



Environmental Division

**Certificate of Analysis**

AMEC EARTH & ENVIRONMENTAL

ATTN: DREW STOLTZ

420 WEBER STREET N  
UNIT G  
WATERLOO ON N2L 4E7

Report Date: 15-JUL-10 13:19 (MT)

Version: FINAL

Lab Work Order #: **L906495**

Date Received: **09-JUL-10**

Project P.O. #: NOT SUBMITTED

Job Reference: TR216

Legal Site Desc:

CofC Numbers: 100543

Other Information:

Comments:

MARY-LYNN PIRES  
Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.  
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU  
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

# CRITERIA REPORT

TR216

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits	Analyzed	Batch
L906495-1 W-7/9/10-DS-001 Sampled By: DS on 09-JUL-10 @ 08:30 Matrix: WATER					O.REG 153/04- TABLE 2		
<b>F1-F4 (O.Reg.153/04)</b>							
<b>CCME Total Hydrocarbons</b>							
F1 (C6-C10)	<100		100	ug/L	F1+F2=1000	13-JUL-10	
F2 (C10-C16)	<100		100	ug/L	F1+F2=1000	13-JUL-10	
F3 (C16-C34)	<250		250	ug/L	F3+F4=1000	13-JUL-10	
F4 (C34-C50)	<250		250	ug/L	F3+F4=1000	13-JUL-10	
Total Hydrocarbons (C6-C50)	<250		250	ug/L		13-JUL-10	
Chromatogram to baseline at nC50	YES			No Unit		13-JUL-10	
Analysis Date				No Unit		12-JUL-10	R1346064
<b>F2-F4 (O.Reg.153/04)</b>							
Prep/Analysis Dates				No Unit		13-JUL-10	R1347584
Surr: Octacosane	78		50-120	%		13-JUL-10	R1347584
Surr: 2-Bromobenzotrifluoride	54		30-120	%		13-JUL-10	R1347584
<b>General Chemistry Package 1</b>							
Alkalinity, Total (as CaCO3)	199		10	mg/L		09-JUL-10	R1340044
Ammonia as N	0.161		0.050	mg/L		12-JUL-10	R1346085
<b>CL,F,NO2,NO3,SO4</b>							
Chloride	<10		10	mg/L	250	13-JUL-10	R1352143
Fluoride	1.15		0.10	mg/L		13-JUL-10	R1352143
Nitrite-N	<0.50		0.50	mg/L	1	13-JUL-10	R1352143
Nitrate-N	<0.50		0.50	mg/L	10	13-JUL-10	R1352143
Sulphate	1610		2.0	mg/L		13-JUL-10	R1352143
Color, Apparent	59.7		1.0	C.U.		09-JUL-10	R1340304
Conductivity	2160		0.40	umhos/cm **	700      **      1400	09-JUL-10	R1346664
Hardness (as CaCO3)	1340		10	mg/L		15-JUL-10	
<b>Metal Scan-Total</b>							
Aluminum (Al)-Total	<0.010	SFPL	0.010	mg/L		14-JUL-10	R1357644
Antimony (Sb)-Total	<0.0050	SFPL	0.0050	mg/L	0.006	14-JUL-10	R1357644
Arsenic (As)-Total	<0.0010	SFPL	0.0010	mg/L	0.025	14-JUL-10	R1357644
Barium (Ba)-Total	<0.010	SFPL	0.010	mg/L	1	14-JUL-10	R1357644
Beryllium (Be)-Total	<0.0010	SFPL	0.0010	mg/L	0.004	14-JUL-10	R1357644
Bismuth (Bi)-Total	<0.0010	SFPL	0.0010	mg/L		14-JUL-10	R1357644
Boron (B)-Total	0.222	SFPL	0.050	mg/L	5.0	14-JUL-10	R1357644
Cadmium (Cd)-Total	<0.00010	SFPL	0.00010	mg/L	0.005	14-JUL-10	R1357644
Calcium (Ca)-Total	400	SFPL	0.50	mg/L		14-JUL-10	R1357644
Chromium (Cr)-Total	<0.0010	SFPL	0.0010	mg/L	0.05	14-JUL-10	R1357644
Cobalt (Co)-Total	<0.00050	SFPL	0.00050	mg/L	0.1	14-JUL-10	R1357644
Copper (Cu)-Total	0.0186	SFPL	0.0010	mg/L	0.023	14-JUL-10	R1357644
Iron (Fe)-Total	1.38	SFPL	0.050	mg/L		14-JUL-10	R1357644
Lead (Pb)-Total	<0.0010	SFPL	0.0010	mg/L	0.01	14-JUL-10	R1357644
Magnesium (Mg)-Total	83.2	DLM	5.0	mg/L		14-JUL-10	R1357644
Manganese (Mn)-Total	0.0191	SFPL	0.0010	mg/L		14-JUL-10	R1357644
Molybdenum (Mo)-Total	<0.0010	SFPL	0.0010	mg/L	7.3	14-JUL-10	R1357644
Nickel (Ni)-Total	<0.0020	SFPL	0.0020	mg/L	0.1	14-JUL-10	R1357644
Phosphorus (P)-Total	<0.050	SFPL	0.050	mg/L		14-JUL-10	R1357644
Potassium (K)-Total	2.2	SFPL	1.0	mg/L		14-JUL-10	R1357644

\* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

\*\* Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

# CRITERIA REPORT

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TR216

Sample Details/Parameters	Result	Qualifier	D.L.	Units	Criteria Specific Limits	Analyzed	Batch
L906495-1 W-7/9/10-DS-001 Sampled By: DS on 09-JUL-10 @ 08:30 Matrix: WATER					O.REG 153/04- TABLE 2		
<b>General Chemistry Package 1</b>							
<b>Metal Scan-Total</b>							
Selenium (Se)-Total	<0.0050	SFPL	0.0050	mg/L	0.01	14-JUL-10	R1357644
Silicon (Si)-Total	6.1	SFPL	1.0	mg/L		14-JUL-10	R1357644
Silver (Ag)-Total	<0.00010	SFPL	0.00010	mg/L	0.0012	14-JUL-10	R1357644
Sodium (Na)-Total	13.1	SFPL	0.50	mg/L	200	14-JUL-10	R1357644
Strontium (Sr)-Total	11.8	SFPL	0.0010	mg/L		14-JUL-10	R1357644
Thallium (Tl)-Total	<0.00030	SFPL	0.00030	mg/L	0.002	14-JUL-10	R1357644
Tin (Sn)-Total	<0.0010	SFPL	0.0010	mg/L		14-JUL-10	R1357644
Titanium (Ti)-Total	0.0192	SFPL	0.0020	mg/L		14-JUL-10	R1357644
Tungsten (W)-Total	<0.010	SFPL	0.010	mg/L		14-JUL-10	R1357644
Uranium (U)-Total	<0.0050	SFPL	0.0050	mg/L		14-JUL-10	R1357644
Vanadium (V)-Total	<0.0010	SFPL	0.0010	mg/L	0.2	14-JUL-10	R1357644
Zinc (Zn)-Total	0.0260	SFPL	0.0030	mg/L	1.1	14-JUL-10	R1357644
Zirconium (Zr)-Total	<0.0040	SFPL	0.0040	mg/L		14-JUL-10	R1357644
Total Dissolved Solids	2120		20	mg/L		12-JUL-10	R1348423
Turbidity	13.9		0.10	NTU		09-JUL-10	R1340247
pH	7.77		0.10	pH units		09-JUL-10	R1346705
<b>Individual Analytes</b>							
<b>Standard Metal Scan</b>							
Antimony (Sb)	<5.0	SFPL	5.0	ug/L	6	14-JUL-10	R1357644
Arsenic (As)	<1.0	SFPL	1.0	ug/L	25	14-JUL-10	R1357644
Barium (Ba)	<10	SFPL	10	ug/L	1000	14-JUL-10	R1357644
Beryllium (Be)	<1.0	SFPL	1.0	ug/L	4	14-JUL-10	R1357644
Boron (B)	213	SFPL	50	ug/L	5000	14-JUL-10	R1357644
Cadmium (Cd)	<0.10	SFPL	0.10	ug/L	5	14-JUL-10	R1357644
Chromium (Cr)	<1.0	SFPL	1.0	ug/L	50	14-JUL-10	R1357644
Cobalt (Co)	<0.50	SFPL	0.50	ug/L	100	14-JUL-10	R1357644
Copper (Cu)	1.6	SFPL	1.0	ug/L	23	14-JUL-10	R1357644
Lead (Pb)	<1.0	SFPL	1.0	ug/L	10	14-JUL-10	R1357644
Molybdenum (Mo)	<1.0	SFPL	1.0	ug/L	7300	14-JUL-10	R1357644
Nickel (Ni)	<2.0	SFPL	2.0	ug/L	100	14-JUL-10	R1357644
Selenium (Se)	<5.0	SFPL	5.0	ug/L	10	14-JUL-10	R1357644
Silver (Ag)	<0.10	SFPL	0.10	ug/L	1.2	14-JUL-10	R1357644
Sodium (Na)	14400	SFPL	500	ug/L	200000	14-JUL-10	R1357644
Thallium (Tl)	<0.30	SFPL	0.30	ug/L	2.0	14-JUL-10	R1357644
Vanadium (V)	<1.0	SFPL	1.0	ug/L	200	14-JUL-10	R1357644
Zinc (Zn)	20.7	SFPL	3.0	ug/L	1100	14-JUL-10	R1357644

\* Detection Limit for result exceeds Criteria Specific Limit. Assessment against Criteria Limit cannot be made.

\*\* Analytical result for this parameter exceeds Criteria Specific Limit listed on this report.

# Reference Information

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**Sample Parameter Qualifier key listed:**

Qualifier	Description
SFPL	Sample was Filtered and Preserved at the laboratory
DLM	Detection Limit Adjusted For Sample Matrix Effects

**Methods Listed (if applicable):**

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ALK-WT	Water	Alkalinity, Total (as CaCO3)		APHA 2320B
ANIONS5-WT	Water	CL,F,NO2,NO3,SO4		EPA 300.0 (IC)
COLOUR-WT	Water	Colour		APHA 2120

Apparent colour is determined by analysis of the decanted sample using the platinum-cobalt colourimetric method.

EC-WT	Water	Conductivity		APHA 2510 B
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Water samples can be measured directly by immersing the conductivity cell into the sample.

ETL-HARDNESS-CALC-WT	Water	Hardness (as CaCO3)		APHA 2340 B
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ETL-TVH,TEH-CCME-WT	Water	CCME Total Hydrocarbons		CCME CWS-PHC DEC-2000 - PUB# 1310-L
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

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

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

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

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

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

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-WT	Water	F1 (O.Reg.153/04)		MOE DECPH-E3421/CCME Tier 1
F2-F4-WT	Water	F2-F4 (O.Reg.153/04)		MOE DECPH-E3421/CCME Tier 1
MET-R153-WT	Water	Standard Metal Scan		EPA 200.8
MET-TOT-WT	Water	Metal Scan-Total		EPA 200.8
NH3-WT	Water	Ammonia as N		EPA 350.1

Sample is measured colorimetrically. When sample is turbid a distillation step is required, sample is distilled into a solution of boric acid and measured colorimetrically.

PH-WT	Water	pH		APHA 4500 H-Electrode
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Water samples are analyzed directly by a calibrated pH meter.

SOLIDS-TDS-WT	Water	Total Dissolved Solids		APHA 2540C
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A well-mixed sample is filtered through glass fibres filter. A known volume of the filtrate is evaporated and dried at 105–50c overnight and then 180–10°C for 1hr.

TURBIDITY-WT	Water	Turbidity		APHA 2130 B
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Sample result is based on a comparison of the intensity of the light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. Sample readings are obtained from a Nephelometer.

Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

100543

*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

TR216

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS LABORATORY GROUP - 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 criteria limits 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: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
420 WEBER STREET N UNIT G  
WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>ALK-WT</b>								
	Water							
<b>Batch</b>	<b>R1340044</b>							
<b>WG1131886-2</b>	<b>CVS</b>							
Alkalinity, Total (as CaCO3)			99		%		85-115	09-JUL-10
<b>WG1131886-3</b>	<b>DUP</b>	<b>L905991-1</b>						
Alkalinity, Total (as CaCO3)		420	422		mg/L	0.53	20	09-JUL-10
<b>WG1131886-1</b>	<b>MB</b>							
Alkalinity, Total (as CaCO3)			<10		mg/L		10	09-JUL-10
<b>ANIONS5-WT</b>								
	Water							
<b>Batch</b>	<b>R1352143</b>							
<b>WG1133099-3</b>	<b>LCS</b>							
Chloride			99		%		75-125	13-JUL-10
Fluoride			97		%		75-125	13-JUL-10
Nitrite-N			97		%		75-125	13-JUL-10
Nitrate-N			98		%		75-125	13-JUL-10
Sulphate			100		%		75-125	13-JUL-10
<b>WG1133099-4</b>	<b>LCSD</b>	<b>WG1133099-3</b>						
Chloride		99	100		%	0.46	30	13-JUL-10
Fluoride		97	98		%	0.62	30	13-JUL-10
Nitrite-N		97	97		%	0.46	30	13-JUL-10
Nitrate-N		98	98		%	0.16	30	13-JUL-10
Sulphate		100	100		%	0.069	30	13-JUL-10
<b>WG1133099-1</b>	<b>MB</b>							
Chloride			<2.0		mg/L		2	13-JUL-10
Fluoride			<0.10		mg/L		0.1	13-JUL-10
Nitrite-N			<0.10		mg/L		0.1	13-JUL-10
Nitrate-N			<0.10		mg/L		0.1	13-JUL-10
Sulphate			<2.0		mg/L		2	13-JUL-10
<b>COLOUR-WT</b>								
	Water							
<b>Batch</b>	<b>R1340304</b>							
<b>WG1131887-2</b>	<b>CVS</b>							
Color, Apparent			101		%		80-120	09-JUL-10
<b>WG1131887-3</b>	<b>DUP</b>	<b>L906495-1</b>						
Color, Apparent		59.7	58.5		C.U.	2.1	20	09-JUL-10
<b>WG1131887-1</b>	<b>MB</b>							
Color, Apparent			<1.0		C.U.		1	09-JUL-10
<b>EC-WT</b>								
	Water							



## Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
 420 WEBER STREET N UNIT G  
 WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>EC-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R1346664</b>							
<b>WG1132052-1</b>	<b>CVS</b>							
Conductivity			99		%		90-110	09-JUL-10
<b>WG1132052-2</b>	<b>DUP</b>	<b>L906495-1</b>						
Conductivity		2160	2180		umhos/cm	0.92	10	09-JUL-10
<b>F1-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R1346064</b>							
<b>WG1131522-1</b>	<b>CVS</b>							
TVH: (C6-C10 / No BTEX Correction)			80		%		80-120	12-JUL-10
<b>WG1131522-3</b>	<b>DUP</b>	<b>L904995-6</b>						
TVH: (C6-C10 / No BTEX Correction)		<100	<100	RPD-NA	ug/L	N/A	30	12-JUL-10
<b>WG1131522-2</b>	<b>MB</b>							
TVH: (C6-C10 / No BTEX Correction)			<100		ug/L		100	12-JUL-10
<b>F2-F4-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R1347584</b>							
<b>WG1132773-1</b>	<b>CVS</b>							
F2 (C10-C16)			105		%		80-120	12-JUL-10
F3 (C16-C34)			103		%		80-120	12-JUL-10
F4 (C34-C50)			100		%		80-120	12-JUL-10
<b>WG1132773-2</b>	<b>CVS</b>							
F2 (C10-C16)			105		%		80-120	12-JUL-10
F3 (C16-C34)			104		%		80-120	12-JUL-10
F4 (C34-C50)			102		%		80-120	12-JUL-10
<b>WG1132773-3</b>	<b>CVS</b>							
F2 (C10-C16)			103		%		80-120	13-JUL-10
F3 (C16-C34)			103		%		80-120	13-JUL-10
F4 (C34-C50)			102		%		80-120	13-JUL-10
<b>WG1132538-2</b>	<b>LCS</b>							
F2 (C10-C16)			93		%		50-120	12-JUL-10
F3 (C16-C34)			98		%		50-120	12-JUL-10
F4 (C34-C50)			91		%		50-110	12-JUL-10
<b>WG1132538-3</b>	<b>LCSD</b>	<b>WG1132538-2</b>						
F2 (C10-C16)		93	88		%	5.9	50	12-JUL-10
F3 (C16-C34)		98	94		%	3.7	50	12-JUL-10
F4 (C34-C50)		91	80		%	13	50	12-JUL-10
<b>WG1132538-1</b>	<b>MB</b>							
F2 (C10-C16)			<100		ug/L		100	12-JUL-10



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Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
420 WEBER STREET N UNIT G  
WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>F2-F4-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1347584</b>							
<b>WG1132538-1</b>	<b>MB</b>							
F3 (C16-C34)			<250		ug/L		250	12-JUL-10
F4 (C34-C50)			<250		ug/L		250	12-JUL-10
<b>MET-R153-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1357644</b>							
<b>WG1133735-1</b>	<b>CVS</b>							
Antimony (Sb)			94		%		80-120	14-JUL-10
Arsenic (As)			92		%		80-120	14-JUL-10
Barium (Ba)			90		%		80-120	14-JUL-10
Beryllium (Be)			100		%		80-120	14-JUL-10
Boron (B)			104		%		70-130	14-JUL-10
Cadmium (Cd)			94		%		80-120	14-JUL-10
Chromium (Cr)			96		%		80-120	14-JUL-10
Cobalt (Co)			93		%		80-120	14-JUL-10
Copper (Cu)			94		%		80-120	14-JUL-10
Lead (Pb)			96		%		80-120	14-JUL-10
Molybdenum (Mo)			111		%		80-120	14-JUL-10
Nickel (Ni)			95		%		80-120	14-JUL-10
Selenium (Se)			88		%		80-120	14-JUL-10
Silver (Ag)			105		%		80-120	14-JUL-10
Sodium (Na)			94		%		80-120	14-JUL-10
Thallium (Tl)			96		%		80-120	14-JUL-10
Vanadium (V)			96		%		80-120	14-JUL-10
Zinc (Zn)			95		%		80-120	14-JUL-10
<b>WG1133735-5</b>	<b>DUP</b>	<b>WG1133735-4</b>						
Antimony (Sb)		<5.0	<5.0	RPD-NA	ug/L	N/A	20	14-JUL-10
Arsenic (As)		<1.0	<1.0	RPD-NA	ug/L	N/A	20	14-JUL-10
Barium (Ba)		60	63	J	ug/L	3	40	14-JUL-10
Beryllium (Be)		<1.0	<1.0	RPD-NA	ug/L	N/A	20	14-JUL-10
Boron (B)		<50	<50	RPD-NA	ug/L	N/A	20	14-JUL-10
Cadmium (Cd)		<0.10	<0.10	RPD-NA	ug/L	N/A	20	14-JUL-10
Chromium (Cr)		5.6	6.2	J	ug/L	0.6	4	14-JUL-10
Cobalt (Co)		<0.50	<0.50	RPD-NA	ug/L	N/A	20	14-JUL-10
Copper (Cu)		6.0	6.0	J	ug/L	0.1	4	14-JUL-10
Lead (Pb)		<1.0	<1.0					



### Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
420 WEBER STREET N UNIT G  
WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-R153-WT</b>		<b>Water</b>						
<b>Batch R1357644</b>								
<b>WG1133735-5</b>	<b>DUP</b>	<b>WG1133735-4</b>						
Lead (Pb)		<1.0	<1.0	RPD-NA	ug/L	N/A	20	14-JUL-10
Molybdenum (Mo)		1.5	1.5	J	ug/L	0.0	4	14-JUL-10
Nickel (Ni)		<2.0	<2.0	RPD-NA	ug/L	N/A	20	14-JUL-10
Selenium (Se)		<5.0	<5.0	RPD-NA	ug/L	N/A	20	14-JUL-10
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/L	N/A	20	14-JUL-10
Sodium (Na)		19000	19400		ug/L	2.4	20	14-JUL-10
Thallium (Tl)		<0.30	<0.30	RPD-NA	ug/L	N/A	20	14-JUL-10
Vanadium (V)		5.7	5.9	J	ug/L	0.2	4	14-JUL-10
Zinc (Zn)		175	190		ug/L	8.5	20	14-JUL-10
<b>WG1133735-3</b>	<b>MB</b>							
Antimony (Sb)			<5.0		ug/L		5	14-JUL-10
Arsenic (As)			<1.0		ug/L		1	14-JUL-10
Barium (Ba)			<10		ug/L		10	14-JUL-10
Beryllium (Be)			<1.0		ug/L		1	14-JUL-10
Boron (B)			<50		ug/L		50	14-JUL-10
Cadmium (Cd)			<0.10		ug/L		0.1	14-JUL-10
Chromium (Cr)			<1.0		ug/L		1	14-JUL-10
Cobalt (Co)			<0.50		ug/L		0.5	14-JUL-10
Copper (Cu)			<1.0		ug/L		1	14-JUL-10
Lead (Pb)			<1.0		ug/L		1	14-JUL-10
Molybdenum (Mo)			<1.0		ug/L		1	14-JUL-10
Nickel (Ni)			<2.0		ug/L		2	14-JUL-10
Selenium (Se)			<5.0		ug/L		5	14-JUL-10
Silver (Ag)			<0.10		ug/L		0.1	14-JUL-10
Sodium (Na)			<500		ug/L		500	14-JUL-10
Thallium (Tl)			<0.30		ug/L		0.3	14-JUL-10
Vanadium (V)			<1.0		ug/L		1	14-JUL-10
Zinc (Zn)			<3.0		ug/L		3	14-JUL-10
<b>MET-TOT-WT</b>		<b>Water</b>						
<b>Batch R1357644</b>								
<b>WG1133735-1</b>	<b>CVS</b>							
Aluminum (Al)-Total			90		%		80-120	14-JUL-10
Antimony (Sb)-Total			94		%		80-120	14-JUL-10
Arsenic (As)-Total			92				80-120	



Environmental

### Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
420 WEBER STREET N UNIT G  
WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-TOT-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R1357644</b>							
<b>WG1133735-1</b>	<b>CVS</b>							
Arsenic (As)-Total			92		%		80-120	14-JUL-10
Barium (Ba)-Total			90		%		80-120	14-JUL-10
Beryllium (Be)-Total			100		%		80-120	14-JUL-10
Bismuth (Bi)-Total			93		%		80-120	14-JUL-10
Boron (B)-Total			104		%		70-130	14-JUL-10
Cadmium (Cd)-Total			94		%		80-120	14-JUL-10
Calcium (Ca)-Total			92		%		80-120	14-JUL-10
Chromium (Cr)-Total			96		%		80-120	14-JUL-10
Cobalt (Co)-Total			93		%		80-120	14-JUL-10
Copper (Cu)-Total			94		%		80-120	14-JUL-10
Iron (Fe)-Total			98		%		80-120	14-JUL-10
Lead (Pb)-Total			96		%		80-120	14-JUL-10
Magnesium (Mg)-Total			91		%		80-120	14-JUL-10
Manganese (Mn)-Total			96		%		80-120	14-JUL-10
Molybdenum (Mo)-Total			111		%		80-120	14-JUL-10
Nickel (Ni)-Total			95		%		80-120	14-JUL-10
Phosphorus (P)-Total			91		%		70-130	14-JUL-10
Potassium (K)-Total			90		%		80-120	14-JUL-10
Selenium (Se)-Total			88		%		80-120	14-JUL-10
Silver (Ag)-Total			105		%		80-120	14-JUL-10
Sodium (Na)-Total			94		%		80-120	14-JUL-10
Strontium (Sr)-Total			94		%		80-120	14-JUL-10
Thallium (Tl)-Total			96		%		80-120	14-JUL-10
Uranium (U)-Total			93		%		80-120	14-JUL-10
Vanadium (V)-Total			96		%		80-120	14-JUL-10
Zinc (Zn)-Total			95		%		80-120	14-JUL-10
<b>WG1133735-2</b>	<b>CVS</b>							
Silicon (Si)-Total			104		%		70-130	14-JUL-10
Tin (Sn)-Total			92		%		80-120	14-JUL-10
Titanium (Ti)-Total			105		%		80-120	14-JUL-10
Tungsten (W)-Total			92		%		70-130	14-JUL-10
Zirconium (Zr)-Total			98		%		80-120	14-JUL-10
<b>WG1133735-5</b>	<b>DUP</b>	<b>WG1133735-4</b>						
Aluminum (Al)-Total		0.056	0.061	J	mg/L	0.005	0.04	14-JUL-10



**Environmental**

## Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
 420 WEBER STREET N UNIT G  
 WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-TOT-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1357644</b>							
<b>WG1133735-5</b>	<b>DUP</b>	<b>WG1133735-4</b>						
Antimony (Sb)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	14-JUL-10
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	14-JUL-10
Barium (Ba)-Total		0.060	0.063	J	mg/L	0.003	0.04	14-JUL-10
Beryllium (Be)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	14-JUL-10
Bismuth (Bi)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	14-JUL-10
Boron (B)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	14-JUL-10
Cadmium (Cd)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-JUL-10
Calcium (Ca)-Total		126	133		mg/L	5.8	20	14-JUL-10
Chromium (Cr)-Total		0.0056	0.0062	J	mg/L	0.0006	0.004	14-JUL-10
Cobalt (Co)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	14-JUL-10
Copper (Cu)-Total		0.0060	0.0060	J	mg/L	0.0001	0.004	14-JUL-10
Iron (Fe)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	14-JUL-10
Lead (Pb)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	14-JUL-10
Magnesium (Mg)-Total		22.4	23.0		mg/L	2.4	20	14-JUL-10
Manganese (Mn)-Total		0.0143	0.0152		mg/L	6.2	20	14-JUL-10
Molybdenum (Mo)-Total		0.0015	0.0015	J	mg/L	0.0000	0.004	14-JUL-10
Nickel (Ni)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	14-JUL-10
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	14-JUL-10
Potassium (K)-Total		2.0	2.1	J	mg/L	0.1	4	14-JUL-10
Selenium (Se)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	14-JUL-10
Silicon (Si)-Total		8.2	8.4	J	mg/L	0.2	4	14-JUL-10
Silver (Ag)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-JUL-10
Sodium (Na)-Total		19.0	19.4		mg/L	2.4	20	14-JUL-10
Strontium (Sr)-Total		0.183	0.190		mg/L	3.3	20	14-JUL-10
Thallium (Tl)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	14-JUL-10
Tin (Sn)-Total		0.0015	0.0015	J	mg/L	0.0000	0.004	14-JUL-10
Titanium (Ti)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	14-JUL-10
Tungsten (W)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	14-JUL-10
Uranium (U)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	14-JUL-10
Vanadium (V)-Total		0.0057	0.0059	J	mg/L	0.0002	0.004	14-JUL-10
Zinc (Zn)-Total		0.175	0.190		mg/L	8.5	20	14-JUL-10
Zirconium (Zr)-Total		<0.0040	<0.0040	RPD-NA	mg/L	N/A	20	14-JUL-10
<b>WG1133735-3</b>	<b>MB</b>							



### Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
420 WEBER STREET N UNIT G  
WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-TOT-WT</b>	<b>Water</b>							
<b>Batch</b>	<b>R1357644</b>							
<b>WG1133735-3 MB</b>								
Aluminum (Al)-Total			<0.010		mg/L		0.01	14-JUL-10
Antimony (Sb)-Total			<0.0050		mg/L		0.005	14-JUL-10
Arsenic (As)-Total			<0.0010		mg/L		0.001	14-JUL-10
Barium (Ba)-Total			<0.010		mg/L		0.01	14-JUL-10
Beryllium (Be)-Total			<0.0010		mg/L		0.001	14-JUL-10
Bismuth (Bi)-Total			<0.0010		mg/L		0.001	14-JUL-10
Boron (B)-Total			<0.050		mg/L		0.05	14-JUL-10
Cadmium (Cd)-Total			<0.00010		mg/L		0.0001	14-JUL-10
Calcium (Ca)-Total			<0.50		mg/L		0.5	14-JUL-10
Chromium (Cr)-Total			<0.0010		mg/L		0.001	14-JUL-10
Cobalt (Co)-Total			<0.00050		mg/L		0.0005	14-JUL-10
Copper (Cu)-Total			<0.0010		mg/L		0.001	14-JUL-10
Iron (Fe)-Total			<0.050		mg/L		0.05	14-JUL-10
Lead (Pb)-Total			<0.0010		mg/L		0.001	14-JUL-10
Magnesium (Mg)-Total			<0.50		mg/L		0.5	14-JUL-10
Manganese (Mn)-Total			<0.0010		mg/L		0.001	14-JUL-10
Molybdenum (Mo)-Total			<0.0010		mg/L		0.001	14-JUL-10
Nickel (Ni)-Total			<0.0020		mg/L		0.002	14-JUL-10
Phosphorus (P)-Total			<0.050		mg/L		0.05	14-JUL-10
Potassium (K)-Total			<1.0		mg/L		1	14-JUL-10
Selenium (Se)-Total			<0.0050		mg/L		0.005	14-JUL-10
Silicon (Si)-Total			<1.0		mg/L		1	14-JUL-10
Silver (Ag)-Total			<0.00010		mg/L		0.0001	14-JUL-10
Sodium (Na)-Total			<0.50		mg/L		0.5	14-JUL-10
Strontium (Sr)-Total			<0.0010		mg/L		0.001	14-JUL-10
Thallium (Tl)-Total			<0.00030		mg/L		0.0003	14-JUL-10
Tin (Sn)-Total			<0.0010		mg/L		0.001	14-JUL-10
Titanium (Ti)-Total			<0.0020		mg/L		0.002	14-JUL-10
Tungsten (W)-Total			<0.010		mg/L		0.01	14-JUL-10
Uranium (U)-Total			<0.0050		mg/L		0.005	14-JUL-10
Vanadium (V)-Total			<0.0010		mg/L		0.001	14-JUL-10
Zinc (Zn)-Total			<0.0030		mg/L		0.003	14-JUL-10
Zirconium (Zr)-Total			<0.0040		mg/L		0.004	14-JUL-10



### Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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Client: AMEC EARTH & ENVIRONMENTAL  
420 WEBER STREET N UNIT G  
WATERLOO ON N2L 4E7

Contact: DREW STOLTZ

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>NH3-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1346085</b>							
<b>WG1132498-2</b>	<b>CVS</b>							
Ammonia as N			100		%		85-115	12-JUL-10
<b>WG1132498-3</b>	<b>DUP</b>	<b>L906103-1</b>						
Ammonia as N		0.117	0.120	J	mg/L	0.003	0.2	12-JUL-10
<b>WG1132498-1</b>	<b>MB</b>							
Ammonia as N			<0.050		mg/L		0.05	12-JUL-10
<b>WG1132498-4</b>	<b>MS</b>	<b>L906103-1</b>						
Ammonia as N			96		%		75-125	12-JUL-10
<b>PH-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1346705</b>							
<b>WG1132051-1</b>	<b>CVS</b>							
pH			101		%		90-110	09-JUL-10
<b>WG1132051-2</b>	<b>DUP</b>	<b>L906340-1</b>						
pH		7.94	7.96		pH units	0.25	20	09-JUL-10
<b>SOLIDS-TDS-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1348423</b>							
<b>WG1132175-3</b>	<b>DUP</b>	<b>L905714-1</b>						
Total Dissolved Solids		558	550		mg/L	1.4	20	12-JUL-10
<b>WG1132175-4</b>	<b>DUP</b>	<b>L905911-2</b>						
Total Dissolved Solids		380	382		mg/L	0.52	20	12-JUL-10
<b>WG1132175-2</b>	<b>LCS</b>							
Total Dissolved Solids			101		%		70-130	12-JUL-10
<b>WG1132175-1</b>	<b>MB</b>							
Total Dissolved Solids			<20		mg/L		20	12-JUL-10
<b>TURBIDITY-WT</b>		<b>Water</b>						
<b>Batch</b>	<b>R1340247</b>							
<b>WG1131890-1</b>	<b>CVS</b>							
Turbidity			101		%		85-115	09-JUL-10
<b>WG1131890-3</b>	<b>DUP</b>	<b>L906279-5</b>						
Turbidity		12.6	12.5		NTU	0.80	20	09-JUL-10
<b>WG1131890-2</b>	<b>MB</b>							
Turbidity			<0.10		NTU		0.1	09-JUL-10

# Quality Control Report

Workorder: L906495

Report Date: 15-JUL-10

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## Legend:

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Limit	99% Confidence Interval (Laboratory Control Limits)
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:

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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.

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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  
CANADA TOLL FREE: 1-800-668-9878



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.

Specify date required  
Service requested  
5 day (Regular)  X  
3-4 day TAT (25%)  
2 day TAT (50%)  
Next day TAT (100%)  
Please indicate FILTERED, PRESERVED OR BOTH  
Same day TAT (200%)

COMPANY NAME: **AMEC** CRITERIA: Reg 153/04 Table 1 **(2)** 3  
OFFICE: **WATERLOO** Criteria on report Yes  No

PROJECT MANAGER: **DREW STOLTZ** TCIP:  MISA:  PWCO:   
PROJECT #: **TRO216** ODWS:  OTHER:

PHONE: **886-7500** FAX: **886-7419** REPORT FORMAT / DISTRIBUTION  
ACCOUNT #  
EMAIL:  FAX:  BOTH:   
SELECT: PDF:  DIGITAL:  BOTH:

QUOTATION # PO#  
EMAIL: **Drew.Stoltz@amec.com**  
EMAIL 2  
ANALYSIS REQUEST

SAMPLING INFORMATION  
Sample Date/Time TYPE MATRIX  
Date (dd-mm-yy) Time (24 hr) (hh:mm) COMP GRAB WATER SOIL OTHER

Sample Date/Time	TYPE	MATRIX	SAMPLE DESCRIPTION TO APPEAR ON REPORT	NUMBER OF CONTAINERS	ANALYSIS REQUEST
<del>09-06-10</del> 08:30	X	X	W-0919/10-DS-001	8	PHC (F1) METALS GENERAL CHEMISTRY PHC (F2-F4)
09-07-10				3	
				1	
				3	
				1	

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? 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

SAMPLE CONDITION: FROZEN  COLD  COOLING INITIATED  AMBIENT   
OBSERVATIONS: Yes  No  If yes add SIF  
MEAN TEMP: 14.7  
INIT: NR

RECEIVED BY: **Drew Stoltz** DATE & TIME: 7/19/10 8:30  
RECEIVED AT LAB BY: **NR** DATE & TIME: 9/7/10 8:58

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