



ENVIRONMENTAL DYNAMICS INC.
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Date Received: 27-NOV-13
Report Date: 13-DEC-13 12:38 (MT)
Version: FINAL REV. 3

Client Phone: 867-393-4882

Certificate of Analysis

Lab Work Order #: L1396670
Project P.O. #: NOT SUBMITTED
Job Reference: 13-Y-0452
C of C Numbers: 1, 2
Legal Site Desc:

Comments: 5-DEC-2013 This report replaces and supersedes previously sent report. This report includes modified sample id for ALS identified sample L1396670-8.

13-DEC-2013 Revision 2: This revision replaces and supersedes previous revision of this report. This revision includes Client Sample ID modification for the samples ALS identify as L1396670-3 and L1396670-6 as requested.

Can Dang
Senior Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1396670-1 Surface Water 26-NOV-13 08:48 X10	L1396670-2 Surface Water 26-NOV-13 10:10 NF2	L1396670-3 Surface Water 26-NOV-13 10:00 NF2-B	L1396670-4 Surface Water 26-NOV-13 10:30 X2	L1396670-5 Surface Water 26-NOV-13 08:11 X14	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	249	237	215	233	390
	Hardness (as CaCO3) (mg/L)	137	124	116	125	227
	pH (pH)	7.70	7.40	7.60	7.52	7.59
	Total Suspended Solids (mg/L)	<1.0	4.0	3.6	10.0	1.0
	Total Dissolved Solids (mg/L)	160	150	134	149	290
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	126	116	113	117	147
	Ammonia, Total (as N) (mg/L)	0.0131	0.0100	0.0075	0.0104	0.0455
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.151	0.158	0.145	0.155	0.147
	Nitrate (as N) (mg/L)	0.187	0.212	0.207	0.206	0.186
	Nitrite (as N) (mg/L)	<0.0010	0.0014	<0.0010	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)	0.0020	0.0052	0.0055	0.0089	<0.0020
	Sulfate (SO4) (mg/L)	29.6	29.4	18.7	27.1	111
	Anion Sum (meq/L)	3.15	2.95	2.68	2.92	5.27
	Cation Sum (meq/L)	2.88	2.65	2.46	2.65	4.83
	Cation - Anion Balance (%)	-4.5	-5.2	-4.3	-4.9	-4.3
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.59	1.45	1.47	1.74	1.54
	Total Organic Carbon (mg/L)	1.44	1.44	1.45	1.80	1.55
Total Metals	Aluminum (Al)-Total (mg/L)	0.0104	0.0922	0.105	0.202	0.0201
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	0.00010
	Arsenic (As)-Total (mg/L)	0.00028	0.00062	0.00065	0.00087	0.00035
	Barium (Ba)-Total (mg/L)	0.0633	0.0634	0.0636	0.0652	0.0613
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000114	0.000416	0.000026	0.000261	0.000117
	Calcium (Ca)-Total (mg/L)	39.3	34.5	34.2	35.3	67.1
	Chromium (Cr)-Total (mg/L)	<0.00010	0.00026	0.00028	0.00054	0.00013
	Cobalt (Co)-Total (mg/L)	0.00075	0.00309	0.00015	0.00203	0.00169
	Copper (Cu)-Total (mg/L)	<0.00050	0.00057	0.00057	0.00086	<0.00050
	Iron (Fe)-Total (mg/L)	0.240	0.392	0.278	0.745	0.439
	Lead (Pb)-Total (mg/L)	0.000276	0.00133	0.00121	0.00405	0.000304
	Lithium (Li)-Total (mg/L)	0.00485	0.00629	0.00595	0.00646	0.00572
	Magnesium (Mg)-Total (mg/L)	9.35	8.88	7.48	8.71	14.9
	Manganese (Mn)-Total (mg/L)	0.105	0.188	0.0392	0.157	1.61
	Molybdenum (Mo)-Total (mg/L)	0.000549	0.000683	0.000695	0.000678	0.000577

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1396670-6 Surface Water 26-NOV-13 09:45 NF2-A	L1396670-7 Surface Water 26-NOV-13 09:17 X3A	L1396670-8 Surface Water 26-NOV-13 08:11 X14-R	L1396670-9 Surface Water 26-NOV-13 11:50 R8	L1396670-10 Surface Water 26-NOV-13 11:30 R10	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	248	243	397	191	211
	Hardness (as CaCO3) (mg/L)	131	136	230	103	115
	pH (pH)	7.35	7.62	7.61	7.81	7.71
	Total Suspended Solids (mg/L)	3.4	1.2	1.8	6.6	5.8
	Total Dissolved Solids (mg/L)	159	157	289	118	132
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	114	124	144	110	111
	Ammonia, Total (as N) (mg/L)	0.0119	0.0157	0.0457	0.0096	0.0100
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.169	0.149	0.146	0.141	0.144
	Nitrate (as N) (mg/L)	0.212	0.183	0.183	0.125	0.198
	Nitrite (as N) (mg/L)	0.0020	<0.0010	<0.0010	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)	0.0046	0.0033	<0.0020	0.0106	0.0077
	Sulfate (SO4) (mg/L)	36.4	27.6	110	9.32	18.0
	Anion Sum (meq/L)	3.06	3.08	5.20	2.40	2.61
	Cation Sum (meq/L)	2.83	2.87	4.89	2.18	2.42
	Cation - Anion Balance (%)	-4.0	-3.5	-3.0	-4.9	-3.7
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.65	1.60	1.44	1.53	1.58
	Total Organic Carbon (mg/L)	1.50	1.67	1.53	1.86	1.77
Total Metals	Aluminum (Al)-Total (mg/L)	0.0758	0.0296	0.0184	0.118	0.107
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00056	0.00041	0.00037	0.00086	0.00070
	Barium (Ba)-Total (mg/L)	0.0638	0.0629	0.0631	0.0623	0.0625
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000783	0.000141	0.000135	0.000015	0.000022
	Calcium (Ca)-Total (mg/L)	35.7	38.1	70.1	31.0	32.5
	Chromium (Cr)-Total (mg/L)	0.00030	0.00014	0.00014	0.00030	0.00038
	Cobalt (Co)-Total (mg/L)	0.00602	0.00099	0.00174	0.00011	0.00012
	Copper (Cu)-Total (mg/L)	0.00053	<0.00050	0.00078	0.00053	0.00051
	Iron (Fe)-Total (mg/L)	0.472	0.289	0.479	0.409	0.324
	Lead (Pb)-Total (mg/L)	0.00139	0.000793	0.000360	0.000187	0.000388
	Lithium (Li)-Total (mg/L)	0.00644	0.00497	0.00587	0.00564	0.00572
	Magnesium (Mg)-Total (mg/L)	10.4	8.77	16.0	6.30	7.43
	Manganese (Mn)-Total (mg/L)	0.320	0.108	1.64	0.0421	0.0363
	Molybdenum (Mo)-Total (mg/L)	0.000659	0.000560	0.000933	0.000726	0.000681

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1396670-11 Surface Water 26-NOV-13 11:15 NF1	L1396670-12 Surface Water 26-NOV-13 11:40 R9	L1396670-13 Surface Water 26-NOV-13 13:30 FB1	L1396670-14 Surface Water 27-NOV-13 09:25 TRIP BLANK
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)	217	213	<2.0	<2.0
	Hardness (as CaCO3) (mg/L)	115	114	<0.50	<0.50
	pH (pH)	7.58	7.80	5.88	5.98
	Total Suspended Solids (mg/L)	15.6	4.6	<1.0	<1.0
	Total Dissolved Solids (mg/L)	135	133	<1.0	<1.0
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	115	113	<2.0	<2.0
	Ammonia, Total (as N) (mg/L)	0.0147	0.0107	<0.0050	0.0233 ^{RRV}
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.144	0.144	<0.020	<0.020
	Nitrate (as N) (mg/L)	0.199	0.203	<0.0050	<0.0050
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)	0.0150	0.0113	<0.0020	<0.0020
	Sulfate (SO4) (mg/L)	18.4	17.8	<0.50	<0.50
	Anion Sum (meq/L)	2.69	2.64	<0.10	<0.10
	Cation Sum (meq/L)	2.44	2.41	<0.10	<0.10
	Cation - Anion Balance (%)	-4.9	-4.5	0.0	0.0
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.52	1.60	<0.50	
	Total Organic Carbon (mg/L)	1.94	2.00	<0.50	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	0.283	0.0852	<0.0030	<0.0030
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00101	0.00071	<0.00010	<0.00010
	Barium (Ba)-Total (mg/L)	0.0684	0.0614	<0.000050	<0.000050
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000032	0.000015	<0.000010	<0.000010
	Calcium (Ca)-Total (mg/L)	34.8	32.9	<0.020	<0.020
	Chromium (Cr)-Total (mg/L)	0.00073	0.00024	<0.00010	<0.00010
	Cobalt (Co)-Total (mg/L)	0.00031	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Total (mg/L)	0.00096	<0.00050	<0.00050	<0.00050
	Iron (Fe)-Total (mg/L)	0.641	0.298	<0.010	<0.010
	Lead (Pb)-Total (mg/L)	0.00499	0.000368	<0.000050	<0.000050
	Lithium (Li)-Total (mg/L)	0.00646	0.00578	<0.00050	<0.00050
	Magnesium (Mg)-Total (mg/L)	7.78	7.24	<0.0050	<0.0050
	Manganese (Mn)-Total (mg/L)	0.0619	0.0359	<0.000050	<0.000050
	Molybdenum (Mo)-Total (mg/L)	0.000749	0.000705	<0.000050	<0.000050

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1396670-1 Surface Water 26-NOV-13 08:48 X10	L1396670-2 Surface Water 26-NOV-13 10:10 NF2	L1396670-3 Surface Water 26-NOV-13 10:00 NF2-B	L1396670-4 Surface Water 26-NOV-13 10:30 X2	L1396670-5 Surface Water 26-NOV-13 08:11 X14
Grouping	Analyte					
WATER						
Total Metals	Nickel (Ni)-Total (mg/L)	0.00209	0.00506	0.00072	0.00378	0.00432
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	0.956	0.841	0.821	0.899	1.28
	Selenium (Se)-Total (mg/L)	0.00036	0.00040	0.00039	0.00036	0.00035
	Silicon (Si)-Total (mg/L)	5.36	5.88	5.88	5.96	5.54
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	0.000011	<0.000010
	Sodium (Na)-Total (mg/L)	2.54	2.64	2.57	2.64	4.18
	Strontium (Sr)-Total (mg/L)	0.184	0.157	0.152	0.159	0.244
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00210	0.00188	0.00186	0.00190	0.00235
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	0.233	0.656	0.0160	0.398	0.205
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0015	0.0062	0.0026	0.0040	0.0015
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00018	0.00034	0.00041	0.00029	0.00020
	Barium (Ba)-Dissolved (mg/L)	0.0640	0.0623	0.0612	0.0626	0.0625
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000102	0.000432	0.000020	0.000228	0.000116
	Calcium (Ca)-Dissolved (mg/L)	39.4	35.0	34.5	35.8	65.9
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00073	0.00335	<0.00010	0.00176	0.00167
	Copper (Cu)-Dissolved (mg/L)	0.00034	0.00032	0.00031	0.00032	0.00031
	Iron (Fe)-Dissolved (mg/L)	0.074	0.133	0.047	0.081	0.243
	Lead (Pb)-Dissolved (mg/L)	0.000062	0.000127	0.000073	0.000096	0.000054
	Lithium (Li)-Dissolved (mg/L)	0.00495	0.00603	0.00583	0.00621	0.00573
	Magnesium (Mg)-Dissolved (mg/L)	9.30	8.93	7.33	8.63	15.1
	Manganese (Mn)-Dissolved (mg/L)	0.103	0.195	0.0315	0.139	1.62
	Molybdenum (Mo)-Dissolved (mg/L)	0.000527	0.000667	0.000639	0.000646	0.000549
	Nickel (Ni)-Dissolved (mg/L)	0.00203	0.00524	<0.00050	0.00314	0.00407
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	0.955	0.826	0.779	0.828	1.30

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1396670-6 Surface Water 26-NOV-13 09:45 NF2-A	L1396670-7 Surface Water 26-NOV-13 09:17 X3A	L1396670-8 Surface Water 26-NOV-13 08:11 X14-R	L1396670-9 Surface Water 26-NOV-13 11:50 R8	L1396670-10 Surface Water 26-NOV-13 11:30 R10	
Grouping	Analyte					
WATER						
Total Metals	Nickel (Ni)-Total (mg/L)	0.00928	0.00215	0.00426	<0.00050	0.00056
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	0.881	0.949	1.33	0.734	0.801
	Selenium (Se)-Total (mg/L)	0.00040	0.00033	0.00036	0.00041	0.00038
	Silicon (Si)-Total (mg/L)	5.91	5.37	5.67	5.95	5.82
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	2.73	2.55	4.34	2.46	2.54
	Strontium (Sr)-Total (mg/L)	0.160	0.180	0.250	0.137	0.143
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00183	0.00207	0.00254	0.00164	0.00177
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	1.27	0.247	0.215	<0.0030	0.0144
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0094	0.0027	0.0022	0.0038	0.0029
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00029	0.00027	0.00022	0.00045	0.00043
	Barium (Ba)-Dissolved (mg/L)	0.0635	0.0646	0.0629	0.0589	0.0612
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000768	0.000146	0.000113	<0.000010	0.000018
	Calcium (Ca)-Dissolved (mg/L)	35.5	39.2	67.4	30.9	34.0
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00588	0.00097	0.00163	<0.00010	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.00034	0.00030	0.00030	0.00027	0.00029
	Iron (Fe)-Dissolved (mg/L)	0.180	0.115	0.227	0.063	0.052
	Lead (Pb)-Dissolved (mg/L)	0.000136	0.000080	<0.000050	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.00630	0.00506	0.00573	0.00541	0.00575
	Magnesium (Mg)-Dissolved (mg/L)	10.4	9.15	15.0	6.20	7.20
	Manganese (Mn)-Dissolved (mg/L)	0.307	0.108	1.59	0.0263	0.0265
	Molybdenum (Mo)-Dissolved (mg/L)	0.000646	0.000502	0.000581	0.000669	0.000654
	Nickel (Ni)-Dissolved (mg/L)	0.00902	0.00216	0.00400	<0.00050	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	0.865	0.997	1.31	0.703	0.764

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1396670-11 Surface Water 26-NOV-13 11:15 NF1	L1396670-12 Surface Water 26-NOV-13 11:40 R9	L1396670-13 Surface Water 26-NOV-13 13:30 FB1	L1396670-14 Surface Water 27-NOV-13 09:25 TRIP BLANK
Grouping	Analyte				
WATER					
Total Metals	Nickel (Ni)-Total (mg/L)	0.00121	<0.00050	<0.00050	<0.00050
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	0.866	0.772	<0.050	<0.050
	Selenium (Se)-Total (mg/L)	0.00043	0.00039	<0.00010	<0.00010
	Silicon (Si)-Total (mg/L)	6.40	5.79	<0.050	<0.050
	Silver (Ag)-Total (mg/L)	0.000011	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	2.63	2.44	<0.050	<0.050
	Strontium (Sr)-Total (mg/L)	0.154	0.148	<0.00020	<0.00020
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00193	0.00182	<0.000010	<0.000010
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0189	<0.0030	<0.0030	<0.0030
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	
	Aluminum (Al)-Dissolved (mg/L)	0.0034	0.0031	<0.0010	
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	
	Arsenic (As)-Dissolved (mg/L)	0.00049	0.00044	<0.00010	
	Barium (Ba)-Dissolved (mg/L)	0.0625	0.0614	<0.000050	
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	
	Cadmium (Cd)-Dissolved (mg/L)	0.000020	<0.000010	<0.000010	
	Calcium (Ca)-Dissolved (mg/L)	33.9	33.6	<0.020	
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	
	Copper (Cu)-Dissolved (mg/L)	0.00030	0.00027	<0.00020	
	Iron (Fe)-Dissolved (mg/L)	0.076	0.051	<0.010	
	Lead (Pb)-Dissolved (mg/L)	0.000086	<0.000050	<0.000050	
	Lithium (Li)-Dissolved (mg/L)	0.00585	0.00569	<0.00050	
	Magnesium (Mg)-Dissolved (mg/L)	7.46	7.34	<0.0050	
	Manganese (Mn)-Dissolved (mg/L)	0.0438	0.0262	<0.000050	
	Molybdenum (Mo)-Dissolved (mg/L)	0.000670	0.000647	<0.000050	
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	
	Potassium (K)-Dissolved (mg/L)	0.794	0.785	<0.050	

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1396670-1 Surface Water 26-NOV-13 08:48 X10	L1396670-2 Surface Water 26-NOV-13 10:10 NF2	L1396670-3 Surface Water 26-NOV-13 10:00 NF2-B	L1396670-4 Surface Water 26-NOV-13 10:30 X2	L1396670-5 Surface Water 26-NOV-13 08:11 X14																																																																								
Grouping	Analyte																																																																												
WATER																																																																													
Dissolved Metals	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Selenium (Se)-Dissolved (mg/L)</td> <td style="text-align: center;">0.00035</td> <td style="text-align: center;">0.00038</td> <td style="text-align: center;">0.00039</td> <td style="text-align: center;">0.00037</td> <td style="text-align: center;">0.00037</td> </tr> <tr> <td>Silicon (Si)-Dissolved (mg/L)</td> <td style="text-align: center;">5.24</td> <td style="text-align: center;">5.73</td> <td style="text-align: center;">5.72</td> <td style="text-align: center;">5.70</td> <td style="text-align: center;">5.49</td> </tr> <tr> <td>Silver (Ag)-Dissolved (mg/L)</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> </tr> <tr> <td>Sodium (Na)-Dissolved (mg/L)</td> <td style="text-align: center;">2.49</td> <td style="text-align: center;">2.62</td> <td style="text-align: center;">2.50</td> <td style="text-align: center;">2.61</td> <td style="text-align: center;">4.20</td> </tr> <tr> <td>Strontium (Sr)-Dissolved (mg/L)</td> <td style="text-align: center;">0.182</td> <td style="text-align: center;">0.155</td> <td style="text-align: center;">0.153</td> <td style="text-align: center;">0.156</td> <td style="text-align: center;">0.245</td> </tr> <tr> <td>Thallium (Tl)-Dissolved (mg/L)</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> <td style="text-align: center;"><0.000010</td> </tr> <tr> <td>Tin (Sn)-Dissolved (mg/L)</td> <td style="text-align: center;"><0.00010</td> <td style="text-align: center;"><0.00010</td> <td style="text-align: center;"><0.00010</td> <td style="text-align: center;"><0.00010</td> <td style="text-align: center;"><0.00010</td> </tr> <tr> <td>Titanium (Ti)-Dissolved (mg/L)</td> <td style="text-align: center;"><0.010</td> <td style="text-align: center;"><0.010</td> <td style="text-align: center;"><0.010</td> <td style="text-align: center;"><0.010</td> <td style="text-align: center;"><0.010</td> </tr> <tr> <td>Uranium (U)-Dissolved (mg/L)</td> <td style="text-align: center;">0.00201</td> <td style="text-align: center;">0.00179</td> <td style="text-align: center;">0.00179</td> <td style="text-align: center;">0.00180</td> <td style="text-align: center;">0.00234</td> </tr> <tr> <td>Vanadium (V)-Dissolved (mg/L)</td> <td style="text-align: center;"><0.0010</td> <td style="text-align: center;"><0.0010</td> <td style="text-align: center;"><0.0010</td> <td style="text-align: center;"><0.0010</td> <td style="text-align: center;"><0.0010</td> </tr> <tr> <td>Zinc (Zn)-Dissolved (mg/L)</td> <td style="text-align: center;">0.233</td> <td style="text-align: center;">0.721</td> <td style="text-align: center;">0.0142</td> <td style="text-align: center;">0.392</td> <td style="text-align: center;">0.209</td> </tr> <tr> <td>Zirconium (Zr)-Dissolved (mg/L)</td> <td style="text-align: center;"><0.00080</td> <td style="text-align: center;"><0.00080</td> <td style="text-align: center;"><0.00080</td> <td style="text-align: center;"><0.00080</td> <td style="text-align: center;"><0.00080</td> </tr> </table>					Selenium (Se)-Dissolved (mg/L)	0.00035	0.00038	0.00039	0.00037	0.00037	Silicon (Si)-Dissolved (mg/L)	5.24	5.73	5.72	5.70	5.49	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	Sodium (Na)-Dissolved (mg/L)	2.49	2.62	2.50	2.61	4.20	Strontium (Sr)-Dissolved (mg/L)	0.182	0.155	0.153	0.156	0.245	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	Uranium (U)-Dissolved (mg/L)	0.00201	0.00179	0.00179	0.00180	0.00234	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Zinc (Zn)-Dissolved (mg/L)	0.233	0.721	0.0142	0.392	0.209	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Selenium (Se)-Dissolved (mg/L)	0.00035	0.00038	0.00039	0.00037	0.00037																																																																								
Silicon (Si)-Dissolved (mg/L)	5.24	5.73	5.72	5.70	5.49																																																																								
Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																																																																								
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Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010																																																																								
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010																																																																								
Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010																																																																								
Uranium (U)-Dissolved (mg/L)	0.00201	0.00179	0.00179	0.00180	0.00234																																																																								
Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010																																																																								
Zinc (Zn)-Dissolved (mg/L)	0.233	0.721	0.0142	0.392	0.209																																																																								
Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080																																																																								

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1396670-6	L1396670-7	L1396670-8	L1396670-9	L1396670-10
Description	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Sampled Date	26-NOV-13	26-NOV-13	26-NOV-13	26-NOV-13	26-NOV-13	26-NOV-13
Sampled Time	09:45	09:17	09:17	08:11	11:50	11:30
Client ID	NF2-A	X3A	X3A	X14-R	R8	R10
Grouping	Analyte					
WATER						
Dissolved Metals	Selenium (Se)-Dissolved (mg/L)	0.00039	0.00033	0.00037	0.00037	0.00041
	Silicon (Si)-Dissolved (mg/L)	5.71	5.54	5.59	5.69	5.69
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	2.73	2.60	4.14	2.39	2.44
	Strontium (Sr)-Dissolved (mg/L)	0.158	0.182	0.245	0.133	0.153
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00177	0.00198	0.00239	0.00161	0.00179
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	1.26	0.254	0.208	<0.0010	0.0133
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1396670-11 Surface Water 26-NOV-13 11:15 NF1	L1396670-12 Surface Water 26-NOV-13 11:40 R9	L1396670-13 Surface Water 26-NOV-13 13:30 FB1	L1396670-14 Surface Water 27-NOV-13 09:25 TRIP BLANK
Grouping	Analyte				
WATER					
Dissolved Metals	Selenium (Se)-Dissolved (mg/L)	0.00039	0.00040	<0.00010	
	Silicon (Si)-Dissolved (mg/L)	5.78	5.74	<0.050	
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	
	Sodium (Na)-Dissolved (mg/L)	2.51	2.47	<0.050	
	Strontium (Sr)-Dissolved (mg/L)	0.153	0.147	<0.00020	
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	
	Uranium (U)-Dissolved (mg/L)	0.00183	0.00180	<0.000010	
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Dissolved (mg/L)	0.0140	<0.0010	<0.0010	
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Beryllium (Be)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Bismuth (Bi)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Chromium (Cr)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Cobalt (Co)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Iron (Fe)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Lead (Pb)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Nickel (Ni)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Phosphorus (P)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Silver (Ag)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Thallium (Tl)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Tin (Sn)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Titanium (Ti)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Vanadium (V)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Zinc (Zn)-Total	DLA	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Cadmium (Cd)-Total	DLM	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Cadmium (Cd)-Dissolved	DLM	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Method Blank	Calcium (Ca)-Total	MB-LOR	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Method Blank	Magnesium (Mg)-Total	MB-LOR	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Method Blank	Manganese (Mn)-Total	MB-LOR	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1396670-1, -10, -11, -12, -13, -14, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Aluminum (Al)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Copper (Cu)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Magnesium (Mg)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Titanium (Ti)-Total	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Ammonia, Total (as N)	MS-B	L1396670-14
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1396670-1, -10, -11, -12, -13, -2, -3, -4, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
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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-WR	Water	Chloride by Ion Chromatography	EPA 300.1
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This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.

Reference Information

ANIONS-F-IC-WR	Water	Fluoride by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.			
ANIONS-NO2-IC-WR	Water	Nitrite Nitrogen by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. Nitrate is detected by UV absorbance.			
ANIONS-NO3-IC-WR	Water	Nitrate Nitrogen by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003. Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-WR	Water	Sulphate by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.			
CARBONS-DOC-VA	Water	Dissolved organic carbon by combustion	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". Dissolved carbon (DOC) fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.			
CARBONS-TOC-VA	Water	Total organic carbon by combustion	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".			
EC-MAN-WR	Water	Conductivity by Meter	APHA 2510 (B)
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using an electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:			
Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]			
MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).			
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).			
NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.			
P-T-COL-VA	Water	Total P in Water by Colour	APHA 4500-P Phosphorous
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
PH-MAN-WR	Water	pH by Meter	APHA 4500-H (B)
"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."			
TDS-CALC-VA	Water	TDS (Calculated)	APHA 1030E (20TH EDITION)

Reference Information

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

ZR-D-MS-VA Water Dissolved Zr in Water by ICPMS 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).

ZR-T-MS-VA Water Total Zr in Water by ICPMS 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).

** 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
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1 2

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.*



Report To		Report Format / Distribution	
Company: EDI	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Other	
Contact: Meighan Kearns	<input checked="" type="checkbox"/> PDF	<input checked="" type="checkbox"/> Excel	<input type="checkbox"/> Digital <input type="checkbox"/> Fax
Address: 2195 - 2nd Avenue	Email 1: mkearns@edynamics.com	Email 2:	
Whitehorse, YT Y1A 3T8	Email 3:		
Phone: 867-393-4882	Fax:		
Invoice To: Same as Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Client / Project Information	
Hardcopy of Invoice with Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Job #: 13-Y-0452	
Company:		PO / AFE:	
Contact:		LSD:	
Address:		Quote #: Q38556	
Phone:		ALS Contact:	
Lab/Work Order # (lab use only):	L1396670	ALS Contact:	
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)
1	X10	26-NOV-13	8:48
2	NF2	26-NOV-13	10:10
3	NF2-A	26-NOV-13	10:00
4	X2	26-NOV-13	10:30
5	X14	26-NOV-13	8:11
6	NF2-B	26-NOV-13	9:45
7	X3A	26-NOV-13	9:17
8	R1	26-NOV-13	8:11



Special Instructions / Requirements with water or tank use (CCME-Freshwater Aquatic Life/B/C CSR - Commercial/LAB Tier 1 - Natural, etc) / Hazardous Details

Use Faro Equis Format to report

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

Released by:	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			<i>[Signature]</i>	27-10-13	9:25	28.05C				

SHIPMENT RELEASE (Client use) SHIPMENT RECEIPT (lab use only) SHIPMENT VERIFICATION (lab use only)

GENF 18.01 Front



Report To	EDL			Report Format / Distribution	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> Excel <input type="checkbox"/> Digital <input type="checkbox"/> Fax
Company:	Meighan Kearns			Service Requested (Rush for routine analysis subject to availability)	<input type="checkbox"/> Regular (Standard Turnaround Times - Business Days) <input type="checkbox"/> Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT <input checked="" type="checkbox"/> Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT <input type="checkbox"/> Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Contact:	2195 - 2nd Avenue			Analysis Request	Please indicate below Filtered, Preserved or both (F, P, F/P)
Address:	Whitehorse, YT Y1A 3T8				
Phone:	867-393-4882	Fax:			
Invoice To	Same as Report?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Hardcopy of invoice with Report?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Company:					
Contact:					
Address:					
Phone:					
Lab Work Order #	L1396670			Quote #:	Q38556
ALS Contact:				Sampler:	

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	ALK-COL-VA,P-T-COL-VA	ANIONS-ALL-IC-WR	CARBONS-DOC-VA	CARBONS-TOC-VA,NH3-F-V	EC-MAN-WR,PH-MAN-WR	MET-D-CCMS-VA,ZR-D-MS	MET-T-CCMS-VA,ZR-T-MS	IONBALANCE-VA	TDS-CALC-VA	TSS-LOW-WR	HARDNESS-CALC-VA	Number of Containers
0	R8	26-Nov-13	1158	Surface Water	X	X	X	X	X	X	X	X	X	X	X	5
10	R10	26-Nov-13	1130	Surface Water	X	X	X	X	X	X	X	X	X	X	X	5
11	NFL	26-Nov-13	1115	Surface Water	X	X	X	X	X	X	X	X	X	X	X	5
12	R9	26-Nov-13	1140	Surface Water	X	X	X	X	X	X	X	X	X	X	X	5
13	FB1	26-Nov-13	1330	Surface Water	X	X	X	X	X	X	X	X	X	X	X	4
14	Trip Blank	26-Nov-13	-	Surface Water	X	X	X	X	X	X	X	X	X	X	X	4

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details



L1396670-COFC

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By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)	Date (dd-mm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			<i>[Signature]</i>	27-Nov-13	9:25	08,050C				

SHIPMENT RECEIPT (lab use only)

SHIPMENT VERIFICATION (lab use only)

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