

Part 2 - Other Issues

The Review Board identified a number of areas where additional information would be helpful in assessing the likelihood of significant impacts on the environment. The Developer should provide any additional information that is available on the items listed below. The remainder of this section provides the relevant sections of the terms of reference and the Review Board's questions in relation to those sections.

IR Number: 1-2-1

Source: Mackenzie Valley Review Board

Ta: Tyhee

Issue: Existing Water Quality

Terms of Reference - 3.2.1 Existing Environment and Baseline Conditions

1. Surface and groundwater quality, reflecting the range of natural variability in the existing environment. This will provide baseline information in order to differentiate project effects from natural conditions and changes due to previous developments. This includes:

a. water quality analysis for any water bodies (including Round Lake, Winter Lake, Narrow Lake and Giauque Lake) that previous development may have affected in order to identify the extent of previous contamination.

- *See Additional Items in final section*

Request

Surface Water Quality for non-impacted water bodies near potential components

- 1. Baseline needed for small ponds downstream of Nicholas Lake settling pond discharge area. The water quality in these ponds is an important part of any determination of significance for potential impacts to water quality if this area is to receive effluent from the Nicholas Lake development.*
- 2. See also Additional Items in final section.*

Tyhee NWT Corp Response

1) Tyhee NWT Corp acknowledges the importance of baseline water quality information for the two small ponds located downstream of the proposed Nicholas Lake settling pond discharge area. In response to this IR, water quality samples were collected from the two small ponds on September 6, 2011. Water samples were also collected from Eclipse Lake and Nicholas Lake at the same time to supplement baseline information. The water samples have been analyzed for the full suite of water quality parameters. The analytical results are appended to this response. These baseline results will form the basis from which to measure potential future impacts on these water bodies associated with project activities at Nicholas Lake.



A TETRA TECH COMPANY

October 17, 2011

ISSUED FOR USE
EBA FILE: V23201525

Tyhee NWT Corporation
401, 675 West Hastings Street
Vancouver, BC V6B 1N2

Attention: Hugh Wilson

Subject: September 2011 Surface Water Quality Sampling
Yellowknife Gold Project, NT

1.0 INTRODUCTION

EBA, A Tetra Tech Company, was retained by Tyhee NWT Corp. (Tyhee) to conduct surface water quality sampling at several waterbodies located downstream from the proposed Nicholas Lake Development Site, Yellowknife Gold Project, NT. This surface water quality sampling program was undertaken as part of Tyhee NWT's response to the Mackenzie Valley Environmental Impact Review Board's (MVEIRB's) information requests, specifically IR Number 1-2-1.

Karla Langlois of EBA collected surface water quality samples on September 6, 2011, at the inlet and outlets of two unnamed ponds (Ponds 1 and 2), Eclipse Lake inlet and an Eclipse Lake background station, and a Nicholas Lake background station as indicated on Figure 1. Site conditions at the time of the field program were described as calm winds and approximately 15 to 19 degrees Celsius (°C).

2.0 SURFACE WATER QUALITY SAMPLING

2.1 Methods

Water quality sampling stations were established at pre-determined locations in relation to proposed development footprints. Sampling stations were positioned at the inlet and outlet of the two ponds located downstream from the proposed Nicholas Lake Development Site sedimentation basin, including Ponds 1 and 2, and Eclipse Lake. Nicholas Lake, downstream from the proposed building and underground development locations, was also sampled.

All surface water quality bottles, preservatives, trip blank samples, and de-ionized water were supplied, and all field water quality samples were analyzed, by ALS Laboratory Group (ALS). Once on site, water quality samples were collected for standard analytical parameters including routine parameters, nutrients, total and dissolved metals (ultra-low detection limits), and total organic carbon (TOC). A duplicate sample and field blank were also collected and analyzed for the full suite of parameters (routine, nutrients, total and dissolved metals, and TOC).

During the collection of water quality samples, bottles were triple rinsed with source water prior to collecting the water samples. Disposable nitrile gloves were worn during handling of all the bottles and equipment. Source water was collected in a manner consistent with standard field sampling methods,

including lowering the bottle in a horizontal position to minimize the disturbance to the bottom sediment, and collected towards the current (including wave action). Water quality samples were collected off shore as much as possible without disturbing the bottom sediment. Samples collected were preserved with an appropriate formula of acids provided by ALS or by maintaining sample temperatures close to 4 degrees °C.

2.2 Results

Surface water conditions at each surface water quality location were described based on evidence of floating particles, water color, field pH, electrical conductivity (EC), and water temperature (Table 1). A calibrated¹ handheld Oakton® multi-parameter probe was used to record the field pH, EC, and surface water temperature. Table 1 below summarizes the surface water conditions at the stations during the September sampling event.

Table 1: Summary of the Surface Water Quality Station Conditions, September 6, 2011

Water Quality Station	Station Location	Station Description	pH	Electrical Conductivity (µS/cm)	Water Temperature (°C)
Pond 1 Inlet	The inlet of Pond 1; the first pond downstream from the proposed sedimentation basin.	Soil bottom substrate, small amount of floating organic matter, some emergent plants, shoreline dominated by sedge and semi-aquatic woody species, water colour yellowish, water depth approx. 45 cm.	6.16	45.5	11.8
Pond 1 Outlet	The outlet of Pond 1; the first pond downstream from the proposed sedimentation basin.	Soil bottom substrate, considerable floating organic matter (including new and old fallen leaves and sphagnum moss), emergent aquatic and semi-aquatic plants including sphagnum moss, willow and buckbean; shoreline composed primarily of shrubs, water colour slightly orange, water depth approx. 50 cm.	6.09	52.9	11.6
Pond 2 Inlet	The inlet of Pond 2; the second pond downstream from the proposed sedimentation basin.	Soil bottom substrate with occasional boulder, small amount of floating matter, emergent aquatic and semi-aquatic plants including pond lilies and sedge, shoreline dominated by sedge and shrubs, water colour clear, water depth approx. 55 cm.	7.22	73.5	12.3
Pond 2 Outlet	The outlet of Pond 2; the second pond downstream from the proposed sedimentation basin.	Soil bottom substrate with occasional cobble, moderate amount of floating matter, submergent plants composed of pond weeds, emergent plants include sedges, shoreline dominated by shrubs and sedge, water colour clear, water depth approx. 15 cm.	7.43	12.6	12.4

¹ The Handheld multi-parameter probe was calibrated in the office immediately prior to the field event.

Table 1: Summary of the Surface Water Quality Station Conditions, September 6, 2011

Water Quality Station	Station Location	Station Description	pH	Electrical Conductivity (µS/cm)	Water Temperature (°C)
Eclipse Lake Inlet*	The inlet to Eclipse Lake, downstream from Ponds 1 and 2.	Cobble bottom substrate, small amount of floating matter, emergent plants composed of sedges and pond lilies, shoreline dominated by shrubs and trees, water colour clear, water depth approx. 15 cm.	7.18	64.3	12.9
Eclipse Lake Background	Eclipse Lake shoreline, approximately 180 m from Eclipse Lake inlet.	Cobble and boulder bottom substrate, small amount of floating matter, no submergent or emergent plants, shoreline dominated by boulder and cobble at station but shrubs around most of lake shoreline in general area, water colour clear, water depth approx. 50 cm.	7.78	68.1	13.3
Nicholas Lake Background	Nicholas Lake shoreline, downstream from the proposed building and underground developments.	Sand and cobble bottom substrate, no visible floating matter, emergent plants include sedges, shoreline dominated by shrubs, water colour clear, water depth approx. 30 cm.	7.73	74.4	11.6

* The Eclipse Lake Inlet surface water quality station was sampled approximately 30 m away from a specific inlet channel due to the general wetness of the area due to beaver dams.

Samples were submitted to ALS Laboratory Group (ALS) in Yellowknife on September 6, 2011. Ultra-low level laboratory detection limits were used in the analysis of all the water quality samples, with the exception that low-level detection limits were used for samples collected at Pond 1 Inlet and Pond 1 Outlet due to higher turbidity levels. Both ultra-low and low-level detected limits were appropriate for the Canadian Council of the Ministers of the Environment (CCME) Freshwater Aquatic Life (FAL) guidelines and the Metal Mining Effluent Regulations (MMER). Of exception, the low-level cadmium detection limit was too high to meet CCME FAL. Laboratory detection limits specific for each parameter are provided in Table 2.

Laboratory analysis indicates that many of the trip and field blank results were below detection limits, except for a few metals (*e.g.* total barium, boron, copper, and zinc, as well as dissolved boron, copper, manganese, nickel, strontium, and zinc) (Table 2). Detectable levels of these few metals in the trip and field blanks are considered remnants from the laboratory issued de-ionized water and the dissolved metal filters. Since the majority of parameters in the trip and field blanks were not detected, methods employed during the collection, transportation, and analysis of the samples were considered satisfactory and did not lead to the introduction of potential contaminants, except possibly small amounts from the dissolved metal filters. ALS has performed internal testing of dissolved metal filters and has found that even after pre-rinsing, detectable levels of barium, copper, strontium, and zinc were recorded².

² Hugdahl, Mark. Background levels of metals in filtration media. ALS Operations Update Canada, ALS EnviroNotes. Provided by G. Gouthro, ALS Edmonton. 1pp.

Analytical results of the duplicate sample were similar to its field sample (collected with the Eclipse Lake Background samples) (Table 3); therefore, the duplicate sample was considered reliable and the sampling and analytical methods employed were acceptable.

For comparison purposes, the analytical results were compared to the CCME FAL guidelines and the MMER Maximum Authorized Concentration in a Grab Sample (Table 3). All surface water quality samples met the MMER standards. All surface water quality stations met the CCME FAL guidelines, except at stations Pond 1 Inlet and -Outlet, where total and dissolved aluminum and arsenic were above CCME FAL guidelines at these sampling stations, and total iron and dissolved cadmium were above guidelines at Station Pond 1 Outlet (Table 3). Parameter levels recorded during the September field event are considered to be representative of natural background water quality conditions. The higher parameter levels recorded at Stations Pond 1 Inlet and -Outlet were considered natural and likely a result of the naturally higher turbidity levels and floating organic matter in the water column.

Detailed laboratory analytical results are provided in Appendix A.

3.0 CLOSURE

We trust this report meets your present requirements. Should you have any questions or comments, please contact the undersigned at your convenience.

Sincerely,
EBA, A Tetra Tech Company



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TABLES

Table 1	Summary of the Surface Water Quality Station Conditions, September 6, 2011
Table 2	Quality Assurance/Quality Control Results, September 6, 2011
Table 3	Surface Water Quality Sampling Results, September 6, 2011

Table 2. Quality Assurance/Quality Control Results, September 6, 2011

Analyte	Trip Blank	Field Blank	Units	Detection Limit Low-Level	Detection Limit Ultra-Low Level
Major Ions, Nutrients, and Inorganics					
Chloride (Cl)	<0.50	<0.50	mg/L	0.50	0.50
Calcium (Ca)-Total	<0.020	<0.020	mg/L	0.50	0.02
Magnesium (Mg)-Total	<0.0040	<0.0040	mg/L	0.10	0.0040
Phosphorus (P)-Total	<0.0010	<0.0010	mg/L	0.0010	0.0010
Potassium (K)-Total	<0.020	<0.020	mg/L	0.10	0.020
Sodium (Na)-Total	0.0138	<0.0050	mg/L	1.00	0.0050
TDS (Calculated)	<1.0	<1.0	mg/L	<1.0	<1.0
Hardness (as CaCO ₃)	<1.0	<1.0	mg/L	<1.0	<1.0
Nitrate (as N)	<0.050	<0.050	mg/L	0.050	0.050
Nitrate and Nitrite (as N)	<0.071	<0.071	mg/L	0.071	0.071
Nitrite (as N)	<0.050	<0.050	mg/L	0.050	0.050
Total Kjeldahl Nitrogen	<0.050	<0.050	mg/L	0.050	0.05
Ammonia (as N)	<0.0050	<0.0050	mg/L	0.0050	0.0050
Sulfate (SO ₄)	<0.50	<0.50	mg/L	0.50	0.50
pH	5.59	5.85	pH	0.10	0.10
Conductivity (EC)	0.74	0.73	uS/cm	0.20	0.20
Bicarbonate (HCO ₃)	<5.0	<5.0	mg/L	5.00	5.00
Carbonate (CO ₃)	<5.0	<5.0	mg/L	5.0	5.0
Hydroxide (OH)	<5.0	<5.0	mg/L	5.0	5.0
Alkalinity, Total (as CaCO ₃)	<5.0	<5.0	mg/L	5.00	5.00
Chemical Oxygen Demand	<10	<10	mg/L	10	10
Total Organic Carbon	0.78	0.77	mg/L	2.5	2.5
Total Suspended Solids	<3.0	<3.0	mg/L	3.0	3.0
Total Metals					
Aluminum (Al)	<0.00030	<0.00030	mg/L	0.02000	0.00030
Antimony (Sb)	<0.000020	<0.000020	mg/L	0.00040	0.000020
Arsenic (As)	<0.000020	<0.000020	mg/L	0.000400	0.000020
Barium (Ba)	0.000098	<0.000050	mg/L	0.00020	0.000050
Beryllium (Be)	<0.000010	<0.000010	mg/L	0.0010	0.000010
Bismuth (Bi)	<0.000010	<0.000010	mg/L	0.00020	0.000010
Boron (B)	<0.0010	0.0011	mg/L	0.020	0.0010
Cadmium (Cd)	<0.0000050	<0.0000050	mg/L	0.00020	0.0000050
Chromium (Cr)	<0.000060	<0.000060	mg/L	0.00080	0.000060
Cobalt (Co)	<0.000010	<0.000010	mg/L	0.00020	0.000010
Copper (Cu)	0.00012	0.00011	mg/L	0.0010	0.00010
Iron (Fe)	<0.0010	<0.0010	mg/L	0.010	0.0010
Lead (Pb)	<0.000010	<0.000010	mg/L	0.00010	0.000010
Lithium (Li)	<0.00050	<0.00050	mg/L	0.00050	0.00050
Manganese (Mn)	<0.000050	<0.000050	mg/L	0.0020	0.000050
Mercury (Hg)	<0.000020	<0.000020	mg/L	0.000020	0.000020
Molybdenum (Mo)	<0.000050	<0.000050	mg/L	0.00010	0.000050

Table 2. Quality Assurance/Quality Control Results, September 6, 2011

Analyte	Trip Blank	Field Blank	Units	Detection Limit Low-Level	Detection Limit Ultra-Low Level
Nickel (Ni)	<0.000060	<0.000060	mg/L	0.00020	0.000060
Selenium (Se)	<0.000040	<0.000040	mg/L	0.00040	0.000040
Silver (Ag)	<0.0000050	<0.0000050	mg/L	0.00040	0.0000050
Strontium (Sr)	<0.000050	<0.000050	mg/L	0.0002	0.000050
Thallium (Tl)	<0.000010	<0.000010	mg/L	0.00010	0.000010
Tin (Sn)	<0.000050	<0.000050	mg/L	0.00040	0.000050
Titanium (Ti)	<0.00010	<0.00010	mg/L	0.0050	0.00010
Uranium (U)	<0.000010	<0.000010	mg/L	0.00010	0.000010
Vanadium (V)	<0.000050	<0.000050	mg/L	0.00050	0.000050
Zinc (Zn)	0.00299	0.00300	mg/L	0.0040	0.00080
Dissolved Metals					
Aluminum (Al)	<0.00030	<0.00030	mg/L	0.02000	0.00030
Antimony (Sb)	<0.000020	<0.000020	mg/L	0.00040	0.000020
Arsenic (As)	<0.000020	<0.000020	mg/L	0.000400	0.000020
Barium (Ba)	<0.000050	<0.000050	mg/L	0.00020	0.000050
Beryllium (Be)	<0.000010	<0.000010	mg/L	0.0010	0.000010
Bismuth (Bi)	<0.000010	<0.000010	mg/L	0.00020	0.000010
Boron (B)	0.0010	0.0011	mg/L	0.020	0.0010
Cadmium (Cd)	<0.0000050	<0.0000050	mg/L	0.00020	0.0000050
Chromium (Cr)	<0.000060	<0.000060	mg/L	0.00080	0.000060
Cobalt (Co)	<0.000010	<0.000010	mg/L	0.00020	0.000010
Copper (Cu)	0.00011	0.00018	mg/L	0.0010	0.00010
Iron (Fe)	<0.0010	<0.0010	mg/L	0.010	0.0010
Lead (Pb)	<0.000010	<0.000010	mg/L	0.00010	0.000010
Lithium (Li)	<0.00050	<0.00050	mg/L	0.00050	0.00050
Manganese (Mn)	<0.000050	0.000083	mg/L	0.0020	0.000050
Mercury (Hg)	<0.000020	<0.000020	mg/L	0.000020	0.000020
Molybdenum (Mo)	<0.000050	<0.000050	mg/L	0.00010	0.000050
Nickel (Ni)	<0.000060	0.000111	mg/L	0.00020	0.000060
Selenium (Se)	<0.000040	<0.000040	mg/L	0.00040	0.000040
Silver (Ag)	<0.0000050	<0.0000050	mg/L	0.00040	0.0000050
Strontium (Sr)	<0.000050	0.000092	mg/L	0.0002	0.000050
Thallium (Tl)	<0.000010	<0.000010	mg/L	0.00010	0.000010
Tin (Sn)	<0.000050	<0.000050	mg/L	0.00040	0.000050
Titanium (Ti)	<0.00010	<0.00010	mg/L	0.0050	0.00010
Uranium (U)	<0.000010	<0.000010	mg/L	0.00010	0.000010
Vanadium (V)	<0.000050	<0.000050	mg/L	0.00050	0.000050
Zinc (Zn)	0.00297	0.00409	mg/L	0.0040	0.00080
Legend					
Detectable Levels					

Table 3. Surface Water Quality Sampling Results, September 6, 2011

Analyte	Lake 1 Inlet ¹	Lake 1 Outlet ¹	Lake 2 Inlet	Lake 2 Outlet	Eclipse Lake Inlet	Eclipse Lake Background	Duplicate (Eclipse Lake Background)	Nicholas Lake Background	Units	Detection Limit Low-Level	Detection Limit Ultra-Low Level	CCME FAL Guideline ^A	MMER ^{AA}
Major Ions, Nutrients, and Inorganics													
Chloride (Cl)	<0.50	<0.50	1.17	1.12	0.97	0.89	0.89	1.38	mg/L	0.50	0.50	---	---
Calcium (Ca)-Total	2.86	3.06	5.35	5.16	5.24	5.08	5.31	5.56	mg/L	0.50	0.02	---	---
Magnesium (Mg)-Total	1.68	1.71	2.87	2.68	2.73	2.62	2.65	2.64	mg/L	0.10	0.0040	---	---
Phosphorus (P)-Total	0.0249	0.0875	0.0090	0.0121	0.0044	0.0033	0.0032	0.0044	mg/L	0.0010	0.0010	---	---
Potassium (K)-Total	1.14	1.92	1.16	1.15	1.08	1.07	1.07	1.25	mg/L	0.10	0.020	---	---
Sodium (Na)-Total	2.7	2.9	2.82	2.70	2.06	2.01	2.04	2.69	mg/L	1.00	0.0050	---	---
TDS (Calculated)	19.9	19.1	35.4	34.2	31.3	30.5	32.6	32.3	mg/L	1.0	1.0	---	---
Hardness (as CaCO ₃)	13.5	12.8	23.6	21.9	23.0	21.6	21.4	21.2	mg/L	1.0	1.0	---	---
Nitrate (as N)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/L	0.050	0.050	2.935	---
Nitrate and Nitrite (as N)	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071	<0.071	mg/L	0.071	0.071	---	---
Nitrite (as N)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	mg/L	0.050	0.050	0.06	---
Total Kjeldahl Nitrogen	0.497	1.19	0.283	0.340	0.152	0.117	0.201	0.153	mg/L	0.050	0.05	---	---
Ammonia (as N)	0.0119	0.0132	<0.0050	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	mg/L	0.0050	0.0050	3.980 - 39.72*	---
Sulfate (SO ₄)	8.24	8.14	7.04	6.88	7.28	7.20	7.18	7.61	mg/L	0.50	0.50	---	---
pH	6.68	6.66	7.61	7.62	7.64	7.66	7.67	7.69	pH	0.10	0.10	6.5 - 9.0	---
Conductivity (EC)	43.7	43.5	66.1	64.7	63.0	61.5	62.0	67.3	uS/cm	0.20	0.20	---	---
Bicarbonate (HCO ₃)	8.0	6.8	32.4	32.2	25.7	25.9	29.9	27.0	mg/L	5.00	5.00	---	---
Carbonate (CO ₃)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	mg/L	5.0	5.0	---	---
Hydroxide (OH)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	mg/L	5.0	5.0	---	---
Alkalinity, Total (as CaCO ₃)	6.6	5.6	26.5	26.4	21.1	21.2	24.5	22.1	mg/L	5.00	5.00	---	---
Chemical Oxygen Demand	49	57	26	<10	<10	<10	<10	<10	mg/L	10	10	---	---
Total Organic Carbon	18.2	18.2	7.7	7.2	6.1	5.8	5.8	5.5	mg/L	2.5	2.5	---	---
Total Suspended Solids	<3.0	5.0	<3.0	5.0	<3.0	<3.0	<3.0	<3.0	mg/L	3.0	3.0	---	30.00
Total Metals													
Aluminum (Al)	0.150	0.172	0.0245	0.0440	0.0223	0.0150	0.0145	0.0130	mg/L	0.02000	0.00030	0.005 - 0.1**	---
Antimony (Sb)	<0.00040	<0.00040	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	mg/L	0.00040	0.000020	---	---
Arsenic (As)	0.00592	0.00958	0.000733	0.000898	0.000555	0.000403	0.000426	0.000559	mg/L	0.000400	0.000020	0.005	1.00
Barium (Ba)	0.00387	0.00878	0.00434	0.00455	0.00321	0.00275	0.00276	0.00338	mg/L	0.00020	0.000050	---	---
Beryllium (Be)	<0.0010	<0.0010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.0010	0.000010	---	---
Bismuth (Bi)	<0.00020	<0.00020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.00020	0.000010	---	---
Boron (B)	<0.020	<0.020	0.0092	0.0091	0.0062	0.0060	0.0062	0.0081	mg/L	0.020	0.0010	1.5	---
Cadmium (Cd)	<0.00020	<0.00020	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	mg/L	0.00020	0.0000050	0.000006 - 0.00001***	---

Table 3. Surface Water Quality Sampling Results, September 6, 2011

Analyte	Lake 1 Inlet ¹	Lake 1 Outlet ¹	Lake 2 Inlet	Lake 2 Outlet	Eclipse Lake Inlet	Eclipse Lake Background	Duplicate (Eclipse Lake Background)	Nicholas Lake Background	Units	Detection Limit Low-Level	Detection Limit Ultra-Low Level	CCME FAL Guideline ^A	MMER ^{AA}
Chromium (Cr)	<0.00080	<0.00080	0.000141	0.000166	0.000137	0.000098	0.000122	0.000104	mg/L	0.00080	0.000060	---	---
Cobalt (Co)	0.00030	0.00058	0.000133	0.000284	0.000326	0.000031	0.000027	0.000025	mg/L	0.00020	0.000010	---	---
Copper (Cu)	<0.0010	0.0011	0.00082	0.00095	0.00079	0.00074	0.00073	0.00052	mg/L	0.0010	0.00010	0.002	0.60
Iron (Fe)	0.200	0.403	0.0707	0.152	0.104	0.0082	0.0072	0.0080	mg/L	0.010	0.0010	0.3	---
Lead (Pb)	<0.00010	<0.00010	<0.000010	0.000032	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.00010	0.000010	0.001	0.40
Lithium (Li)	<0.0060	<0.0060	0.00236	0.00224	0.00201	0.00195	0.00203	0.00239	mg/L	0.00050	0.00050	---	---
Manganese (Mn)	0.0109	0.0334	0.0161	0.0387	0.0202	0.00149	0.00135	0.00229	mg/L	0.0020	0.000050	---	---
Mercury (Hg)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	mg/L	0.000020	0.000020	0.000026	---
Molybdenum (Mo)	0.00090	0.00071	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	mg/L	0.00010	0.000050	0.073	---
Nickel (Ni)	0.00148	0.00176	0.00109	0.00140	0.000977	0.000880	0.000873	0.000562	mg/L	0.00020	0.000060	0.025 - 0.0319***	1.00
Selenium (Se)	<0.00040	<0.00040	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	mg/L	0.00040	0.000040	0.001	---
Silver (Ag)	<0.00040	<0.00040	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	mg/L	0.00040	0.0000050	0.0001	---
Strontium (Sr)	0.0124	0.0125	0.0259	0.0251	0.0216	0.0208	0.0207	0.0270	mg/L	0.0002	0.000050	---	---
Thallium (Tl)	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.00010	0.000010	0.0008	---
Tin (Sn)	<0.00040	<0.00040	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	mg/L	0.00040	0.000050	---	---
Titanium (Ti)	<0.0050	<0.0050	0.00029	0.00061	0.00031	<0.00010	<0.00010	<0.00010	mg/L	0.0050	0.00010	---	---
Uranium (U)	<0.00010	<0.00010	0.000087	0.000109	0.000065	0.000057	0.000056	0.000098	mg/L	0.00010	0.000010	0.015	---
Vanadium (V)	<0.00050	<0.00050	0.000071	0.000122	0.000081	0.000057	0.000057	0.000054	mg/L	0.00050	0.000050	---	---
Zinc (Zn)	<0.0040	0.0050	<0.00080	0.00096	<0.00080	<0.00080	<0.00080	<0.00080	mg/L	0.0040	0.00080	0.03	1.00
Dissolved Metals													
Aluminum (Al)	0.144	0.137	0.0121	0.0114	0.0117	0.0137	0.0126	0.00969	mg/L	0.02000	0.00030	0.005 - 0.1**	
Antimony (Sb)	0.000030	0.000024	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	mg/L	0.00040	0.000020	---	
Arsenic (As)	0.00565	0.00576	0.000703	0.000674	0.000492	0.000441	0.000541	0.000540	mg/L	0.000400	0.000020	0.005	1.00
Barium (Ba)	0.00378	0.00395	0.00400	0.00385	0.00293	0.00277	0.00275	0.00330	mg/L	0.00020	0.000050	---	
Beryllium (Be)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.0010	0.000010	---	
Bismuth (Bi)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.00020	0.000010	---	
Boron (B)	0.0047	0.0055	0.0095	0.0094	0.0070	0.0065	0.0067	0.0084	mg/L	0.020	0.0010	1.5	
Cadmium (Cd)	<0.0000050	0.0000061	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	mg/L	0.00020	0.0000050	0.000006 - 0.00001***	
Chromium (Cr)	0.000457	0.000473	0.000151	0.000163	0.000115	0.000120	0.000105	0.000091	mg/L	0.00080	0.000060	---	
Cobalt (Co)	0.000296	0.000250	0.000043	0.000050	0.000159	0.000020	0.000019	0.000013	mg/L	0.00020	0.000010	---	
Copper (Cu)	0.00067	0.00059	0.00083	0.00087	0.00079	0.00092	0.00087	0.00054	mg/L	0.0010	0.00010	0.002	0.60

Table 3. Surface Water Quality Sampling Results, September 6, 2011

Analyte	Lake 1 Inlet ¹	Lake 1 Outlet ¹	Lake 2 Inlet	Lake 2 Outlet	Eclipse Lake Inlet	Eclipse Lake Background	Duplicate (Eclipse Lake Background)	Nicholas Lake Background	Units	Detection Limit Low-Level	Detection Limit Ultra-Low Level	CCME FAL Guideline ^A	MMER ^{^^}
Iron (Fe)	0.158	0.140	0.0137	0.0207	0.0241	0.0043	0.0034	0.0031	mg/L	0.010	0.0010	0.3	---
Lead (Pb)	0.000025	0.000088	<0.000010	<0.000010	0.000014	0.000012	<0.000010	0.000011	mg/L	0.00010	0.000010	0.001	0.40
Lithium (Li)	0.00331	0.00347	0.00239	0.00233	0.00193	0.00194	0.00195	0.00235	mg/L	0.00050	0.00050	---	---
Manganese (Mn)	0.0111	0.0169	0.00261	0.00486	0.0105	0.000271	0.000264	0.000290	mg/L	0.0020	0.000050	---	---
Mercury (Hg)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	mg/L	0.000020	0.000020	0.000026	---
Molybdenum (Mo)	<0.000050	<0.000050	<0.000050	0.000051	<0.000050	<0.000050	<0.000050	<0.000050	mg/L	0.00010	0.000050	0.073	---
Nickel (Ni)	0.00154	0.00153	0.00116	0.00117	0.000985	0.00102	0.000906	0.000644	mg/L	0.00020	0.000060	0.025 - 0.0319***	1.00
Selenium (Se)	0.000044	0.000047	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	mg/L	0.00040	0.000040	0.001	---
Silver (Ag)	<0.0000050	0.0000056	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	mg/L	0.00040	0.0000050	0.0001	---
Strontium (Sr)	0.0126	0.0115	0.0256	0.0247	0.0217	0.0208	0.0208	0.0268	mg/L	0.0002	0.000050	---	---
Thallium (Tl)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.00010	0.000010	0.0008	---
Tin (Sn)	0.000460	0.000445	0.000285	<0.000050	0.000431	<0.000050	<0.000050	0.000387	mg/L	0.00040	0.000050	---	---
Titanium (Ti)	0.00052	0.00034	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	0.00010	mg/L	0.0050	0.00010	---	---
Uranium (U)	0.000050	0.000042	0.000034	0.000039	0.000052	0.000047	0.000049	0.000078	mg/L	0.00010	0.000010	0.015	---
Vanadium (V)	0.000185	0.000177	0.000053	<0.000050	0.000051	0.000053	<0.000050	<0.000050	mg/L	0.00050	0.000050	---	---
Zinc (Zn)	0.0101	0.00496	0.00332	0.00270	0.00110	0.00228	0.00157	0.00194	mg/L	0.0040	0.00080	0.03	1.00
Legend													

^A Canadian Council of Ministers of the Environment - Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (December 2007) (CCME FAL).

^{^^} Metal Mining Effluent Regulation (MMER) Maximum Authorized Concentration in a Grab Sample

Outside CCME FAL Guidelines

Detection Limit above CCME FAL Guidelines

¹ Ultra-low level analysis completed for all water quality samples, except low-level analysis on total metals and nutrients at Lake 1 Inlet and Lake 1 Outlet due to higher turbidity levels.

< denotes result below detection level

--- = No CCME FAL or MMER Guideline

* = CCME guideline for Ammonia-N (Total Ammonia) is pH and water temperature dependent. The calculation of the CCME FAL guideline assumes the water temperature is 5 deg C and the analyzed pH to the nearest whole number.

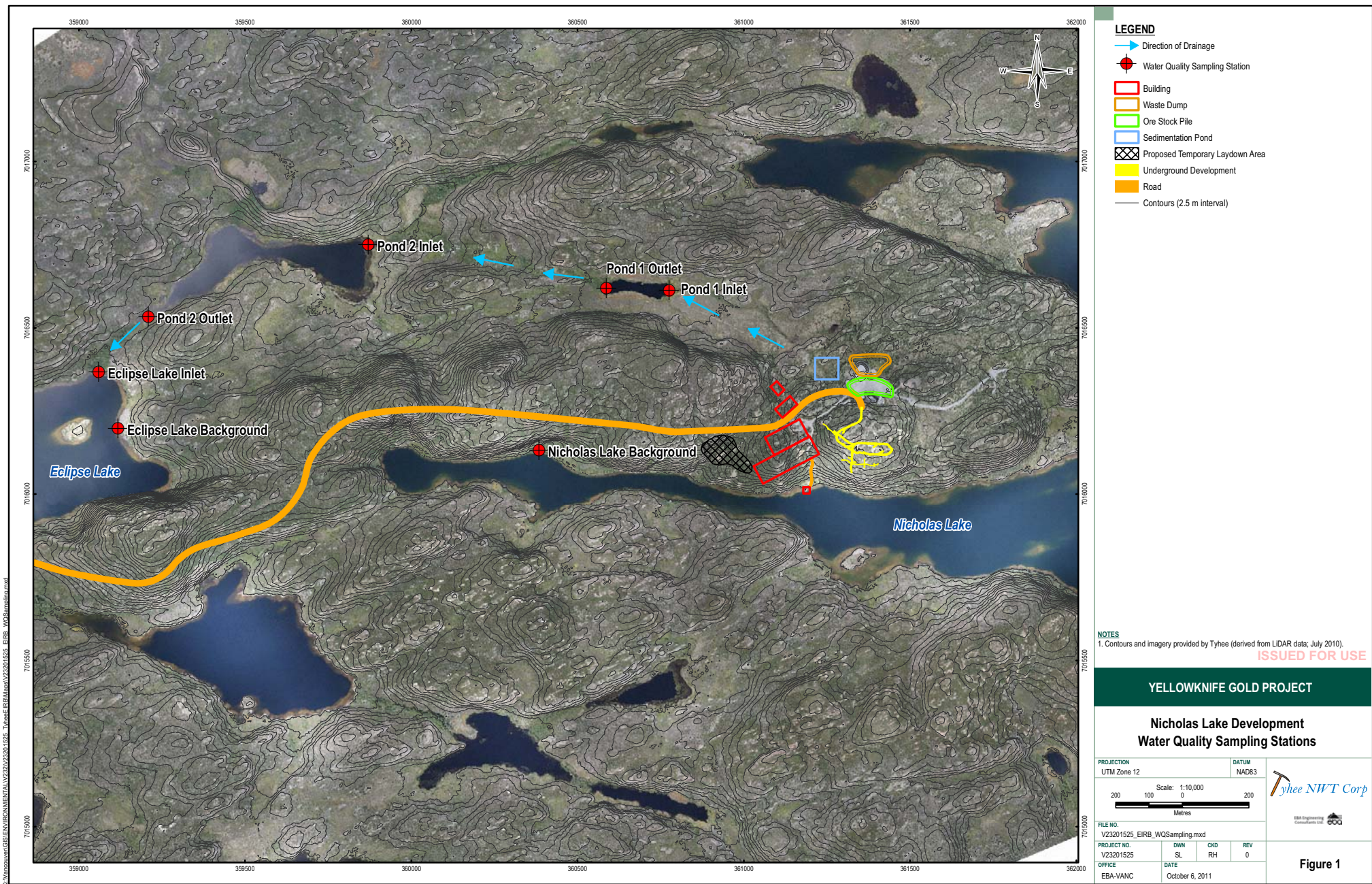
** CCME guideline for Aluminum is specific to the pH of the water at this site during this particular sampling event. Guideline for pH values < 6.5 = 0.005mg/L and for pH values ≥ 6.5 = 0.1 mg/L.

*** = CCME guideline for Cadmium is dependent on hardness of the water and is calculated using the formula: Cd guideline = 10 exp{0.86[log(hardness)]-3.2} for each sample.

**** = CCME guideline dependent on hardness of the water.

FIGURE

Figure 1 Nicholas Lake Development Water Quality Sampling Stations



APPENDIX A

APPENDIX A LABORATORY ANALYSIS



EBA ENG CONSULTANTS LTD
ATTN: KARLA LANGLOIS
201- 4916 49 STREET
PO BOX 2244
YELLOWKNIFE NT X1A 3P6

Date Received: 07-SEP-11
Report Date: 30-SEP-11 14:05 (MT)
Version: FINAL REV. 2

Client Phone: 867-920-2287

Certificate of Analysis

Lab Work Order #: L1054594
Project P.O. #: NOT SUBMITTED
Job Reference: V23201525
C of C Numbers: 1
Legal Site Desc:

Comments: ADDITIONAL 30-SEP-11 13:17

30-SEP-11: 30-SEP-11. L1054594-1 and -2, Added results for total Lithium.


Catherine Evaristo-Cordero
Senior Account Manager

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ADDRESS: 9936-67 Avenue, Edmonton, AB T6E 0P5 Canada | Phone: +1 780 413 5227 | Fax: +1 780 437 2311
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-1 LAKE 1 INLET							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Total Metals							
Total Metals in Water by ICPMS (Low)							
Aluminum (Al)-Total	0.150		0.020	mg/L		19-SEP-11	R2254178
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Arsenic (As)-Total	0.00592		0.00040	mg/L		19-SEP-11	R2254178
Barium (Ba)-Total	0.00387		0.00020	mg/L		19-SEP-11	R2254178
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-SEP-11	R2254178
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L		19-SEP-11	R2254178
Boron (B)-Total	<0.020		0.020	mg/L		19-SEP-11	R2254178
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L		19-SEP-11	R2254178
Chromium (Cr)-Total	<0.00080		0.00080	mg/L		19-SEP-11	R2254178
Cobalt (Co)-Total	0.00030		0.00020	mg/L		19-SEP-11	R2254178
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-SEP-11	R2254178
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-SEP-11	R2254178
Lithium (Li)-Total	<0.0060		0.0060	mg/L		19-SEP-11	R2254178
Molybdenum (Mo)-Total	0.00090		0.00010	mg/L		19-SEP-11	R2254178
Nickel (Ni)-Total	0.00148		0.00020	mg/L		19-SEP-11	R2254178
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Silver (Ag)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Strontium (Sr)-Total	0.0124		0.00020	mg/L		19-SEP-11	R2254178
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		19-SEP-11	R2254178
Tin (Sn)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Titanium (Ti)-Total	<0.0050		0.0050	mg/L		19-SEP-11	R2254178
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-SEP-11	R2254178
Vanadium (V)-Total	<0.00050		0.00050	mg/L		19-SEP-11	R2254178
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-SEP-11	R2254178
Total Metals in Water by ICPOES (Low)							
Calcium (Ca)-Total	2.86		0.50	mg/L		19-SEP-11	R2254363
Iron (Fe)-Total	0.200		0.010	mg/L		19-SEP-11	R2254363
Magnesium (Mg)-Total	1.68		0.10	mg/L		19-SEP-11	R2254363
Manganese (Mn)-Total	0.0109		0.0020	mg/L		19-SEP-11	R2254363
Potassium (K)-Total	1.14		0.10	mg/L		19-SEP-11	R2254363
Sodium (Na)-Total	2.7		1.0	mg/L		19-SEP-11	R2254363
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.144		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	0.000030		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.00565		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00378		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0047		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	2.81		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000457		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000296		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00067		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.158		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	0.000025		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00331		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	1.76		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.0111		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-1 LAKE 1 INLET							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Nickel (Ni)-Dissolved	0.00154		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.09		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	0.000044		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.57		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0126		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	0.000460		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	0.00052		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000050		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	0.000185		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.0101		0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	0.0119		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	49		10	mg/L		22-SEP-11	R2256402
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Total Kjeldahl Nitrogen	0.497		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	18.2		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0249		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	<0.50		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	2.75		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	1.60		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	1.03		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	2.3		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	19.9			mg/L		21-SEP-11	
Hardness (as CaCO3)	13.5			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	8.24		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	6.68		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	43.7		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	8.0		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	6.6		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-2 LAKE 1 OUTLET							
Sampled By: K. LANGLOIS on 06-SEP-11 @ 00:01							
Matrix: WATER							
Total Metals							
Total Metals in Water by ICPMS (Low)							
Aluminum (Al)-Total	0.172		0.020	mg/L		19-SEP-11	R2254178
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Arsenic (As)-Total	0.00958		0.00040	mg/L		19-SEP-11	R2254178
Barium (Ba)-Total	0.00878		0.00020	mg/L		19-SEP-11	R2254178
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-SEP-11	R2254178
Bismuth (Bi)-Total	<0.00020		0.00020	mg/L		19-SEP-11	R2254178
Boron (B)-Total	<0.020		0.020	mg/L		19-SEP-11	R2254178
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L		19-SEP-11	R2254178
Chromium (Cr)-Total	<0.00080		0.00080	mg/L		19-SEP-11	R2254178
Cobalt (Co)-Total	0.00058		0.00020	mg/L		19-SEP-11	R2254178
Copper (Cu)-Total	0.0011		0.0010	mg/L		19-SEP-11	R2254178
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-SEP-11	R2254178
Lithium (Li)-Total	<0.0060		0.0060	mg/L		19-SEP-11	R2254178
Molybdenum (Mo)-Total	0.00071		0.00010	mg/L		19-SEP-11	R2254178
Nickel (Ni)-Total	0.00176		0.00020	mg/L		19-SEP-11	R2254178
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Silver (Ag)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Strontium (Sr)-Total	0.0125		0.00020	mg/L		19-SEP-11	R2254178
Thallium (Tl)-Total	<0.00010		0.00010	mg/L		19-SEP-11	R2254178
Tin (Sn)-Total	<0.00040		0.00040	mg/L		19-SEP-11	R2254178
Titanium (Ti)-Total	<0.0050		0.0050	mg/L		19-SEP-11	R2254178
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-SEP-11	R2254178
Vanadium (V)-Total	<0.00050		0.00050	mg/L		19-SEP-11	R2254178
Zinc (Zn)-Total	0.0050		0.0040	mg/L		19-SEP-11	R2254178
Total Metals in Water by ICPOES (Low)							
Calcium (Ca)-Total	3.06		0.50	mg/L		19-SEP-11	R2254363
Iron (Fe)-Total	0.403		0.010	mg/L		19-SEP-11	R2254363
Magnesium (Mg)-Total	1.71		0.10	mg/L		19-SEP-11	R2254363
Manganese (Mn)-Total	0.0334		0.0020	mg/L		19-SEP-11	R2254363
Potassium (K)-Total	1.92		0.10	mg/L		19-SEP-11	R2254363
Sodium (Na)-Total	2.9		1.0	mg/L		19-SEP-11	R2254363
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.137		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	0.000024		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.00576		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00395		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0055		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	0.0000061		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	2.93		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000473		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000250		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00059		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.140		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	0.000088		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00347		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	1.80		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.0169		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-2 LAKE 1 OUTLET Sampled By: K. LANGLOIS on 06-SEP-11 @ 00:01 Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Nickel (Ni)-Dissolved	0.00153		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.85		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	0.000047		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	0.0000056		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.52		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0115		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	0.000445		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	0.00034		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000042		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	0.000177		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00496		0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	0.0132		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	57		10	mg/L		22-SEP-11	R2256402
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Total Kjeldahl Nitrogen	1.19		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	18.2		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0875		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	5.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	<0.50		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	2.59		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	1.53		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	1.40		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	2.1		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	19.1			mg/L		21-SEP-11	
Hardness (as CaCO3)	12.8			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	8.14		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	6.66		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	43.5		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	6.8		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	5.6		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-6 LAKE2 INLET Sampled By: K. LANGLOIS on 06-SEP-11 Matrix: WATER Ultra-Low Metals (CCMS) Mercury (Hg) Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest) Aluminum (Al)-Total	0.0245		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	0.000733		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.00434		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0092		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	5.35		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	0.000141		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	0.000133		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00082		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	0.0707		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	0.00236		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	2.87		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	0.0161		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	0.00109		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	1.16		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	2.82		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	0.0259		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050	RRV	0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	0.00029		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	0.000087		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	0.000071		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	<0.00080	RRV	0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved Diss. Metals in Water by CRC ICPMS (Ult) Aluminum (Al)-Dissolved	0.0121		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.000703		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00400		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0095		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	5.11		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000151		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000043		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00083		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.0137		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00239		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	2.75		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.00261		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-6 LAKE2 INLET							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.00116		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.13		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.78		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0256		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	0.000285	RRV	0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000034		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	0.000053		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00332	RRV	0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	26		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	0.283		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	7.7		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0090		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	1.17		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	5.18		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	2.59		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	0.99		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	2.5		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	35.4			mg/L		21-SEP-11	
Hardness (as CaCO3)	23.6			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	7.04		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	7.61		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	66.1		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	32.4		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	26.5		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-7 LAKE 2 OUTLET							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	0.0440		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	0.000898		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.00455		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0091		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	5.16		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	0.000166		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	0.000284		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00095		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	0.152		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	0.000032		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	0.00224		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	2.68		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	0.0387		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	0.00140		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	1.15		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	2.70		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	0.0251		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	0.00061		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	0.000109		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	0.000122		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	0.00096		0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.0114		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.000674		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00385		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0094		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	5.32		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000163		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000050		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00087		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.0207		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00233		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	2.71		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.00486		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-7 LAKE 2 OUTLET Sampled By: K. LANGLOIS on 06-SEP-11 Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	0.000051		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.00117		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.12		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.71		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0247		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	0.00012		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000039		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00270	RRV	0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	0.0084		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	0.340		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	7.2		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0121		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	5.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	1.12		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	4.74		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	2.44		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	0.86		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	2.3		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	34.2			mg/L		21-SEP-11	
Hardness (as CaCO3)	21.9			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	6.88		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	7.62		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	64.7		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	32.2		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	26.4		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-8 ECLIPSE LAKE INLET							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	0.0223		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	0.000555		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.00321		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0062		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	5.24		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	0.000137		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	0.000326		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00079		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	0.104		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	0.00201		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	2.73		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	0.0202		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	0.000977		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	1.08		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	2.06		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	0.0216		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	0.00031		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	0.000065		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	0.000081		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	<0.00080		0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.0117		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.000492		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00293		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0070		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	5.24		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000115		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000159		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00079		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.0241		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	0.000014		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00193		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	2.66		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.0105		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-8 ECLIPSE LAKE INLET Sampled By: K. LANGLOIS on 06-SEP-11 Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.000985		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.07		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.07		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0217		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	0.000431	RRV	0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000052		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	0.000051		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00110		0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	0.152		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	6.1		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0044		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	0.97		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	5.08		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	2.50		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	0.90		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	1.9		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	31.3			mg/L		21-SEP-11	
Hardness (as CaCO3)	23.0			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	7.28		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	7.64		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	63.0		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	25.7		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	21.1		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-9 ECLIPSE LAKE BACKGROUND							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	0.0150		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	0.000403		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.00275		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0060		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	5.08		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	0.000098		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	0.000031		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00074		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	0.0082		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	0.00195		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	2.62		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	0.00149		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	0.000880		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	1.07		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	2.01		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	0.0208		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	0.000057		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	0.000057		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	<0.00080		0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.0137		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.000441		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00277		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0065		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	5.21		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000120		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000020		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00092		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.0043		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	0.000012		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00194		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	2.64		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.000271		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-9 ECLIPSE LAKE BACKGROUND							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.00102		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.05		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.09		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0208		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000047		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	0.000053		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00228		0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	0.117		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	5.8		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0033		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	0.89		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	4.81		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	2.32		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	0.83		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	1.7		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	30.5			mg/L		21-SEP-11	
Hardness (as CaCO3)	21.6			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	7.20		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	7.66		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	61.5		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	25.9		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	21.2		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-10 NICHOLAS LAKE BACKGROUND							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	0.0130		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	0.000559		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.00338		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0081		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	5.56		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	0.000104		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	0.000025		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00052		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	0.0080		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	0.00239		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	2.64		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	0.00229		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	0.000562		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	1.25		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	2.69		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	0.0270		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	0.000098		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	0.000054		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	<0.00080		0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.00969		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.000540		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00330		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0084		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	5.54		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000091		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000013		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00054		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.0031		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	0.000011		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00235		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	2.67		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.000290		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-10 NICHOLAS LAKE BACKGROUND Sampled By: K. LANGLOIS on 06-SEP-11 Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.000644		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.22		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.74		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0268		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	0.000387	RRV	0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000078		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00194		0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	0.153		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	5.5		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0044		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	1.38		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	4.76		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	2.26		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	0.85		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	2.2		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	32.3			mg/L		21-SEP-11	
Hardness (as CaCO3)	21.2			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	7.61		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	7.69		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	67.3		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	27.0		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	22.1		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-11 DUPLICATE							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	0.0145		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	0.000426		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.00276		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0062		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	5.31		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	0.000122		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	0.000027		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00073		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	0.0072		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	0.00203		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	2.65		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	0.00135		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	0.000873		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	1.07		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	2.04		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	0.0207		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	0.000056		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	0.000057		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	<0.00080		0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	0.0126		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	0.000541	RRV	0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	0.00275		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0067		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	5.28		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	0.000105		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	0.000019		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00087		0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	0.0034		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	0.00195		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	2.64		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.000264		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-11 DUPLICATE							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.000906		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	1.04		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	2.07		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.0208		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	0.000049		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00157		0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	0.201		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	5.8		2.5	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	0.0032		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	0.89		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	4.78		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	2.31		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	0.89		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	1.8		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low EC			%		21-SEP-11	
TDS (Calculated)	32.6			mg/L		21-SEP-11	
Hardness (as CaCO3)	21.4			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	7.18		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	7.67		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	62.0		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	29.9		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	24.5		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-12 FIELD BLANK							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	<0.00030		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	0.0011	RRV	0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	<0.020		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	<0.000060		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00011	RRV	0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	<0.0010		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	<0.00050		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	<0.0040		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	<0.000060		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	<0.020		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	<0.0050		0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	0.00300	RRV	0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	<0.00030	RRV	0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020	RRV	0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	<0.000020	RRV	0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	<0.000050	RRV	0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010	RRV	0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010	RRV	0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0011	RRV	0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050	RRV	0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	0.084	RRV	0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	<0.000060	RRV	0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	<0.000010	RRV	0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00018	RRV	0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	<0.0010	RRV	0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	<0.000010	RRV	0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	<0.00050	RRV	0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	<0.0040	RRV	0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	0.000083	RRV	0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-12 FIELD BLANK							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050	RRV	0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	0.000111	RRV	0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	<0.020	RRV	0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040	RRV	0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050	RRV	0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	0.0138	RRV	0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	0.000092	RRV	0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010	RRV	0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	<0.000050	RRV	0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	<0.00010	RRV	0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	<0.000010	RRV	0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	<0.000050	RRV	0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00409	RRV	0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	0.77		0.50	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	<0.0010		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	<0.50		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	<0.50		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	<0.10		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	<0.50		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	<1.0		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low TDS			%		21-SEP-11	
TDS (Calculated)	<1.0			mg/L		21-SEP-11	
Hardness (as CaCO3)	<1.0			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	<0.50		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	5.85		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	0.73		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-13 TRIP BLANK							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Ultra-Low Metals (CCMS)							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Metals in Water by CRC ICPMS (No Digest)							
Aluminum (Al)-Total	<0.00030		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Total	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Total	0.000098	RRV	0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Total	<0.0010		0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Total	<0.020		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Total	<0.000060		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Total	0.00012	RRV	0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Total	<0.0010		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Total	<0.00050		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Total	<0.0040		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Total	<0.000060		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Total	<0.020		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Total	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Total	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Total	0.0138	RRV	0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Total	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Total	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Total	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Total	0.00299	RRV	0.00080	mg/L		15-SEP-11	R2253011
Ultra-Low Metals (CCMS) - Dissolved							
Diss. Metals in Water by CRC ICPMS (Ult)							
Aluminum (Al)-Dissolved	<0.00030		0.00030	mg/L		15-SEP-11	R2253011
Antimony (Sb)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Arsenic (As)-Dissolved	<0.000020		0.000020	mg/L		15-SEP-11	R2253011
Barium (Ba)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Beryllium (Be)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Bismuth (Bi)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Boron (B)-Dissolved	0.0010	RRV	0.0010	mg/L		15-SEP-11	R2253011
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Calcium (Ca)-Dissolved	<0.020		0.020	mg/L		15-SEP-11	R2253011
Chromium (Cr)-Dissolved	<0.000060		0.000060	mg/L		15-SEP-11	R2253011
Cobalt (Co)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Copper (Cu)-Dissolved	0.00011	RRV	0.00010	mg/L		15-SEP-11	R2253011
Iron (Fe)-Dissolved	<0.0010		0.0010	mg/L		15-SEP-11	R2253011
Lead (Pb)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Lithium (Li)-Dissolved	<0.00050		0.00050	mg/L		15-SEP-11	R2253011
Magnesium (Mg)-Dissolved	<0.0040		0.0040	mg/L		15-SEP-11	R2253011
Manganese (Mn)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1054594-13 TRIP BLANK							
Sampled By: K. LANGLOIS on 06-SEP-11							
Matrix: WATER							
Diss. Metals in Water by CRC ICPMS (Ult)							
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Nickel (Ni)-Dissolved	<0.000060		0.000060	mg/L		15-SEP-11	R2253011
Potassium (K)-Dissolved	<0.020		0.020	mg/L		15-SEP-11	R2253011
Selenium (Se)-Dissolved	<0.000040		0.000040	mg/L		15-SEP-11	R2253011
Silver (Ag)-Dissolved	<0.0000050		0.0000050	mg/L		15-SEP-11	R2253011
Sodium (Na)-Dissolved	0.0183	RRV	0.0050	mg/L		15-SEP-11	R2253011
Strontium (Sr)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Tin (Sn)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Titanium (Ti)-Dissolved	<0.00010		0.00010	mg/L		15-SEP-11	R2253011
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L		15-SEP-11	R2253011
Vanadium (V)-Dissolved	<0.000050		0.000050	mg/L		15-SEP-11	R2253011
Zinc (Zn)-Dissolved	0.00297	RRV	0.00080	mg/L		15-SEP-11	R2253011
Mercury (Hg) - Dissolved							
Mercury (Hg)-Dissolved	<0.000020		0.000020	mg/L		13-SEP-11	R2250570
Miscellaneous Parameters							
Ammonia (as N)	<0.0050		0.0050	mg/L		20-SEP-11	R2255640
Chemical Oxygen Demand	<10		10	mg/L		22-SEP-11	R2256402
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	14-SEP-11	15-SEP-11	R2251801
Total Organic Carbon	0.78		0.50	mg/L		14-SEP-11	R2252110
Phosphorus (P)-Total	<0.0010		0.0010	mg/L		19-SEP-11	R2254088
Total Suspended Solids	<3.0		3.0	mg/L		12-SEP-11	R2249799
Routine Water Analysis							
Chloride by IC							
Chloride (Cl)	<0.50		0.50	mg/L		10-SEP-11	R2249575
Dissolved Metals in Water by ICPOES							
Calcium (Ca)-Dissolved	<0.50		0.50	mg/L		12-SEP-11	R2249918
Magnesium (Mg)-Dissolved	<0.10		0.10	mg/L		12-SEP-11	R2249918
Potassium (K)-Dissolved	<0.50		0.50	mg/L		12-SEP-11	R2249918
Sodium (Na)-Dissolved	<1.0		1.0	mg/L		12-SEP-11	R2249918
Ion Balance Calculation							
Ion Balance	Low TDS			%		21-SEP-11	
TDS (Calculated)	<1.0			mg/L		21-SEP-11	
Hardness (as CaCO3)	<1.0			mg/L		21-SEP-11	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		12-SEP-11	
Nitrite as N by IC							
Nitrite (as N)	<0.050		0.050	mg/L		10-SEP-11	R2249575
Sulfate by IC							
Sulfate (SO4)	<0.50		0.50	mg/L		10-SEP-11	R2249575
pH, Conductivity and Total Alkalinity							
pH	5.59		0.10	pH		09-SEP-11	R2248704
Conductivity (EC)	0.74		0.20	uS/cm		09-SEP-11	R2248704
Bicarbonate (HCO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Carbonate (CO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Hydroxide (OH)	<5.0		5.0	mg/L		09-SEP-11	R2248704
Alkalinity, Total (as CaCO3)	<5.0		5.0	mg/L		09-SEP-11	R2248704

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
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**
C-TOT-ORG-LOW-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
CL-IC-ED	Water	Chloride by IC	APHA 4110 B-ION CHROMATOGRAPHY
COD-ED	Water	Chemical Oxygen Demand	APHA 5220 D-Micro Colorimetry
HG-D-L-CVAA-ED	Water	Mercury (Hg) - Dissolved	EPA 245.7 / EPA 245.1
HG-T-L-CVAA-ED	Water	Mercury (Hg)	EPA 245.7 / EPA 245.1
IONBALANCE-ED	Water	Ion Balance Calculation	APHA 1030E
MET-D-ICP-ED	Water	Dissolved Metals in Water by ICPOES	APHA 3120 B-ICP-OES
MET-D-NP-U-CCMS-ED	Water	Diss. Metals in Water by CRC ICPMS (Ult)	APHA 3125-ICP-MS
Ultra trace metals in water are analyzed by ICPMS, based on US EPA Method 6020A (Jan 1998). This procedure is intended for pristine field-filtered acid-preserved water samples. ALS recommends that filtration blanks be submitted for this test to aid with interpretation of results.			
MET-T-L-ICP-ED	Water	Total Metals in Water by ICPOES (Low)	APHA 3120 B-ICP-OES
MET-T-L-MS-ED	Water	Total Metals in Water by ICPMS (Low)	SW 846 - 6020-ICPMS
MET-T-NP-U-CCMS-ED	Water	Metals in Water by CRC ICPMS (No Digest)	APHA 3125-ICP-MS
Ultra trace metals in water are analyzed by ICPMS, based on US EPA Method 6020A (Jan 1998). The detection limits provided can only be met for undigested samples. This procedure is intended for pristine, non-turbid, acid-preserved water samples, where sample turbidity is < 1 NTU. Where turbidity exceeds 1 NTU, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results.			
NH3-L-CFA-ED	Water	Ammonia in Water by Colour	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.			
NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-ED	Water	Nitrite as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
NO3-IC-ED	Water	Nitrate as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
P-T-L-COL-ED	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.			
PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity	APHA 4500-H, 2510, 2320
All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)			
SO4-IC-ED	Water	Sulfate by IC	APHA 4110 B-ION CHROMATOGRAPHY
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
TKN-L-CFA-ED	Water	TKN in Water by Colour	APHA 4500-NORG (TKN)
This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total Kjeldahl Nitrogen is determined by sample digestion at 380 celcius with analysis using an automated colourimetric finish.			

** 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
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

