WO #: 5/147  
 Lab Temperature: 12.5/88/06  
 Notes: 12.5/88/06

Ph: 905.712.5100 • Fax: 905.712.5122 • Toll Free: 800.856.6261

**Chain of Custody Record**

**Regulatory Requirements:**

Regulation 153/09 (reg. 511 Amend.)

Table: 1 Indicate one

Ind/Com  Res/Park  Agriculture

Soil Texture (check one):  Coarse  Fine

Sewer Use

Region: \_\_\_\_\_ Indicate one

Sanitary  Storm

Regulation 558  CCME  Other (specify): \_\_\_\_\_

Prov. Water Quality Objectives (PWQO)  None

**Turnaround Time Required (TAT) Required\***

Regular TAT:  5 to 7 Working Days

Rush TAT (please provide prior notification) Rush Surcharges Apply:

3 Working Days  2 Working Days  1 Working Day

OR

Date Required (Rush surcharges may apply): \_\_\_\_\_

\*TAT is exclusive of weekends and statutory holidays

**Client Information:**

Company: TerraProbe Inc.

Contact: Suzie Heinecke

Address: 220 Blythwood Dr. Mississauga, ON L4N 4Y8

Phone: 905-279-8355 Fax: 905-279-8356

Project: 31-12-8015 PO: \_\_\_\_\_

AGAT Quotation #: \_\_\_\_\_

Please note, if quotation number is not provided, client will be billed full price for analysis.

**Invoice To:**

Company: \_\_\_\_\_

Contact: \_\_\_\_\_

Address: \_\_\_\_\_

Same: Yes  No

**Report Information - reports to be sent to:**

1. Name: Suzie Heinecke

Email: suzie@terraprobe.ca

2. Name: \_\_\_\_\_

Email: \_\_\_\_\_

**Legend Matrix**

GW Ground Water O Oil

SW Surface Water P Paint

SD Sediment S Soil

**Regulatory Requirements:**

Regulation 153/09 (reg. 511 Amend.)

Table: 1 Indicate one

Ind/Com  Res/Park  Agriculture

Soil Texture (check one):  Coarse  Fine

Sewer Use

Region: \_\_\_\_\_ Indicate one

Sanitary  Storm

Regulation 558  CCME  Other (specify): \_\_\_\_\_

Prov. Water Quality Objectives (PWQO)  None

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information
1	Mar 29	AM	Soil	1	
2	"	AM	"	"	
3	"	APM	"	"	
5	"	PM	"	"	
6	"	PM	"	"	
7	"	PM	"	"	
8	"	PM	"	"	
9	"	PM	"	"	
10	"	PM	"	"	
4	"	PM	"	"	

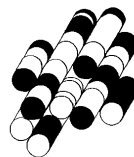
**Is this submission for a Record of Site Condition?** (potable water intended for human consumption)

Yes  No

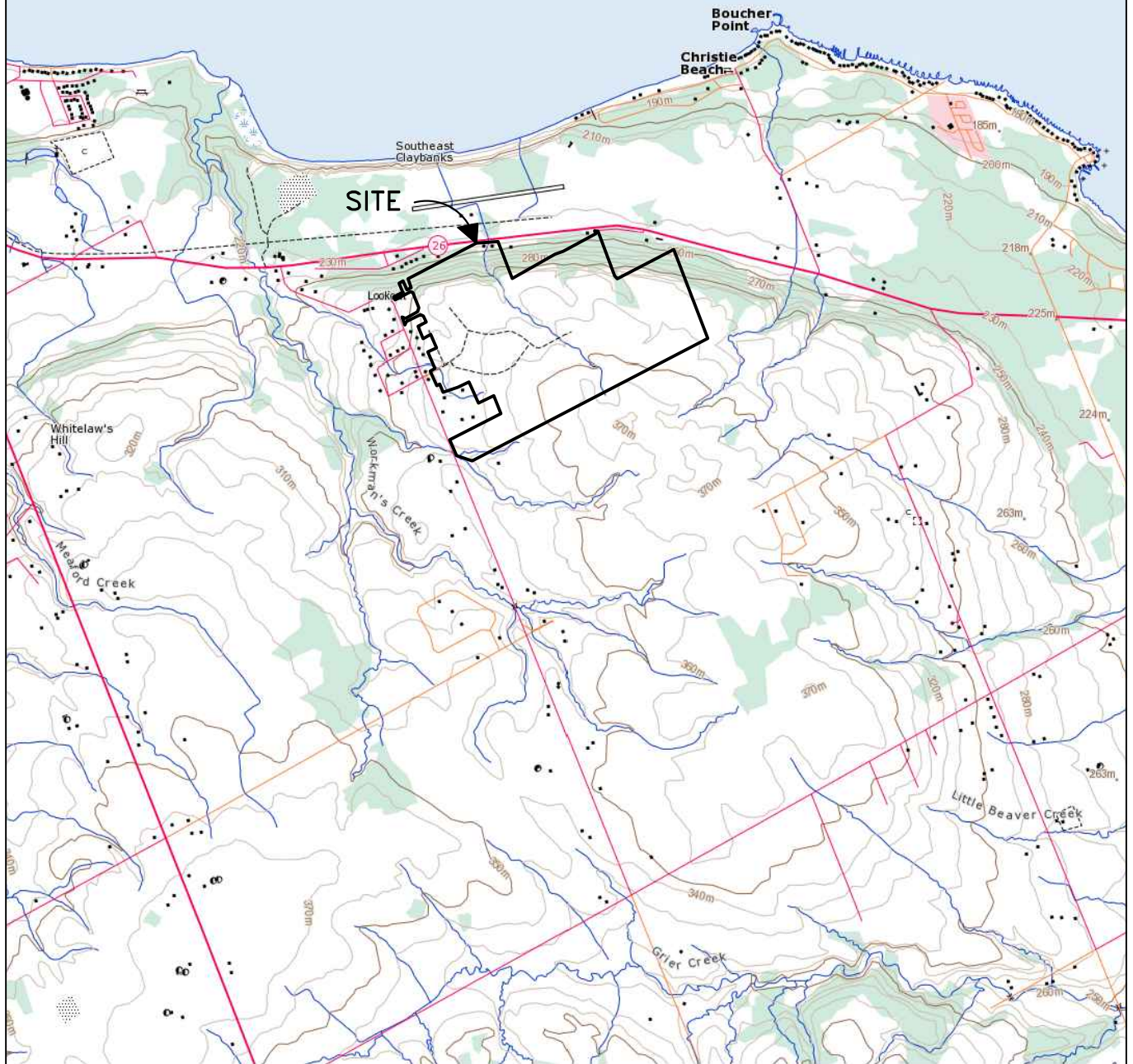
If "Yes", please use the Drinking Water Chain of Custody Form

Metals and Inorganics	Metals Scan	Hydride Forming Metals	Client Custom Metals	ORP: B-HWS <input type="checkbox"/> Cl <input type="checkbox"/> CN <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> FOC <input type="checkbox"/> C+6 <input type="checkbox"/> SAR <input type="checkbox"/> Hg <input type="checkbox"/> pH	Nutrients: TP <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> TKN <input type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> NO <sub>2</sub> /NO <sub>3</sub>	VOC: VOC <input type="checkbox"/> THM <input type="checkbox"/> BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP	Sewer Use
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# FIGURES



**Terraprobe Inc.**



MARCH 2012

# SITE LOCATION PLAN

31-12-8015



FIGURE 1

**LEGEND**

▲ 10 ARSENIC SAMPLE LOCATIONS

● 329.51 BOREHOLES

