



APPENDIX C

Laboratory Certificates of Analysis



Environmental Division

Certificate of Analysis

GOLDER ASSOCIATES LTD.
ATTN: MARK BOLTON
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1

Report Date: 19-MAR-10 14:21 (MT)
Version: FINAL

Lab Work Order #: **L868039**

Date Received: **10-MAR-10**

Project P.O. #: NOT SUBMITTED
Job Reference: 07-1414-0014-3000-3300
Legal Site Desc:
CofC Numbers: 21453

Other Information:

Comments:

Dean Watt
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.

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L868039-1	L868039-2	L868039-3	L868039-4	L868039-5
		Description	09-MAR-10	09-MAR-10	09-MAR-10	09-MAR-10	09-MAR-10
		Sampled Date	21453-01	21453-02	21453-03	21453-04	21453-05
		Sampled Time					
		Client ID					
Grouping	Analyte						
WATER							
Physical Tests	Colour, True (CU)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	Conductivity (uS/cm)	48.8	281	305	696	705	705
	Hardness (as CaCO3) (mg/L)	4.2	139	123	378	380	380
	pH (pH)	6.75	8.21	8.17	8.28	8.34	8.34
	Total Dissolved Solids (mg/L)	30	178	185	437	441	441
	Turbidity (NTU)	1.01	0.71	1.85	0.24	0.27	0.27
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	16.4	131	98.3	346	333	333
	Chloride (Cl) (mg/L)	3.13	3.43	25.5	26.7	26.8	26.8
	Fluoride (F) (mg/L)	<0.020	<0.020	0.036	0.037	0.037	0.037
	Nitrate (as N) (mg/L)	0.0463	<0.0050	<0.0050	0.681	0.682	0.682
	Nitrite (as N) (mg/L)	0.0153	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	1.11	12.1	14.6	36.2	36.2	36.2
Bacteriological Tests	E. coli (MPN/100mL)	<1	<1	<1	<1	<1	<1
	Coliform Bacteria - Total (MPN/100mL)	<1	<1	<1	<1	<1	<1
Total Metals	Aluminum (Al)-Total (mg/L)	0.019	<0.010	<0.010	<0.020	<0.020	<0.020
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010
	Arsenic (As)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020	0.00021	0.00021
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.040	<0.040	<0.040
	Beryllium (Be)-Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
	Cadmium (Cd)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040	<0.00040	<0.00040
	Calcium (Ca)-Total (mg/L)	1.48	45.9	39.4	125	125	125
	Chromium (Cr)-Total (mg/L)	<0.0020	<0.0020	<0.0020	<0.0040	<0.0040	<0.0040
	Cobalt (Co)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Copper (Cu)-Total (mg/L)	0.0090	<0.0010	<0.0010	0.0229	0.0229	0.0229
	Iron (Fe)-Total (mg/L)	<0.030	0.064	0.215	0.035	0.034	0.034
	Lead (Pb)-Total (mg/L)	<0.00050	0.00112	<0.00050	<0.0010	<0.0010	<0.0010
	Lithium (Li)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
	Magnesium (Mg)-Total (mg/L)	0.13	5.88	5.92	16.1	16.2	16.2
	Manganese (Mn)-Total (mg/L)	0.0025	0.0422	0.0826	<0.0040	<0.0040	<0.0040
	Mercury (Hg)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Molybdenum (Mo)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
	Nickel (Ni)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	<0.10	0.11	0.50	0.84	0.84	0.84

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L868039-6 09-MAR-10 21453-06	L868039-7 09-MAR-10 21453-07	L868039-8 09-MAR-10 21453-08	
Grouping	Analyte				
WATER					
Physical Tests	Colour, True (CU)	<5.0	<5.0	<5.0	
	Conductivity (uS/cm)	51.1	594	379	
	Hardness (as CaCO3) (mg/L)	20.8	300	196	
	pH (pH)	7.95	8.33	8.37	
	Total Dissolved Solids (mg/L)	30	380	237	
	Turbidity (NTU)	0.46	10.1	7.76	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	15.7	173	170	
	Chloride (Cl) (mg/L)	3.13	34.5	14.1	
	Fluoride (F) (mg/L)	<0.020	0.249	0.038	
	Nitrate (as N) (mg/L)	0.0055	0.451	<0.0050	
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	
	Sulfate (SO4) (mg/L)	3.09	87.7	13.7	
Bacteriological Tests	E. coli (MPN/100mL)	<1	<1	<1	
	Coliform Bacteria - Total (MPN/100mL)	<1	<1	<1	
Total Metals	Aluminum (Al)-Total (mg/L)	0.023	0.095	<0.010	
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.0010	<0.00050	
	Arsenic (As)-Total (mg/L)	<0.00010	<0.00020	0.00012	
	Barium (Ba)-Total (mg/L)	<0.020	<0.040	<0.020	
	Beryllium (Be)-Total (mg/L)	<0.0050	<0.0050	<0.0050	
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	
	Boron (B)-Total (mg/L)	<0.10	<0.20	<0.10	
	Cadmium (Cd)-Total (mg/L)	<0.00020	0.00054	<0.00020	
	Calcium (Ca)-Total (mg/L)	6.56	106	63.3	
	Chromium (Cr)-Total (mg/L)	<0.0020	<0.0040	<0.0020	
	Cobalt (Co)-Total (mg/L)	<0.010	<0.010	<0.010	
	Copper (Cu)-Total (mg/L)	0.0026	0.0047	0.0014	
	Iron (Fe)-Total (mg/L)	0.032	2.37	0.813	
	Lead (Pb)-Total (mg/L)	<0.00050	<0.0010	<0.00050	
	Lithium (Li)-Total (mg/L)	<0.010	0.011	<0.010	
	Magnesium (Mg)-Total (mg/L)	1.08	8.48	9.12	
	Manganese (Mn)-Total (mg/L)	<0.0020	0.638	0.159	
	Mercury (Hg)-Total (mg/L)	<0.00020	<0.00020	<0.00020	
	Molybdenum (Mo)-Total (mg/L)	<0.030	<0.030	<0.030	
	Nickel (Ni)-Total (mg/L)	<0.050	0.063	<0.050	
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	
	Potassium (K)-Total (mg/L)	<0.10	0.58	0.46	

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L868039-1	L868039-2	L868039-3	L868039-4	L868039-5
		Description					
		Sampled Date	09-MAR-10	09-MAR-10	09-MAR-10	09-MAR-10	09-MAR-10
		Sampled Time					
		Client ID	21453-01	21453-02	21453-03	21453-04	21453-05
Grouping	Analyte						
WATER							
Total Metals	Selenium (Se)-Total (mg/L)		<0.0010	<0.0010	<0.0010	<0.0020	<0.0020
	Silicon (Si)-Total (mg/L)		0.234	11.7	10.0	6.18	6.09
	Silver (Ag)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Sodium (Na)-Total (mg/L)		<2.0	4.5	14.9	17.1	16.8
	Strontium (Sr)-Total (mg/L)		<0.0050	0.124	1.34	0.328	0.323
	Thallium (Tl)-Total (mg/L)		<0.20	<0.20	<0.20	<0.20	<0.20
	Tin (Sn)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Titanium (Ti)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)		<0.00010	<0.00010	<0.00010	0.00269	0.00271
	Vanadium (V)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Zinc (Zn)-Total (mg/L)		<0.050	0.305	<0.050	<0.10	<0.10

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L868039-6 09-MAR-10 21453-06	L868039-7 09-MAR-10 21453-07	L868039-8 09-MAR-10 21453-08	
Grouping	Analyte				
WATER					
Total Metals	Selenium (Se)-Total (mg/L)	<0.0010	<0.0020	<0.0010	
	Silicon (Si)-Total (mg/L)	3.02	7.83	9.43	
	Silver (Ag)-Total (mg/L)	<0.010	<0.010	<0.010	
	Sodium (Na)-Total (mg/L)	2.3	11.3	7.6	
	Strontium (Sr)-Total (mg/L)	0.0131	0.284	0.517	
	Thallium (Tl)-Total (mg/L)	<0.20	<0.20	<0.20	
	Tin (Sn)-Total (mg/L)	<0.030	<0.030	<0.030	
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	
	Uranium (U)-Total (mg/L)	<0.00010	<0.00020	<0.00010	
	Vanadium (V)-Total (mg/L)	<0.030	<0.030	<0.030	
	Zinc (Zn)-Total (mg/L)	<0.050	0.12	<0.050	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	APHA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrite detection is by UV absorbance and not conductivity.			
ANIONS-NO3-IC-VA	Water	Nitrate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrate detection is by UV absorbance and not conductivity.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 "Color"
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 Color
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
ECOLI-COLI-HLTH-VA	Water	E.coli by Colilert	APHA METHOD 9223
This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.			
HG-TOT-DW-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-TOT-LOW-MS-VA	Water	Total Metals in Water by ICPMS(Low)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value
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This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

TCOLI-COLI-HLTH-VA	Water	Total coliform by Colilert	APHA METHOD 9223
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This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-VA	Water	Total Dissolved Solids by Gravimetric	APHA 2540 C - GRAVIMETRIC
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This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 "Turbidity"
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This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 Turbidity
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This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

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

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
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

21453

GLOSSARY OF REPORT TERMS

Surrogate A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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 of sample.

mg/L milligrams per litre.

< - Less than.

D.L. The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



Environmental Division

ALS Laboratory Group Quality Control Report

Workorder: L868039

Report Date: 19-MAR-10

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Client: GOLDER ASSOCIATES LTD.
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1

Contact: MARK BOLTON

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-COL-VA		Water						
Batch	R1210590							
WG1079485-12	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			95		%		85-115	16-MAR-10
WG1079485-15	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			95		%		85-115	16-MAR-10
WG1079485-3	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			97		%		85-115	16-MAR-10
WG1079485-6	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			94		%		85-115	16-MAR-10
WG1079485-9	CRM	VA-ALKH-CONTROL						
Alkalinity, Total (as CaCO3)			98		%		85-115	16-MAR-10
WG1079485-11	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-14	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-2	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-5	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-8	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
ANIONS-CL-IC-VA		Water						
Batch	R1209676							
WG1077853-11	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			101		%		94-106	11-MAR-10
WG1077853-2	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			100		%		94-106	11-MAR-10
WG1077853-3	DUP	L868039-6						
Chloride (Cl)		3.13	2.94	J	mg/L	0.19	2	11-MAR-10
WG1077853-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-10	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-4	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-8	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-MAR-10

ALS Laboratory Group Quality Control Report

Workorder: L868039

Report Date: 19-MAR-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-F-IC-VA		Water						
Batch	R1209676							
WG1077853-11	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			103		%		93-107	11-MAR-10
WG1077853-2	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			104		%		93-107	11-MAR-10
WG1077853-3	DUP	L868039-6						
Fluoride (F)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	11-MAR-10
WG1077853-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	11-MAR-10
WG1077853-10	MB							
Fluoride (F)			<0.020		mg/L		0.02	11-MAR-10
WG1077853-4	MB							
Fluoride (F)			<0.020		mg/L		0.02	11-MAR-10
WG1077853-6	MB							
Fluoride (F)			<0.020		mg/L		0.02	11-MAR-10
WG1077853-8	MB							
Fluoride (F)			<0.020		mg/L		0.02	11-MAR-10
ANIONS-NO2-IC-VA		Water						
Batch	R1209676							
WG1077853-11	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			95		%		91-109	11-MAR-10
WG1077853-2	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			95		%		91-109	11-MAR-10
WG1077853-3	DUP	L868039-6						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	11-MAR-10
WG1077853-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	11-MAR-10
WG1077853-10	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	11-MAR-10
WG1077853-4	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	11-MAR-10
WG1077853-6	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	11-MAR-10
WG1077853-8	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	11-MAR-10
ANIONS-NO3-IC-VA		Water						

ALS Laboratory Group Quality Control Report

Workorder: L868039

Report Date: 19-MAR-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-NO3-IC-VA		Water						
Batch	R1209676							
WG1077853-11	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			102		%		91-109	11-MAR-10
WG1077853-2	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		91-109	11-MAR-10
WG1077853-3	DUP	L868039-6						
Nitrate (as N)		0.0055	0.0056	J	mg/L	0.0001	0.02	11-MAR-10
WG1077853-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	11-MAR-10
WG1077853-10	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	11-MAR-10
WG1077853-4	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	11-MAR-10
WG1077853-6	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	11-MAR-10
WG1077853-8	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	11-MAR-10
ANIONS-SO4-IC-VA		Water						
Batch	R1209676							
WG1077853-11	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			103		%		93-107	11-MAR-10
WG1077853-2	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			103		%		93-107	11-MAR-10
WG1077853-3	DUP	L868039-6						
Sulfate (SO4)		3.09	3.06	J	mg/L	0.02	2	11-MAR-10
WG1077853-1	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-10	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-4	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-6	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	11-MAR-10
WG1077853-8	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	11-MAR-10
COLOUR-TRUE-VA	Water							

ALS Laboratory Group Quality Control Report

Workorder: L868039

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
COLOUR-TRUE-VA		Water						
Batch	R1207537							
WG1077841-1	MB							
Colour, True			<5.0		CU		5	11-MAR-10
WG1077841-4	MB							
Colour, True			<5.0		CU		5	11-MAR-10
WG1077841-7	MB							
Colour, True			<5.0		CU		5	11-MAR-10
EC-PCT-VA		Water						
Batch	R1212536							
WG1080025-7	CRM	VA-EC-PCT-CONTROL						
Conductivity			99		%		90-110	17-MAR-10
WG1080025-11	DUP	L868039-1						
Conductivity		48.8	48.3		uS/cm	1.0	20	17-MAR-10
WG1080025-1	MB							
Conductivity			<2.0		uS/cm		2	17-MAR-10
WG1080025-2	MB							
Conductivity			<2.0		uS/cm		2	17-MAR-10
WG1080025-3	MB							
Conductivity			<2.0		uS/cm		2	17-MAR-10
WG1080025-4	MB							
Conductivity			<2.0		uS/cm		2	17-MAR-10
HG-TOT-DW-CVAFS-VA		Water						
Batch	R1207718							
WG1077877-2	CRM	VA-HG-WATRM						
Mercury (Hg)-Total			89		%		80-120	11-MAR-10
WG1077877-1	MB							
Mercury (Hg)-Total			<0.00020		mg/L		0.0002	11-MAR-10
MET-TOT-ICP-VA		Water						
Batch	R1209648							
WG1078189-4	CRM	VA-HIGH-WATRM						
Beryllium (Be)-Total			100		%		80-120	14-MAR-10
Bismuth (Bi)-Total			104		%		80-120	14-MAR-10
Cobalt (Co)-Total			98		%		80-120	14-MAR-10
Iron (Fe)-Total			100		%		80-120	14-MAR-10
Lithium (Li)-Total			104		%		80-120	14-MAR-10
Molybdenum (Mo)-Total			101		%		80-120	14-MAR-10
Nickel (Ni)-Total			99		%		80-120	14-MAR-10
Phosphorus (P)-Total			103		%		80-120	14-MAR-10

ALS Laboratory Group Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA		Water						
Batch	R1209648							
WG1078189-4 CRM	VA-HIGH-WATRM							
Silicon (Si)-Total			101		%		80-120	14-MAR-10
Silver (Ag)-Total			101		%		80-120	14-MAR-10
Sodium (Na)-Total			100		%		80-120	14-MAR-10
Strontium (Sr)-Total			99		%		80-120	14-MAR-10
Thallium (Tl)-Total			100		%		80-120	14-MAR-10
Tin (Sn)-Total			101		%		80-120	14-MAR-10
Titanium (Ti)-Total			104		%		80-120	14-MAR-10
Vanadium (V)-Total			101		%		80-120	14-MAR-10
WG1078189-1 MB								
Beryllium (Be)-Total			<0.0050		mg/L		0.005	14-MAR-10
Bismuth (Bi)-Total			<0.20		mg/L		0.2	14-MAR-10
Cobalt (Co)-Total			<0.010		mg/L		0.01	14-MAR-10
Iron (Fe)-Total			<0.030		mg/L		0.03	14-MAR-10
Lithium (Li)-Total			<0.010		mg/L		0.01	14-MAR-10
Molybdenum (Mo)-Total			<0.030		mg/L		0.03	14-MAR-10
Nickel (Ni)-Total			<0.050		mg/L		0.05	14-MAR-10
Phosphorus (P)-Total			<0.30		mg/L		0.3	14-MAR-10
Silicon (Si)-Total			<0.050		mg/L		0.05	14-MAR-10
Silver (Ag)-Total			<0.010		mg/L		0.01	14-MAR-10
Sodium (Na)-Total			<2.0		mg/L		2	14-MAR-10
Strontium (Sr)-Total			<0.0050		mg/L		0.005	14-MAR-10
Thallium (Tl)-Total			<0.20		mg/L		0.2	14-MAR-10
Tin (Sn)-Total			<0.030		mg/L		0.03	14-MAR-10
Titanium (Ti)-Total			<0.010		mg/L		0.01	14-MAR-10
Vanadium (V)-Total			<0.030		mg/L		0.03	14-MAR-10
Batch	R1210631							
WG1078189-3 DUP		L868039-2						
Beryllium (Be)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	14-MAR-10
Bismuth (Bi)-Total		<0.20	<0.20	RPD-NA	mg/L	N/A	20	14-MAR-10
Cobalt (Co)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	14-MAR-10
Iron (Fe)-Total		0.064	0.064	J	mg/L	0.000	0.12	14-MAR-10
Lithium (Li)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	14-MAR-10
Molybdenum (Mo)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	14-MAR-10
Nickel (Ni)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	14-MAR-10
Phosphorus (P)-Total		<0.30	<0.30	RPD-NA	mg/L	N/A	20	14-MAR-10

ALS Laboratory Group Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA		Water						
Batch	R1210631							
WG1078189-3	DUP	L868039-2						
Silicon (Si)-Total		11.7	11.8		mg/L	1.0	20	14-MAR-10
Silver (Ag)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	14-MAR-10
Sodium (Na)-Total		4.5	4.5	J	mg/L	0.0	8	14-MAR-10
Strontium (Sr)-Total		0.124	0.125		mg/L	0.69	20	14-MAR-10
Thallium (Tl)-Total		<0.20	<0.20	RPD-NA	mg/L	N/A	20	14-MAR-10
Tin (Sn)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	14-MAR-10
Titanium (Ti)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	14-MAR-10
Vanadium (V)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	14-MAR-10
MET-TOT-LOW-MS-VA		Water						
Batch	R1209485							
WG1078189-4	CRM	VA-HIGH-WATRM						
Aluminum (Al)-Total			115		%		80-120	12-MAR-10
Antimony (Sb)-Total			112		%		80-120	12-MAR-10
Arsenic (As)-Total			110		%		80-120	12-MAR-10
Barium (Ba)-Total			115		%		80-120	12-MAR-10
Boron (B)-Total			112		%		80-120	12-MAR-10
Cadmium (Cd)-Total			107		%		80-120	12-MAR-10
Calcium (Ca)-Total			113		%		80-120	12-MAR-10
Chromium (Cr)-Total			115		%		80-120	12-MAR-10
Copper (Cu)-Total			111		%		80-120	12-MAR-10
Lead (Pb)-Total			107		%		80-120	12-MAR-10
Magnesium (Mg)-Total			104		%		80-120	12-MAR-10
Manganese (Mn)-Total			114		%		80-120	12-MAR-10
Potassium (K)-Total			115		%		80-120	12-MAR-10
Selenium (Se)-Total			108		%		80-120	12-MAR-10
Uranium (U)-Total			119		%		80-120	12-MAR-10
Zinc (Zn)-Total			109		%		80-120	12-MAR-10
WG1078189-1	MB							
Aluminum (Al)-Total			<0.0010		mg/L		0.001	12-MAR-10
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	12-MAR-10
Barium (Ba)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Boron (B)-Total			<0.010		mg/L		0.01	12-MAR-10
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Calcium (Ca)-Total			<0.020		mg/L		0.02	12-MAR-10

ALS Laboratory Group Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA		Water						
Batch R1209485								
WG1078189-1 MB								
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	12-MAR-10
Copper (Cu)-Total			<0.00010		mg/L		0.0001	12-MAR-10
Lead (Pb)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	12-MAR-10
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Potassium (K)-Total			<0.050		mg/L		0.05	12-MAR-10
Selenium (Se)-Total			<0.0010		mg/L		0.001	12-MAR-10
Uranium (U)-Total			<0.000010		mg/L		0.00001	12-MAR-10
Zinc (Zn)-Total			<0.0010		mg/L		0.001	12-MAR-10
Batch R1210029								
WG1078189-1 MB								
Arsenic (As)-Total			<0.00010		mg/L		0.0001	15-MAR-10
Batch R1210424								
WG1078189-3 DUP		L868039-2						
Aluminum (Al)-Total		<0.010	0.0017	J	mg/L	0.0005	0.004	16-MAR-10
Antimony (Sb)-Total		<0.00050	<0.00010	RPD-NA	mg/L	N/A	20	16-MAR-10
Arsenic (As)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-MAR-10
Barium (Ba)-Total		<0.020	0.00116		mg/L	1.1	20	16-MAR-10
Boron (B)-Total		<0.10	0.100	J	mg/L	0.001	0.04	16-MAR-10
Cadmium (Cd)-Total		<0.00020	<0.000050	RPD-NA	mg/L	N/A	20	16-MAR-10
Calcium (Ca)-Total		45.9	47.1		mg/L	2.6	20	16-MAR-10
Chromium (Cr)-Total		<0.0020	<0.00050	RPD-NA	mg/L	N/A	20	16-MAR-10
Copper (Cu)-Total		<0.0010	0.00017	J	mg/L	0.00002	0.0004	16-MAR-10
Lead (Pb)-Total		0.00112	0.00114		mg/L	1.9	20	16-MAR-10
Magnesium (Mg)-Total		5.88	6.01		mg/L	2.1	20	16-MAR-10
Manganese (Mn)-Total		0.0422	0.0429		mg/L	1.8	20	16-MAR-10
Potassium (K)-Total		0.11	0.112	J	mg/L	0.001	0.2	16-MAR-10
Selenium (Se)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-MAR-10
Uranium (U)-Total		<0.00010	0.000017	J	mg/L	0.000001	0.00004	16-MAR-10
Zinc (Zn)-Total		0.305	0.311		mg/L	2.1	20	16-MAR-10
PH-PCT-VA		Water						

ALS Laboratory Group Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-PCT-VA		Water						
Batch	R1212536							
WG1080025-11	DUP	L868039-1						
pH		6.75	7.10		pH	5.1	20	17-MAR-10
TDS-VA		Water						
Batch	R1208629							
WG1077503-2	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			96		%		88-112	10-MAR-10
WG1077503-1	MB							
Total Dissolved Solids			<10		mg/L		10	10-MAR-10
WG1077503-4	MB							
Total Dissolved Solids			<10		mg/L		10	10-MAR-10
TURBIDITY-VA		Water						
Batch	R1208600							
WG1078030-11	CRM	VA-TURB-SPK-8						
Turbidity			101		%		85-115	11-MAR-10
WG1078030-2	CRM	VA-TURB-SPK-8						
Turbidity			98		%		85-115	11-MAR-10
WG1078030-5	CRM	VA-TURB-SPK-8						
Turbidity			98		%		85-115	11-MAR-10
WG1078030-8	CRM	VA-TURB-SPK-8						
Turbidity			98		%		85-115	11-MAR-10
WG1078030-9	DUP	L868039-7						
Turbidity		10.1	10.7		NTU	5.8	39	11-MAR-10
WG1078030-1	MB							
Turbidity			<0.10		NTU		0.1	11-MAR-10
WG1078030-10	MB							
Turbidity			<0.10		NTU		0.1	11-MAR-10
WG1078030-4	MB							
Turbidity			<0.10		NTU		0.1	11-MAR-10
WG1078030-7	MB							
Turbidity			<0.10		NTU		0.1	11-MAR-10

ALS Laboratory Group Quality Control Report

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Legend:

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:

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.

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.

Short Holding Time

STUDY RECORD/ANALYSIS REQUEST

21453

page 1 of 1



Rush Processing

500-4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604-298-6623 Fax: 604-298-5253

7-1414-0014-3000-3300

Laboratory Name: **ALS**

Address: **8081 Lougheed Hwy, Burnaby**

Golder Contact: **Mark Bolton** Golder E-mail Address: **mbolton@golder.com** Tel/Fax: **1-800-665-0243** Contact: **A. Springer**

Office the final reports should be sent to:

500-4260 Still Creek Drive
Burnaby, BC V5C 6C6
Tel: 604-298-6623
Fax: 604-298-5253

202-2790 Gladwin Road
Abbotsford, BC V2T 4S8
Tel: 604-850-8786
Fax: 604-850-8756

L968039
2640 Douglas Street
Victoria, BC V8T 4M1
Tel: 250-881-7372
Fax: 250-881-7470

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D/M/Y)	Analyses Required											Remarks (over)	
			Number of Containers	Anions	Alkalinity	Turbidity	pH	Hardness	TDS	Color	Conductivity	Total Metals	Total Coliforms + E. coli		
21453 -01	H ₂ O	9/03/10	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Full Drinking Water
-02			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Please Package
-03			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	include
-04			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	DW metals
-05			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Scan + ICP
-06			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Total
-07			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Coliform +
-08			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	E. coli
-09															
-10															
-11															
-12															

Sampler's Signature: T. Pabell	Relinquished by: Signature: T. Pabell	Company: Golde	Date: 09/03/2010	Time: 16:30	Received by: Signature:	Company:
Sample Storage (°C): ON ICE	Relinquished by: Signature:	Company:	Date:	Time:	Received by: Signature:	Company:
Comments: Full Drinking Water Package	Method of Shipment: 9 AM DHL Express	Waybill No.: D-013331528	Received for Lab by: 313	Date: 03/10/10	Time: 8 AM	
Sample times range from 8:40 (SCN# 21453-01)	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C): 1.2	Cooler opened by:	Date:	Time:

to
15.25 (SCN# 21453-08)

WHITE: Golder copy

YELLOW: Lab

PINK: Lab returns with Final Report



Environmental Division

Certificate of Analysis

GOLDER ASSOCIATES LTD.

ATTN: MARK BOLTON

2640 DOUGLAS STREET

VICTORIA BC V8T 4M1

Report Date: 18-MAR-10 13:54 (MT)

Version: FINAL

Lab Work Order #: **L868426**

Date Received: **11-MAR-10**

Project P.O. #: NOT SUBMITTED
Job Reference: 07-1414-0014-3000-3300
Legal Site Desc:
CofC Numbers: 21454

Other Information:

Comments:

Dean Watt
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.

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L868426-1	L868426-2	L868426-3	
		10-MAR-10	10-MAR-10	10-MAR-10	
		21454-01	21454-02	21454-03	
Grouping	Analyte				
WATER					
Physical Tests	Colour, True (CU)	<5.0	<5.0	<5.0	
	Conductivity (uS/cm)	155	419	82.0	
	Hardness (as CaCO3) (mg/L)	38.1	198	32.7	
	pH (pH)	7.62	7.17	6.74	
	Total Dissolved Solids (mg/L)	114	266	51	
	Turbidity (NTU)	2.38	0.28	0.13	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	72.7	145	31.2	
	Chloride (Cl) (mg/L)	5.41	24.5	3.95	
	Fluoride (F) (mg/L)	<0.020	<0.020	<0.020	
	Nitrate (as N) (mg/L)	<0.0050	5.45	0.0838	
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	
	Sulfate (SO4) (mg/L)	2.61	17.9	2.13	
Bacteriological Tests	E. coli (MPN/100mL)		<1	<1	
	Coliform Bacteria - Total (MPN/100mL)		1990	<1	
Total Metals	Aluminum (Al)-Total (mg/L)	0.013	<0.010	0.015	
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	
	Arsenic (As)-Total (mg/L)	<0.00010	<0.00010	<0.00010	
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	
	Beryllium (Be)-Total (mg/L)	<0.0050	<0.0050	<0.0050	
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	
	Boron (B)-Total (mg/L)	0.21	<0.10	<0.10	
	Cadmium (Cd)-Total (mg/L)	<0.00020	<0.00020	<0.00020	
	Calcium (Ca)-Total (mg/L)	12.6	61.6	10.6	
	Chromium (Cr)-Total (mg/L)	<0.0020	<0.0020	<0.0020	
	Cobalt (Co)-Total (mg/L)	<0.010	<0.010	<0.010	
	Copper (Cu)-Total (mg/L)	0.0044	0.0156	0.0026	
	Iron (Fe)-Total (mg/L)	0.600	<0.030	<0.030	
	Lead (Pb)-Total (mg/L)	0.00070	<0.00050	<0.00050	
	Lithium (Li)-Total (mg/L)	<0.010	<0.010	<0.010	
	Magnesium (Mg)-Total (mg/L)	1.62	10.8	1.52	
	Manganese (Mn)-Total (mg/L)	0.0205	<0.0020	0.0072	
	Mercury (Hg)-Total (mg/L)	<0.00020	<0.00020	<0.00020	
	Molybdenum (Mo)-Total (mg/L)	<0.030	<0.030	<0.030	
	Nickel (Ni)-Total (mg/L)	<0.050	<0.050	<0.050	
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	
	Potassium (K)-Total (mg/L)	<0.10	0.19	0.13	

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L868426-1 10-MAR-10 21454-01	L868426-2 10-MAR-10 21454-02	L868426-3 10-MAR-10 21454-03	
Grouping	Analyte				
WATER					
Total Metals	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Silicon (Si)-Total (mg/L)	11.7	9.17	4.76	
	Silver (Ag)-Total (mg/L)	<0.010	<0.010	<0.010	
	Sodium (Na)-Total (mg/L)	22.8	5.3	3.1	
	Strontium (Sr)-Total (mg/L)	0.0336	0.0778	0.0289	
	Thallium (Tl)-Total (mg/L)	<0.20	<0.20	<0.20	
	Tin (Sn)-Total (mg/L)	<0.030	<0.030	<0.030	
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	
	Uranium (U)-Total (mg/L)	<0.00010	<0.00010	<0.00010	
	Vanadium (V)-Total (mg/L)	<0.030	<0.030	<0.030	
	Zinc (Zn)-Total (mg/L)	<0.050	<0.050	<0.050	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	APHA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrite detection is by UV absorbance and not conductivity.			
ANIONS-NO3-IC-VA	Water	Nitrate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrate detection is by UV absorbance and not conductivity.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 "Color"
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 Color
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
ECOLI-COLI-HLTH-VA	Water	E.coli by Colilert	APHA METHOD 9223
This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.			
HG-TOT-DW-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-TOT-LOW-MS-VA	Water	Total Metals in Water by ICPMS(Low)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

TCOLI-COLI-HLTH-VA Water Total coliform by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-VA Water Total Dissolved Solids by Gravimetric APHA 2540 C - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

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

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
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

21454

GLOSSARY OF REPORT TERMS

Surrogate A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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 of sample.

mg/L milligrams per litre.

< - Less than.

D.L. The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



Environmental Division

ALS Laboratory Group Quality Control Report

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Client: GOLDER ASSOCIATES LTD.
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1
Contact: MARK BOLTON

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-COL-VA		Water						
Batch	R1210590							
WG1079485-12	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			95		%		85-115	16-MAR-10
WG1079485-15	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			95		%		85-115	16-MAR-10
WG1079485-3	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			97		%		85-115	16-MAR-10
WG1079485-6	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			94		%		85-115	16-MAR-10
WG1079485-9	CRM	VA-ALKH-CONTROL						
Alkalinity, Total (as CaCO3)			98		%		85-115	16-MAR-10
WG1079485-11	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-14	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-2	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-5	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
WG1079485-8	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	16-MAR-10
ANIONS-CL-IC-VA		Water						
Batch	R1209498							
WG1078580-12	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			100		%		94-106	12-MAR-10
WG1078580-2	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			100		%		94-106	12-MAR-10
WG1078580-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-11	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-3	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-5	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-7	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-9	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-MAR-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-F-IC-VA		Water						
Batch	R1209498							
WG1078580-12	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			101		%		93-107	12-MAR-10
WG1078580-2	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			103		%		93-107	12-MAR-10
WG1078580-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	12-MAR-10
WG1078580-11	MB							
Fluoride (F)			<0.020		mg/L		0.02	12-MAR-10
WG1078580-3	MB							
Fluoride (F)			<0.020		mg/L		0.02	12-MAR-10
WG1078580-5	MB							
Fluoride (F)			<0.020		mg/L		0.02	12-MAR-10
WG1078580-7	MB							
Fluoride (F)			<0.020		mg/L		0.02	12-MAR-10
WG1078580-9	MB							
Fluoride (F)			<0.020		mg/L		0.02	12-MAR-10
ANIONS-NO2-IC-VA		Water						
Batch	R1209498							
WG1078580-12	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			95		%		91-109	12-MAR-10
WG1078580-2	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			98		%		91-109	12-MAR-10
WG1078580-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	12-MAR-10
WG1078580-11	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	12-MAR-10
WG1078580-3	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	12-MAR-10
WG1078580-5	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	12-MAR-10
WG1078580-7	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	12-MAR-10
WG1078580-9	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	12-MAR-10
ANIONS-NO3-IC-VA		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-NO3-IC-VA		Water						
Batch	R1209498							
WG1078580-12	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			100		%		91-109	12-MAR-10
WG1078580-2	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		91-109	12-MAR-10
WG1078580-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	12-MAR-10
WG1078580-11	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	12-MAR-10
WG1078580-3	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	12-MAR-10
WG1078580-5	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	12-MAR-10
WG1078580-7	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	12-MAR-10
WG1078580-9	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	12-MAR-10
ANIONS-SO4-IC-VA		Water						
Batch	R1209498							
WG1078580-12	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			103		%		93-107	12-MAR-10
WG1078580-2	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			104		%		93-107	12-MAR-10
WG1078580-1	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-11	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-3	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-5	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-7	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	12-MAR-10
WG1078580-9	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	12-MAR-10
COLOUR-TRUE-VA		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
COLOUR-TRUE-VA		Water						
Batch	R1208501							
WG1078400-3	DUP	L868426-2						
Colour, True		<5.0	<5.0	RPD-NA	CU	N/A	20	12-MAR-10
WG1078400-1	MB							
Colour, True			<5.0		CU		5	12-MAR-10
WG1078400-4	MB							
Colour, True			<5.0		CU		5	12-MAR-10
EC-PCT-VA		Water						
Batch	R1211168							
WG1079095-7	CRM	VA-EC-PCT-CONTROL						
Conductivity			100		%		90-110	16-MAR-10
WG1079095-11	DUP	L868426-1						
Conductivity		155	159		uS/cm	2.3	20	16-MAR-10
WG1079095-1	MB							
Conductivity			<2.0		uS/cm		2	16-MAR-10
WG1079095-2	MB							
Conductivity			<2.0		uS/cm		2	16-MAR-10
WG1079095-3	MB							
Conductivity			<2.0		uS/cm		2	16-MAR-10
WG1079095-4	MB							
Conductivity			<2.0		uS/cm		2	16-MAR-10
WG1079095-5	MB							
Conductivity			<2.0		uS/cm		2	16-MAR-10
MET-TOT-ICP-VA		Water						
Batch	R1209648							
WG1078589-4	CRM	VA-HIGH-WATRM						
Beryllium (Be)-Total			98		%		80-120	14-MAR-10
Bismuth (Bi)-Total			100		%		80-120	14-MAR-10
Cobalt (Co)-Total			96		%		80-120	14-MAR-10
Iron (Fe)-Total			99		%		80-120	14-MAR-10
Lithium (Li)-Total			101		%		80-120	14-MAR-10
Molybdenum (Mo)-Total			99		%		80-120	14-MAR-10
Nickel (Ni)-Total			96		%		80-120	14-MAR-10
Phosphorus (P)-Total			100		%		80-120	14-MAR-10
Silicon (Si)-Total			98		%		80-120	14-MAR-10
Silver (Ag)-Total			101		%		80-120	14-MAR-10
Sodium (Na)-Total			100		%		80-120	14-MAR-10
Strontium (Sr)-Total			97		%		80-120	14-MAR-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA		Water						
Batch	R1209648							
WG1078589-4 CRM	VA-HIGH-WATRM							
Thallium (Tl)-Total			97		%		80-120	14-MAR-10
Tin (Sn)-Total			98		%		80-120	14-MAR-10
Titanium (Ti)-Total			102		%		80-120	14-MAR-10
Vanadium (V)-Total			99		%		80-120	14-MAR-10
WG1078589-1 MB								
Beryllium (Be)-Total			<0.0050		mg/L		0.005	14-MAR-10
Bismuth (Bi)-Total			<0.20		mg/L		0.2	14-MAR-10
Cobalt (Co)-Total			<0.010		mg/L		0.01	14-MAR-10
Iron (Fe)-Total			<0.030		mg/L		0.03	14-MAR-10
Lithium (Li)-Total			<0.010		mg/L		0.01	14-MAR-10
Molybdenum (Mo)-Total			<0.030		mg/L		0.03	14-MAR-10
Nickel (Ni)-Total			<0.050		mg/L		0.05	14-MAR-10
Phosphorus (P)-Total			<0.30		mg/L		0.3	14-MAR-10
Silicon (Si)-Total			<0.050		mg/L		0.05	14-MAR-10
Silver (Ag)-Total			<0.010		mg/L		0.01	14-MAR-10
Sodium (Na)-Total			<2.0		mg/L		2	14-MAR-10
Strontium (Sr)-Total			<0.0050		mg/L		0.005	14-MAR-10
Thallium (Tl)-Total			<0.20		mg/L		0.2	14-MAR-10
Tin (Sn)-Total			<0.030		mg/L		0.03	14-MAR-10
Titanium (Ti)-Total			<0.010		mg/L		0.01	14-MAR-10
Vanadium (V)-Total			<0.030		mg/L		0.03	14-MAR-10
MET-TOT-LOW-MS-VA		Water						
Batch	R1209485							
WG1078589-4 CRM	VA-HIGH-WATRM							
Aluminum (Al)-Total			106		%		80-120	12-MAR-10
Antimony (Sb)-Total			104		%		80-120	12-MAR-10
Arsenic (As)-Total			101		%		80-120	12-MAR-10
Barium (Ba)-Total			106		%		80-120	12-MAR-10
Boron (B)-Total			103		%		80-120	12-MAR-10
Cadmium (Cd)-Total			99		%		80-120	12-MAR-10
Calcium (Ca)-Total			104		%		80-120	12-MAR-10
Chromium (Cr)-Total			106		%		80-120	12-MAR-10
Copper (Cu)-Total			102		%		80-120	12-MAR-10
Lead (Pb)-Total			100		%		80-120	12-MAR-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA		Water						
Batch	R1209485							
WG1078589-4	CRM	VA-HIGH-WATRM						
Magnesium (Mg)-Total			96		%		80-120	12-MAR-10
Manganese (Mn)-Total			104		%		80-120	12-MAR-10
Potassium (K)-Total			106		%		80-120	12-MAR-10
Selenium (Se)-Total			99		%		80-120	12-MAR-10
Uranium (U)-Total			105		%		80-120	12-MAR-10
Zinc (Zn)-Total			100		%		80-120	12-MAR-10
WG1078589-1	MB							
Aluminum (Al)-Total			0.0013	MB-LOR	mg/L		0.001	12-MAR-10
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	12-MAR-10
Arsenic (As)-Total			<0.00010		mg/L		0.0001	12-MAR-10
Barium (Ba)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Boron (B)-Total			<0.010		mg/L		0.01	12-MAR-10
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Calcium (Ca)-Total			<0.020		mg/L		0.02	12-MAR-10
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	12-MAR-10
Copper (Cu)-Total			<0.00010		mg/L		0.0001	12-MAR-10
Lead (Pb)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Magnesium (Mg)-Total			0.0056	MB-LOR	mg/L		0.005	12-MAR-10
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	12-MAR-10
Potassium (K)-Total			<0.050		mg/L		0.05	12-MAR-10
Selenium (Se)-Total			<0.0010		mg/L		0.001	12-MAR-10
Uranium (U)-Total			<0.000010		mg/L		0.00001	12-MAR-10
Zinc (Zn)-Total			<0.0010		mg/L		0.001	12-MAR-10
Batch	R1210038							
WG1078589-2	DUP	L868426-3						
Aluminum (Al)-Total		0.015	0.0138		mg/L	5.6	20	15-MAR-10
Antimony (Sb)-Total		<0.00050	<0.00010	RPD-NA	mg/L	N/A	20	15-MAR-10
Arsenic (As)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	15-MAR-10
Barium (Ba)-Total		<0.020	0.00138		mg/L	2.0	20	15-MAR-10
Boron (B)-Total		<0.10	<0.010	RPD-NA	mg/L	N/A	20	15-MAR-10
Cadmium (Cd)-Total		<0.00020	<0.000050	RPD-NA	mg/L	N/A	20	15-MAR-10
Calcium (Ca)-Total		10.6	10.5		mg/L	0.98	20	15-MAR-10
Chromium (Cr)-Total		<0.0020	<0.00050	RPD-NA	mg/L	N/A	20	15-MAR-10
Copper (Cu)-Total		0.0026	0.00260		mg/L	0.87	20	15-MAR-10

ALS Laboratory Group Quality Control Report

Workorder: L868426

Report Date: 18-MAR-10

Page 7 of 9

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA		Water						
Batch	R1210038							
WG1078589-2	DUP	L868426-3						
Lead (Pb)-Total		<0.00050	0.000249	J	mg/L	0.000005	0.0002	15-MAR-10
Magnesium (Mg)-Total		1.52	1.52		mg/L	0.043	20	15-MAR-10
Manganese (Mn)-Total		0.0072	0.00743		mg/L	2.8	20	15-MAR-10
Potassium (K)-Total		0.13	0.127	J	mg/L	0.001	0.2	15-MAR-10
Selenium (Se)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	15-MAR-10
Uranium (U)-Total		<0.00010	<0.000010	RPD-NA	mg/L	N/A	20	15-MAR-10
Zinc (Zn)-Total		<0.050	0.0011	RPD-NA	mg/L	N/A	20	15-MAR-10
PH-PCT-VA		Water						
Batch	R1211168							
WG1079095-8	CRM	VA-PH7-BUF						
pH			7.02		pH		6.9-7.1	16-MAR-10
WG1079095-11	DUP	L868426-1						
pH		7.62	7.91		pH	3.8	20	16-MAR-10
TDS-VA		Water						
Batch	R1208888							
WG1078556-2	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			100		%		88-112	12-MAR-10
WG1078556-5	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			97		%		88-112	12-MAR-10
WG1078556-1	MB							
Total Dissolved Solids			<10		mg/L		10	12-MAR-10
WG1078556-4	MB							
Total Dissolved Solids			<10		mg/L		10	12-MAR-10
TURBIDITY-VA		Water						
Batch	R1208912							
WG1078549-2	CRM	VA-TURB-SPK-8						
Turbidity			100		%		85-115	12-MAR-10
WG1078549-5	CRM	VA-TURB-SPK-8						
Turbidity			102		%		85-115	12-MAR-10
WG1078549-8	CRM	VA-TURB-SPK-8						
Turbidity			100		%		85-115	12-MAR-10
WG1078549-1	MB							
Turbidity			<0.10		NTU		0.1	12-MAR-10
WG1078549-4	MB							
Turbidity			<0.10		NTU		0.1	12-MAR-10
WG1078549-7	MB							

ALS Laboratory Group Quality Control Report

Workorder: L868426

Report Date: 18-MAR-10

Page 8 of 9

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TURBIDITY-VA	Water							
Batch	R1208912							
WG1078549-7 MB								
Turbidity			<0.10		NTU		0.1	12-MAR-10

ALS Laboratory Group Quality Control Report

Workorder: L868426

Report Date: 18-MAR-10

Page 9 of 9

Legend:

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:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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 RECORD/ANALYSIS REQUEST

No 21454

page 1 of 1

Short Holding Time

Rush Processing

Telephone: 604-298-0023

Project Number: 07-1914-0014-3000-3300		Laboratory Name: ALS Laboratory	
		Address: 8081 Lougheed Highway, Burnaby	
Golder Contact: Mark Bolton	Golder E-mail Address: mbolton@golder.com	Tel/Fax: 1-800-665-0243	Contact: 1-800-665-0243

Office the final reports should be sent to:

- 500-4260 Still Creek Drive Burnaby, BC V5C 6C6
Tel: 604-298-6623 Fax: 604-298-5253
- 202-2790 Gladwin Road Abbotsford, BC V2T 4S8
Tel: 604-850-8786 Fax: 604-850-8756
- 2640 Douglas Street Victoria, BC V8T 4M1
Tel: 250-881-7372 Fax: 250-881-7470

US65426

Analyses Required

Amber Springer

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D/M/Y)	Number of Containers	Analyses Required										Remarks (over)	
				Anions	Alkalinity	Turbidity/Color	pH	Hardness	TDS	Conductivity	Total Metals	Total Coliforms + E. coli	Hold		
21454 -01	H ₂ O	10/03/10	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Full Drinking Water Package Please include DW metals scan + ICP N total coliforms + E. coli
↓ -02	↓	↓	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
↓ -03	↓	↓	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
-04															
-05															
-06															
-07															
-08															
-09															
-10															
-11															
-12															

Sampler's Signature: <i>T. Labelle</i>	Relinquished by: Signature: <i>T. Labelle</i>	Company: <i>Golder</i>	Date: <i>10/03/2010</i>	Time: <i>16:30</i>	Received by: Signature	Company
Sample Storage (°C): <i>On Ice</i>	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments: <i>Full Drinking Water Package Sampling Time Ranged from 11:05AM (21454-01)</i>	Method of Shipment: <i>9 AM Express</i>	Waybill No.: <i>D-013331529</i>	Received for Lab by: <i>AD</i>		Date: <i>10/03/11</i>	Time: <i>9:11</i>
	Shipped by: <i>DHL</i>	Shipment Condition: Seal Intact:	Temp (°C): <i>2</i>	Cooler opened by:	Date	Time

to WHITE: Golder copy YELLOW: Lab PINK: Lab returns with Final Report

11:40pm (21454-03)



Environmental Division

GOLDER ASSOCIATES LTD.
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1
ATTN: MARK BOLTON

Date: 14-OCT-10
PO No.:
WO No.: L939582
Project Ref: 07-1414-0014-3000-3300
Sample ID: 21731-01
Sampled By:
Date Collected: 04-OCT-10
Lab Sample ID: L939582-1
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
E.coli and Total by Colilert (Health)						
E. coli	<1		MPN/100mL	0		05-OCT-10
Coliform Bacteria - Total	21		MPN/100mL	0		05-OCT-10
Drinking Water Full Package						
Chloride (Cl)	3.33		mg/L		250	07-OCT-10
Fluoride (F)	<0.020		mg/L	1.5		07-OCT-10
*Nitrate (as N)	1.51		mg/L	10		07-OCT-10
*Nitrite (as N)	<0.0010		mg/L	1		07-OCT-10
Sulfate (SO4)	3.63		mg/L		500	07-OCT-10
pH	7.04		pH		6.5-8.5	06-OCT-10
Total Mercury in Water by CVAFS						
Mercury (Hg)-Total	<0.00020		mg/L	0.001		08-OCT-10
Total Metals in Water (DW) + ICP						
Total Metals in Water by ICPOES						
Beryllium (Be)-Total	<0.0050		mg/L			07-OCT-10
Bismuth (Bi)-Total	<0.20		mg/L			07-OCT-10
Cobalt (Co)-Total	<0.010		mg/L			07-OCT-10
Iron (Fe)-Total	<0.030		mg/L		0.3	07-OCT-10
Lithium (Li)-Total	<0.010		mg/L			07-OCT-10
Molybdenum (Mo)-Total	<0.030		mg/L			07-OCT-10
Nickel (Ni)-Total	<0.050		mg/L			07-OCT-10
Phosphorus (P)-Total	<0.30		mg/L			07-OCT-10
Silicon (Si)-Total	5.49		mg/L			07-OCT-10
Silver (Ag)-Total	<0.010		mg/L			07-OCT-10
Sodium (Na)-Total	3.7		mg/L		200	07-OCT-10
Strontium (Sr)-Total	0.0427		mg/L			07-OCT-10
Thallium (Tl)-Total	<0.20		mg/L			07-OCT-10
Tin (Sn)-Total	<0.030		mg/L			07-OCT-10
Titanium (Ti)-Total	<0.010		mg/L			07-OCT-10
Vanadium (V)-Total	<0.030		mg/L			07-OCT-10
Total Metals in Water by ICPMs(Low)						
Aluminum (Al)-Total	0.028		mg/L		0.1	10-OCT-10
Antimony (Sb)-Total	<0.00050		mg/L	0.006		10-OCT-10
Arsenic (As)-Total	<0.00010		mg/L	0.01		10-OCT-10
Barium (Ba)-Total	<0.020		mg/L	1		10-OCT-10
Boron (B)-Total	<0.10		mg/L	5		10-OCT-10
Cadmium (Cd)-Total	<0.00020		mg/L	0.005		10-OCT-10
Calcium (Ca)-Total	16.2		mg/L			10-OCT-10
Chromium (Cr)-Total	<0.0020		mg/L	0.05		10-OCT-10
Copper (Cu)-Total	0.0051		mg/L		1.0	10-OCT-10
Lead (Pb)-Total	<0.00050		mg/L	0.01		10-OCT-10



Environmental Division

GOLDER ASSOCIATES LTD.
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1
ATTN: MARK BOLTON

Date: 14-OCT-10
PO No.:
WO No.: L939582
Project Ref: 07-1414-0014-3000-3300
Sample ID: 21731-01
Sampled By:
Date Collected: 04-OCT-10
Lab Sample ID: L939582-1
Matrix:

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals in Water (DW) + ICP						
Total Metals in Water by ICPMS(Low)						
Magnesium (Mg)-Total	2.42		mg/L			10-OCT-10
Manganese (Mn)-Total	0.0050		mg/L		0.05	12-OCT-10
Potassium (K)-Total	0.17		mg/L			10-OCT-10
Selenium (Se)-Total	<0.0010		mg/L	0.01		10-OCT-10
Uranium (U)-Total	<0.00010		mg/L	0.02		10-OCT-10
Zinc (Zn)-Total	<0.050		mg/L		5.0	10-OCT-10
Alkalinity, Total (as CaCO3)	42.8		mg/L			07-OCT-10
Colour, True	<5.0		CU			06-OCT-10
Conductivity	117		uS/cm			06-OCT-10
Hardness (as CaCO3)	50.5		mg/L		500	13-OCT-10
Total Dissolved Solids	76		mg/L		500	07-OCT-10
*Turbidity	0.30		NTU	0.1		06-OCT-10
CDWQG = Health Canada Guideline Limits updated MAY 2008						
* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.						
* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality						
- A blank entry designates no known limit.						
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.						
Approved by <u>Amber Springer</u> Amber Springer Project Manager						
14-OCT-10:						

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Manganese	Elevated levels may cause staining of laundry and porcelain.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds. The reported surrogate recovery value provides a measure of method efficiency.

mg/kg (units) - unit of concentration based on mass, parts per million

mg/L (units) - unit of concentration based on volume, parts per million

< - Less than

D.L. - Detection 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.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

OUT-OF-CUSTODY RECORD/ANALYSIS REQUEST

NO 21731

page 1 of 1

Object Number: 07-1414-0014-3000-3300

Laboratory Name: ALS

Address: 8081 LOUGHEED HWY, SUITE 101 BURNABY

500-4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604-298-6623 Fax: 604-299-5000

Golder Contact: MARK BULTON

Golder E-mail Address: mbolton@golder.com

Tel/Fax: 604-253-4188

Contact: AMBER SPRINGER

Short Holding Time

Rush Processing

2640 Douglas Street
Victoria, BC V8T 4M1
Tel: 250-881-7372
Fax: 250-881-7470

Analyses Required

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D/M/Y)	Number of Containers	Analyses Required							RUSH	Remarks (over)	
				COLOUR	CONDUCTIVITY	TDS, HARDNESS, PH	TURBIDITY	TOTAL ALKALINITY	ANION SCAN	TOTAL METALS (D.W. PLUS ICP)			TOTAL COLIFORMS + E. COLI
21731-01	H ₂ O	4/10/10	3	✓	✓	✓	✓	✓	✓	✓			ANALYZE FOR FULL D.W. PACKAGE PLUS TOTAL COLIF. + E. COLI
-02													
-03													
-04													
-05													
-06													
-07													
-08													INCLUDE D.W. METALS PLUS ICP
-09													
-10													
-11													
-12													

Sampler's Signature: <i>Mark Bolton</i>	Relinquished by: Signature: <i>Mark Bolton</i>	Company: GOLDER	Date: OCT 4/2010	Time:	Received by: Signature:	Company:
Sample Storage (°C): ON ICE	Relinquished by: Signature:	Company:	Date:	Time:	Received by: Signature:	Company:
Comments: FULL D.W. PACKAGE SAMPLED 10:50 AM	Method of Shipment:	Waybill No.: DHL NET92750806	Received for Lab by:		Date: 05-10-10	Time: 13.05
	Shipped by:	Shipment Condition: Seal Intact:	Temp (°C): 10.8	Cooler opened by: RC	Date: 05-10-10	Time: 13.05

WHITE: Golder copy

YELLOW: Lab copy

PINK: Lab returns with Final Report



GOLDER ASSOCIATES LTD.
ATTN: MARK BOLTON
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1
Phone: 250-881-7372

Date Received: 29-SEP-10
Report Date: 08-OCT-10 10:46 (MT)
Version: FINAL

Certificate of Analysis

Lab Work Order #: L937351
Project P.O. #: NOT SUBMITTED
Job Reference: 07-1414-0014-3000-3300
Legal Site Desc:
C of C Numbers: 21605

Comments:

Amber Springer
Account Manager

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

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LIMITED Part of the ALS Group A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L937351-1	L937351-2	L937351-3	L937351-4	L937351-5
		Description					
		Sampled Date	28-SEP-10	28-SEP-10	28-SEP-10	28-SEP-10	28-SEP-10
		Sampled Time					
		Client ID	21605-01	21605-02	21605-03	21605-04	21605-05
Grouping	Analyte						
WATER							
Physical Tests	Colour, True (CU)		<5.0	<5.0	<5.0	<5.0	<5.0
	Conductivity (uS/cm)		786	421	617	407	396
	Hardness (as CaCO3) (mg/L)		454	224	334	198	200
	pH (pH)		7.97	8.19	8.03	7.92	7.97
	Total Dissolved Solids (mg/L)		500	255	410	250	244
	Turbidity (NTU)		1.13	2.31	22.6	<0.10	<0.10
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		364	194	208	169	160
	Bromide (Br) (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
	Chloride (Cl) (mg/L)		20.4	16.6	38.6	16.0	16.4
	Fluoride (F) (mg/L)		0.031	0.033	0.141	<0.020	<0.020
	Nitrate (as N) (mg/L)		0.838	<0.0050	<0.0050	2.81	2.88
	Nitrite (as N) (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)		41.9	13.2	65.4	14.4	15.0
Bacteriological Tests	E. coli (MPN/100mL)		<1	<1	<1	<1	<1
	Coliform Bacteria - Total (MPN/100mL)		345	<1	<1	61	165
Total Metals	Aluminum (Al)-Total (mg/L)		<0.020 ^{DLA}	<0.010	<0.020 ^{DLA}	<0.010	<0.010
	Antimony (Sb)-Total (mg/L)		<0.0010 ^{DLA}	<0.00050	<0.0010 ^{DLA}	<0.00050	<0.00050
	Arsenic (As)-Total (mg/L)		<0.00020 ^{DLA}	0.00012	<0.00020 ^{DLA}	<0.00010	<0.00010
	Barium (Ba)-Total (mg/L)		<0.040 ^{DLA}	0.021	0.046	<0.020	<0.020
	Beryllium (Be)-Total (mg/L)		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Bismuth (Bi)-Total (mg/L)		<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)		<0.20 ^{DLA}	<0.10	<0.20 ^{DLA}	<0.10	<0.10
	Cadmium (Cd)-Total (mg/L)		<0.00040 ^{DLA}	<0.00020	<0.00040 ^{DLA}	<0.00020	<0.00020
	Calcium (Ca)-Total (mg/L)		152	72.4	123	60.1	60.9
	Chromium (Cr)-Total (mg/L)		<0.0040 ^{DLA}	<0.0020	<0.0040 ^{DLA}	<0.0020	<0.0020
	Cobalt (Co)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Copper (Cu)-Total (mg/L)		0.0166	<0.0010	0.0020	0.0025	0.0028
	Iron (Fe)-Total (mg/L)		<0.030	0.308	2.90	<0.030	<0.030
	Lead (Pb)-Total (mg/L)		0.0013	<0.00050	<0.0010 ^{DLA}	<0.00050	<0.00050
	Lithium (Li)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Magnesium (Mg)-Total (mg/L)		18.2	10.5	6.61	11.6	11.6
	Manganese (Mn)-Total (mg/L)		<0.0040 ^{DLA}	0.217	0.608	<0.0020	<0.0020
	Mercury (Hg)-Total (mg/L)		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Molybdenum (Mo)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Nickel (Ni)-Total (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus (P)-Total (mg/L)		<0.30	<0.30	<0.30	<0.30	<0.30	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L937351-6	L937351-7	L937351-8	L937351-9
		Description				
		Sampled Date	28-SEP-10	28-SEP-10	28-SEP-10	28-SEP-10
		Sampled Time				
		Client ID	21605-06	21605-07	21605-08	21605-09
Grouping	Analyte					
WATER						
Physical Tests	Colour, True (CU)	<5.0	<5.0	<5.0	<5.0	<5.0
	Conductivity (uS/cm)	102	168	119	290	290
	Hardness (as CaCO3) (mg/L)	44.7	40.5	48.3	156	156
	pH (pH)	7.25	8.25	7.22	8.07	8.07
	Total Dissolved Solids (mg/L)	67	111	71	184	184
	Turbidity (NTU)	0.49	1.08	0.58	0.55	0.55
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	35.1	77.8	57.3	145	145
	Bromide (Br) (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Chloride (Cl) (mg/L)	2.76	5.20	3.52	3.39	3.39
	Fluoride (F) (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020
	Nitrate (as N) (mg/L)	1.97	<0.0050	0.0400	<0.0050	<0.0050
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	3.09	3.35	4.60	12.4	12.4
Bacteriological Tests	E. coli (MPN/100mL)	3		<1	<1	<1
	Coliform Bacteria - Total (MPN/100mL)	261		<1	3	3
Total Metals	Aluminum (Al)-Total (mg/L)	0.049	<0.010	0.041	<0.010	<0.010
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Arsenic (As)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020
	Beryllium (Be)-Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.10	0.19	<0.10	<0.10	<0.10
	Cadmium (Cd)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Calcium (Ca)-Total (mg/L)	14.4	13.3	14.8	52.0	52.0
	Chromium (Cr)-Total (mg/L)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Cobalt (Co)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Copper (Cu)-Total (mg/L)	0.0084	0.0031	0.0083	<0.0010	<0.0010
	Iron (Fe)-Total (mg/L)	0.043	0.301	0.087	0.085	0.085
	Lead (Pb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	0.00181	0.00181
	Lithium (Li)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Magnesium (Mg)-Total (mg/L)	2.15	1.76	2.72	6.27	6.27
	Manganese (Mn)-Total (mg/L)	0.0041	0.0149	0.0033	0.0383	0.0383
	Mercury (Hg)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Molybdenum (Mo)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030	<0.030
	Nickel (Ni)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L937351-1	L937351-2	L937351-3	L937351-4	L937351-5
		Description					
		Sampled Date	28-SEP-10	28-SEP-10	28-SEP-10	28-SEP-10	28-SEP-10
		Sampled Time					
		Client ID	21605-01	21605-02	21605-03	21605-04	21605-05
Grouping	Analyte						
WATER							
Total Metals	Potassium (K)-Total (mg/L)		0.86	0.48	0.51	0.17	0.17
	Selenium (Se)-Total (mg/L)		<0.0020 ^{DLA}	<0.0010	<0.0020 ^{DLA}	<0.0010	<0.0010
	Silicon (Si)-Total (mg/L)		6.34	9.68	8.05	9.19	9.20
	Silver (Ag)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Sodium (Na)-Total (mg/L)		17.1	7.7	9.4	4.9	4.8
	Strontium (Sr)-Total (mg/L)		0.357	0.546	0.304	0.0715	0.0710
	Thallium (Tl)-Total (mg/L)		<0.20	<0.20	<0.20	<0.20	<0.20
	Tin (Sn)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Titanium (Ti)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)		0.00240	<0.00010	<0.00020 ^{DLA}	<0.00010	<0.00010
	Vanadium (V)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Zinc (Zn)-Total (mg/L)		<0.10 ^{DLA}	<0.050	<0.10 ^{DLA}	<0.050	<0.050

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

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L937351-6	L937351-7	L937351-8	L937351-9
		28-SEP-10	28-SEP-10	28-SEP-10	28-SEP-10
		21605-06	21605-07	21605-08	21605-09
Grouping	Analyte				
WATER					
Total Metals	Potassium (K)-Total (mg/L)	0.16	<0.10	<0.10	0.11
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Silicon (Si)-Total (mg/L)	4.75	12.1	5.33	11.6
	Silver (Ag)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Sodium (Na)-Total (mg/L)	3.4	23.4	3.0	4.3
	Strontium (Sr)-Total (mg/L)	0.0384	0.0339	0.0294	0.130
	Thallium (Tl)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20
	Tin (Sn)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010
	Vanadium (V)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030
	Zinc (Zn)-Total (mg/L)	<0.050	<0.050	<0.050	0.483

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	APHA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-BR-IC-VA	Water	Bromide by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrite detection is by UV absorbance and not conductivity.			
ANIONS-NO3-IC-VA	Water	Nitrate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrate detection is by UV absorbance and not conductivity.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 "Color"
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 Color
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
ECOLI-COLI-BCDW-VA	Water	E.coli by Colilert	APHA METHOD 9223
This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.			
HG-TOT-DW-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method			

Reference Information

6010B).

MET-TOT-LOW-MS-VA Water Total Metals in Water by ICPMS(Low) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TCOLI-COLI-BCDW-VA Water Total coliform by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-VA Water Total Dissolved Solids by Gravimetric APHA 2540 C - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

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

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
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

21605

GLOSSARY OF REPORT TERMS

Surrogate A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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 of sample.

mg/L milligrams per litre.

< - Less than.

D.L. The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



Quality Control Report

Workorder: L937351

Report Date: 08-OCT-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-COL-VA		Water						
Batch	R1487266							
WG1176778-5	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	01-OCT-10
WG1176778-8	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	01-OCT-10
ANIONS-BR-IC-VA		Water						
Batch	R1483625							
WG1175497-11	CRM	VA-IC-IVA2-ION23110						
Bromide (Br)			95		%		85-115	29-SEP-10
WG1175497-2	CRM	VA-IC-IVA2-ION23110						
Bromide (Br)			100		%		85-115	29-SEP-10
WG1175497-7	DUP	L937351-5						
Bromide (Br)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-9	DUP	L937351-9						
Bromide (Br)		<0.050	<0.050	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-1	MB							
Bromide (Br)			<0.050		mg/L		0.05	29-SEP-10
WG1175497-10	MB							
Bromide (Br)			<0.050		mg/L		0.05	29-SEP-10
WG1175497-4	MB							
Bromide (Br)			<0.050		mg/L		0.05	29-SEP-10
WG1175497-6	MB							
Bromide (Br)			<0.050		mg/L		0.05	29-SEP-10
WG1175497-8	MB							
Bromide (Br)			<0.050		mg/L		0.05	29-SEP-10
ANIONS-CL-IC-VA		Water						
Batch	R1483625							
WG1175497-11	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			98		%		85-115	29-SEP-10
WG1175497-2	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			100		%		85-115	29-SEP-10
WG1175497-7	DUP	L937351-5						
Chloride (Cl)		16.4	16.4		mg/L	0.18	20	29-SEP-10
WG1175497-9	DUP	L937351-9						
Chloride (Cl)		3.39	3.39	J	mg/L	0.00	2	29-SEP-10
WG1175497-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	29-SEP-10
WG1175497-10	MB							
Chloride (Cl)			<0.50		mg/L		0.5	29-SEP-10



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Workorder: L937351

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-CL-IC-VA		Water						
Batch	R1483625							
WG1175497-4	MB							
Chloride (Cl)			<0.50		mg/L		0.5	29-SEP-10
WG1175497-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	29-SEP-10
WG1175497-8	MB							
Chloride (Cl)			<0.50		mg/L		0.5	29-SEP-10
ANIONS-F-IC-VA		Water						
Batch	R1483625							
WG1175497-11	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			105		%		85-115	29-SEP-10
WG1175497-2	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			107		%		85-115	29-SEP-10
WG1175497-7	DUP	L937351-5						
Fluoride (F)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-9	DUP	L937351-9						
Fluoride (F)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	29-SEP-10
WG1175497-10	MB							
Fluoride (F)			<0.020		mg/L		0.02	29-SEP-10
WG1175497-4	MB							
Fluoride (F)			<0.020		mg/L		0.02	29-SEP-10
WG1175497-6	MB							
Fluoride (F)			<0.020		mg/L		0.02	29-SEP-10
WG1175497-8	MB							
Fluoride (F)			<0.020		mg/L		0.02	29-SEP-10
ANIONS-NO2-IC-VA		Water						
Batch	R1483625							
WG1175497-11	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			100		%		85-115	29-SEP-10
WG1175497-7	DUP	L937351-5						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-9	DUP	L937351-9						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	29-SEP-10
WG1175497-10	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	29-SEP-10



Quality Control Report

Workorder: L937351

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-NO2-IC-VA		Water						
Batch	R1483625							
WG1175497-4	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	29-SEP-10
WG1175497-6	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	29-SEP-10
WG1175497-8	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	29-SEP-10
ANIONS-NO3-IC-VA		Water						
Batch	R1483625							
WG1175497-11	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		85-115	29-SEP-10
WG1175497-7	DUP	L937351-5						
Nitrate (as N)		2.88	2.88		mg/L	0.22	20	29-SEP-10
WG1175497-9	DUP	L937351-9						
Nitrate (as N)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	29-SEP-10
WG1175497-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	29-SEP-10
WG1175497-10	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	29-SEP-10
WG1175497-4	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	29-SEP-10
WG1175497-6	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	29-SEP-10
WG1175497-8	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	29-SEP-10
ANIONS-SO4-IC-VA		Water						
Batch	R1483625							
WG1175497-11	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			100		%		85-115	29-SEP-10
WG1175497-2	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			102		%		85-115	29-SEP-10
WG1175497-7	DUP	L937351-5						
Sulfate (SO4)		15.0	15.0		mg/L	0.26	20	29-SEP-10
WG1175497-9	DUP	L937351-9						
Sulfate (SO4)		12.4	12.4		mg/L	0.21	20	29-SEP-10
WG1175497-1	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	29-SEP-10
WG1175497-10	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	29-SEP-10



Quality Control Report

Workorder: L937351

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-SO4-IC-VA								
Batch	R1483625							
WG1175497-4	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	29-SEP-10
WG1175497-6	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	29-SEP-10
WG1175497-8	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	29-SEP-10
COLOUR-TRUE-VA								
Batch	R1483264							
WG1176306-2	CRM	VA-COL-C-25						
Colour, True			114		%		85-115	30-SEP-10
WG1176306-4	CRM	VA-COL-C-25						
Colour, True			114		%		85-115	30-SEP-10
WG1176306-5	DUP	L937351-8						
Colour, True		<5.0	<5.0	RPD-NA	CU	N/A	20	30-SEP-10
WG1176306-1	MB							
Colour, True			<5.0		CU		5	30-SEP-10
WG1176306-3	MB							
Colour, True			<5.0		CU		5	30-SEP-10
EC-PCT-VA								
Batch	R1484230							
WG1176167-7	CRM	VA-EC-PCT-CONTROL						
Conductivity			100		%		90-110	30-SEP-10
WG1176167-1	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-14	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-2	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-3	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-4	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-5	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
Batch	R1484728							
WG1176158-7	CRM	VA-EC-PCT-CONTROL						
Conductivity			97		%		90-110	30-SEP-10
WG1176158-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-PCT-VA		Water						
Batch	R1484728							
WG1176158-1	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176158-2	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176158-3	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
HG-TOT-DW-CVAFS-VA		Water						
Batch	R1484984							
WG1177144-2	CRM	VA-HG-WATRM						
Mercury (Hg)-Total			89		%		80-120	01-OCT-10
WG1177144-10	DUP	L937351-4						
Mercury (Hg)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	01-OCT-10
WG1177144-1	MB							
Mercury (Hg)-Total			<0.00020		mg/L		0.0002	01-OCT-10
MET-TOT-ICP-VA		Water						
Batch	R1490644							
WG1175847-4	CRM	VA-HIGH-WATRM						
Beryllium (Be)-Total			101		%		80-120	06-OCT-10
Bismuth (Bi)-Total			96		%		80-120	06-OCT-10
Cobalt (Co)-Total			95		%		80-120	06-OCT-10
Iron (Fe)-Total			95		%		80-120	06-OCT-10
Lithium (Li)-Total			102		%		80-120	06-OCT-10
Molybdenum (Mo)-Total			98		%		80-120	06-OCT-10
Nickel (Ni)-Total			96		%		80-120	06-OCT-10
Phosphorus (P)-Total			98		%		80-120	06-OCT-10
Silicon (Si)-Total			108		%		80-120	06-OCT-10
Silver (Ag)-Total			98		%		80-120	06-OCT-10
Sodium (Na)-Total			101		%		80-120	06-OCT-10
Strontium (Sr)-Total			100		%		80-120	06-OCT-10
Thallium (Tl)-Total			98		%		80-120	06-OCT-10
Tin (Sn)-Total			96		%		80-120	06-OCT-10
Titanium (Ti)-Total			105		%		80-120	06-OCT-10
Vanadium (V)-Total			99		%		80-120	06-OCT-10
WG1175847-1	MB							
Beryllium (Be)-Total			<0.0050		mg/L		0.005	06-OCT-10
Bismuth (Bi)-Total			<0.20		mg/L		0.2	06-OCT-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA		Water						
Batch	R1490644							
WG1175847-1	MB							
Cobalt (Co)-Total			<0.010		mg/L		0.01	06-OCT-10
Iron (Fe)-Total			<0.030		mg/L		0.03	06-OCT-10
Lithium (Li)-Total			<0.010		mg/L		0.01	06-OCT-10
Molybdenum (Mo)-Total			<0.030		mg/L		0.03	06-OCT-10
Nickel (Ni)-Total			<0.050		mg/L		0.05	06-OCT-10
Phosphorus (P)-Total			<0.30		mg/L		0.3	06-OCT-10
Silicon (Si)-Total			<0.050		mg/L		0.05	06-OCT-10
Silver (Ag)-Total			<0.010		mg/L		0.01	06-OCT-10
Sodium (Na)-Total			<2.0		mg/L		2	06-OCT-10
Strontium (Sr)-Total			<0.0050		mg/L		0.005	06-OCT-10
Thallium (Tl)-Total			<0.20		mg/L		0.2	06-OCT-10
Tin (Sn)-Total			<0.030		mg/L		0.03	06-OCT-10
Titanium (Ti)-Total			<0.010		mg/L		0.01	06-OCT-10
Vanadium (V)-Total			<0.030		mg/L		0.03	06-OCT-10
MET-TOT-LOW-MS-VA		Water						
Batch	R1487616							
WG1175847-1	MB							
Aluminum (Al)-Total			0.0028	MB-LOR	mg/L		0.001	04-OCT-10
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	04-OCT-10
Arsenic (As)-Total			<0.00010		mg/L		0.0001	04-OCT-10
Barium (Ba)-Total			<0.000050		mg/L		0.00005	04-OCT-10
Boron (B)-Total			<0.010		mg/L		0.01	04-OCT-10
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	04-OCT-10
Calcium (Ca)-Total			<0.020		mg/L		0.02	04-OCT-10
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	04-OCT-10
Copper (Cu)-Total			0.00012	MB-LOR	mg/L		0.0001	04-OCT-10
Lead (Pb)-Total			<0.000050		mg/L		0.00005	04-OCT-10
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	04-OCT-10
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	04-OCT-10
Potassium (K)-Total			<0.050		mg/L		0.05	04-OCT-10
Selenium (Se)-Total			<0.0010		mg/L		0.001	04-OCT-10
Uranium (U)-Total			<0.000010		mg/L		0.00001	04-OCT-10
Zinc (Zn)-Total			<0.0010		mg/L		0.001	04-OCT-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA		Water						
Batch	R1488686							
WG1175847-4	CRM	VA-HIGH-WATRM						
Aluminum (Al)-Total			107		%		80-120	04-OCT-10
Antimony (Sb)-Total			98		%		80-120	04-OCT-10
Arsenic (As)-Total			102		%		80-120	04-OCT-10
Barium (Ba)-Total			99		%		80-120	04-OCT-10
Boron (B)-Total			95		%		80-120	04-OCT-10
Cadmium (Cd)-Total			97		%		80-120	04-OCT-10
Calcium (Ca)-Total			102		%		80-120	04-OCT-10
Chromium (Cr)-Total			103		%		80-120	04-OCT-10
Copper (Cu)-Total			97		%		80-120	04-OCT-10
Lead (Pb)-Total			100		%		80-120	04-OCT-10
Magnesium (Mg)-Total			113		%		80-120	04-OCT-10
Manganese (Mn)-Total			103		%		80-120	04-OCT-10
Potassium (K)-Total			99		%		80-120	04-OCT-10
Selenium (Se)-Total			100		%		80-120	04-OCT-10
Uranium (U)-Total			95		%		80-120	04-OCT-10
Zinc (Zn)-Total			97		%		80-120	04-OCT-10
PH-PCT-VA		Water						
Batch	R1484230							
WG1176167-8	CRM	VA-PH7-BUF						
pH			7.01		pH		6.9-7.1	30-SEP-10
Batch	R1484728							
WG1176158-8	CRM	VA-PH7-BUF						
pH			7.04		pH		6.9-7.1	30-SEP-10
TDS-VA		Water						
Batch	R1488578							
WG1176648-2	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			101		%		85-115	30-SEP-10
WG1176648-5	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			99		%		85-115	30-SEP-10
WG1176648-8	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			102		%		85-115	30-SEP-10
WG1176648-3	DUP	L937351-5						
Total Dissolved Solids		244	238		mg/L	2.5	20	30-SEP-10
WG1176648-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TDS-VA		Water						
Batch	R1488578							
WG1176648-1 MB								
Total Dissolved Solids			<10		mg/L		10	30-SEP-10
WG1176648-4 MB								
Total Dissolved Solids			<10		mg/L		10	30-SEP-10
WG1176648-7 MB								
Total Dissolved Solids			<10		mg/L		10	30-SEP-10
TURBIDITY-VA		Water						
Batch	R1482853							
WG1175597-11 CRM		VA-TURB-SPK-8						
Turbidity			97		%		85-115	29-SEP-10
WG1175597-14 CRM		VA-TURB-SPK-8						
Turbidity			101		%		85-115	29-SEP-10
WG1175597-17 CRM		VA-TURB-SPK-8						
Turbidity			99		%		85-115	29-SEP-10
WG1175597-2 CRM		VA-TURB-SPK-8						
Turbidity			101		%		85-115	29-SEP-10
WG1175597-5 CRM		VA-TURB-SPK-8						
Turbidity			100		%		85-115	29-SEP-10
WG1175597-8 CRM		VA-TURB-SPK-8						
Turbidity			98		%		85-115	29-SEP-10
WG1175597-15 DUP		L937351-9						
Turbidity		0.55	0.57	J	NTU	0.020	0.4	29-SEP-10
WG1175597-1 MB								
Turbidity			<0.10		NTU		0.1	29-SEP-10
WG1175597-10 MB								
Turbidity			<0.10		NTU		0.1	29-SEP-10
WG1175597-13 MB								
Turbidity			<0.10		NTU		0.1	29-SEP-10
WG1175597-16 MB								
Turbidity			<0.10		NTU		0.1	29-SEP-10
WG1175597-4 MB								
Turbidity			<0.10		NTU		0.1	29-SEP-10
WG1175597-7 MB								
Turbidity			<0.10		NTU		0.1	29-SEP-10

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Legend:

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:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH by Meter (Automated)							
	1	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	2	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	3	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	4	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	5	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	6	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	7	28-SEP-10	30-SEP-10 11:34	0.25	48	hours	EHTR-FM
	8	28-SEP-10	30-SEP-10 12:32	0.25	48	hours	EHTR-FM
	9	28-SEP-10	30-SEP-10 12:32	0.25	48	hours	EHTR-FM

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L937351 were received on 29-SEP-10 12:55.

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.



1937351

CHAIN-OF-CUSTODY RECORD/ANALYSIS REQUEST

No 21605 Page 1 of 1

Short Holding Time
Rush Processing

Project Number: 07-1414-0014-3000-3300		Laboratory Name: ALS	
Golder Contact: Mark Bolton		Address: 8081 Lougheed Hwy, Suite 101 - Burnaby	
Golder E-mail Address: mbolton@golder.com	Tel/Fax: 604-253-4188	Contact: Amber Springer	



n Road
 2640 Douglas Street
 Victoria, BC V8T 4M1
 Tel: 250-881-7372
 Fax: 250-881-7470

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D/M/Y)	Analyses Required										Remarks (over)	
			Number of Containers	Color	Conductivity	TDS	Hardness, pH	Turbidity	Total Alkalinity	Anion Scan	Total Metals	Total Coli, formst + E. Coli		RUSH
21605-01	H ₂ O	28/09/10	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Analyze for
-02			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	full drinking
-03			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	water package
-04			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	+ Total Coli/formst
-05			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	+ E. Coli
-06			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	+ include
-07			2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	drinking water
-08			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	metals + ICP
-09			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
-10														
-11														
-12														

Sampler's Signature: T. Labelle	Relinquished by: Signature: T. Labelle	Company: Golder	Date:	Time:	Received by: Signature:	Company:
Sample Storage (°C): ON ICE	Relinquished by: Signature:	Company:	Date:	Time:	Received by: Signature:	Company:
Comments: Full Drinking Water Package	Method of Shipment: 9 AM EXPRESS	Waybill No.: 1005980521	Received for Lab by:		Date:	Time:
Sampling times ranged from 8:55 AM - ONWARDS	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C):	Cooler opened by: R.C.	Date: 29-09-10	Time: 12:55

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report



GOLDER ASSOCIATES LTD.
ATTN: MARK BOLTON
2640 DOUGLAS STREET
VICTORIA BC V8T 4M1
Phone: 250-881-7372

Date Received: 30-SEP-10
Report Date: 14-OCT-10 11:43 (MT)
Version: FINAL REV. 2

Certificate of Analysis

Lab Work Order #: L937596
Project P.O. #: NOT SUBMITTED
Job Reference: 07-1414-0014-3000-3300
Legal Site Desc:
C of C Numbers: 21604

Comments:
14-OCT-10:

Amber Springer
Account Manager

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

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LIMITED Part of the ALS Group A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L937596-1			
Grouping	Analyte				
WATER					
Physical Tests	Colour, True (CU)	<5.0			
	Conductivity (uS/cm)	429			
	Hardness (as CaCO3) (mg/L)	167			
	pH (pH)	8.01			
	Total Dissolved Solids (mg/L)	276			
	Turbidity (NTU)	7.97			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	116			
	Chloride (Cl) (mg/L)	51.9			
	Fluoride (F) (mg/L)	0.032			
	Nitrate (as N) (mg/L)	<0.0050			
	Nitrite (as N) (mg/L)	<0.0010			
	Sulfate (SO4) (mg/L)	16.8			
Bacteriological Tests	E. coli (MPN/100mL)	<1			
	Coliform Bacteria - Total (MPN/100mL)	56			
Total Metals	Aluminum (Al)-Total (mg/L)	<0.010			
	Antimony (Sb)-Total (mg/L)	<0.00050			
	Arsenic (As)-Total (mg/L)	<0.00010			
	Barium (Ba)-Total (mg/L)	<0.020			
	Beryllium (Be)-Total (mg/L)	<0.0050			
	Bismuth (Bi)-Total (mg/L)	<0.20			
	Boron (B)-Total (mg/L)	<0.10			
	Cadmium (Cd)-Total (mg/L)	<0.00020			
	Calcium (Ca)-Total (mg/L)	55.1			
	Chromium (Cr)-Total (mg/L)	<0.0020			
	Cobalt (Co)-Total (mg/L)	<0.010			
	Copper (Cu)-Total (mg/L)	<0.0010			
	Iron (Fe)-Total (mg/L)	0.677			
	Lead (Pb)-Total (mg/L)	<0.00050			
	Lithium (Li)-Total (mg/L)	<0.010			
	Magnesium (Mg)-Total (mg/L)	7.15			
	Manganese (Mn)-Total (mg/L)	0.274			
	Mercury (Hg)-Total (mg/L)	<0.00020			
	Molybdenum (Mo)-Total (mg/L)	<0.030			
	Nickel (Ni)-Total (mg/L)	<0.050			
	Phosphorus (P)-Total (mg/L)	<0.30			
	Potassium (K)-Total (mg/L)	0.53			

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L937596-1			
Grouping	Analyte				
WATER					
Total Metals	Selenium (Se)-Total (mg/L)	<0.0010			
	Silicon (Si)-Total (mg/L)	10.4			
	Silver (Ag)-Total (mg/L)	<0.010			
	Sodium (Na)-Total (mg/L)	17.0			
	Strontium (Sr)-Total (mg/L)	1.40			
	Thallium (Tl)-Total (mg/L)	<0.20			
	Tin (Sn)-Total (mg/L)	<0.030			
	Titanium (Ti)-Total (mg/L)	<0.010			
	Uranium (U)-Total (mg/L)	<0.00010			
	Vanadium (V)-Total (mg/L)	<0.030			
	Zinc (Zn)-Total (mg/L)	<0.050			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	APHA 310.2
		This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.	
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
ANIONS-NO2-IC-VA	Water	Nitrite by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrite detection is by UV absorbance and not conductivity.	
ANIONS-NO3-IC-VA	Water	Nitrate by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrate detection is by UV absorbance and not conductivity.	
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 "Color"
		This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.	
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 Color
		This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.	
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
		This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.	
ECOLI-COLI-BCDW-VA	Water	E.coli by Colilert	APHA METHOD 9223
		This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.	
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
		Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.	
HG-TOT-DW-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7
		This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).	
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
		This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).	
MET-TOT-LOW-MS-VA	Water	Total Metals in Water by ICPMS(Low)	EPA SW-846 3005A/6020A
		This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).	
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TCOLI-COLI-BCDW-VA Water Total coliform by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-VA Water Total Dissolved Solids by Gravimetric APHA 2540 C - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

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

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
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

21604

GLOSSARY OF REPORT TERMS

Surrogate A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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 of sample.

mg/L milligrams per litre.

< - Less than.

D.L. The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-COL-VA		Water						
Batch	R1487266							
WG1176778-5	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	01-OCT-10
WG1176778-8	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	01-OCT-10
ANIONS-CL-IC-VA		Water						
Batch	R1485263							
WG1176325-11	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			98		%		85-115	30-SEP-10
WG1176325-2	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			98		%		85-115	30-SEP-10
WG1176325-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-10	MB							
Chloride (Cl)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-4	MB							
Chloride (Cl)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-8	MB							
Chloride (Cl)			<0.50		mg/L		0.5	30-SEP-10
ANIONS-F-IC-VA		Water						
Batch	R1485263							
WG1176325-11	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			104		%		85-115	30-SEP-10
WG1176325-2	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			105		%		85-115	30-SEP-10
WG1176325-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	30-SEP-10
WG1176325-10	MB							
Fluoride (F)			<0.020		mg/L		0.02	30-SEP-10
WG1176325-4	MB							
Fluoride (F)			<0.020		mg/L		0.02	30-SEP-10
WG1176325-6	MB							
Fluoride (F)			<0.020		mg/L		0.02	30-SEP-10
WG1176325-8	MB							
Fluoride (F)			<0.020		mg/L		0.02	30-SEP-10
ANIONS-NO2-IC-VA		Water						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-NO2-IC-VA		Water						
Batch	R1485263							
WG1176325-11	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			99		%		85-115	30-SEP-10
WG1176325-2	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			101		%		85-115	30-SEP-10
WG1176325-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	30-SEP-10
WG1176325-10	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	30-SEP-10
WG1176325-4	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	30-SEP-10
WG1176325-6	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	30-SEP-10
WG1176325-8	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	30-SEP-10
ANIONS-NO3-IC-VA		Water						
Batch	R1485263							
WG1176325-11	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		85-115	30-SEP-10
WG1176325-2	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		85-115	30-SEP-10
WG1176325-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	30-SEP-10
WG1176325-10	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	30-SEP-10
WG1176325-4	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	30-SEP-10
WG1176325-6	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	30-SEP-10
WG1176325-8	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	30-SEP-10
ANIONS-SO4-IC-VA		Water						
Batch	R1485263							
WG1176325-11	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			100		%		85-115	30-SEP-10
WG1176325-2	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			100		%		85-115	30-SEP-10
WG1176325-1	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	30-SEP-10



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ANIONS-SO4-IC-VA								
Batch	R1485263							
WG1176325-10	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-4	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-6	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	30-SEP-10
WG1176325-8	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	30-SEP-10
COLOUR-TRUE-VA								
Batch	R1484871							
WG1177101-2	CRM	VA-COL-C-25						
Colour, True			114		%		85-115	01-OCT-10
WG1177101-4	CRM	VA-COL-C-25						
Colour, True			113		%		85-115	01-OCT-10
WG1177101-1	MB							
Colour, True			<5.0		CU		5	01-OCT-10
WG1177101-3	MB							
Colour, True			<5.0		CU		5	01-OCT-10
EC-PCT-VA								
Batch	R1484230							
WG1176167-7	CRM	VA-EC-PCT-CONTROL						
Conductivity			100		%		90-110	30-SEP-10
WG1176167-1	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-14	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-2	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-3	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-4	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
WG1176167-5	MB							
Conductivity			<2.0		uS/cm		2	30-SEP-10
HG-TOT-DW-CVAFS-VA								
	Water							



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HG-TOT-DW-CVAFS-VA		Water						
Batch	R1490984							
WG1179834-2	CRM	VA-HG-WATRM						
Mercury (Hg)-Total			81		%		80-120	06-OCT-10
WG1179834-1	MB							
Mercury (Hg)-Total			<0.00020		mg/L		0.0002	06-OCT-10
MET-TOT-ICP-VA		Water						
Batch	R1496143							
WG1176486-3	CRM	VA-HIGH-WATRM						
Beryllium (Be)-Total			96		%		80-120	06-OCT-10
Bismuth (Bi)-Total			96		%		80-120	06-OCT-10
Cobalt (Co)-Total			94		%		80-120	06-OCT-10
Iron (Fe)-Total			94		%		80-120	06-OCT-10
Lithium (Li)-Total			105		%		80-120	06-OCT-10
Molybdenum (Mo)-Total			95		%		80-120	06-OCT-10
Nickel (Ni)-Total			94		%		80-120	06-OCT-10
Phosphorus (P)-Total			99		%		80-120	06-OCT-10
Silicon (Si)-Total			102		%		80-120	06-OCT-10
Silver (Ag)-Total			97		%		80-120	06-OCT-10
Sodium (Na)-Total			100		%		80-120	06-OCT-10
Strontium (Sr)-Total			99		%		80-120	06-OCT-10
Thallium (Tl)-Total			96		%		80-120	06-OCT-10
Tin (Sn)-Total			96		%		80-120	06-OCT-10
Titanium (Ti)-Total			101		%		80-120	06-OCT-10
Vanadium (V)-Total			97		%		80-120	06-OCT-10
WG1176486-1	MB							
Beryllium (Be)-Total			<0.0050		mg/L		0.005	06-OCT-10
Bismuth (Bi)-Total			<0.20		mg/L		0.2	06-OCT-10
Cobalt (Co)-Total			<0.010		mg/L		0.01	06-OCT-10
Iron (Fe)-Total			<0.030		mg/L		0.03	06-OCT-10
Lithium (Li)-Total			<0.010		mg/L		0.01	06-OCT-10
Molybdenum (Mo)-Total			<0.030		mg/L		0.03	06-OCT-10
Nickel (Ni)-Total			<0.050		mg/L		0.05	06-OCT-10
Phosphorus (P)-Total			<0.30		mg/L		0.3	06-OCT-10
Silicon (Si)-Total			<0.050		mg/L		0.05	06-OCT-10
Silver (Ag)-Total			<0.010		mg/L		0.01	06-OCT-10
Sodium (Na)-Total			<2.0		mg/L		2	06-OCT-10
Strontium (Sr)-Total			<0.0050		mg/L		0.005	06-OCT-10



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MET-TOT-ICP-VA								
	Water							
Batch	R1496143							
WG1176486-1 MB								
Thallium (Tl)-Total			<0.20		mg/L		0.2	06-OCT-10
Tin (Sn)-Total			<0.030		mg/L		0.03	06-OCT-10
Titanium (Ti)-Total			<0.010		mg/L		0.01	06-OCT-10
Vanadium (V)-Total			<0.030		mg/L		0.03	06-OCT-10
MET-TOT-LOW-MS-VA								
	Water							
Batch	R1488686							
WG1176486-3 CRM		VA-HIGH-WATRM						
Aluminum (Al)-Total			107		%		80-120	04-OCT-10
Antimony (Sb)-Total			98		%		80-120	04-OCT-10
Arsenic (As)-Total			101		%		80-120	04-OCT-10
Barium (Ba)-Total			99		%		80-120	04-OCT-10
Boron (B)-Total			98		%		80-120	04-OCT-10
Cadmium (Cd)-Total			97		%		80-120	04-OCT-10
Calcium (Ca)-Total			100		%		80-120	04-OCT-10
Chromium (Cr)-Total			99		%		80-120	04-OCT-10
Copper (Cu)-Total			97		%		80-120	04-OCT-10
Lead (Pb)-Total			99		%		80-120	04-OCT-10
Magnesium (Mg)-Total			114		%		80-120	04-OCT-10
Manganese (Mn)-Total			101		%		80-120	04-OCT-10
Potassium (K)-Total			100		%		80-120	04-OCT-10
Selenium (Se)-Total			100		%		80-120	04-OCT-10
Uranium (U)-Total			94		%		80-120	04-OCT-10
Zinc (Zn)-Total			95		%		80-120	04-OCT-10
WG1176486-1 MB								
Aluminum (Al)-Total			<0.0010		mg/L		0.001	04-OCT-10
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	04-OCT-10
Arsenic (As)-Total			<0.00010		mg/L		0.0001	04-OCT-10
Barium (Ba)-Total			<0.000050		mg/L		0.00005	04-OCT-10
Boron (B)-Total			<0.010		mg/L		0.01	04-OCT-10
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	04-OCT-10
Calcium (Ca)-Total			<0.020		mg/L		0.02	04-OCT-10
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	04-OCT-10
Copper (Cu)-Total			<0.00010		mg/L		0.0001	04-OCT-10
Lead (Pb)-Total			<0.000050		mg/L		0.00005	04-OCT-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA		Water						
Batch	R1488686							
WG1176486-1	MB							
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	04-OCT-10
Manganese (Mn)-Total			0.000052	MB-LOR	mg/L		0.00005	04-OCT-10
Potassium (K)-Total			<0.050		mg/L		0.05	04-OCT-10
Selenium (Se)-Total			<0.0010		mg/L		0.001	04-OCT-10
Uranium (U)-Total			<0.000010		mg/L		0.00001	04-OCT-10
Zinc (Zn)-Total			<0.0010		mg/L		0.001	04-OCT-10
PH-PCT-VA		Water						
Batch	R1484230							
WG1176167-8	CRM	VA-PH7-BUF						
pH			7.01		pH		6.9-7.1	30-SEP-10
TDS-VA		Water						
Batch	R1488578							
WG1176648-2	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			101		%		85-115	30-SEP-10
WG1176648-5	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			99		%		85-115	30-SEP-10
WG1176648-8	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			102		%		85-115	30-SEP-10
WG1176648-1	MB							
Total Dissolved Solids			<10		mg/L		10	30-SEP-10
WG1176648-4	MB							
Total Dissolved Solids			<10		mg/L		10	30-SEP-10
WG1176648-7	MB							
Total Dissolved Solids			<10		mg/L		10	30-SEP-10
TURBIDITY-VA		Water						
Batch	R1484523							
WG1176410-10	CRM	VA-TURB-SPK-8						
Turbidity			97		%		85-115	30-SEP-10
WG1176410-12	CRM	VA-TURB-SPK-8						
Turbidity			97		%		85-115	30-SEP-10
WG1176410-14	CRM	VA-TURB-SPK-8						
Turbidity			96		%		85-115	30-SEP-10
WG1176410-2	CRM	VA-TURB-SPK-8						
Turbidity			98		%		85-115	30-SEP-10
WG1176410-4	CRM	VA-TURB-SPK-8						



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TURBIDITY-VA		Water						
Batch	R1484523							
WG1176410-4	CRM	VA-TURB-SPK-8						
Turbidity			98		%		85-115	30-SEP-10
WG1176410-6	CRM	VA-TURB-SPK-8						
Turbidity			98		%		85-115	30-SEP-10
WG1176410-1	MB							
Turbidity			<0.10		NTU		0.1	30-SEP-10
WG1176410-11	MB							
Turbidity			<0.10		NTU		0.1	30-SEP-10
WG1176410-13	MB							
Turbidity			<0.10		NTU		0.1	30-SEP-10
WG1176410-3	MB							
Turbidity			<0.10		NTU		0.1	30-SEP-10
WG1176410-5	MB							
Turbidity			<0.10		NTU		0.1	30-SEP-10
WG1176410-9	MB							
Turbidity			<0.10		NTU		0.1	30-SEP-10

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Legend:

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:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MB-LOR	Method Blank exceeds ALS DQO. LORs adjusted for samples with positive hits below 5 times blank level. Please contact ALS if re-analysis is required.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH by Meter (Automated)	1	29-SEP-10	30-SEP-10 12:32	0.25	24	hours	EHTR-FM

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L937596 were received on 30-SEP-10 09:01.

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.



CUSTODY RECORD/ANALYSIS REQUEST

No 21604 Page 1 of 1

500-4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone: 604 299 6622 Fax: 604 299 5252

07-1414-0014-3000-3300

Laboratory Name: **ALS**

Address: **8081 Lougheed Hwy, Suite 101, Burnaby**

Golder Contact: **Mark Bolton**

Golder E-mail Address: **mbolton@golder.com**

Tel/Fax: **604-253-4188**

Contact: **Amber Springer**

Short Holding Time

Rush Processing

Gladwin Road
rd, BC V2T 4S8
50-8786
504-850-8756

2640 Douglas Street
Victoria, BC V8T 4M1
Tel: 250-881-7372
Fax: 250-881-7470

L937596

Analyses Required

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D/M/Y)	Number of Containers	Analyses Required										Remarks (over)	
				Anions	Alkalinity	Turbidity, Color	pH	Hardness	TDS	Conductivity	Total Metals	Total Coliforms + E. coli	RUSH		
21604 -01	H ₂ O	29/09/10	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Full drinking water package
-02															Please include
-03															DW metals scan
-04															+ ICP W
-05															total coliforms
-06															+ E. coli
-07															
-08															
-09															
-10															
-11															
-12															

Sampler's Signature: T. Lobelle	Relinquished by: Signature: T. Lobelle	Company: Golder	Date: 29/09/10	Time: 16:30	Received by: Signature	Company
Sample Storage (°C): ON ICE	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments: Full drinking water package	Method of Shipment: 9:00 AM Express	Waybill No.: D-013331983	Received for Lab by:		Date	Time
	Shipped by: DHL	Shipment Condition: Seal Intact:	Temp (°C): 3/6	Cooler opened by: SH	Date: 30/Sept/10	Time: 09:01

WHITE: Golder copy YELLOW: Lab copy PINK: Lab returns with Final Report



GOLDER ASSOCIATES LTD.
ATTN: MARK BOLTON
3795 CAREY ROAD
VICTORIA BC V8Z 6T8
Phone: 250-419-4905

Date Received: 22-DEC-10
Report Date: 30-DEC-10 16:56 (MT)
Version: FINAL

Certificate of Analysis

Lab Work Order #: L965282
Project P.O. #: NOT SUBMITTED
Job Reference: 07-1414-0014-3000-3300
Legal Site Desc:
C of C Numbers: 0512

Dean Watt
Account Manager

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

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LIMITED Part of the ALS Group A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L965282-1			
Grouping	Analyte				
WATER					
Physical Tests	Colour, True (CU)	<5.0			
	Conductivity (uS/cm)	383			
	Hardness (as CaCO3) (mg/L)	179			
	pH (pH)	7.97			
	Total Dissolved Solids (mg/L)	229			
	Turbidity (NTU)	2.68			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	193			
	Chloride (Cl) (mg/L)	13.1			
	Fluoride (F) (mg/L)	0.041			
	Nitrate (as N) (mg/L)	<0.0050			
	Nitrite (as N) (mg/L)	<0.0010			
	Sulfate (SO4) (mg/L)	13.5			
Bacteriological Tests	E. coli (MPN/100mL)	<1			
	Coliform Bacteria - Total (MPN/100mL)	3			
Total Metals	Aluminum (Al)-Total (mg/L)	<0.010			
	Antimony (Sb)-Total (mg/L)	<0.00050			
	Arsenic (As)-Total (mg/L)	0.00013			
	Barium (Ba)-Total (mg/L)	<0.020			
	Beryllium (Be)-Total (mg/L)	<0.0050			
	Bismuth (Bi)-Total (mg/L)	<0.20			
	Boron (B)-Total (mg/L)	<0.10			
	Cadmium (Cd)-Total (mg/L)	<0.00020			
	Calcium (Ca)-Total (mg/L)	59.7			
	Chromium (Cr)-Total (mg/L)	<0.0020			
	Cobalt (Co)-Total (mg/L)	<0.010			
	Copper (Cu)-Total (mg/L)	<0.0010			
	Iron (Fe)-Total (mg/L)	0.330			
	Lead (Pb)-Total (mg/L)	<0.00050			
	Lithium (Li)-Total (mg/L)	<0.010			
	Magnesium (Mg)-Total (mg/L)	7.34			
	Manganese (Mn)-Total (mg/L)	0.137			
	Mercury (Hg)-Total (mg/L)	<0.00020			
	Molybdenum (Mo)-Total (mg/L)	<0.030			
	Nickel (Ni)-Total (mg/L)	<0.050			
	Phosphorus (P)-Total (mg/L)	<0.30			
	Potassium (K)-Total (mg/L)	0.41			

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L965282-1			
Grouping	Analyte				
WATER					
Total Metals	Selenium (Se)-Total (mg/L)	<0.0010			
	Silicon (Si)-Total (mg/L)	9.78			
	Silver (Ag)-Total (mg/L)	<0.010			
	Sodium (Na)-Total (mg/L)	7.8			
	Strontium (Sr)-Total (mg/L)	0.517			
	Thallium (Tl)-Total (mg/L)	<0.20			
	Tin (Sn)-Total (mg/L)	<0.030			
	Titanium (Ti)-Total (mg/L)	<0.010			
	Uranium (U)-Total (mg/L)	<0.00010			
	Vanadium (V)-Total (mg/L)	<0.030			
	Zinc (Zn)-Total (mg/L)	<0.050			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	APHA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrite detection is by UV absorbance and not conductivity.			
ANIONS-NO3-IC-VA	Water	Nitrate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrate detection is by UV absorbance and not conductivity.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 "Color"
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 Color
This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
ECOLI-COLI-HLTH-VA	Water	E.coli by Colilert	APHA METHOD 9223
This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.			
HG-TOT-DW-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-TOT-LOW-MS-VA	Water	Total Metals in Water by ICPMS(Low)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TCOLI-COLI-HLTH-VA Water Total coliform by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-VA Water Total Dissolved Solids by Gravimetric APHA 2540 C - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

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

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
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

0512

GLOSSARY OF REPORT TERMS

Surrogate A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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 of sample.

mg/L milligrams per litre.

< - Less than.

D.L. The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

Page 1 of 9

Client: GOLDER ASSOCIATES LTD.
 3795 CAREY ROAD
 VICTORIA BC V8Z 6T8
 Contact: MARK BOLTON

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-COL-VA		Water						
Batch	R1780443							
WG1221930-12	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			93		%		85-115	27-DEC-10
WG1221930-15	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			108		%		85-115	27-DEC-10
WG1221930-21	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			97		%		85-115	27-DEC-10
WG1221930-3	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			95		%		85-115	27-DEC-10
WG1221930-6	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			112		%		85-115	27-DEC-10
WG1221930-9	CRM	VA-ALKH-CONTROL						
Alkalinity, Total (as CaCO3)			99		%		85-115	27-DEC-10
WG1221930-11	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-14	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-17	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-2	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-20	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-5	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-8	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
ANIONS-CL-IC-VA		Water						
Batch	R1777223							
WG1221291-11	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			101		%		85-115	23-DEC-10
WG1221291-2	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			101		%		85-115	23-DEC-10
WG1221291-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-10	MB							
Chloride (Cl)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-4	MB							
Chloride (Cl)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-6	MB							



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-CL-IC-VA		Water						
Batch	R1777223							
WG1221291-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-8	MB							
Chloride (Cl)			<0.50		mg/L		0.5	23-DEC-10
ANIONS-F-IC-VA		Water						
Batch	R1777223							
WG1221291-11	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			108		%		85-115	23-DEC-10
WG1221291-2	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			107		%		85-115	23-DEC-10
WG1221291-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	23-DEC-10
WG1221291-10	MB							
Fluoride (F)			<0.020		mg/L		0.02	23-DEC-10
WG1221291-4	MB							
Fluoride (F)			<0.020		mg/L		0.02	23-DEC-10
WG1221291-6	MB							
Fluoride (F)			<0.020		mg/L		0.02	23-DEC-10
WG1221291-8	MB							
Fluoride (F)			<0.020		mg/L		0.02	23-DEC-10
ANIONS-NO2-IC-VA		Water						
Batch	R1777223							
WG1221291-11	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			95		%		85-115	23-DEC-10
WG1221291-2	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			95		%		85-115	23-DEC-10
WG1221291-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	23-DEC-10
WG1221291-10	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	23-DEC-10
WG1221291-4	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	23-DEC-10
WG1221291-6	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	23-DEC-10
WG1221291-8	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	23-DEC-10
ANIONS-NO3-IC-VA		Water						



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

Page 3 of 9

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-NO3-IC-VA		Water						
Batch	R1777223							
WG1221291-11	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		85-115	23-DEC-10
WG1221291-2	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		85-115	23-DEC-10
WG1221291-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	23-DEC-10
WG1221291-10	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	23-DEC-10
WG1221291-4	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	23-DEC-10
WG1221291-6	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	23-DEC-10
WG1221291-8	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	23-DEC-10
ANIONS-SO4-IC-VA		Water						
Batch	R1777223							
WG1221291-11	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			103		%		85-115	23-DEC-10
WG1221291-2	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			103		%		85-115	23-DEC-10
WG1221291-1	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-10	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-4	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-6	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	23-DEC-10
WG1221291-8	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	23-DEC-10
COLOUR-TRUE-VA		Water						
Batch	R1778443							
WG1221672-2	CRM	VA-COL-C-25						
Colour, True			101		%		85-115	23-DEC-10
WG1221672-5	CRM	VA-COL-C-25						
Colour, True			103		%		85-115	23-DEC-10
WG1221672-1	MB							
Colour, True			<5.0		CU		5	23-DEC-10



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
COLOUR-TRUE-VA								
Water								
Batch R1778443								
WG1221672-4	MB							
Colour, True			<5.0		CU		5	23-DEC-10
EC-PCT-VA								
Water								
Batch R1776443								
WG1221333-9	CRM	VA-EC-PCT-CONTROL						
Conductivity			100		%		90-110	23-DEC-10
WG1221333-1	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
WG1221333-2	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
WG1221333-3	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
HG-TOT-DW-CVAFS-VA								
Water								
Batch R1777403								
WG1221837-2	CRM	VA-HG-WATRM						
Mercury (Hg)-Total			88		%		80-120	24-DEC-10
WG1221837-1	MB							
Mercury (Hg)-Total			<0.00020		mg/L		0.0002	24-DEC-10
MET-TOT-ICP-VA								
Water								
Batch R1775703								
WG1221309-4	CRM	VA-HIGH-WATRM						
Beryllium (Be)-Total			97		%		80-120	23-DEC-10
Bismuth (Bi)-Total			96		%		80-120	23-DEC-10
Cobalt (Co)-Total			93		%		80-120	23-DEC-10
Iron (Fe)-Total			95		%		80-120	23-DEC-10
Lithium (Li)-Total			101		%		80-120	23-DEC-10
Molybdenum (Mo)-Total			97		%		80-120	23-DEC-10
Nickel (Ni)-Total			94		%		80-120	23-DEC-10
Phosphorus (P)-Total			98		%		80-120	23-DEC-10
Silicon (Si)-Total			101		%		80-120	23-DEC-10
Silver (Ag)-Total			94		%		80-120	23-DEC-10
Sodium (Na)-Total			100		%		80-120	23-DEC-10
Strontium (Sr)-Total			99		%		80-120	23-DEC-10
Thallium (Tl)-Total			96		%		80-120	23-DEC-10
Tin (Sn)-Total			95		%		80-120	23-DEC-10



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA		Water						
Batch	R1775703							
WG1221309-4 CRM	VA-HIGH-WATRM							
Titanium (Ti)-Total			104		%		80-120	23-DEC-10
Vanadium (V)-Total			99		%		80-120	23-DEC-10
WG1221309-1 MB								
Beryllium (Be)-Total			<0.0050		mg/L		0.005	23-DEC-10
Bismuth (Bi)-Total			<0.20		mg/L		0.2	23-DEC-10
Cobalt (Co)-Total			<0.010		mg/L		0.01	23-DEC-10
Iron (Fe)-Total			<0.030		mg/L		0.03	23-DEC-10
Lithium (Li)-Total			<0.010		mg/L		0.01	23-DEC-10
Molybdenum (Mo)-Total			<0.030		mg/L		0.03	23-DEC-10
Nickel (Ni)-Total			<0.050		mg/L		0.05	23-DEC-10
Phosphorus (P)-Total			<0.30		mg/L		0.3	23-DEC-10
Silicon (Si)-Total			<0.050		mg/L		0.05	23-DEC-10
Silver (Ag)-Total			<0.010		mg/L		0.01	23-DEC-10
Sodium (Na)-Total			<2.0		mg/L		2	23-DEC-10
Strontium (Sr)-Total			<0.0050		mg/L		0.005	23-DEC-10
Thallium (Tl)-Total			<0.20		mg/L		0.2	23-DEC-10
Tin (Sn)-Total			<0.030		mg/L		0.03	23-DEC-10
Titanium (Ti)-Total			<0.010		mg/L		0.01	23-DEC-10
Vanadium (V)-Total			<0.030		mg/L		0.03	23-DEC-10
MET-TOT-LOW-MS-VA		Water						
Batch	R1777103							
WG1221309-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	23-DEC-10
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	23-DEC-10
Arsenic (As)-Total			<0.00010		mg/L		0.0001	23-DEC-10
Barium (Ba)-Total			<0.000050		mg/L		0.00005	23-DEC-10
Boron (B)-Total			<0.010		mg/L		0.01	23-DEC-10
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	23-DEC-10
Calcium (Ca)-Total			<0.020		mg/L		0.02	23-DEC-10
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	23-DEC-10
Copper (Cu)-Total			<0.00050		mg/L		0.0005	23-DEC-10
Lead (Pb)-Total			<0.000050		mg/L		0.00005	23-DEC-10
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	23-DEC-10
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	23-DEC-10



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA								
	Water							
Batch	R1777103							
WG1221309-1	MB							
Potassium (K)-Total			<0.050		mg/L		0.05	23-DEC-10
Selenium (Se)-Total			<0.0010		mg/L		0.001	23-DEC-10
Uranium (U)-Total			<0.000010		mg/L		0.00001	23-DEC-10
Zinc (Zn)-Total			<0.0030		mg/L		0.003	23-DEC-10
Batch	R1782403							
WG1221309-4	CRM	VA-HIGH-WATRM						
Aluminum (Al)-Total			96		%		80-120	27-DEC-10
Antimony (Sb)-Total			89		%		80-120	27-DEC-10
Arsenic (As)-Total			88		%		80-120	27-DEC-10
Barium (Ba)-Total			91		%		80-120	27-DEC-10
Boron (B)-Total			89		%		80-120	27-DEC-10
Cadmium (Cd)-Total			88		%		80-120	27-DEC-10
Calcium (Ca)-Total			89		%		80-120	27-DEC-10
Chromium (Cr)-Total			93		%		80-120	27-DEC-10
Copper (Cu)-Total			88		%		80-120	27-DEC-10
Lead (Pb)-Total			89		%		80-120	27-DEC-10
Magnesium (Mg)-Total			94		%		80-120	27-DEC-10
Manganese (Mn)-Total			92		%		80-120	27-DEC-10
Potassium (K)-Total			92		%		80-120	27-DEC-10
Selenium (Se)-Total			87		%		80-120	27-DEC-10
Uranium (U)-Total			91		%		80-120	27-DEC-10
Zinc (Zn)-Total			86		%		80-120	27-DEC-10
PH-PCT-VA								
	Water							
Batch	R1776443							
WG1221333-10	CRM	VA-PH7-BUF						
pH			6.99		pH		6.9-7.1	23-DEC-10
TDS-VA								
	Water							
Batch	R1786344							
WG1221971-2	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			98		%		85-115	27-DEC-10
WG1221971-5	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			98		%		85-115	27-DEC-10
WG1221971-8	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			101		%		85-115	27-DEC-10



Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TDS-VA		Water						
Batch	R1786344							
WG1221971-1 MB								
Total Dissolved Solids			<10		mg/L		10	27-DEC-10
WG1221971-4 MB								
Total Dissolved Solids			<10		mg/L		10	27-DEC-10
WG1221971-7 MB								
Total Dissolved Solids			<10		mg/L		10	27-DEC-10
TURBIDITY-VA		Water						
Batch	R1775663							
WG1221671-10 CRM		VA-TURB-SPK-8						
Turbidity			101		%		85-115	23-DEC-10
WG1221671-2 CRM		VA-TURB-SPK-8						
Turbidity			105		%		85-115	23-DEC-10
WG1221671-4 CRM		VA-TURB-SPK-8						
Turbidity			101		%		85-115	23-DEC-10
WG1221671-6 CRM		VA-TURB-SPK-8						
Turbidity			101		%		85-115	23-DEC-10
WG1221671-1 MB								
Turbidity			<0.10		NTU		0.1	23-DEC-10
WG1221671-3 MB								
Turbidity			<0.10		NTU		0.1	23-DEC-10
WG1221671-5 MB								
Turbidity			<0.10		NTU		0.1	23-DEC-10
WG1221671-9 MB								
Turbidity			<0.10		NTU		0.1	23-DEC-10

Quality Control Report

Workorder: L965282

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Legend:

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:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L965282

Report Date: 30-DEC-10

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH by Meter (Automated)	1	22-DEC-10	23-DEC-10 10:44	0.25	23	hours	EHTR-FM

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L965282 were received on 22-DEC-10 14:55.

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.

Short Holding Time

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

Rush Processing



Project Number: 07-1414-0014-3000-3300		Laboratory Name: ALS	
Golder Contact: macle Bolton		Golder E-mail Address: mbolton@golder.com	Address: 8081 Langford Hwy, Burnaby Telephone/Fax: 604-253-4188
		Contact: Amber Springer	

V5C 6C6
Tel: 604-298-6623
Fax: 604-298-5253

10 Gladwin Road
Victoria, B.C.
V2T 4S8
Tel: 604-850-8786
Fax: 604-850-8756

3795 Carey Road, 2nd floor
Victoria, B.C.
V8Z 6T8
Tel: 250-881-7372
Fax: 250-881-7470

Analyses Required

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D / M / Y)	Number of Containers	Analyses Required										Remarks (over)	
				Color	Turbidity	Conductivity	Hardness, pH	TDS	Anion Scan	Total metals	Total Alkalinity	Total Coliforms + E. Coli	RUSH		
L965080 0512 -01	H2O	22/12/10	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Full drinking water package + Total Coliforms + E. Coli
-02															ed drinking water metals ICP
-03															
-04															
-05															
-06															
-07															
-08															
-09															
-10															
-11															
-12															

Sampler's Signature: T. Labelle	Relinquished by: Signature T. Labelle	Company Golder	Date Dec 22/2010	Time 12:00pm	Received by: Signature	Company
Sample Storage (°C) ON ICE	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments: Full Drinking Water Package	Method of Shipment: Air	Waybill No.:	Received for Lab by:		Date	Time
	Shipped by: Harbour Air	Shipment Condition: Seal Intact: Yes	Temp (°C) 5	Cooler opened by: JP	Date Dec 22/10	Time 14:55



GOLDER ASSOCIATES LTD.
ATTN: MARK BOLTON
3795 CAREY ROAD
VICTORIA BC V8Z 6T8
Phone: 250-419-4905

Date Received: 22-DEC-10
Report Date: 30-DEC-10 16:43 (MT)
Version: FINAL

Certificate of Analysis

Lab Work Order #: L965204
Project P.O. #: NOT SUBMITTED
Job Reference: 07-1414-0014-3000-3300
Legal Site Desc:
C of C Numbers: 0511

Dean Watt
Account Manager

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

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LIMITED Part of the ALS Group A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L965204-1	L965204-2	L965204-3	L965204-4	L965204-5	
	21-DEC-10	21-DEC-10	21-DEC-10	21-DEC-10	21-DEC-10	
	0511-01	0511-02	0511-03	0511-04	0511-05	
Grouping	Analyte					
WATER						
Physical Tests	Colour, True (CU)	<5.0	<5.0	<5.0	<5.0	<5.0
	Conductivity (uS/cm)	701	468	572	335	59.3
	Hardness (as CaCO3) (mg/L)	350	207	268	151	23.0
	pH (pH)	7.70	7.44	7.35	7.96	7.03
	Total Dissolved Solids (mg/L)	431	282	379	206	22
	Turbidity (NTU)	0.13	0.42	4.44	1.82	0.20
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	353	175	169	107	22.2
	Chloride (Cl) (mg/L)	32.6	26.9	26.2	32.9	3.86
	Fluoride (F) (mg/L)	0.037	<0.020	0.314	0.041	<0.020
	Nitrate (as N) (mg/L)	1.32	8.52	2.32	<0.0050	0.0146
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	0.0021	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	37.9	16.1	109	17.0	3.24
Bacteriological Tests	E. coli (MPN/100mL)	<1	<1	<1	<1	<1
	Coliform Bacteria - Total (MPN/100mL)	27	<1	<1	15	<1
Total Metals	Aluminum (Al)-Total (mg/L)	<0.020 ^{dia}	<0.010	0.063	<0.010	0.016
	Antimony (Sb)-Total (mg/L)	<0.0010 ^{dia}	<0.00050	<0.0010 ^{dia}	<0.00050	<0.00050
	Arsenic (As)-Total (mg/L)	<0.00020 ^{dia}	<0.00010	<0.00020 ^{dia}	0.00013	<0.00010
	Barium (Ba)-Total (mg/L)	<0.040 ^{dia}	<0.020	<0.040 ^{dia}	<0.020	<0.020
	Beryllium (Be)-Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.20 ^{dia}	<0.10	<0.20 ^{dia}	<0.10	<0.10
	Cadmium (Cd)-Total (mg/L)	<0.00040 ^{dia}	<0.00020	0.00066	<0.00020	<0.00020
	Calcium (Ca)-Total (mg/L)	119	64.3	91.4	51.2	7.36
	Chromium (Cr)-Total (mg/L)	<0.0040 ^{dia}	<0.0020	<0.0040 ^{dia}	<0.0020	<0.0020
	Cobalt (Co)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Copper (Cu)-Total (mg/L)	0.0147	0.0020	0.0039	<0.0010	0.0024
	Iron (Fe)-Total (mg/L)	<0.030	<0.030	0.894	0.258	<0.030
	Lead (Pb)-Total (mg/L)	<0.0010 ^{dia}	0.00060	<0.0010 ^{dia}	<0.00050	<0.00050
	Lithium (Li)-Total (mg/L)	<0.010	<0.010	0.016	0.010	<0.010
	Magnesium (Mg)-Total (mg/L)	13.0	11.4	9.79	5.67	1.12
	Manganese (Mn)-Total (mg/L)	<0.0040 ^{DLA}	<0.0020	0.638	0.0936	<0.0020
	Mercury (Hg)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Molybdenum (Mo)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030	<0.030
	Nickel (Ni)-Total (mg/L)	<0.050	<0.050	0.095	<0.050	<0.050
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	0.77	0.17	0.67	0.48	<0.10

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

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L965204-6	L965204-7	L965204-8	L965204-9	
	21-DEC-10	21-DEC-10	21-DEC-10	21-DEC-10	
	0511-06	0511-07	0511-08	0511-09	
Grouping	Analyte				
WATER					
Physical Tests	Colour, True (CU)	<5.0	<5.0	13.7	<5.0
	Conductivity (uS/cm)	59.3	86.0	196	285
	Hardness (as CaCO3) (mg/L)	23.0	33.6	59.3	139
	pH (pH)	7.05	6.74	7.92	8.08
	Total Dissolved Solids (mg/L)	34	53	135	189
	Turbidity (NTU)	0.30	0.97	4.36	1.74
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	22.5	31.1	81.9	137
	Chloride (Cl) (mg/L)	3.83	5.34	11.6	3.53
	Fluoride (F) (mg/L)	<0.020	<0.020	<0.020	<0.020
	Nitrate (as N) (mg/L)	0.0133	0.368	<0.0050	<0.0050
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	3.20	3.19	6.29	12.2
Bacteriological Tests	E. coli (MPN/100mL)	<1	<1	<1	
	Coliform Bacteria - Total (MPN/100mL)	<1	6	<1	
Total Metals	Aluminum (Al)-Total (mg/L)	<0.010	0.075	0.014	<0.010
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050
	Arsenic (As)-Total (mg/L)	<0.00010	<0.00010	0.00020	<0.00010
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020
	Beryllium (Be)-Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.10	<0.10	0.14	<0.10
	Cadmium (Cd)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020
	Calcium (Ca)-Total (mg/L)	7.40	11.0	19.4	47.3
	Chromium (Cr)-Total (mg/L)	<0.0020	<0.0020	<0.0020	<0.0020
	Cobalt (Co)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Copper (Cu)-Total (mg/L)	0.0024	0.0052	0.0034	<0.0010
	Iron (Fe)-Total (mg/L)	<0.030	0.193	1.96	0.035
	Lead (Pb)-Total (mg/L)	<0.00050	0.00063	<0.00050	0.00112
	Lithium (Li)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Magnesium (Mg)-Total (mg/L)	1.10	1.50	2.65	5.12
	Manganese (Mn)-Total (mg/L)	<0.0020	0.0284	0.0705	0.0389
	Mercury (Hg)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020
	Molybdenum (Mo)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030
	Nickel (Ni)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	<0.10	0.14	0.10	0.10

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

ALS LABORATORY GROUP ANALYTICAL REPORT

		Sample ID	L965204-1	L965204-2	L965204-3	L965204-4	L965204-5
		Description					
		Sampled Date	21-DEC-10	21-DEC-10	21-DEC-10	21-DEC-10	21-DEC-10
		Sampled Time					
		Client ID	0511-01	0511-02	0511-03	0511-04	0511-05
Grouping	Analyte						
WATER							
Total Metals	Selenium (Se)-Total (mg/L)		<0.0020 ^{dla}	<0.0010	<0.0020 ^{dla}	<0.0010	<0.0010
	Silicon (Si)-Total (mg/L)		6.11	9.51	7.70	10.1	3.61
	Silver (Ag)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Sodium (Na)-Total (mg/L)		21.4	6.0	11.6	19.6	2.4
	Strontium (Sr)-Total (mg/L)		0.322	0.0918	0.265	1.30	0.0169
	Thallium (Tl)-Total (mg/L)		<0.20	<0.20	<0.20	<0.20	<0.20
	Tin (Sn)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Titanium (Ti)-Total (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)		0.00139	<0.00010	<0.00020 ^{dla}	<0.00010	<0.00010
	Vanadium (V)-Total (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Zinc (Zn)-Total (mg/L)		<0.10 ^{dla}	<0.050	0.16	<0.050	<0.050

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

ALS LABORATORY GROUP ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L965204-6	L965204-7	L965204-8	L965204-9	
		21-DEC-10	21-DEC-10	21-DEC-10	21-DEC-10	
		0511-06	0511-07	0511-08	0511-09	
Grouping	Analyte					
WATER						
Total Metals	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	
	Silicon (Si)-Total (mg/L)	3.62	4.98	11.9	12.0	
	Silver (Ag)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	
	Sodium (Na)-Total (mg/L)	2.4	3.4	20.8	4.6	
	Strontium (Sr)-Total (mg/L)	0.0171	0.0321	0.0560	0.128	
	Thallium (Tl)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	
	Tin (Sn)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030	
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	
	Uranium (U)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	
	Vanadium (V)-Total (mg/L)	<0.030	<0.030	<0.030	<0.030	
	Zinc (Zn)-Total (mg/L)	<0.050	<0.050	<0.050	0.207	

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

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	APHA 310.2
		This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.	
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
ANIONS-F-IC-VA	Water	Fluoride by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
ANIONS-NO2-IC-VA	Water	Nitrite by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrite detection is by UV absorbance and not conductivity.	
ANIONS-NO3-IC-VA	Water	Nitrate by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Specifically, the nitrate detection is by UV absorbance and not conductivity.	
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 "Color"
		This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.	
COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	APHA 2120 Color
		This analysis is carried out using procedures adapted from APHA Method 2120 "Color". Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Apparent Colour is determined without prior sample filtration. Colour is pH dependent. Unless otherwise indicated, reported colour results pertain to the pH of the sample as received, to within +/- 1 pH unit.	
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
		This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.	
ECOLI-COLI-HLTH-VA	Water	E.coli by Colilert	APHA METHOD 9223
		This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.	
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
		Hardness is calculated from Calcium and Magnesium concentrations, and is expressed as calcium carbonate equivalents.	
HG-TOT-DW-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7
		This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).	
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
		This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).	
MET-TOT-LOW-MS-VA	Water	Total Metals in Water by ICPMS(Low)	EPA SW-846 3005A/6020A

Reference Information

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TCOLI-COLI-HLTH-VA Water Total coliform by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is quantified by a statistical estimation of bacteria density (most probable number).

TDS-VA Water Total Dissolved Solids by Gravimetric APHA 2540 C - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA Water Turbidity by Meter APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

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

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
VA	ALS LABORATORY GROUP - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

0511

GLOSSARY OF REPORT TERMS

Surrogate A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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 of sample.

mg/L milligrams per litre.

< - Less than.

D.L. The reported Detection Limit, also known as the Limit of Reporting (LOR).

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.



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Client: GOLDER ASSOCIATES LTD.
 3795 CAREY ROAD
 VICTORIA BC V8Z 6T8
 Contact: MARK BOLTON

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-COL-VA		Water						
Batch	R1780443							
WG1221930-12	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			93		%		85-115	27-DEC-10
WG1221930-15	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			108		%		85-115	27-DEC-10
WG1221930-21	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			97		%		85-115	27-DEC-10
WG1221930-3	CRM	VA-ALKL-CONTROL						
Alkalinity, Total (as CaCO3)			95		%		85-115	27-DEC-10
WG1221930-6	CRM	VA-ALKM-CONTROL						
Alkalinity, Total (as CaCO3)			112		%		85-115	27-DEC-10
WG1221930-9	CRM	VA-ALKH-CONTROL						
Alkalinity, Total (as CaCO3)			99		%		85-115	27-DEC-10
WG1221930-11	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-14	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-17	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-2	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-20	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-5	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
WG1221930-8	MB							
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-DEC-10
ANIONS-CL-IC-VA		Water						
Batch	R1774443							
WG1220767-10	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			100		%		85-115	22-DEC-10
WG1220767-2	CRM	VA-IC-IVA2-ION23110						
Chloride (Cl)			101		%		85-115	22-DEC-10
WG1220767-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-4	MB							
Chloride (Cl)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-6	MB							
Chloride (Cl)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-7	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-CL-IC-VA		Water						
Batch	R1774443							
WG1220767-7	MB							
Chloride (Cl)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-9	MB							
Chloride (Cl)			<0.50		mg/L		0.5	22-DEC-10
ANIONS-F-IC-VA		Water						
Batch	R1774443							
WG1220767-10	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			107		%		85-115	22-DEC-10
WG1220767-2	CRM	VA-IC-IVA2-ION23110						
Fluoride (F)			108		%		85-115	22-DEC-10
WG1220767-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	22-DEC-10
WG1220767-4	MB							
Fluoride (F)			<0.020		mg/L		0.02	22-DEC-10
WG1220767-6	MB							
Fluoride (F)			<0.020		mg/L		0.02	22-DEC-10
WG1220767-7	MB							
Fluoride (F)			<0.020		mg/L		0.02	22-DEC-10
WG1220767-9	MB							
Fluoride (F)			<0.020		mg/L		0.02	22-DEC-10
ANIONS-NO2-IC-VA		Water						
Batch	R1774443							
WG1220767-10	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			93		%		85-115	22-DEC-10
WG1220767-2	CRM	VA-IC-IVA2-ION23110						
Nitrite (as N)			96		%		85-115	22-DEC-10
WG1220767-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	22-DEC-10
WG1220767-4	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	22-DEC-10
WG1220767-6	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	22-DEC-10
WG1220767-7	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	22-DEC-10
WG1220767-9	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	22-DEC-10
ANIONS-NO3-IC-VA		Water						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ANIONS-NO3-IC-VA		Water						
Batch	R1774443							
WG1220767-10	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			100		%		85-115	22-DEC-10
WG1220767-2	CRM	VA-IC-IVA2-ION23110						
Nitrate (as N)			101		%		85-115	22-DEC-10
WG1220767-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	22-DEC-10
WG1220767-4	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	22-DEC-10
WG1220767-6	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	22-DEC-10
WG1220767-7	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	22-DEC-10
WG1220767-9	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	22-DEC-10
ANIONS-SO4-IC-VA		Water						
Batch	R1774443							
WG1220767-10	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			102		%		85-115	22-DEC-10
WG1220767-2	CRM	VA-IC-IVA2-ION23110						
Sulfate (SO4)			103		%		85-115	22-DEC-10
WG1220767-1	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-4	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-6	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-7	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	22-DEC-10
WG1220767-9	MB							
Sulfate (SO4)			<0.50		mg/L		0.5	22-DEC-10
COLOUR-TRUE-VA		Water						
Batch	R1778443							
WG1221672-2	CRM	VA-COL-C-25						
Colour, True			101		%		85-115	23-DEC-10
WG1221672-5	CRM	VA-COL-C-25						
Colour, True			103		%		85-115	23-DEC-10
WG1221672-3	DUP	L965204-8						
Colour, True		13.7	13.7		CU	0.0	20	23-DEC-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
COLOUR-TRUE-VA		Water						
Batch	R1778443							
WG1221672-1	MB							
Colour, True			<5.0		CU		5	23-DEC-10
WG1221672-4	MB							
Colour, True			<5.0		CU		5	23-DEC-10
EC-PCT-VA		Water						
Batch	R1776443							
WG1221333-9	CRM	VA-EC-PCT-CONTROL						
Conductivity			100		%		90-110	23-DEC-10
WG1221333-1	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
WG1221333-2	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
WG1221333-3	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
Batch	R1776464							
WG1221326-9	CRM	VA-EC-PCT-CONTROL						
Conductivity			98		%		90-110	23-DEC-10
WG1221326-1	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
WG1221326-2	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
WG1221326-3	MB							
Conductivity			<2.0		uS/cm		2	23-DEC-10
HG-TOT-DW-CVAFS-VA		Water						
Batch	R1774903							
WG1221566-2	CRM	VA-HG-WATRM						
Mercury (Hg)-Total			96		%		80-120	23-DEC-10
WG1221566-11	DUP	L965204-9						
Mercury (Hg)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	23-DEC-10
WG1221566-1	MB							
Mercury (Hg)-Total			<0.00020		mg/L		0.0002	23-DEC-10
MET-TOT-ICP-VA		Water						
Batch	R1778923							
WG1221506-2	DUP	L965204-1						
Beryllium (Be)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	24-DEC-10
Bismuth (Bi)-Total		<0.20	<0.20	RPD-NA	mg/L	N/A	20	24-DEC-10
Cobalt (Co)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	24-DEC-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA								
	Water							
Batch	R1778923							
WG1221506-2	DUP	L965204-1						
Iron (Fe)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	24-DEC-10
Lithium (Li)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	24-DEC-10
Molybdenum (Mo)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	24-DEC-10
Nickel (Ni)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	24-DEC-10
Phosphorus (P)-Total		<0.30	<0.30	RPD-NA	mg/L	N/A	20	24-DEC-10
Silicon (Si)-Total		6.11	5.95		mg/L	2.6	20	24-DEC-10
Silver (Ag)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	24-DEC-10
Sodium (Na)-Total		21.4	20.7		mg/L	3.4	20	24-DEC-10
Strontium (Sr)-Total		0.322	0.312		mg/L	3.1	20	24-DEC-10
Thallium (Tl)-Total		<0.20	<0.20	RPD-NA	mg/L	N/A	20	24-DEC-10
Tin (Sn)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	24-DEC-10
Titanium (Ti)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	24-DEC-10
Vanadium (V)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	24-DEC-10
Batch	R1782863							
WG1221506-3	CRM	VA-HIGH-WATRM						
Beryllium (Be)-Total			95		%		80-120	27-DEC-10
Bismuth (Bi)-Total			97		%		80-120	27-DEC-10
Cobalt (Co)-Total			95		%		80-120	27-DEC-10
Iron (Fe)-Total			93		%		80-120	27-DEC-10
Lithium (Li)-Total			96		%		80-120	27-DEC-10
Molybdenum (Mo)-Total			96		%		80-120	27-DEC-10
Nickel (Ni)-Total			95		%		80-120	27-DEC-10
Phosphorus (P)-Total			99		%		80-120	27-DEC-10
Silicon (Si)-Total			103		%		80-120	27-DEC-10
Silver (Ag)-Total			95		%		80-120	27-DEC-10
Sodium (Na)-Total			96		%		80-120	27-DEC-10
Strontium (Sr)-Total			99		%		80-120	27-DEC-10
Thallium (Tl)-Total			98		%		80-120	27-DEC-10
Tin (Sn)-Total			97		%		80-120	27-DEC-10
Titanium (Ti)-Total			101		%		80-120	27-DEC-10
Vanadium (V)-Total			99		%		80-120	27-DEC-10
WG1221506-1	MB							
Beryllium (Be)-Total			<0.0050		mg/L		0.005	27-DEC-10
Bismuth (Bi)-Total			<0.20		mg/L		0.2	27-DEC-10
Cobalt (Co)-Total			<0.010		mg/L		0.01	27-DEC-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-ICP-VA		Water						
Batch	R1782863							
WG1221506-1	MB							
Iron (Fe)-Total			<0.030		mg/L		0.03	27-DEC-10
Lithium (Li)-Total			<0.010		mg/L		0.01	27-DEC-10
Molybdenum (Mo)-Total			<0.030		mg/L		0.03	27-DEC-10
Nickel (Ni)-Total			<0.050		mg/L		0.05	27-DEC-10
Phosphorus (P)-Total			<0.30		mg/L		0.3	27-DEC-10
Silicon (Si)-Total			<0.050		mg/L		0.05	27-DEC-10
Silver (Ag)-Total			<0.010		mg/L		0.01	27-DEC-10
Sodium (Na)-Total			<2.0		mg/L		2	27-DEC-10
Strontium (Sr)-Total			<0.0050		mg/L		0.005	27-DEC-10
Thallium (Tl)-Total			<0.20		mg/L		0.2	27-DEC-10
Tin (Sn)-Total			<0.030		mg/L		0.03	27-DEC-10
Titanium (Ti)-Total			<0.010		mg/L		0.01	27-DEC-10
Vanadium (V)-Total			<0.030		mg/L		0.03	27-DEC-10
MET-TOT-LOW-MS-VA		Water						
Batch	R1781463							
WG1221506-2	DUP	L965204-1						
Aluminum (Al)-Total		<0.020	<0.0060	RPD-NA	mg/L	N/A	20	27-DEC-10
Antimony (Sb)-Total		<0.0010	<0.00020	RPD-NA	mg/L	N/A	20	27-DEC-10
Arsenic (As)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	27-DEC-10
Barium (Ba)-Total		<0.040	0.00384		mg/L	3.3	20	27-DEC-10
Boron (B)-Total		<0.20	0.039		mg/L	4.2	20	27-DEC-10
Cadmium (Cd)-Total		<0.00040	<0.00010	RPD-NA	mg/L	N/A	20	27-DEC-10
Calcium (Ca)-Total		119	111		mg/L	7.1	20	27-DEC-10
Chromium (Cr)-Total		<0.0040	<0.0010	RPD-NA	mg/L	N/A	20	27-DEC-10
Copper (Cu)-Total		0.0147	0.0138		mg/L	6.4	20	27-DEC-10
Lead (Pb)-Total		<0.0010	0.00021	J	mg/L	0.00005	0.002	27-DEC-10
Magnesium (Mg)-Total		13.0	12.5		mg/L	3.6	20	27-DEC-10
Potassium (K)-Total		0.77	0.72		mg/L	6.9	20	27-DEC-10
Selenium (Se)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	27-DEC-10
Uranium (U)-Total		0.00139	0.00135		mg/L	2.9	20	27-DEC-10
Zinc (Zn)-Total		<0.10	0.0093		mg/L	5.6	20	27-DEC-10
Batch	R1782403							
WG1221506-3	CRM	VA-HIGH-WATRM						
Aluminum (Al)-Total			101		%		80-120	27-DEC-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA								
	Water							
Batch	R1782403							
WG1221506-3 CRM		VA-HIGH-WATRM						
Antimony (Sb)-Total			89		%		80-120	27-DEC-10
Arsenic (As)-Total			89		%		80-120	27-DEC-10
Barium (Ba)-Total			92		%		80-120	27-DEC-10
Boron (B)-Total			87		%		80-120	27-DEC-10
Cadmium (Cd)-Total			90		%		80-120	27-DEC-10
Calcium (Ca)-Total			91		%		80-120	27-DEC-10
Chromium (Cr)-Total			91		%		80-120	27-DEC-10
Copper (Cu)-Total			89		%		80-120	27-DEC-10
Lead (Pb)-Total			90		%		80-120	27-DEC-10
Magnesium (Mg)-Total			93		%		80-120	27-DEC-10
Manganese (Mn)-Total			92		%		80-120	27-DEC-10
Potassium (K)-Total			91		%		80-120	27-DEC-10
Selenium (Se)-Total			89		%		80-120	27-DEC-10
Uranium (U)-Total			97		%		80-120	27-DEC-10
Zinc (Zn)-Total			87		%		80-120	27-DEC-10
Batch	R1788124							
WG1221506-2 DUP		L965204-1						
Manganese (Mn)-Total		<0.0040	0.00012	J	mg/L	0.00005	0.008	29-DEC-10
Batch	R1791823							
WG1221506-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	29-DEC-10
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	29-DEC-10
Arsenic (As)-Total			<0.00010		mg/L		0.0001	29-DEC-10
Barium (Ba)-Total			<0.000050		mg/L		0.00005	29-DEC-10
Boron (B)-Total			<0.010		mg/L		0.01	29-DEC-10
Cadmium (Cd)-Total			<0.000050		mg/L		0.00005	29-DEC-10
Calcium (Ca)-Total			<0.020		mg/L		0.02	29-DEC-10
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	29-DEC-10
Copper (Cu)-Total			<0.00050		mg/L		0.0005	29-DEC-10
Lead (Pb)-Total			<0.000050		mg/L		0.00005	29-DEC-10
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	29-DEC-10
Manganese (Mn)-Total			<0.000050		mg/L		0.00005	29-DEC-10
Potassium (K)-Total			<0.050		mg/L		0.05	29-DEC-10
Selenium (Se)-Total			<0.0010		mg/L		0.001	29-DEC-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TOT-LOW-MS-VA Water								
Batch	R1791823							
WG1221506-1	MB							
Uranium (U)-Total			<0.000010		mg/L		0.00001	29-DEC-10
Zinc (Zn)-Total			<0.0030		mg/L		0.003	29-DEC-10
PH-PCT-VA Water								
Batch	R1776443							
WG1221333-10	CRM	VA-PH7-BUF						
pH			6.99		pH		6.9-7.1	23-DEC-10
Batch	R1776464							
WG1221326-10	CRM	VA-PH7-BUF						
pH			6.99		pH		6.9-7.1	23-DEC-10
TDS-VA Water								
Batch	R1786344							
WG1221971-2	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			98		%		85-115	27-DEC-10
WG1221971-5	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			98		%		85-115	27-DEC-10
WG1221971-8	CRM	VA-TDS-INFUS-425						
Total Dissolved Solids			101		%		85-115	27-DEC-10
WG1221971-1	MB							
Total Dissolved Solids			<10		mg/L		10	27-DEC-10
WG1221971-4	MB							
Total Dissolved Solids			<10		mg/L		10	27-DEC-10
WG1221971-7	MB							
Total Dissolved Solids			<10		mg/L		10	27-DEC-10
TURBIDITY-VA Water								
Batch	R1769471							
WG1221070-2	CRM	VA-TURB-SPK-8						
Turbidity			104		%		85-115	22-DEC-10
WG1221070-4	CRM	VA-TURB-SPK-8						
Turbidity			102		%		85-115	22-DEC-10
WG1221070-6	CRM	VA-TURB-SPK-8						
Turbidity			101		%		85-115	22-DEC-10
WG1221070-8	CRM	VA-TURB-SPK-8						
Turbidity			102		%		85-115	22-DEC-10
WG1221070-11	DUP	L965204-7						
Turbidity		0.97	0.97		NTU	0.21	25	22-DEC-10



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TURBIDITY-VA	Water							
Batch	R1769471							
WG1221070-1	MB							
Turbidity			<0.10		NTU		0.1	22-DEC-10
WG1221070-3	MB							
Turbidity			<0.10		NTU		0.1	22-DEC-10
WG1221070-5	MB							
Turbidity			<0.10		NTU		0.1	22-DEC-10
WG1221070-7	MB							
Turbidity			<0.10		NTU		0.1	22-DEC-10

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Legend:

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:

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.

Quality Control Report

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH by Meter (Automated)							
	1	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	2	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	3	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	4	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	5	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	6	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	7	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	8	21-DEC-10	23-DEC-10 10:30	0.25	47	hours	EHTR-FM
	9	21-DEC-10	23-DEC-10 10:44	0.25	47	hours	EHTR-FM

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L965204 were received on 22-DEC-10 13:00.

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

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

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

Short Holding Time

L965204

CHAIN OF CUSTODY RECORD/ANALYSIS REQUEST

No 0511 page 1 of 1

Rush Processing



500-4260 Still Creek Drive
Burnaby, British Columbia, Canada V5C 6C6
Telephone 604-298-8623 Fax 604-298-5253

Project Number: 07-1914-0014-3000-3300		Laboratory Name: ALS	
Golder Contact: Mark Bolton		Golder E-mail Address: mbolton@golder.com	
Address: 8031 Lougheed Hwy, Suite 100-Burnaby, BC		Telephone/Fax: 604-253-4183	
Contact: Amber Springer			



Gladwin Road
B.C.

3795 Carey Road, 2nd floor
Victoria, B.C.
V8Z 6T8
Tel: 250-881-7372
Fax: 250-881-7470

D-8786
50-8756

Analyses Required

Sample Control Number (SCN)	Sample Matrix (over)	Date Sampled (D/M/Y)	Number of Containers	Analyses Required								RUSH	Remarks (over)	
				Color	Conductivity	TDS	Hardness, pH	Turbidity	Total Alkalinity	Anion Scan	Total Metals			Total Coliforms + E. Coli
0511 -01	H2O	21/12/10	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Analyze for
-02			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Full drinking
-03			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	water package
-04			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	+ Total Coliforms
-05			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	+ E. coli
-06			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	and include
-07			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	drinking water metals
-08			2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	+ ICP
-09			3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
-10														
-11														
-12														

Sampler's Signature: T. Labelle	Relinquished by: Signature T. Labelle	Company Golder	Date Dec 22/2010	Time	Received by: Signature	Company
Sample Storage (°C) ON ICE	Relinquished by: Signature	Company	Date	Time	Received by: Signature	Company
Comments: Full Drinking Water Package Sampling Times 9:35 - 10:15	Method of Shipment:	Waybill No.:	Received for Lab by:	Date 12/22/10	Time 1:00	
	Shipped by:	Shipment Condition: Seal Intact:	Temp (°C)	Cooler opened by:	Date	Time