Gartner Lee Limited

September 30th, 2005

Harvey Klatt
Sabina Resources Ltd.
309 Court Street South
Thunder Bay, Ontario
P7B 2Y1

Dear Mr. Klatt:

Re: 50598 – Baseline Water Quality Monitoring Program at Hackett River Project

As per the request of Mr. Harvey Klatt of Sabina Resources Ltd., Gartner Lee Limited (GLL) carried out a baseline water quality monitoring program (initiated 2004) at the Hackett River Project Area in Nunavut from July 5th to July 8th 2005. Sample collection, general site observations and subsequent analysis of results were completed by Chad Davey M.Sc, Environmental Technician of GLL's Whitehorse, Yukon office.

The scope of work conducted as part of this program included:

- Preparation of a revised sampling network to include streams in the Hackett and Mara drainages;
- Collection of water quality samples for chemical analysis from 19 locations plus a control lake;
- Measurement of surface flow on 8 streams within the Mara and Hackett River watersheds; and
- Summarization and reporting of the results from the water quality monitoring program.

This letter report contains a description of the 2005 water quality monitoring and flow measurement program and a presentation of the results.

1.0 Background

The Hackett River property is an advanced-stage base and precious metal property located in the Kitikmeot region of Nunavut at 66 degrees north and 108 degrees west, approximately 480 kilometers northeast of Yellowknife, NWT and 75 kilometers southwest of a potential deep water shipping port at Bathurst Inlet.

The Hackett River project area is situated in two watersheds; Hackett River and Mara River. Both rivers are tributaries of the Burnside River. Boot Lake, Cleaver Lake, Anne Lake and Turtle

Lake are located in the Mara River drainage while Banana Lake, Camp Lake and Sunken Lakes are in the Hackett River drainage.

2.0 Methodology

GLL visited the property in July 2005 to continue the baseline water quality monitoring program that was initiated in 2004. The sampling program focused on the areas being targeted by current exploration activities and consisted of water quality sampling from the following 12 locations including one reference lake (Figure 1):

- Upper Sunken Lake;
- Boot Lake;
- Cleaver Lake;
- Anne Lake;
- Mara River (two locations);
- Unnamed tributary #1 entering Mara River
- Banana Lake;
- Camp Lake;
- Hackett River (two locations); and
- Cigar Lake (reference lake).

Water quality sampling and flow measurements were conducted at the following 8 locations:

- Outlet of Hood Lake;
- Outlet of Jo Lake;
- Outlet of Hood Lake;
- Outlet of Upper Sunken Lake (2 locations)
- Outlet of Boot Lake;
- Outlet of Turtle Lake;
- Unnamed Tributary #2 entering Mara River

2.1 Water Quality Sampling

In order to monitor the water quality of lakes and rivers within the Hackett and Mara watersheds in relation to the exploratory mining activities conducted by Sabina Resources, field collection and subsequent laboratory analysis was required.

GLL collected field measurements of pH, temperature and electrical conductivity at each site. Conductivity and temperature measurements were collected using a YSI-63 pH, Conductivity and Temperature probe. The pH was calibrated on site using pH 7 and pH 4 buffer solutions.

Calibration of the conductivity probe was checked in standard solutions on site and indicated acceptable calibration.

The water samples were collected using recognized sampling protocols. Appropriate measures were taken to mitigate sample contamination from all sources. Field staff wore disposable latex gloves when sampling. Surface water samples were grab samples taken from either the lakeshore or collected from a stream.

Samples were collected by GLL for general chemical parameters (laboratory pH, conductivity, sulphate, alkalinity, hardness, nitrate, nitrite, phosphate, total dissolved solids, total suspended solids and turbidity) in a pre-cleaned 1 L plastic bottle supplied by the analytical laboratory. Samples for total metals were collected in 250 mL acid washed plastic bottles supplied by the laboratory and preserved with nitric acid. Dissolved metals were vacuum filtered in the field through 0.45 micron disposable filterware and preserved with nitric acid immediately after filtration. Samples for total organic carbon (TOC), dissolved organic carbon and total nitrogen were collected in 125 mL amber glass bottles. TOC and total nitrogen samples were preserved on site using hydrochloric acid.

All samples were kept cold, but not allowed to freeze, at all times between sample collection and delivery to the laboratory. Samples were shipped via air cargo from Yellowknife to ALS Environmental, a CAEAL accredited environmental laboratory in Calgary, Alberta. Chain of custody forms were prepared and accompanied the samples. A copy of the Chain of Custody is attached to the analytical laboratory report (Attachment A).

2.2 Flow Measurements

In order to characterize the hydrology and assess the potential loading of various water quality parameters within the watershed, measurements of stream flow at several lake and stream outlets was conducted.

The Swoffer Model 2100 propeller-type meter was the preferred method to calculate flow velocity in streams. In some streams the flow was extremely low, rendering the Swoffer meter impossible to employ. In these situations the float method was used to calculated flow velocity, in which a floating object was placed within the water and its travel time over a fixed distance downstream was recorded.

2.3 Quality Control/Quality Assurance

Quality Control/Quality Assurance protocols are a necessary component to any environmental sampling program. For the purposes of maintaining data quality a number of industry and corporate protocols were applied to this project including field replicates and laboratory duplicates. Field replicate sampling is designed to provide a measure of field variability and the repeatability of sampling. Variability of less than 25 % indicates very low field variability. Two replicate sample locations were chosen randomly and two samples collected sequentially. The surface sample for Camp Lake and Banana Lake was taken in replicate. Laboratory duplicates provide a measure of the analytical variability (precision). Laboratory variability of less than 25% is generally considered acceptable.

In accordance with GLL's stream gauging protocols for propeller-type meters, all site locations were straight channels, free from obstructions upstream or downstream and point velocities were taken at 10% intervals of the total channel width. Regardless of which method was used to calculate flow velocity, carefully planning in selecting each site was taken to ensure representative hydraulic conditions.

3.0 Results

The 2005 sampling program sites were chosen based upon previous work carried out in the area, as well as focusing on areas of exploration and potential development. The results of the 2005 water quality program are presented in Tables 1, 2, 3 and 4 and discussed in the following section. Data were evaluated based upon the Canadian Council of Ministers for the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life (2003). Values that exceed guidelines are highlighted within the data tables. Since the 2004 and 2005 baseline water sampling programs were conducted at different times of the year (2004 - August 20th to 24th; 2005 - July 5th to 8th), direct comparisons of water quality parameters were difficult to interpret due to limnological cycles that naturally occur within lakes. However general water quality similarities between the two sample years were observed. All results presented here are within the context of the 2005 sampling program only. Photographs of the sampling locations are presented in Attachment B.

Generally, the overall surface water system can be characterized as a series of isolated lakes with moderate surface water drainage systems at the time of sampling (Photograph 1 and 2). The following observations can be made:

- Cigar Lake was sampled as a potential reference lake to provide an overview of the regional and background water chemistry. The water quality at Cigar Lake is similar to

the other locations in the area not receiving drainage from mineralized areas (Boot Lake, Mara River, and Hackett River).

- The majority of surface waters sampled were very soft[1] (hardness less than 30 mg/L) with the exception of Boot Lake, Mara Inflow #2 and Turtle Outflow which are considered soft[2] (hardness between 30 and 60 mg/L) and Cleaver Lake and Anne Lake, which are moderately soft[2] (hardness between 60 and 120 mg/L);
- The majority of surface waters sampled contained Alkalinity levels that were generally low (< 10 mg/l $CaCO_3$) indicative of high sensitivity[2] to acidic inputs with the exception of Anne Lake, Mara Inflow #1, Mara Inflow #2, Banana Lake and Turtle Outflow which had slightly higher (10 to 20 mg/l CaCO3) alkalinity levels and therefore moderate sensitivity to acidic inputs[3];
- Alkalinity levels in the rivers were also low indicating a sensitivity to acid inputs[3];
- Organic carbon levels in all waters sampled were low and nutrient levels, specifically phosphorus, are indicative of nutrient poor surface waters[4];
- There were no detectable levels of total suspended sediment in any of the surface samples and turbidity levels are extremely low (< 2.0 NTU).
- Sulphate levels are elevated in lakes/streams potentially receiving drainage from mineralized areas, specifically Camp Lake, Cleaver Lake, Anne Lake, Banana Lake and Upper Sunken Lake, Upper Sunken Lake Outflow, Sunken Lakes Outflow, Mara Inflow #2, Turtle Outflow.
- Generally, most metal levels in lakes/streams were low and within the recommended CCME guidelines with the exception of cadmium, copper, zinc and aluminum.
- The levels of cadmium and zinc exceed the recommended CCME guidelines in Camp Lake and Banana Lake, as well as lakes/streams downstream: Upper Sunken Lake, Upper Sunken Lake Outflow, Sunken Lakes Outflow, Camp Creek and Hackett River Downstream.
- The level of zinc exceeds the recommended CCME guidelines in Camp Lake as well as lakes/streams downstream: Upper Sunken Lake, Upper Sunken Lake Outflow, Sunken Lakes Outflow, and Camp Creek.

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[1] McNeeley, R.N., V.P. Neimanis and L. Dwyer. 1979. *Water Quality Sourcebook – A Guide to Water Quality Parameters.* Inland Waters Directorate, Water Quality Branch, Minister of Supply and Services Canada.

[2] Saffran, K.A. and D.O. Trew. 1996. *Sensitivity of Alberta Lakes to Acidifying Deposition: An Update of Maps with Emphasis on 109 Northern Lakes.* Water Management Division. Alberta Environmental Protection.

[3] Boward, D., P. Kayzak, S. Stranko, M. Hurd and A. Prochaska. 1999. *From the Mountains to the Sea: The State of Maryland's Freshwater Streams.* Maryland Department of Natural Resources.

[4] Canadian Council of Ministers of the Environment (CCME). 2003. *Canadian Guidance Framework for the Management of Phosphorus in Freshwater Systems.* National Guidelines and Standards Office, Environment Canada.

- Elevated levels of cadmium, copper and zinc that exceed the recommended CCME guidelines occur in Cleaver Lake and lake/streams downstream; Anne Lake and Turtle Lake Outflow.
- Elevated levels of cadmium that exceed the recommended CCME guidelines also appear in Boot Lake and downstream to Boot Lake Outlet.
- Upper Sunken Lake, Upper Sunken Lake Outflow, Sunken Lakes Outflow and Boot Lake had elevated levels of aluminum compared to the other sampling locations.
- Elevated levels of lead that exceed the recommended CCME appear in Cleaver Lake and elevated levels of iron that exceed the recommended CCME appear in Mara Inflow #2.

3.1 Quality Control/Quality Assurance

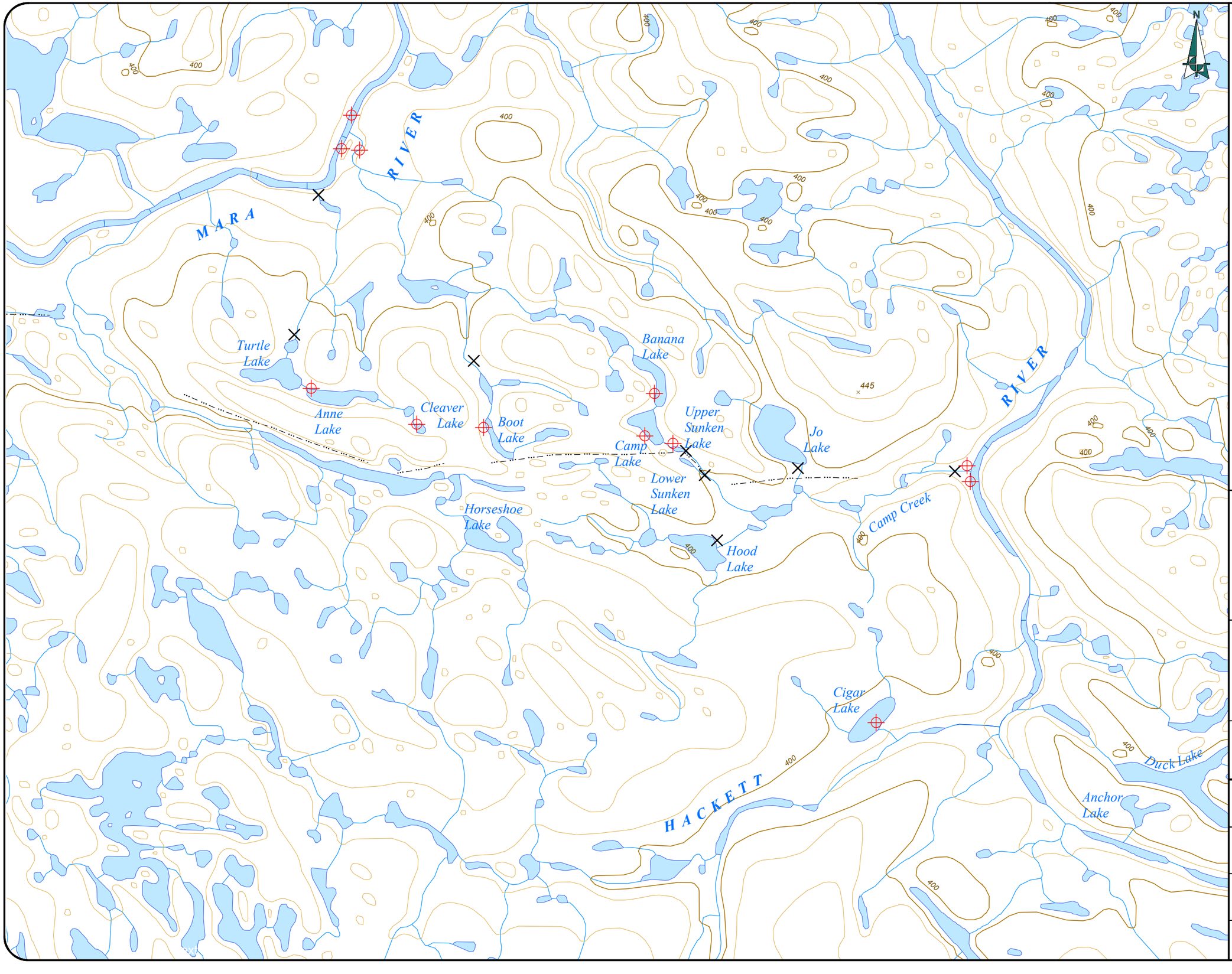
The surface sample from Camp Lake and Banana Lake was collected in replicate (e.g. two samples collected sequentially) and summarized in Table 5. Generally, the two water samples had similar water quality. The highest relative percent difference (RPD) was noted in dissolved lead for Banana Lake with a RPD between samples of 116%. Typically, RPD's greater than 25% can be an indication of field variability, and as parameters approach their detection limit high variability is more likely to occur. Lead values for Camp Lake also had a high RPD's; 51% for total and 44% for dissolved. A comparison of dissolved and total lead indicates that the majority of the lead in these samples is associated with particulate matter (> 0.45 micron), which could be the cause of this variability. Dissolved zinc and turbidity for Banana Lake also had high RPD values (38% and 55% respectively). The remainder of the parameters had variability of 24% or less. Laboratory precision is summarized in Table 6 with total dissolved solids having RPD's of over 100% for both lab duplicates (Cleaver Lake and Banana Lake Replicate).

I trust that this summary of the 2005 Baseline Water Quality Monitoring Program at Hackett River Project meets your current needs. If you have any questions, or if we can be of further assistance, please do not hesitate to contact me at (867) 633-6474 ext. 34.

Yours very truly,
GARTNER LEE LIMITED

Leslie Gomm, Ph.D., P.Eng.
Senior Environmental Engineer

Attachments: A – Surface Water Quality Laboratory Data Sheets
B – Photo log



LEGEND:

- Water Quality Sample Locations
- X Water Quality and Flow Measurement Sample Locations

Physical Features

- Esker
- Rapids or Falls
- Watercourse
- Waterbody

Elevation Features

- Spot Elevation
- Index Contour (100m)
- Intermediate Contour (20m)

DATA SOURCES AND DISCLAIMERS:

National Topographic Database (NTDB) data compiled by Government of Canada, Natural Resources Canada (NRCan), at 1:250 000 scale.

Sample site locations determined by field Global Positioning System (GPS) locations recorded in UTM Zone 12, NAD83. All sample locations recorded by Gartner Lee Ltd.

Created By: AS

Reviewed By: LG

Date Issued: August 6, 2005

Project Number: 50598

File Name: 40655_water_quality_sample_locations_proposeal_2Aug2005.mxd

Revision:1

Projection: UTM Zone 12 NAD83

0 1.25 2.5 5 kms

Scale 1: 75 000
Contour Interval: 20 metres

Sabina Resources Limited

Project: Hackett River Project - 50598
Location: Hackett River, NWT
Client: Sabina Resources Limited

2005 Baseline Water Quality Sample Sites

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Figure No. 1

Hackett River

Table 1. July 5, 6 & 7 2005 Surface Water Sampling and Flow Measurements

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Weather: On July 5th - Cloudy and cold, no wind. July 6th - Clear skies and warm, light breeze. July 7th - Cloudy and cold, windy.

Date	Station Name	Easting*	Northing*	Electrical Conductivity (uS/cm @ 25°C)	Temperature (°C)	pH	Flow (L/s)	Comments
July 5th	Upper Sunken Lake	620,455	7,312,469	79.6	9.3	8.16	-	Accessed sample location by foot from camp. Visable outflow from Upper Sunken Lake was gauged (see Sunken Lake Outflow 1#). Sample from west shore <1/2 way from inlet. No direct flow link to Lower Sunken Lake. Outlet from Camp Lake not visable although groundwater flow is likely.
July 5th	Sunken Lake Outflow #1	620,735	7,312,304	68.8	10.2	7.47	22.2	Accessed sample location by foot from camp. Sample location 30 m downstream from Upper Sunken Lake (near east shore). Flow measurements were made using the area-velocity method. Riverbed consisted of large gravel-sized sediment (4 cm).
July 5th	Sunken Lake Outflow #2	620,955	7,312,017	68	9.4	7.07	23.2	Accessed sample location by foot from camp. Outflow from Lower Sunken Lake was not visable. Sampling was located 20 m downstream of where the outflow of Lower Sunken Lake would likely meet (during freshet) the outflow from Upper Sunken Lake. Flow measurements were made using the area-velocity method. Riverbed was primarily bedrock.
July 6th	Mara River d/s	613,610	7,319,444	12.6	10	6.90	-	Accessed site by helicopeter. Sampled the east shore 50 m downstream from a riffle/rapid area.Too strong to get flow measurement, approximately 30 m wide.
July 6th	Mara River u/s	613,488	7,319,102	12.8	10.1	6.85	-	Accessed site by helicopter. Sample location below rapids area, upstream of drainage input from project area. Ripples/rapids followed by slower deeper pools. Too strong to wade to get flow measurement, approximately 34 m wide. Fair bit of flow.
July 6th	Mara Inflow #1	613,554	7,319,221	53	7.4	6.86	-	Accessed site by helicopter. Sample location 10 m upstream from confluence with Mara River. Flow is too slow/shallow to make flow measurements. Most sections of the stream is dry.
July 6th	Mara Inflow #2	612,869	7,317,957	62.3	11.1	6.88	3.95	Accessed site by helicopter. Sample taken 30 m upstream from confluence with Mara River. Stream has very little flow, difficult to gauge. Flow measurements were made using float-area method. Riverbed consisted if boulder-sized sediments (> 25 cm)
July 6th	Turtle Outflow	612,395	7,314,775	117.2	9.8	7.17	40.2	Accessed site by helicopter. Sample location was 50 m downstream from Turtle Lake. Flow measurements were made using the velocity-area method. Riverbed consisted of boulder-sized sediments (> 25 cm)
July 6th	Anne Lake	612,756	7,313,633	111.6	11.4	7.07	-	Accessed site by helicopter. Sample location was on the north side - middle of lake.
July 6th	Cleaver Lake	614,828	7,313,012	122.4	11.5	7.02	-	Accessed site by helicopter. Sample location was southeast side of lake, no island was visiable. No visable surface flow outlet from Cleaver Lake.
July 6th	Boot Lake	616,425	7,312,805	157.4	9.6	6.63	-	Accessed site by helicopter. Sample location at narrows (west shore).
July 6th	Hood Lake Outflow	621,395	7,310,400	41.6	10.5	7.03	81.5	Accessed site by helicopter. Sample location was 100 m downstream from Hood Lake. Flow measurements were made using the area-velocity method. Riverbed consisted of sand and gravel-sized sediments (0.1 to 2 cm).
July 6th	Jo Lake Outflow	623,120	7,311,942	11.7	11.5	6.91	15.9	Accessed site by helicopter. Sample location was 100 m downstream of Jo Lake. Flow measurements were made using area-velocity method. Riverbed consisted of large gravel-sized sediments (5 cm).
July 6th	Cigar Lake	624,783	7,306,527	20.6	14.2	6.83	-	Accessed site by helicopter. Sample location was taken on the south side of the lake on the east side of the outlet. Intended for reference.
July 6th	Hackett River d/s	626,738	7,312,057	15.9	11.3	6.98	-	Accessed site by helicopter. Sample location was 40 m downstream from confluence of Camp Creek. Flow is quite slow (deep) in Hackett River at this location, looks like a lake.
July 6th	Camp Creek	626,682	7,312,043	29.3	13.2	6.8	594.9	Accessed site by helicopter. Sample location was on Camp Creek, 30 m upstream from confluence with Hackett River. Due to problems with the stream gauge, the float-area method was used to measure the flow in Camp Creek. Riverbed consisted of gravel-sized sediments (4 cm).
July 6th	Hackett River u/s	626,682	7,311,973	20.1	13.4	6.97	-	Accessed site by helicopter. Sample location was 25 m upstream from confluence of Camp Creek. Hackett River at this location is also slow moving and deep.
July 7th	Boot Lake Outflow	616,219	7,314,214	74.9	11	7.33	89.6	Accessed site by helicopter. Sample location was 100 m downstream from Boot Lake. Many boulders, difficult to measure flow with gauge. Flow measurememts were made using float-area method. Riverbed consisted of boulder-sized sediments (> 25 cm)
July 7th	Banana Lake	620,063	7,313,529	55.1	10.4	6.84	-	Accessed by helicopter. Sample location was on east side of lake.
July 7th	Camp Lake	619,860	7,312,625	81.1	8.4	6.51	-	Accessed by foot from camp. Since there was no zodiac, sample location was at the southeast shore of Camp Lake only.

Notes ** UTM Zone 12, NAD83*

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Table 2 Surface Water Samples from Hackett River, 2005

General Chemistry Analysis (mg/L)

Station	Detection Limits	Water Quality Guidelines	Upper Sunken Lake	Upper Sunken Lake Outflow	Sunken Lakes Outflow	Boot Lake	Boot Lake Outflow	Cleaver Lake	Anne Lake	Mara U/S	Mara D/S	Mara Inflow #1	Mara Inflow #2
Date		CCME [a]	7/5/2005	7/5/2005	7/5/2005	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005
Physical Tests													
Temperature (^{o}C)			9.3	10.2	9.4	9.6	11	11.5	11.4	10.1	10	7.4	11.1
Conductivity (lab) (uS/cm)	2		80.7	72.6	71.7	163	76.9	165	159	13.5	13.6	55.4	87.8
Conductivity (field) (uS/cm)			79.6	68.8	68	157.4	74.9	122.4	111.6	12.8	12.6	53	62.3
Total Dissolved Solids	1		37.2	36.4	37.4	72.5	35.3	83.9	82.4	6.2	6.5	22.0	40.6
Hardness CaCO3	0.54		24.4	24.4	24.4	58.5	27.5	62.8	65.6	4.30	4.47	21.7	35.2
pH (lab)	0.01	6.5-9.0	6.47	6.45	6.30	6.48	6.61	6.58	6.88	6.60	6.62	6.92	6.93
pH (field)			8.16	7.47	7.07	6.63	7.33	7.02	7.07	6.85	6.9	6.86	6.88
TSS	4		<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Turbidity (NTU)	0.1		0.92	0.80	0.69	0.24	0.27	0.49	0.24	0.54	1.11	0.36	0.50
Dissolved Anions													
Alkalinity-Total CaCO3	1		4.8	4.0	2.7	4.2	6.1	9.6	18.2	4.4	4.4	16.3	17.3
Chloride	0.5		4.78	4.66	4.51	34.5	10.2	13.2	1.06	<0.50	<0.50	0.73	0.68
Sulphate SO4	1		20.0	19.4	20.7	11.6	11.6	43.0	53.3	1.8	1.8	10.1	23.3
Nutrients													
Ammonia Nitrogen	0.0050		0.0050	0.0270	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0060	0.0075	0.0077	0.0050
Total Kjeldahl Nitrogen	0.050		0.119	0.137	0.132	0.134	0.145	0.112	0.188	0.154	0.145	0.128	0.159
Nitrate Nitrogen	0.0050	13	0.0070	<0.0050	<0.0050	<0.0050	0.0050	<0.0050	<0.0050	0.0060	<0.0050	0.0100	<0.0050
Nitrite Nitrogen	0.0050	0.06	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate/Nitrite Nitrogen	0.0071		<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.0100	<0.0071
Dissolved ortho-phosphate	0.0010		<0.0010	<0.0010	0.0027	<0.0010	<0.0010	<0.0010	<0.0010	0.0027	0.0027	0.0027	0.0027
Total Phosphate	0.0020		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic Parameters													
Dissolved Organic Carbon	0.50		0.59	1.56	1.40	1.56	1.72	1.12	1.91	1.92	1.90	1.87	2.32
Total Organic Carbon	0.50		1.72	1.69	1.55	1.84	1.81	1.42	2.15	2.09	2.11	1.98	2.44

All units mg/L unless otherwise noted

[a] *Canadian water quality guidelines for the protection of aquatic life, Council of Ministers of the Environment, 1999*

**Average of sample and replicate*

Italic *results exceed CCME Aquatic Life Guidelines*

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Table 2 (continued) Surface Water Samples from Hackett River, 2005

General Chemistry Analysis (mg/L)

Station	Detection Limits	Water Quality Guidelines	Cigar Lake	*Banana Lake	Hackett U/S	Hackett D/S	*Camp Lake	Turtle Outflow	Hood Lake Outflow	Jo lake Outflow	Camp Creek
Date		CCME [a]	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005
Physical Tests											
Temperature (°C)			14.2	10.4	13.4	11.3	13.2	9.8	10.5	11.5	13.2
Conductivity (lab) (uS/cm)	2		26.6	56.45	20.5	31.7	85.45	120	43.4	12.1	39.0
Conductivity (field) (uS/cm)			20.6	55.1	20.1	15.9	81.1	117.2	41.6	11.7	29.3
Total Dissolved Solids	1		13.2	25.4	9.6	15.3	42.5	57.4	20.0	5.4	19.0
Hardness CaCO3	0.54		9.67	20.6	6.61	10.6	28	48.7	15.1	3.63	13.2
pH (lab)	0.01	6.5-9.0	6.75	6.83	6.63	6.59	6.43	6.93	6.68	6.62	6.57
pH (field)			6.83	6.84	6.97	6.98	6.51	7.17	7.03	6.91	6.8
TSS	4		<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Turbidity (NTU)	0.1		0.40	0.47	0.28	0.53	0.94	0.36	0.28	0.34	0.29
Dissolved Anions											
Alkalinity-Total CaCO3	1		7.4	11.3	4.7	5.1	3.7	19.8	6.8	4.6	4.7
Chloride	0.5		<0.50	<0.50	<0.50	0.58	6.48	1.13	<0.50	<0.50	0.80
Sulphate SO4	1		4.8	14.4	4.3	8.1	21.95	35.1	12.1	1.2	10.7
Nutrients											
Ammonia Nitrogen	0.005		0.0061	<0.0050	<0.0050	0.0051	<0.0050	0.0057	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen	0.050		0.247	0.179	0.155	0.119	0.1715	0.138	0.125	0.160	0.126
Nitrate Nitrogen	0.005	13	<0.0050	0.005	<0.0050	0.0070	<0.0050	0.0080	<0.0050	<0.0050	0.0060
Nitrite Nitrogen	0.005	0.06	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate/Nitrite Nitrogen	0.007		<0.0071	<0.0071	<0.0071	<0.0071	<0.0071	0.0080	<0.0071	<0.0071	<0.0071
Dissolved ortho-phosphate	0.001		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate	0.002		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Organic Parameters											
Dissolved Organic Carbon	0.50		3.06	1.99	1.81	1.65	1.575	1.64	1.48	1.86	1.67
Total Organic Carbon	0.50		4.11	2.24	1.98	1.85	1.945	1.80	1.76	2.11	1.75

All units mg/L unless otherwise noted

[a] Canadian water quality guidelines for the protection of aquatic life, Council of Ministers of the Environment, 1999

**Average of sample and replicate*

Italic *results exceed CCME Aquatic Life Guidelines*

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Table 3 Surface Water Samples from Hackett River, 2005

Total Metals Analysis (mg/L)

Station	Detection Limits	Water Quality Guidelines	Upper Sunken Lake	Upper Sunken Lake Outflow	Sunken Lakes Outflow	Boot Lake	Boot Lake Outflow	Cleaver Lake	Anne Lake	Mara U/S	Mara D/S	Mara Inflow #1	Mara Inflow #2
Date		CCME [a]	7/5/2005	7/5/2005	7/5/2005	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005
Total Metals													
Aluminum	0.001	0.005-0.1[b]	0.0693	0.0702	0.0962	0.0206	0.0138	0.0261	0.0103	0.0178	0.0197	0.0136	0.0157
Antimony	0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	0.0001	0.005	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	0.00005		0.00813	0.00785	0.00780	0.0181	0.00819	0.0118	0.00819	0.00206	0.00226	0.00352	0.00429
Beryllium	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.00005	0.000017	0.00165	0.00163	0.00164	0.000133	0.000090	0.00699	0.00100	<0.000050	<0.000050	<0.000050	<0.000050
Calcium	0.02		7.17	7.07	6.91	20.8	8.64	19.6	19.8	0.920	0.997	6.40	10.9
Chromium	0.0005	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	0.0001		0.00070	0.00068	0.00074	0.00025	<0.00010	0.00031	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	0.0001	0.002-0.004[c]	0.0391	0.0387	0.0300	0.00124	0.00280	0.0177	0.0189	0.00078	0.00079	0.00125	0.00180
Iron	0.03	0.3	0.040	0.037	0.075	0.035	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	79.6
Lead	0.00005	0.001-0.007[d]	0.000414	0.000404	0.000402	0.000133	<0.000050	0.00118	0.000068	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	0.005		<0.0050	<0.0050	<0.0050	0.0063	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	0.005		1.76	1.71	1.72	1.81	1.54	3.25	3.80	0.439	0.459	1.49	2.11
Manganese	0.00005		0.0418	0.0416	0.0410	0.0181	0.00150	0.00891	0.0225	0.00125	0.00211	0.00546	0.000999
Mercury	0.00005	0.000026	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum	0.00005	0.073	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	0.0005	0.025-0.15[e]	0.00264	0.00255	0.00287	0.00536	0.00149	0.00457	0.00269	<0.00050	0.00052	<0.00050	<0.00050
Phosphorus	0.3		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Potassium	0.05		0.842	0.807	0.815	1.07	0.822	1.15	1.10	0.350	0.368	0.660	0.695
Selenium	0.001	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silicon	0.05		0.845	0.847	0.858	0.417	0.401	1.59	1.19	0.122	0.127	0.560	0.543
Silver	0.00001	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	0.05		0.627	0.597	0.604	0.948	0.642	0.878	0.589	0.449	0.462	0.558	0.487
Strontium	0.0001		0.0356	0.0348	0.0331	0.149	0.0423	0.0849	0.0165	0.00430	0.00450	0.00795	0.00939
Thallium	0.0001	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	0.0001		<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium	0.00001		0.000013	0.000012	0.000017	<0.000010	0.000010	0.000018	0.000028	0.000049	0.000052	0.000018	0.000039
Vanadium	0.001		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	0.001	0.03	0.331	0.331	0.338	0.0309	0.0207	1.10	0.203	0.0012	0.0014	0.0017	0.0058

All units mg/l unless otherwise noted

a) Canadian water quality guidelines for the protection of aquatic life, Council of Ministers of the Environment, 2003

b) 0.005mg/L at pH < 6.5, [Ca2+] < 4 mg/L, DOC < 2 mg/L: 0.1 mg/L at pH ≥ 6.5, [Ca2+] ≥ 4 mg/L, DOC ≥ 2 mg/L

c) 0.002 mg/L at [CaCO3] = 0 - 120 mg/L; 0.003 mg/L at [CaCO3] =120 - 180 mg/L; 0.004 mg/L at [CaCO3] >180mg/L

d) 0.001 mg/L at [CaCO3] = 0 - 60 mg/L; 0.002 mg/L at [CaCO3] =60 - 120 mg/L; 0.004 mg/L at [CaCO3] =120 -180mg/L; 0.007 mg/L at [CaCO3] > 180mg/L

e) 0.025 mg/L at [CaCO3] = 0 - 60 mg/L; 0.065 mg/L at [CaCO3] =60 - 120 mg/L; 0.110 mg/L at [CaCO3] =120 -180mg/L; 0.150 mg/L at [CaCO3] > 180mg/L

**Average of sample and replicate*

Italic *results exceed CCME Aquatic Life Guidelines*

Gartner Lee

Table 3 (continued) Surface Water Samples from Hackett River, 2005

Total Metals Analysis (mg/L)

Station	Detection Limits	Water Quality Guidelines	Cigar Lake	*Banana Lake	Hackett U/S	Hackett D/S	*Camp Lake	Turtle Outflow	Hood Lake Outflow	Jo lake Outflow	Camp Creek
Date		CCME [a]	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005
Total Metals											
Aluminum	0.001	0.005-0.1[b]	0.0212	0.0246	0.0192	0.0225	0.0835	0.0036	0.0129	0.0094	0.0214
Antimony	0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	0.0001	0.005	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	0.00005		0.00295	0.00451	0.00324	0.00451	0.009295	0.00470	0.00472	0.00191	0.00522
Beryllium	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.00005	0.000017	<0.000050	0.00008	<0.000050	0.000061	0.001955	0.000119	<0.000050	<0.000050	0.000115
Calcium	0.02		2.60	5.61	1.59	2.66	8.205	15.2	3.73	0.782	3.22
Chromium	0.0005	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	0.0001		<0.00010	0.00019	<0.00010	<0.00010	0.00089	<0.00010	0.00012	<0.00010	<0.00010
Copper	0.0001	0.002-0.004[c]	0.00141	0.0323	0.00132	0.00219	0.043	0.00503	0.00149	0.00053	0.00284
Iron	0.03	0.3	0.038	<0.030	<0.030	<0.030	0.113	<0.030	<0.030	<0.030	0.036
Lead	0.00005	0.001-0.007[d]	0.000069	<0.000050	<0.000050	<0.000050	0.00065	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	0.005		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	0.005		0.887	1.67	0.717	1.11	1.865	2.75	1.54	0.468	1.32
Manganese	0.00005		0.00194	0.0049	0.000763	0.00113	0.05795	0.00122	0.00273	0.00616	0.00135
Mercury	0.00005	0.000026	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum	0.00005	0.073	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	0.0005	0.025-0.15[e]	0.00342	0.00064	0.00119	0.00307	0.003215	0.00067	0.00751	<0.00050	0.00426
Phosphorus	0.3		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Potassium	0.05		0.430	0.836	0.481	0.514	0.8655	0.881	0.459	0.363	0.525
Selenium	0.001	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silicon	0.05		0.142	0.474	0.146	0.312	0.950	0.618	0.451	0.136	0.367
Silver	0.00001	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	0.05		0.484	0.566	0.448	0.506	0.667	0.497	0.506	0.403	0.517
Strontium	0.0001		0.00552	0.0084	0.00497	0.00771	0.04515	0.0125	0.00902	0.00332	0.00944
Thallium	0.0001	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium	0.00001		0.000015	0.000014	0.000011	0.000028	0.000012	0.000140	0.000012	0.000018	0.000038
Vanadium	0.001		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	0.001	0.03	0.0023	0.014	0.0020	0.0223	0.379	0.0356	0.0036	<0.0010	0.0356

All units mg/l unless otherwise noted

a) Canadian water quality guidelines for the protection of aquatic life, Council of Ministers of the Environment, 2003

b) 0.005mg/L at pH < 6.5, [Ca2+] < 4 mg/L, DOC < 2 mg/L: 0.1 mg/L at pH ≥ 6.5, [Ca2+] ≥ 4 mg/L, DOC ≥ 2 mg/L

c) 0.002 mg/L at [CaCO3] = 0 - 120 mg/L; 0.003 mg/L at [CaCO3] =120 - 180 mg/L; 0.004 mg/L at [CaCO3] >180mg/L

d) 0.001 mg/L at [CaCO3] = 0 - 60 mg/L; 0.002 mg/L at [CaCO3] =60 - 120 mg/L; 0.004 mg/L at [CaCO3] =120 -180mg/L; 0.007 mg/L at [CaCO3] > 180mg/L

e) 0.025 mg/L at [CaCO3] = 0 - 60 mg/L; 0.065 mg/L at [CaCO3] =60 - 120 mg/L; 0.110 mg/L at [CaCO3] =120 -180mg/L; 0.150 mg/L at [CaCO3] > 180mg/L

**Average of sample and replicate*

Italic *results exceed CCME Aquatic Life Guidelines*

Gartner Lee

Table 4 Surface Water Samples from Hackett River, 2005

Dissolved Metals Analysis (mg/L)

Station	Detection Limits	Water Quality Guidelines	Upper Sunken Lake	Upper Sunken Lake Outflow	Sunken Lakes Outflow	Boot Lake	Boot Lake Outflow	Cleaver Lake	Anne Lake	Mara U/S	Mara D/S	Mara Inflow #1	Mara Inflow #2
Date		CCME [a]	7/5/2005	7/5/2005	7/5/2005	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005
Dissolved Metals													
Aluminum	0.001	0.005-0.1[b]	0.0346	0.0285	0.0426	0.0116	0.0105	0.0121	0.0092	0.0152	0.0222	0.0098	0.0140
Antimony	0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	0.0001	0.005	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	0.00005		0.00786	0.00771	0.00771	0.0176	0.00793	0.0119	0.00807	0.00210	0.00254	0.00331	0.00422
Beryllium	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.00005	0.000017	0.00153	0.00159	0.00163	0.000129	0.000073	0.00694	0.000989	<0.000050	<0.000050	<0.000050	<0.000050
Calcium	0.02		6.97	7.01	6.95	20.5	8.50	19.7	19.9	0.975	1.06	6.31	10.7
Chromium	0.0005	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	0.0001		0.00064	0.00066	0.00073	0.00026	<0.00010	0.00032	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	0.0001	0.002-0.004[c]	0.0301	0.0308	0.0232	0.00111	0.00264	0.0131	0.0165	0.00077	0.00141	0.00108	0.00185
Iron	0.03	0.3	<0.030	<0.030	0.033	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead	0.00005	0.001-0.007[d]	0.000116	0.000117	0.000113	<0.000050	<0.000050	0.000352	<0.000050	<0.000050	0.00160	<0.000050	<0.000050
Lithium	0.005		<0.0050	<0.0050	<0.0050	0.0065	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	0.005		1.70	1.68	1.70	1.78	1.51	3.29	3.88	0.452	0.440	1.45	2.08
Manganese	0.00005		0.0401	0.0412	0.0406	0.0174	0.00105	0.00867	0.0214	0.000783	0.00140	0.000487	0.000580
Mercury	0.00005	0.000026	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum	0.00005	0.073	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	0.0005	0.025-0.15[e]	0.00250	0.00251	0.00294	0.00522	0.00145	0.00464	0.00260	0.00052	0.00056	<0.00050	0.00052
Phosphorus	0.3		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
Potassium	0.05		0.806	0.810	0.818	1.06	0.812	1.15	1.11	0.371	0.377	0.655	0.696
Selenium	0.001	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silicon	0.05		0.853	0.843	0.872	0.423	0.413	1.69	1.21	0.114	0.140	0.570	0.509
Silver	0.00001	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	0.05		0.746	0.711	0.737	1.10	0.759	1.01	0.730	0.467	0.632	0.681	0.615
Strontium	0.0001		0.0344	0.0344	0.0330	0.144	0.0410	0.0834	0.0168	0.00443	0.00443	0.00776	0.00928
Thallium	0.0001	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010
Titanium	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium	0.00001		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	0.000042	0.000046	0.000014	0.000030
Vanadium	0.001		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	0.001	0.03	0.324	0.329	0.345	0.0323	0.0239	1.14	0.202	0.0018	0.0089	0.0043	0.0081

All units mg/l unless otherwise noted

a) Canadian water quality guidelines for the protection of aquatic life, Council of Ministers of the Environment, 2003

b) 0.005mg/L at pH < 6.5, [Ca2+] < 4 mg/L, DOC < 2 mg/L: 0.1 mg results exceed CCME Aquatic Life Guidelines

c) 0.002 mg/L at [CaCO3] = 0 - 120 mg/L; 0.003 mg/L at [CaCO3] =120 - 180 mg/L; 0.004 mg/L at [CaCO3] >180mg/L

d) 0.001 mg/L at [CaCO3] = 0 - 60 mg/L; 0.002 mg/L at [CaCO3] =60 - 120 mg/L; 0.004 mg/L at [CaCO3] =120 -180mg/L; 0.007 mg/L at [CaCO3] > 180mg/L

e) 0.025 mg/L at [CaCO3] = 0 - 60 mg/L; 0.065 mg/L at [CaCO3] =60 - 120 mg/L; 0.110 mg/L at [CaCO3] =120 -180mg/L; 0.150 mg/L at [CaCO3] > 180mg/L

**Average of sample and replicate*

Italic *results exceed CCME Aquatic Life Guidelines*

Gartner Lee

Table 4 (continued) Surface Water Samples from Hackett River, 2005

Dissolved Metals Analysis (mg/L)

Station	Detection Limits	Water Quality Guidelines	Cigar Lake	*Banana Lake	Hackett U/S	Hackett D/S	*Camp Lake	Turtle Outflow	Hood Lake Outflow	Jo lake Outflow	Camp Creek
Date		CCME [a]	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/7/2005	7/6/2005	7/6/2005	7/6/2005	7/6/2005
Dissolved Metals											
Aluminum	0.001	0.005-0.1[b]	0.0168	0.0159	0.0166	0.0181	0.01815	0.0038	0.0088	0.0115	0.0156
Antimony	0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	0.0001	0.005	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	0.00005		0.00286	0.00459	0.00304	0.00424	0.009035	0.00464	0.00456	0.00171	0.00499
Beryllium	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	0.0005		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	0.00005	0.000017	<0.000050	0.000076	<0.000050	0.000070	0.00184	0.000099	<0.000050	<0.000050	0.000106
Calcium	0.02		2.46	5.55	1.51	2.50	8.19	15.1	3.58	0.739	3.15
Chromium	0.0005	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	0.0001		<0.00010	0.0002	<0.00010	<0.00010	0.000885	<0.00010	<0.00010	<0.00010	<0.00010
Copper	0.0001	0.002-0.004[c]	0.00113	0.02765	0.00130	0.00208	0.0335	0.00443	0.00138	0.00051	0.00247
Iron	0.03	0.3	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead	0.00005	0.001-0.007[d]	<0.000050	<0.000050	<0.000050	<0.000050	0.0001255	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	0.005		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	0.005		0.856	1.63	0.689	1.05	1.835	2.69	1.51	0.435	1.30
Manganese	0.00005		0.00105	0.004585	0.000603	0.000970	0.0566	0.000612	0.00217	0.00387	0.00124
Mercury	0.00005	0.000026	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum	0.00005	0.073	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	0.0005	0.025-0.15[e]	0.00308	0.00069	0.00117	0.00288	0.00327	0.00065	0.00718	<0.00050	0.00426
Phosphorus	0.3		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium	0.05		0.394	0.8405	0.487	0.506	0.863	0.883	0.456	0.361	0.521
Selenium	0.001	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silicon	0.05		0.151	0.495	0.149	0.307	0.918	0.633	0.452	0.144	0.381
Silver	0.00001	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	0.05		0.584	0.6605	0.592	0.624	0.731	0.624	0.624	0.534	0.652
Strontium	0.0001		0.00539	0.00829	0.00477	0.00737	0.0445	0.0126	0.00868	0.00306	0.00912
Thallium	0.0001	0.0008	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	0.0001		<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium	0.00001		0.000013	0.000011	0.000010	0.000023	<0.000010	0.000084	<0.000010	0.000014	0.000030
Vanadium	0.001		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	0.001	0.03	0.0046	0.0169	0.0054	0.0240	0.3795	0.0375	0.0064	0.0038	0.0378

All units mg/l unless otherwise noted

a) Canadian water quality guidelines for the protection of aquatic life, Council of Ministers of the Environment, 2003

b) 0.005mg/L at pH < 6.5, [Ca2+] < 4 mg/L, DOC < 2 mg/L: 0.1 mg/L results exceed CCME Aquatic Life Guidelines

c) 0.002 mg/L at [CaCO3] = 0 - 120 mg/L; 0.003 mg/L at [CaCO3] =120 - 180 mg/L; 0.004 mg/L at [CaCO3] >180mg/L

d) 0.001 mg/L at [CaCO3] = 0 - 60 mg/L; 0.002 mg/L at [CaCO3] =60 - 120 mg/L; 0.004 mg/L at [CaCO3] =120 -180mg/L; 0.007 mg/L at [CaCO3] > 180mg/L

e) 0.025 mg/L at [CaCO3] = 0 - 60 mg/L; 0.065 mg/L at [CaCO3] =60 - 120 mg/L; 0.110 mg/L at [CaCO3] =120 -180mg/L; 0.150 mg/L at [CaCO3] > 180mg/L

**Average of sample and replicate*

Italic *results exceed CCME Aquatic Life Guidelines*

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Table 5. QA/QC: Field Replicates

Surface Water Analysis Results (mg/L)

Station	Camp Lake	Camp Lake Rep	RPD	Station	Camp Lake	Camp Lake Rep	RPD
Date	7/7/2005	7/7/2005	%	Date	7/7/2005	7/7/2005	%
Physical Tests				**Dissolved Anions**			
Conductivity (uS/cm)	85.2	85.7	1%	Alkalinity-Total CaCO3	3.7	3.7	0%
Total Dissolved Solids	42.7	42.3	1%	Chloride Cl	6.48	6.48	0%
Hardness CaCO3	28.6	27.4	4%	Sulphate SO4	22.0	21.9	0%
pH	6.44	6.41	0%				
Total Suspended Solids	<4.0	<4.0	0%				
Turbidity (NTU)	0.86	1.01	16%				
Nutrients				**Organic Parameters**			
Ammonia Nitrogen N	0.005	0.0057	0%	Dissolved Organic Carbon C	1.59	1.56	2%
Total Kjeldahl Nitrogen N	0.155	0.188	19%	Total Organic Carbon C	1.96	1.93	2%
Nitrate Nitrogen N	<0.0050	0.0080	0%				
Nitrite Nitrogen N	<0.0050	<0.0050	0%				
Nitrite/Nitrate Nitrogen N	<0.0071	0.0080	0%				
Dissolved ortho-Phosphate P	<0.0010	<0.0010	0%				
Total Phosphate P	<0.0020	<0.0020	0%				
Total Metals				**Dissolved Metals**			
Aluminum T-Al	0.0928	0.0742	22%	Aluminum D-Al	0.0160	0.0203	24%
Antimony T-Sb	<0.00010	<0.00010	0%	Antimony D-Sb	<0.00010	<0.00010	0%
Arsenic T-As	<0.00010	<0.00010	0%	Arsenic D-As	<0.00010	<0.00010	0%
Barium T-Ba	0.00941	0.00918	2%	Barium D-Ba	0.00919	0.00888	0%
Beryllium T-Be	<0.00050	<0.00050	0%	Beryllium D-Be	<0.00050	<0.00050	0%
Bismuth T-Bi	<0.00050	<0.00050	0%	Bismuth D-Bi	<0.00050	<0.00050	0%
Boron T-B	<0.010	<0.010	0%	Boron D-B	<0.010	<0.010	0%
Cadmium T-Cd	0.00198	0.00193	3%	Cadmium D-Cd	0.00185	0.00183	1%
Calcium T-Ca	8.31	8.10	3%	Calcium D-Ca	8.35	8.03	4%
Chromium T-Cr	<0.00050	<0.00050	0%	Chromium D-Cr	<0.00050	<0.00050	0%
Cobalt T-Co	0.00091	0.00087	4%	Cobalt D-Co	0.00089	0.00088	1%
Copper T-Cu	0.0442	0.0418	6%	Copper D-Cu	0.0353	0.0317	11%
Iron T-Fe	0.122	0.104	16%	Iron D-Fe	<0.030	0.038	0%
Lead T-Pb	0.000816	0.000484	51%	Lead D-Pb	0.000153	0.000098	44%
Lithium T-Li	<0.0050	<0.0050	0%	Lithium D-Li	<0.0050	<0.0050	0%
Magnesium T-Mg	1.89	1.84	3%	Magnesium D-Mg	1.89	1.78	6%
Manganese T-Mn	0.0585	0.0574	2%	Manganese D-Mn	0.0574	0.0558	3%
Mercury T-Hg	<0.000050	<0.000050	0%	Mercury D-Hg	<0.000050	<0.000050	0%
Molybdenum T-Mo	<0.000050	<0.000050	0%	Molybdenum D-Mo	<0.000050	<0.000050	0%
Nickel T-Ni	0.00331	0.00312	6%	Nickel D-Ni	0.00343	0.00311	0%
Phosphorus T-P	<0.30	<0.30	0%	Phosphorus D-P	<0.30	<0.30	0%
Potassium T-K	0.883	0.848	0%	Potassium D-K	0.892	0.834	7%
Silicon T-Si	0.950	0.955	1%	Silicon D-Si	0.918	0.942	3%
Silver T-Ag	<0.000010	<0.000010	0%	Silver D-Ag	<0.000010	<0.000010	0%
Sodium T-Na	0.676	0.658	0%	Sodium D-Na	0.706	0.756	7%
Strontium T-Sr	0.0456	0.0447	2%	Strontium D-Sr	0.0449	0.0441	2%
Thallium T-Tl	<0.00010	<0.00010	0%	Thallium D-Tl	<0.00010	<0.00010	0%
Tin T-Sn	<0.00010	<0.00010	0%	Tin D-Sn	<0.00010	<0.00010	0%
Titanium T-Ti	<0.010	<0.010	0%	Titanium D-Ti	<0.010	<0.010	0%
Uranium T-U	0.000013	0.000011	0%	Uranium D-U	<0.000010	<0.000010	0%
Vanadium T-V	<0.0010	<0.0010	0%	Vanadium D-V	<0.0010	<0.0010	0%
Zinc T-Zn	0.383	0.375	2%	Zinc D-Zn	0.378	0.381	1%

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Table 5 (continued). QA/QC: Field Replicates

Surface Water Analysis Results (mg/L)

Station	Banana Lake	Banana Lake Rep	RPD	Station	Banana Lake	Banana Lake Rep	RPD
Date	7/7/2005	7/7/2005	%	Date	7/7/2005	7/7/2005	%
Physical Tests				**Dissolved Anions**			
Conductivity (uS/cm)	56.1	56.8	1%	Alkalinity-Total CaCO3	11.4	11.2	2%
Total Dissolved Solids	25.5	25.2	1%	Chloride Cl	<0.50	<0.50	0%
Hardness CaCO3	20.8	20.3	2%	Sulphate SO4	14.3	14.5	1%
pH	6.83	6.83	0%				
Total Suspended Solids	<4.0	<4.0	0%				
Turbidity (NTU)	0.34	0.60	55%				
Nutrients				**Organic Parameters**			
Ammonia Nitrogen N	<0.0050	<0.0050	0%	Dissolved Organic Carbon C	1.99	1.99	0%
Total Kjeldahl Nitrogen N	0.183	0.175	4%	Total Organic Carbon C	2.25	2.23	1%
Nitrate Nitrogen N	<0.0050	0.0050	0%				
Nitrite Nitrogen N	<0.0050	<0.0050	0%				
Nitrite/Nitrate Nitrogen N	<0.0071	<0.0071	0%				
Dissolved ortho-Phosphate P	<0.0010	<0.0010	0%				
Total Phosphate P	<0.0020	<0.0020	0%				
Total Metals				**Dissolved Metals**			
Aluminum T-Al	0.0272	0.0219	22%	Aluminum D-Al	0.0175	0.0143	20%
Antimony T-Sb	<0.00010	<0.00010	0%	Antimony D-Sb	<0.00010	<0.00010	0%
Arsenic T-As	<0.00010	<0.00010	0%	Arsenic D-As	<0.00010	<0.00010	0%
Barium T-Ba	0.00460	0.00442	4%	Barium D-Ba	0.00479	0.00439	0%
Beryllium T-Be	<0.00050	<0.00050	0%	Beryllium D-Be	<0.00050	<0.00050	0%
Bismuth T-Bi	<0.00050	<0.00050	0%	Bismuth D-Bi	<0.00050	<0.00050	0%
Boron T-B	<0.010	<0.010	0%	Boron D-B	<0.010	<0.010	0%
Cadmium T-Cd	0.000076	0.000086	12%	Cadmium D-Cd	0.000079	0.000073	8%
Calcium T-Ca	5.67	5.55	2%	Calcium D-Ca	5.62	5.48	3%
Chromium T-Cr	<0.00050	<0.00050	0%	Chromium D-Cr	<0.00050	<0.00050	0%
Cobalt T-Co	0.00020	0.00018	11%	Cobalt D-Co	0.00021	0.00019	10%
Copper T-Cu	0.0327	0.0318	3%	Copper D-Cu	0.0289	0.0264	9%
Iron T-Fe	0.031	<0.030	0%	Iron D-Fe	<0.030	<0.030	0%
Lead T-Pb	<0.000050	<0.000050	0%	Lead D-Pb	0.000189	0.00005	116%
Lithium T-Li	<0.0050	<0.0050	0%	Lithium D-Li	<0.0050	<0.0050	0%
Magnesium T-Mg	1.70	1.64	4%	Magnesium D-Mg	1.65	1.61	2%
Manganese T-Mn	0.00493	0.00479	3%	Manganese D-Mn	0.00470	0.00447	5%
Mercury T-Hg	<0.000050	<0.000050	0%	Mercury D-Hg	<0.000050	<0.000050	0%
Molybdenum T-Mo	<0.000050	<0.000050	0%	Molybdenum D-Mo	<0.000050	<0.000050	0%
Nickel T-Ni	0.00063	0.00065	3%	Nickel D-Ni	0.00073	0.00065	12%
Phosphorus T-P	<0.30	<0.30	0%	Phosphorus D-P	<0.30	<0.30	0%
Potassium T-K	0.854	0.818	4%	Potassium D-K	0.863	0.818	5%
Silicon T-Si	0.474	0.471	1%	Silicon D-Si	0.495	0.447	10%
Silver T-Ag	<0.000010	<0.000010	0%	Silver D-Ag	<0.000010	<0.000010	0%
Sodium T-Na	0.569	0.563	1%	Sodium D-Na	0.755	0.566	29%
Strontium T-Sr	0.00858	0.00821	4%	Strontium D-Sr	0.00842	0.00816	3%
Thallium T-Tl	<0.00010	<0.00010	0%	Thallium D-Tl	<0.00010	<0.00010	0%
Tin T-Sn	<0.00010	<0.00010	0%	Tin D-Sn	<0.00010	0.00012	0%
Titanium T-Ti	<0.010	<0.010	0%	Titanium D-Ti	<0.010	<0.010	0%
Uranium T-U	0.000014	0.000014	0%	Uranium D-U	<0.000010	0.000011	0%
Vanadium T-V	<0.0010	<0.0010	0%	Vanadium D-V	<0.0010	<0.0010	0%
Zinc T-Zn	0.0139	0.0142	2%	Zinc D-Zn	0.0201	0.0137	38%

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Table 6. QA/QC: Lab Duplicates

Surface Water Analysis Results (mg/L)

Station	Cleaver Lake	Cleaver Lake	Clearer Lake	RPD	Station	Cleaver Lake	Cleaver Lake	Clearer Lake	RPD
Date	7/6/2005	QC# 20770	QC# 21627	%	Date	7/6/2005	QC# 20770	QC# 21627	%
Physical Tests					**Dissolved Anions**				
Conductivity (uS/cm)	165	166	-	1%	Alkalinity-Total CaCO3	9.6	9.8	-	2%
Total Dissolved Solids	83.9	<1.0	-	> 100%	Chloride Cl	13.2	13.2	-	0%
pH	6.58	6.58	-	0%	Sulphate SO4	43.0	43.2	-	0%
Total Suspended Solids	<4.0	<4.0	-	0%					
Turbidity (NTU)	0.49	0.45	-	9%					
Nutrients					**Organic Parameters**				
Ammonia Nitrogen N	<0.0050	<0.0050		0%	Dissolved Organic Carbon C	1.12	-	1.15	3%
Total Kjeldahl Nitrogen N	0.112	-	0.104	7%	Total Organic Carbon C	1.42	-	1.32	7%
Nitrate Nitrogen N	<0.0050	<0.0050		0%					
Nitrite Nitrogen N	<0.0050	<0.0050		0%					
Nitrite/Nitrate Nitrogen N	<0.0071	<0.0071		0%					
Dissolved ortho-Phosphate P	<0.0010	<0.0010		0%					
Total Phosphate P	<0.0020	<0.0020		0%					
Total Metals					**Dissolved Metals**				
Aluminum T-Al	0.0261	-	0.0241	8%	Aluminum D-Al	0.0121	-	0.0120	1%
Antimony T-Sb	<0.00010	-	<0.00010	0%	Antimony D-Sb	<0.00010	-	<0.00010	0%
Arsenic T-As	<0.00010	-	<0.00010	0%	Arsenic D-As	<0.00010	-	<0.00010	0%
Barium T-Ba	0.0118	-	0.0119	1%	Barium D-Ba	0.0119	-	0.0120	1%
Beryllium T-Be	<0.00050	-	<0.00050	0%	Beryllium D-Be	<0.00050	-	<0.00050	0%
Bismuth T-Bi	<0.00050	-	<0.00050	0%	Bismuth D-Bi	<0.00050	-	<0.00050	0%
Boron T-B	<0.010	-	<0.010	0%	Boron D-B	<0.010	-	<0.010	0%
Cadmium T-Cd	0.00699	-	0.00696	0%	Cadmium D-Cd	0.00694	-	0.00701	1%
Calcium T-Ca	19.6	-	19.5	1%	Calcium D-Ca	19.7	-	19.9	1%
Chromium T-Cr	<0.00050	-	<0.00050	0%	Chromium D-Cr	<0.00050	-	<0.00050	0%
Cobalt T-Co	0.00031	-	0.00031	0%	Cobalt D-Co	0.00032	-	0.00031	3%
Copper T-Cu	0.0177	-	0.0176	1%	Copper D-Cu	0.0131	-	0.0130	1%
Lead T-Pb	0.00118	-	0.00118	0%	Lead D-Pb	0.000352	-	0.000351	0%
Lithium T-Li	<0.0050	-	<0.0050	0%	Lithium D-Li	<0.0050	-	<0.0050	0%
Magnesium T-Mg	3.25	-	3.25	0%	Magnesium D-Mg	3.29	-	3.33	1%
Manganese T-Mn	0.00891	-	0.00879	1%	Manganese D-Mn	0.00867	-	0.00889	3%
Molybdenum T-Mo	<0.000050	-	<0.000050	0%	Molybdenum D-Mo	<0.000050	-	<0.000050	0%
Nickel T-Ni	0.00457	-	0.00453	1%	Nickel D-Ni	0.00464	-	0.00463	0%
Potassium T-K	1.15	-	1.14	1%	Potassium D-K	1.15	-	1.18	3%
Silicon T-Si	<0.0010	-	<0.0010	0%	Silicon D-Si	<0.0010	-	<0.0010	0%
Silver T-Ag	0.000020	-	0.000020	0%	Silver D-Ag	0.000014	-	0.000013	7%
Sodium T-Na	0.878	-	0.874	0%	Sodium D-Na	1.01	-	1.04	3%
Strontium T-Sr	0.0849	-	0.0845	0%	Strontium D-Sr	0.0834	-	0.0859	3%
Thallium T-Tl	<0.00010	-	<0.00010	0%	Thallium D-Tl	<0.00010	-	<0.00010	0%
Tin T-Sn	<0.00010	-	<0.00010	0%	Tin D-Sn	<0.00010	-	<0.00010	0%
Uranium T-U	0.000018	-	0.000017	6%	Uranium D-U	<0.000010	-	<0.000010	0%
Vanadium T-V	<0.0010	-	<0.0010	0%	Vanadium D-V	<0.0010	-	<0.0010	0%
Zinc T-Zn	1.10	-	1.09	1%	Zinc D-Zn	1.14	-	1.14	0%

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Table 6 (continued). QA/QC: Lab Duplicates

Surface Water Analysis Results (mg/L)

Station	Banana Replicate	Banana Replicate	Banana Replicate	RPD	Station	Banana Replicate	Banana Replicate	Banana Replicate	RPD
Date	7/7/2005	QC# 20771	QC# 21628	%	Date	7/7/2005	QC# 20771	QC# 21628	%
Physical Tests					**Dissolved Anions**				
Conductivity (uS/cm)	56.8	57.2	-	1%	Alkalinity-Total CaCO3	11.2	11.6	-	4%
Total Dissolved Solids	25.2	<1.0	-	> 100%	Chloride Cl	<0.50	<0.50	-	0%
pH	6.83	6.85	-	0%	Sulphate SO4	14.5	14.3	-	1%
Total Suspended Solids	<4.0	<4.0	-	0%					
Turbidity (NTU)	0.60	0.57	-	5%					
Nutrients					**Organic Parameters**				
Ammonia Nitrogen N	<0.0050	<0.0050		0%	Dissolved Organic Carbon C	1.99	-	2.03	2%
Total Kjeldahl Nitrogen N	0.175	-	0.169	3%	Total Organic Carbon C	2.23	-	2.19	2%
Nitrate Nitrogen N	0.0050	<0.0050		0%					
Nitrite Nitrogen N	<0.0050	<0.0050		0%					
Nitrite/Nitrate Nitrogen N	<0.0071	<0.0071		0%					
Dissolved ortho-Phosphate P	<0.0010	<0.0010		0%					
Total Phosphate P	<0.0020	<0.0020		0%					
Total Metals					**Dissolved Metals**				
Aluminum T-Al	0.0219	-	0.0220	0%	Aluminum D-Al	0.0143	-	0.0139	3%
Antimony T-Sb	<0.00010	-	<0.00010	0%	Antimony D-Sb	<0.00010	-	<0.00010	0%
Arsenic T-As	<0.00010	-	<0.00010	0%	Arsenic D-As	<0.00010	-	<0.00010	0%
Barium T-Ba	0.00442	-	0.00448	1%	Barium D-Ba	0.00439	-	0.00430	2%
Beryllium T-Be	<0.00050	-	<0.00050	0%	Beryllium D-Be	<0.00050	-	<0.00050	0%
Bismuth T-Bi	<0.00050	-	<0.00050	0%	Bismuth D-Bi	<0.00050	-	<0.00050	0%
Boron T-B	<0.010	-	<0.010	0%	Boron D-B	<0.010	-	<0.010	0%
Cadmium T-Cd	0.000086	-	0.000072	18%	Cadmium D-Cd	0.000073	-	0.000069	6%
Calcium T-Ca	5.55	-	5.58	1%	Calcium D-Ca	5.48	-	5.53	1%
Chromium T-Cr	<0.00050	-	<0.00050	0%	Chromium D-Cr	<0.00050	-	0.00055	0%
Cobalt T-Co	0.00018	-	0.00020	11%	Cobalt D-Co	0.00019	-	0.00018	5%
Copper T-Cu	0.0318	-	0.0322	1%	Copper D-Cu	0.0264	-	0.0260	2%
Lead T-Pb	<0.000050	-	<0.000050	0%	Lead D-Pb	<0.000050	-	<0.000050	0%
Lithium T-Li	<0.0050	-	<0.0050	0%	Lithium D-Li	<0.0050	-	<0.0050	0%
Magnesium T-Mg	1.64	-	1.63	1%	Magnesium D-Mg	1.61	-	1.59	1%
Manganese T-Mn	0.00479	-	0.00483	1%	Manganese D-Mn	0.00447	-	0.00444	1%
Molybdenum T-Mo	<0.000050	-	<0.000050	0%	Molybdenum D-Mo	<0.000050	-	<0.000050	0%
Nickel T-Ni	0.00065	-	0.00065	0%	Nickel D-Ni	0.00065	-	0.00062	5%
Potassium T-K	0.818	-	0.837	2%	Potassium D-K	0.818	-	0.808	1%
Silicon T-Si	<0.0010	-	<0.0010	0%	Silicon D-Si	<0.0010	-	<0.0010	0%
Silver T-Ag	<0.000010	-	<0.000010	0%	Silver D-Ag	<0.000010	-	<0.000010	0%
Sodium T-Na	0.563	-	0.563	0%	Sodium D-Na	0.566	-	0.555	2%
Strontium T-Sr	0.00821	-	0.00831	1%	Strontium D-Sr	0.00816	-	0.00818	0%
Thallium T-Tl	<0.00010	-	<0.00010	0%	Thallium D-Tl	<0.00010	-	<0.00010	0%
Tin T-Sn	<0.00010	-	<0.00010	0%	Tin D-Sn	0.00012	-	0.00013	8%
Uranium T-U	0.000014	-	0.000016	13%	Uranium D-U	0.000011	-	0.000011	0%
Vanadium T-V	<0.0010	-	<0.0010	0%	Vanadium D-V	<0.0010	-	<0.0010	0%
Zinc T-Zn	0.0142	-	0.0142	0%	Zinc D-Zn	0.0137	-	0.0137	0%

Attachments

Attachment A

ALS Environmental Laboratory Results

ALS Environmental

CHEMICAL ANALYSIS REPORT

Date:	July 26, 2005
ALS File No.	R3016
Report On:	Hackett River 50598
Report To:	**Gartner Lee Ltd.** 2251 2nd Ave Whitehorse, YT Y1A 5W1
Attention:	**Ms. Lesley Gomm**
Received:	July 11, 2005

ALS ENVIRONMENTAL
per:

Monica Gibson

Monica Gibson, M.Sc. - Project Chemist
Bill Chew, B.Sc. - Manager, Client Services

ALS CANADA LTD.
#2 - 21 Highfield Circle SE, Calgary, AB Canada T2G 5N6
Phone: 403-214-5431 Fax: 403-214-5430 Website: www.alsenviro.com

REMARKS

For some of the submitted water samples, the measured concentration of specific dissolved parameters is greater than the corresponding total parameters concentration. The explanation for these findings is one or a combination of the following:

- laboratory method variability;
- analytical bias introduced during sample filtration;
- analytical bias introduced during general handling, storage, transportation and/or analysis of the sample;
- sample grab bias - where separate grab samples are processed to produce total and dissolved samples;
- sample split bias - where total and dissolved parameters samples are produced from the same grab sample.

For further clarification of any of the above information, please contact your ALS representative.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Upper Sunken Lake	Sunken L OutFlow #1	Sunken L OutFlow #2	Mara River Downstream	Mara River Upstream
Sample Date			05-07-05	05-07-05	05-07-05	05-07-06	05-07-06
Sample Time			14:15	15:00	16:00	09:10	09:45
ALS ID			*1*	*2*	*3*	*4*	*5*
Physical Tests							
Conductivity	(uS/cm)		80.7	72.6	71.7	13.6	13.5
Total Dissolved Solids			37.2	36.4	37.4	6.5	6.2
Hardness	CaCO3		24.4	24.4	24.4	4.47	4.30
pH			6.47	6.45	6.30	6.62	6.60
Total Suspended Solids			<4.0	<4.0	<4.0	<4.0	<4.0
Turbidity	(NTU)		0.92	0.80	0.69	1.11	0.54
Dissolved Anions							
Alkalinity-Gran Total		CaCO3	4.8	4.0	2.7	4.4	4.4
Chloride	Cl		4.78	4.66	4.51	<0.50	<0.50
Sulphate	SO4		20.0	19.4	20.7	1.8	1.8
Nutrients							
Ammonia Nitrogen		N	0.0050	0.0270	<0.0050	0.0075	0.0060
Total Kjeldahl Nitrogen		N	0.119	0.137	0.132	0.145	0.154
Nitrate Nitrogen		N	0.0070	<0.0050	<0.0050	<0.0050	0.0060
Nitrite Nitrogen		N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite/Nitrate Nitrogen		N	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071
Dissolved ortho-Phosphate		P	<0.0010	<0.0010	0.0027	0.0027	0.0027
Total Phosphate		P	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID		Upper Sunken Lake	Sunken L OutFlow #1	Sunken L OutFlow #2	Mara River Downstream	Mara River Upstream
Sample Date		05-07-05	05-07-05	05-07-05	05-07-06	05-07-06
Sample Time		14:15	15:00	16:00	09:10	09:45
ALS ID		*1*	*2*	*3*	*4*	*5*
Total Metals						
Aluminum	T-Al	0.0693	0.0702	0.0962	0.0197	0.0178
Antimony	T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	T-As	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	T-Ba	0.00813	0.00785	0.00780	0.00226	0.00206
Beryllium	T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	T-B	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	T-Cd	0.00165	0.00163	0.00164	<0.000050	<0.000050
Calcium	T-Ca	7.17	7.07	6.91	0.997	0.920
Chromium	T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	T-Co	0.00070	0.00068	0.00074	<0.00010	<0.00010
Copper	T-Cu	0.0391	0.0387	0.0300	0.00079	0.00078
Iron	T-Fe	0.040	0.037	0.075	<0.030	<0.030
Lead	T-Pb	0.000414	0.000404	0.000402	<0.000050	<0.000050
Lithium	T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	T-Mg	1.76	1.71	1.72	0.459	0.439
Manganese	T-Mn	0.0418	0.0416	0.0410	0.00211	0.00125
Molybdenum	T-Mo	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	T-Ni	0.00264	0.00255	0.00287	0.00052	<0.00050
Potassium	T-K	0.842	0.807	0.815	0.368	0.350
Selenium	T-Se	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	T-Na	0.627	0.597	0.604	0.462	0.449
Strontium	T-Sr	0.0356	0.0348	0.0331	0.00450	0.00430
Thallium	T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	T-Sn	<0.00010	<0.00010	0.00014	<0.00010	<0.00010
Uranium	T-U	0.000013	0.000012	0.000017	0.000052	0.000049
Vanadium	T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	T-Zn	0.331	0.331	0.338	0.0014	0.0012

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Upper Sunken Lake	Sunken L OutFlow #1	Sunken L OutFlow #2	Mara River Downstream	Mara River Upstream
Sample Date			05-07-05	05-07-05	05-07-05	05-07-06	05-07-06
Sample Time			14:15	15:00	16:00	09:10	09:45
ALS ID			*1*	*2*	*3*	*4*	*5*
Dissolved Metals							
Aluminum	D-Al		0.0346	0.0285	0.0426	0.0222	0.0152
Antimony	D-Sb		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	D-As		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	D-Ba		0.00786	0.00771	0.00771	0.00254	0.00210
Beryllium	D-Be		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	D-B		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	D-Cd		0.00153	0.00159	0.00163	<0.000050	<0.000050
Calcium	D-Ca		6.97	7.01	6.95	1.06	0.975
Chromium	D-Cr		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	D-Co		0.00064	0.00066	0.00073	<0.00010	<0.00010
Copper	D-Cu		0.0301	0.0308	0.0232	0.00141	0.00077
Iron	D-Fe		<0.030	<0.030	0.033	<0.030	<0.030
Lead	D-Pb		0.000116	0.000117	0.000113	0.00160	<0.000050
Lithium	D-Li		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	D-Mg		1.70	1.68	1.70	0.440	0.452
Manganese	D-Mn		0.0401	0.0412	0.0406	0.00140	0.000783
Molybdenum	D-Mo		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	D-Ni		0.00250	0.00251	0.00294	0.00056	0.00052
Potassium	D-K		0.806	0.810	0.818	0.377	0.371
Selenium	D-Se		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	D-Ag		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	D-Na		0.746	0.711	0.737	0.632	0.467
Strontium	D-Sr		0.0344	0.0344	0.0330	0.00443	0.00443
Thallium	D-Tl		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	D-Sn		<0.00010	<0.00010	<0.00010	<0.00010	0.00014
Uranium	D-U		<0.000010	<0.000010	<0.000010	0.000046	0.000042
Vanadium	D-V		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	D-Zn		0.324	0.329	0.345	0.0089	0.0018
Organic Parameters							
Dissolved Organic Carbon C			0.59	1.56	1.40	1.90	1.92
Total Organic Carbon		C	1.72	1.69	1.55	2.11	2.09

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Mara Inflow #1	Mara Inflow #2	Turtle Outflow	Anne Lake	Clearer Lake
Sample Date			05-07-06	05-07-06	05-07-06	05-07-06	05-07-06
Sample Time			10:15	11:00	11:25	11:49	12:15
ALS ID			*6*	*7*	*8*	*9*	*10*
Physical Tests							
Conductivity	(uS/cm)		55.4	87.8	120	159	165
Total Dissolved Solids			22.0	40.6	57.4	82.4	83.9
Hardness	CaCO3		21.7	35.2	48.7	65.6	62.8
pH			6.92	6.93	6.93	6.88	6.58
Total Suspended Solids			<4.0	<4.0	<4.0	<4.0	<4.0
Turbidity	(NTU)		0.36	0.50	0.36	0.24	0.49
Dissolved Anions							
Alkalinity-Gran Total		CaCO3	16.3	17.3	19.8	18.2	9.6
Chloride	Cl		0.73	0.68	1.13	1.06	13.2
Sulphate	SO4		10.1	23.3	35.1	53.3	43.0
Nutrients							
Ammonia Nitrogen		N	0.0077	0.0050	0.0057	<0.0050	<0.0050
Total Kjeldahl Nitrogen		N	0.128	0.159	0.138	0.188	0.112
Nitrate Nitrogen		N	0.0100	<0.0050	0.0080	<0.0050	<0.0050
Nitrite Nitrogen		N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite/Nitrate Nitrogen		N	0.0100	<0.0071	0.0080	<0.0071	<0.0071
Dissolved ortho-Phosphate		P	0.0027	0.0027	<0.0010	<0.0010	<0.0010
Total Phosphate		P	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID		Mara Inflow #1	Mara Inflow #2	Turtle Outflow	Anne Lake	Clearer Lake
Sample Date		05-07-06	05-07-06	05-07-06	05-07-06	05-07-06
Sample Time		10:15	11:00	11:25	11:49	12:15
ALS ID		*6*	*7*	*8*	*9*	*10*
Total Metals						
Aluminum	T-Al	0.0136	0.0157	0.0036	0.0103	0.0261
Antimony	T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	T-As	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	T-Ba	0.00352	0.00429	0.00470	0.00819	0.0118
Beryllium	T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	T-B	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	T-Cd	<0.000050	<0.000050	0.000119	0.00100	0.00699
Calcium	T-Ca	6.40	10.9	15.2	19.8	19.6
Chromium	T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	T-Co	<0.00010	<0.00010	<0.00010	<0.00010	0.00031
Copper	T-Cu	0.00125	0.00180	0.00503	0.0189	0.0177
Iron	T-Fe	<0.030	79.6	<0.030	<0.030	<0.030
Lead	T-Pb	<0.000050	<0.000050	<0.000050	0.000068	0.00118
Lithium	T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	T-Mg	1.49	2.11	2.75	3.80	3.25
Manganese	T-Mn	0.00546	0.000999	0.00122	0.0225	0.00891
Molybdenum	T-Mo	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	T-Ni	<0.00050	<0.00050	0.00067	0.00269	0.00457
Potassium	T-K	0.660	0.695	0.881	1.10	1.15
Selenium	T-Se	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	0.000020
Sodium	T-Na	0.558	0.487	0.497	0.589	0.878
Strontium	T-Sr	0.00795	0.00939	0.0125	0.0165	0.0849
Thallium	T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	T-U	0.000018	0.000039	0.000140	0.000028	0.000018
Vanadium	T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	T-Zn	0.0017	0.0058	0.0356	0.203	1.10

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Mara Inflow #1	Mara Inflow #2	Turtle Outflow	Anne Lake	Clearer Lake
Sample Date			05-07-06	05-07-06	05-07-06	05-07-06	05-07-06
Sample Time			10:15	11:00	11:25	11:49	12:15
ALS ID			*6*	*7*	*8*	*9*	*10*
Dissolved Metals							
Aluminum	D-Al		0.0098	0.0140	0.0038	0.0092	0.0121
Antimony	D-Sb		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	D-As		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	D-Ba		0.00331	0.00422	0.00464	0.00807	0.0119
Beryllium	D-Be		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	D-B		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	D-Cd		<0.000050	<0.000050	0.000099	0.000989	0.00694
Calcium	D-Ca		6.31	10.7	15.1	19.9	19.7
Chromium	D-Cr		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	D-Co		<0.00010	<0.00010	<0.00010	<0.00010	0.00032
Copper	D-Cu		0.00108	0.00185	0.00443	0.0165	0.0131
Iron	D-Fe		<0.030	<0.030	<0.030	<0.030	<0.030
Lead	D-Pb		<0.000050	<0.000050	<0.000050	<0.000050	0.000352
Lithium	D-Li		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	D-Mg		1.45	2.08	2.69	3.88	3.29
Manganese	D-Mn		0.000487	0.000580	0.000612	0.0214	0.00867
Molybdenum	D-Mo		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	D-Ni		<0.00050	0.00052	0.00065	0.00260	0.00464
Potassium	D-K		0.655	0.696	0.883	1.11	1.15
Selenium	D-Se		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	D-Ag		<0.000010	<0.000010	<0.000010	<0.000010	0.000014
Sodium	D-Na		0.681	0.615	0.624	0.730	1.01
Strontium	D-Sr		0.00776	0.00928	0.0126	0.0168	0.0834
Thallium	D-Tl		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	D-Sn		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	D-U		0.000014	0.000030	0.000084	0.000018	<0.000010
Vanadium	D-V		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	D-Zn		0.0043	0.0081	0.0375	0.202	1.14
Organic Parameters							
Dissolved Organic Carbon C			1.87	2.32	1.64	1.91	1.12
Total Organic Carbon		C	1.98	2.44	1.80	2.15	1.42

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Boot Lake	Hood Lake Outlet	Joe Lake Outlet	Cigar Lake	H-River Downstream
Sample Date			05-07-06	05-07-06	05-07-06	05-07-06	05-07-06
Sample Time			13:30	14:00	14:35	15:05	16:00
ALS ID			*11*	*12*	*13*	*14*	*15*
Physical Tests							
Conductivity	(uS/cm)		163	43.4	12.1	26.6	31.7
Total Dissolved Solids			72.5	20.0	5.4	13.2	15.3
Hardness	CaCO3		58.5	15.1	3.63	9.67	10.6
pH			6.48	6.68	6.62	6.75	6.59
Total Suspended Solids			<4.0	<4.0	<4.0	<4.0	<4.0
Turbidity	(NTU)		0.24	0.28	0.34	0.40	0.53
Dissolved Anions							
Alkalinity-Gran Total		CaCO3	4.2	6.8	4.6	7.4	5.1
Chloride	Cl		34.5	<0.50	<0.50	<0.50	0.58
Sulphate	SO4		11.6	12.1	1.2	4.8	8.1
Nutrients							
Ammonia Nitrogen		N	<0.0050	<0.0050	<0.0050	0.0061	0.0051
Total Kjeldahl Nitrogen		N	0.134	0.125	0.160	0.247	0.119
Nitrate Nitrogen		N	<0.0050	<0.0050	<0.0050	<0.0050	0.0070
Nitrite Nitrogen		N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite/Nitrate Nitrogen		N	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071
Dissolved ortho-Phosphate		P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate		P	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID		Boot Lake	Hood Lake Outlet	Joe Lake Outlet	Cigar Lake	H-River Downstream
Sample Date		05-07-06	05-07-06	05-07-06	05-07-06	05-07-06
Sample Time		13:30	14:00	14:35	15:05	16:00
ALS ID		*11*	*12*	*13*	*14*	*15*
Total Metals						
Aluminum	T-Al	0.0206	0.0129	0.0094	0.0212	0.0225
Antimony	T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	T-As	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	T-Ba	0.0181	0.00472	0.00191	0.00295	0.00451
Beryllium	T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	T-B	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	T-Cd	0.000133	<0.000050	<0.000050	<0.000050	0.000061
Calcium	T-Ca	20.8	3.73	0.782	2.60	2.66
Chromium	T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	T-Co	0.00025	0.00012	<0.00010	<0.00010	<0.00010
Copper	T-Cu	0.00124	0.00149	0.00053	0.00141	0.00219
Iron	T-Fe	0.035	<0.030	<0.030	0.038	<0.030
Lead	T-Pb	0.000133	<0.000050	<0.000050	0.000069	<0.000050
Lithium	T-Li	0.0063	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	T-Mg	1.81	1.54	0.468	0.887	1.11
Manganese	T-Mn	0.0181	0.00273	0.00616	0.00194	0.00113
Molybdenum	T-Mo	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	T-Ni	0.00536	0.00751	<0.00050	0.00342	0.00307
Potassium	T-K	1.07	0.459	0.363	0.430	0.514
Selenium	T-Se	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	T-Na	0.948	0.506	0.403	0.484	0.506
Strontium	T-Sr	0.149	0.00902	0.00332	0.00552	0.00771
Thallium	T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	T-U	<0.000010	0.000012	0.000018	0.000015	0.000028
Vanadium	T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	T-Zn	0.0309	0.0036	<0.0010	0.0023	0.0223

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File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Boot Lake	Hood Lake Outlet	Joe Lake Outlet	Cigar Lake	H-River Downstream
Sample Date			05-07-06	05-07-06	05-07-06	05-07-06	05-07-06
Sample Time			13:30	14:00	14:35	15:05	16:00
ALS ID			*11*	*12*	*13*	*14*	*15*
Dissolved Metals							
Aluminum	D-Al		0.0116	0.0088	0.0115	0.0168	0.0181
Antimony	D-Sb		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	D-As		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	D-Ba		0.0176	0.00456	0.00171	0.00286	0.00424
Beryllium	D-Be		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	D-B		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	D-Cd		0.000129	<0.000050	<0.000050	<0.000050	0.000070
Calcium	D-Ca		20.5	3.58	0.739	2.46	2.50
Chromium	D-Cr		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	D-Co		0.00026	<0.00010	<0.00010	<0.00010	<0.00010
Copper	D-Cu		0.00111	0.00138	0.00051	0.00113	0.00208
Iron	D-Fe		<0.030	<0.030	<0.030	<0.030	<0.030
Lead	D-Pb		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	D-Li		0.0065	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	D-Mg		1.78	1.51	0.435	0.856	1.05
Manganese	D-Mn		0.0174	0.00217	0.00387	0.00105	0.000970
Molybdenum	D-Mo		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	D-Ni		0.00522	0.00718	<0.00050	0.00308	0.00288
Potassium	D-K		1.06	0.456	0.361	0.394	0.506
Selenium	D-Se		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	D-Ag		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	D-Na		1.10	0.624	0.534	0.584	0.624
Strontium	D-Sr		0.144	0.00868	0.00306	0.00539	0.00737
Thallium	D-Tl		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	D-Sn		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	D-U		<0.000010	<0.000010	0.000014	0.000013	0.000023
Vanadium	D-V		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	D-Zn		0.0323	0.0064	0.0038	0.0046	0.0240
Organic Parameters							
Dissolved Organic Carbon C			1.56	1.48	1.86	3.06	1.65
Total Organic Carbon		C	1.84	1.76	2.11	4.11	1.85

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File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Camp Creek	H-River Upstream	Boot Lake Outlet	Banana Lake	Banana Replicate
Sample Date			05-07-06	05-07-06	05-07-07	05-07-07	05-07-07
Sample Time			16:20	17:00	08:30	08:45	08:55
ALS ID			*16*	*17*	*18*	*19*	*20*
Physical Tests							
Conductivity	(uS/cm)		39.0	20.5	76.9	56.1	56.8
Total Dissolved Solids			19.0	9.6	35.3	25.5	25.2
Hardness	CaCO3		13.2	6.61	27.5	20.8	20.3
pH			6.57	6.63	6.61	6.83	6.83
Total Suspended Solids			<4.0	<4.0	<4.0	<4.0	<4.0
Turbidity	(NTU)		0.29	0.28	0.27	0.34	0.60
Dissolved Anions							
Alkalinity-Gran Total		CaCO3	4.7	4.7	6.1	11.4	11.2
Chloride	Cl		0.80	<0.50	10.2	<0.50	<0.50
Sulphate	SO4		10.7	4.3	11.6	14.3	14.5
Nutrients							
Ammonia Nitrogen		N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Kjeldahl Nitrogen		N	0.126	0.155	0.145	0.183	0.175
Nitrate Nitrogen		N	0.0060	<0.0050	0.0050	<0.0050	0.0050
Nitrite Nitrogen		N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite/Nitrate Nitrogen		N	<0.0071	<0.0071	<0.0071	<0.0071	<0.0071
Dissolved ortho-Phosphate		P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate		P	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

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Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID		Camp Creek	H-River Upstream	Boot Lake Outlet	Banana Lake	Banana Replicate
Sample Date		05-07-06	05-07-06	05-07-07	05-07-07	05-07-07
Sample Time		16:20	17:00	08:30	08:45	08:55
ALS ID		*16*	*17*	*18*	*19*	*20*
Total Metals						
Aluminum	T-Al	0.0214	0.0192	0.0138	0.0272	0.0219
Antimony	T-Sb	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	T-As	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	T-Ba	0.00522	0.00324	0.00819	0.00460	0.00442
Beryllium	T-Be	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	T-B	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	T-Cd	0.000115	<0.000050	0.000090	0.000076	0.000086
Calcium	T-Ca	3.22	1.59	8.64	5.67	5.55
Chromium	T-Cr	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	T-Co	<0.00010	<0.00010	<0.00010	0.00020	0.00018
Copper	T-Cu	0.00284	0.00132	0.00280	0.0327	0.0318
Iron	T-Fe	0.036	<0.030	<0.030	0.031	<0.030
Lead	T-Pb	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	T-Li	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	T-Mg	1.32	0.717	1.54	1.70	1.64
Manganese	T-Mn	0.00135	0.000763	0.00150	0.00493	0.00479
Molybdenum	T-Mo	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	T-Ni	0.00426	0.00119	0.00149	0.00063	0.00065
Potassium	T-K	0.525	0.481	0.822	0.854	0.818
Selenium	T-Se	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	T-Ag	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	T-Na	0.517	0.448	0.642	0.569	0.563
Strontium	T-Sr	0.00944	0.00497	0.0423	0.00858	0.00821
Thallium	T-Tl	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	T-Sn	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	T-U	0.000038	0.000011	0.000010	0.000014	0.000014
Vanadium	T-V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	T-Zn	0.0356	0.0020	0.0207	0.0139	0.0142

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File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Camp Creek	H-River Upstream	Boot Lake Outlet	Banana Lake	Banana Replicate
Sample Date			05-07-06	05-07-06	05-07-07	05-07-07	05-07-07
Sample Time			16:20	17:00	08:30	08:45	08:55
ALS ID			*16*	*17*	*18*	*19*	*20*
Dissolved Metals							
Aluminum	D-Al		0.0156	0.0166	0.0105	0.0175	0.0143
Antimony	D-Sb		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	D-As		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	D-Ba		0.00499	0.00304	0.00793	0.00479	0.00439
Beryllium	D-Be		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron	D-B		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	D-Cd		0.000106	<0.000050	0.000073	0.000079	0.000073
Calcium	D-Ca		3.15	1.51	8.50	5.62	5.48
Chromium	D-Cr		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	D-Co		<0.00010	<0.00010	<0.00010	0.00021	0.00019
Copper	D-Cu		0.00247	0.00130	0.00264	0.0289	0.0264
Iron	D-Fe		<0.030	<0.030	<0.030	<0.030	<0.030
Lead	D-Pb		<0.000050	<0.000050	<0.000050	0.000189	<0.000050
Lithium	D-Li		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium	D-Mg		1.30	0.689	1.51	1.65	1.61
Manganese	D-Mn		0.00124	0.000603	0.00105	0.00470	0.00447
Molybdenum	D-Mo		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel	D-Ni		0.00426	0.00117	0.00145	0.00073	0.00065
Potassium	D-K		0.521	0.487	0.812	0.863	0.818
Selenium	D-Se		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	D-Ag		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium	D-Na		0.652	0.592	0.759	0.755	0.566
Strontium	D-Sr		0.00912	0.00477	0.0410	0.00842	0.00816
Thallium	D-Tl		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	D-Sn		<0.00010	<0.00010	<0.00010	<0.00010	0.00012
Uranium	D-U		0.000030	0.000010	<0.000010	<0.000010	0.000011
Vanadium	D-V		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	D-Zn		0.0378	0.0054	0.0239	0.0201	0.0137
Organic Parameters							
Dissolved Organic Carbon C			1.67	1.81	1.72	1.99	1.99
Total Organic Carbon		C	1.75	1.98	1.81	2.25	2.23

Remarks regarding the analyses appear at the beginning of this report.
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File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Camp Lake	Camp Lake Replicate
Sample Date			05-07-07	05-07-07
Sample Time			13:30	13:45
ALS ID			*21*	*22*
Physical Tests				
Conductivity	(uS/cm)		85.2	85.7
Total Dissolved Solids			42.7	42.3
Hardness	CaCO3		28.6	27.4
pH			6.44	6.41
Total Suspended Solids			<4.0	<4.0
Turbidity	(NTU)		0.86	1.01
Dissolved Anions				
Alkalinity-Gran Total		CaCO3	3.7	3.7
Chloride	Cl		6.48	6.48
Sulphate	SO4		22.0	21.9
Nutrients				
Ammonia Nitrogen		N	<0.0050	0.0057
Total Kjeldahl Nitrogen		N	0.155	0.188
Nitrate Nitrogen		N	<0.0050	0.0080
Nitrite Nitrogen		N	<0.0050	<0.0050
Nitrite/Nitrate Nitrogen		N	<0.0071	0.0080
Dissolved ortho-Phosphate		P	<0.0010	<0.0010
Total Phosphate		P	<0.0020	<0.0020

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID		Camp Lake	Camp Lake Replicate
Sample Date		05-07-07	05-07-07
Sample Time		13:30	13:45
ALS ID		*21*	*22*
Total Metals			
Aluminum	T-Al	0.0928	0.0742
Antimony	T-Sb	<0.00010	<0.00010
Arsenic	T-As	<0.00010	<0.00010
Barium	T-Ba	0.00941	0.00918
Beryllium	T-Be	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	<0.00050
Boron	T-B	<0.010	<0.010
Cadmium	T-Cd	0.00198	0.00193
Calcium	T-Ca	8.31	8.10
Chromium	T-Cr	<0.00050	<0.00050
Cobalt	T-Co	0.00091	0.00087
Copper	T-Cu	0.0442	0.0418
Iron	T-Fe	0.122	0.104
Lead	T-Pb	0.000816	0.000484
Lithium	T-Li	<0.0050	<0.0050
Magnesium	T-Mg	1.89	1.84
Manganese	T-Mn	0.0585	0.0574
Molybdenum	T-Mo	<0.000050	<0.000050
Nickel	T-Ni	0.00331	0.00312
Potassium	T-K	0.883	0.848
Selenium	T-Se	<0.0010	<0.0010
Silver	T-Ag	<0.000010	<0.000010
Sodium	T-Na	0.676	0.658
Strontium	T-Sr	0.0456	0.0447
Thallium	T-Tl	<0.00010	<0.00010
Tin	T-Sn	<0.00010	<0.00010
Uranium	T-U	0.000013	0.000011
Vanadium	T-V	<0.0010	<0.0010
Zinc	T-Zn	0.383	0.375

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

RESULTS OF ANALYSIS - Water

Sample ID			Camp Lake	Camp Lake Replicate
Sample Date			05-07-07	05-07-07
Sample Time			13:30	13:45
ALS ID			*21*	*22*
Dissolved Metals				
Aluminum	D-Al		0.0160	0.0203
Antimony	D-Sb		<0.00010	<0.00010
Arsenic	D-As		<0.00010	<0.00010
Barium	D-Ba		0.00919	0.00888
Beryllium	D-Be		<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	<0.00050
Boron	D-B		<0.010	<0.010
Cadmium	D-Cd		0.00185	0.00183
Calcium	D-Ca		8.35	8.03
Chromium	D-Cr		<0.00050	<0.00050
Cobalt	D-Co		0.00089	0.00088
Copper	D-Cu		0.0353	0.0317
Iron	D-Fe		<0.030	0.038
Lead	D-Pb		0.000153	0.000098
Lithium	D-Li		<0.0050	<0.0050
Magnesium	D-Mg		1.89	1.78
Manganese	D-Mn		0.0574	0.0558
Molybdenum	D-Mo		<0.000050	<0.000050
Nickel	D-Ni		0.00343	0.00311
Potassium	D-K		0.892	0.834
Selenium	D-Se		<0.0010	<0.0010
Silver	D-Ag		<0.000010	<0.000010
Sodium	D-Na		0.706	0.756
Strontium	D-Sr		0.0449	0.0441
Thallium	D-Tl		<0.00010	<0.00010
Tin	D-Sn		<0.00010	<0.00010
Uranium	D-U		<0.000010	<0.000010
Vanadium	D-V		<0.0010	<0.0010
Zinc	D-Zn		0.378	0.381
Organic Parameters				
Dissolved Organic Carbon C			1.59	1.56
Total Organic Carbon		C	1.96	1.93

Remarks regarding the analyses appear at the beginning of this report.
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File No. R3016

Appendix 1 - QUALITY CONTROL - Replicates

Water			Clearer Lake 05-07-06 12:15	Clearer Lake QC # 20770	Clearer Lake QC # 21627	Clearer Lake QC # 21650
Physical Tests						
Conductivity	(uS/cm)		165	166	-	-
Total Dissolved Solids			83.9	<1.0	-	-
pH			6.58	6.58	-	-
Total Suspended Solids			<4.0	<4.0	-	-
Turbidity	(NTU)		0.49	0.45	-	-
Dissolved Anions						
Alkalinity-Gran Total		CaCO3	9.6	9.8	-	-
Chloride	Cl		13.2	13.2	-	-
Sulphate	SO4		43.0	43.2	-	-
Nutrients						
Ammonia Nitrogen		N	<0.0050	<0.0050	-	-
Total Kjeldahl Nitrogen		N	0.112	-	0.104	0.104
Nitrate Nitrogen		N	<0.0050	<0.0050	-	-
Nitrite Nitrogen		N	<0.0050	<0.0050	-	-
Nitrite/Nitrate Nitrogen		N	<0.0071	<0.0071	-	-
Dissolved ortho-Phosphate		P	<0.0010	<0.0010	-	-
Total Phosphate		P	<0.0020	<0.0020	-	-

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

Appendix 1 - QUALITY CONTROL - Replicates

Water		Clearer Lake 05-07-06 12:15	Clearer Lake QC # 20770	Clearer Lake QC # 21627	Clearer Lake QC # 21650
Total Metals					
Aluminum	T-Al	0.0261	-	0.0241	0.0241
Antimony	T-Sb	<0.00010	-	<0.00010	<0.00010
Arsenic	T-As	<0.00010	-	<0.00010	<0.00010
Barium	T-Ba	0.0118	-	0.0119	0.0119
Beryllium	T-Be	<0.00050	-	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	-	<0.00050	<0.00050
Boron	T-B	<0.010	-	<0.010	<0.010
Cadmium	T-Cd	0.00699	-	0.00696	0.00696
Calcium	T-Ca	19.6	-	19.5	19.5
Chromium	T-Cr	<0.00050	-	<0.00050	<0.00050
Cobalt	T-Co	0.00031	-	0.00031	0.00031
Copper	T-Cu	0.0177	-	0.0176	0.0176
Lead	T-Pb	0.00118	-	0.00118	0.00118
Lithium	T-Li	<0.0050	-	<0.0050	<0.0050
Magnesium	T-Mg	3.25	-	3.25	3.25
Manganese	T-Mn	0.00891	-	0.00879	0.00879
Molybdenum	T-Mo	<0.000050	-	<0.000050	<0.000050
Nickel	T-Ni	0.00457	-	0.00453	0.00453
Potassium	T-K	1.15	-	1.14	1.14
Selenium	T-Se	<0.0010	-	<0.0010	<0.0010
Silver	T-Ag	0.000020	-	0.000020	0.000020
Sodium	T-Na	0.878	-	0.874	0.874
Strontium	T-Sr	0.0849	-	0.0845	0.0845
Thallium	T-Tl	<0.00010	-	<0.00010	<0.00010
Tin	T-Sn	<0.00010	-	<0.00010	<0.00010
Uranium	T-U	0.000018	-	0.000017	0.000017
Vanadium	T-V	<0.0010	-	<0.0010	<0.0010
Zinc	T-Zn	1.10	-	1.09	1.09

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

Appendix 1 - QUALITY CONTROL - Replicates

Water			Clearer Lake 05-07-06 12:15	Clearer Lake QC # 20770	Clearer Lake QC # 21627	Clearer Lake QC # 21650
Dissolved Metals						
Aluminum	D-Al		0.0121	-	0.0120	0.0120
Antimony	D-Sb		<0.00010	-	<0.00010	<0.00010
Arsenic	D-As		<0.00010	-	<0.00010	<0.00010
Barium	D-Ba		0.0119	-	0.0120	0.0120
Beryllium	D-Be		<0.00050	-	<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	-	<0.00050	<0.00050
Boron	D-B		<0.010	-	<0.010	<0.010
Cadmium	D-Cd		0.00694	-	0.00701	0.00701
Calcium	D-Ca		19.7	-	19.9	19.9
Chromium	D-Cr		<0.00050	-	<0.00050	<0.00050
Cobalt	D-Co		0.00032	-	0.00031	0.00031
Copper	D-Cu		0.0131	-	0.0130	0.0130
Lead	D-Pb		0.000352	-	0.000351	0.000351
Lithium	D-Li		<0.0050	-	<0.0050	<0.0050
Magnesium	D-Mg		3.29	-	3.33	3.33
Manganese	D-Mn		0.00867	-	0.00889	0.00889
Molybdenum	D-Mo		<0.000050	-	<0.000050	<0.000050
Nickel	D-Ni		0.00464	-	0.00463	0.00463
Potassium	D-K		1.15	-	1.18	1.18
Selenium	D-Se		<0.0010	-	<0.0010	<0.0010
Silver	D-Ag		0.000014	-	0.000013	0.000013
Sodium	D-Na		1.01	-	1.04	1.04
Strontium	D-Sr		0.0834	-	0.0859	0.0859
Thallium	D-Tl		<0.00010	-	<0.00010	<0.00010
Tin	D-Sn		<0.00010	-	<0.00010	<0.00010
Uranium	D-U		<0.000010	-	<0.000010	<0.000010
Vanadium	D-V		<0.0010	-	<0.0010	<0.0010
Zinc	D-Zn		1.14	-	1.14	1.14
Organic Parameters						
Dissolved Organic Carbon		C	1.12	-	1.15	1.15
Total Organic Carbon		C	1.42	-	1.32	1.32

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

Appendix 1 - QUALITY CONTROL - Replicates

Water			Banana Replicate 05-07-07 08:55	Banana Replicate QC # 20771	Banana Replicate QC # 21628	Banana Replicate QC # 21651
Physical Tests						
Conductivity	(uS/cm)		56.8	57.2	-	-
Total Dissolved Solids			25.2	<1.0	-	-
pH			6.83	6.85	-	-
Total Suspended Solids			<4.0	<4.0	-	-
Turbidity	(NTU)		0.60	0.57	-	-
Dissolved Anions						
Alkalinity-Gran Total		CaCO3	11.2	11.6	-	-
Chloride	Cl		<0.50	<0.50	-	-
Sulphate	SO4		14.5	14.3	-	-
Nutrients						
Ammonia Nitrogen		N	<0.0050	<0.0050	-	-
Total Kjeldahl Nitrogen		N	0.175	-	0.169	0.169
Nitrate Nitrogen		N	0.0050	<0.0050	-	-
Nitrite Nitrogen		N	<0.0050	<0.0050	-	-
Nitrite/Nitrate Nitrogen		N	<0.0071	<0.0071	-	-
Dissolved ortho-Phosphate		P	<0.0010	<0.0010	-	-
Total Phosphate		P	<0.0020	<0.0020	-	-

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

Appendix 1 - QUALITY CONTROL - Replicates

Water		Banana Replicate 05-07-07 08:55	Banana Replicate QC # 20771	Banana Replicate QC # 21628	Banana Replicate QC # 21651
Total Metals					
Aluminum	T-Al	0.0219	-	0.0220	0.0220
Antimony	T-Sb	<0.00010	-	<0.00010	<0.00010
Arsenic	T-As	<0.00010	-	<0.00010	<0.00010
Barium	T-Ba	0.00442	-	0.00448	0.00448
Beryllium	T-Be	<0.00050	-	<0.00050	<0.00050
Bismuth	T-Bi	<0.00050	-	<0.00050	<0.00050
Boron	T-B	<0.010	-	<0.010	<0.010
Cadmium	T-Cd	0.000086	-	0.000072	0.000072
Calcium	T-Ca	5.55	-	5.58	5.58
Chromium	T-Cr	<0.00050	-	<0.00050	<0.00050
Cobalt	T-Co	0.00018	-	0.00020	0.00020
Copper	T-Cu	0.0318	-	0.0322	0.0322
Lead	T-Pb	<0.000050	-	<0.000050	<0.000050
Lithium	T-Li	<0.0050	-	<0.0050	<0.0050
Magnesium	T-Mg	1.64	-	1.63	1.63
Manganese	T-Mn	0.00479	-	0.00483	0.00483
Molybdenum	T-Mo	<0.000050	-	<0.000050	<0.000050
Nickel	T-Ni	0.00065	-	0.00065	0.00065
Potassium	T-K	0.818	-	0.837	0.837
Selenium	T-Se	<0.0010	-	<0.0010	<0.0010
Silver	T-Ag	<0.000010	-	<0.000010	<0.000010
Sodium	T-Na	0.563	-	0.563	0.563
Strontium	T-Sr	0.00821	-	0.00831	0.00831
Thallium	T-Tl	<0.00010	-	<0.00010	<0.00010
Tin	T-Sn	<0.00010	-	<0.00010	<0.00010
Uranium	T-U	0.000014	-	0.000016	0.000016
Vanadium	T-V	<0.0010	-	<0.0010	<0.0010
Zinc	T-Zn	0.0142	-	0.0142	0.0142

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

File No. R3016

Appendix 1 - QUALITY CONTROL - Replicates

Water			Banana Replicate 05-07-07 08:55	Banana Replicate QC # 20771	Banana Replicate QC # 21628	Banana Replicate QC # 21651
Dissolved Metals						
Aluminum	D-Al		0.0143	-	0.0139	0.0139
Antimony	D-Sb		<0.00010	-	<0.00010	<0.00010
Arsenic	D-As		<0.00010	-	<0.00010	<0.00010
Barium	D-Ba		0.00439	-	0.00430	0.00430
Beryllium	D-Be		<0.00050	-	<0.00050	<0.00050
Bismuth	D-Bi		<0.00050	-	<0.00050	<0.00050
Boron	D-B		<0.010	-	<0.010	<0.010
Cadmium	D-Cd		0.000073	-	0.000069	0.000069
Calcium	D-Ca		5.48	-	5.53	5.53
Chromium	D-Cr		<0.00050	-	0.00055	0.00055
Cobalt	D-Co		0.00019	-	0.00018	0.00018
Copper	D-Cu		0.0264	-	0.0260	0.0260
Lead	D-Pb		<0.000050	-	<0.000050	<0.000050
Lithium	D-Li		<0.0050	-	<0.0050	<0.0050
Magnesium	D-Mg		1.61	-	1.59	1.59
Manganese	D-Mn		0.00447	-	0.00444	0.00444
Molybdenum	D-Mo		<0.000050	-	<0.000050	<0.000050
Nickel	D-Ni		0.00065	-	0.00062	0.00062
Potassium	D-K		0.818	-	0.808	0.808
Selenium	D-Se		<0.0010	-	<0.0010	<0.0010
Silver	D-Ag		<0.000010	-	<0.000010	<0.000010
Sodium	D-Na		0.566	-	0.555	0.555
Strontium	D-Sr		0.00816	-	0.00818	0.00818
Thallium	D-Tl		<0.00010	-	<0.00010	<0.00010
Tin	D-Sn		0.00012	-	0.00013	0.00013
Uranium	D-U		0.000011	-	0.000011	0.000011
Vanadium	D-V		<0.0010	-	<0.0010	<0.0010
Zinc	D-Zn		0.0137	-	0.0137	0.0137
Organic Parameters						
Dissolved Organic Carbon		C	1.99	-	2.03	2.03
Total Organic Carbon		C	2.23	-	2.19	2.19

Remarks regarding the analyses appear at the beginning of this report.
< = Less than the detection limit indicated.
Results are expressed as milligrams per litre except where noted.

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - High, 4GK116							
Total Metals							
Aluminum	T-Al	1.93	2.00	mg/L	0.2	21637	a
Aluminum	T-Al	1.92	2.00	mg/L	0.2	21646	a
Aluminum	T-Al	1.93	2.00	mg/L	0.2	21660	a
Aluminum	T-Al	1.92	2.00	mg/L	0.2	21669	a
Antimony	T-Sb	0.98	1.00	mg/L	0.2	21637	a
Antimony	T-Sb	1.00	1.00	mg/L	0.2	21646	a
Antimony	T-Sb	0.98	1.00	mg/L	0.2	21660	a
Antimony	T-Sb	1.00	1.00	mg/L	0.2	21669	a
Arsenic	T-As	1.00	1.00	mg/L	0.2	21637	a
Arsenic	T-As	1.00	1.00	mg/L	0.2	21646	a
Arsenic	T-As	1.00	1.00	mg/L	0.2	21660	a
Arsenic	T-As	1.00	1.00	mg/L	0.2	21669	a
Barium	T-Ba	0.254	0.250	mg/L	0.01	21637	a
Barium	T-Ba	0.251	0.250	mg/L	0.01	21646	a
Barium	T-Ba	0.254	0.250	mg/L	0.01	21660	a
Barium	T-Ba	0.251	0.250	mg/L	0.01	21669	a
Beryllium	T-Be	0.101	0.100	mg/L	0.005	21637	a
Beryllium	T-Be	0.100	0.100	mg/L	0.005	21646	a
Beryllium	T-Be	0.101	0.100	mg/L	0.005	21660	a
Beryllium	T-Be	0.100	0.100	mg/L	0.005	21669	a
Bismuth	T-Bi	0.99	1.00	mg/L	0.2	21637	a
Bismuth	T-Bi	0.96	1.00	mg/L	0.2	21646	a
Bismuth	T-Bi	0.99	1.00	mg/L	0.2	21660	a
Bismuth	T-Bi	0.96	1.00	mg/L	0.2	21669	a
Boron	T-B	1.01	1.00	mg/L	0.1	21637	a
Boron	T-B	1.01	1.00	mg/L	0.1	21646	a
Boron	T-B	1.01	1.00	mg/L	0.1	21660	a
Boron	T-B	1.01	1.00	mg/L	0.1	21669	a
Cadmium	T-Cd	0.101	0.100	mg/L	0.01	21637	a
Cadmium	T-Cd	0.101	0.100	mg/L	0.01	21646	a
Cadmium	T-Cd	0.101	0.100	mg/L	0.01	21660	a
Cadmium	T-Cd	0.101	0.100	mg/L	0.01	21669	a
Calcium	T-Ca	48.9	50.0	mg/L	0.05	21637	a

Methods:
a = ICPOES

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - High, 4GK116							
Total Metals							
Calcium	T-Ca	49.3	50.0	mg/L	0.05	21646	a
Calcium	T-Ca	48.9	50.0	mg/L	0.05	21660	a
Calcium	T-Ca	49.3	50.0	mg/L	0.05	21669	a
Chromium	T-Cr	0.247	0.250	mg/L	0.01	21637	a
Chromium	T-Cr	0.250	0.250	mg/L	0.01	21646	a
Chromium	T-Cr	0.247	0.250	mg/L	0.01	21660	a
Chromium	T-Cr	0.250	0.250	mg/L	0.01	21669	a
Cobalt	T-Co	0.248	0.250	mg/L	0.01	21637	a
Cobalt	T-Co	0.250	0.250	mg/L	0.01	21646	a
Cobalt	T-Co	0.248	0.250	mg/L	0.01	21660	a
Cobalt	T-Co	0.250	0.250	mg/L	0.01	21669	a
Copper	T-Cu	0.247	0.250	mg/L	0.01	21637	a
Copper	T-Cu	0.251	0.250	mg/L	0.01	21646	a
Copper	T-Cu	0.247	0.250	mg/L	0.01	21660	a
Copper	T-Cu	0.251	0.250	mg/L	0.01	21669	a
Iron	T-Fe	1.01	1.00	mg/L	0.03	21637	a
Iron	T-Fe	1.01	1.00	mg/L	0.03	21646	a
Iron	T-Fe	1.01	1.00	mg/L	0.03	21660	a
Iron	T-Fe	1.01	1.00	mg/L	0.03	21669	a
Lead	T-Pb	0.504	0.500	mg/L	0.05	21637	a
Lead	T-Pb	0.500	0.500	mg/L	0.05	21646	a
Lead	T-Pb	0.504	0.500	mg/L	0.05	21660	a
Lead	T-Pb	0.500	0.500	mg/L	0.05	21669	a
Lithium	T-Li	0.231	0.250	mg/L	0.01	21637	a
Lithium	T-Li	0.230	0.250	mg/L	0.01	21646	a
Lithium	T-Li	0.231	0.250	mg/L	0.01	21660	a
Lithium	T-Li	0.230	0.250	mg/L	0.01	21669	a
Magnesium	T-Mg	49.2	50.0	mg/L	0.1	21637	a
Magnesium	T-Mg	49.6	50.0	mg/L	0.1	21646	a
Magnesium	T-Mg	49.2	50.0	mg/L	0.1	21660	a
Magnesium	T-Mg	49.6	50.0	mg/L	0.1	21669	a
Manganese	T-Mn	0.251	0.250	mg/L	0.005	21637	a
Manganese	T-Mn	0.250	0.250	mg/L	0.005	21646	a

Methods:
a = ICPOES

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - High, 4GK116							
Total Metals							
Manganese	T-Mn	0.251	0.250	mg/L	0.005	21660	a
Manganese	T-Mn	0.250	0.250	mg/L	0.005	21669	a
Molybdenum	T-Mo	0.251	0.250	mg/L	0.03	21637	a
Molybdenum	T-Mo	0.249	0.250	mg/L	0.03	21646	a
Molybdenum	T-Mo	0.251	0.250	mg/L	0.03	21660	a
Molybdenum	T-Mo	0.249	0.250	mg/L	0.03	21669	a
Nickel	T-Ni	0.500	0.500	mg/L	0.05	21637	a
Nickel	T-Ni	0.502	0.500	mg/L	0.05	21646	a
Nickel	T-Ni	0.500	0.500	mg/L	0.05	21660	a
Nickel	T-Ni	0.502	0.500	mg/L	0.05	21669	a
Potassium	T-K	49.6	50.0	mg/L	2	21637	a
Potassium	T-K	49.2	50.0	mg/L	2	21646	a
Potassium	T-K	49.6	50.0	mg/L	2	21660	a
Potassium	T-K	49.2	50.0	mg/L	2	21669	a
Selenium	T-Se	0.99	1.00	mg/L	0.2	21637	a
Selenium	T-Se	1.01	1.00	mg/L	0.2	21646	a
Selenium	T-Se	0.99	1.00	mg/L	0.2	21660	a
Selenium	T-Se	1.01	1.00	mg/L	0.2	21669	a
Silver	T-Ag	0.101	0.100	mg/L	0.01	21637	a
Silver	T-Ag	0.101	0.100	mg/L	0.01	21646	a
Silver	T-Ag	0.101	0.100	mg/L	0.01	21660	a
Silver	T-Ag	0.101	0.100	mg/L	0.01	21669	a
Sodium	T-Na	49.6	50.0	mg/L	2	21637	a
Sodium	T-Na	49.6	50.0	mg/L	2	21646	a
Sodium	T-Na	49.6	50.0	mg/L	2	21660	a
Sodium	T-Na	49.6	50.0	mg/L	2	21669	a
Strontium	T-Sr	0.250	0.250	mg/L	0.005	21637	a
Strontium	T-Sr	0.249	0.250	mg/L	0.005	21646	a
Strontium	T-Sr	0.250	0.250	mg/L	0.005	21660	a
Strontium	T-Sr	0.249	0.250	mg/L	0.005	21669	a
Thallium	T-Tl	0.95	1.00	mg/L	0.2	21637	a
Thallium	T-Tl	1.00	1.00	mg/L	0.2	21646	a
Thallium	T-Tl	0.95	1.00	mg/L	0.2	21660	a

Methods:
a = ICPOES

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - High, 4GK116							
Total Metals							
Thallium	T-Tl	1.00	1.00	mg/L	0.2	21669	a
Tin	T-Sn	0.418	0.500	mg/L	0.03	21637	a
Tin	T-Sn	0.382	0.500	mg/L	0.03	21646	a
Tin	T-Sn	0.418	0.500	mg/L	0.03	21660	a
Tin	T-Sn	0.382	0.500	mg/L	0.03	21669	a
Vanadium	T-V	0.503	0.500	mg/L	0.03	21637	a
Vanadium	T-V	0.500	0.500	mg/L	0.03	21646	a
Vanadium	T-V	0.503	0.500	mg/L	0.03	21660	a
Vanadium	T-V	0.500	0.500	mg/L	0.03	21669	a
Zinc	T-Zn	0.501	0.500	mg/L	0.005	21637	a
Zinc	T-Zn	0.502	0.500	mg/L	0.005	21646	a
Zinc	T-Zn	0.501	0.500	mg/L	0.005	21660	a
Zinc	T-Zn	0.502	0.500	mg/L	0.005	21669	a
ALSEV Metals in Water - Mid, 4GK116							
Total Metals							
Aluminum	T-Al	0.100	0.100	mg/L	0.001	21647	b
Aluminum	T-Al	0.103	0.100	mg/L	0.001	21648	b
Aluminum	T-Al	0.100	0.100	mg/L	0.001	21670	b
Aluminum	T-Al	0.103	0.100	mg/L	0.001	21671	b
Antimony	T-Sb	0.0492	0.0500	mg/L	0.0001	21647	b
Antimony	T-Sb	0.0479	0.0500	mg/L	0.0001	21648	b
Antimony	T-Sb	0.0492	0.0500	mg/L	0.0001	21670	b
Antimony	T-Sb	0.0479	0.0500	mg/L	0.0001	21671	b
Arsenic	T-As	0.0509	0.0500	mg/L	0.0001	21647	b
Arsenic	T-As	0.0493	0.0500	mg/L	0.0001	21648	b
Arsenic	T-As	0.0509	0.0500	mg/L	0.0001	21670	b
Arsenic	T-As	0.0493	0.0500	mg/L	0.0001	21671	b
Barium	T-Ba	0.0128	0.0125	mg/L	0.00005	21647	b
Barium	T-Ba	0.0125	0.0125	mg/L	0.00005	21648	b
Barium	T-Ba	0.0128	0.0125	mg/L	0.00005	21670	b
Barium	T-Ba	0.0125	0.0125	mg/L	0.00005	21671	b

Methods:
a = ICPOES
b = ICPMS

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - Mid, 4GK116							
Total Metals							
Beryllium	T-Be	0.00521	0.00500	mg/L	0.0005	21647	a
Beryllium	T-Be	0.00529	0.00500	mg/L	0.0005	21648	a
Beryllium	T-Be	0.00521	0.00500	mg/L	0.0005	21670	a
Beryllium	T-Be	0.00529	0.00500	mg/L	0.0005	21671	a
Bismuth	T-Bi	0.0507	0.0500	mg/L	0.0005	21647	a
Bismuth	T-Bi	0.0477	0.0500	mg/L	0.0005	21648	a
Bismuth	T-Bi	0.0507	0.0500	mg/L	0.0005	21670	a
Bismuth	T-Bi	0.0477	0.0500	mg/L	0.0005	21671	a
Boron	T-B	0.050	0.050	mg/L	0.01	21647	a
Boron	T-B	0.051	0.050	mg/L	0.01	21648	a
Boron	T-B	0.050	0.050	mg/L	0.01	21670	a
Boron	T-B	0.051	0.050	mg/L	0.01	21671	a
Cadmium	T-Cd	0.00508	0.00500	mg/L	0.00005	21647	a
Cadmium	T-Cd	0.00490	0.00500	mg/L	0.00005	21648	a
Cadmium	T-Cd	0.00508	0.00500	mg/L	0.00005	21670	a
Cadmium	T-Cd	0.00490	0.00500	mg/L	0.00005	21671	a
Calcium	T-Ca	2.54	2.50	mg/L	0.02	21647	a
Calcium	T-Ca	2.50	2.50	mg/L	0.02	21648	a
Calcium	T-Ca	2.54	2.50	mg/L	0.02	21670	a
Calcium	T-Ca	2.50	2.50	mg/L	0.02	21671	a
Chromium	T-Cr	0.0130	0.0125	mg/L	0.0005	21647	a
Chromium	T-Cr	0.0130	0.0125	mg/L	0.0005	21648	a
Chromium	T-Cr	0.0130	0.0125	mg/L	0.0005	21670	a
Chromium	T-Cr	0.0130	0.0125	mg/L	0.0005	21671	a
Cobalt	T-Co	0.0129	0.0125	mg/L	0.0001	21647	a
Cobalt	T-Co	0.0125	0.0125	mg/L	0.0001	21648	a
Cobalt	T-Co	0.0129	0.0125	mg/L	0.0001	21670	a
Cobalt	T-Co	0.0125	0.0125	mg/L	0.0001	21671	a
Copper	T-Cu	0.0125	0.0125	mg/L	0.0001	21647	a
Copper	T-Cu	0.0125	0.0125	mg/L	0.0001	21648	a
Copper	T-Cu	0.0125	0.0125	mg/L	0.0001	21670	a
Copper	T-Cu	0.0125	0.0125	mg/L	0.0001	21671	a
Iron	T-Fe	0.05	0.05	mg/L	0.03	21647	a

Methods:
a = ICPMS

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - Mid, 4GK116							
Total Metals							
Iron	T-Fe	0.05	0.05	mg/L	0.03	21648	a
Iron	T-Fe	0.05	0.05	mg/L	0.03	21670	a
Iron	T-Fe	0.05	0.05	mg/L	0.03	21671	a
Lead	T-Pb	0.0258	0.0250	mg/L	0.00005	21647	a
Lead	T-Pb	0.0246	0.0250	mg/L	0.00005	21648	a
Lead	T-Pb	0.0258	0.0250	mg/L	0.00005	21670	a
Lead	T-Pb	0.0246	0.0250	mg/L	0.00005	21671	a
Lithium	T-Li	0.0129	0.0125	mg/L	0.005	21647	a
Lithium	T-Li	0.0123	0.0125	mg/L	0.005	21648	a
Lithium	T-Li	0.0129	0.0125	mg/L	0.005	21670	a
Lithium	T-Li	0.0123	0.0125	mg/L	0.005	21671	a
Magnesium	T-Mg	2.38	2.50	mg/L	0.005	21647	a
Magnesium	T-Mg	2.45	2.50	mg/L	0.005	21648	a
Magnesium	T-Mg	2.38	2.50	mg/L	0.005	21670	a
Magnesium	T-Mg	2.45	2.50	mg/L	0.005	21671	a
Manganese	T-Mn	0.0129	0.0125	mg/L	0.00005	21647	a
Manganese	T-Mn	0.0125	0.0125	mg/L	0.00005	21648	a
Manganese	T-Mn	0.0129	0.0125	mg/L	0.00005	21670	a
Manganese	T-Mn	0.0125	0.0125	mg/L	0.00005	21671	a
Molybdenum	T-Mo	0.0129	0.0125	mg/L	0.00005	21647	a
Molybdenum	T-Mo	0.0125	0.0125	mg/L	0.00005	21648	a
Molybdenum	T-Mo	0.0129	0.0125	mg/L	0.00005	21670	a
Molybdenum	T-Mo	0.0125	0.0125	mg/L	0.00005	21671	a
Nickel	T-Ni	0.0250	0.0250	mg/L	0.0005	21647	a
Nickel	T-Ni	0.0251	0.0250	mg/L	0.0005	21648	a
Nickel	T-Ni	0.0250	0.0250	mg/L	0.0005	21670	a
Nickel	T-Ni	0.0251	0.0250	mg/L	0.0005	21671	a
Potassium	T-K	2.64	2.50	mg/L	0.05	21647	a
Potassium	T-K	2.56	2.50	mg/L	0.05	21648	a
Potassium	T-K	2.64	2.50	mg/L	0.05	21670	a
Potassium	T-K	2.56	2.50	mg/L	0.05	21671	a
Selenium	T-Se	0.0525	0.0500	mg/L	0.0005	21647	a
Selenium	T-Se	0.0501	0.0500	mg/L	0.0005	21648	a

Methods:
a = ICPMS

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - Mid, 4GK116							
Total Metals							
Selenium	T-Se	0.0525	0.0500	mg/L	0.0005	21670	a
Selenium	T-Se	0.0501	0.0500	mg/L	0.0005	21671	a
Silver	T-Ag	0.00518	0.00500	mg/L	0.00001	21647	a
Silver	T-Ag	0.00500	0.00500	mg/L	0.00001	21648	a
Silver	T-Ag	0.00518	0.00500	mg/L	0.00001	21670	a
Silver	T-Ag	0.00500	0.00500	mg/L	0.00001	21671	a
Sodium	T-Na	2.60	2.50	mg/L	0.01	21647	a
Sodium	T-Na	2.66	2.50	mg/L	0.01	21648	a
Sodium	T-Na	2.60	2.50	mg/L	0.01	21670	a
Sodium	T-Na	2.66	2.50	mg/L	0.01	21671	a
Strontium	T-Sr	0.0133	0.0125	mg/L	0.0001	21647	a
Strontium	T-Sr	0.0127	0.0125	mg/L	0.0001	21648	a
Strontium	T-Sr	0.0133	0.0125	mg/L	0.0001	21670	a
Strontium	T-Sr	0.0127	0.0125	mg/L	0.0001	21671	a
Thallium	T-Tl	0.0511	0.0500	mg/L	0.0001	21647	a
Thallium	T-Tl	0.0484	0.0500	mg/L	0.0001	21648	a
Thallium	T-Tl	0.0511	0.0500	mg/L	0.0001	21670	a
Thallium	T-Tl	0.0484	0.0500	mg/L	0.0001	21671	a
Tin	T-Sn	0.0237	0.0250	mg/L	0.0001	21647	a
Tin	T-Sn	0.0233	0.0250	mg/L	0.0001	21648	a
Tin	T-Sn	0.0237	0.0250	mg/L	0.0001	21670	a
Tin	T-Sn	0.0233	0.0250	mg/L	0.0001	21671	a
Uranium	T-U	0.000257	0.000250	mg/L	0.00001	21647	a
Uranium	T-U	0.000257	0.000250	mg/L	0.00001	21648	a
Uranium	T-U	0.000257	0.000250	mg/L	0.00001	21670	a
Uranium	T-U	0.000257	0.000250	mg/L	0.00001	21671	a
Vanadium	T-V	0.0254	0.0250	mg/L	0.001	21647	a
Vanadium	T-V	0.0248	0.0250	mg/L	0.001	21648	a
Vanadium	T-V	0.0254	0.0250	mg/L	0.001	21670	a
Vanadium	T-V	0.0248	0.0250	mg/L	0.001	21671	a
Zinc	T-Zn	0.0265	0.0250	mg/L	0.001	21647	a
Zinc	T-Zn	0.0257	0.0250	mg/L	0.001	21648	a
Zinc	T-Zn	0.0265	0.0250	mg/L	0.001	21670	a

Methods:
a = ICPMS

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

			Result	Target	Units	DL	ALSQC#	Method
ALSEV Metals in Water - Mid, 4GK116								
Total Metals								
Zinc	T-Zn		0.0257	0.0250	mg/L	0.001	21671	a
SPEX Anions (10xD), 27-108AS								
Dissolved Anions								
Chloride	Cl		4.68	4.99	mg/L	0.5	21587	b
Sulphate	SO4		15.4	15.0	mg/L	1	21587	b
Nutrients								
Nitrate Nitrogen		N	2.53	2.49	mg/L	0.005	21587	b
Nitrite Nitrogen		N	2.46	2.50	mg/L	0.005	21587	b
SPEX Nutrients, 10-53, 10-54N								
Nutrients								
Total Kjeldahl Nitrogen		N	11.2	10.2	mg/L	0.05	21630	c
Total Kjeldahl Nitrogen		N	11.0	10.2	mg/L	0.05	21634	c
Total Kjeldahl Nitrogen		N	11.2	10.2	mg/L	0.05	21653	c
Total Kjeldahl Nitrogen		N	11.0	10.2	mg/L	0.05	21657	c
ERA WasteWatR pH, P114977								
Physical Tests								
pH			5.48	5.40	pH	0.01	21259	d
ERA WasteWatR Minerals, P118506								
Physical Tests								
Conductivity	(uS/cm)		436	436	uS/cm	2	21260	e
ERA Hardness, P114507								
Physical Tests								
Total Suspended Solids			36.0	37.9	mg/L	4	21137	f

Methods:
a = ICPMS
b = WA_Anions_IC
c = Electrode
d = WA_pH_PCT-Meter
e = WA_Cond_PCT-Meter
f = WA_TS_Grav

Appendix 1 - QUALITY CONTROL - Reference Materials

Water

		Result	Target	Units	DL	ALSQC#	Method
SPEX Nutrients, 11-57N Nut 1							
Nutrients							
Ammonia Nitrogen	N	17.9	17.9	mg/L	0.005	21257	a
Dissolved ortho-Phosphate	P	1.59	1.72	mg/L	0.001	20988	b
SPEX Nutrients, 11-58N Nut 2							
Nutrients							
Total Phosphate	P	1.60	1.77	mg/L	0.002	21206	b

Methods:
a = WA_Ammonia_Color
b = WA_Phosphate_Color

File No. R3016

Appendix 1 - QUALITY CONTROL - Spikes

Water

		Result	Target	Units	DL	ALSQC#	Method
Physical Tests							
Total Suspended Solids		70.0	75.0	mg/L	4	21139	a
Turbidity (NTU)		41.9	40.0	NTU	0.1	21011	b
Organic Parameters							
Total Organic Carbon	C	9.06	8.57	mg/L	0.5	21636	c
Total Organic Carbon	C	9.23	8.57	mg/L	0.5	21645	c
Total Organic Carbon	C	9.06	8.57	mg/L	0.5	21659	c
Total Organic Carbon	C	9.23	8.57	mg/L	0.5	21668	c

Methods:
a = WA_TS_Grav
b = WA_Turbidity_Meter
c = IR

Appendix 1 - QUALITY CONTROL - Blanks

Water

			Result	Target	Units	DL	ALSQC#	Method
Physical Tests								
Conductivity	(uS/cm)		<2.0	<2.0	uS/cm	2	21258	a
Total Suspended Solids			<4.0	<4.0	mg/L	4	21138	b
Turbidity	(NTU)		<0.10	<0.10	NTU	0.1	21010	c
Dissolved Anions								
Chloride	Cl		<0.50	<0.50	mg/L	0.5	21586	d
Sulphate	SO4		<1.0	<1.0	mg/L	1	21586	d
Nutrients								
Ammonia Nitrogen		N	<0.0050	<0.0050	mg/L	0.005	21256	e
Total Kjeldahl Nitrogen		N	<0.05	<0.05	mg/L	0.05	21629	f
Total Kjeldahl Nitrogen		N	<0.05	<0.05	mg/L	0.05	21633	f
Total Kjeldahl Nitrogen		N	<0.05	<0.05	mg/L	0.05	21652	f
Total Kjeldahl Nitrogen		N	<0.05	<0.05	mg/L	0.05	21656	f
Nitrate Nitrogen		N	<0.0050	<0.0050	mg/L	0.005	21586	d
Nitrite Nitrogen		N	<0.0050	<0.0050	mg/L	0.005	21586	d
Dissolved ortho-Phosphate		P	<0.0010	<0.0010	mg/L	0.001	20987	g
Total Phosphate		P	<0.0020	<0.0020	mg/L	0.002	21205	g
Total Metals								
Aluminum	T-Al		<0.0010	<0.0010	mg/L	0.001	21631	h
Aluminum	T-Al		<0.0010	<0.0010	mg/L	0.001	21632	h
Aluminum	T-Al		<0.20	<0.20	mg/L	0.2	21642	i
Aluminum	T-Al		<0.20	<0.20	mg/L	0.2	21643	i
Aluminum	T-Al		<0.0010	<0.0010	mg/L	0.001	21654	h
Aluminum	T-Al		<0.0010	<0.0010	mg/L	0.001	21655	h
Aluminum	T-Al		<0.20	<0.20	mg/L	0.2	21665	i
Aluminum	T-Al		<0.20	<0.20	mg/L	0.2	21666	i
Antimony	T-Sb		<0.00010	<0.00010	mg/L	0.0001	21631	h
Antimony	T-Sb		<0.00010	<0.00010	mg/L	0.0001	21632	h
Antimony	T-Sb		<0.20	<0.20	mg/L	0.2	21642	i
Antimony	T-Sb		<0.20	<0.20	mg/L	0.2	21643	i
Antimony	T-Sb		<0.00010	<0.00010	mg/L	0.0001	21654	h
Antimony	T-Sb		<0.00010	<0.00010	mg/L	0.0001	21655	h
Antimony	T-Sb		<0.20	<0.20	mg/L	0.2	21665	i
Antimony	T-Sb		<0.20	<0.20	mg/L	0.2	21666	i
Arsenic	T-As		<0.00010	<0.00010	mg/L	0.0001	21631	h

Methods:
a = WA_Cond_PCT-Meter
b = WA_TS_Grav
c = WA_Turbidity_Meter
d = WA_Anions_IC
e = WA_Ammonia_Color
f = Electrode
g = WA_Phosphate_Color
h = ICPMS
i = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Total Metals							
Arsenic	T-As	<0.00010	<0.00010	mg/L	0.0001	21632	a
Arsenic	T-As	<0.20	<0.20	mg/L	0.2	21642	b
Arsenic	T-As	<0.20	<0.20	mg/L	0.2	21643	b
Arsenic	T-As	<0.00010	<0.00010	mg/L	0.0001	21654	a
Arsenic	T-As	<0.00010	<0.00010	mg/L	0.0001	21655	a
Arsenic	T-As	<0.20	<0.20	mg/L	0.2	21665	b
Arsenic	T-As	<0.20	<0.20	mg/L	0.2	21666	b
Barium	T-Ba	<0.000050	<0.000050	mg/L	0.00005	21631	a
Barium	T-Ba	<0.000050	<0.000050	mg/L	0.00005	21632	a
Barium	T-Ba	<0.010	<0.010	mg/L	0.01	21642	b
Barium	T-Ba	<0.010	<0.010	mg/L	0.01	21643	b
Barium	T-Ba	<0.000050	<0.000050	mg/L	0.00005	21654	a
Barium	T-Ba	<0.000050	<0.000050	mg/L	0.00005	21655	a
Barium	T-Ba	<0.010	<0.010	mg/L	0.01	21665	b
Barium	T-Ba	<0.010	<0.010	mg/L	0.01	21666	b
Beryllium	T-Be	<0.00050	<0.00050	mg/L	0.0005	21631	a
Beryllium	T-Be	<0.00050	<0.00050	mg/L	0.0005	21632	a
Beryllium	T-Be	<0.0050	<0.0050	mg/L	0.005	21642	b
Beryllium	T-Be	<0.0050	<0.0050	mg/L	0.005	21643	b
Beryllium	T-Be	<0.00050	<0.00050	mg/L	0.0005	21654	a
Beryllium	T-Be	<0.00050	<0.00050	mg/L	0.0005	21655	a
Beryllium	T-Be	<0.0050	<0.0050	mg/L	0.005	21665	b
Beryllium	T-Be	<0.0050	<0.0050	mg/L	0.005	21666	b
Bismuth	T-Bi	<0.00050	<0.00050	mg/L	0.0005	21631	a
Bismuth	T-Bi	<0.00050	<0.00050	mg/L	0.0005	21632	a
Bismuth	T-Bi	<0.10	<0.10	mg/L	0.1	21642	b
Bismuth	T-Bi	<0.10	<0.10	mg/L	0.1	21643	b
Bismuth	T-Bi	<0.00050	<0.00050	mg/L	0.0005	21654	a
Bismuth	T-Bi	<0.00050	<0.00050	mg/L	0.0005	21655	a
Bismuth	T-Bi	<0.10	<0.10	mg/L	0.1	21665	b
Bismuth	T-Bi	<0.10	<0.10	mg/L	0.1	21666	b
Boron	T-B	<0.010	<0.010	mg/L	0.01	21631	a
Boron	T-B	<0.010	<0.010	mg/L	0.01	21632	a
Boron	T-B	<0.10	<0.10	mg/L	0.1	21642	b
Boron	T-B	<0.10	<0.10	mg/L	0.1	21643	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Total Metals							
Boron	T-B	<0.010	<0.010	mg/L	0.01	21654	a
Boron	T-B	<0.010	<0.010	mg/L	0.01	21655	a
Boron	T-B	<0.10	<0.10	mg/L	0.1	21665	b
Boron	T-B	<0.10	<0.10	mg/L	0.1	21666	b
Cadmium	T-Cd	<0.000050	<0.000050	mg/L	0.00005	21631	a
Cadmium	T-Cd	<0.000050	<0.000050	mg/L	0.00005	21632	a
Cadmium	T-Cd	<0.010	<0.010	mg/L	0.01	21642	b
Cadmium	T-Cd	<0.010	<0.010	mg/L	0.01	21643	b
Cadmium	T-Cd	<0.000050	<0.000050	mg/L	0.00005	21654	a
Cadmium	T-Cd	<0.000050	<0.000050	mg/L	0.00005	21655	a
Cadmium	T-Cd	<0.010	<0.010	mg/L	0.01	21665	b
Cadmium	T-Cd	<0.010	<0.010	mg/L	0.01	21666	b
Calcium	T-Ca	<0.020	<0.020	mg/L	0.02	21631	a
Calcium	T-Ca	<0.020	<0.020	mg/L	0.02	21632	a
Calcium	T-Ca	<0.050	<0.050	mg/L	0.05	21642	b
Calcium	T-Ca	<0.050	<0.050	mg/L	0.05	21643	b
Calcium	T-Ca	<0.020	<0.020	mg/L	0.02	21654	a
Calcium	T-Ca	<0.020	<0.020	mg/L	0.02	21655	a
Calcium	T-Ca	<0.050	<0.050	mg/L	0.05	21665	b
Calcium	T-Ca	<0.050	<0.050	mg/L	0.05	21666	b
Chromium	T-Cr	<0.00050	<0.00050	mg/L	0.0005	21631	a
Chromium	T-Cr	<0.00050	<0.00050	mg/L	0.0005	21632	a
Chromium	T-Cr	<0.010	<0.010	mg/L	0.01	21642	b
Chromium	T-Cr	<0.010	<0.010	mg/L	0.01	21643	b
Chromium	T-Cr	<0.00050	<0.00050	mg/L	0.0005	21654	a
Chromium	T-Cr	<0.00050	<0.00050	mg/L	0.0005	21655	a
Chromium	T-Cr	<0.010	<0.010	mg/L	0.01	21665	b
Chromium	T-Cr	<0.010	<0.010	mg/L	0.01	21666	b
Cobalt	T-Co	<0.00010	<0.00010	mg/L	0.0001	21631	a
Cobalt	T-Co	<0.00010	<0.00010	mg/L	0.0001	21632	a
Cobalt	T-Co	<0.010	<0.010	mg/L	0.01	21642	b
Cobalt	T-Co	<0.010	<0.010	mg/L	0.01	21643	b
Cobalt	T-Co	<0.00010	<0.00010	mg/L	0.0001	21654	a
Cobalt	T-Co	<0.00010	<0.00010	mg/L	0.0001	21655	a
Cobalt	T-Co	<0.010	<0.010	mg/L	0.01	21665	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Total Metals							
Cobalt	T-Co	<0.010	<0.010	mg/L	0.01	21666	a
Copper	T-Cu	<0.00010	<0.00010	mg/L	0.0001	21631	b
Copper	T-Cu	<0.00010	<0.00010	mg/L	0.0001	21632	b
Copper	T-Cu	<0.010	<0.010	mg/L	0.01	21642	a
Copper	T-Cu	<0.010	<0.010	mg/L	0.01	21643	a
Copper	T-Cu	<0.00010	<0.00010	mg/L	0.0001	21654	b
Copper	T-Cu	<0.00010	<0.00010	mg/L	0.0001	21655	b
Copper	T-Cu	<0.010	<0.010	mg/L	0.01	21665	a
Copper	T-Cu	<0.010	<0.010	mg/L	0.01	21666	a
Iron	T-Fe	<0.030	<0.030	mg/L	0.03	21642	a
Iron	T-Fe	<0.030	<0.030	mg/L	0.03	21643	a
Iron	T-Fe	<0.030	<0.030	mg/L	0.03	21665	a
Iron	T-Fe	<0.030	<0.030	mg/L	0.03	21666	a
Lead	T-Pb	<0.000050	<0.000050	mg/L	0.00005	21631	b
Lead	T-Pb	<0.000050	<0.000050	mg/L	0.00005	21632	b
Lead	T-Pb	<0.050	<0.050	mg/L	0.05	21642	a
Lead	T-Pb	<0.050	<0.050	mg/L	0.05	21643	a
Lead	T-Pb	<0.000050	<0.000050	mg/L	0.00005	21654	b
Lead	T-Pb	<0.000050	<0.000050	mg/L	0.00005	21655	b
Lead	T-Pb	<0.050	<0.050	mg/L	0.05	21665	a
Lead	T-Pb	<0.050	<0.050	mg/L	0.05	21666	a
Lithium	T-Li	<0.0050	<0.0050	mg/L	0.005	21631	b
Lithium	T-Li	<0.0050	<0.0050	mg/L	0.005	21632	b
Lithium	T-Li	<0.010	<0.010	mg/L	0.01	21642	a
Lithium	T-Li	<0.010	<0.010	mg/L	0.01	21643	a
Lithium	T-Li	<0.0050	<0.0050	mg/L	0.005	21654	b
Lithium	T-Li	<0.0050	<0.0050	mg/L	0.005	21655	b
Lithium	T-Li	<0.010	<0.010	mg/L	0.01	21665	a
Lithium	T-Li	<0.010	<0.010	mg/L	0.01	21666	a
Magnesium	T-Mg	<0.0050	<0.0050	mg/L	0.005	21631	b
Magnesium	T-Mg	<0.0050	<0.0050	mg/L	0.005	21632	b
Magnesium	T-Mg	<0.10	<0.10	mg/L	0.1	21642	a
Magnesium	T-Mg	<0.10	<0.10	mg/L	0.1	21643	a
Magnesium	T-Mg	<0.0050	<0.0050	mg/L	0.005	21654	b
Magnesium	T-Mg	<0.0050	<0.0050	mg/L	0.005	21655	b

Methods:
a = ICPOES
b = ICPMS

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Total Metals							
Magnesium	T-Mg	<0.10	<0.10	mg/L	0.1	21665	a
Magnesium	T-Mg	<0.10	<0.10	mg/L	0.1	21666	a
Manganese	T-Mn	<0.000050	<0.000050	mg/L	0.00005	21631	b
Manganese	T-Mn	<0.000050	<0.000050	mg/L	0.00005	21632	b
Manganese	T-Mn	<0.0050	<0.0050	mg/L	0.005	21642	a
Manganese	T-Mn	<0.0050	<0.0050	mg/L	0.005	21643	a
Manganese	T-Mn	<0.000050	<0.000050	mg/L	0.00005	21654	b
Manganese	T-Mn	<0.000050	<0.000050	mg/L	0.00005	21655	b
Manganese	T-Mn	<0.0050	<0.0050	mg/L	0.005	21665	a
Manganese	T-Mn	<0.0050	<0.0050	mg/L	0.005	21666	a
Molybdenum	T-Mo	<0.000050	<0.000050	mg/L	0.00005	21631	b
Molybdenum	T-Mo	<0.000050	<0.000050	mg/L	0.00005	21632	b
Molybdenum	T-Mo	<0.030	<0.030	mg/L	0.03	21642	a
Molybdenum	T-Mo	<0.030	<0.030	mg/L	0.03	21643	a
Molybdenum	T-Mo	<0.000050	<0.000050	mg/L	0.00005	21654	b
Molybdenum	T-Mo	<0.000050	<0.000050	mg/L	0.00005	21655	b
Molybdenum	T-Mo	<0.030	<0.030	mg/L	0.03	21665	a
Molybdenum	T-Mo	<0.030	<0.030	mg/L	0.03	21666	a
Nickel	T-Ni	<0.00050	<0.00050	mg/L	0.0005	21631	b
Nickel	T-Ni	<0.00050	<0.00050	mg/L	0.0005	21632	b
Nickel	T-Ni	<0.050	<0.050	mg/L	0.05	21642	a
Nickel	T-Ni	<0.050	<0.050	mg/L	0.05	21643	a
Nickel	T-Ni	<0.00050	<0.00050	mg/L	0.0005	21654	b
Nickel	T-Ni	<0.00050	<0.00050	mg/L	0.0005	21655	b
Nickel	T-Ni	<0.050	<0.050	mg/L	0.05	21665	a
Nickel	T-Ni	<0.050	<0.050	mg/L	0.05	21666	a
Potassium	T-K	<0.050	<0.050	mg/L	0.05	21631	b
Potassium	T-K	<0.050	<0.050	mg/L	0.05	21632	b
Potassium	T-K	<2.0	<2.0	mg/L	2	21642	a
Potassium	T-K	<2.0	<2.0	mg/L	2	21643	a
Potassium	T-K	<0.050	<0.050	mg/L	0.05	21654	b
Potassium	T-K	<0.050	<0.050	mg/L	0.05	21655	b
Potassium	T-K	<2.0	<2.0	mg/L	2	21665	a
Potassium	T-K	<2.0	<2.0	mg/L	2	21666	a
Selenium	T-Se	<0.00050	<0.00050	mg/L	0.0005	21631	b

Methods:
a = ICPOES
b = ICPMS

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Total Metals							
Selenium	T-Se	<0.00050	<0.00050	mg/L	0.0005	21632	a
Selenium	T-Se	<0.20	<0.20	mg/L	0.2	21642	b
Selenium	T-Se	<0.20	<0.20	mg/L	0.2	21643	b
Selenium	T-Se	<0.00050	<0.00050	mg/L	0.0005	21654	a
Selenium	T-Se	<0.00050	<0.00050	mg/L	0.0005	21655	a
Selenium	T-Se	<0.20	<0.20	mg/L	0.2	21665	b
Selenium	T-Se	<0.20	<0.20	mg/L	0.2	21666	b
Silver	T-Ag	<0.000010	<0.000010	mg/L	0.00001	21631	a
Silver	T-Ag	<0.000010	<0.000010	mg/L	0.00001	21632	a
Silver	T-Ag	<0.010	<0.010	mg/L	0.01	21642	b
Silver	T-Ag	<0.010	<0.010	mg/L	0.01	21643	b
Silver	T-Ag	<0.000010	<0.000010	mg/L	0.00001	21654	a
Silver	T-Ag	<0.000010	<0.000010	mg/L	0.00001	21655	a
Silver	T-Ag	<0.010	<0.010	mg/L	0.01	21665	b
Silver	T-Ag	<0.010	<0.010	mg/L	0.01	21666	b
Sodium	T-Na	<0.010	<0.010	mg/L	0.01	21631	a
Sodium	T-Na	<0.010	<0.010	mg/L	0.01	21632	a
Sodium	T-Na	<2.0	<2.0	mg/L	2	21642	b
Sodium	T-Na	<2.0	<2.0	mg/L	2	21643	b
Sodium	T-Na	<0.010	<0.010	mg/L	0.01	21654	a
Sodium	T-Na	<0.010	<0.010	mg/L	0.01	21655	a
Sodium	T-Na	<2.0	<2.0	mg/L	2	21665	b
Sodium	T-Na	<2.0	<2.0	mg/L	2	21666	b
Strontium	T-Sr	<0.00010	<0.00010	mg/L	0.0001	21631	a
Strontium	T-Sr	<0.00010	<0.00010	mg/L	0.0001	21632	a
Strontium	T-Sr	<0.0050	<0.0050	mg/L	0.005	21642	b
Strontium	T-Sr	<0.0050	<0.0050	mg/L	0.005	21643	b
Strontium	T-Sr	<0.00010	<0.00010	mg/L	0.0001	21654	a
Strontium	T-Sr	<0.00010	<0.00010	mg/L	0.0001	21655	a
Strontium	T-Sr	<0.0050	<0.0050	mg/L	0.005	21665	b
Strontium	T-Sr	<0.0050	<0.0050	mg/L	0.005	21666	b
Thallium	T-Tl	<0.00010	<0.00010	mg/L	0.0001	21631	a
Thallium	T-Tl	<0.00010	<0.00010	mg/L	0.0001	21632	a
Thallium	T-Tl	<0.20	<0.20	mg/L	0.2	21642	b
Thallium	T-Tl	<0.20	<0.20	mg/L	0.2	21643	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Total Metals							
Thallium	T-Tl	<0.00010	<0.00010	mg/L	0.0001	21654	a
Thallium	T-Tl	<0.00010	<0.00010	mg/L	0.0001	21655	a
Thallium	T-Tl	<0.20	<0.20	mg/L	0.2	21665	b
Thallium	T-Tl	<0.20	<0.20	mg/L	0.2	21666	b
Tin	T-Sn	<0.00010	<0.00010	mg/L	0.0001	21631	a
Tin	T-Sn	<0.00010	<0.00010	mg/L	0.0001	21632	a
Tin	T-Sn	<0.030	<0.030	mg/L	0.03	21642	b
Tin	T-Sn	<0.030	<0.030	mg/L	0.03	21643	b
Tin	T-Sn	<0.00010	<0.00010	mg/L	0.0001	21654	a
Tin	T-Sn	<0.00010	<0.00010	mg/L	0.0001	21655	a
Tin	T-Sn	<0.030	<0.030	mg/L	0.03	21665	b
Tin	T-Sn	<0.030	<0.030	mg/L	0.03	21666	b
Uranium	T-U	<0.000010	<0.000010	mg/L	0.00001	21631	a
Uranium	T-U	<0.000010	<0.000010	mg/L	0.00001	21632	a
Uranium	T-U	<0.000010	<0.000010	mg/L	0.00001	21654	a
Uranium	T-U	<0.000010	<0.000010	mg/L	0.00001	21655	a
Vanadium	T-V	<0.0010	<0.0010	mg/L	0.001	21631	a
Vanadium	T-V	<0.0010	<0.0010	mg/L	0.001	21632	a
Vanadium	T-V	<0.030	<0.030	mg/L	0.03	21642	b
Vanadium	T-V	<0.030	<0.030	mg/L	0.03	21643	b
Vanadium	T-V	<0.0010	<0.0010	mg/L	0.001	21654	a
Vanadium	T-V	<0.0010	<0.0010	mg/L	0.001	21655	a
Vanadium	T-V	<0.030	<0.030	mg/L	0.03	21665	b
Vanadium	T-V	<0.030	<0.030	mg/L	0.03	21666	b
Zinc	T-Zn	<0.0010	<0.0010	mg/L	0.001	21631	a
Zinc	T-Zn	<0.0010	<0.0010	mg/L	0.001	21632	a
Zinc	T-Zn	<0.0050	<0.0050	mg/L	0.005	21642	b
Zinc	T-Zn	<0.0050	<0.0050	mg/L	0.005	21643	b
Zinc	T-Zn	<0.0010	<0.0010	mg/L	0.001	21654	a
Zinc	T-Zn	<0.0010	<0.0010	mg/L	0.001	21655	a
Zinc	T-Zn	<0.0050	<0.0050	mg/L	0.005	21665	b
Zinc	T-Zn	<0.0050	<0.0050	mg/L	0.005	21666	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals							
Aluminum	D-Al	<0.0010	<0.0010	mg/L	0.001	21638	a
Aluminum	D-Al	<0.0010	<0.0010	mg/L	0.001	21639	a
Aluminum	D-Al	<0.20	<0.20	mg/L	0.2	21640	b
Aluminum	D-Al	<0.20	<0.20	mg/L	0.2	21641	b
Aluminum	D-Al	<0.0010	<0.0010	mg/L	0.001	21661	a
Aluminum	D-Al	<0.0010	<0.0010	mg/L	0.001	21662	a
Aluminum	D-Al	<0.20	<0.20	mg/L	0.2	21663	b
Aluminum	D-Al	<0.20	<0.20	mg/L	0.2	21664	b
Antimony	D-Sb	<0.00010	<0.00010	mg/L	0.0001	21638	a
Antimony	D-Sb	<0.00010	<0.00010	mg/L	0.0001	21639	a
Antimony	D-Sb	<0.20	<0.20	mg/L	0.2	21640	b
Antimony	D-Sb	<0.20	<0.20	mg/L	0.2	21641	b
Antimony	D-Sb	<0.00010	<0.00010	mg/L	0.0001	21661	a
Antimony	D-Sb	<0.00010	<0.00010	mg/L	0.0001	21662	a
Antimony	D-Sb	<0.20	<0.20	mg/L	0.2	21663	b
Antimony	D-Sb	<0.20	<0.20	mg/L	0.2	21664	b
Arsenic	D-As	<0.00010	<0.00010	mg/L	0.0001	21638	a
Arsenic	D-As	<0.00010	<0.00010	mg/L	0.0001	21639	a
Arsenic	D-As	<0.20	<0.20	mg/L	0.2	21640	b
Arsenic	D-As	<0.20	<0.20	mg/L	0.2	21641	b
Arsenic	D-As	<0.00010	<0.00010	mg/L	0.0001	21661	a
Arsenic	D-As	<0.00010	<0.00010	mg/L	0.0001	21662	a
Arsenic	D-As	<0.20	<0.20	mg/L	0.2	21663	b
Arsenic	D-As	<0.20	<0.20	mg/L	0.2	21664	b
Barium	D-Ba	<0.000050	<0.000050	mg/L	0.00005	21638	a
Barium	D-Ba	<0.000050	<0.000050	mg/L	0.00005	21639	a
Barium	D-Ba	<0.010	<0.010	mg/L	0.01	21640	b
Barium	D-Ba	<0.010	<0.010	mg/L	0.01	21641	b
Barium	D-Ba	<0.000050	<0.000050	mg/L	0.00005	21661	a
Barium	D-Ba	<0.000050	<0.000050	mg/L	0.00005	21662	a
Barium	D-Ba	<0.010	<0.010	mg/L	0.01	21663	b
Barium	D-Ba	<0.010	<0.010	mg/L	0.01	21664	b
Beryllium	D-Be	<0.00050	<0.00050	mg/L	0.0005	21638	a
Beryllium	D-Be	<0.00050	<0.00050	mg/L	0.0005	21639	a
Beryllium	D-Be	<0.0050	<0.0050	mg/L	0.005	21640	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals							
Beryllium	D-Be	<0.0050	<0.0050	mg/L	0.005	21641	a
Beryllium	D-Be	<0.00050	<0.00050	mg/L	0.0005	21661	b
Beryllium	D-Be	<0.00050	<0.00050	mg/L	0.0005	21662	b
Beryllium	D-Be	<0.0050	<0.0050	mg/L	0.005	21663	a
Beryllium	D-Be	<0.0050	<0.0050	mg/L	0.005	21664	a
Bismuth	D-Bi	<0.00050	<0.00050	mg/L	0.0005	21638	b
Bismuth	D-Bi	<0.00050	<0.00050	mg/L	0.0005	21639	b
Bismuth	D-Bi	<0.10	<0.10	mg/L	0.1	21640	a
Bismuth	D-Bi	<0.10	<0.10	mg/L	0.1	21641	a
Bismuth	D-Bi	<0.00050	<0.00050	mg/L	0.0005	21661	b
Bismuth	D-Bi	<0.00050	<0.00050	mg/L	0.0005	21662	b
Bismuth	D-Bi	<0.10	<0.10	mg/L	0.1	21663	a
Bismuth	D-Bi	<0.10	<0.10	mg/L	0.1	21664	a
Boron	D-B	<0.010	<0.010	mg/L	0.01	21638	b
Boron	D-B	<0.010	<0.010	mg/L	0.01	21639	b
Boron	D-B	<0.10	<0.10	mg/L	0.1	21640	a
Boron	D-B	<0.10	<0.10	mg/L	0.1	21641	a
Boron	D-B	<0.010	<0.010	mg/L	0.01	21661	b
Boron	D-B	<0.010	<0.010	mg/L	0.01	21662	b
Boron	D-B	<0.10	<0.10	mg/L	0.1	21663	a
Boron	D-B	<0.10	<0.10	mg/L	0.1	21664	a
Cadmium	D-Cd	<0.000050	<0.000050	mg/L	0.00005	21638	b
Cadmium	D-Cd	<0.000050	<0.000050	mg/L	0.00005	21639	b
Cadmium	D-Cd	<0.010	<0.010	mg/L	0.01	21640	a
Cadmium	D-Cd	<0.010	<0.010	mg/L	0.01	21641	a
Cadmium	D-Cd	<0.000050	<0.000050	mg/L	0.00005	21661	b
Cadmium	D-Cd	<0.000050	<0.000050	mg/L	0.00005	21662	b
Cadmium	D-Cd	<0.010	<0.010	mg/L	0.01	21663	a
Cadmium	D-Cd	<0.010	<0.010	mg/L	0.01	21664	a
Calcium	D-Ca	<0.020	<0.020	mg/L	0.02	21638	b
Calcium	D-Ca	<0.020	<0.020	mg/L	0.02	21639	b
Calcium	D-Ca	<0.050	<0.050	mg/L	0.05	21640	a
Calcium	D-Ca	<0.050	<0.050	mg/L	0.05	21641	a
Calcium	D-Ca	<0.020	<0.020	mg/L	0.02	21661	b
Calcium	D-Ca	<0.020	<0.020	mg/L	0.02	21662	b

Methods:
a = ICPOES
b = ICPMS

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals							
Calcium	D-Ca	<0.050	<0.050	mg/L	0.05	21663	a
Calcium	D-Ca	<0.050	<0.050	mg/L	0.05	21664	a
Chromium	D-Cr	<0.00050	<0.00050	mg/L	0.0005	21638	b
Chromium	D-Cr	<0.00050	<0.00050	mg/L	0.0005	21639	b
Chromium	D-Cr	<0.010	<0.010	mg/L	0.01	21640	a
Chromium	D-Cr	<0.010	<0.010	mg/L	0.01	21641	a
Chromium	D-Cr	<0.00050	<0.00050	mg/L	0.0005	21661	b
Chromium	D-Cr	<0.00050	<0.00050	mg/L	0.0005	21662	b
Chromium	D-Cr	<0.010	<0.010	mg/L	0.01	21663	a
Chromium	D-Cr	<0.010	<0.010	mg/L	0.01	21664	a
Cobalt	D-Co	<0.00010	<0.00010	mg/L	0.0001	21638	b
Cobalt	D-Co	<0.00010	<0.00010	mg/L	0.0001	21639	b
Cobalt	D-Co	<0.010	<0.010	mg/L	0.01	21640	a
Cobalt	D-Co	<0.010	<0.010	mg/L	0.01	21641	a
Cobalt	D-Co	<0.00010	<0.00010	mg/L	0.0001	21661	b
Cobalt	D-Co	<0.00010	<0.00010	mg/L	0.0001	21662	b
Cobalt	D-Co	<0.010	<0.010	mg/L	0.01	21663	a
Cobalt	D-Co	<0.010	<0.010	mg/L	0.01	21664	a
Copper	D-Cu	<0.00010	<0.00010	mg/L	0.0001	21638	b
Copper	D-Cu	<0.00010	<0.00010	mg/L	0.0001	21639	b
Copper	D-Cu	<0.010	<0.010	mg/L	0.01	21640	a
Copper	D-Cu	<0.010	<0.010	mg/L	0.01	21641	a
Copper	D-Cu	<0.00010	<0.00010	mg/L	0.0001	21661	b
Copper	D-Cu	<0.00010	<0.00010	mg/L	0.0001	21662	b
Copper	D-Cu	<0.010	<0.010	mg/L	0.01	21663	a
Copper	D-Cu	<0.010	<0.010	mg/L	0.01	21664	a
Iron	D-Fe	<0.030	<0.030	mg/L	0.03	21640	a
Iron	D-Fe	<0.030	<0.030	mg/L	0.03	21641	a
Iron	D-Fe	<0.030	<0.030	mg/L	0.03	21663	a
Iron	D-Fe	<0.030	<0.030	mg/L	0.03	21664	a
Lead	D-Pb	<0.000050	<0.000050	mg/L	0.00005	21638	b
Lead	D-Pb	<0.000050	<0.000050	mg/L	0.00005	21639	b
Lead	D-Pb	<0.050	<0.050	mg/L	0.05	21640	a
Lead	D-Pb	<0.050	<0.050	mg/L	0.05	21641	a
Lead	D-Pb	<0.000050	<0.000050	mg/L	0.00005	21661	b

Methods:
a = ICPOES
b = ICPMS

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals							
Lead	D-Pb	<0.000050	<0.000050	mg/L	0.00005	21662	a
Lead	D-Pb	<0.050	<0.050	mg/L	0.05	21663	b
Lead	D-Pb	<0.050	<0.050	mg/L	0.05	21664	b
Lithium	D-Li	<0.0050	<0.0050	mg/L	0.005	21638	a
Lithium	D-Li	<0.0050	<0.0050	mg/L	0.005	21639	a
Lithium	D-Li	<0.010	<0.010	mg/L	0.01	21640	b
Lithium	D-Li	<0.010	<0.010	mg/L	0.01	21641	b
Lithium	D-Li	<0.0050	<0.0050	mg/L	0.005	21661	a
Lithium	D-Li	<0.0050	<0.0050	mg/L	0.005	21662	a
Lithium	D-Li	<0.010	<0.010	mg/L	0.01	21663	b
Lithium	D-Li	<0.010	<0.010	mg/L	0.01	21664	b
Magnesium	D-Mg	<0.0050	<0.0050	mg/L	0.005	21638	a
Magnesium	D-Mg	<0.0050	<0.0050	mg/L	0.005	21639	a
Magnesium	D-Mg	<0.10	<0.10	mg/L	0.1	21640	b
Magnesium	D-Mg	<0.10	<0.10	mg/L	0.1	21641	b
Magnesium	D-Mg	<0.0050	<0.0050	mg/L	0.005	21661	a
Magnesium	D-Mg	<0.0050	<0.0050	mg/L	0.005	21662	a
Magnesium	D-Mg	<0.10	<0.10	mg/L	0.1	21663	b
Magnesium	D-Mg	<0.10	<0.10	mg/L	0.1	21664	b
Manganese	D-Mn	<0.000050	<0.000050	mg/L	0.00005	21638	a
Manganese	D-Mn	<0.000050	<0.000050	mg/L	0.00005	21639	a
Manganese	D-Mn	<0.0050	<0.0050	mg/L	0.005	21640	b
Manganese	D-Mn	<0.0050	<0.0050	mg/L	0.005	21641	b
Manganese	D-Mn	<0.000050	<0.000050	mg/L	0.00005	21661	a
Manganese	D-Mn	<0.000050	<0.000050	mg/L	0.00005	21662	a
Manganese	D-Mn	<0.0050	<0.0050	mg/L	0.005	21663	b
Manganese	D-Mn	<0.0050	<0.0050	mg/L	0.005	21664	b
Molybdenum	D-Mo	<0.000050	<0.000050	mg/L	0.00005	21638	a
Molybdenum	D-Mo	<0.000050	<0.000050	mg/L	0.00005	21639	a
Molybdenum	D-Mo	<0.030	<0.030	mg/L	0.03	21640	b
Molybdenum	D-Mo	<0.030	<0.030	mg/L	0.03	21641	b
Molybdenum	D-Mo	<0.000050	<0.000050	mg/L	0.00005	21661	a
Molybdenum	D-Mo	<0.000050	<0.000050	mg/L	0.00005	21662	a
Molybdenum	D-Mo	<0.030	<0.030	mg/L	0.03	21663	b
Molybdenum	D-Mo	<0.030	<0.030	mg/L	0.03	21664	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals							
Nickel	D-Ni	<0.00050	<0.00050	mg/L	0.0005	21638	a
Nickel	D-Ni	<0.00050	<0.00050	mg/L	0.0005	21639	a
Nickel	D-Ni	<0.050	<0.050	mg/L	0.05	21640	b
Nickel	D-Ni	<0.050	<0.050	mg/L	0.05	21641	b
Nickel	D-Ni	<0.00050	<0.00050	mg/L	0.0005	21661	a
Nickel	D-Ni	<0.00050	<0.00050	mg/L	0.0005	21662	a
Nickel	D-Ni	<0.050	<0.050	mg/L	0.05	21663	b
Nickel	D-Ni	<0.050	<0.050	mg/L	0.05	21664	b
Potassium	D-K	<0.050	<0.050	mg/L	0.05	21638	a
Potassium	D-K	<0.050	<0.050	mg/L	0.05	21639	a
Potassium	D-K	<2.0	<2.0	mg/L	2	21640	b
Potassium	D-K	<2.0	<2.0	mg/L	2	21641	b
Potassium	D-K	<0.050	<0.050	mg/L	0.05	21661	a
Potassium	D-K	<0.050	<0.050	mg/L	0.05	21662	a
Potassium	D-K	<2.0	<2.0	mg/L	2	21663	b
Potassium	D-K	<2.0	<2.0	mg/L	2	21664	b
Selenium	D-Se	<0.00050	<0.00050	mg/L	0.0005	21638	a
Selenium	D-Se	<0.00050	<0.00050	mg/L	0.0005	21639	a
Selenium	D-Se	<0.20	<0.20	mg/L	0.2	21640	b
Selenium	D-Se	<0.20	<0.20	mg/L	0.2	21641	b
Selenium	D-Se	<0.00050	<0.00050	mg/L	0.0005	21661	a
Selenium	D-Se	<0.00050	<0.00050	mg/L	0.0005	21662	a
Selenium	D-Se	<0.20	<0.20	mg/L	0.2	21663	b
Selenium	D-Se	<0.20	<0.20	mg/L	0.2	21664	b
Silver	D-Ag	<0.000010	<0.000010	mg/L	0.00001	21638	a
Silver	D-Ag	<0.000010	<0.000010	mg/L	0.00001	21639	a
Silver	D-Ag	<0.010	<0.010	mg/L	0.01	21640	b
Silver	D-Ag	<0.010	<0.010	mg/L	0.01	21641	b
Silver	D-Ag	<0.000010	<0.000010	mg/L	0.00001	21661	a
Silver	D-Ag	<0.000010	<0.000010	mg/L	0.00001	21662	a
Silver	D-Ag	<0.010	<0.010	mg/L	0.01	21663	b
Silver	D-Ag	<0.010	<0.010	mg/L	0.01	21664	b
Sodium	D-Na	<0.010	<0.010	mg/L	0.01	21638	a
Sodium	D-Na	<0.010	<0.010	mg/L	0.01	21639	a
Sodium	D-Na	<2.0	<2.0	mg/L	2	21640	b

Methods:
a = ICPMS
b = ICPOES

Appendix 1 - QUALITY CONTROL - Blanks

Water

		Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals							
Sodium	D-Na	<2.0	<2.0	mg/L	2	21641	a
Sodium	D-Na	<0.010	<0.010	mg/L	0.01	21661	b
Sodium	D-Na	<0.010	<0.010	mg/L	0.01	21662	b
Sodium	D-Na	<2.0	<2.0	mg/L	2	21663	a
Sodium	D-Na	<2.0	<2.0	mg/L	2	21664	a
Strontium	D-Sr	<0.00010	<0.00010	mg/L	0.0001	21638	b
Strontium	D-Sr	<0.00010	<0.00010	mg/L	0.0001	21639	b
Strontium	D-Sr	<0.0050	<0.0050	mg/L	0.005	21640	a
Strontium	D-Sr	<0.0050	<0.0050	mg/L	0.005	21641	a
Strontium	D-Sr	<0.00010	<0.00010	mg/L	0.0001	21661	b
Strontium	D-Sr	<0.00010	<0.00010	mg/L	0.0001	21662	b
Strontium	D-Sr	<0.0050	<0.0050	mg/L	0.005	21663	a
Strontium	D-Sr	<0.0050	<0.0050	mg/L	0.005	21664	a
Thallium	D-Tl	<0.00010	<0.00010	mg/L	0.0001	21638	b
Thallium	D-Tl	<0.00010	<0.00010	mg/L	0.0001	21639	b
Thallium	D-Tl	<0.20	<0.20	mg/L	0.2	21640	a
Thallium	D-Tl	<0.20	<0.20	mg/L	0.2	21641	a
Thallium	D-Tl	<0.00010	<0.00010	mg/L	0.0001	21661	b
Thallium	D-Tl	<0.00010	<0.00010	mg/L	0.0001	21662	b
Thallium	D-Tl	<0.20	<0.20	mg/L	0.2	21663	a
Thallium	D-Tl	<0.20	<0.20	mg/L	0.2	21664	a
Tin	D-Sn	<0.00010	<0.00010	mg/L	0.0001	21638	b
Tin	D-Sn	<0.00010	<0.00010	mg/L	0.0001	21639	b
Tin	D-Sn	<0.030	<0.030	mg/L	0.03	21640	a
Tin	D-Sn	<0.030	<0.030	mg/L	0.03	21641	a
Tin	D-Sn	<0.00010	<0.00010	mg/L	0.0001	21661	b
Tin	D-Sn	<0.00010	<0.00010	mg/L	0.0001	21662	b
Tin	D-Sn	<0.030	<0.030	mg/L	0.03	21663	a
Tin	D-Sn	<0.030	<0.030	mg/L	0.03	21664	a
Uranium	D-U	<0.000010	<0.000010	mg/L	0.00001	21638	b
Uranium	D-U	<0.000010	<0.000010	mg/L	0.00001	21639	b
Uranium	D-U	<0.000010	<0.000010	mg/L	0.00001	21661	b
Uranium	D-U	<0.000010	<0.000010	mg/L	0.00001	21662	b
Vanadium	D-V	<0.0010	<0.0010	mg/L	0.001	21638	b
Vanadium	D-V	<0.0010	<0.0010	mg/L	0.001	21639	b

Methods:
a = ICPOES
b = ICPMS

File No. R3016

Appendix 1 - QUALITY CONTROL - Blanks

Water

			Result	Target	Units	DL	ALSQC#	Method
Dissolved Metals								
Vanadium	D-V		<0.030	<0.030	mg/L	0.03	21640	a
Vanadium	D-V		<0.030	<0.030	mg/L	0.03	21641	a
Vanadium	D-V		<0.0010	<0.0010	mg/L	0.001	21661	b
Vanadium	D-V		<0.0010	<0.0010	mg/L	0.001	21662	b
Vanadium	D-V		<0.030	<0.030	mg/L	0.03	21663	a
Vanadium	D-V		<0.030	<0.030	mg/L	0.03	21664	a
Zinc	D-Zn		<0.0010	<0.0010	mg/L	0.001	21638	b
Zinc	D-Zn		<0.0010	<0.0010	mg/L	0.001	21639	b
Zinc	D-Zn		<0.0050	<0.0050	mg/L	0.005	21640	a
Zinc	D-Zn		<0.0050	<0.0050	mg/L	0.005	21641	a
Zinc	D-Zn		<0.0010	<0.0010	mg/L	0.001	21661	b
Zinc	D-Zn		<0.0010	<0.0010	mg/L	0.001	21662	b
Zinc	D-Zn		<0.0050	<0.0050	mg/L	0.005	21663	a
Zinc	D-Zn		<0.0050	<0.0050	mg/L	0.005	21664	a
Organic Parameters								
Total Carbon	C		<0.5	<0.5	mg/L	0.5	21635	c
Total Carbon	C		<0.5	<0.5	mg/L	0.5	21644	c
Total Carbon	C		<0.5	<0.5	mg/L	0.5	21658	c
Total Carbon	C		<0.5	<0.5	mg/L	0.5	21667	c
Total Inorganic Carbon		C	<0.5	<0.5	mg/L	0.5	21635	c
Total Inorganic Carbon		C	<0.5	<0.5	mg/L	0.5	21644	c
Total Inorganic Carbon		C	<0.5	<0.5	mg/L	0.5	21658	c
Total Inorganic Carbon		C	<0.5	<0.5	mg/L	0.5	21667	c
Total Organic Carbon		C	<0.5	<0.5	mg/L	0.5	21635	c
Total Organic Carbon		C	<0.5	<0.5	mg/L	0.5	21644	c
Total Organic Carbon		C	<0.5	<0.5	mg/L	0.5	21658	c
Total Organic Carbon		C	<0.5	<0.5	mg/L	0.5	21667	c

Methods:
a = ICPOES
b = ICPMS
c = IR

Appendix 2 - METHODOLOGY

Outlines of the methodologies utilized for the analysis of the samples submitted are as follows

Conductivity in Water

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

Recommended Holding Time:
Sample: 28 days
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Conventional Parameters in Water

These analyses are carried out in accordance with procedures described in "Methods for Chemical Analysis of Water and Wastes" (USEPA), "Manual for the Chemical Analysis of Water, Wastewaters, Sediments and Biological Tissues" (BCMOE), and/or "Standard Methods for the Examination of Water and Wastewater" (APHA). Further details are available on request.

pH in Water

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

Recommended Holding Time:
Sample: 2 hours
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Solids in Water

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total dissolved solids (TDS) and total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius, TSS is determined by drying the filter at 104 degrees celsius. Total solids are determined by evaporating a sample to dryness at 104 degrees celsius. Fixed and volatile solids are determined by igniting a dried sample residue at 550 degrees celsius.

Recommended Holding Time:
Sample: 7 days
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Turbidity of Water

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

Recommended Holding Time:
Sample: 2 days
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Alkalinity in Water by Titration

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

Recommended Holding Time:
Sample: 14 days
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Dissolved Anions in Water by Ion Chromatography

This analysis is carried out using procedures adapted from APHA Method 4110 "Determination of Anions by Ion Chromatography" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Anions are determined by filtering the sample through a 0.45 micron membrane filter and injecting the filtrate onto a Dionex IonPac AG17 anion exchange column with a sodium carbonate and sodium bicarbonate eluent stream. Anions routinely determined by this method include: bromide, chloride, fluoride, nitrate, nitrite and sulphate.

Recommended Holding Time:
Sample: 28 days (bromide, chloride, fluoride, sulphate)
Sample: 2 days (nitrate, nitrite)
Reference: APHA and EPA
For more detail see ALS Environmental "Collection & Sampling Guide"

Ammonia in Water by Colourimetry

This analysis is carried out, on unpreserved samples, using procedures adapted from APHA Method 4500-NH3 "Nitrogen (Ammonia)". Ammonia is determined using the phenate colourimetric method.

Recommended Holding Time:

Sample: 1 day
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Total Kjeldahl Nitrogen in Water

This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total kjeldahl nitrogen is determined by sample digestion at 367 celcius with analysis using an ammonia selective electrode.

Recommended Holding Time:
Sample: 28 days
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Phosphate in Water

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". All forms of phosphate are determined by the ascorbic acid colourimetric method. Dissolved ortho-phosphate (dissolved reactive phosphorous) is determined by direct measurement. Total phosphate (total phosphorous) is determined after persulphate digestion of a sample. Total dissolved phosphate (total dissolved phosphorous) is determined by filtering a sample through a 0.45 micron membrane filter followed by persulfate digestion of the filtrate.

Recommended Holding Time:
Sample: 2 days
Reference: EPA
For more detail see ALS Environmental "Collection & Sampling Guide"

Metals in Water

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" 20th Edition 1998 published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotplate or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by atomic absorption/emission spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Recommended Holding Time:

Sample:	6 months
Reference:	EPA
For more detail see:	ALS "Collection & Sampling Guide"

Carbon in Water

This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)". All fractions of carbon are determined by the combustion-infrared method. Total carbon includes organic carbon (covalently bonded in organic molecules) and inorganic carbon (carbonate, bicarbonate and dissolved carbon dioxide). Total organic carbon is the calculated difference between the total carbon and the inorganic carbon determination. Dissolved carbon fractions are determined by filtering the sample through a 0.45 micron membrane filter prior to analysis.

Recommended Holding Time:
Sample: 28 days
Reference: APHA
For more detail see ALS Environmental "Collection & Sampling Guide"

Results contained within this report relate only to the samples as submitted.

End of Report

25263

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1988 Triumph Street, Vancouver, BC Canada V5L 1K5 Tel: 604-253-4188 Toll Free: 1-800-665-0243 Fax: 604-253-6700
#2 - 21 Highfield Circle SE, Calgary, AB Canada T2G 5N6 Tel: 403-214-5431 Toll Free: 1-866-722-6231 Fax: 403-214-5430
#2 - 8820 100th Street, Fort St. John, BC Canada V1J 3W9 Tel: 250-785-8281 Fax: 250-785-8286

CHAIN OF CUSTODY FORM

PAGE 1 OF 3

SEND REPORT TO:

CLIENT: Gartner Lee Ltd
ADDRESS: 2251 - 2nd Ave
CITY: Whitehorse PROV.: YT POSTAL CODE: Y1A 5W1
TELEPHONE: 633-6474 FAX: 633-6321 CONTACT:
PROJECT NAME & NO.: Hackett River 50593 SAMPLER: C. Davey
QUOTE NO.: PO NO.: ALS CONTACT: B Chan
REPORT FORMAT: ☑ HARDCOPY ☑ EMAIL - ADDRESS: lgcreen@gartnerlee.com
☐ FAX ☑ EXCEL ☐ PDF ☐ OTHER:

ANALYSIS REQUESTED: See attached sheet for Analysis Parameters in Chode: Gen Chem, Total metals, dissolved metals, DOC, TOC + Total Nitrogen, Nitrate

FOR LAB USE ONLY	SAMPLE IDENTIFICATION	DATE / TIME COLLECTED YYYY-MM-DD	TIME	MATRIX	Analysis	NOTES (sample specific comments, due dates, etc.)
	Upper Sucker Lake	2005/07/05	14:15	Surface	X	
	Sucker Lake Outflow 1st	11	15:00		X	
	Sucker Lake Outflow 2nd	11	16:00		X	
	Mara River Downstream	2005/07/06	9:10		X	
	Mara River Upstream	11	9:45		X	
	Mara Inflow 1st	11	10:00		X	
	Mara Inflow #2	11	11:00		X	
	Turtle Outflow	11	12:25		X	
	Annie Lake	11	1:04		X	
	Cleaver Lake	11	2:16	↓	X	

TURN AROUND REQUIRED: ☐ ROUTINE ☐ RUSH - SPECIFY DATE: (surcharge may apply)

SEND INVOICE TO: ☑ SAME AS REPORT ☐ DIFFERENT FROM REPORT (provide details below)

INVOICE FORMAT: ☐ HARDCOPY ☐ PDF ☐ FAX

SPECIAL INSTRUCTIONS:
Please do lab duplicate on one of the samples.
→ metals - use aquatic life

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME
	DATE		DATE
	TIME		TIME
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
	TIME		TIME

FOR LAB USE ONLY

COOLER SEAL INTACT? ☐ YES ☐ NO ☐ N/A
SAMPLE TEMPERATURE: ____ °C
FROZEN? ☐ YES ☐ NO
COOLING METHOD? ☐ ICEPACKS ☐ ICE ☐ NONE

CLIENT COPY

SEE WHITEPAPER FOR SOURCE VERSION 07

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#2 - 21 Highfield Circle SE, **Calgary**, AB Canada T2G 5N6 Tel: 403-214-5431 Toll Free: 1-866-722-6231 Fax: 403-214-5430
#2 - 8820 100th Street, **Fort St. John**, BC Canada V1J 3W9 Tel: 250-785-8281 Fax: 250-785-8286

CHAIN OF CUSTODY FORM

PAGE 2 OF 3

SEND REPORT TO:

CLIENT: Gartner Lee Ltd
ADDRESS: 2251 - 2nd Ave
CITY: Whitehorse PROV.: YT POSTAL CODE: Y5A 5W1
TELEPHONE: 633-6474 FAX: 633-6321 CONTACT:
PROJECT NAME & NO.: Hackett River 50548 SAMPLER: C. Davey
QUOTE NO.: PO NO.: ALS CONTACT: Bill Chen
REPORT FORMAT: ☑ HARDCOPY ☑ EMAIL - ADDRESS: lgann@gartnerlee.com
☐ FAX ☑ EXCEL ☐ PDF ☐ OTHER:

ANALYSIS REQUESTED: See attached sheet for analysis. Parameters include Gen Chem, total metals, dissolved metals, DOC, TOC + Total Nitrogen, Nutrients

FOR LAB USE ONLY	SAMPLE IDENTIFICATION	DATE (YYYY-MM-DD)	TIME	MATRIX	See attached sheet	NOTES (sample specific comments, due dates, etc.)
	Boot Lake	2005/07/06	13:30	water	X	
	Fool Lake Outlet	"	14:00	↓	X	
	Joe Lake Outlet	"	14:55	↓	X	
	Cigar Lake	"	15:05	↓	X	
	H-River Downstream	"	16:00	↓	X	
	Camp Creek	"	16:15	↓	X	
	H-River Upstream	"	17:00	↓	X	
	Boot Lake Outlet	2005/07/07	8:30	↓	X	
	Banana Lake	"	8:45	↓	X	
	Banana Replicate	"	8:55	↓	X	

TURN AROUND REQUIRED: ☑ ROUTINE ☐ RUSH - SPECIFY DATE: ____ (surcharge may apply)

SEND INVOICE TO: ☑ SAME AS REPORT ☐ DIFFERENT FROM REPORT (provide details below)
INVOICE FORMAT: ☑ HARDCOPY ☐ PDF ☐ FAX

SPECIAL INSTRUCTIONS:
please do a QA duplicate analysis
2 samples
metals - use Aquatic Life

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME
	DATE		DATE
	TIME		TIME
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
	TIME		TIME

FOR LAB USE ONLY

COOLER SEAL INTACT? ☐ YES ☐ NO ☐ N/A
SAMPLE TEMPERATURE: ____°C
FROZEN? ☐ YES ☐ NO
COOLING METHOD? ☐ ICEPACKS ☐ ICE ☐ NONE

CLIENT COPY

SEE WHITEPAPER FOR SOURCE VERSION 07

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#2 - 8820 100th Street, **Fort St. John**, BC Canada V1J 3W9 Tel: 250-785-8281 Fax: 250-785-8286

CHAIN OF CUSTODY FORM

SEND REPORT TO:

CLIENT: Gartner Lee Ltd
ADDRESS: 7251 2nd Ave
CITY: Whitehorse PROV.: YT POSTAL CODE: Y1A 5W
TELEPHONE: 633-6474 FAX: 633-6321 CONTACT:
PROJECT NAME & NO.: Hackett River 9[illegible] SAMPLER: C. Davey
QUOTE NO.: PO NO.: ALS CONTACT: Bill Chen
REPORT FORMAT: ☑ HARDCOPY ☑ EMAIL - ADDRESS: lgem[illegible]@gartnerlee.com
☐ FAX ☑ EXCEL ☐ PDF ☐ OTHER:

ANALYSIS REQUESTED: See attached sheet for analysis. Parameters include: Gen Chem, total metals, dissolved metals, DOC, TOC + total Nitrogen, Nutrients

FOR LAB USE ONLY	SAMPLE IDENTIFICATION	DATE (YYYY-MM-DD)	TIME	MATRIX	NOTES (sample specific comments, due dates, etc.)
	Camp Lake	2006/08/07	13:30	Water	
	Camp Lake Replicate	"	13:45	"	

TURN AROUND REQUIRED: ☑ ROUTINE ☐ RUSH - SPECIFY DATE: ____ (surcharge may apply)

SEND INVOICE TO: ☑ SAME AS REPORT ☐ DIFFERENT FROM REPORT (provide details below)

INVOICE FORMAT: ☑ HARDCOPY ☐ PDF ☐ FAX

SPECIAL INSTRUCTIONS:
please do a lab duplicate analysis on 2 samples - metals [illegible] aquatic life

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME

FOR LAB USE ONLY

COOLER SEAL INTACT? ☐ YES ☐ NO ☐ N/A
SAMPLE TEMPERATURE: ____ °C
FROZEN? ☐ YES ☐ NO
COOLING METHOD? ☐ ICEPACKS ☐ ICE ☐ NONE

CLIENT COPY

SEE WHITEPAPER FOR SOURCE VERSIONR_07

Attachment B

Photolog

- PHOTOGRAPHS -

PHOTOGRAPH 1

Typical drainage channel with moderate flow at ime of site visit. This is the outlet of Upper Sunken Lake, looking northwest towards Uppern Sunken Lake.

PHOTOGRAPH 2

This is a typical inflow and outflow of the lakes and rivers at time of site visit. This photo typics Mara Inflow #2, looking towards the southeast.

- PHOTOGRAPHS -

PHOTOGRAPH 3

Mara Inflow #1 looking east. Very little flow at time of visit.

PHOTOGRAPH 4

Upper Sunke Lake, looking south. Jeff Kadlun graciously points to the exact sample location.

- PHOTOGRAPHS -

PHOTOGRAPH 5

Mara River (downstream sample location) south side looking downstream.

PHOTOGRAPH 6

Camp Lake looking due north looking away from camp. Sample location at botom left.