

**INDUSTRIAL PROPERTY  
3195 EAST BAYSHORE ROAD  
OWEN SOUND, ONTARIO**

**Phase II ESA -  
Summary Report of Soil & Groundwater  
Analysis - Northern Samples**

**PREPARED FOR:**

Northridge Property Management Inc.  
PO Box 325  
908 2nd Avenue East, Suite 200  
Owen Sound, Ontario

Rubicon Job Number • R55001.3  
Report Date • October 6, 2013



*“....Environmental Solutions.”*

***Rubicon Environmental (2008) Inc.***

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Northridge Property Management Inc.  
PO Box 325  
908 2nd Avenue East, Suite 200  
Owen Sound, Ontario

October 6, 2013

Attention: Mr. Trevor Heathers

**R55001.3      Industrial Property**  
**3195 East Bayshore Road, Owen Sound, Ontario**  
**Phase II ESA - Summary Report of Soil & Groundwater Analysis**

Dear Sir,

Please find the Summary Report for the above-mentioned investigation conducted on your behalf. Please feel free to contact me at 519-924-0003 if you require any additional information.

Sincerely,  
**RUBICON ENVIRONMENTAL (2008) INC.**

Paul Rew, P. Eng.

Distribution:

Client : 1  
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**SUMMARY REPORT - Industrial Property - 3195 East Bayshore Road, Owen Sound, Ontario  
Phase II ESA - Summary Report of Soil & Groundwater Analysis**

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Rubicon Environmental (2008) Inc. was retained by Mr. Trevor Heathers on behalf of Northridge Property Management Inc. to undertake a Phase II Environmental Site Assessment (ESA) at an industrial property located at 3195 East Bayshore Road, Owen Sound, Ontario. The Phase II ESA investigation was completed on-site to investigate the Areas of Potential Environmental Concerns (APEC's) identified on the Subject Property in a Phase I ESA report dated June 5, 2013, conducted by Rubicon Environmental (2008) Inc. This Phase II ESA assessment was conducted in accordance with the Ministry of the Environment (MOE) Ontario Regulation 153/04, as amended 511/09 criteria.

The subject property is located on the east side of East Bayshore Road, just south of 32<sup>nd</sup> Street in Owen Sound, Ontario (Figure 1). The municipal address is 3195 East Bayshore Road, Owen Sound, Ontario. The legal property description is PT LT 53 – 54 PL 838 OWEN SOUND AS IN R494589; T/W R231442; OWEN SOUND. The Property Identifier Number (PIN#) is 37060-0123. The property is approx. 37.45 acres in size.

The site is currently developed with one (1) industrial/commercial building which is separated into multiple units occupied, or formerly occupied, by various commercial and industrial operations, and one (1) outbuilding which is separated into two (2) units. The current tenants of the industrial building are: Heated Storage for vehicles, boats, and miscellaneous stock, MacClean Engineering, DanceMakers & Gymnastica, Heated vehicle storage, Weston bakeries warehouse, Countertops Plus, Thompson Mould & Pattern, Sportmakers gymnasium, Tenneco Warehouse, Harbour Self-Storage, Transcontinental Printing warehouse, and Heated boat storage. Many of the industrial facilities units are currently vacant, or solely used for storage. The outbuilding, which is divided into two units, is currently occupied with one unit occupied by Vince Goodeve's Artist Studio, and the second unit is Tim's Repair and U-Fix-It auto-body shop (Figure 2).

The Phase II ESA site investigation commenced on January 28, 2013. In total, 20 boreholes were advanced on the subject property with 9 boreholes generally advanced in the northern area of the subject property, with 3 of these 9 boreholes developed as monitoring wells. The soil and groundwater samples were collected in various areas (Figure 3) of the Subject Property, with sample depths collected to a maximum depth of 4.5 metres.

The soil samples collected from the subject property were submitted to the laboratory, and analyzed for all, or a combination of, VOC's (Volatile Organic Compounds), BTEX (Benzene, Toluene, Ethylbenzene, Xylenes), PHC's (Petroleum HydroCarbons - F1 to F4 fractions), PAH's (Polycyclic Aromatic Hydrocarbons), and the Metals parameters. Tables 1 - 7 present the soil and groundwater analysis results for the following Boreholes: BH/MW7, BH/MW8, BH10, BH11, BH12, BH13, BH14, BH/MW15, and BH16, as per Mr. Trevor Heathers instructions for this report summary. The complete laboratory certificates of analysis are included in Appendix 1.

On May 6, 2013, groundwater samples were obtained from the monitoring wells installed as part of the Phase II ESA investigation. The wells were purged a minimum of three well volumes, and were allowed to stabilize, prior to sampling. The groundwater samples collected from the northern area wells were submitted to the laboratory and analysed for VOC's (Volatile Organic Compounds, which includes BTEX), PHC's (petroleum hydrocarbons, F1 to F4 fractions), PAH's (polycyclic aromatic hydrocarbons), and the Metals parameters.

All soil and groundwater samples were submitted to ALS Laboratories of Waterloo, Ontario. The laboratory analysis results were compared to O. Reg. 153/04, as amended 511/09, Table 3 criteria for residential properties with fine textured soil in a non-potable groundwater condition. The laboratory analytical results showed that both the soil and groundwater samples analyzed were found to be below the O. Reg. 153/04, as amended 511/09, Table 3 criteria.



The site meets the current O. Reg. 153/04, as amended 511/09, Table 3 criteria. It is suitable for both industrial/commercial and residential land use. No impacts above the MOE criteria were identified, and therefore, no further environmental investigation is warranted at this time. At the time of this investigation the site appears to pose no significant risk in owning, financing, insuring or developing.

Respectfully submitted,

**RUBICON ENVIRONMENTAL (2008) INC.**



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Paul D. Rew, P.Eng.



**TABLE 1:**  
**SOIL ANALYSIS – PAH's**

<i>Analyte</i>	<i>Criteria</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>
		BH10 SS2	BH13 SS2	BH16 SS1
<b>PAH</b>				
Acenaphthene	7.9	>0.050	>0.050	>0.050
Acenaphthylene	0.15	>0.050	>0.050	>0.050
Anthracene	0.67	>0.050	>0.050	>0.050
Benzo(a)anthracene	0.5	>0.050	>0.050	>0.050
Benzo(a)pyrene	0.3	>0.050	>0.050	>0.050
Benzo(b)fluoranthene	0.78	>0.050	>0.050	>0.050
Benzo(g,h,i)perylene	6.6	>0.050	>0.050	>0.050
Benzo(k)fluoranthene	0.78	>0.050	>0.050	>0.050
Chrysene	7	>0.050	>0.050	>0.050
Dibenzo(ah)anthracene	0.1	>0.050	>0.050	>0.050
Fluoranthene	0.69	>0.050	>0.050	>0.050
Fluorene	62	>0.050	>0.050	>0.050
Indeno(1,2,3-cd)pyrene	0.38	>0.050	>0.050	>0.050
1+2-Methylnaphthalenes	0.99	>0.042	>0.042	>0.042
1-Methylnaphthalene	0.99	>0.030	>0.030	>0.030
2-Methylnaphthalene	0.99	>0.030	>0.030	>0.030
Naphthalene	0.6	>0.050	>0.050	>0.050
Phenanthrene	6.2	>0.050	>0.050	>0.050
Pyrene	78	>0.050	>0.050	>0.050

All values in ug/L – ppb – parts per billion  
MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site Condition Standards in a coarse soil texture in a Non-Potable Ground Water Condition for Residential Property Use.



**TABLE 2:**  
**SOIL ANALYSIS – BTEX/PHC's**

<i>Analyte</i>	<i>Criteria</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>
<b>BTEX</b>		<b>BH10 SS2</b>	<b>BH13 SS2</b>	<b>BH15 SS1</b>	<b>BH16 SS1</b>
Benzene	0.21	<0.020	<0.020	<0.020	<0.020
Ethyl Benzene	2	>0.050	>0.050	>0.050	>0.050
Toluene	2.3	<0.20	<0.20	<0.20	<0.20
Xylenes (Total)	3.1	>0.050	>0.050	>0.050	>0.050
<b>PHC</b>		<b>BH10 SS2</b>	<b>BH13 SS2</b>	<b>BH15 SS1</b>	<b>BH16 SS1</b>
F1 (C6-C10)	55	>5.0	>5.0	>5.0	>5.0
F1 BTEX	55	>5.0	>5.0	>5.0	>5.0
F2 (C10-C16)	98	>10.0	>10.0	>10.0	>10.0
F3 (C16-C34)	300	>50.0	>50.0	57	>50.0
F4 (C34-C50)	2800	>50.0	>50.0	>50.0	>50.0
Total Hydrocarbons (C6-C50)		>50.0	>50.0	57	>50.0

All values in ug/L – ppb – parts per billion  
MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site Condition Standards in a  
coarse soil texture in a Non-Potable Ground Water Condition for Residential Property Use.



**TABLE 3:  
SOIL ANALYSIS – VOC's**

<i>Analyte</i>	<i>Criteria</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>
<b>VOC</b>		BH/MW7 SS2	BH/MW8 SS2	BH12 SS2	BH14 SS2
Acetone	16	>0.50	>0.50	>0.50	>0.50
Benzene	0.21	>0.020	>0.020	>0.020	>0.020
Bromodichloromethane	13	>0.050	>0.050	>0.050	>0.050
Bromoform	0.27	>0.050	>0.050	>0.050	>0.050
Bromomethane	0.05	>0.050	>0.050	>0.050	>0.050
Carbon tetrachloride	0.05	>0.050	>0.050	>0.050	>0.050
Chlorobenzene	2.4	>0.050	>0.050	>0.050	>0.050
Dibromochloromethane	9.4	>0.050	>0.050	>0.050	>0.050
Chloroform	0.05	>0.050	>0.050	>0.050	>0.050
1,2-Dibromoethane	0.05	>0.050	>0.050	>0.050	>0.050
1,2-Dichlorobenzene	3.4	>0.050	>0.050	>0.050	>0.050
1,3-Dichlorobenzene	4.8	>0.050	>0.050	>0.050	>0.050
1,4-Dichlorobenzene	0.083	>0.050	>0.050	>0.050	>0.050
Dichlorodifluoromethane	16	>0.050	>0.050	>0.050	>0.050
1,1-Dichloroethane	3.5	>0.050	>0.050	>0.050	>0.050
1,2-Dichloroethane	0.05	>0.050	>0.050	>0.050	>0.050
1,1-Dichloroethylene	0.05	>0.050	>0.050	>0.050	>0.050
cis-1,2-Dichloroethylene	3.4	>0.050	>0.050	>0.050	>0.050
trans-1,2-Dichloroethylene	0.084	>0.050	>0.050	>0.050	>0.050
1,3-Dichloropropene (cis & trans)	0.05	>0.042	>0.042	>0.042	>0.042
Methylene Chloride	0.1	>0.050	>0.050	>0.050	>0.050
1,2-Dichloropropane	0.05	>0.050	>0.050	>0.050	>0.050
cis-1,3-Dichloropropene	-	>0.030	>0.030	>0.030	>0.030
trans-1,3-Dichloropropene	-	>0.030	>0.030	>0.030	>0.030
Ethyl Benzene	2	<0.050	<0.050	<0.050	<0.050
n-Hexane	2.8	<0.050	<0.050	<0.050	<0.050





<b>Analyte</b>	<b>Criteria</b>	<b>Sample ID</b>	<b>Sample ID</b>	<b>Sample ID</b>	<b>Sample ID</b>
<b>VOC</b>		BH12 SS2	BH14 SS2	BH12 SS2	BH14 SS2
Methyl Ethyl Ketone	16	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	1.7	<0.50	<0.50	<0.50	<0.50
MTBE	0.75	<0.050	<0.050	<0.050	<0.050
Styrene	0.7	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.058	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	<0.050	<0.050	<0.050	<0.050
Tetrachloroethylene	0.28	<0.050	<0.050	<0.050	<0.050
Toluene	2.3	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	0.38	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.061	<0.050	<0.050	<0.050	<0.050
Trichlorofluoromethane	4	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	0.02	<0.020	<0.020	<0.020	<0.020
o-Xylene	-	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	-	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	3.1	<0.050	<0.050	<0.050	<0.050
<b>PHC</b>					
F1 (C6-C10)	55	>5.0	>5.0	>5.0	>5.0
F1 BTEX	55	>5.0	>5.0	>5.0	>5.0
F2 (C10-C16)	98	>10.0	>10.0	>10.0	>10.0
F3 (C16-C34)	300	>50.0	>50.0	51	>50.0
F4 (C34-C50)	2800	>50.0	>50.0	158	>50.0
F4G-SG (GHH-Silica)	2800	-	-	660	-
Total Hydrocarbons (C6-C50)	-	>50.0	>50.0	209	>50.0

All values in ug/L – ppb – parts per billion  
 MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site Condition Standards in a  
 coarse soil texture in a Non-Potable Ground Water Condition for Residential Property Use.

**TABLE 4:**  
**SOIL ANALYSIS – General Metals**

<i>Analyte</i>	<i>Criteria</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>
<b>METALS</b>		BH/MW7 SS2	BH/MW8 SS2	BH11 SS2	BH12 SS2	BH14 SS2	BH15 SS2
pH	-			7.72	7.55	7.85	7.60
SAR	5.0	0.19	0.77	<0.10	0.80	0.29	0.13
Antimony	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	18	4.3	4.1	4.6	3.9	3.7	4.4
Barium	390	30.5	26.9	29.5	34.2	24.8	20.8
Beryllium	4	0.88	0.84	0.93	0.70	0.87	<0.50
Boron	120	55.4	55.1	58.3	44.1	56.9	25.7
Cadmium	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium	160	23.5	24.3	26.6	20.6	24.9	13.0
Cobalt	22	10.4	10.8	11.7	9.6	10.8	6.9
Copper	140	8.0	7.4	9.5	12.8	9.2	29.1
Lead	120	4.2	3.8	4.5	4.7	3.8	4.3
Mercury	0.27	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum	6.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel	100	25.7	26.3	29.5	22.4	27.2	14.0
Selenium	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	23	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	86	30.8	31.0	34.2	28	31.6	19.1
Zinc	340	45.9	48.2	52.3	43.2	51.3	28.7
Chromium, Hexavalent	8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

All values in ug/L – ppb – parts per billion  
MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site Condition Standards in a  
coarse soil texture in a Non-Potable Ground Water Condition for Residential Property Use.



**TABLE 5:  
GROUNDWATER ANALYSIS – General Metals**

<i>Analyte</i>	<i>Criteria</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>
<b>METALS</b>		BH/MW7	BH/MW8	BH/MW15
Aluminum (Al)	-	-	29	74
Antimony (Sb)	20000	-	<0.50	<0.50
Arsenic (As)	1900	-	1.7	12.9
Barium (Ba)	29000	-	11.4	47.0
Beryllium (Be)	67	-	<0.50	<0.50
Bismuth (Bi)	-	-	<1.0	<1.0
Boron (B)	45000	-	979	428
Cadmium (Cd)	2.7	-	<0.090	<0.090
Calcium (Ca)	-	-	113000	147000
Chromium (Cr)	810	-	<0.50	<0.50
Cobalt (Co)	66	-	4.09	1.76
Copper (Cu)	87	-	<1.0	<1.0
Iron (Fe)	-	-	1350	8930
Lead (Pb)	25	-	<0.50	<0.50
Lithium (Li)	-	-	<100	<100
Magnesium (Mg)	-	-	43600	45700
Manganese (Mn)	-	-	219	629
Molybdenum (Mo)	9200	-	17.1	6.63
Nickel (Ni)	490	-	7.2	3.6
Phosphorus (P)	-	-	<50	<50
Potassium (K)	-	-	13700	6700
Selenium (Se)	63	-	0.45	0.34
Silicon (Si)	-	-	5700	14000
Silver (Ag)	1.5	-	<0.020	0.025
Sodium (Na)	2300000	-	95600	36200
Strontium (Sr)	-	-	1030	2650
Thallium (Tl)	510	-	<0.060	<0.060
Tin (Sn)	-	-	<1.0	<1.0
Titanium (Ti)	-	-	5.1	2.2
Tungsten (W)	-	-	<6.0	<6.0
Uranium (U)	420	-	6.7	4.4
Vanadium (V)	250	-	<0.50	<0.50
Zinc (Zn)	1100	-	3.2	16.9
Zirconium (Zr)	-	-	<0.80	<0.80

All values in ug/L – ppb – parts per billion  
MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site  
Condition Standards in a coarse soil texture in a Non-Potable Ground  
Water Condition for Residential Property Use.

**TABLE 6:**  
**GROUNDWATER ANALYSIS – VOC's**

<b>Analyte</b>	<b>Criteria</b>	<b>Sample ID</b>	<b>Sample ID</b>	<b>Sample ID</b>
<b>VOC's</b>		<b>BH/MW7</b>	<b>BH/MW8</b>	<b>BH/MW15</b>
Acetone	130000	<30	<30	<30
Benzene	44	<0.50	<0.50	<0.50
Bromodichloromethane	85000	<2.0	<2.0	<2.0
Bromoform	380	<5.0	<5.0	<5.0
Bromomethane	5.6	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	<0.20	<0.20	<0.20
Chlorobenzene	630	<0.50	<0.50	<0.50
Dibromochloromethane	82000	<2.0	<2.0	<2.0
Chloroform	2.4	<1.0	<1.0	<1.0
1,2-Dibromoethane	0.25	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	4600	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	9600	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	8	<0.50	<0.50	<0.50
Dichlorodifluoromethane	4400	<2.0	<2.0	<2.0
1,1-Dichloroethane	320	<0.50	<0.50	<0.50
1,2-Dichloroethane	1.6	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	<0.50	<0.50	<0.50
1,3-Dichloropropene (cis & trans)	5.2	<0.50	<0.50	<0.50
Methylene Chloride	610	<5.0	<5.0	<5.0
1,2-Dichloropropane	16	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	-	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	-	<0.30	<0.30	<0.30
Ethyl Benzene	2300	<0.50	<0.50	<0.50
n-Hexane	51	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	470000	<20	<20	<20
Methyl Isobutyl Ketone	140000	<20	<20	<20
MTBE	190	<2.0	<2.0	<2.0
Styrene	1300	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	3.3	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	3.2	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	<0.50	<0.50	<0.50
Toluene	18000	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	640	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	<0.50	<0.50	<0.50



<b>Analyte</b>	<b>Criteria</b>	<b>Sample ID</b>	<b>Sample ID</b>	<b>Sample ID</b>
<b>VOC's</b>		<b>BH/MW7</b>	<b>BH/MW8</b>	<b>BH/MW15</b>
Trichloroethylene	1.6	<0.50	<0.50	<0.50
Trichlorofluoromethane	2500	<5.0	<5.0	<5.0
Vinyl chloride	0.5	<0.50	<0.50	<0.50
o-Xylene	-	<0.30	<0.30	<0.30
m+p-Xylenes	-	<0.40	<0.40	<0.40
Xylenes (Total)	4200	<0.50	<0.50	<0.50
<b>PHC's</b>				
F1 (C6-C10)	750	<25	<25	<25
F1 BTEX	750	<25	<25	<25
F2 (C10-C16)	150	<100	<100	<100
F2 naphth.	-	<100	<100	<100
F3 (C16-C34)	500	<250	<250	<250
F3 PAH	-	<250	<250	<250
F4 (C34-C50)	500	<250	<250	<250
Total Hydrocarbons (C6-C50)	-	<250	<250	<250

All values in ug/L – ppb – parts per billion  
MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site Condition  
Standards in a coarse soil texture in a Non-Potable Ground Water Condition  
for Residential Property Use.





**TABLE 7:**  
**GROUNDWATER ANALYSIS – PAH's**

<i>Analyte</i>	<i>Criteria</i>	<i>Sample ID</i>	<i>Sample ID</i>	<i>Sample ID</i>
<b>PAH's</b>		<b>BH/MW7</b>	<b>BH/MW8</b>	<b>BH/MW15</b>
Acenaphthene	600	<0.020	<0.020	<0.020
Acenaphthylene	1.8	<0.020	<0.020	<0.020
Anthracene	2.4	<0.020	<0.020	<0.020
Benzo(a)anthracene	4.7	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.81	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.75	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	0.2	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.4	<0.020	<0.020	<0.020
Chrysene	1	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	0.52	<0.020	<0.020	<0.020
Fluoranthene	130	0.038	0.021	<0.020
Fluorene	400	0.121	0.057	0.049
Indeno(1,2,3-cd)pyrene	0.2	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	1800	<0.088	<0.029	<0.056
1-Methylnaphthalene	1800	0.046	<0.020	0.024
2-Methylnaphthalene	1800	<0.086	<0.021	<0.052
Naphthalene	1400	<0.165	<0.117	<0.063
Phenanthrene	580	1.18	0.422	0.369
Pyrene	68	<0.020	<0.020	<0.020

All values in ug/L – ppb – parts per billion  
MOE O.Reg. 153/04 (511/09) – Table 3 – Full Depth Generic Site Condition  
Standards in a coarse soil texture in a Non-Potable Ground Water Condition  
for Residential Property Use.



**LIMITATIONS**

1. This assessment was conducted in accordance with generally accepted engineering standards. It is possible that materials other than those described in this report are present at the site. The client acknowledges that no assessment can necessarily identify the existence of all contaminants, potential contaminants or environmental conditions;
2. This report was prepared for the sole and exclusive use of Mr. Trevor Heathers, on behalf of Northridge Property Management Inc. Rubicon Environmental (2008) Inc. accepts no responsibility or liability for any loss, damage, expense, fine or any other claim of any nature or type, including any liability or potential liability arising from its own negligence, for any use of this report or reliance on it, in whole or in part, by anyone other than Mr. Trevor Heathers, on behalf of Northridge Property Management Inc.;
3. There is no representation, warranty or condition, express or implied, by Rubicon Environmental (2008) Inc. or its officers, directors, employees or agents that this assessment has identified all contaminants, potential contaminants or environmental conditions at the site or that the site is free from contamination, potential contaminants or environmental conditions other than those noted in this report;
4. This assessment has been completed from information and documentation described in this report as well as the results of limited chemical analysis of soil samples collected from accessible locations on the date(s) specified. We have assumed that any such information and documentation is accurate and complete. We can accept no responsibility or liability for any errors, deficiencies or inaccuracies in this report arising from errors or omissions in the information and documentation provided by others;
5. This assessment was based on information and the results of investigation(s) obtained on the date(s) specified. Rubicon Environmental (2008) Inc. accepts no responsibility or liability for any changes or potential changes in the condition of the site subsequent to the date of our investigation(s);
6. The conditions between sampling locations have been inferred, to the best of our ability, based on the conditions observed at sampling locations. Conditions between and beyond sampling locations may vary. This assessment pertains, only, to the site specifically described in this report and not to any adjacent or other property;
7. This assessment does not include, nor is it intended to include, any opinion regarding the suitability of any structure on the site for any particular function, the integrity of the on-site buildings or the geotechnical conditions on the site, with the exception of how they may identify with environmental concerns. Inspections of buildings do not include compliance with building, gas, electrical or boiler codes, or any other federal, provincial or municipal codes not associated with environmental concerns. Should concerns regarding any parameters other than environmental concerns arise as a result of our investigation(s), they should be addressed by appropriately qualified professionals; and,
8. This report is not to be reproduced or released to any other party, in whole or in part, without the express written consent of Rubicon Environmental (2008) Inc.



# FIGURES





FIGURE 1:  
 SITE LOCATION  
 3195 EAST BAYSHORE ROAD  
 OWEN SOUND, ONTARIO



PROJECT #: R55001.2  
 DRAWN BY:  
 CHECKED BY:  
 REVISIONS:

NAME  
 NH  
 PDR

DATE  
 MAY 2013  
 MAY 2013



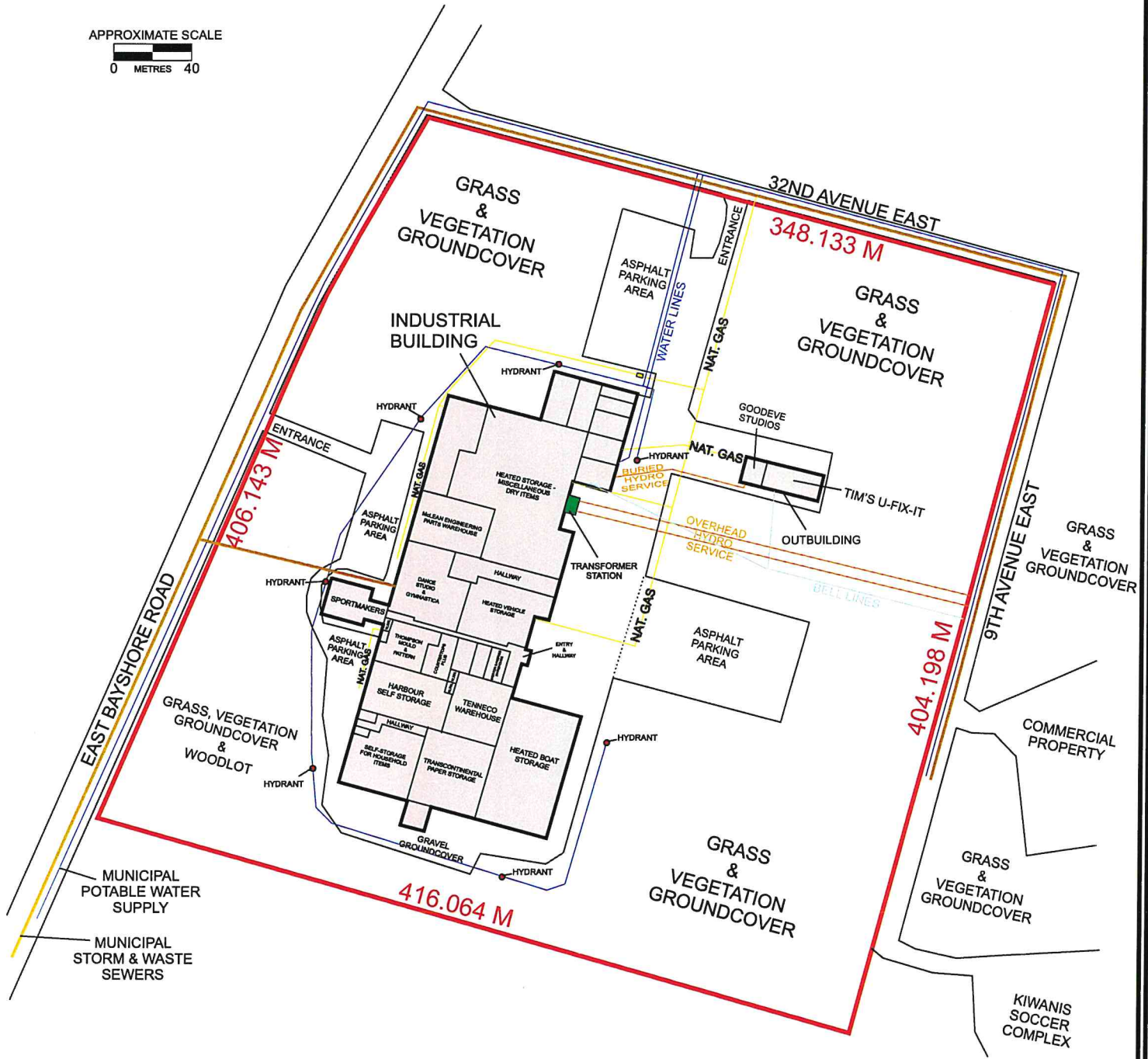
FIGURE 1:  
 SITE LOCATION  
 3195 EAST BAYSHORE ROAD  
 OWEN SOUND, ONTARIO



**FIGURE 2:  
SITE PLAN  
3195 EAST BAYSHORE ROAD  
OWEN SOUND, ONTARIO**



APPROXIMATE SCALE



**LEGEND**

— PHASE I AND PHASE II STUDY AREA & RSC BOUNDARY

PROJECT #:R55001.2	NAME	DATE
DRAWN BY:	NH	MAY 2013
CHECKED BY:	PDR	MAY 2013
REVISIONS:		

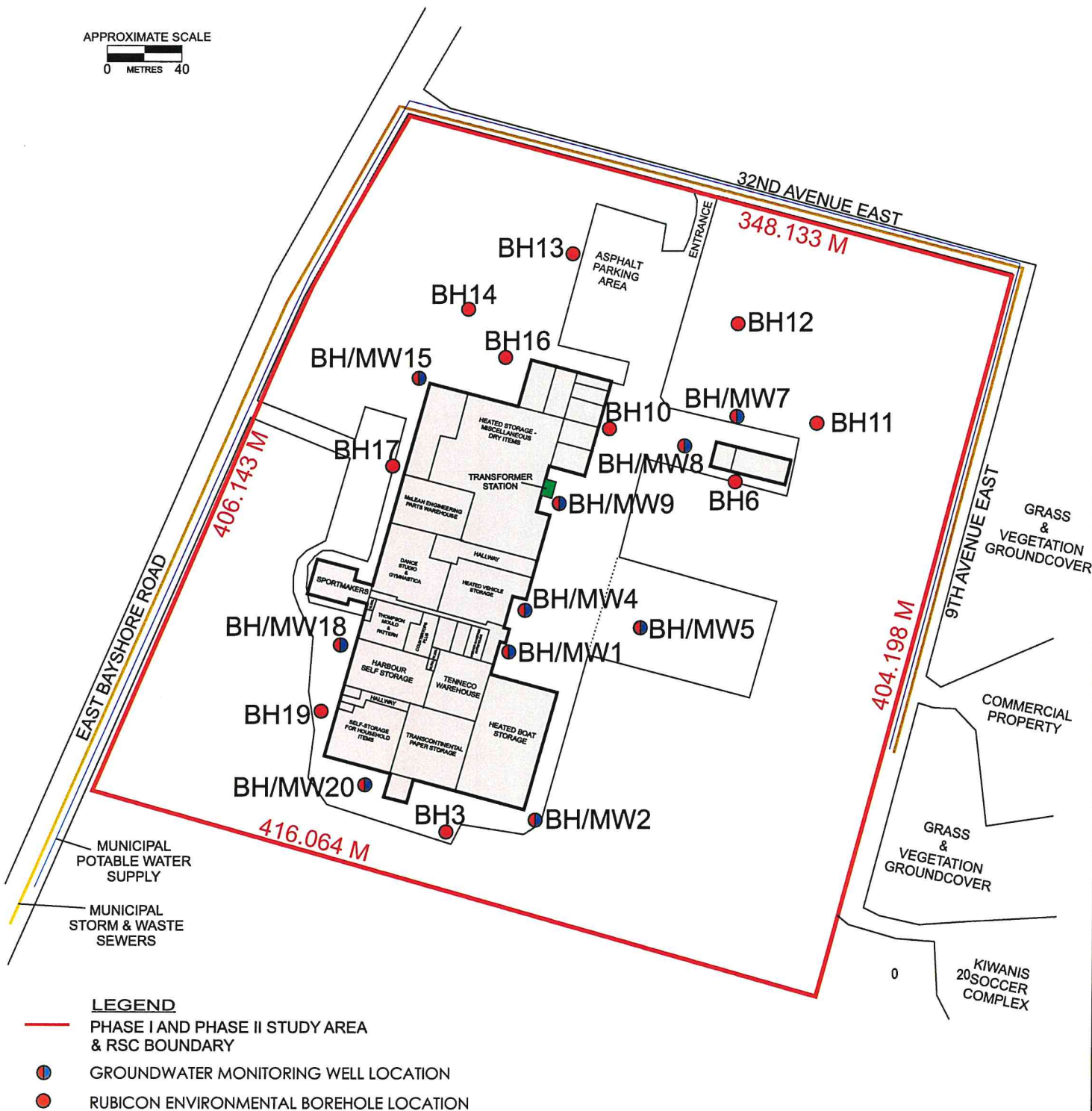


**FIGURE 2:  
SITE PLAN  
3195 EAST BAYSHORE ROAD  
OWEN SOUND, ONTARIO**

FIGURE 3:  
SITE INVESTIGATION  
3195 EAST BAYSHORE ROAD  
OWEN SOUND, ONTARIO



APPROXIMATE SCALE



**LEGEND**

- PHASE I AND PHASE II STUDY AREA & RSC BOUNDARY
- GROUNDWATER MONITORING WELL LOCATION
- RUBICON ENVIRONMENTAL BOREHOLE LOCATION

PROJECT #:	NAME	DATE
R55001.2	NH	SEPTEMBER 2013
DRAWN BY:	PDR	SEPTEMBER 2013
CHECKED BY:		
REVISIONS:		



FIGURE 3:  
SITE INVESTIGATION  
3195 EAST BAYSHORE ROAD  
OWEN SOUND, ONTARIO



# Appendix 1

## Laboratory Certificates of Analysis





RUBICON ENVIRONMENTAL INC.  
ATTN: PAUL REW  
60 Toronto St  
FLESHERTON ON N0C 1E0

Date Received: 05-FEB-13  
Report Date: 08-FEB-13 08:41 (MT)  
Version: FINAL

Client Phone: 519-924-0003

## Certificate of Analysis

**Lab Work Order #:** L1265221  
**Project P.O. #:** NOT SUBMITTED  
**Job Reference:** R555001  
**C of C Numbers:** 127676  
**Legal Site Desc:**

Gayle Braun  
Senior Account Manager

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

ADDRESS: 309 Exeter Road Unit #29, London, ON N6L 1C1 Canada | Phone: +1 519 652 6044 | Fax: +1 519 652 0671  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

L1265221 CONT'D....  
 Job Reference: R555001  
 PAGE 2 of 5  
 08-FEB-13 08:41 (MT)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1265221-1	L1265221-2	L1265221-3	L1265221-4	L1265221-5	L1265221-6	L1265221-7	L1265221-8	L1265221-9
			#1	#2													
Physical Tests	% Moisture	%	-	-					9.39	7.16	12.0	7.57	7.44	6.84	12.8	9.27	
Polycyclic Aromatic Hydrocarbons	Acenaphthene	ug/g	7.9	-				<0.050	<0.050	<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	<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	<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	<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	<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	<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	<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	<0.050	<0.050
	Chrysene	ug/g	7	-				<0.050	<0.050	<0.050	<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	<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	<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	<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	<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	<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	<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	<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	<0.050	<0.050	
Phenanthrene	ug/g	6.2	-				<0.050	<0.050	<0.050	<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	<0.050	<0.050	<0.050	
Surrogate: 2-Fluorobiphenyl	%	-	-				99.1	101.6	106.8	115.6	102.7	103.4	106.8	106.8	102.6	107.8	
Surrogate: p-Terphenyl d14	%	-	-				105.3	109.6	114.2	129.6	107.6	106.9	109.8	109.8	104.8	108.8	

Guide Limit #1: ON51/11-1-T3-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.





# ANALYTICAL REPORT

L1265221 CONT'D....  
 Job Reference: R555001  
 PAGE 3 of 5  
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SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Physical Tests	% Moisture	%	-	-	L1265221-10	31-JAN-13	13:10	BH10 SS2 (D)
Polycyclic Aromatic Hydrocarbons	Acenaphthene	ug/g	7.9	-				9.18
	Acenaphthylene	ug/g	0.15	-				<0.050
	Anthracene	ug/g	0.67	-				<0.050
	Benzo(a)anthracene	ug/g	0.5	-				<0.050
	Benzo(a)pyrene	ug/g	0.3	-				<0.050
	Benzo(b)fluoranthene	ug/g	0.78	-				<0.050
	Benzo(g,h,i)perylene	ug/g	6.6	-				<0.050
	Benzo(k)fluoranthene	ug/g	0.78	-				<0.050
	Chrysene	ug/g	7	-				<0.050
	Dibenzo(ah)anthracene	ug/g	0.1	-				<0.050
	Fluoranthene	ug/g	0.69	-				<0.050
	Fluorene	ug/g	62	-				<0.050
	Indeno(1,2,3-cd)pyrene	ug/g	0.38	-				<0.050
	1+2-Methylnaphthalenes	ug/g	0.99	-				<0.042
1-Methylnaphthalene	ug/g	0.99	-				<0.030	
2-Methylnaphthalene	ug/g	0.99	-				<0.030	
Naphthalene	ug/g	0.6	-				<0.050	
Phenanthrene	ug/g	6.2	-				<0.050	
Pyrene	ug/g	78	-				<0.050	
Surrogate: 2-Fluorobiphenyl	%	-	-				110.9	
Surrogate: p-Terphenyl d14	%	-	-				113.2	

**Guide Limit #1: ON511/11-13-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 Guideline Limit listed. See Summary of Guideline Exceedances.



# ANALYTICAL REPORT

L1265221 CONT'D....  
Job Reference: R555001  
PAGE 4 of 5  
08-FEB-13 08:41 (MT)

## Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
-----------	--------	-----------	----------	---------	--------	-----------------	------

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Res/Park/Inst. Property Use (Coarse)  
(No parameter exceedances)

## Reference Information

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Depending on the analytical GC/MS column used benzo(a)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).

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

### Chain of Custody Numbers:

127676

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.





Environmental

### Quality Control Report

Workorder: L1265221

Report Date: 08-FEB-13

Page 1 of 5

Client: RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0  
Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	Soil							
Batch	R2521639							
WG1622840-3	DUP	L1263807-14						
% Moisture		7.70	7.50		%	2.6	30	05-FEB-13
WG1622840-2	LCS							
% Moisture			95.7		%		70-130	05-FEB-13
WG1622840-1	MB							
% Moisture			<0.10		%		0.1	05-FEB-13
Batch	R2521644							
WG1623044-3	DUP	L1265236-2						
% Moisture		10.8	10.1		%	6.3	30	05-FEB-13
WG1623044-2	LCS							
% Moisture			107.3		%		70-130	05-FEB-13
WG1623044-1	MB							
% Moisture			<0.10		%		0.1	05-FEB-13
PAH-511-WT	Soil							
Batch	R2521749							
WG1623319-1	CVS							
1-Methylnaphthalene			106.3		%		50-140	06-FEB-13
2-Methylnaphthalene			105.5		%		50-140	06-FEB-13
Acenaphthene			108.1		%		50-140	06-FEB-13
Acenaphthylene			106.5		%		50-140	06-FEB-13
Anthracene			94.8		%		50-140	06-FEB-13
Benzo(a)anthracene			102.5		%		50-140	06-FEB-13
Benzo(a)pyrene			99.7		%		50-140	06-FEB-13
Benzo(b)fluoranthene			116.6		%		50-140	06-FEB-13
Benzo(g,h,i)perylene			101.1		%		50-140	06-FEB-13
Benzo(k)fluoranthene			93.2		%		50-140	06-FEB-13
Chrysene			104.0		%		50-140	06-FEB-13
Dibenzo(ah)anthracene			103.5		%		50-140	06-FEB-13
Fluoranthene			97.7		%		50-140	06-FEB-13
Fluorene			108.2		%		50-140	06-FEB-13
Indeno(1,2,3-cd)pyrene			110.3		%		50-140	06-FEB-13
Naphthalene			102.6		%		50-140	06-FEB-13
Phenanthrene			101.1		%		50-140	06-FEB-13
Pyrene			96.8		%		50-140	06-FEB-13
WG1623052-6	DUP	L1265221-1						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-FEB-13



Environmental

### Quality Control Report

Workorder: L1265221

Report Date: 08-FEB-13

Page 2 of 5

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
<b>Batch</b>	<b>R2521749</b>							
<b>WG1623052-6 DUP</b>		<b>L1265221-1</b>						
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-FEB-13
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Naphthalene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Phenanthrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
<b>WG1623052-2 LCS</b>								
1-Methylnaphthalene			109.4		%		50-140	06-FEB-13
2-Methylnaphthalene			109.6		%		50-140	06-FEB-13
Acenaphthene			109.9		%		50-140	06-FEB-13
Acenaphthylene			108.8		%		50-140	06-FEB-13
Anthracene			106.8		%		50-140	06-FEB-13
Benzo(a)anthracene			108.8		%		50-140	06-FEB-13
Benzo(a)pyrene			105.3		%		50-140	06-FEB-13
Benzo(b)fluoranthene			120.2		%		50-140	06-FEB-13
Benzo(g,h,i)perylene			108.5		%		50-140	06-FEB-13
Benzo(k)fluoranthene			97.0		%		50-140	06-FEB-13
Chrysene			110.6		%		50-140	06-FEB-13
Dibenzo(ah)anthracene			112.5		%		50-140	06-FEB-13
Fluoranthene			111.6		%		50-140	06-FEB-13
Fluorene			111.9		%		50-140	06-FEB-13
Indeno(1,2,3-cd)pyrene			114.8		%		50-140	06-FEB-13



Environmental

### Quality Control Report

Workorder: L1265221

Report Date: 08-FEB-13

Page 3 of 5

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
<b>Batch</b>	<b>R2521749</b>							
<b>WG1623052-2</b>	<b>LCS</b>							
Naphthalene			114.7		%		50-140	06-FEB-13
Phenanthrene			110.5		%		50-140	06-FEB-13
Pyrene			110.6		%		50-140	06-FEB-13
<b>WG1623052-3</b>	<b>LCSD</b>	<b>WG1623052-2</b>						
1-Methylnaphthalene		109.4	108.3		%	1.1	50	06-FEB-13
2-Methylnaphthalene		109.6	108.0		%	1.5	50	06-FEB-13
Acenaphthene		109.9	108.4		%	1.4	50	06-FEB-13
Acenaphthylene		108.8	107.6		%	1.2	50	06-FEB-13
Anthracene		106.8	113.9		%	6.4	50	06-FEB-13
Benzo(a)anthracene		108.8	115.5		%	6.0	50	06-FEB-13
Benzo(a)pyrene		105.3	112.5		%	6.6	50	06-FEB-13
Benzo(b)fluoranthene		120.2	118.4		%	1.5	50	06-FEB-13
Benzo(g,h,i)perylene		108.5	114.7		%	5.6	50	06-FEB-13
Benzo(k)fluoranthene		97.0	103.1		%	6.1	50	06-FEB-13
Chrysene		110.6	117.1		%	5.7	50	06-FEB-13
Dibenzo(ah)anthracene		112.5	118.9		%	5.5	50	06-FEB-13
Fluoranthene		111.6	117.4		%	5.0	50	06-FEB-13
Fluorene		111.9	109.4		%	2.2	50	06-FEB-13
Indeno(1,2,3-cd)pyrene		114.8	114.9		%	0.1	50	06-FEB-13
Naphthalene		114.7	107.3		%	6.7	50	06-FEB-13
Phenanthrene		110.5	117.1		%	5.8	50	06-FEB-13
Pyrene		110.6	117.1		%	5.8	50	06-FEB-13
<b>WG1623052-1</b>	<b>MB</b>							
1-Methylnaphthalene			<0.030		ug/g		0.03	06-FEB-13
2-Methylnaphthalene			<0.030		ug/g		0.03	06-FEB-13
Acenaphthene			<0.050		ug/g		0.05	06-FEB-13
Acenaphthylene			<0.050		ug/g		0.05	06-FEB-13
Anthracene			<0.050		ug/g		0.05	06-FEB-13
Benzo(a)anthracene			<0.050		ug/g		0.05	06-FEB-13
Benzo(a)pyrene			<0.050		ug/g		0.05	06-FEB-13
Benzo(b)fluoranthene			<0.050		ug/g		0.05	06-FEB-13
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	06-FEB-13
Benzo(k)fluoranthene			<0.050		ug/g		0.05	06-FEB-13





Environmental

### Quality Control Report

Workorder: L1265221

Report Date: 08-FEB-13

Page 4 of 5

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
<b>Batch</b>	<b>R2521749</b>							
<b>WG1623052-1 MB</b>								
Chrysene			<0.050		ug/g		0.05	06-FEB-13
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	06-FEB-13
Fluoranthene			<0.050		ug/g		0.05	06-FEB-13
Fluorene			<0.050		ug/g		0.05	06-FEB-13
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	06-FEB-13
Naphthalene			<0.050		ug/g		0.05	06-FEB-13
Phenanthrene			<0.050		ug/g		0.05	06-FEB-13
Pyrene			<0.050		ug/g		0.05	06-FEB-13
Surrogate: 2-Fluorobiphenyl			104.9		%		50-140	06-FEB-13
Surrogate: p-Terphenyl d14			98.6		%		50-140	06-FEB-13
<b>WG1623052-7 MS</b>		<b>L1265221-1</b>						
1-Methylnaphthalene			97.0		%		50-140	06-FEB-13
2-Methylnaphthalene			97.5		%		50-140	06-FEB-13
Acenaphthene			98.5		%		50-140	06-FEB-13
Acenaphthylene			99.9		%		50-140	06-FEB-13
Anthracene			92.1		%		50-140	06-FEB-13
Benzo(a)anthracene			102.6		%		50-140	06-FEB-13
Benzo(a)pyrene			93.2		%		50-140	06-FEB-13
Benzo(b)fluoranthene			96.4		%		50-140	06-FEB-13
Benzo(g,h,i)perylene			87.2		%		50-140	06-FEB-13
Benzo(k)fluoranthene			85.7		%		50-140	06-FEB-13
Chrysene			92.6		%		50-140	06-FEB-13
Dibenzo(ah)anthracene			90.5		%		50-140	06-FEB-13
Fluoranthene			99.5		%		50-140	06-FEB-13
Fluorene			100.1		%		50-140	06-FEB-13
Indeno(1,2,3-cd)pyrene			93.9		%		50-140	06-FEB-13
Naphthalene			100.4		%		50-140	06-FEB-13
Phenanthrene			93.9		%		50-140	06-FEB-13
Pyrene			97.9		%		50-140	06-FEB-13

# Quality Control Report

Workorder: L1265221

Report Date: 08-FEB-13

Client: RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0  
Contact: PAUL REW

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.

127676  
COFC # 00000

CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM Page 1 of 1

60 NORTHLAND ROAD, UNIT 1  
WATERLOO, ON N2V 2B8  
Phone: (519) 886-6910  
Fax: (519) 886-9047  
Toll Free: 1-800-668-9878



COMPANY NAME <b>Rubicon Environ</b>		Criteria on report YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
OFFICE <b>Flesherton</b>		Reg 133/04 <input type="checkbox"/> Reg 511/09 <input checked="" type="checkbox"/> <b>Confidential</b>	
PROJECT MANAGER <b>Paul Rew</b>		Table 1 2 3 4 5 6 7 8 9	
PROJECT # <b>R15061</b>		TCLP MISA PWQO	
PHONE <b>924-0003</b>		ODWS OTHER	
ACCOUNT #		REPORT FORMAT/DISTRIBUTION	
QUOTATION # <b>Q39992</b>		EMAIL FAX DIGITAL BOTH	
PO #		SELECT: PDF DIGITAL BOTH	
SAMPLING INFORMATION		EMAIL 1	
Sample Date/Time	TYPE	EMAIL 2	
Date (dd-mm-yy)	Time (24hr) (hh:mm)	SAMPLE DESCRIPTION TO APPEAR ON REPORT	
Jan 29	3:10	BH13 S52	
Jan 29	4:15	BH16 S51	
Jan 30	9:40	BH-MW4 S52	
Jan 30	11:10	BH-MW2 S52	
Jan 30	12:40	BH-MW20 S52	
Jan 30	4:10	BH-MW1 S52	
Jan 31	8:10am	BH3 S52	
Jan 31	12:15pm	BH-MW9 S52	
Jan 31	1:10pm	BH10 S52	
Jan 31	1:10pm	BH10 S52 (D1)	
SPECIAL INSTRUCTIONS/COMMENTS		NUMBER OF CONTAINERS	
SAMPLED BY: <b>Brigitte Wheeler</b>		1	
RELINQUISHED BY: <b>Brigitte Wheeler</b>		1	
DATE & TIME RECEIVED BY: <b>COJ</b>		1	
DATE & TIME RECEIVED AT LAB BY:		1	
THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK YES OR NO)		DATE & TIME	
Are any samples taken from a regulated DW System? Yes <input type="checkbox"/> No <input type="checkbox"/>		DATE & TIME	
If yes, an authorized drinking water COC MUST be used for this submission. Yes <input type="checkbox"/> No <input type="checkbox"/>		DATE & TIME	
Is the water sampled intended to be potable for human consumption? Yes <input type="checkbox"/> No <input type="checkbox"/>		DATE & TIME	
SAMPLING INFORMATION		DATE & TIME	
Date (dd-mm-yy)	Time (24hr) (hh:mm)	DATE & TIME	
Jan 29	3:10	12/13/13:43	
Jan 29	4:15		
Jan 30	9:40		
Jan 30	11:10		
Jan 30	12:40		
Jan 30	4:10		
Jan 31	8:10am		
Jan 31	12:15pm		
Jan 31	1:10pm		
Jan 31	1:10pm		
SPECIAL INSTRUCTIONS/COMMENTS		DATE & TIME	
SAMPLED BY: <b>Brigitte Wheeler</b>		DATE & TIME	
RELINQUISHED BY: <b>Brigitte Wheeler</b>		DATE & TIME	
THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK YES OR NO)		DATE & TIME	
Are any samples taken from a regulated DW System? Yes <input type="checkbox"/> No <input type="checkbox"/>		DATE & TIME	
If yes, an authorized drinking water COC MUST be used for this submission. Yes <input type="checkbox"/> No <input type="checkbox"/>		DATE & TIME	
Is the water sampled intended to be potable for human consumption? Yes <input type="checkbox"/> No <input type="checkbox"/>		DATE & TIME	
SAMPLING INFORMATION		DATE & TIME	
Date (dd-mm-yy)	Time (24hr) (hh:mm)	DATE & TIME	
Jan 29	3:10	12/13/13:43	
Jan 29	4:15		
Jan 30	9:40		
Jan 30	11:10		
Jan 30	12:40		
Jan 30	4:10		
Jan 31	8:10am		
Jan 31	12:15pm		
Jan 31	1:10pm		
Jan 31	1:10pm		



L1265221-COFC

Notes  
1. Quote number must be provided to ensure proper pricing  
2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. 3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.  
Please contact the lab to confirm TATs.





RUBICON ENVIRONMENTAL INC.  
ATTN: PAUL REW  
60 Toronto St  
FLESHERTON ON N0C 1E0

Date Received: 05-FEB-13  
Report Date: 12-FEB-13 08:34 (MT)  
Version: FINAL

Client Phone: 519-924-0003

## Certificate of Analysis

Lab Work Order #: L1265229  
Project P.O. #: NOT SUBMITTED  
Job Reference: R55001  
C of C Numbers: 127679  
Legal Site Desc:

Gayle Braun  
Senior Account Manager

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

ADDRESS: 309 Exeter Road Unit #29, London, ON N6L 1C1 Canada | Phone: +1 519 652 6044 | Fax: +1 519 652 0671  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

L1265229 CONT'D....  
 Job Reference: R55001  
 PAGE 2 of 6  
 12-FEB-13 08:34 (MT)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Physical Tests	% Moisture	%	-	-	L1265229-1	29-JAN-13	15:15	BH13 SS4
Volatile Organic Compounds	Benzene	ug/g	0.21	-	L1265229-2	29-JAN-13	16:10	BH16 SS3
	Ethyl Benzene	ug/g	2	-	L1265229-3	29-JAN-13	18:15	BH-MW15 SS3
	Toluene	ug/g	2.3	-	L1265229-4	30-JAN-13	09:45	BH-MW4 SS3
	o-Xylene	ug/g	-	-	L1265229-5	30-JAN-13	12:40	BH-MW20 SS2
	m-p-Xylenes	ug/g	-	-	L1265229-6	30-JAN-13	14:15	BH-MW18 SS3
Xylenes (Total)		ug/g	3.1	-	L1265229-7	30-JAN-13	16:15	BH-MW1 SS3
		ug/g	-	-	L1265229-8	31-JAN-13	13:20	BH10 SS4
Surrogate: 4-Bromofluorobenzene		%	-	-	L1265229-9	31-JAN-13	13:20	BH10 (D) SS4
		%	-	-				
Hydrocarbons	Surrogate: 1,4-Difluorobenzene	%	-	-				
	F1 (C6-C10)	ug/g	55	-				
	F1-BTEX	ug/g	55	-				
	F2 (C10-C16)	ug/g	98	-				
	F3 (C16-C34)	ug/g	300	-				
	F4 (C34-C50)	ug/g	2800	-				
	Total Hydrocarbons (C6-C50)	ug/g	-	-				
	Chrom. to baseline at nC50	%	-	-				
Surrogate: 2-Bromobenzotrifluoride	%	-	-					
Surrogate: 3,4-Dichlorotoluene	%	-	-					
Surrogate: Octacosane	%	-	-					

Guide Limit #1: ON511/11-T3-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.



# ANALYTICAL REPORT

L1265229 CONT'D....  
 Job Reference: R55001  
 PAGE 3 of 6  
 12-FEB-13 08:34 (MT)

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Physical Tests								
Volatile Organic Compounds	% Moisture	%	-	-	L1265229-10	31-JAN-13	-	TRIP BLANK
	Benzene	ug/g	0.21	-				
	Ethyl Benzene	ug/g	2	-				
	Toluene	ug/g	2.3	-				
	o-Xylene	ug/g	-	-				
	m+p-Xylenes	ug/g	-	-				
	Xylenes (Total)	ug/g	3.1	-				
	Surrogate: 4-Bromofluorobenzene	%	-	-				
	Surrogate: 1,4-Difluorobenzene	%	-	-				
	F1 (C6-C10)	ug/g	55	-				
Hydrocarbons								
F1-BTEX	ug/g	55	-					
F2 (C10-C16)	ug/g	98	-					
F3 (C16-C34)	ug/g	300	-					
F4 (C34-C50)	ug/g	2800	-					
Total Hydrocarbons (C6-C50)	ug/g	-	-					
Chrom. to baseline at nC50	-	-	-	-				
Surrogate: 2-Bromobenzotrifluoride	%	-	-					
Surrogate: 3,4-Dichlorotoluene	%	-	-					
Surrogate: Octacosane	%	-	-					

**Guide Limit #1: ON511/11-T3-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.





# ANALYTICAL REPORT

L1265229 CONT'D....  
Job Reference: R55001  
PAGE 4 of 6  
12-FEB-13 08:34 (MT)

## Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
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Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Res/Park/Inst. Property Use (Coarse)  
(No parameter exceedances)

## Reference Information

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<b>BTX-511-HS-WT</b>	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260
<p>BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.</p>			
<p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
<b>F1-F4-511-CALC-WT</b>	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC DEC-2000 - PUB# 1310-S
<p>Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.</p>			
<p>Hydrocarbon results are expressed on a dry weight basis.</p>			
<p>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.</p>			
<p>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.</p>			
<p>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(k)fluoranthene, Benzo(k)fluoranthene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p>			
<p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p>			
<ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.</li> <li>3. Linearity of gasoline response within 15% throughout the calibration range.</li> </ol>			
<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"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.</li> <li>3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.</li> <li>4. Linearity of diesel or motor oil response within 15% throughout the calibration range.</li> </ol>			
<b>F1-HS-511-WT</b>	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).</p>			
<b>F2-F4-511-WT</b>	Soil	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1
<p>Fractions F2, F3 and F4 are determined by extracting a soil sample with a solvent mix. The solvent recovered from the extracted soil sample is dried and treated to remove polar material. The extract is analyzed by 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).</p>			
<b>MOISTURE-WT</b>	Soil	% Moisture	Gravimetric: Oven Dried
<b>XYLENES-SUM-CALC-WT</b>	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
<p>Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.</p>			

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

Chain of Custody Numbers:

127679

# Reference Information

L1265229 CONT'D....  
Job Reference: R55001  
PAGE 6 of 6  
12-FEB-13 08:34 (MT)

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: L1265229

Report Date: 12-FEB-13

Page 1 of 4

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0  
 Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522250</b>							
<b>WG1622241-1</b>	<b>CVS</b>							
Benzene			109.5		%		75-125	06-FEB-13
Ethyl Benzene			111.1		%		75-125	06-FEB-13
m+p-Xylenes			107.8		%		75-125	06-FEB-13
o-Xylene			106.6		%		75-125	06-FEB-13
Toluene			103.4		%		75-125	06-FEB-13
<b>WG1623150-4</b>	<b>DUP</b>	<b>WG1623150-3</b>						
Benzene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	07-FEB-13
Ethyl Benzene		<0.20	<0.20	RPD-NA	ug/g	N/A	40	07-FEB-13
m+p-Xylenes		0.38	0.35		ug/g	8.2	40	07-FEB-13
o-Xylene		0.747	0.684		ug/g	8.8	40	07-FEB-13
Toluene		<0.80	<0.80	RPD-NA	ug/g	N/A	40	07-FEB-13
<b>WG1623150-2</b>	<b>LCS</b>							
Benzene			110.1		%		70-130	06-FEB-13
Ethyl Benzene			104.6		%		70-130	06-FEB-13
m+p-Xylenes			101.3		%		70-130	06-FEB-13
o-Xylene			104.1		%		70-130	06-FEB-13
Toluene			103.2		%		70-130	06-FEB-13
<b>WG1623150-1</b>	<b>MB</b>							
Benzene			<0.020		ug/g		0.02	06-FEB-13
Ethyl Benzene			<0.050		ug/g		0.05	06-FEB-13
m+p-Xylenes			<0.030		ug/g		0.03	06-FEB-13
o-Xylene			<0.020		ug/g		0.02	06-FEB-13
Toluene			<0.20		ug/g		0.2	06-FEB-13
Surrogate: 1,4-Difluorobenzene			108.4		%		70-130	06-FEB-13
Surrogate: 4-Bromofluorobenzene			109.1		%		70-130	06-FEB-13
<b>WG1623150-5</b>	<b>MS</b>	<b>WG1623150-3</b>						
Benzene			123.6		%		60-140	07-FEB-13
Ethyl Benzene			115.3		%		60-140	07-FEB-13
m+p-Xylenes			107.0		%		60-140	07-FEB-13
o-Xylene			115.0		%		60-140	07-FEB-13
Toluene			122.1		%		60-140	07-FEB-13
F1-HS-511-WT	Soil							



Environmental

### Quality Control Report

Workorder: L1265229

Report Date: 12-FEB-13

Page 2 of 4

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	Soil							
<b>Batch</b>	<b>R2522250</b>							
<b>WG1622241-1</b>	<b>CVS</b>							
F1 (C6-C10)			96.5		%		80-120	06-FEB-13
<b>WG1623150-4</b>	<b>DUP</b>	<b>WG1623150-3</b>						
F1 (C6-C10)		93	92		ug/g	1.2	50	07-FEB-13
<b>WG1623150-2</b>	<b>LCS</b>							
F1 (C6-C10)			88.5		%		80-120	06-FEB-13
<b>WG1623150-1</b>	<b>MB</b>							
F1 (C6-C10)			<5.0		ug/g		5	06-FEB-13
Surrogate: 3,4-Dichlorotoluene			108.5		%		60-140	06-FEB-13
<b>WG1623150-7</b>	<b>MS</b>	<b>WG1623150-6</b>						
F1 (C6-C10)			113.8		%		60-140	07-FEB-13
F2-F4-511-WT	Soil							
<b>Batch</b>	<b>R2526852</b>							
<b>WG1623316-1</b>	<b>CVS</b>							
F2 (C10-C16)			96.0		%		80-120	11-FEB-13
F3 (C16-C34)			96.7		%		80-120	11-FEB-13
F4 (C34-C50)			103.8		%		80-120	11-FEB-13
<b>WG1622848-5</b>	<b>DUP</b>	<b>L1263807-14</b>						
F2 (C10-C16)		40	32		ug/g	22	40	11-FEB-13
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	40	11-FEB-13
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	40	11-FEB-13
<b>WG1622848-2</b>	<b>LCS</b>							
F2 (C10-C16)			90.7		%		80-120	11-FEB-13
F3 (C16-C34)			97.3		%		80-120	11-FEB-13
F4 (C34-C50)			105.9		%		80-120	11-FEB-13
<b>WG1622848-3</b>	<b>LCSD</b>	<b>WG1622848-2</b>						
F2 (C10-C16)		90.7	95.2		%	4.9	50	11-FEB-13
F3 (C16-C34)		97.3	97.0		%	0.3	50	11-FEB-13
F4 (C34-C50)		105.9	105.7		%	0.2	50	11-FEB-13
<b>WG1622848-1</b>	<b>MB</b>							
F2 (C10-C16)			<10		ug/g		10	11-FEB-13
F3 (C16-C34)			<50		ug/g		50	11-FEB-13
F4 (C34-C50)			<50		ug/g		50	11-FEB-13
Surrogate: Octacosane			102.7		%		60-140	11-FEB-13
Surrogate: 2-Bromobenzotrifluoride			79.9		%		60-140	11-FEB-13
<b>WG1622848-6</b>	<b>MS</b>	<b>L1263807-14</b>						



Environmental

### Quality Control Report

Workorder: L1265229

Report Date: 12-FEB-13

Page 3 of 4

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
Batch	R2526852							
WG1622848-6	MS	L1263807-14						
F2 (C10-C16)			95.6		%		60-140	11-FEB-13
F3 (C16-C34)			94.7		%		60-140	11-FEB-13
F4 (C34-C50)			104.4		%		60-140	11-FEB-13
MOISTURE-WT	Soil							
Batch	R2521644							
WG1623044-3	DUP	L1265236-2						
% Moisture		10.8	10.1		%	6.3	30	05-FEB-13
WG1623044-2	LCS							
% Moisture			107.3		%		70-130	05-FEB-13
WG1623044-1	MB							
% Moisture			<0.10		%		0.1	05-FEB-13



# Quality Control Report

Workorder: L1265229

Report Date: 12-FEB-13

Client: RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0  
Contact: PAUL REW

Page 4 of 4

## Legend:

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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
DLA	Detection Limit Adjusted For required dilution
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 / ANALYTICAL SERVICES REQUEST FORM

60 NORTHLAND ROAD, UNIT 1  
WATERLOO, ON N2V 2B8  
Phone: (519) 886-6910  
Fax: (519) 886-9047  
Toll Free: 1-800-668-9878



COMPANY NAME: Rubicon Env.

OFFICE: Flesherton

PROJECT MANAGER: Paul Rev

PROJECT #: R5560

PHONE: 924-0003 FAX: 924-0004

ACCOUNT #

QUOTATION # Q37992 PO #

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Criteria on report YES  NO

Reg 153/04  Reg 511/09

Table 1 2 3 4 5 6 7 8 9

TCLP MISA PWQO  
ODWS OTHER

REPORT FORMAT/DISTRIBUTION

EMAIL FAX DIGITAL BOTH  
SELECT: PDF DIGITAL BOTH

EMAIL 1  
EMAIL 2

SAMPLE DESCRIPTION TO APPEAR ON REPORT

BH13 554 553  
BH16 553 553  
BH-MW15 553 553  
BH-MW4 553 553  
BH-MW20 553 553  
BH-MW18 553 553  
BH-MW1 553 553  
BH-MW10 553 553  
BH-MW10 553 553  
trip blank

NUMBER OF CONTAINERS

ANALYSIS REQUEST

Service requested

Specify date required

2 day TAT (50%)  
Next day TAT (100%)  
Same day TAT (200%)

PLEASE INDICATE FILTERED, PRESERVED OR BOTH (F, P, F/P)

SUBMISSION #: L1265229

ENTERED BY: ay

DATE/TIME ENTERED: 5/2/13 14:36

BIN #: B193

COMMENTS

LAB ID

MEOH

SAMPLED BY: Brian Cuthbert

RELINQUISHED BY: Brian White

RECEIVED BY: ay

RECEIVED AT LAB BY: ay

DATE & TIME: 5/2/13 13:43

DATE & TIME

DATE & TIME

SPECIAL INSTRUCTIONS/COMMENTS

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK YES OR NO)

Are any samples taken from a regulated DW System?

If yes, an authorized drinking water COC MUST be used for this submission.

Is the water sampled intended to be potable for human consumption?

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

Yes  No

Notes

- Quote number must be provided to ensure proper pricing
- TAT may vary dependent on complexity of analysis and lab workload at time of submission. Please contact the lab to confirm TATs.
- Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.



RUBICON ENVIRONMENTAL INC.  
ATTN: PAUL REW  
60 Toronto St  
FLESHERTON ON N0C 1E0

Date Received: 05-FEB-13  
Report Date: 13-FEB-13 14:24 (MT)  
Version: FINAL

Client Phone: 519-924-0003

## Certificate of Analysis

**Lab Work Order #:** L1265236  
**Project P.O. #:** NOT SUBMITTED  
**Job Reference:** R55001  
**C of C Numbers:** 127678  
**Legal Site Desc:**

*Wayne Smith*

Wayne Smith, C.CHEM., C.E.T.  
Account Manager

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

ADDRESS: 309 Exeter Road Unit #29, London, ON N6L 1C1 Canada | Phone: +1 519 652 6044 | Fax: +1 519 652 0671  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company





# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

L1265236 CONT'D....  
Job Reference: R55001  
PAGE 2 of 10  
13-FEB-13 14:24 (MTT)

Grouping	Analyte	Unit	Guide Limits		ALS ID	L1265236-1	L1265236-2	L1265236-3	L1265236-4	L1265236-5	L1265236-6	L1265236-7	L1265236-8	L1265236-9
			#1	#2	Sampled Date	Sampled Time	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
Physical Tests	% Moisture	%	-	-	L1265236-1	10.9	10.8	10.7	11.9	8.56	10.5	6.92	11.1	16.3
Volatile Organic Compounds	Acetone	ug/g	16	-	L1265236-1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Benzene	ug/g	0.21	-	L1265236-1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
	Bromodichloromethane	ug/g	13	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Bromoform	ug/g	0.27	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Bromomethane	ug/g	0.05	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Carbon tetrachloride	ug/g	0.05	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Chlorobenzene	ug/g	2.4	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Dibromochloromethane	ug/g	9.4	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Chloroform	ug/g	0.05	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,2-Dibromoethane	ug/g	0.05	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,2-Dichlorobenzene	ug/g	3.4	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,3-Dichlorobenzene	ug/g	4.8	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,4-Dichlorobenzene	ug/g	0.083	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Dichlorodifluoromethane	ug/g	16	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,1-Dichloroethane	ug/g	3.5	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
1,1-Dichloroethylene	ug/g	0.05	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
cis-1,2-Dichloroethylene	ug/g	3.4	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	-	L1265236-1	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	
Methylene Chloride	ug/g	0.1	-	L1265236-1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	

**Guide Limit #1: ON511/11-T3-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.



# ANALYTICAL REPORT

L1265236 CONT'D....  
 Job Reference: R55001  
 PAGE 3 of 10  
 13-FEB-13 14:24 (MT)

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Physical Tests	% Moisture	%	-	-	L1265236-10	31-JAN-13	-	TRIP BLANK
Volatile Organic Compounds	Acetone	ug/g	16	-				<0.10
	Benzene	ug/g	0.21	-				<0.50
	Bromodichloromethane	ug/g	13	-				<0.020
	Bromoform	ug/g	0.27	-				<0.050
	Bromomethane	ug/g	0.05	-				<0.050
	Carbon tetrachloride	ug/g	0.05	-				<0.050
	Chlorobenzene	ug/g	2.4	-				<0.050
	Dibromochloromethane	ug/g	9.4	-				<0.050
	Chloroform	ug/g	0.05	-				<0.050
	1,2-Dibromoethane	ug/g	0.05	-				<0.050
	1,2-Dichlorobenzene	ug/g	3.4	-				<0.050
	1,3-Dichlorobenzene	ug/g	4.8	-				<0.050
	1,4-Dichlorobenzene	ug/g	0.083	-				<0.050
	Dichlorodifluoromethane	ug/g	16	-				<0.050
	1,1-Dichloroethane	ug/g	3.5	-				<0.050
	1,2-Dichloroethane	ug/g	0.05	-				<0.050
	1,1-Dichloroethylene	ug/g	0.05	-				<0.050
cis-1,2-Dichloroethylene	ug/g	3.4	-				<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	-				<0.050	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	-				<0.050	
Methylene Chloride	ug/g	0.1	-				<0.042	
								<0.050

**Guide Limit #1: ON511/11-T3-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.



# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

L1265236 CONT'D....  
 Job Reference: R55001  
 PAGE 4 of 10  
 13-FEB-13 14:24 (MT)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1265236-1	L1265236-2	L1265236-3	L1265236-4	L1265236-5	L1265236-6	L1265236-7	L1265236-8	L1265236-9
			#1	#2													
Volatile Organic Compounds	1,2-Dichloropropane	ug/g	0.05	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	cis-1,3-Dichloropropene	ug/g	-	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
	trans-1,3-Dichloropropene	ug/g	-	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
	Ethyl Benzene	ug/g	2	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	n-Hexane	ug/g	2.8	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Methyl Ethyl Ketone	ug/g	16	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Methyl Isobutyl Ketone	ug/g	1.7	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	MTBE	ug/g	0.75	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Styrene	ug/g	0.7	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,1,1,2-Tetrachloroethane	ug/g	0.058	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,1,2,2-Tetrachloroethane	ug/g	0.05	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Tetrachloroethylene	ug/g	0.28	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Toluene	ug/g	2.3	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	1,1,1-Trichloroethane	ug/g	0.38	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1,1,2-Trichloroethane	ug/g	0.05	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Trichloroethylene	ug/g	0.061	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Trichlorofluoromethane	ug/g	4	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
o-Xylene	ug/g	-	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
m+p-Xylenes	ug/g	-	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	
Xylenes (Total)	ug/g	3.1	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Surrogate: 4-Bromofluorobenzene	%	-	-	L1265236-1	29-JAN-13	12:10	BH-MW7 SS3	92.4	91.0	89.6	86.4	79.7	87.6	86.1	88.2	73.3	

Guide Limit #1: ON511/11-T3-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.





# ANALYTICAL REPORT

L1265236 CONT'D....  
 Job Reference: R55001  
 PAGE 5 of 10  
 13-FEB-13 14:24 (MT)

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Volatile Organic Compounds	1,2-Dichloropropane	ug/g	0.05	-	L1265236-10	31-JAN-13	-	TRIP BLANK
	cis-1,3-Dichloropropene	ug/g	-	-				
	trans-1,3-Dichloropropene	ug/g	-	-				
	Ethyl Benzene	ug/g	2	-				
	n-Hexane	ug/g	2.8	-				
	Methyl Ethyl Ketone	ug/g	16	-				
	Methyl Isobutyl Ketone	ug/g	1.7	-				
	MTBE	ug/g	0.75	-				
	Styrene	ug/g	0.7	-				
	1,1,1,2-Tetrachloroethane	ug/g	0.058	-				
	1,1,2,2-Tetrachloroethane	ug/g	0.05	-				
	Tetrachloroethylene	ug/g	0.28	-				
	Toluene	ug/g	2.3	-				
	1,1,1-Trichloroethane	ug/g	0.38	-				
	1,1,2-Trichloroethane	ug/g	0.05	-				
	Trichloroethylene	ug/g	0.061	-				
	Trichlorofluoromethane	ug/g	4	-				
	Vinyl chloride	ug/g	0.02	-				
	o-Xylene	ug/g	-	-				
	m+p-Xylenes	ug/g	-	-				
Xylenes (Total)	ug/g	3.1	-					
Surrogate: 4-Bromofluorobenzene	%	-	-					
								86.0

**Guide Limit #1: ON511/11-T3-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.



# ANALYTICAL REPORT

L1265236 CONT'D....  
 Job Reference: R55001  
 PAGE 6 of 10  
 13-FEB-13 14:24 (MT)

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1265236-1	L1265236-2	L1265236-3	L1265236-4	L1265236-5	L1265236-6	L1265236-7	L1265236-8	L1265236-9			
			#1	#2																
Volatile Organic Compounds Hydrocarbons	Surrogate: 1,4-Difluorobenzene	%	-	-																
	F1 (C6-C10)	ug/g	55	-																
	F1-BTEX	ug/g	55	-																
	F2 (C10-C16)	ug/g	98	-																
	F3 (C16-C34)	ug/g	300	-																
	F4 (C34-C50)	ug/g	2800	-																
	F4G-SG (GHH-Silica)	mg/kg	2800	-																
	Total Hydrocarbons (C6-C50)	ug/g	-	-																
	Chrom. to baseline at nC50	%	-	-																
	Trihalomethanes	Surrogate: 2-Bromobenzotrifluoride	%	-	-															
Surrogate: 3,4-Dichloroluene		%	-	-																
Surrogate: Octacosane		%	-	-																
	Total THMs	nounits	-	-																

Guide Limit #1: ON511/11-T3-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.

**SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)**

Grouping	Analyte	Unit	Guide Limits		ALS ID
			#1	#2	
Volatile Organic Compounds	Surrogate: 1,4-Difluorobenzene	%	-	-	L1265236-10
Hydrocarbons	F1 (C6-C10)	ug/g	55	-	31-JAN-13
	F1-BTEX	ug/g	55	-	-
	F2 (C10-C16)	ug/g	98	-	TRIP BLANK
	F3 (C16-C34)	ug/g	300	-	
	F4 (C34-C50)	ug/g	2800	-	
	F4-G-SG (GHH-Silica)	mg/kg	2800	-	
	Total Hydrocarbons (C6-C50)	ug/g	-	-	
	Chrom. to baseline at nC50	-	-	-	
	Surrogate: 2-Bromobenzotrifluoride	%	-	-	
	Surrogate: 3,4-Dichlorotoluene	%	-	-	88.9
	Surrogate: Octacosane	%	-	-	
Trihalomethanes	Total THMs	nounits	-	-	<0.10

**Guide Limit #1: ON511/11-T3-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.





# ANALYTICAL REPORT

L1265236 CONT'D....  
Job Reference: R55001  
PAGE 8 of 10  
13-FEB-13 14:24 (MT)

## Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
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Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Res/Park/Inst. Property Use (Coarse)  
(No parameter exceedances)

## Reference Information

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<b>F1-F4-511-CALC-WT</b>	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC DEC-2000 - PUB# 1310-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:			
<ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.</li> <li>3. Linearity of gasoline response within 15% throughout the calibration range.</li> </ol>			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
<ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.</li> <li>3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.</li> <li>4. Linearity of diesel or motor oil response within 15% throughout the calibration range.</li> </ol>			
<b>F1-HS-511-WT</b>	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
<b>F2-F4-511-WT</b>	Soil	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1
Fractions F2, F3 and F4 are determined by extracting a soil sample with a solvent mix. The solvent recovered from the extracted soil sample is dried and treated to remove polar material. The extract is analyzed by 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).			
<b>F4G-ADD-511-WT</b>	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1
F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
<b>MOISTURE-WT</b>	Soil	% Moisture	Gravimetric: Oven Dried
<b>THM-SUM-CALC-WT</b>	Soil	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
<b>VOC-1,3-DCP-CALC-WT</b>	Soil	Regulation 153 VOCs	SW8260B/SW8270C
<b>VOC-511-HS-WT</b>	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.			

## Reference Information

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
<b>XYLENES-SUM-CALC-WT</b>	Soil	Sum of Xylene Isomer Concentrations	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
**ALS test methods may incorporate modifications from specified reference methods to improve performance.			
Chain of Custody Numbers:			
127678			
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.



Environmental

# Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

Page 1 of 11

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622753-1</b>	<b>CVS</b>							
F1 (C6-C10)			94.3		%		80-120	06-FEB-13
<b>WG1622742-4</b>	<b>DUP</b>	<b>WG1622742-3</b>						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	50	06-FEB-13
<b>WG1622742-2</b>	<b>LCS</b>							
F1 (C6-C10)			97.3		%		80-120	06-FEB-13
<b>WG1622742-1</b>	<b>MB</b>							
F1 (C6-C10)			<5.0		ug/g		5	06-FEB-13
Surrogate: 3,4-Dichlorotoluene			104.2		%		60-140	06-FEB-13
<b>WG1622742-7</b>	<b>MS</b>	<b>WG1622742-6</b>						
F1 (C6-C10)			109.8		%		60-140	06-FEB-13
F2-F4-511-WT	Soil							
<b>Batch</b>	<b>R2522310</b>							
<b>WG1623612-2</b>	<b>CVS</b>							
F2 (C10-C16)			97.9		%		80-120	06-FEB-13
F3 (C16-C34)			90.0		%		80-120	06-FEB-13
F4 (C34-C50)			86.0		%		80-120	06-FEB-13
<b>WG1623050-5</b>	<b>DUP</b>	<b>WG1623050-4</b>						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	40	06-FEB-13
F3 (C16-C34)		51	<50	RPD-NA	ug/g	N/A	40	06-FEB-13
F4 (C34-C50)		158	157		ug/g	0.1	40	06-FEB-13
<b>WG1623050-2</b>	<b>LCS</b>							
F2 (C10-C16)			95.8		%		80-120	06-FEB-13
F3 (C16-C34)			95.1		%		80-120	06-FEB-13
F4 (C34-C50)			90.1		%		80-120	06-FEB-13
<b>WG1623050-6</b>	<b>MS</b>	<b>WG1623050-4</b>						
F2 (C10-C16)			93.5		%		60-140	06-FEB-13
F3 (C16-C34)			98.1		%		60-140	06-FEB-13
F4 (C34-C50)			N/A	MS-B	%		-	06-FEB-13
<b>Batch</b>	<b>R2526852</b>							
<b>WG1623316-1</b>	<b>CVS</b>							
F2 (C10-C16)			96.0		%		80-120	11-FEB-13
F3 (C16-C34)			96.7		%		80-120	11-FEB-13
F4 (C34-C50)			103.8		%		80-120	11-FEB-13
<b>WG1622848-5</b>	<b>DUP</b>	<b>L1263807-14</b>						
F2 (C10-C16)		40	32		ug/g	22	40	11-FEB-13





Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
<b>Batch</b>	<b>R2526852</b>							
<b>WG1622848-5</b>	<b>DUP</b>	<b>L1263807-14</b>						
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	40	11-FEB-13
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	40	11-FEB-13
<b>WG1622848-2</b>	<b>LCS</b>							
F2 (C10-C16)			90.7		%		80-120	11-FEB-13
F3 (C16-C34)			97.3		%		80-120	11-FEB-13
F4 (C34-C50)			105.9		%		80-120	11-FEB-13
<b>WG1622848-3</b>	<b>LCSD</b>	<b>WG1622848-2</b>						
F2 (C10-C16)		90.7	95.2		%	4.9	50	11-FEB-13
F3 (C16-C34)		97.3	97.0		%	0.3	50	11-FEB-13
F4 (C34-C50)		105.9	105.7		%	0.2	50	11-FEB-13
<b>WG1622848-1</b>	<b>MB</b>							
F2 (C10-C16)			<10		ug/g		10	11-FEB-13
F3 (C16-C34)			<50		ug/g		50	11-FEB-13
F4 (C34-C50)			<50		ug/g		50	11-FEB-13
Surrogate: Octacosane			102.7		%		60-140	11-FEB-13
Surrogate: 2-Bromobenzotrifluoride			79.9		%		60-140	11-FEB-13
<b>WG1622848-6</b>	<b>MS</b>	<b>L1263807-14</b>						
F2 (C10-C16)			95.6		%		60-140	11-FEB-13
F3 (C16-C34)			94.7		%		60-140	11-FEB-13
F4 (C34-C50)			104.4		%		60-140	11-FEB-13
<b>Batch</b>	<b>R2529133</b>							
<b>WG1626498-1</b>	<b>CVS</b>							
F2 (C10-C16)			102.8		%		80-120	13-FEB-13
F3 (C16-C34)			103.4		%		80-120	13-FEB-13
F4 (C34-C50)			106.2		%		80-120	13-FEB-13
<b>WG1625975-5</b>	<b>DUP</b>	<b>WG1625975-4</b>						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	40	13-FEB-13
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	40	13-FEB-13
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	40	13-FEB-13
<b>WG1625975-2</b>	<b>LCS</b>							
F2 (C10-C16)			95.0		%		80-120	13-FEB-13
F3 (C16-C34)			100.1		%		80-120	13-FEB-13
F4 (C34-C50)			96.4		%		80-120	13-FEB-13
<b>WG1625975-3</b>	<b>LCSD</b>	<b>WG1625975-2</b>						
F2 (C10-C16)		95.0	90.3		%	5.1	50	13-FEB-13



Environmental

### Quality Control Report

Workorder: L1265236

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
<b>Batch</b>	<b>R2529133</b>							
<b>WG1625975-3</b>	<b>LCS</b>	<b>WG1625975-2</b>						
F3 (C16-C34)		100.1	95.7		%	4.4	50	13-FEB-13
F4 (C34-C50)		96.4	100.4		%	4.0	50	13-FEB-13
<b>WG1625975-1</b>	<b>MB</b>							
F2 (C10-C16)			<10		ug/g		10	13-FEB-13
F3 (C16-C34)			<50		ug/g		50	13-FEB-13
F4 (C34-C50)			<50		ug/g		50	13-FEB-13
Surrogate: Octacosane			126.7		%		60-140	13-FEB-13
Surrogate: 2-Bromobenzotrifluoride			98.8		%		60-140	13-FEB-13
<b>WG1625975-6</b>	<b>MS</b>	<b>WG1625975-4</b>						
F2 (C10-C16)			91.9		%		60-140	13-FEB-13
F3 (C16-C34)			97.6		%		60-140	13-FEB-13
F4 (C34-C50)			97.8		%		60-140	13-FEB-13
F4G-ADD-511-WT	Soil							
<b>Batch</b>	<b>R2522510</b>							
<b>WG1623677-2</b>	<b>LCS</b>							
F4G-SG (GHH-Silica)			62.1		%		60-140	05-FEB-13
<b>WG1623677-3</b>	<b>LCS</b>	<b>WG1623677-2</b>						
F4G-SG (GHH-Silica)		62.1	72.4		%	15	50	05-FEB-13
<b>WG1623677-1</b>	<b>MB</b>							
F4G-SG (GHH-Silica)			<250		mg/kg		250	05-FEB-13
MOISTURE-WT	Soil							
<b>Batch</b>	<b>R2521643</b>							
<b>WG1623049-3</b>	<b>DUP</b>	<b>L1265245-5</b>						
% Moisture		9.36	9.38		%	0.2	30	05-FEB-13
<b>WG1623049-2</b>	<b>LCS</b>							
% Moisture			91.7		%		70-130	05-FEB-13
<b>WG1623049-1</b>	<b>MB</b>							
% Moisture			<0.10		%		0.1	05-FEB-13
<b>Batch</b>	<b>R2521644</b>							
<b>WG1623044-3</b>	<b>DUP</b>	<b>L1265236-2</b>						
% Moisture		10.8	10.1		%	6.3	30	05-FEB-13
<b>WG1623044-2</b>	<b>LCS</b>							
% Moisture			107.3		%		70-130	05-FEB-13
<b>WG1623044-1</b>	<b>MB</b>							
% Moisture			<0.10		%		0.1	05-FEB-13
VOC-511-HS-WT	Soil							



Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622753-1</b>	<b>CVS</b>							
1,1,1,2-Tetrachloroethane			93.4		%		75-125	06-FEB-13
1,1,2,2-Tetrachloroethane			102.0		%		75-125	06-FEB-13
1,1,1-Trichloroethane			99.0		%		75-125	06-FEB-13
1,1,2-Trichloroethane			98.8		%		75-125	06-FEB-13
1,1-Dichloroethane			102.2		%		75-125	06-FEB-13
1,1-Dichloroethylene			92.3		%		70-130	06-FEB-13
1,2-Dibromoethane			86.0		%		75-125	06-FEB-13
1,2-Dichlorobenzene			88.7		%		75-125	06-FEB-13
1,2-Dichloroethane			92.0		%		75-125	06-FEB-13
1,2-Dichloropropane			90.9		%		75-125	06-FEB-13
1,3-Dichlorobenzene			102.7		%		70-130	06-FEB-13
1,4-Dichlorobenzene			100.6		%		75-125	06-FEB-13
Acetone			114.2		%		70-130	06-FEB-13
Benzene			89.3		%		75-125	06-FEB-13
Bromodichloromethane			95.1		%		75-125	06-FEB-13
Bromoform			98.5		%		75-125	06-FEB-13
Bromomethane			94.6		%		70-130	06-FEB-13
Carbon tetrachloride			98.9		%		75-125	06-FEB-13
Chlorobenzene			94.9		%		75-125	06-FEB-13
Chloroform			100.4		%		75-125	06-FEB-13
cis-1,2-Dichloroethylene			99.7		%		75-125	06-FEB-13
cis-1,3-Dichloropropene			98.3		%		75-125	06-FEB-13
Dibromochloromethane			90.0		%		75-125	06-FEB-13
Dichlorodifluoromethane			72.5		%		70-130	06-FEB-13
Ethyl Benzene			98.8		%		75-125	06-FEB-13
n-Hexane			82.7		%		75-125	06-FEB-13
Methylene Chloride			89.6		%		75-125	06-FEB-13
MTBE			83.5		%		75-125	06-FEB-13
m+p-Xylenes			99.5		%		70-130	06-FEB-13
Methyl Ethyl Ketone			100.8		%		70-130	06-FEB-13
Methyl Isobutyl Ketone			88.5		%		70-130	06-FEB-13
o-Xylene			100.9		%		75-125	06-FEB-13
Styrene			107.1		%		75-125	06-FEB-13





Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

Page 5 of 11

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622753-1</b>	<b>CVS</b>							
Tetrachloroethylene			88.6		%		75-125	06-FEB-13
Toluene			92.0		%		75-125	06-FEB-13
trans-1,2-Dichloroethylene			87.0		%		75-125	06-FEB-13
trans-1,3-Dichloropropene			97.3		%		75-125	06-FEB-13
Trichloroethylene			97.1		%		70-130	06-FEB-13
Trichlorofluoromethane			111.0		%		70-130	06-FEB-13
Vinyl chloride			93.0		%		70-130	06-FEB-13
<b>WG1622742-4</b>	<b>DUP</b>	<b>WG1622742-3</b>						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	06-FEB-13
Benzene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	06-FEB-13
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-FEB-13
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Ethyl Benzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13



Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622742-4 DUP</b>		<b>WG1622742-3</b>						
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-FEB-13
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	06-FEB-13
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	06-FEB-13
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	06-FEB-13
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Toluene		<0.20	<0.20	RPD-NA	ug/g	N/A	40	06-FEB-13
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	06-FEB-13
Trichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	06-FEB-13
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	06-FEB-13
<b>WG1622742-2 LCS</b>								
1,1,1,2-Tetrachloroethane			97.2		%		60-130	06-FEB-13
1,1,2,2-Tetrachloroethane			93.8		%		60-130	06-FEB-13
1,1,1-Trichloroethane			110.4		%		60-130	06-FEB-13
1,1,2-Trichloroethane			98.2		%		60-130	06-FEB-13
1,1-Dichloroethane			110.2		%		60-130	06-FEB-13
1,1-Dichloroethylene			93.0		%		60-130	06-FEB-13
1,2-Dibromoethane			93.8		%		70-130	06-FEB-13
1,2-Dichlorobenzene			97.7		%		70-130	06-FEB-13
1,2-Dichloroethane			113.3		%		60-130	06-FEB-13
1,2-Dichloropropane			104.2		%		70-130	06-FEB-13
1,3-Dichlorobenzene			104.7		%		70-130	06-FEB-13
1,4-Dichlorobenzene			102.8		%		70-130	06-FEB-13
Acetone			117.5		%		60-140	06-FEB-13
Benzene			109.3		%		70-130	06-FEB-13
Bromodichloromethane			117.0		%		50-140	06-FEB-13
Bromoform			96.5		%		70-130	06-FEB-13
Bromomethane			101.3		%		50-140	06-FEB-13



Environmental

# Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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RUBICON ENVIRONMENTAL INC.

60 Toronto St

FLESHERTON ON N0C 1E0

PAUL REW

Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
1-HS-WT	Soil						
	<b>R2522070</b>						
<b>1622742-2 LCS</b>							
Carbon tetrachloride		112.2		%		70-130	06-FEB-13
Bromobenzene		103.9		%		70-130	06-FEB-13
Chloroform		123.9		%		70-130	06-FEB-13
1,2-Dichloroethylene		111.3		%		70-130	06-FEB-13
1,3-Dichloropropene		115.3		%		70-130	06-FEB-13
Bromochloromethane		97.5		%		60-130	06-FEB-13
Chlorodifluoromethane		72.9		%		50-140	06-FEB-13
1,4-Dichlorobenzene		100.8		%		70-130	06-FEB-13
Hexane		93.8		%		70-130	06-FEB-13
1,1,1-Trichloroethylene		111.9		%		70-130	06-FEB-13
1,1,2-Trichloroethane		92.0		%		70-130	06-FEB-13
o,p-Xylenes		104.6		%		70-130	06-FEB-13
1,2-Dimethyl Ethyl Ketone		117.8		%		60-140	06-FEB-13
1,3-Dimethyl Isobutyl Ketone		102.9		%		60-140	06-FEB-13
m-Xylene		100.6		%		70-130	06-FEB-13
1,2-Dichlorobenzene		96.2		%		70-130	06-FEB-13
1,1-Dichloroethylene		87.1		%		60-130	06-FEB-13
1,2,4-Trichlorobenzene		90.3		%		70-130	06-FEB-13
1,1,2-Trichloroethylene		99.4		%		60-130	06-FEB-13
1,1,3-Trichloropropene		89.2		%		70-130	06-FEB-13
1,1,1-Trichloroethylene		109.9		%		60-130	06-FEB-13
Chlorofluoromethane		113.0		%		50-140	06-FEB-13
1,1,1-Trichloroethane		94.2		%		70-130	06-FEB-13
<b>1622742-1 MB</b>							
1,1,1,2-Tetrachloroethane		<0.050		ug/g		0.05	06-FEB-13
1,1,2,2-Tetrachloroethane		<0.050		ug/g		0.05	06-FEB-13
1,1,1-Trichloroethane		<0.050		ug/g		0.05	06-FEB-13
1,1,2-Trichloroethane		<0.050		ug/g		0.05	06-FEB-13
1,1-Dichloroethane		<0.050		ug/g		0.05	06-FEB-13
1,2-Dichloroethylene		<0.050		ug/g		0.05	06-FEB-13
Dibromoethane		<0.050		ug/g		0.05	06-FEB-13
Dichlorobenzene		<0.050		ug/g		0.05	06-FEB-13
1,2-Dichloroethane		<0.050		ug/g		0.05	06-FEB-13
1,2-Dichloropropane		<0.050		ug/g		0.05	06-FEB-13





Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622742-1 MB</b>								
1,3-Dichlorobenzene			<0.050		ug/g		0.05	06-FEB-13
1,4-Dichlorobenzene			<0.050		ug/g		0.05	06-FEB-13
Acetone			<0.50		ug/g		0.5	06-FEB-13
Benzene			<0.020		ug/g		0.02	06-FEB-13
Bromodichloromethane			<0.050		ug/g		0.05	06-FEB-13
Bromoform			<0.050		ug/g		0.05	06-FEB-13
Bromomethane			<0.050		ug/g		0.05	06-FEB-13
Carbon tetrachloride			<0.050		ug/g		0.05	06-FEB-13
Chlorobenzene			<0.050		ug/g		0.05	06-FEB-13
Chloroform			<0.050		ug/g		0.05	06-FEB-13
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	06-FEB-13
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	06-FEB-13
Dibromochloromethane			<0.050		ug/g		0.05	06-FEB-13
Dichlorodifluoromethane			<0.050		ug/g		0.05	06-FEB-13
Ethyl Benzene			<0.050		ug/g		0.05	06-FEB-13
n-Hexane			<0.050		ug/g		0.05	06-FEB-13
Methylene Chloride			<0.050		ug/g		0.05	06-FEB-13
MTBE			<0.050		ug/g		0.05	06-FEB-13
m+p-Xylenes			<0.030		ug/g		0.03	06-FEB-13
Methyl Ethyl Ketone			<0.50		ug/g		0.5	06-FEB-13
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	06-FEB-13
o-Xylene			<0.020		ug/g		0.02	06-FEB-13
Styrene			<0.050		ug/g		0.05	06-FEB-13
Tetrachloroethylene			<0.050		ug/g		0.05	06-FEB-13
Toluene			<0.20		ug/g		0.2	06-FEB-13
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	06-FEB-13
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	06-FEB-13
Trichloroethylene			<0.050		ug/g		0.05	06-FEB-13
Trichlorofluoromethane			<0.050		ug/g		0.05	06-FEB-13
Vinyl chloride			<0.020		ug/g		0.02	06-FEB-13
Surrogate: 1,4-Difluorobenzene			122.2		%		70-130	06-FEB-13
Surrogate: 4-Bromofluorobenzene			114.2		%		70-130	06-FEB-13
<b>WG1622742-5 MS</b>		<b>WG1622742-3</b>						
1,1,1,2-Tetrachloroethane			99.6		%		50-140	06-FEB-13



Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622742-5 MS</b>		<b>WG1622742-3</b>						
1,1,2,2-Tetrachloroethane			93.5		%		50-140	06-FEB-13
1,1,1-Trichloroethane			116.0		%		50-140	06-FEB-13
1,1,2-Trichloroethane			93.3		%		50-140	06-FEB-13
1,1-Dichloroethane			125.1		%		50-140	06-FEB-13
1,1-Dichloroethylene			106.3		%		50-140	06-FEB-13
1,2-Dibromoethane			88.3		%		50-140	06-FEB-13
1,2-Dichlorobenzene			103.6		%		50-140	06-FEB-13
1,2-Dichloroethane			101.5		%		50-140	06-FEB-13
1,2-Dichloropropane			116.7		%		50-140	06-FEB-13
1,3-Dichlorobenzene			111.3		%		50-140	06-FEB-13
1,4-Dichlorobenzene			108.9		%		50-140	06-FEB-13
Acetone			110.7		%		50-140	06-FEB-13
Benzene			101.1		%		50-140	06-FEB-13
Bromodichloromethane			113.1		%		50-140	06-FEB-13
Bromoform			95.8		%		50-140	06-FEB-13
Bromomethane			112.4		%		50-140	06-FEB-13
Carbon tetrachloride			116.5		%		50-140	06-FEB-13
Chlorobenzene			109.2		%		50-140	06-FEB-13
Chloroform			117.8		%		50-140	06-FEB-13
cis-1,2-Dichloroethylene			114.2		%		50-140	06-FEB-13
cis-1,3-Dichloropropene			109.8		%		50-140	06-FEB-13
Dibromochloromethane			98.7		%		50-140	06-FEB-13
Dichlorodifluoromethane			74.8		%		50-140	06-FEB-13
Ethyl Benzene			105.5		%		50-140	06-FEB-13
n-Hexane			100.9		%		50-140	06-FEB-13
Methylene Chloride			107.0		%		50-140	06-FEB-13
MTBE			100.9		%		50-140	06-FEB-13
m+p-Xylenes			111.3		%		50-140	06-FEB-13
Methyl Ethyl Ketone			98.8		%		50-140	06-FEB-13
Methyl Isobutyl Ketone			83.4		%		50-140	06-FEB-13
o-Xylene			101.7		%		50-140	06-FEB-13
Styrene			94.5		%		50-140	06-FEB-13
Tetrachloroethylene			83.8		%		50-140	06-FEB-13



Environmental

### Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	Soil							
<b>Batch</b>	<b>R2522070</b>							
<b>WG1622742-5 MS</b>		<b>WG1622742-3</b>						
Toluene			90.2		%		50-140	06-FEB-13
trans-1,2-Dichloroethylene			108.5		%		50-140	06-FEB-13
trans-1,3-Dichloropropene			84.6		%		50-140	06-FEB-13
Trichloroethylene			112.4		%		50-140	06-FEB-13
Trichlorofluoromethane			131.8		%		50-140	06-FEB-13
Vinyl chloride			106.7		%		50-140	06-FEB-13

# Quality Control Report

Workorder: L1265236

Report Date: 13-FEB-13

Client: RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0  
Contact: PAUL REW

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## Legend:

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Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

## Sample Parameter Qualifier Definitions:

---

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

---

## Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

---

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

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



# CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

10 NORTHLAND ROAD, UNIT 1  
 WATERLOO, ON N2V 2B8  
 Phone: (519) 886-6910  
 Fax: (519) 886-9047  
 Toll Free: 1-800-668-9878



COMPANY NAME: Rubicon Environ  
 OFFICE: Flesherston  
 PROJECT MANAGER: Paul Rew  
 PROJECT #: R55001 FAX: 924-6004  
 PHONE: 924-0003  
 ACCOUNT #: Q37992 PO #

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

Criteria on report YES NO  
 Reg 153/04  Reg 511/09  Residential  
 Table 1 2 3 4 5 6 7 8 9

TCLP MISA PWQO  
 ODWS OTHER

REPORT FORMAT/DISTRIBUTION  
 EMAIL PDF FAX DIGITAL BOTH  
 EMAIL 1  
 EMAIL 2

DATE	TIME	TYPE	COMP	GRAB	WATER	SOIL	OTHER
Jan 29	12:10						
Jan 29	1:15						
Jan 29	2:10						
Jan 29	5:15						
Jan 29	9:45am						
Jan 31	11:10 am						
Jan 31	11:10 am						
Jan 31	12:15 pm						
Jan 31	2:05 pm						
Jan 31							

Specify date required  
 5 day (regular)   
 3-4 day (25%)   
 2 day TAT (50%)   
 Next day TAT (100%)   
 Same day TAT (200%)

PLEASE INDICATE FILTERED, PRESERVED OR BOTH  
 ← (F, P, F/P)

SUBMISSION #:  
 L1265236

ENTERED BY:  
 [Signature]

DATE/TIME ENTERED:  
 5/2/13 14:41

BIN #:  
 B193

COMMENTS:  
 UOC  
 PRC FI-FY

NUMBER OF CONTAINERS

SAMPLE DESCRIPTION TO APPEAR ON REPORT  
 BH-MW7  
 BH8  
 BH-MW8  
 BH14  
 BH19  
 BH17  
 BH17  
 BH-MW9  
 BH12  
 trip blank

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK YES OR NO)  
 Yes  No   
 Are any samples taken from a regulated DW System?  
 If yes, an authorized drinking water COC MUST be used for this submission.  
 Is the water sampled intended to be potable for human consumption?

SPECIAL INSTRUCTIONS/COMMENTS  
 MEND

DATE & TIME RECEIVED BY:  
 DATE & TIME RECEIVED AT LAB BY:

DATE & TIME  
 DATE & TIME

DATE/TIME RECEIVED BY:  
 DATE/TIME RECEIVED AT LAB BY:

SAMPLED BY:  
 RELINQUISHED BY:

Notes:  
 1. Quote number must be provided to ensure proper pricing  
 2. TAT may vary dependent on complexity of analysis and lab workload at time of submission.  
 3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.



L1265236-COFC

LAB ID	COMMENTS	MEAN TEMP	INIT
3		1.5	
4			
5			
6			
7			
8			
10			

SAMPLE CONDITION  
 FROZEN   
 COLD   
 COOLING INITIATED   
 AMBIENT   
 OBSERVATIONS  
 Yes  No   
 If yes add SIF

DATE & TIME  
 DATE & TIME

DATE/TIME RECEIVED BY:  
 DATE/TIME RECEIVED AT LAB BY:

DATE & TIME  
 DATE & TIME

SAMPLED BY:  
 RELINQUISHED BY:

Notes:  
 1. Quote number must be provided to ensure proper pricing  
 2. TAT may vary dependent on complexity of analysis and lab workload at time of submission.  
 3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.



RUBICON ENVIRONMENTAL INC.  
ATTN: PAUL REW  
60 Toronto St  
FLESHERTON ON N0C 1E0

Date Received: 05-FEB-13  
Report Date: 20-FEB-13 13:15 (MT)  
Version: FINAL

Client Phone: 519-924-0003

## Certificate of Analysis

Lab Work Order #: L1265211  
Project P.O. #: NOT SUBMITTED  
Job Reference: R55001  
C of C Numbers: 127675  
Legal Site Desc:

Gayle Braun  
Senior Account Manager

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

ADDRESS: 309 Exeter Road Unit #29, London, ON N6L 1C1 Canada | Phone: +1 519 652 6044 | Fax: +1 519 652 0671  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



# ANALYTICAL REPORT

L1265211 CONT'D....  
 Job Reference: R55001  
 PAGE 2 of 4  
 20-FEB-13 13:15 (MT)

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1265211-1	L1265211-2	L1265211-3	L1265211-5
			#1	#2								
Physical Tests	% Moisture	%	-	-		30-JAN-13	08:00	BH-MW5 SS1	14.0	4.88	12.3	8.21
	pH	pH units	-	-					<0.010	<0.10	<0.010	
Polychlorinated Biphenyls	Aroclor 1242	ug/g	-	-					<0.010	DLM <0.10	<0.010	
	Aroclor 1248	ug/g	-	-					<0.010	DLM <0.10	<0.010	
	Aroclor 1254	ug/g	-	-					<0.010	DLM <0.10	<0.010	
	Aroclor 1260	ug/g	-	-					<0.010	DLM <0.10	<0.010	
	Total PCBs	ug/g	0.35	-				<0.020	<0.20	<0.020	<0.020	
	Surrogate: d14-Terphenyl	%	-	-				113.2	106.7	120.1		

**Guide Limit #1: ON511/11-T3-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.

Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
-----------	--------	-----------	----------	---------	--------	-----------------	------

Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Res/Park/Inst. Property Use (Coarse)  
 (No parameter 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 For Sample Matrix Effects

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PCB-511-WT	Soil	PCB-O.Reg 153/04 (July 2011)	SW846 3510/8082
An aliquot of a solid sample is extracted with a solvent, extract is cleaned up and analyzed on the GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
PH-R511-WT	Soil	pH-O.Reg 153/04 (July 2011)	MOEE E3137A
A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			

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

### Chain of Custody Numbers:

127675

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 wwt - milligrams per kilogram based on dry 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: L1265211

Report Date: 20-FEB-13

Page 1 of 3

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	Soil							
Batch	R2521639							
WG1622840-3	DUP	L1263807-14						
% Moisture		7.70	7.50		%	2.6	30	05-FEB-13
WG1622840-2	LCS							
% Moisture			95.7		%		70-130	05-FEB-13
WG1622840-1	MB							
% Moisture			<0.10		%		0.1	05-FEB-13
PCB-511-WT	Soil							
Batch	R2522449							
WG1623322-1	CVS							
Aroclor 1242			96.1		%		60-140	06-FEB-13
Aroclor 1248			85.7		%		60-140	06-FEB-13
Aroclor 1254			92.2		%		60-140	06-FEB-13
Aroclor 1260			99.9		%		60-140	06-FEB-13
WG1623052-4	DUP	L1265211-1						
Aroclor 1242		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-13
Aroclor 1248		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-13
Aroclor 1254		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-13
Aroclor 1260		<0.010	<0.010	RPD-NA	ug/g	N/A	40	06-FEB-13
WG1623052-2	LCS							
Aroclor 1242			92.7		%		60-140	06-FEB-13
Aroclor 1248			76.0		%		60-140	06-FEB-13
Aroclor 1254			79.9		%		60-140	06-FEB-13
Aroclor 1260			92.2		%		60-140	06-FEB-13
WG1623052-1	MB							
Aroclor 1242			<0.010		ug/g		0.01	06-FEB-13
Aroclor 1248			<0.010		ug/g		0.01	06-FEB-13
Aroclor 1254			<0.010		ug/g		0.01	06-FEB-13
Aroclor 1260			<0.010		ug/g		0.01	06-FEB-13
Surrogate: d14-Terphenyl			110.6		%		60-140	06-FEB-13
WG1623052-5	MS	L1265211-1						
Aroclor 1242			83.9		%		60-140	06-FEB-13
Aroclor 1254			77.6		%		60-140	06-FEB-13
Aroclor 1260			88.6		%		60-140	06-FEB-13
PH-R511-WT	Soil							



Environmental

### Quality Control Report

Workorder: L1265211

Report Date: 20-FEB-13

Page 2 of 3

Client: RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-R511-WT	Soil							
Batch	R2522049							
WG1623349-3	DUP	WG1623349-2						
pH		7.58	7.62	J	pH units	0.04	0.3	06-FEB-13
WG1623349-1	LCS							
pH			7.03		pH units		6.7-7.3	06-FEB-13

# Quality Control Report

Workorder: L1265211

Report Date: 20-FEB-13

Client: RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0  
Contact: PAUL REW

Page 3 of 3

## Legend:

---

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

## Sample Parameter Qualifier Definitions:

---

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

---

## Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

---

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

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.





**GRAIN SIZE DETERMINATIONS**

Project Name: RUBICON ENVIRONMENTAL INC.-L  
 Project Number: Q37992-15520  
 Sampler:  
 Technician: SM1  
 Lab ID Number: L1265211-4

Sample Location:  
 Sample Number: BH1 SS6  
 Sample Depth:  
 Date Sampled: 01/30/13  
 Date Submitted: 02/05/13  
 Date Completed: 02/20/13

Total Sample Weight 50 grams  
 Hydro. Sample Weight 50.000 grams  
 % Past #10 1.000 \* 100  
 Sub Factor 1.000

Specific Gravity: 2.650  
 Liquid Specific Gravity: 1.000  
 Grav Factor: 1.606

Sieve Size	Weight Retained (grams)	Percent Retained	Diameter (mm)	Cum. % Retained	Cum. % Passing
38.1 mm. DIA.:		0.000	38.100	0.000	100.000
25.4 mm. DIA.:		0.000	25.400	0.000	100.000
19.0 mm. DIA.:		0.000	19.000	0.000	100.000
9.5 mm. DIA.:		0.000	9.500	0.000	100.000
NO. 4 SIEVE :		0.000	4.500	0.000	100.000
NO. 10 SIEVE :		0.000	2.000	0.000	100.000
NO. 20 SIEVE :		0.000	0.850	0.000	100.000
NO. 40 SIEVE :		0.000	0.425	0.000	100.000
NO. 60 SIEVE :		0.000	0.250	0.000	100.000
NO. 100 SIEVE:		0.000	0.150	0.000	100.000
NO. 200 SIEVE:		0.000	0.075	0.000	100.000

Time (min)	Hydrometer Reading	Temperature (C)	Diameter (mm)	% Suspended (Subsample)	% Suspended (Total Sample)
1.00	19.0	22.0	0.045	52.968	52.968
2.00	18.0	22.0	0.032	49.756	49.756
4.00	16.0	22.0	0.023	43.331	43.331
8.00	15.0	22.0	0.017	40.119	40.119
15.00	14.0	22.0	0.012	36.907	36.907
30.00	13.0	22.0	0.009	33.695	33.695
60.00	11.0	22.0	0.006	27.271	27.271
120.00	11.0	22.0	0.004	27.271	27.271
240.00	10.0	22.0	0.003	24.059	24.059
480.00	10.0	22.0	0.002	24.059	24.059
1440.00	8.0	22.0	0.001	17.635	17.635

GRAIN SIZE	% BY WT.	DIA. RANGE (mm)
% GRAVEL :	0.00	> 4.5
% COARSE SAND :	0.00	2.0 - 4.5
% MEDIUM SAND :	0.00	0.425 - 2.0
% FINE SAND :	0.00	0.075 - 0.425
% SILT :	77.37	0.075 - 0.002
% CLAY :	22.63	< 0.002
% CLAY :	27.27	< 0.005

Sum Percentages 100



# CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

50 NORTHLAND ROAD, UNIT 1  
 WATERLOO, ON N2V 2B8  
 Phone: (519) 886-6910  
 Fax: (519) 886-9047  
 Toll Free: 1-800-668-9878



COMPANY NAME: Rubicon Enviro

OFFICE: Fisher

PROJECT MANAGER: Paul Rew

PROJECT # R55001

PHONE 924-0003 FAX 924-0004

ACCOUNT # \_\_\_\_\_

QUOTATION # Q37992 PO # \_\_\_\_\_

CRITERIA: Criteria on report YES  NO   
 Reg 153/04  Reg 511/09  Residential

Table 1 2 3 4 5 6 7 8 9

TCLP \_\_\_\_\_ MISA \_\_\_\_\_ PWQO \_\_\_\_\_  
 ODWS \_\_\_\_\_ OTHER \_\_\_\_\_

REPORT FORMAT/DISTRIBUTION  
 EMAIL \_\_\_\_\_ FAX \_\_\_\_\_ BOTH \_\_\_\_\_  
 SELECT: PDF \_\_\_\_\_ DIGITAL \_\_\_\_\_ BOTH \_\_\_\_\_  
 EMAIL 1 \_\_\_\_\_  
 EMAIL 2 \_\_\_\_\_

ANALYSIS REQUEST

SUBMISSION #: L1265211  
 ENTERED BY: ojs

DATE/TIME ENTERED: 5/21/14:27

BIN #: B192

LAB ID \_\_\_\_\_

COMMENTS \_\_\_\_\_

NUMBER OF CONTAINERS \_\_\_\_\_

Specify date required \_\_\_\_\_

Service requested: 5 day (regular)  
 5 day (regular)  
 3-4 day (25%)  
 2 day TAT (50%)  
 Next day TAT (100%)  
 Same day TAT (200%)

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

PLEASE INDICATE FILTERED, PRESERVED OR BOTH

←----- (F, P, F/P)

DATE/TIME ENTERED: \_\_\_\_\_

ENTERED BY: \_\_\_\_\_

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DATE/TIME ENTERED: \_\_\_\_\_

ENTERED BY: \_\_\_\_\_

Sample Date/Time

Time (24hr) (hh:mm)

Matrix Type

COMP

GRAB

WATER

SOIL

OTHER

Sample Description to Appear on Report

BA-MW5 554

BA-MW9 551

BA-MW9 551 (D)

BA 556

BA 556

BA 556

BA 556

BA 556

BA 556

BA 556

BA 556

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Sampled By: Baier W h

Relinquished By: Baier W h

Received By: \_\_\_\_\_

Received At Lab By: \_\_\_\_\_

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Date & Time: \_\_\_\_\_

Mean Temp: \_\_\_\_\_

Frozen: \_\_\_\_\_

Cold: \_\_\_\_\_

Cooling Initiated: \_\_\_\_\_

Ambient: \_\_\_\_\_

Observations: \_\_\_\_\_

Yes  No

If Yes add SIF: \_\_\_\_\_

Yes  No

Mean Temp: \_\_\_\_\_

Frozen: \_\_\_\_\_

Cold: \_\_\_\_\_

Cooling Initiated: \_\_\_\_\_

Ambient: \_\_\_\_\_

Observations: \_\_\_\_\_

Yes  No

If Yes add SIF: \_\_\_\_\_

Yes  No

Mean Temp: \_\_\_\_\_

Frozen: \_\_\_\_\_

Cold: \_\_\_\_\_

Cooling Initiated: \_\_\_\_\_

Ambient: \_\_\_\_\_

Observations: \_\_\_\_\_

Yes  No

If Yes add SIF: \_\_\_\_\_

Yes  No

Mean Temp: \_\_\_\_\_

Frozen: \_\_\_\_\_

Barcode: L1265211-COFC

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RUBICON ENVIRONMENTAL INC.  
ATTN: PAUL REW  
60 Toronto St  
FLESHERTON ON N0C 1E0

Date Received: 05-FEB-13  
Report Date: 26-FEB-13 06:51 (MT)  
Version: FINAL REV. 2

Client Phone: 519-924-0003

## Certificate of Analysis

Lab Work Order #: L1265198  
Project P.O. #: NOT SUBMITTED  
Job Reference: R55001  
C of C Numbers: 127677  
Legal Site Desc:

**Comments:**

26-FEB-13: Removed HWS Boron results as per client request GAB/LO

Gayle Braun  
Senior Account Manager

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits #1 #2	ALS ID	L1265198-1	L1265198-2	L1265198-3	L1265198-4	L1265198-5	L1265198-6	L1265198-7	L1265198-8	L1265198-9
				Sampled Date Sampled Time Sample ID	29-JAN-13 11:10 BH11 SS2	29-JAN-13 12:15 BH-MW7 SS2	29-JAN-13 13:10 BH6 SS2	29-JAN-13 13:10 BH6 SS2 (D)	29-JAN-13 14:05 BH-MW8 SS2	29-JAN-13 17:10 BH14 SS2	29-JAN-13 18:05 BH-MW15 SS2	30-JAN-13 08:05 BH-MW5 SS2	30-JAN-13 11:10 BH-MW2 SS2
Physical Tests	Conductivity	mS/cm	0.7 -	0.105	0.112	0.124	0.325	0.128	0.133	0.196	0.156	0.213	
	% Moisture	%	-	13.4	13.5	10.3	6.10	16.9	11.3	14.5	7.49	10.3	
	pH	pH units	-	7.72	7.77	7.81	8.15	7.74	7.85	7.60	8.01	8.08	
Cyanides	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	
	SAR	SAR	5 -	<0.10	0.19	0.18	0.42	0.77	0.29	0.13	0.20	0.39	
Saturated Paste Extractables	Calcium (Ca)	mg/L	-	26.6	24.8	20.1	21.1	26.5	26.3	39.2	10.1	12.3	
	Magnesium (Mg)	mg/L	-	5.61	6.98	7.42	6.45	5.24	7.31	10.4	4.03	3.99	
	Sodium (Na)	mg/L	-	1.76	4.18	3.68	8.61	16.6	6.57	3.52	2.96	6.18	
Metals	Antimony (Sb)	ug/g	7.5 -	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	Arsenic (As)	ug/g	18 -	4.6	4.3	3.6	3.5	4.1	3.7	4.4	4.2	3.0	
	Barium (Ba)	ug/g	390 -	29.5	30.5	29.2	24.6	26.9	24.8	20.8	22.7	17.8	
	Beryllium (Be)	ug/g	4 -	0.93	0.88	0.86	0.87	0.84	0.87	<0.50	0.85	0.59	
	Boron (B)	ug/g	120 -	58.3	55.4	65.3	79.4	55.1	56.9	25.7	66.2	53.0	
	Cadmium (Cd)	ug/g	1.2 -	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	Chromium (Cr)	ug/g	160 -	26.6	23.5	24.7	25.9	24.3	24.9	13.0	25.5	17.7	
	Cobalt (Co)	ug/g	22 -	11.7	10.4	11.1	10.7	10.8	10.8	6.9	11.7	7.7	
	Copper (Cu)	ug/g	140 -	9.5	8.0	9.5	9.1	7.4	9.2	29.1	10.5	21.8	
	Lead (Pb)	ug/g	120 -	4.5	4.2	3.7	3.9	3.8	3.8	4.3	4.0	3.4	
Mercury (Hg)	ug/g	0.27 -	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Molybdenum (Mo)	ug/g	6.9 -	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
Nickel (Ni)	ug/g	100 -	29.5	25.7	26.5	26.9	26.3	26.3	27.2	14.0	28.8		
Selenium (Se)	ug/g	2.4 -	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		

Guide Limit #1: ON511/11-T3-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 Guideline Limit listed. See Summary of Guideline Exceedances.

# ANALYTICAL REPORT

## SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits #1 #2	ALS ID			
				L1265198-10 30-JAN-13 12:15 BH-MW18 SS2	L1265198-11 30-JAN-13 14:15 BH-MW18 SS2 (D)	L1265198-12 31-JAN-13 20:10 BH3 SS2	L1265198-13 31-JAN-13 14:15 BH12 SS2
Physical Tests	Conductivity	mS/cm	0.7 -	0.256	0.189	0.361	0.262
	% Moisture	%	-	18.0	11.0	6.42	15.3
	pH	pH units	-	7.81	7.82	8.10	7.55
Cyanides	Cyanide, Weak Acid Diss	ug/g	0.051 -	<0.050	<0.050	<0.050	<0.050
	SAR	SAR	5 -	0.70	0.43	0.66	0.80
Saturated Paste Extractables	Calcium (Ca)	mg/L	-	20.5	19.6	13.6	62.5
	Magnesium (Mg)	mg/L	-	6.56	5.90	6.41	10.9
	Sodium (Na)	mg/L	-	14.2	8.43	11.9	26.0
Metals	Antimony (Sb)	ug/g	7.5 -	<1.0	<1.0	<1.0	<1.0
	Arsenic (As)	ug/g	18 -	2.3	5.5	3.0	3.9
	Barium (Ba)	ug/g	390 -	8.3	30.1	79.9	34.2
	Beryllium (Be)	ug/g	4 -	<0.50	1.08	0.82	0.70
	Boron (B)	ug/g	120 -	9.9	86.4	71.6	44.1
	Cadmium (Cd)	ug/g	1.2 -	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr)	ug/g	160 -	6.2	32.4	22.4	20.6
	Cobalt (Co)	ug/g	22 -	2.2	14.3	9.8	9.6
	Copper (Cu)	ug/g	140 -	14.4	10.7	7.6	12.8
	Lead (Pb)	ug/g	120 -	2.3	4.7	3.1	4.7
Mercury (Hg)	ug/g	0.27 -	<0.010	<0.010	<0.010	<0.010	
Molybdenum (Mo)	ug/g	6.9 -	<1.0	<1.0	<1.0	<1.0	
Nickel (Ni)	ug/g	100 -	5.3	35.4	24.4	22.4	
Selenium (Se)	ug/g	2.4 -	<1.0	<1.0	<1.0	<1.0	

### Guide Limit #1: ON511/11-T3-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.

# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1265198-1	L1265198-2	L1265198-3	L1265198-4	L1265198-5	L1265198-6	L1265198-7	L1265198-8	L1265198-9
			#1	#2													
Metals	Silver (Ag)	ug/g	20	-		29-JAN-13	11:10	BH11 SS2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Thallium (Tl)	ug/g	1	-		29-JAN-13	13:10	BH6 SS2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U)	ug/g	23	-		29-JAN-13	13:10	BH6 SS2 (D)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V)	ug/g	86	-		29-JAN-13	13:10	BH6 SS2	34.2	30.8	32.9	33.4	31.0	31.6	19.1	31.6	22.4
	Zinc (Zn)	ug/g	340	-		29-JAN-13	13:10	BH6 SS2	52.3	45.9	47.5	48.6	48.2	50.3	28.7	50.3	34.5
Speciated Metals	Chromium, Hexavalent	ug/g	8	-		29-JAN-13	12:15	BH-MW7 SS2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Guide Limit #1: ON511/11-T3-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.

# ANALYTICAL REPORT

SOIL - Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011)

Grouping	Analyte	Unit	Guide Limits #1 #2	ALS ID	L1265198-10	L1265198-11	L1265198-12	L1265198-13
				Sampled Date Sampled Time Sample ID	30-JAN-13 12:15 BH-MW18 SS2	30-JAN-13 14:15 BH-MW18 SS2 (D)	31-JAN-13 20:10 BH3 SS2	31-JAN-13 14:15 BH12 SS2
Metals	Silver (Ag)	ug/g	20 -		<0.20	<0.20	<0.20	<0.20
	Thallium (Tl)	ug/g	1 -		<0.50	<0.50	<0.50	<0.50
	Uranium (U)	ug/g	23 -		<1.0	<1.0	<1.0	<1.0
	Vanadium (V)	ug/g	86 -		8.7	42.9	30.5	28.0
	Zinc (Zn)	ug/g	340 -		9.4	62.0	44.9	43.2
Speciated Metals	Chromium, Hexavalent	ug/g	8 -		<0.20	<0.20	<0.20	<0.20

Guide Limit #1: ON511/11-T3-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.





# ANALYTICAL REPORT

L1265198 CONT'D....  
Job Reference: R55001  
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## Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - as amended by O.Reg. 511 (JULY, 2011) - ON511/11-T3-Soil-Res/Park/Inst. Property Use (Coarse)							

(No parameter exceedances)

## Reference Information

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<b>B-HWS-R511-WT</b>	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.			
<b>CN-WAD-R511-WT</b>	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011) MOE 3015/APHA 4500CN I-WAD	
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). 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.			
<b>CR-CR6-IC-R511-WT</b>	Soil	Hex Chrom-O.Reg 153/04 (July 2011) SW846 3060A/7199 R511	
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Soil sample undergoes an alkaline digestion process where the sample is acidified and derivatized with 1,5-diphenylcarbazine (DPC) using ion chromatography.			
<b>EC-R511-WT</b>	Soil	Conductivity-O.Reg 153/04 (July 2011) MOEE E3138	
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). 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.			
<b>HG-R511-WT</b>	Soil	Mercury-O.Reg 153/04 (July 2011) SW846 3050B/7471	
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Solid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.			
<b>MET-JUG/G-CCMS-WT</b>	Soil	Metal Scan Collision Cell ICPMS EPA 200.2/6020A	
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Sample is vigorously digested with nitric and hydrochloric acid. Analysis is conducted by ICP/MS.			
<b>MOISTURE-WT</b>	Soil	% Moisture	Gravimetric: Oven Dried
<b>PH-R511-WT</b>	Soil	pH-O.Reg 153/04 (July 2011)	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.			
<b>SAR-R511-WT</b>	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using an 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). **ALS test methods may incorporate modifications from specified reference methods to improve performance.			

Chain of Custody Numbers:

127677

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:

# Reference Information

L1265198 CONT'D....  
Job Reference: R55001  
PAGE 8 of 8  
26-FEB-13 06:51 (MT)

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.



Environmental

### Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

Page 1 of 7

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT Soil								
Batch	R2521664							
WG1623303-3	CVS		97.5		%		80-120	06-FEB-13
Cyanide, Weak Acid Diss								
WG1623108-3	DUP	L1265198-1	<0.050	RPD-NA	ug/g	N/A	35	06-FEB-13
Cyanide, Weak Acid Diss								
WG1623108-2	LCS		97.5		%		80-120	06-FEB-13
Cyanide, Weak Acid Diss								
WG1623108-1	MB		<0.050		ug/g		0.05	06-FEB-13
Cyanide, Weak Acid Diss								
WG1623108-4	MS	L1265198-1	86.0		%		70-130	06-FEB-13
Cyanide, Weak Acid Diss								
CR-CR6-IC-R511-WT Soil								
Batch	R2522193							
WG1623106-4	CRM	WT-SQC012	87.5		%		80-120	06-FEB-13
Chromium, Hexavalent								
WG1623106-3	DUP	L1265198-1	<0.20	RPD-NA	ug/g	N/A	35	06-FEB-13
Chromium, Hexavalent								
WG1623106-2	LCS		97.4		%		80-120	06-FEB-13
Chromium, Hexavalent								
WG1623106-1	MB		<0.20		ug/g		0.2	06-FEB-13
Chromium, Hexavalent								
EC-R511-WT Soil								
Batch	R2521793							
WG1623291-2	DUP	L1265200-3	0.125		mS/cm	6.9	20	06-FEB-13
Conductivity								
WG1623291-3	DUP	L1265200-1	0.399		mS/cm	3.0	20	06-FEB-13
Conductivity								
WG1623352-1	LCS		99.4		%		90-110	06-FEB-13
Conductivity								
WG1623291-1	MB		<0.0040		mS/cm		0.004	06-FEB-13
Conductivity								
HG-R511-WT Soil								
Batch	R2521710							
WG1623268-2	CRM	WT-SS-1	104.6		%		70-130	06-FEB-13
Mercury (Hg)								
WG1623268-4	DUP	WG1623268-3	0.025		ug/g	2.2	30	06-FEB-13
Mercury (Hg)								
WG1623268-8	DUP	L1264754-1						





Environmental

### Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

Page 2 of 7

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-R511-WT	Soil							
<b>Batch</b>	<b>R2521710</b>							
<b>WG1623268-8</b>	<b>DUP</b>	<b>L1264754-1</b>						
Mercury (Hg)		0.027	0.028		ug/g	2.7	30	06-FEB-13
<b>WG1623268-7</b>	<b>LCS</b>							
Mercury (Hg)			98.0		%		80-120	06-FEB-13
<b>WG1623268-1</b>	<b>MB</b>							
Mercury (Hg)			<0.010		ug/g		0.01	06-FEB-13
<b>WG1623268-5</b>	<b>MS</b>	<b>WG1623268-3</b>						
Mercury (Hg)			93.7		%		70-130	06-FEB-13
<b>WG1623268-9</b>	<b>MS</b>	<b>L1264754-1</b>						
Mercury (Hg)			76.4		%		70-130	06-FEB-13
MET-UG/G-CCMS-WT	Soil							
<b>Batch</b>	<b>R2523810</b>							
<b>WG1623311-2</b>	<b>CVS</b>							
Antimony (Sb)			96.0		%		70-130	06-FEB-13
Arsenic (As)			102.9		%		70-130	06-FEB-13
Barium (Ba)			101.9		%		70-130	06-FEB-13
Beryllium (Be)			96.4		%		70-130	06-FEB-13
Boron (B)			95.5		%		70-130	06-FEB-13
Cadmium (Cd)			97.4		%		70-130	06-FEB-13
Chromium (Cr)			97.3		%		70-130	06-FEB-13
Cobalt (Co)			99.7		%		70-130	06-FEB-13
Copper (Cu)			99.6		%		70-130	06-FEB-13
Lead (Pb)			94.3		%		70-130	06-FEB-13
Molybdenum (Mo)			98.3		%		70-130	06-FEB-13
Nickel (Ni)			97.9		%		70-130	06-FEB-13
Selenium (Se)			97.7		%		70-130	06-FEB-13
Silver (Ag)			98.3		%		70-130	06-FEB-13
Thallium (Tl)			92.8		%		70-130	06-FEB-13
Uranium (U)			91.2		%		70-130	06-FEB-13
Vanadium (V)			97.5		%		70-130	06-FEB-13
Zinc (Zn)			93.4		%		70-130	06-FEB-13
<b>WG1623268-4</b>	<b>DUP</b>	<b>WG1623268-3</b>						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	06-FEB-13
Arsenic (As)		4.05	4.23		ug/g	4.4	30	06-FEB-13
Barium (Ba)		94.1	104		ug/g	10	40	06-FEB-13
Beryllium (Be)		0.65	0.68					



Environmental

### Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

Page 3 of 7

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	Soil							
<b>Batch</b>	<b>R2523810</b>							
<b>WG1623268-4</b>	<b>DUP</b>	<b>WG1623268-3</b>						
Beryllium (Be)		0.65	0.68		ug/g	4.1	30	06-FEB-13
Boron (B)		13.6	13.4		ug/g	1.5	30	06-FEB-13
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	06-FEB-13
Chromium (Cr)		24.7	25.2		ug/g	2.1	30	06-FEB-13
Cobalt (Co)		9.3	9.7		ug/g	4.2	30	06-FEB-13
Copper (Cu)		20.5	21.4		ug/g	4.5	30	06-FEB-13
Lead (Pb)		12.5	12.8		ug/g	2.1	40	06-FEB-13
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	06-FEB-13
Nickel (Ni)		20.2	21.3		ug/g	5.7	30	06-FEB-13
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	06-FEB-13
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	06-FEB-13
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	06-FEB-13
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	06-FEB-13
Vanadium (V)		35.8	37.2		ug/g	3.7	30	06-FEB-13
Zinc (Zn)		62.3	66.9		ug/g	7.1	30	06-FEB-13
<b>WG1623268-8</b>	<b>DUP</b>	<b>L1264754-1</b>						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	06-FEB-13
Arsenic (As)		4.3	4.62		ug/g	7.2	30	06-FEB-13
Barium (Ba)		109	116		ug/g	6.2	40	06-FEB-13
Beryllium (Be)		0.68	0.75		ug/g	10	30	06-FEB-13
Boron (B)		8.7	8.4		ug/g	3.3	30	06-FEB-13
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	06-FEB-13
Chromium (Cr)		28.1	29.6		ug/g	5.2	30	06-FEB-13
Cobalt (Co)		11.6	12.1		ug/g	4.1	30	06-FEB-13
Copper (Cu)		16.2	17.4		ug/g	6.7	30	06-FEB-13
Lead (Pb)		13.2	14.9		ug/g	12	40	06-FEB-13
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	06-FEB-13
Nickel (Ni)		21.0	22.6		ug/g	7.1	30	06-FEB-13
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	06-FEB-13
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	06-FEB-13
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	06-FEB-13
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	06-FEB-13
Vanadium (V)		39.9	42.7		ug/g	6.6	30	06-FEB-13



Environmental

# Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

Page 4 of 7

Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	Soil							
<b>Batch</b>	<b>R2523810</b>							
<b>WG1623268-8</b>	<b>DUP</b>	<b>L1264754-1</b>						
Zinc (Zn)		65.7	69.4		ug/g	5.6	30	06-FEB-13
<b>WG1623268-6</b>	<b>LCS</b>							
Antimony (Sb)			91.2		%		80-120	06-FEB-13
Arsenic (As)			99.8		%		80-120	06-FEB-13
Barium (Ba)			99.4		%		80-120	06-FEB-13
Beryllium (Be)			93.0		%		80-120	06-FEB-13
Boron (B)			88.6		%		80-120	06-FEB-13
Cadmium (Cd)			97.5		%		80-120	06-FEB-13
Chromium (Cr)			97.2		%		80-120	06-FEB-13
Cobalt (Co)			95.2		%		80-120	06-FEB-13
Copper (Cu)			95.0		%		80-120	06-FEB-13
Lead (Pb)			93.6		%		80-120	06-FEB-13
Molybdenum (Mo)			93.2		%		80-120	06-FEB-13
Nickel (Ni)			94.9		%		80-120	06-FEB-13
Selenium (Se)			97.2		%		80-120	06-FEB-13
Silver (Ag)			98.1		%		80-120	06-FEB-13
Thallium (Tl)			99.6		%		80-120	06-FEB-13
Uranium (U)			95.7		%		80-120	06-FEB-13
Vanadium (V)			97.8		%		80-120	06-FEB-13
Zinc (Zn)			98.4		%		80-120	06-FEB-13
<b>WG1623268-1</b>	<b>MB</b>							
Antimony (Sb)			<1.0		ug/g		1	06-FEB-13
Arsenic (As)			<0.20		ug/g		0.2	06-FEB-13
Barium (Ba)			<1.0		ug/g		1	06-FEB-13
Beryllium (Be)			<0.50		ug/g		0.5	06-FEB-13
Boron (B)			<5.0		ug/g		5	06-FEB-13
Cadmium (Cd)			<0.50		ug/g		0.5	06-FEB-13
Chromium (Cr)			<1.0		ug/g		1	06-FEB-13
Cobalt (Co)			<1.0		ug/g		1	06-FEB-13
Copper (Cu)			<1.0		ug/g		1	06-FEB-13
Lead (Pb)			<1.0		ug/g		1	06-FEB-13
Molybdenum (Mo)			<1.0		ug/g		1	06-FEB-13
Nickel (Ni)			<1.0		ug/g		1	06-FEB-13
Selenium (Se)			<1.0		ug/g		1	06-FEB-13



Environmental

### Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-UG/G-CCMS-WT	Soil							
<b>Batch</b>	<b>R2523810</b>							
<b>WG1623268-1</b>	<b>MB</b>							
Silver (Ag)			<0.20		ug/g		0.2	06-FEB-13
Thallium (Tl)			<0.50		ug/g		0.5	06-FEB-13
Uranium (U)			<1.0		ug/g		1	06-FEB-13
Vanadium (V)			<1.0		ug/g		1	06-FEB-13
Zinc (Zn)			<5.0		ug/g		5	06-FEB-13
<b>WG1623268-5</b>	<b>MS</b>	<b>WG1623268-3</b>						
Antimony (Sb)			96.8		%		70-130	06-FEB-13
Arsenic (As)			N/A	MS-B	%		-	06-FEB-13
Barium (Ba)			N/A	MS-B	%		-	06-FEB-13
Beryllium (Be)			96.3		%		70-130	06-FEB-13
Boron (B)			N/A	MS-B	%		-	06-FEB-13
Cadmium (Cd)			112.2		%		70-130	06-FEB-13
Chromium (Cr)			N/A	MS-B	%		-	06-FEB-13
Cobalt (Co)			N/A	MS-B	%		-	06-FEB-13
Copper (Cu)			N/A	MS-B	%		-	06-FEB-13
Lead (Pb)			N/A	MS-B	%		-	06-FEB-13
Molybdenum (Mo)			110.5		%		70-130	06-FEB-13
Nickel (Ni)			N/A	MS-B	%		-	06-FEB-13
Selenium (Se)			105.3		%		70-130	06-FEB-13
Silver (Ag)			103.7		%		70-130	06-FEB-13
Thallium (Tl)			99.6		%		70-130	06-FEB-13
Uranium (U)			113.6		%		70-130	06-FEB-13
Vanadium (V)			N/A	MS-B	%		-	06-FEB-13
Zinc (Zn)			N/A	MS-B	%		-	06-FEB-13
MOISTURE-WT	Soil							
<b>Batch</b>	<b>R2521642</b>							
<b>WG1623242-3</b>	<b>DUP</b>	<b>L1265457-2</b>						
% Moisture		10.6	10.6		%	0.3	30	05-FEB-13
<b>WG1623242-2</b>	<b>LCS</b>							
% Moisture			94.4		%		70-130	05-FEB-13
<b>WG1623242-1</b>	<b>MB</b>							
% Moisture			<0.10		%		0.1	05-FEB-13





Environmental

### Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

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Client: RUBICON ENVIRONMENTAL INC.  
 60 Toronto St  
 FLESHERTON ON N0C 1E0

Contact: PAUL REW

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	Soil							
Batch	R2521643							
WG1623049-3	DUP	L1265245-5						
% Moisture		9.36	9.38		%	0.2	30	05-FEB-13
WG1623049-2	LCS							
% Moisture			91.7		%		70-130	05-FEB-13
WG1623049-1	MB							
% Moisture			<0.10		%		0.1	05-FEB-13
PH-R511-WT	Soil							
Batch	R2522049							
WG1623349-3	DUP	WG1623349-2						
pH		7.58	7.62	J	pH units	0.04	0.3	06-FEB-13
WG1623349-1	LCS							
pH			7.03		pH units		6.7-7.3	06-FEB-13
SAR-R511-WT	Soil							
Batch	R2521851							
WG1623291-2	DUP	L1265200-3						
Calcium (Ca)		16.6	16.4		mg/L	0.9	40	06-FEB-13
Sodium (Na)		6.18	5.60		mg/L	9.8	40	06-FEB-13
Magnesium (Mg)		0.84	0.81		mg/L	3.9	40	06-FEB-13
WG1623291-1	MB							
Calcium (Ca)			<0.10		mg/L		0.1	06-FEB-13
Sodium (Na)			<0.10		mg/L		0.1	06-FEB-13
Magnesium (Mg)			<0.10		mg/L		0.1	06-FEB-13

# Quality Control Report

Workorder: L1265198

Report Date: 26-FEB-13

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RUBICON ENVIRONMENTAL INC.  
60 Toronto St  
FLESHERTON ON N0C 1E0  
PAUL REW

## Legend:

ALS Control Limit (Data Quality Objectives)  
P Duplicate  
RPD Relative Percent Difference  
N/A Not Available  
S Laboratory Control Sample  
M Standard Reference Material  
MS Matrix Spike  
MSD Matrix Spike Duplicate  
E Average Desorption Efficiency  
Method Blank  
IM Internal Reference Material  
CRM Certified Reference Material  
CV Continuing Calibration Verification  
S Calibration Verification Standard  
LSD Laboratory Control Sample Duplicate

## Table Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
S-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
D-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

## Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

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 EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

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 predetermined 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.

60 NORTHLAND ROAD, UNIT 1  
 WATERLOO, ON N2V 2B8  
 Phone: (519) 886-6910  
 Fax: (519) 886-9047  
 Toll Free: 1-800-668-9878



CHAIN OF CUSTODY / ANALYTICAL SERVICES REQUEST FORM

127677  
 C of C # 00000

Page 1 of 1

Specify date required: 2 day TAT (50%)  5 day (regular)  3-4 day (25%)  Service requested: 2 day TAT (50%)  Next day TAT (100%)  Same day TAT (200%)

Note: all TAT Quoted material is in business days which exclude statutory holidays and weekends. TAT samples received past 3:00 pm or Saturday/Sunday begin the next day.

CRITERIA: Criteria on report YES  NO   
 Reg 153/04  Reg 511/09  Residual   
 Table 1 2 3 4 5 6 7 8 9  
 TCLP  MISA  PWQO   
 ODWS  OTHER

COMPANY NAME: Rabicon Environ  
 OFFICE: Flesher ton  
 PROJECT MANAGER: Paul Rew  
 PROJECT #: R55001  
 PHONE: 924-0003 FAX: 924-0004  
 ACCOUNT #

QUOTATION # Q37992 PO #

REPORT FORMAT/DISTRIBUTION:  FAX  BOTH   
 SELECT: PDF  DIGITAL  BOTH   
 EMAIL 1:   
 EMAIL 2:

ANALYSIS REQUEST

Date (dd-mm-yy)	Time (24hr) (hh:mm)	SAMPLING INFORMATION				LAB ID
		TYPE	MATRIX	OTHER	OTHER	
Jan 29	11:10	GRAB	WATER	SOIL	1	
Jan 29	12:15	GRAB	WATER	SOIL	2	
Jan 29	1:10	GRAB	WATER	SOIL	3	
Jan 29	1:10	GRAB	WATER	SOIL	4	
Jan 29	2:05	GRAB	WATER	SOIL	5	
Jan 29	5:10	GRAB	WATER	SOIL	6	
Jan 29	6:05	GRAB	WATER	SOIL	7	
Jan 30	8:05am	GRAB	WATER	SOIL	8	
Jan 30	11:02am	GRAB	WATER	SOIL	9	
Jan 30	2:15 pm	GRAB	WATER	SOIL	10	
Jan 30	2:45 pm	GRAB	WATER	SOIL	11	
Jan 31	8:10 pm	GRAB	WATER	SOIL	12	
Jan 31	2:15 pm	GRAB	WATER	SOIL	13	



L1265198-COFC

SPECIAL INSTRUCTIONS/COMMENTS: *Brucella water*

THE QUESTIONS BELOW MUST BE ANSWERED FOR WATER SAMPLES (CHECK YES OR NO)

Are any samples taken from a regulated DW System? Yes  No   
 If yes, an authorized drinking water COC MUST be used for this submission.  
 Is the water sampled intended to be potable for human consumption? Yes  No

RECEIVED BY: *Paul Rew* DATE & TIME: 01/29/04 13:43  
 RECEIVED AT LAB BY: *Paul Rew* DATE & TIME: 01/29/04 13:43

MEAN TEMP: 11.5  
 OBSERVATIONS: *INIT*

1. Quote number must be provided to ensure proper pricing  
 2. TAT may vary dependent on complexity of analysis and lab workload at time of submission. 3. Any known or suspected hazards relating to a sample must be noted on the chain of custody in comments section.



RUBICON ENVIRONMENTAL INC.  
ATTN: BRIAN WHEELER  
22 ANNADALE DRIVE  
LONDON ON N6G 2B7

Date Received: 08-MAY-13  
Report Date: 16-MAY-13 12:21 (MT)  
Version: FINAL

Client Phone: 519-857-7435

## Certificate of Analysis

**Lab Work Order #:** L1298889  
**Project P.O. #:** NOT SUBMITTED  
**Job Reference:** R55001  
**C of C Numbers:** 136809  
**Legal Site Desc:**

Gayle Braun  
Senior Account Manager

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

ADDRESS: 309 Exeter Road Unit #29, London, ON N6L 1C1 Canada | Phone: +1 519 652 6044 | Fax: +1 519 652 0671  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



# ANALYTICAL REPORT

**WATER - Ontario Regulation 153/04 - April 15, 2011 Standards**

Grouping	Analyte	Unit	Guide Limits #1 #2	ALS ID		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
				Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID							
Dissolved Metals	Dissolved Metals Filtration Location	-	-	L1298889-1	L1298889-2	L1298889-3	L1298889-4	L1298889-5	L1298889-6	L1298889-7	L1298889-8	L1298889-9
	Aluminum (Al)-Dissolved	ug/L	-	74	136	20	29	<0.50	<0.50	<0.50	<0.50	<10
	Antimony (Sb)-Dissolved	ug/L	20000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Arsenic (As)-Dissolved	ug/L	1900	12.9	12.7	2.7	1.7	11.4	13:00	13:10	13:30	14:00
	Barium (Ba)-Dissolved	ug/L	29000	47.0	47.0	143	11.4	<0.50	BH-MW8 (D)	BH-MW7 (D)	BH-MW7 (D)	BH-MW4
	Beryllium (Be)-Dissolved	ug/L	67	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Bismuth (Bi)-Dissolved	ug/L	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Boron (B)-Dissolved	ug/L	45000	428	417	1390	979	<0.090	<0.090	<0.090	<0.090	<0.090
	Cadmium (Cd)-Dissolved	ug/L	2.7	<0.090	<0.090	<0.090	<0.090	113000	<0.090	<0.090	<0.090	<0.090
	Calcium (Ca)-Dissolved	ug/L	-	147000	147000	92700	130000	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr)-Dissolved	ug/L	810	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Cobalt (Co)-Dissolved	ug/L	66	1.76	1.75	<0.50	4.09	<0.50	<0.50	<0.50	<0.50	<0.50
	Copper (Cu)-Dissolved	ug/L	87	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Iron (Fe)-Dissolved	ug/L	-	8930	9280	1090	1350	1350	1350	1350	1350	369
	Lead (Pb)-Dissolved	ug/L	25	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Lithium (Li)-Dissolved	ug/L	-	<100	<100	<100	<100	<100	<100	<100	<100	<100
	Magnesium (Mg)-Dissolved	ug/L	-	45700	47000	49400	43600	43600	43600	43600	43600	43600
	Manganese (Mn)-Dissolved	ug/L	-	629	636	14.2	219	219	219	219	219	219
	Molybdenum (Mo)-Dissolved	ug/L	9200	6.63	6.61	0.75	17.1	17.1	17.1	17.1	17.1	17.1
Nickel (Ni)-Dissolved	ug/L	490	3.6	3.5	<1.0	7.2	7.2	7.2	7.2	7.2	7.2	
Phosphorus (P)-Dissolved	ug/L	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	
Potassium (K)-Dissolved	ug/L	-	6700	6600	24600	13700	13700	13700	13700	13700	13700	

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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



# ANALYTICAL REPORT

## WATER - Ontario Regulation 153/04 - April 15, 2011 Standards

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1298889-10	L1298889-11	L1298889-12	L1298889-13	L1298889-14	L1298889-15
			#1	#2										
Dissolved Metals	Dissolved Metals Filtration Location		-	-										
	Aluminum (Al)-Dissolved	ug/L	-	-										
	Antimony (Sb)-Dissolved	ug/L	20000	20000										
	Arsenic (As)-Dissolved	ug/L	1900	1900										
	Barium (Ba)-Dissolved	ug/L	29000	29000										
	Beryllium (Be)-Dissolved	ug/L	67	67										
	Bismuth (Bi)-Dissolved	ug/L	-	-										
	Boron (B)-Dissolved	ug/L	45000	45000										
	Cadmium (Cd)-Dissolved	ug/L	2.7	2.7										
	Calcium (Ca)-Dissolved	ug/L	-	-										
	Chromium (Cr)-Dissolved	ug/L	810	810										
	Cobalt (Co)-Dissolved	ug/L	66	66										
	Copper (Cu)-Dissolved	ug/L	87	87										
	Iron (Fe)-Dissolved	ug/L	-	-										
	Lead (Pb)-Dissolved	ug/L	25	25										
	Lithium (Li)-Dissolved	ug/L	-	-										
	Magnesium (Mg)-Dissolved	ug/L	-	-										
	Manganese (Mn)-Dissolved	ug/L	-	-										
	Molybdenum (Mo)-Dissolved	ug/L	9200	9200										
	Nickel (Ni)-Dissolved	ug/L	490	490										
	Phosphorus (P)-Dissolved	ug/L	-	-										
	Potassium (K)-Dissolved	ug/L	-	-										

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**

**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

☐ Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

☐ Analytical result for this parameter exceeds Guideline Limits listed. See Summary of Guideline Exceedances.

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

# ANALYTICAL REPORT

**WATER - Ontario Regulation 153/04 - April 15, 2011 Standards**

Grouping	Analyte	Unit	Guide Limits #1 #2	ALS ID		Sampled Date Sampled Time Sample ID	L1298889-1 06-MAY-13 12:00 BH-MW15	L1298889-2 06-MAY-13 12:10 BH-MW15 (D)	L1298889-3 06-MAY-13 12:30 BH-MW9	L1298889-4 06-MAY-13 12:35 BH-MW9 (D)	L1298889-5 06-MAY-13 13:00 BH-MW8	L1298889-6 06-MAY-13 13:10 BH-MW8 (D)	L1298889-7 06-MAY-13 13:30 BH-MW7	L1298889-8 06-MAY-13 13:40 BH-MW7 (D)	L1298889-9 06-MAY-13 14:00 BH-MW4
				06-MAY-13 12:00 BH-MW15	06-MAY-13 12:10 BH-MW15 (D)										
Dissolved Metals	Selenium (Se)-Dissolved	ug/L	63 63	0.34	<0.20	0.45	0.34	<0.20		0.45				0.23	
	Silicon (Si)-Dissolved	ug/L	- -	14000	5000	5700	13200	5000		5700				6100	
	Silver (Ag)-Dissolved	ug/L	1.5 1.5	0.025	0.068	<0.020	<0.020	0.068		<0.020				0.068	
	Sodium (Na)-Dissolved	ug/L	23000002300000	36200	48500	95600	37200	48500		95600				283000	
	Strontium (Sr)-Dissolved	ug/L	- -	2650	15100	1030	2700	15100		1030				14100	
	Thallium (Tl)-Dissolved	ug/L	510 510	<0.060	<0.060	<0.060	<0.060	<0.060		<0.060				<0.060	
	Tin (Sn)-Dissolved	ug/L	- -	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0				<1.0	
	Titanium (Ti)-Dissolved	ug/L	- -	2.2	3.1	5.1	3.4	3.1		5.1				7.9	
	Tungsten (W)-Dissolved	ug/L	- -	<6.0	<6.0	<6.0	<6.0	<6.0		<6.0				<6.0	
	Uranium (U)-Dissolved	ug/L	420 420	4.4	1.1	6.7	4.5	1.1		6.7				5.5	
	Vanadium (V)-Dissolved	ug/L	250 250	<0.50	<0.50	<0.50	0.52	<0.50		<0.50				<0.50	
	Zinc (Zn)-Dissolved	ug/L	1100 1100	16.9	3.0	3.2	3.4	3.0		3.2				<3.0	
	Zirconium (Zr)-Dissolved	ug/L	- -	<0.80	<0.80	<0.80	<0.80	<0.80		<0.80				<0.80	
Volatile Organic Compounds	Acetone	ug/L	130000 130000	<30	<30	<30	<30		<30				<30		
	Benzene	ug/L	44 430	<0.50	<0.50	<0.50	<0.50		<0.50				<0.50		
	Bromodichloromethane	ug/L	85000 85000	<2.0	<2.0	<2.0	<2.0		<2.0				<2.0		
	Bromoform	ug/L	380 770	<5.0	<5.0	<5.0	<5.0		<5.0				<5.0		
	Bromomethane	ug/L	5.6 56	<0.50	<0.50	<0.50	<0.50		<0.50				<0.50		
	Carbon tetrachloride	ug/L	0.79 8.4	<0.20	<0.20	<0.20	<0.20		<0.20				<0.20		
	Chlorobenzene	ug/L	630 630	<0.50	<0.50	<0.50	<0.50		<0.50				<0.50		
	Dibromochloromethane	ug/L	82000 82000	<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		

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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





# ANALYTICAL REPORT

## WATER - Ontario Regulation 153/04 - April 15, 2011 Standards

Grouping	Analyte	Unit	Guide Limits #1 #2	ALS ID						
				L1298889-10 06-MAY-13 14:30 BH-MW1	L1298889-11 06-MAY-13 15:00 BH-MW20	L1298889-12 06-MAY-13 15:30 BH-MW18	L1298889-13 06-MAY-13 16:00 BH-MW2	L1298889-14 06-MAY-13 16:30 BH-MW5	L1298889-15 06-MAY-13 12:00 TRIP BLANK	
Dissolved Metals	Selenium (Se)-Dissolved	ug/L	63 63		<0.20	DLM <2.0	0.43			
	Silicon (Si)-Dissolved	ug/L	- -		5700	DLM <10000	10200			<0.20
	Silver (Ag)-Dissolved	ug/L	1.5 1.5		<0.020	DLM <0.20	<0.020			5700'
	Sodium (Na)-Dissolved	ug/L	23000002300000		47800	DLM 611000	4630			<0.020
	Strontium (Sr)-Dissolved	ug/L	- -		6920	DLM 7370	599			13200
	Thallium (Tl)-Dissolved	ug/L	510 510		<0.060	DLM <0.60	<0.060			11400
	Tin (Sn)-Dissolved	ug/L	- -		<1.0	DLM <10	<1.0			<0.060
	Titanium (Ti)-Dissolved	ug/L	- -		<2.0	DLM <20	<2.0			<1.0
	Tungsten (W)-Dissolved	ug/L	- -		<6.0	DLM <60	<6.0			2.3
	Uranium (U)-Dissolved	ug/L	420 420		2.5	DLM <10	2.1			<6.0
	Vanadium (V)-Dissolved	ug/L	250 250		<0.50	DLM <5.0	1.15			3.6
	Zinc (Zn)-Dissolved	ug/L	1100 1100		<3.0	DLM <30	14.2			<0.50
	Zirconium (Zr)-Dissolved	ug/L	- -		<0.80	DLM <8.0	<0.80			<3.0
	Volatile Organic Compounds	Acetone	ug/L	130000 130000		<30	<30			
Benzene		ug/L	44 430		<0.50	<0.50	<0.50			42
Bromodichloromethane		ug/L	85000 85000		<2.0	<2.0				<0.50
Bromoform		ug/L	380 770		<5.0	<5.0				<2.0
Bromomethane		ug/L	5.6 56		<0.50	<0.50				<5.0
Carbon tetrachloride		ug/L	0.79 8.4		<0.20	<0.20				<0.50
Chlorobenzene		ug/L	630 630		<0.50	<0.50				<0.20
Dibromochloromethane		ug/L	82000 82000		<2.0	<2.0				<0.50
Chloroform		ug/L	2.4 22		<1.0	<1.0				<2.0
										<1.0

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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



# ANALYTICAL REPORT

**WATER - Ontario Regulation 153/04 - April 15, 2011 Standards**

Grouping	Analyte	Unit	Guide Limits #1 #2	L1298889-1	L1298889-2	L1298889-3	L1298889-4	L1298889-5	L1298889-6	L1298889-7	L1298889-8	L1298889-9
				06-MAY-13 12:00 BH-MW15	06-MAY-13 12:10 BH-MW15 (D)	06-MAY-13 12:30 BH-MW9	06-MAY-13 12:35 BH-MW9 (D)	06-MAY-13 13:00 BH-MW8	06-MAY-13 13:10 BH-MW8 (D)	06-MAY-13 13:30 BH-MW7	06-MAY-13 13:40 BH-MW7 (D)	06-MAY-13 14:00 BH-MW4
Volatile Organic Compounds	1,2-Dibromoethane	ug/L	0.25 0.83	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	1,2-Dichlorobenzene	ug/L	4600 9600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,3-Dichlorobenzene	ug/L	9600 9600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,4-Dichlorobenzene	ug/L	8 67	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Dichlorodifluoromethane	ug/L	4400 4400	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	1,1-Dichloroethane	ug/L	320 3100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,2-Dichloroethane	ug/L	1.6 12	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,1-Dichloroethylene	ug/L	1.6 17	<0.50	<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	<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	<0.50
	1,3-Dichloropropene (cis & trans)	ug/L	5.2 45	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Methylene Chloride	ug/L	610 5500	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1,2-Dichloropropane	ug/L	16 140	<0.50	<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	<0.30
	trans-1,3-Dichloropropene	ug/L	- -	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
	Ethyl Benzene	ug/L	2300 2300	<0.50	<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	<0.50
Methyl Ethyl Ketone	ug/L	470000 1500000	<20	<20	<20	<20	<20	<20	<20	<20	<20	
Methyl Isobutyl Ketone	ug/L	140000 580000	<20	<20	<20	<20	<20	<20	<20	<20	<20	
MTBE	ug/L	190 1400	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Styrene	ug/L	1300 9100	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,1,2-Tetrachloroethane	ug/L	3.3 28	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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

WATER - Ontario Regulation 153/04 - April 15, 2011 Standards

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1298889-10	L1298889-11	L1298889-12	L1298889-13	L1298889-14	L1298889-15
			#1	#2										
Volatile Organic Compounds	1,2-Dibromoethane	ug/L	0.25	0.83		06-MAY-13	14:30	BH-MW1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	1,2-Dichlorobenzene	ug/L	4600	9600		06-MAY-13	15:30	BH-MW18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,3-Dichlorobenzene	ug/L	9600	9600		06-MAY-13	15:30	BH-MW18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,4-Dichlorobenzene	ug/L	8	67		06-MAY-13	15:30	BH-MW18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Dichlorodifluoromethane	ug/L	4400	4400		06-MAY-13	15:00	BH-MW20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	1,1-Dichloroethane	ug/L	320	3100		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,2-Dichloroethane	ug/L	1.6	12		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,1-Dichloroethylene	ug/L	1.6	17		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	cis-1,2-Dichloroethylene	ug/L	1.6	17		06-MAY-13	15:00	BH-MW20	<0.50	0.58	<0.50	<0.50	<0.50	<0.50
	trans-1,2-Dichloroethylene	ug/L	1.6	17		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	1,3-Dichloropropene (cis & trans)	ug/L	5.2	45		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Methylene Chloride	ug/L	610	5500		06-MAY-13	15:00	BH-MW20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1,2-Dichloropropane	ug/L	16	140		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	cis-1,3-Dichloropropene	ug/L	-	-		06-MAY-13	15:00	BH-MW20	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
	trans-1,3-Dichloropropene	ug/L	-	-		06-MAY-13	15:00	BH-MW20	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
	Ethyl Benzene	ug/L	2300	2300		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	n-Hexane	ug/L	51	520		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Methyl Ethyl Ketone	ug/L	470000	1500000		06-MAY-13	15:00	BH-MW20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	ug/L	140000	580000		06-MAY-13	15:00	BH-MW20	<20	<20	<20	<20	<20	<20	
MTBE	ug/L	190	1400		06-MAY-13	15:00	BH-MW20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Styrene	ug/L	1300	9100		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,1,2-Tetrachloroethane	ug/L	3.3	28		06-MAY-13	15:00	BH-MW20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

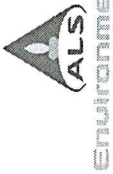
Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)

☐ Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

▒ Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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



# ANALYTICAL REPORT

L1298889 CONT'D....  
 Job Reference: R55001  
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**WATER - Ontario Regulation 153/04 - April 15, 2011 Standards**

Grouping	Analyte	Unit	Guide Limits #1 #2	L1298889-1	L1298889-2	L1298889-3	L1298889-4	L1298889-5	L1298889-6	L1298889-7	L1298889-8	L1298889-9	
				06-MAY-13 12:00 BH-MW15	06-MAY-13 12:10 BH-MW15 (D)	06-MAY-13 12:30 BH-MW9	06-MAY-13 12:35 BH-MW9 (D)	06-MAY-13 13:00 BH-MW8	06-MAY-13 13:10 BH-MW8 (D)	06-MAY-13 13:30 BH-MW7	06-MAY-13 13:40 BH-MW7 (D)	06-MAY-13 14:00 BH-MW4	
Volatile Organic Compounds	1,1,2,2-Tetrachloroethane	ug/L	3.2 15	<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	18000 18000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	1,1,1-Trichloroethane	ug/L	640 6700	<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 30	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	Trichloroethylene	ug/L	1.6 17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	Trichlorofluoromethane	ug/L	2500 2500	<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	<0.50
	o-Xylene	ug/L	- -	<0.30	<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	<0.40
Hydrocarbons	Xylenes (Total)	ug/L	4200 4200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	Surrogate: 4-Bromofluorobenzene	%	- -	85.5	89.9	91.9	90.2	90.3	90.3	94.8	85.2	110.0	
	Surrogate: 1,4-Difluorobenzene	%	- -	89.7	91.9	91.9	89.7	89.7	89.7	94.8	89.7	103.6	
	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	- -	<250	<250	<250	<250	<250	<250	<250	<250	<250		
Chrom. to baseline at nC50		- -	YES	YES	YES	YES	YES	YES	YES	YES	YES		

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**  
 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.  
 Analytical result for this parameter exceeds Guideline Limit listed. See Summary of Guideline Exceedances.  
 \* Please refer to the Reference Information section for an explanation of any qualifiers noted.



# ANALYTICAL REPORT

## WATER - Ontario Regulation 153/04 - April 15, 2011 Standards

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID	L1298889-10	L1298889-11	L1298889-12	L1298889-13	L1298889-14	L1298889-15																					
			#1	#2																															
Volatile Organic Compounds	1,1,2,2-Tetrachloroethane	ug/L	3.2	15	L1298889-10	06-MAY-13	14:30	BH-MW1	<0.50	L1298889-11	06-MAY-13	15:00	BH-MW20	<0.50	L1298889-12	06-MAY-13	15:30	BH-MW18	<0.50	L1298889-13	06-MAY-13	16:00	BH-MW2	<0.50	L1298889-14	06-MAY-13	16:30	BH-MW5	<0.50	L1298889-15	06-MAY-13	12:00	TRIP BLANK	<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		<0.50	
	Toluene	ug/L	18000	18000					<0.50		<0.50			<0.50		<0.50			<0.50		<0.50				<0.50		<0.50					<0.50		<0.50	
	1,1,1-Trichloroethane	ug/L	640	6700					<0.50		<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	30					<0.50		<0.50			<0.50		<0.50			<0.50		<0.50				<0.50		<0.50					<0.50		<0.50	
	Trichloroethylene	ug/L	1.6	17					<0.50		<0.50			<0.50		<0.50			<0.50		<0.50				<0.50		<0.50					<0.50		<0.50	
	Trichlorofluoromethane	ug/L	2500	2500					<5.0		<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		<0.50	
	o-Xylene	ug/L	-	-					<0.30		<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		<0.40	
	Xylenes (Total)	ug/L	4200	4200					<0.50		<0.50			<0.50		<0.50			<0.50		<0.50				<0.50		<0.50					<0.50		<0.50	
	Surrogate: 4-Bromofluorobenzene	%	-	-					88.9		93.7			80.3		104.6			101.7		101.7				101.7		97.3					102.8		97.3	
	Surrogate: 1,4-Difluorobenzene	%	-	-					92.7		94.4			88.9		101.7			96.4		96.4				96.4		97.3						97.3		97.3
	Hydrocarbons	F1 (C6-C10)	ug/L	750	750				<25		<25			<25		<25			<25		<25				<25		<25					<25		<25	
F1-BTEX		ug/L	750	750				<25		<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		<100		
F2-Naphth		ug/L	-	-				<100		<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		<250		
F3-PAH		ug/L	-	-				<250		<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		<250		
Total Hydrocarbons (C6-C50)		ug/L	-	-				<250		<250			<250		<250			<250		<250				<250		<250					<250		<250		
Chrom. to baseline at nC50		-	-				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES		

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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





# ANALYTICAL REPORT

L1298889 CONT'D....  
 Job Reference: R55001  
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 16-MAY-13 12:21 (MT)

## WATER - Ontario Regulation 153/04 - April 15, 2011 Standards

Grouping	Analyte	Unit	Guide Limits #1 #2	L1298889-1	L1298889-2	L1298889-3	L1298889-4	L1298889-5	L1298889-6	L1298889-7	L1298889-8	L1298889-9
				ALS ID	ALS ID	ALS ID	ALS ID	ALS ID	ALS ID	ALS ID	ALS ID	ALS ID
				Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID	Sampled Date Sampled Time Sample ID
Hydrocarbons	Surrogate: 2-Bromobenzotrifluoride	%	-	71.1	60.8	85.2		85.2		82.2	76.0	90.4
	Surrogate: 3,4-Dichlorotoluene	%	-	69.6	92.2	86.6		86.6		71.8	83.7	89.3
	Surrogate: Octacosane	%	-	87.5	78.0	94.8		94.8		99.1	91.9	100.2
Polycyclic Aromatic Hydrocarbons	Acenaphthene	ug/L	600	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Acenaphthylene	ug/L	1.8	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Anthracene	ug/L	2.4	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Benzo(e)anthracene	ug/L	4.7	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Benzo(a)pyrene	ug/L	0.81	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
	Benzo(b)fluoranthene	ug/L	0.75	<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	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Benzo(k)fluoranthene	ug/L	0.4	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Chrysene	ug/L	1	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Dibenzo(ah)anthracene	ug/L	0.52	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Fluoranthene	ug/L	130	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
	Fluorene	ug/L	400	0.049	<0.020	0.057		0.021	0.021	0.038	0.121	<0.020
	Indeno(1,2,3-cd)pyrene	ug/L	0.2	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	ug/L	1800	<0.056	<0.028	<0.029		<0.028	<0.028	<0.028	<0.028	<0.028	
1-Methylnaphthalene	ug/L	1800	0.024	<0.020	<0.020		<0.020	<0.020	<0.020	0.046	<0.020	
2-Methylnaphthalene	ug/L	1800	<0.052	<0.020	<0.020		<0.020	<0.020	<0.020	<0.086	<0.020	
Naphthalene	ug/L	1400	<0.063	<0.020	<0.117		<0.020	<0.020	<0.020	<0.165	<0.049	
Phenanthrene	ug/L	580	0.369	0.037	0.422		0.422	0.232	1.18	1.18	0.069	
Pyrene	ug/L	68	<0.020	<0.020	<0.020		<0.020	<0.020	<0.020	0.020	<0.020	

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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

# ANALYTICAL REPORT

## WATER - Ontario Regulation 153/04 - April 15, 2011 Standards

Grouping	Analyte	Unit	Guide Limits #1 #2	L1298889-10	L1298889-11	L1298889-12	L1298889-13	L1298889-14	L1298889-15
				06-MAY-13 14:30 BH-MW1	06-MAY-13 15:00 BH-MW20	06-MAY-13 15:30 BH-MW18	06-MAY-13 16:00 BH-MW2	06-MAY-13 16:30 BH-MW5	06-MAY-13 12:00 TRIP BLANK
Hydrocarbons	Surrogate: 2-Bromobenzotrifluoride	%	- -	92.9	89.6	79.8	78.2	71.3	87.3
	Surrogate: 3,4-Dichlorotoluene	%	- -	89.4	79.0	76.8	80.6	94.1	
Polycyclic Aromatic Hydrocarbons	Surrogate: Octacosane	%	- -	94.2	98.7	87.0	92.1	84.6	DLA
	Acenaphthene	ug/L	600 1700	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Acenaphthylene	ug/L	1.8 1.8	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Anthracene	ug/L	2.4 2.4	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Benzo(a)anthracene	ug/L	4.7 4.7	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Benzo(a)pyrene	ug/L	0.81 0.81	<0.010	<0.010	<0.010	<0.010	<0.10	DLA
	Benzo(b)fluoranthene	ug/L	0.75 0.75	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Benzo(g,h,i)perylene	ug/L	0.2 0.2	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Benzo(k)fluoranthene	ug/L	0.4 0.4	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Chrysene	ug/L	1 1	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
Dibenzo(a,h)anthracene		ug/L	0.52 0.52	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Fluoranthene	ug/L	130 130	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
Fluorene		ug/L	400 400	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Indeno(1,2,3-cd)pyrene	ug/L	0.2 0.2	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
1+2-Methylnaphthalenes		ug/L	1800 1800	<0.028	<0.028	<0.028	<0.028	<0.28	DLA
	1-Methylnaphthalene	ug/L	1800 1800	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
2-Methylnaphthalene		ug/L	1800 1800	<0.020	<0.020	<0.020	<0.020	<0.20	DLA
	Naphthalene	ug/L	1400 6400	<0.029 <sup>DLB</sup>	<0.029	<0.020	<0.020	<0.20	DLA
Phenanthrene		ug/L	580 580	0.026	0.049	0.049	<0.020	0.36	DLA
	Pyrene	ug/L	68 68	<0.020	<0.020	<0.020	<0.020	<0.20	DLA

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**

**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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

# ANALYTICAL REPORT

**WATER - Ontario Regulation 153/04 - April 15, 2011 Standards**

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Polycyclic Aromatic Hydrocarbons	Surrogate: 2-Fluorobiphenyl	%	-	-	L1298889-1	06-MAY-13	12:00	BH-MW15
	Surrogate: d14-Terphenyl	%	-	-	L1298889-2	06-MAY-13	12:10	BH-MW15 (D)
Polychlorinated Biphenyls	Aroclor 1242	ug/L	-	-	L1298889-3	06-MAY-13	12:30	BH-MW9
	Aroclor 1248	ug/L	-	-	L1298889-4	06-MAY-13	12:35	BH-MW9 (D)
	Aroclor 1254	ug/L	-	-	L1298889-5	06-MAY-13	13:00	BH-MW8
	Aroclor 1260	ug/L	-	-	L1298889-6	06-MAY-13	13:10	BH-MW8 (D)
	Total PCBs	ug/L	7.8	15	L1298889-7	06-MAY-13	13:30	BH-MW7
	Surrogate: d14-Terphenyl	%	-	-	L1298889-8	06-MAY-13	13:40	BH-MW7 (D)
					L1298889-9	06-MAY-13	14:00	BH-MW4

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**  
**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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

# ANALYTICAL REPORT

**WATER - Ontario Regulation 153/04 - April 15, 2011 Standards**

Grouping	Analyte	Unit	Guide Limits		ALS ID	Sampled Date	Sampled Time	Sample ID
			#1	#2				
Polycyclic Aromatic Hydrocarbons	Surrogate: 2-Fluorobiphenyl	%	-	-	L1298889-10	06-MAY-13	14:30	BH-MW1
	Surrogate: d14-Terphenyl	%	97.2	113.9	L1298889-11	06-MAY-13	15:00	BH-MW20
Polychlorinated Biphenyls	Aroclor 1242	ug/L			L1298889-12	06-MAY-13	15:30	BH-MW18
	Aroclor 1248	ug/L			L1298889-13	06-MAY-13	16:00	BH-MW2
	Aroclor 1254	ug/L			L1298889-14	06-MAY-13	16:30	BH-MW5
	Aroclor 1260	ug/L			L1298889-15	06-MAY-13	12:00	TRIP BLANK
	Total PCBs	ug/L	7.8	15				
	Surrogate: d14-Terphenyl	%						

**Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)**

**Guide Limit #2: T3-Non-Potable Ground Water-All Types of Property Uses (Fine)**

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

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



Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse) (No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Fine) (No parameter exceedances)							

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

## Reference Information

### Additional Comments for Sample Listed:

Sample Number	Matrix	Report Remarks	Sample Comment:
L1298889-6	Water	Note: DLM: The ion abundance ratio did not meet the acceptance criteria for positive identification	

### Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLB	Detection limit was raised due to detection of analyte at comparable level in Method Blank.
DLM	Detection Limit Adjusted For Sample Matrix Effects

### Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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**BTX-511-HS-WT** Water BTEX by Headspace SW846 8260 (511)

BTX is determined by analyzing by headspace-GC/MS.

**F1-F4-511-CALC-WT** Water F1-F4 Hydrocarbon Calculated CCMC CWS-PHC DEC-2000 - PUB# 1310-L  
 Parameters

Analytical methods used for analysis of CCMC 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) MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by liquid/liquid extraction with a solvent. The solvent recovered from the extracted sample is dried and treated to remove polar material. The extract is then analyzed by 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).

## Reference Information

**Methods Listed (if applicable):**

ALS Test Code	Matrix	Test Description	Method Reference**
<b>MET-D-JG/L-MS-WT</b>	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).			
<b>METHYLNAPS-CALC-WT</b>	Water	PAH-Calculated Parameters	SW846 8270
<b>PAH-511-WT</b>	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. For Benzo (a) pyrene analysis samples are filtered. The sample extracts are concentrated and then analyzed using GC/MS. Depending on the analytical GC/MS column used benzo(f)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).			
<b>PCB-511-WT</b>	Water	PCB-O. Reg 153/04 (July 2011)	SW846 3510/8082
Aqueous samples are extracted, then concentrated, reconstituted, and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
<b>VOC-1,3-DCP-CALC-WT</b>	Water	Regulation 153 VOCs	SW8260B/SW8270C
<b>VOC-511-HS-WT</b>	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).			
<b>XYLENES-SUM-CALC-WT</b>	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:

136809

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.





Environmental

# Quality Control Report

Workorder: L1298889

Report Date: 16-MAY-13

Page 1 of 28

Client: RUBICON ENVIRONMENTAL INC.  
 22 ANNADALE DRIVE  
 LONDON ON N6G 2B7

Contact: BRIAN WHEELER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	Water							
<b>Batch</b>	<b>R2602519</b>							
<b>WG1667408-1</b>	<b>CVS</b>							
Benzene			101.3		%		75-125	09-MAY-13
Ethyl Benzene			94.2		%		75-125	09-MAY-13
m+p-Xylenes			104.4		%		75-125	09-MAY-13
o-Xylene			94.2		%		75-125	09-MAY-13
Toluene			96.7		%		75-125	09-MAY-13
<b>WG1667408-4</b>	<b>DUP</b>	<b>WG1667408-3</b>						
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAY-13
Ethyl Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAY-13
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	13-MAY-13
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	13-MAY-13
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	13-MAY-13
<b>WG1667408-2</b>	<b>MB</b>							
Benzene			<0.50		ug/L		0.5	09-MAY-13
Ethyl Benzene			<0.50		ug/L		0.5	09-MAY-13
m+p-Xylenes			<0.40		ug/L		0.4	09-MAY-13
o-Xylene			<0.30		ug/L		0.3	09-MAY-13
Toluene			<0.50		ug/L		0.5	09-MAY-13
Surrogate: 1,4-Difluorobenzene			101.0		%		70-130	09-MAY-13
Surrogate: 4-Bromofluorobenzene			89.0		%		70-130	09-MAY-13
<b>WG1667408-5</b>	<b>MS</b>	<b>L1299286-3</b>						
Benzene			102.7		%		50-150	10-MAY-13
Ethyl Benzene			91.9		%		50-150	10-MAY-13
m+p-Xylenes			105.6		%		50-150	10-MAY-13
o-Xylene			90.9		%		50-150	10-MAY-13
Toluene			95.5		%		50-150	10-MAY-13
F1-HS-511-WT	Water							
<b>Batch</b>	<b>R2602519</b>							
<b>WG1667408-1</b>	<b>CVS</b>							
F1 (C6-C10)			107.7		%		80-120	09-MAY-13
<b>WG1667408-4</b>	<b>DUP</b>	<b>WG1667408-3</b>						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	10-MAY-13
<b>WG1667408-2</b>	<b>MB</b>							
F1 (C6-C10)			<25		ug/L		25	09-MAY-13
Surrogate: 3,4-Dichlorotoluene			98.1		%		60-140	09-MAY-13
<b>WG1667408-5</b>	<b>MS</b>	<b>L1299286-3</b>						



Environmental

# Quality Control Report

Workorder: L1298889

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Client: RUBICON ENVIRONMENTAL INC.  
22 ANNADALE DRIVE  
LONDON ON N6G 2B7

Contact: BRIAN WHEELER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	Water							
<b>Batch</b>	<b>R2602519</b>							
<b>WG1667408-5</b>	<b>MS</b>	<b>L1299286-3</b>						
F1 (C6-C10)			93.7		%		60-140	10-MAY-13
<b>Batch</b>	<b>R2606888</b>							
<b>WG1667636-1</b>	<b>CVS</b>							
F1 (C6-C10)			96.2		%		80-120	13-MAY-13
<b>WG1667636-4</b>	<b>DUP</b>	<b>WG1667636-3</b>						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	15-MAY-13
<b>WG1667636-2</b>	<b>MB</b>							
F1 (C6-C10)			<25		ug/L		25	15-MAY-13
Surrogate: 3,4-Dichlorotoluene			98.6		%		60-140	15-MAY-13
<b>WG1667636-5</b>	<b>MS</b>	<b>WG1667636-3</b>						
F1 (C6-C10)			85.7		%		60-140	13-MAY-13
F2-F4-511-WT	Water							
<b>Batch</b>	<b>R2606668</b>							
<b>WG1669910-1</b>	<b>CVS</b>							
F2 (C10-C16)			102.4		%		65-135	14-MAY-13
F3 (C16-C34)			101.4		%		65-135	14-MAY-13
F4 (C34-C50)			104.4		%		65-135	14-MAY-13
<b>WG1667570-2</b>	<b>LCS</b>							
F2 (C10-C16)			76.8		%		65-135	14-MAY-13
F3 (C16-C34)			79.4		%		65-135	14-MAY-13
F4 (C34-C50)			72.3		%		65-135	14-MAY-13
<b>WG1667570-3</b>	<b>LCSD</b>	<b>WG1667570-2</b>						
F2 (C10-C16)		76.8	79.8		%	3.9	50	14-MAY-13
F3 (C16-C34)		79.4	82.0		%	3.2	50	14-MAY-13
F4 (C34-C50)		72.3	77.0		%	6.3	50	14-MAY-13
<b>WG1667570-1</b>	<b>MB</b>							
F2 (C10-C16)			<100		ug/L		100	14-MAY-13
F3 (C16-C34)			<250		ug/L		250	14-MAY-13
F4 (C34-C50)			<250		ug/L		250	14-MAY-13
Surrogate: Octacosane			99.5		%		60-140	14-MAY-13
Surrogate: 2-Bromobenzotrifluoride			80.7		%		60-140	14-MAY-13

MET-D-UG/L-MS-WT Water

# Quality Control Report

Workorder: L1298889

Report Date: 16-MAY-13

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Client: RUBICON ENVIRONMENTAL INC.  
 22 ANNADALE DRIVE  
 LONDON ON N6G 2B7  
 Contact: BRIAN WHEELER

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	Water							
<b>Batch</b>	<b>R2602673</b>							
<b>WG1667217-1 CVS</b>								
Aluminum (Al)-Dissolved			98.3					09-MAY-13
Antimony (Sb)-Dissolved			101.2					09-MAY-13
Arsenic (As)-Dissolved			104.5					09-MAY-13
Barium (Ba)-Dissolved			103.1					09-MAY-13
Beryllium (Be)-Dissolved			104.0					09-MAY-13
Bismuth (Bi)-Dissolved			99.8					09-MAY-13
Boron (B)-Dissolved			102.3					09-MAY-13
Cadmium (Cd)-Dissolved			104.1					09-MAY-13
Calcium (Ca)-Dissolved			96.7					09-MAY-13
Chromium (Cr)-Dissolved			97.3					09-MAY-13
Cobalt (Co)-Dissolved			103.7					09-MAY-1
Copper (Cu)-Dissolved			102.7					
Iron (Fe)-Dissolved			98.1					
Lead (Pb)-Dissolved			101.8					
Lithium (Li)-Dissolved			102.9					
Magnesium (Mg)-Dissolved			99.0					
Manganese (Mn)-Dissolved			99.0					
Molybdenum (Mo)-Dissolved			102.9					
Nickel (Ni)-Dissolved			100.7					
Phosphorus (P)-Dissolved			96.5					
Potassium (K)-Dissolved			95.9					
Selenium (Se)-Dissolved			97.0					
Silicon (Si)-Dissolved			96.1					
Silver (Ag)-Dissolved			105.5					
Sodium (Na)-Dissolved			100.1					
Strontium (Sr)-Dissolved			100.3					
Thallium (Tl)-Dissolved			101.4					
Tin (Sn)-Dissolved			100.5					
Titanium (Ti)-Dissolved			100.1					
Tungsten (W)-Dissolved			99.2					
Uranium (U)-Dissolved			102.7					
Vanadium (V)-Dissolved			97.9					
Zinc (Zn)-Dissolved			104.1					