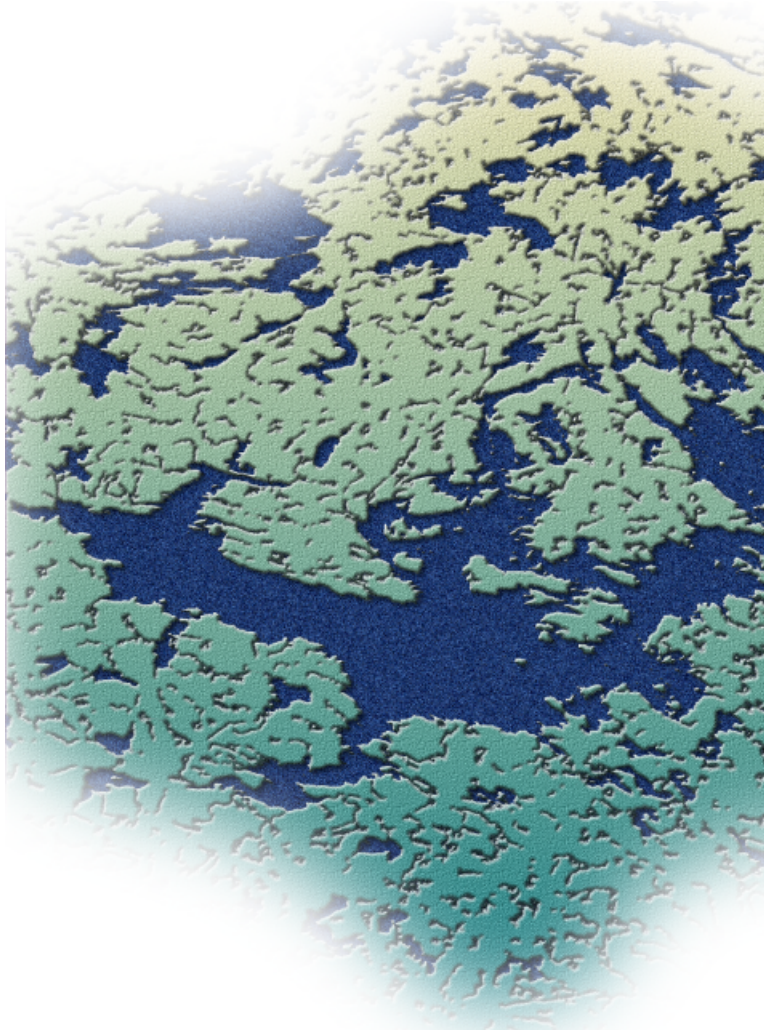




Lac de Gras Area

Water Quality Sampling Program Spring 1996



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August 3, 1997

Water Resources Division
Indian and Northern Affairs Canada, Yellowknife, NWT





Abstract

This report presents results from a water quality study that was carried out during the spring of 1996 on five major lakes found in the BHP claim block. Grab water samples collected from Slipper, Nema, Moose, Vulture and Kodiak Lakes were analyzed for major ions, nutrients, metals and physicals. The data collected from this study will aid in determining baseline values for the lakes' parameters and detecting water quality changes that may result from mining activities in the future. The study also provides some of the only under ice sampling that has been done in the area. A comparison of the Analytical Service Laboratories Ltd. (ASL) and the Taiga Environmental Laboratory test results was also undertaken for quality control purposes.

Acknowledgements

The authors would like to acknowledge the contributions of the following people and organizations: Francis Jackson, DIAND Water Resources, for sampling; Juanetta Sanderson and Brian Latham, DIAND Water Resources, for editing; and BHP Diamonds Inc., for use of equipment.

Published under the authority of the
Minister of Indian Affairs and Northern Development
Ottawa, 1999
<http://www.inac.gc.ca>

QS-Y131-000-EE-A1

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Services Canada

Cette publication peut aussi être obtenue en français
sous le titre : Région du lac de Gras : *Programme
d'échantillonnage pour l'analyse de la qualité de l'eau,
Printemps 1996.*

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Introduction

Background

Mining development in the Northwest Territories is continuing to expand and with the increased demand for northern mineral resources come increased concerns about possible environmental degradation. Developmental processes associated with mining have been known to cause changes in water quality of nearby lakes and streams, such as heavy metal contamination from mine effluents (Freedman, B. 1995).

The NWT Diamonds Project is located 300 km northeast of Yellowknife, Northwest Territories, near Lac de Gras. This project was implemented to explore and develop claims in this area. Open pit and underground operations will be used to mine diamonds in the claims block for approximately 25 years (NWT Diamonds Project, 1995).

Project activities that may affect the lakes and streams found in the Lac de Gras area will occur during construction and operations and include exploration, road construction, dewatering of lakes, camp construction, tailings disposal, dam construction, sewage disposal, culvert installation, and stream diversions. These activities have the potential to change the aquatic environment of lakes and streams in the area through habitat loss, habitat modification, water quality changes, disruption of migratory routes, habitat degradation, and ecosystem changes (NWT Diamonds Project, 1997).

Objectives

The following report presents results from a water quality study that was carried out during the spring of 1996. Slipper, Nema, Moose, Vulture and Kodiak Lakes, which are in close proximity to the BHP Diamonds proposed mine, were sampled and tested for various water quality parameters. This study was initiated to determine current water quality

characteristics of these lakes and can be used to evaluate possible future water quality changes in the Lac de Gras region. Collection of under ice samples can also be used to supplement the existing database, which was collected mainly under open water conditions. For quality control purposes, samples were sent to both the Taiga Environmental Laboratory, which is used by DIAND, and the Analytical Service Laboratories Ltd. (ASL). BHP sent their initial environmental samples to the latter laboratory for analysis and the results were contained in BHP's Environmental Impact Statement (NWT Diamonds Project, 1995).

Materials and Methods

The lakes were sampled during the week of April 16-19, 1996. A detailed sampling schedule is presented in Appendix 1.

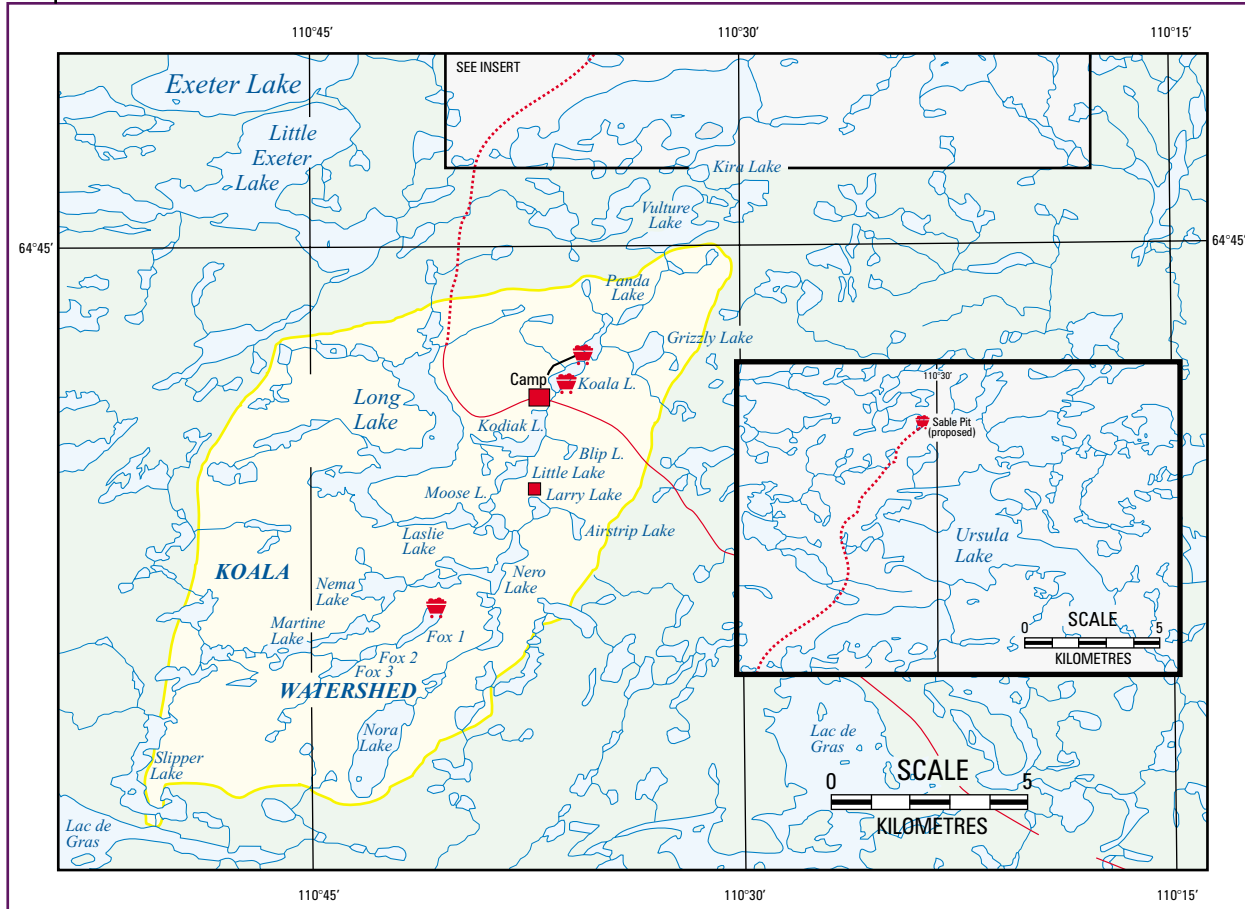
Surface grab water samples were collected from five lakes (Slipper, Nema, Moose, Vulture and Kodiak Lakes) in the BHP claim block (Fig. 1). Four sets of water samples were collected from under the ice at each site. Three sets of samples were for the Taiga Environmental Laboratory with the remaining set sent to ASL laboratory. Each sample set was tested for various parameters which are grouped into four major categories: physicals and major ions; nutrients; mercury and metals. Both total and dissolved metals were analyzed by ICP-MS.

QA/QC

As part of the QA/QC procedures, sample bottles were rinsed three times with the appropriate lake water prior to filling. Triplicate samples and field and filter blanks were also collected (Appendices 3.6-3.7). Further details on the QA/QC methods are provided in Appendix 2.



Figure 1. Lac de Gras Study Area, Spring 1996.



Results and Discussion

Raw data are provided in Appendices 3.1-3.5. Many of the parameters were below detection limits for both the ASL and Taiga Environmental laboratories. For each lake, the means of the three values were calculated and are presented in Tables 1- 4. In the instances where a “less than” value was used to calculate the mean, half the detection limit was used. The calculated means that used “less than” values are identified by the “~” beside the value in Tables 1-4.

Concentrations of parameters (ie. metals, nutrients, physicals and major ions) for all five lakes were below the

existing CCREM Water Quality Guidelines for the Protection of Freshwater Aquatic Life, with the possible exception of copper in Slipper Lake (CCREM, 1995).

In some cases, the dissolved metal values were higher than the totals, eg. barium (Table 1, Appendix 3.1-3.5). This is probably due to the fact that both values were close to the detection limit, as there was no detection of contamination in either the field or filter blanks.



Table 1: Mean Metal Concentrations

Metal	Units	Slipper Lk.	Nema Lk.	Moose Lk.	Kodlak Lk.	Vulture Lk.	C.W.Q.G
T. Aluminum	µg/L	25.8	21.6	26.3	35.8	9.23	5.0-100.0
Diss Aluminum	µg/L	21.4	20.267	23.8	33.13	6	
T. Antimony	µg/L	0.53	0.39	0.33	0.37	0.43	
Diss. Antimony	µg/L	0.73	0.33	0.3	0.4	0.53	
T. Arsenic-Hyd.	µg/L	~0.15	~0.15	~0.15	~0.15	~0.15	50
Diss. Arsenic	µg/L	~0.15	~0.15	~0.15	~0.15	~0.15	
T. Barium	µg/L	5	6.23	7.57	15.67	2.8	
Diss. Barium	µg/L	5.3	6.13	7.37	15.37	2.67	
T. Beryllium	µg/L	~0.05	~0.03	~0.05	~0.05	~0.03	
Diss. Beryllium	µg/L	~0.067	~0.03	~0.05	~0.07	~0.03	
T. Bismuth	µg/L	~0.05	~0.05	~0.05	~0.05	~0.05	
Diss. Bismuth	µg/L	~0.05	~0.05	~0.05	~0.05	~0.05	
T. Cadmium	µg/L	0.167	~0.05	~0.05	~0.05	~0.05	0.2-1.8
Diss. Cadmium	µg/L	0.167	~0.05	~0.05	~0.05	~0.05	
T. Cesium	µg/L	~0.05	~0.05	~0.05	~0.05	~0.05	
Diss. Cesium	µg/L	~0.05	~0.05	~0.05	~0.05	~0.05	
T. Chromium	µg/L	0.467	0.43	0.43	0.5	~0.23	2.0-20.0
Diss. Chromium	µg/L	0.5	~1.67	~0.13	0.27	0.17	
T. Cobalt	µg/L	0.9	~0.33	0.08	0.1	~0.083	
Diss. Cobalt	µg/L	0.867	0.1	0.1	0.1	0.1	
T. Copper	µg/L	3.5	1.467	1.53	2.3	0.9	2.0-4.0
Diss. Copper	µg/L	3.7	1.4	1.43	2.3	0.9	
T.Indium	µg/L	~0.05	~0.05	~0.05	~0.05	~0.05	
Diss. Indium	µg/L	~0.05	~0.05	~0.05	~0.05	~0.05	
T. Iron	µg/L	42	20.3	31	67.67	6.67	300
Diss. Iron	µg/L	12.3	8	13	43.67	~1.5	
T. Lead	µg/L	0.667	~0.1	~0.13	~0.13	~0.1	1.0-4.0
Diss. Lead	µg/L	0.83	~0.1	~0.1	~0.1	~0.1	
T. Lithium	µg/L	1.23	1.57	1.6	2.9	1.13	
Diss. Lithium	µg/L	1.467	1.63	1.57	2.8	1.13	
T. Manganese	µg/L	1.767	3.2	5.87	4.5	0.4	
Diss. Manganese	µg/L	1.4	2.9	5.067	3.47	0.3	
T. Mercury-C/V	µg/L	~0.01	~0.1	~0.01	~0.01	~0.01	0.1
Diss. Mercury-C/V	µg/L	~0.01	~0.1	~0.01	~0.01	~0.01	
T.Molybdenum	µg/L	0.1	0.2	0.1	0.1	~0.07	
Diss Molybdenum	µg/L	0.1	0.2	0.1	0.1	~0.05	
T. Nickel	µg/L	1.83	0.8	0.667	2.43	0.43	25-150
Diss. Nickel	µg/L	1.767	0.8	0.87	2.63	0.43	
T. Rubidium	µg/L	2.367	3.13	3.1	3.57	1.43	
Diss. Rubidium	µg/L	2.3667	3.1	3	3.57	1.4	
T. Selenium	µg/L	~0.5	~0.67	~0.67	~0.5	~0.5	1
Diss. Selenium	µg/L	~0.5	~0.5	~0.5	~0.67	~0.5	
T. Silver	µg/L	~0.05	~0.5	~0.05	~0.05	~0.05	0.1
Diss. Silver	µg/L	~0.05	~0.5	~0.05	~0.05	~0.05	
Strontium -	µg/L	13.13	18.37	16.8	29.97	6.27	
Diss. Strontium	µg/L	13.2	18.67	16.53	29.53	6.27	
T. Thallium	µg/L	~0.05	~0.5	~0.05	~0.05	~0.05	
Diss. Thallium	µg/L	~0.05	~0.5	~0.05	~0.05	~0.05	
T. Uranium	µg/L	0.1	0.1	0.1	0.13	~0.05	
Diss. Uranium	µg/L	0.1	0.1	~0.08	0.13	~0.05	
T. Vanadium	µg/L	0.1	0.1	0.1	0.1	~0.07	
Diss. Vanadium	µg/L	~0.075	~0.05	~0.07	~0.08	~0.05	
T. Zinc	µg/L	15.5	1	1.9	3.3	2.27	
Diss. Zinc	µg/L	19.96	0.9	1.27	3.3	1.53	30

Note 1: mean values were calculated from three replicate samples collected from each lake (see Appendix 3.1-3.5).
 2: a "~" indicates that the value shown was calculated with "less than" values (see Appendix 3.1-3.5).
 3: C.W.Q.G.= Canadian Water Quality Guidelines for Freshwater Aquatic Life.


Table 2: Mean Nutrient Concentrations

Nutrient	Units	Slipper Lake	Nema Lake	Moose Lake	Kodiak Lake	Vulture Lake	C.W.Q.G.
Ammonia-N	mg/L	0.033	0.036	0.033	0.007	0.034	
T-Phosphorous	mg/L	0.012	0.007	0.008	0.007	0.009	
Diss. Phosphorous	mg/L	0.009	0.005	0.004	0.005	0.004	
Ortho-Phosphorous	mg/L	~0.001	~0.001	~0.001	~0.001	~0.001	
Nitrate	mg/L	0.051	0.237	0.045	0.23	~0.01	
Nitrite	mg/L	~0.004	~0.004	~0.004	~0.004	~0.004	60.0
NO ₃ -N+NO ₂ -N	mg/L	0.051	0.237	0.045	0.23	~0.01	
Reac. Silica	mg/L	1.11	0.741	0.97	1.13	0.25	

Note 1: mean values were calculated from three replicate samples collected from each lake (see Appendix 3.1-3.5).
 2: a "~" indicates that the value shown was calculated with "less than" values (see Appendix 3.1-3.5).
 3: C.W.Q.G.= Canadian Water Quality Guidelines for Freshwater Aquatic Life.

Table 3: Physical Parameters - Mean Concentrations

Physicals	Units	Slipper Lake	Nema Lake	Moose Lake	Kodiak Lake	Vulture Lake	C.W.Q.G.
Alkalinity	mg/L	8.3	9.6	9.34	11.3	4.83	
pH		6.62	6.56	6.60	6.65	6.72	6.5-9.0
Conductivity	µs/cm	32.3	37.3	30.9	45.2	16.7	
Colour	colour	5	5	6.7	16.7	5	
Dissolved Solids	mg/L	67.3	59	64.3	59.3	29.67	
Suspended Solids	mg/L	3.7	4.3	~2	~2.83	~3	
Turbidity	NTU	0.9	1.03	0.3	0.47	0.67	

Note 1: mean values were calculated from three replicate samples collected from each lake (see Appendix 3.1-3.5).
 2: a "~" indicates that the value shown was calculated with "less than" values (see Appendix 3.1-3.5).
 3: C.W.Q.G.= Canadian Water Quality Guidelines for Freshwater Aquatic Life.

QA/QC Results

Zinc and aluminum were detected in the field and filter blanks in small amounts (Appendix 3.6-3.7). According to the Taiga laboratory, this is not unlikely as these elements are very easily picked up by water (Puznicki, pers. comm., 1997). The detection of antimony in field and filter blanks

may have resulted from the use of the TYPE 1 water produced at the Taiga lab, as it has been found to contain trace amounts of antimony (Appendix 1-2; Puznicki, pers. comm., 1997).

**Table 4: Major Ions - Mean Concentrations**

Major Ions	Units	Slipper Lake	Nema Lake	Moose Lake	Kodiak Lake	Vulture Lake	C.W.Q.G.
Carbonate	mgCaCO ₃	0	0	0	0	0	
Bicarbonate	mgCaCO ₃	8.3	9.6	9.934	11.3	4.8	
Hydroxide	mgCaCO ₃	0	0	0	0	0	
Chloride	mg/L	1.36	1.51	0.82	1.897	0.36	
Sulphate	mg/L	5.67	4.7	4.3	5	3	
Fluoride	mg/L	~0.025	~0.025	~0.025	~0.025	~0.025	
T. Hardness	mg/L	8.23	10.2	9.7	14.13	4.7	
T. Calcium	mg/L	1.52	2.01	1.89	2.75	0.813	
T. Magnesium	µg/L	1.07	1.26	1.21	1.76	0.64	
T. Sodium	mg/L	1.49	1.78	0.96	1.44	0.56	
T. Potassium	mg/L	1.10	1.22	1.22	1.32	0.63	

Note 1: mean values were calculated from three replicate samples collected from each lake (see Appendix 3.1-3.5).
 2: a "~" indicates that the value shown was calculated with "less than" values (see Appendix 3.1-3.5).
 3: C.W.Q.G.= Canadian Water Quality Guidelines for Freshwater Aquatic Life.

Laboratory Comparison

Water quality samples from each of the five lakes in the Lac de Gras study area were analyzed by both the Analytical Service Laboratories (ASL), in Vancouver, B.C., and the Taiga Environmental Laboratory in Yellowknife. A preliminary comparison of the results from the two laboratories showed that values differed by 0.012 to 14.34 µg/L (Appendix 3.1-3.5).

Differences in dissolved and suspended solid values were most likely due to the use of different sized glass fibre filters. The Taiga Environmental Laboratory used a 1.2µ filter while the ASL laboratory used a 1.0µ filter (Puznicki, K., pers. comm., 1997). At this moment there are no set standards for the filter size used in these tests, only suggested sizes and types.

Another factor that may account for the differences in the values presented in Appendices 3.1-3.5 is time of testing. The Taiga Environmental Laboratory received their samples first due to the close proximity to the sampling area. ASL received their samples a few days later, at which time dissolved and suspended solid levels may have changed. Although set standards for testing do exist, they cannot always be followed exactly due to circumstances at the time of sampling (Clesceri *et al.*, 1989).

To statistically compare the data from the two labs, numerous considerations must be taken into account for each parameter. There is no generally accepted range that two labs data values may differ by. This is because each analytical method has its own inherent analytical variability,



which depends on the procedures used to take a sample, prepare the sample for analysis and the type of analytical instrumentation used (Metcalf, pers. comm. 1997). It would also be beneficial to determine the detection limit, and an estimate of the precision of the results for each parameter for each lab. Therefore, a statistically accurate analysis or comparison of the data between the ASL and Taiga Environmental laboratories would require a detailed examination of each water quality parameter, taking into account existing variability in each lab. This was not within the scope of this report, so can not be addressed further.

Conclusions

At the time of this study, the lakes in the area (ie. Slipper, Nema, Moose, Vulture and Kodiak Lakes) contained levels of ions, nutrients, physicals and metals which are below existing guidelines (C.C.R.E.M, 1991). The values presented in this report will aid in data comparisons for the area and the detection of future water quality changes. The results from this study are also quite valuable since they represent some of the only under ice data that has been collected from the five lakes.

A preliminary comparison of the results from the two laboratories (ASL and Taiga) has shown that values differ by 0.012 to 14.34 µg/L (Appendix 3.1-3.5). Different glass fibre filter sizes used by the two labs may be responsible for data differences between dissolved and suspended solids (Appendix 3.1-3.5). Analytical variability and testing time differences may also be contributing to the data differences.

There are no current standards for statistically comparing data for different labs. To adequately compare the ASL and Taiga Environmental laboratories data values, many considerations must be addressed for each lab and water quality parameter. This would be a large undertaking and was not within the scope of this study.

Recommendations

Filter size used by laboratories should be specified when ordering analyses and should be recognized as a significant variable when comparing dissolved parameter values.



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Appendix 1

BHP Proposed Diamond Project

Winter Water Sampling (April 16-19/96) Schedule

Tuesday April 16/96

- Leave Yellowknife at 9:30am.
- Meet with mine personnel, sign in, and receive safety and mine orientation.
- BHP provides facility (Rescan shack) to conduct filtering of field samples.

Note: Due to extended time in the field, samples had to be filtered (dissolved metals, and filter blanks). The other reason why samples were filtered in the field was to simulate the course of actions and laboratory procedures conducted by Rescan.

- Set up of filtering equipment, and sampling bottles.
- Arrange for snowmobiles and radios.

Wednesday April 17/96

- Start at 8:00am - input way points into GPS
 - sample #1 - Slipper Lake (site #1)
64E37'00" 110E51'00"
 - sample #2 - Nema Lake (site #2)
64E40'00" 110E42'30"
 - sample #3 - Moose Lake (site #3)
64E41'00" 110E38'30"
 - sample #3a - field blank at Moose lake
64E41'00" 110E38'30"
- label all bottles

Thursday April 18/96

- sample #4 - Vulture Lake (site #4)
64E45'00" 110E32'00"
- sample #5 - Kodiak Lake (site #5)
64E42'00" 110E37'30"
- BHP requested that all baggage leaving Koala camp be at airport by 5:30pm. Therefore, there was only time to filter dissolved metals and mercury samples.

Friday April 19/96

- Return to Yellowknife (5:30am)

Appendix 2

Field Methods

Surface grab water samples were collected from an 8 inch diameter hole made through the ice by a gas-powered ice auger. At each of the five sampling sites (Slipper, Nema, Moose, Vulture and Kodiak Lakes), four sets of water samples (one set for ASL, and three sets for Taiga) were collected. Each sample set was tested for the following parameters by ASL and/or DIAND laboratories.

For quality control purposes, sample bottles were rinsed three times with the appropriate lake water prior to filling. As freezing of samples will alter their chemical composition it was necessary to minimize the length of time the water samples were exposed to sub zero temperatures. Samples were transported to the Koala camp in Coleman coolers via snowmobile as soon as possible after collection. Here the samples were sorted, filtered and preserved.

Category	Volume	Preservative	Parameter
Physicals & Major Ions	1000 mL	store at 4°C	acidity, pH, specific conductance, colour, dissolved solids, suspended solids, turbidity, total calcium, dissolved calcium, total magnesium, dissolved magnesium, total sodium, dissolved sodium, total potassium, dissolved potassium, chloride, fluoride, alkalinity, hardness, carbonate, bicarbonate, hydroxide, and sulphate
Nutrients	500 mL	store at 4°C	nitrate, nitrite, nitrate+nitrite, total phosphorous, dissolved phosphorous, ortho-phosphorous, reactive silica
	250 mL		ammonia
	125 mL (filtered)		dissolved inorganic carbon
	125 mL (filtered)		dissolved organic carbon
Mercury	125 mL (glass)	2 ml 1:1 H ₂ SO ₄	total mercury
	125 mL (filtered)		dissolved mercury
Metals	500 mL	10 ml 1:3 HNO ₃	Total: aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, cesium, chromium, cobalt, copper, indium, iron, lead, lithium, manganese, molybdenum, nickel, rubidium, selenium, rubidium, selenium, silicon, silver, strontium, thallium, tin, titanium, uranium, vanadium and zinc
Metals	250 mL	5 ml 1:3 HNO ₃	Dissolved: aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, cesium, chromium, cobalt, copper, indium, iron, lead, lithium, manganese, molybdenum, nickel, rubidium, selenium, silicon, silver, strontium, thallium, tin, titanium, uranium, vanadium, and zinc
Filter Blank	250 mL (filtered)		Dissolved: aluminium, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, cesium, chromium, cobalt, copper, indium, iron, lead, lithium, manganese, molybdenum, nickel, rubidium, selenium, silicon, silver, strontium, thallium, tin, titanium, uranium, vanadium, and zinc



All filtering consisted of passing a specified volume (250-500 mL) of lake water or, in the case of the field blank and filter blank, TYPE 1 water, through a 0.45 µm membrane filter via hand pump. Samples were filtered in the order of sample collection.

Prior to filtering each sample set, a filter blank was performed (see Appendix 3.7). A filter blank involves the rinsing of the inside of the filtering apparatus (complete with filter paper) first with 5% nitric acid, followed by three rinses

of Type 1 water. All rinses were discarded. A specified volume (250 ml) of Type 1 water was then filtered, acidified and submitted as a filter blank. The filter blank is recommended to determine if contamination is occurring through the filtering process. Samples requiring filtering were designated as dissolved. All samples were preserved according to their requirements.

Note: Type 1 water is water that has been distilled and de-ionized.


Appendix 3.1: Water Quality Parameters for Slipper Lake (Site 1)

Parameter	Units	Talga Site 1-1 04/17/96 960307	Talga Site 1-2 04/17/96 960308	Talga Site 1-3 04/17/96 960309	Mean for 3 samples	ASL 960419	ASL/Talga
*Acidity CaCO ₃		--	--	--		5.4	
Alkalinity	mg/L	8.3	8.3	8.4	8.333	9	1.08
carbonate	mgCaCO ₃	0	0	0	0	<1.0	-
bicarbonate	mgCaCO ₃	8.3	8.3	8.4	8.333	9	1.08
hydroxide	mgCaCO ₃	0	0	0	0		-
Chloride	mg/L	1.29	1.37	1.42	1.36	1.8	1.32
Sulphate	mg/L	5	5	7	5.6667	3.5	0.62
Fluoride	mg/L	<0.05	<0.05	<0.05	0.025	0.04	-
pH		6.64	6.62	6.61	6.62	6.33	0.96
Tot.Hardness	mg/L	8.4	8.2	8.1	8.2333333	9.22	1.12
Conductivity	µs/cm	31.5	32.3	33.1	32.3	33.8	1.05
Colour	Colour	5	5	5	5	10	2.00
Filt.Residue	mg/L	75	66	61	67.3333333	28	0.42
Non-Filt_Res.	mg/L	3	3	5	3.6666666	4	1.09
Turbidity	NTU	0.4	1.2	1.1	0.9	0.7	0.78
T. Calcium	mg/L	1.55	1.52	1.48	1.5166667	1.85	1.22
*D. Calcium	mg/L					1.77	-
T. Magnesium	µg/L	1.09	1.06	1.06	1.07	1.19	1.11
*D.Magnesium	µg/L					1.17	-
T. Sodium	mg/L	1.56	1.46	1.46	1.4933333	<2	-
*D. Sodium	mg/L					<2	-
T. Potassium	mg/L	1.15	1.08	1.08	1.1033333	<2	-
*D. Potassium	mg/L					<2	-
Ammonia-N	mg/L	0.033	0.033	0.033	0.033	0.03	0.91
T-Phosphorous	mg/L	0.014	0.011	0.012	0.0123333	0.013	1.05
Diss.Phosphorous	mg/L	0.014	0.006	0.008	0.0093333	0.006	0.64
Ortho-Phosphorous	mg/L	<0.002	<0.002	<0.002	0.001	0.001	-
*Phosphorous T-P	mg/L					<0.3	-
*Phosphorous D-P	mg/L					<0.3	-
Nitrate	mg/L	0.054	0.05	0.05	0.0513333	0.059	1.15
Nitrite	mg/L	<0.008	<0.008	<0.008	0.004	0.001	-
NO ₃ -N+NO ₂ -N	mg/L	0.054	0.05	0.05	0.0513333		-
*D. Inorganic Carbon	mg/L					2.5	-
*D. Organic Carbon	mg/L					5	-
Reac.Silica	mg/L	1.1	1.1	1.12	1.1066667		-
T.Aluminum-ICP-MS	µg/L	32.3	23.7	21.4	25.8	33.0	1.28
Diss. Aluminium	µg/L	18.8	20.6	24.8	21.4	23.0	1.07
Tot. Antimony	µg/L	0.6	0.5	0.5	0.5333333	0.8	1.50
Diss.Antimony	µg/L	0.7	0.9	0.6	0.7333333	0.9	1.23
T.Arsenic-Hyd.	µg/L	<0.3	<0.3	<0.3	0.15	0.27	-
Diss. Arsenic	µg/L	<0.3	<0.3	<0.3	0.15	0.24	-
T.Barium ICP-MS	µg/L	5.1	4.9	5	5	5.6	1.12
Diss. Barium	µg/L	4.6	5	6.4	5.333333	5.3	0.99
T.Beryllium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Beryllium	µg/L	<0.1	<0.1	0.1	0.06667	0.00	-
T.Bismuth ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Bismuth	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Boron	µg/L					3.00	-
*Diss. Boron	µg/L					3.00	-

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.1: Water Quality Parameters for Slipper Lake (cont'd)

Parameter	Units	Talga Site 1-1 04/17/96 960307	Talga Site 1-2 04/17/96 960308	Talga Site 1-3 04/17/96 960309	Mean for 3 samples	ASL 960419	ASL/Talga
T.Cadmium ICP-MS	µg/L	0.3	0.1	0.1	0.1666667	0.24	1.44
Dis. Cadmium	µg/L	0.2	0.2	0.1	0.1666667	0.15	0.90
T.Cesium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Cesium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Chromium ICP-MS	µg/L	0.6	0.4	0.4	0.4666667	0.8	1.71
Diss. Chromium	µg/L	0.4	0.5	0.6	0.5	0.4	0.80
T.Cobalt ICP-MS	µg/L	0.9	0.9	0.9	0.9	1.0	1.11
Diss. Cobalt	µg/L	0.7	0.7	1.2	0.8666667	0.8	0.92
T.Copper ICP-MS	µg/L	4.7	2.8	3	3.5	4.6	1.31
Diss. Copper	µg/L	3.4	3.7	4	3.7	3.7	1.00
T.Indium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Indium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Iron	µg/L	52	29	45	42	30	0.71
Diss. Iron	µg/L	13	14	10	12.333333	20	1.62
T.Lead ICP-MS	µg/L	1.5	0.3	0.2	0.6666667	2.1	3.15
Diss. Lead	µg/L	1	1	0.5	0.8333333	0.9	1.08
T. Lithium ICP-MS	µg/L	1.3	1.2	1.2	1.2333333	1.0	0.81
Diss. Lithium	µg/L	1.2	1.3	1.9	1.4666667	1.0	0.68
T.Manganese ICP-MS	µg/L	1.9	1.7	1.7	1.7666667	2.2	1.25
Diss.Manganese	µg/L	1.2	1.3	1.7	1.4	1.4	1.00
T.Mercury-C/V	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
Diss.Mercury-CV	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
T.Molybdenum ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
Diss.Molybdenum	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
T.Nickel ICP-MS	µg/L	2.8	1.4	1.3	1.8333333	2.6	1.42
Diss. Nickel	µg/L	2	2	1.3	1.7666667	1.8	1.02
T.Rubidium ICP-MS	µg/L	2.5	2.3	2.3	2.3666667		-
Diss.Rubidium	µg/L	2.3	2.5	2.3	2.3666667		-
T.Selenium ICP-MS	µg/L	<1	<1	<1	0.5	0.00	-
Diss.Selenium	µg/L	<1	<1	<1	0.5	0.00	-
*T. Silicon	µg/L					470	-
*Diss. Silicon	µg/L					450	-
T.Silver ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.02	-
Diss. Silver	µg/L	<0.1	<0.1	<0.1	0.05	0.01	-
Strontium ICP-MS	µg/L	13.6	12.9	12.9	13.13333	15.2	1.16
Diss.Strontium	µg/L	12.8	13.8	13	13.2	14.9	1.13
T.Thallium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss.Thallium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Tin	mg/L					0.00	-
*Diss. Tin	mg/L					0.00	-
*T. Titanium	mg/L					0.00	-
*Diss. Titanium	mg/L					0.00	-
T.Uranium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
Diss.Uranium	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
T.Vanadium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.00	0.00
Diss.Vanadium	µg/L	<0.1	/	0.1	0.075	0.00	0.00
T.Zinc ICP-MS	µg/L	32.5	6.4	7.6	15.5	36.0	2.32
Diss. Zinc	µg/L	24.9	22.8	12.2	19.9666	22.0	1.10

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.2: Water Quality Parameters for Nema Lake (Site 2)

Parameter	Units	Talga Site 2-1 04/17/96 960310	Talga Site 2-2 04/17/96 960311	Talga Site 2-3 04/17/96 960312	Mean for 3 samples	ASL 960419	ASL/Talga
*Acidity CaCO ₃		--	--	--		6.3	-
Alkalinity	mg/L	9.6	9.6	9.6	9.6	10.3	1.07
carbonate	mgCaCO ₃	0	0	0	0	<1.0	-
bicarbonate	mgCaCO ₃	9.6	9.6	9.6	9.6	10.3	1.07
hydroxide	mgCaCO ₃	0	0	0	0		-
Chloride	mg/L	1.49	1.47	1.58	1.513333	1.7	1.12
Sulphate	mg/L	4	5	5	4.666667	5	1.07
Fluoride	mg/L	<0.05	<0.05	<0.05	0.025	0.04	-
pH		6.56	6.55	6.57	6.56	6.19	0.94
Tot.Hardness	mg/L	10.3	10.1	10.2	10.2	10.6	1.04
Conductivity	µs/cm	37.3	37.3	37.2	37.266666	37.4	1.00
Colour	Colour	5	5	5	5	10	2.00
Filt.Residue	mg/L	55	51	71	59	30	0.51
Non-Filt_Res.	mg/L	4	4	5	4.333333	1	0.23
Turbidity	NTU	1	0.7	1.4	1.033333	0.2	0.19
T. Calcium	mg/L	2.05	1.98	2.01	2.013333	2.31	1.15
*D. Calcium	mg/L					2.29	-
T. Magnesium	µg/L	1.26	1.26	1.26	1.26	1.18	0.94
*D.Magnesium	µg/L					1.18	-
T. Sodium	mg/L	1.78	1.79	1.77	1.78	2	1.12
*D. Sodium	mg/L					2	-
T. Potassium	mg/L	1.22	1.22	1.22	1.22	<2	0.82
*D. Potassium	mg/L					<2	-
Ammonia-N	mg/L	0.036	0.035	0.036	0.035667	0.03	0.84
T-Phosphorous	mg/L	0.007	0.007	0.007	0.007	0.007	1.00
Diss.Phosphorous	mg/L	0.005	0.006	0.005	0.005333	0.003	0.56
Ortho-Phosphorous	mg/L	<0.002	<0.002	<0.002	0.001	0.002	-
*Phosphorous T-P	mg/L					<0.3	-
*Phosphorous D-P	mg/L					<0.3	-
Nitrate	mg/L	0.236	0.236	0.239	0.237	0.249	1.05
Nitrite	mg/L	<0.008	<0.008	<0.008	0.004	0.003	-
NO ₃ -N+NO ₂ -N	mg/L	0.236	0.236	0.239	0.237		-
*D. Inorganic Carbon	mg/L					2.1	-
*D. Organic Carbon	mg/L					5.5	-
Reac.Silica	mg/L	0.74	0.743	0.741	0.74133		-
T.Aluminum-ICP-MS	µg/L	21.6	22.2	21	21.6	24	1.11
Diss. Aluminium	µg/L	19.9	20.8	20.1	20.266667	27	1.33
Tot. Antimony	µg/L	0.3	0.4	0.4	0.366667	0.5	1.36
Diss.Antimony	µg/L	0.4	0.3	0.3	0.333333	0.4	1.20
T.Arsenic-Hyd.	µg/L	<0.3	<0.3	<0.3	0.15	0.19	-
Diss. Arsenic	µg/L	<0.3	<0.3	<0.3	0.15	0.21	-
T.Barium ICP-MS	µg/L	6.2	6.2	6.3	6.233333	6.8	1.09
Diss. Barium	µg/L	6	6.2	6.2	6.133333	6.5	1.06
T.Beryllium ICP-MS	µg/L	0.1	<0.1	<0.1	0.033333	0	0.00
Diss. Beryllium	µg/L	<0.1	0.1	<0.1	0.033333	0	-
T.Bismuth ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0	-
Diss. Bismuth	µg/L	<0.1	<0.1	<0.1	0.05	0	-
*T. Boron	µg/L					3	-
*Diss. Boron	µg/L					3	-

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.2: Water Quality Parameters for Nema Lake (cont'd)

Parameter	Units	Talga Site 2-1 04/17/96 960310	Talga Site 2-2 04/17/96 960311	Talga Site 2-3 04/17/96 960312	Mean for 3 samples	ASL 960419	ASL/Talga
T.Cadmium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0	-
Dis. Cadmium	µg/L	<0.1	<0.1	<0.1	0.05	0	-
T.Cesium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Cesium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Chromium ICP-MS	µg/L	0.4	0.5	0.4	0.4333333	0.2	0.46
Diss. Chromium	µg/L	<0.2	0.2	0.2	1.66667	0	-
T.Cobalt ICP-MS	µg/L	0.1	<0.1	<0.1	0.3333	0	0.00
Diss. Cobalt	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
T.Copper ICP-MS	µg/L	1.4	1.4	1.6	1.4666667	1.6	1.09
Diss. Copper	µg/L	1.4	1.4	1.4	1.4	1.7	1.21
T.Indium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Indium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Iron	µg/L	32	15	14	20.33333	20	0.98
Diss. Iron	µg/L	8	8	8	8	10	1.25
T.Lead ICP-MS	µg/L	<0.2	<0.2	<0.2	0.1	0.1	-
Diss. Lead	µg/L	<0.2	<0.2	<0.2	0.1	0	-
T. Lithium ICP-MS	µg/L	1.6	1.6	1.5	1.5666667	2	1.28
Diss. Lithium	µg/L	1.8	1.6	1.5	1.6333333	2	1.22
T.Manganese ICP-MS	µg/L	3.2	3.2	3.2	3.2	3.5	1.09
Diss.Manganese	µg/L	2.8	3	2.9	2.9	3.1	1.07
T.Mercury-C/V	µg/L	<0.02	<0.02	<0.02	0.1	0	-
Diss.Mercury-CV	µg/L	<0.02	<0.02	<0.02	0.1	0	-
T.Molybdenum ICP-MS	µg/L	0.2	0.2	0.2	0.2	0.2	1.00
Diss.Molybdenum	µg/L	0.2	0.2	0.2	0.2	0.2	1.00
T.Nickel ICP-MS	µg/L	0.8	0.8	0.8	0.8	0.8	1.00
Diss. Nickel	µg/L	0.8	0.8	0.8	0.8	0.8	1.00
T.Rubidium ICP-MS	µg/L	3.1	3.1	3.2	3.1333333		-
Diss.Rubidium	µg/L	3.1	3.1	3.1	3.1		-
T.Selenium ICP-MS	µg/L	1	<1	<1	0.66667	0	-
Diss.Selenium	µg/L	<1	<1	<1	0.5	0	-
*T. Silicon	µg/L					300	-
*Diss. Silicon	µg/L					300	-
T.Silver ICP-MS	µg/L	<0.1	<0.1	<0.1	0.5	0	-
Diss. Silver	µg/L	<0.1	<0.1	<0.1	0.5	0	-
Strontium ICP-MS	µg/L	18.3	18.2	18.6	18.36667	19.7	1.07
Diss.Strontium	µg/L	18.2	18.5	18.4	18.66667	19.3	1.03
T.Thallium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.5	0	-
Diss.Thallium	µg/L	<0.1	<0.1	<0.1	0.5	0	-
*T. Tin	mg/L					0	-
*Diss. Tin	mg/L					0	-
*T. Titanium	mg/L					0	-
*Diss. Titanium	mg/L					0	-
T.Uranium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
Diss.Uranium	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
T.Vanadium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0	-
Diss.Vanadium	µg/L	<0.1	<0.1	<0.1	0.05	0	-
T.Zinc ICP-MS	µg/L	1.4	1.1	0.5	1	1	1.00
Diss. Zinc	µg/L	0.9	0.7	1.1	0.9	1.0	1.11

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.3: Water Quality Parameters for Moose Lake (Site 3)

Parameter	Units	Talga Site 3-1 04/17/96 960313	Talga Site 3-2 04/17/96 960314	Talga Site 3-3 04/17/96 960315	Mean for 3 samples	ASL 960419	ASL/Talga
*Acidity CaCO ₃		--	--	--		7.2	
Alkalinity	mg/L	10	9.9	9.9	9.93333334	11	1.11
carbonate	mgCaCO ₃	0	0	0	0	<1.0	-
bicarbonate	mgCaCO ₃	10	9.9	9.9	9.93333334	11	1.11
hydroxide	mgCaCO ₃	0	0	0	0		-
Chloride	mg/L	0.8	0.85	0.8	0.81666667	1.1	1.35
Sulphate	mg/L	5	4	4	4.33333333	2.4	0.55
Fluoride	mg/L	<0.05	<0.05	<0.05	0.025	0.04	-
pH		6.63	6.59	6.59	6.60	6.21	0.94
Tot.Hardness	mg/L	9.7	9.9	9.5	9.7	10.3	1.06
Conductivity	µs/cm	30.9	30.9	30.8	30.8666667	31	1.00
Colour	Colour	5	5	10	6.66666667	10	1.50
Filt.Residue	mg/L	69	72	52	64.3333333	25	0.39
Non-Filt_Res.	mg/L	<3	<3	3	2	<1	-
Turbidity	NTU	0.3	0.4	0.3	0.33333333	0.2	0.60
T. Calcium	mg/L	1.89	1.95	1.84	1.89333333	2.12	1.12
*D. Calcium	mg/L					2.06	-
T. Magnesium	µg/L	1.21	1.22	1.2	1.21	1.28	1.06
*D.Magnesium	µg/L					1.26	-
T. Sodium	mg/L	0.95	0.97	0.96	0.96	<2	2.08
*D. Sodium	mg/L					<2	-
T. Potassium	mg/L	1.22	1.22	1.22	1.22	<2	0.82
*D. Potassium	mg/L					<2	-
Ammonia-N	mg/L	0.031	0.034	0.033	0.03266667	0.03	0.92
T-Phosphorous	mg/L	0.011	0.006	0.007	0.008	0.004	0.50
Diss.Phosphorous	mg/L	0.004	0.005	0.004	0.00433333	0.004	0.92
Ortho-Phosphorous	mg/L	<0.002	<0.002	<0.002	0.001	0.004	-
*Phosphorous T-P	mg/L					<0.3	-
*Phosphorous D-P	mg/L					<0.3	-
Nitrate	mg/L	0.04	0.051	0.044	0.045	0.03	0.67
Nitrite	mg/L	<0.008	<0.008	<0.008	0.004	0.001	-
NO ₃ -N+NO ₂ -N	mg/L	0.04	0.051	0.044	0.045		-
*D. Inorganic Carbon	mg/L					2.4	-
*D. Organic Carbon	mg/L					5.6	-
Reac.Silica	mg/L	0.973	0.966	0.966	0.96833333		-
T.Aluminum-ICP-MS	µg/L	26.3	26.5	26.2	26.333333	28.0	1.06
Diss. Aluminium	µg/L	23.6	23.7	24.1	23.8	27.0	1.13
Tot. Antimony	µg/L	0.3	0.3	0.4	0.3333333	0.4	1.20
Diss.Antimony	µg/L	0.4	0.1	0.4	0.3	0.4	1.33
T.Arsenic-Hyd.	µg/L	<0.3	<0.3	<0.3	0.15	0.28	-
Diss. Arsenic	µg/L	<0.3	<0.3	<0.3	0.15	0.27	-
T.Barium ICP-MS	µg/L	7.5	7.5	7.7	7.5666667	8.3	1.10
Diss. Barium	µg/L	7.3	7.4	7.4	7.36666667	7.8	1.06
T.Beryllium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Beryllium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
T.Bismuth ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Bismuth	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Boron	µg/L					3.00	-
*Diss. Boron	µg/L					3.00	-

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.3: Water Quality Parameters for Moose Lake (cont'd)

Parameter	Units	Talga Site 3-1 04/17/96 960313	Talga Site 3-2 04/17/96 960314	Talga Site 3-3 04/17/96 960315	Mean for 3 samples	ASL 960419	ASL/Talga
T.Cadmium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Dis. Cadmium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
T.Cesium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Cesium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Chromium ICP-MS	µg/L	0.5	0.4	0.4	0.43333333	0.4	0.92
Diss. Chromium	µg/L	0.2	<0.2	0.2	0.13333333	0.3	-
T.Cobalt ICP-MS	µg/L	<0.1	0.1	0.1	0.08333	0.0	-
Diss. Cobalt	µg/L	0.1	0.1	0.1	0.1	0.2	2.00
T.Copper ICP-MS	µg/L	1.7	1.4	1.5	1.53333333	1.6	1.04
Diss. Copper	µg/L	1.4	1.4	1.5	1.43333333	1.5	1.05
T.Indium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Indium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Iron	µg/L	30	30	33	31	40	1.29
Diss. Iron	µg/L	13	12	14	13	20	1.54
T.Lead ICP-MS	µg/L	0.2	<0.2	<0.2	0.13333	0.3	2.25
Diss. Lead	µg/L	<0.2	<0.2	<0.2	0.1	0.1	-
T. Lithium ICP-MS	µg/L	1.6	1.6	1.6	1.6	2.0	1.25
Diss. Lithium	µg/L	1.5	1.6	1.6	1.56666667	2.0	1.28
T.Manganese ICP-MS	µg/L	5.9	5.8	5.9	5.8666667	6.5	1.11
Diss.Manganese	µg/L	5.1	5.1	5	5.06666667	5.7	1.13
T.Mercury-C/V	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
Diss.Mercury-CV	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
T.Molybdenum ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
Diss.Molybdenum	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
T.Nickel ICP-MS	µg/L	0.9	0.8	0.9	0.8666667	0.9	1.35
Diss. Nickel	µg/L	0.8	0.9	0.9	0.86666667	0.9	1.04
T.Rubidium ICP-MS	µg/L	3.1	3.1	3.1	3.1		-
Diss.Rubidium	µg/L	3	3	3	3		-
T.Selenium ICP-MS	µg/L	<1	<1	1	0.66667	0.00	-
Diss.Selenium	µg/L	<1	<1	<1	0.5	0.00	-
*T. Silicon	µg/L					400	-
*Diss. Silicon	µg/L					380	-
T.Silver ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Silver	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Strontium ICP-MS	µg/L	16.9	16.7	16.8	16.8	18.4	1.10
Diss.Strontium	µg/L	16.8	16.5	16.3	16.5333333	18.0	1.09
T.Thallium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss.Thallium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Tin	mg/L					0.00	-
*Diss. Tin	mg/L					0.00	-
*T. Titanium	mg/L					0.00	-
*Diss. Titanium	mg/L					0.00	-
T.Uranium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
Diss.Uranium	µg/L	0.1	0.1	<0.1	0.08333	0.1	-
T.Vanadium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.00	-
Diss.Vanadium	µg/L	<0.1	<0.1	0.1	0.06667	0.00	-
T.Zinc ICP-MS	µg/L	2.6	1.7	1.4	1.9	2.0	1.05
Diss. Zinc	µg/L	1.4	0.8	1.6	1.26666667	2.0	1.58

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.4: Water Quality Parameters for Vulture Lake (Site 4)

Parameter	Units	Talga Site 4-1 04/17/96 960318	Talga Site 4-2 04/17/96 960317	Talga Site 4-3 04/17/96 960319	Mean for 3 samples	ASL 960419	ASL/Talga
*Acidity CaCO ₃		--	--	--		1.8	
Alkalinity	mg/L	4.9	4.8	4.8	4.8333333	5.4	1.12
carbonate	mgCaCO ₃	0	0	0	0	<1.0	-
bicarbonate	mgCaCO ₃	4.9	4.8	4.8	4.8333333	5.4	1.12
hydroxide	mgCaCO ₃	0	0	0	0		-
Chloride	mg/L	0.39	0.29	0.39	0.35666667	0.6	1.68
Sulphate	mg/L	3	3	3	3	1.3	0.43
Fluoride	mg/L	<0.05	<0.05	<0.05	0.025	0.03	-
pH		6.72	6.72	6.71	6.72	6.2	0.92
Tot.Hardness	mg/L	4.7	4.7	4.6	4.66666667	4.96	1.06
Conductivity	µs/cm	17.3	15.8	17	16.7	15.9	0.95
Colour	Colour	5	5	5	5	<5	-
Filt.Residue	mg/L	17	33	39	29.6666667	<10	-
Non-Filt_Res.	mg/L	6	<3	<3	3	1	-
Turbidity	NTU	0.8	0.7	0.5	0.66666667	0.2	0.30
T. Calcium	mg/L	0.81	0.83	0.8	0.81333333	0.91	1.12
*D. Calcium	mg/L					0.91	-
T. Magnesium	µg/L	0.64	0.65	0.64	0.64333333	0.655	1.02
*D.Magnesium	µg/L					0.653	-
T. Sodium	mg/L	0.56	0.57	0.55	0.56	<2	-
*D. Sodium	mg/L					<2	-
T. Potassium	mg/L	0.62	0.65	0.63	0.63333333	<2	-
*D. Potassium	mg/L					<2	-
Ammonia-N	mg/L	0.031	0.037	0.034	0.034	0.03	0.88
T-Phosphorous	mg/L	0.01	0.009	0.01	0.00966667	0.004	0.41
Diss.Phosphorous	mg/L	0.003	0.004	0.004	0.00366667	0.003	0.82
Ortho-Phosphorous	mg/L	<0.002	<0.002	<0.002	0.001	0.003	-
*Phosphorous T-P	mg/L					<0.3	-
*Phosphorous D-P	mg/L					<0.3	-
Nitrate	mg/L	<0.008	0.022	<0.008	0.01	<0.005	-
Nitrite	mg/L	<0.008	<0.008	<0.008	0.004	0.001	-
NO ₃ -N+NO ₂ -N	mg/L	<0.008	0.022	<0.008	0.01		-
*D. Inorganic Carbon	mg/L					1.3	-
*D. Organic Carbon	mg/L					2.6	-
Reac.Silica	mg/L	0.25	0.245	0.247	0.24733333		-
T.Aluminum-ICP-MS	µg/L	8.9	10.6	8.2	9.2333333	12.0	1.30
Diss. Aluminium	µg/L	6	5.8	6.2	6	8.0	1.33
Tot. Antimony	µg/L	0.4	0.4	0.5	0.43333333	0.5	1.15
Diss.Antimony	µg/L	0.6	0.5	0.5	0.5333333	0.7	1.31
T.Arsenic-Hyd.	µg/L	<0.3	<0.3	<0.3	0.15	0.21	-
Diss. Arsenic	µg/L	<0.3	<0.3	<0.3	0.15	0.20	-
T.Barium ICP-MS	µg/L	2.8	2.9	2.7	2.8	3.0	1.07
Diss. Barium	µg/L	2.6	2.7	2.7	2.66666667	2.9	1.09
T.Beryllium ICP-MS	µg/L	<0.1	0.1	<0.1	0.03333	0.00	-
Diss. Beryllium	µg/L	0.1	<0.1	<0.1	0.03333	0.00	-
T.Bismuth ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Bismuth	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Boron	µg/L					2.00	-
*Diss. Boron	µg/L					1.00	-

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.4: Water Quality Parameters for Vulture Lake (cont'd)

Parameter	Units	Talga Site 4-1 04/17/96 960318	Talga Site 4-2 04/17/96 960317	Talga Site 4-3 04/17/96 960319	Mean for 3 samples	ASL 960419	ASL/Talga
T.Cadmium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Dis. Cadmium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
T.Cesium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Cesium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Chromium ICP-MS	µg/L	0.3	0.3	<0.2	0.233333	0.3	-
Diss. Chromium	µg/L	0.2	0.2	<0.2	0.166666	0.2	-
T.Cobalt ICP-MS	µg/L	<0.1	0.1	0.1	0.083333	0.0	-
Diss. Cobalt	µg/L	0.1	0.1	0.1	0.1	0.2	2.00
T.Copper ICP-MS	µg/L	0.9	0.9	0.9	0.9	1.0	1.11
Diss. Copper	µg/L	1	0.9	0.8	0.9	1.0	1.11
T.Indium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Indium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Iron	µg/L	6	8	6	6.6666667	20	3.00
Diss. Iron	µg/L	<3	<3	<3	1.5	0	-
T.Lead ICP-MS	µg/L	<0.2	<0.2	<0.2	0.1	0.1	-
Diss. Lead	µg/L	<0.2	<0.2	<0.2	0.1	0.4	-
T. Lithium ICP-MS	µg/L	1.2	1.1	1.1	1.13333333	1.0	0.88
Diss. Lithium	µg/L	1.1	1.1	1.2	1.13333333	1.0	0.88
T.Manganese ICP-MS	µg/L	0.4	0.4	0.4	0.4	0.5	1.25
Diss.Manganese	µg/L	0.3	0.3	0.3	0.3	0.4	1.33
T.Mercury-C/V	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
Diss.Mercury-CV	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
T.Molybdenum ICP-MS	µg/L	<0.1	<0.1	0.1	0.066667	0.0	-
Diss.Molybdenum	µg/L	<0.1	<0.1	<0.1	0.05	0.0	-
T.Nickel ICP-MS	µg/L	0.4	0.5	0.4	0.43333333	0.4	0.92
Diss. Nickel	µg/L	0.4	0.4	0.5	0.43333333	0.4	0.92
T.Rubidium ICP-MS	µg/L	1.4	1.5	1.4	1.43333333		-
Diss.Rubidium	µg/L	1.4	1.4	1.4	1.4		-
T.Selenium ICP-MS	µg/L	<1	<1	<1	0.5	0.00	-
Diss.Selenium	µg/L	<1	<1	<1	0.5	0.00	-
*T. Silicon	µg/L					100	-
*Diss. Silicon	µg/L					90	-
T.Silver ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Silver	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Strontium ICP-MS	µg/L	6.3	6.3	6.2	6.2666667	6.8	1.09
Diss.Strontium	µg/L	6.3	6.2	6.3	6.2666667	6.8	1.09
T.Thallium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss.Thallium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Tin	mg/L					0.00	-
*Diss. Tin	mg/L					0.00	-
*T. Titanium	mg/L					0.00	-
*Diss. Titanium	mg/L					0.00	-
T.Uranium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.02	-
Diss.Uranium	µg/L	<0.1	<0.1	<0.1	0.05	0.02	-
T.Vanadium ICP-MS	µg/L	0.1	<0.1	<0.1	0.066667	0.00	-
Diss.Vanadium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
T.Zinc ICP-MS	µg/L	2.5	2.6	1.7	2.26666667	3.0	1.32
Diss. Zinc	µg/L	1.5	1.3	1.8	1.53333333	2.0	1.30

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.5: Water Quality Parameters for Kodiak Lake (Site 5)

Parameter	Units	Talga Site 5-1 04/17/96 960320	Talga Site 5-2 04/17/96 960321	Talga Site 5-3 04/17/96 960322	Mean for 3 samples	ASL 960419	ASL/Talga
*Acidity CaCO ₃		--	--	--		7.2	
Alkalinity	mg/L	11.3	11.4	11.3	11.333333	12.4	1.09
carbonate	mgCaCO ₃	0	0	0	0	<1.0	-
bicarbonate	mgCaCO ₃	11.3	11.4	11.3	11.333333	12.4	1.09
hydroxide	mgCaCO ₃	0	0	0	0		-
Chloride	mg/L	1.93	1.88	1.88	1.8966667	2.1	1.11
Sulphate	mg/L	5	5	5	5	2.1	0.42
Fluoride	mg/L	<0.05	<0.05	<0.05	0.025	0.05	-
pH		6.57	6.7	6.68	6.65	5.95	0.89
Tot.Hardness	mg/L	14.1	14.1	14.2	14.133333	15.5	1.10
Conductivity	µs/cm	45.2	45	45.4	45.2	45	1.00
Colour	Colour	10	20	20	16.666667	16	0.96
Filt.Residue	mg/L	55	67	56	59.333333	38	0.64
Non-Filt_Res.	mg/L	4	<3	3	2.83333333	<1	-
Turbidity	NTU	0.7	0.4	0.3	0.4666667	0.2	0.43
T. Calcium	mg/L	2.75	2.74	2.77	2.7533333	3.16	1.15
*D. Calcium	mg/L					3.19	-
T. Magnesium	µg/L	1.75	1.76	1.77	1.76	1.83	1.04
*D.Magnesium	µg/L					1.83	-
T. Sodium	mg/L	1.44	1.44	1.43	1.4366667	<2	-
*D. Sodium	mg/L					<2	-
T. Potassium	mg/L	1.32	1.33	1.32	1.323333	<2	-
*D. Potassium	mg/L					<2	-
Ammonia-N	mg/L	0.005	0.007	0.009	0.007	<0.02	-
T-Phosphorous	mg/L	0.007	0.007	0.008	0.0073333	0.006	0.82
Diss.Phosphorous	mg/L	0.007	0.004	0.004	0.005	0.003	0.60
Ortho-Phosphorous	mg/L	<0.002	<0.002	<0.002	0.001	0.001	-
*Phosphorous T-P	mg/L					<0.3	-
*Phosphorous D-P	mg/L					<0.3	-
Nitrate	mg/L	0.223	0.228	0.226	0.2256667	0.185	0.82
Nitrite	mg/L	<0.008	<0.008	<0.008	0.004	0.001	-
NO ₃ -N+NO ₂ -N	mg/L	0.223	0.228	0.226	0.2256667		0.00
*D. Inorganic Carbon	mg/L					1.9	-
*D. Organic Carbon	mg/L					6.4	-
Reac.Silica	mg/L	1.13	1.12	1.15	1.1333333		-
T.Aluminum-ICP-MS	µg/L	35.7	35.8	35.9	35.8	38.0	1.06
Diss. Aluminium	µg/L	33.7	32.8	32.9	33.133333	36.0	1.09
Tot. Antimony	µg/L	0.4	0.3	0.4	0.3666667	0.6	1.64
Diss.Antimony	µg/L	0.4	0.4	0.4	0.4	0.4	1.00
T.Arsenic-Hyd.	µg/L	<0.3	<0.3	<0.3	0.15	0.40	2.67
Diss. Arsenic	µg/L	<0.3	<0.3	<0.3	0.15	0.39	2.60
T.Barium ICP-MS	µg/L	15.8	15.4	15.8	15.666667	16.7	1.07
Diss. Barium	µg/L	15.5	15.3	15.3	15.366667	16.3	1.06
T.Beryllium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Beryllium	µg/L	<0.1	<0.1	0.1	0.06667	0.00	-
T.Bismuth ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Bismuth	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Boron	µg/L					2.00	-
*Diss. Boron	µg/L					2.00	-

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Talga ratio.


Appendix 3.5: Water Quality Parameters for Kodiak Lake (cont'd)

Parameter	Units	Taiga Site 5-1 04/17/96 960320	Taiga Site 5-2 04/17/96 960321	Taiga Site 5-3 04/17/96 960322	Mean for 3 samples	ASL 960419	ASL/Taiga
T.Cadmium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Dis. Cadmium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
T.Cesium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Cesium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Chromium ICP-MS	µg/L	0.6	0.5	0.4	0.5	0.4	0.80
Diss. Chromium	µg/L	0.3	0.3	0.2	0.2666667	0.4	1.50
T.Cobalt ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.2	2.00
Diss. Cobalt	µg/L	0.1	0.1	0.1	0.1	0.1	1.00
T.Copper ICP-MS	µg/L	2.7	2.1	2.1	2.3	2.3	1.00
Diss. Copper	µg/L	2.8	2.1	2	2.3	2.3	1.00
T.Indium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05		-
Diss. Indium	µg/L	<0.1	<0.1	<0.1	0.05		-
T.Iron	µg/L	68	69	66	67.666667	70	1.03
Diss. Iron	µg/L	44	44	43	43.666667	40	0.92
T.Lead ICP-MS	µg/L	0.2	<0.2	<0.2	0.133333	0.1	-
Diss. Lead	µg/L	<0.2	<0.2	<0.2	0.1	0.1	-
T. Lithium ICP-MS	µg/L	2.9	2.9	2.9	2.9	3.0	1.03
Diss. Lithium	µg/L	2.9	2.7	2.8	2.8	3.0	1.07
T.Manganese ICP-MS	µg/L	4.5	4.5	4.5	4.5	4.9	1.09
Diss. Manganese	µg/L	3.6	3.3	3.5	3.4666667	3.8	1.10
T.Mercury-C/V	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
Diss. Mercury-CV	µg/L	<0.02	<0.02	<0.02	0.01	0.00	-
T.Molybdenum ICP-MS	µg/L	0.2	0.2	0.2	0.1	0.2	2.00
Diss. Molybdenum	µg/L	0.2	0.2	0.2	0.1	0.2	2.00
T.Nickel ICP-MS	µg/L	2.5	2.4	2.4	2.4333333	2.6	1.07
Diss. Nickel	µg/L	3.1	2.4	2.4	2.6333333	2.5	0.95
T.Rubidium ICP-MS	µg/L	3.6	3.6	3.5	3.5666667		-
Diss. Rubidium	µg/L	3.6	3.6	3.5	3.5666667		-
T.Selenium ICP-MS	µg/L	<1	<1	<1	0.5	0.00	-
Diss. Selenium	µg/L	<1	<1	1	0.66667	0.00	-
*T. Silicon	µg/L					460	-
*Diss. Silicon	µg/L					460	-
T.Silver ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Silver	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Strontium ICP-MS	µg/L	30.1	29.8	30	29.966667	32.5	1.08
Diss. Strontium	µg/L	29.8	29.4	29.4	29.5333333	32.3	1.09
T.Thallium ICP-MS	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
Diss. Thallium	µg/L	<0.1	<0.1	<0.1	0.05	0.00	-
*T. Tin	mg/L					0.00	-
*Diss. Tin	mg/L					0.00	-
*T. Titanium	mg/L					0.00	-
*Diss. Titanium	mg/L					0.00	-
T.Uranium ICP-MS	µg/L	0.1	0.2	0.1	0.1333333	0.2	1.50
Diss. Uranium	µg/L	0.2	0.1	0.1	0.1333333	0.2	1.50
T.Vanadium ICP-MS	µg/L	0.1	0.1	0.1	0.1	0.00	-
Diss. Vanadium	µg/L	0.1	<0.1	0.1	0.08333	0.00	-
T.Zinc ICP-MS	µg/L	3.6	3.2	3.1	3.3	5.0	1.52
Diss. Zinc	µg/L	4	3	2.9	3.3	4.0	1.21

Note: 1: Due to specialized instrumentation required to do specific tests, not all parameters listed were tested by both laboratories (ASL and DIAND) and are indicated by a blank space. Values found to be less than the testing labs detection limit are indicated by a "<".

2: half the "less than" detection value (those values indicated by a "<") were used to calculate the ASL/Taiga ratio.



Appendix 3.6: Water Quality Parameters for Field Blank (Moose Lake - Site 3B)

Parameter	Units	Field Blank Site 3B 04/17/96 960316
Alkalinity	mg/L	<0.3
Carbonate	mgCaCO ₃	0.00
Bicarbonate	mgCaCO ₃	0.2
Hydroxide	mgCaCO ₃	0.0
Chloride	mg/L	<0.08
Sulphate	mg/L	3.0
Fluoride	mg/L	<0.05
pH		5.61
T. Hardness	mg/L	<0.1
Conductivity	µs/cm	1.1
Colour	colour	5
T. Dissolved Solids	mg/L	10
T. Suspended Solids	mg/L	3
Turbidity	NTU	0.6
T. Calcium	mg/L	<0.04
T. Magnesium	µg/L	<0.01
T. Sodium	mg/L	<0.04
T. Potassium	mg/L	<0.05
Ammonia-N	mg/L	<0.002
T. Phosphorous	mg/L	0.031
Diss. Phosphorous	mg/L	0.003
Ortho-Phosphorous	mg/L	<0.002
Nitrate	mg/L	<0.008
Nitrite	mg/L	<0.008
NO ₃ -N+NO ₂ -N	mg/L	<0.008
Reac. Silica	mg/L	<0.005
T. Aluminum-ICP-MS	µg/L	<0.5
Diss. Aluminium	µg/L	1.2
T. Antimony	µg/L	0.4
Diss. Antimony	µg/L	0.4
T. Arsenic-Hyd.	µg/L	<0.3
Diss. Arsenic	µg/L	<0.3
T. Barium ICP-MS	µg/L	<0.1
Diss. Barium	µg/L	<0.1
T. Beryllium ICP-MS	µg/L	0.1
Diss. Beryllium	µg/L	<0.1
T. Bismuth ICP-MS	µg/L	<0.1
Diss. Bismuth	µg/L	<0.1
T. Cadmium ICP-MS	µg/L	<0.1
Diss. Cadmium	µg/L	<0.1

Note: Values found to be less than the testing labs detection limit are indicated by a "<".



Appendix 3.6: Water Quality Parameters for Field Blank (cont'd)

Parameter	Units	Field Blank Site 3B 04/17/96 960316
T. Cesium ICP-MS	µg/L	<0.1
Diss. Cesium	µg/L	<0.1
T. Chromium ICP-MS	µg/L	<0.2
Diss. Chromium	µg/L	<0.2
T. Cobalt ICP-MS	µg/L	<0.1
Diss. Cobalt	µg/L	<0.1
T. Copper ICP-MS	µg/L	0.1
Diss. Copper	µg/L	0.1
T. Indium ICP-MS	µg/L	<0.1
Diss. Indium	µg/L	<0.1
T. Iron	µg/L	<3
Diss. Iron	µg/L	<3
T. Lead ICP-MS	µg/L	<0.2
Diss. Lead	µg/L	<0.2
T. Lithium ICP-MS	µg/L	<0.1
Diss. Lithium	µg/L	<0.1
T. Manganese ICP-MS	µg/L	<0.1
Diss. Manganese	µg/L	<0.1
T. Mercury-C/V	µg/L	<0.01
Diss. Mercury-C/V	µg/L	<0.01
T. Molybdenum ICP-MS	µg/L	<0.1
Diss. Molybdenum	µg/L	<0.1
T. Nickel ICP-MS	µg/L	<0.1
Diss. Nickel	µg/L	<0.1
T. Rubidium ICP-MS	µg/L	<0.1
Diss. Rubidium	µg/L	<0.1
T. Selenium ICP-MS	µg/L	1.0
Diss. Selenium	µg/L	<1
T. Silver ICP-MS	µg/L	<0.1
Diss. Silver	µg/L	<0.1
Strontium ICP-MS	µg/L	<0.1
Diss. Strontium	µg/L	<0.1
T. Thallium ICP-MS	µg/L	<0.1
Diss. Thallium	µg/L	<0.1
T. Uranium ICP-MS	µg/L	<0.1
Diss. Uranium	µg/L	<0.1
T. Vanadium ICP-MS	µg/L	<0.1
Diss. Vanadium	µg/L	<0.1
T. Zinc ICP-MS	µg/L	<0.5
Diss. Zinc	µg/L	<0.5

Note: Values found to be less than the testing labs detection limit are indicated by a "<".



Appendix 3.7: Water Quality Parameters for Site Filter Blanks

Parameter	Units	Filter Blank Slipper Lake 04/17/96 960323	Filter Blank Nema Lake 04/17/96 960324	Filter Blank Moose Lake 04/17/96 960325	Filter Blank Vulture Lake 04/17/96 960326	Filter Blank Kodiak Lake 04/17/96 960327
Diss. Aluminium	µg/L	0.9	0.9	0.5	<0.5	<0.5
Diss. Antimony	µg/L	0.6	0.6	0.3	0.4	0.4
Diss. Arsenic	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3
Diss. Barium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Beryllium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Diss. Bismuth	µg/L	<0.1	0.1	<0.1	0.1	<0.1
Diss. Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Chromium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diss. Cobalt	µg/L	<0.1	0.1	0.1	<0.1	<0.1
Diss. Copper	µg/L	0.1	0.2	0.1	0.1	<0.1
Diss. Indium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Iron	µg/L	<3	<3	<3	<3	<3
Diss. Lead	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diss. Lithium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Manganese	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Molybdenum	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Nickel	µg/L	<0.1	0.1	<0.1	<0.1	<0.1
Diss. Rubidium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Selenium	µg/L	<1	<1	<1	<1	<1
Diss. Silver	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Strontium	µg/L	<0.1	0.1	<0.1	<0.1	<0.1
Diss. Thallium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Uranium	µg/L	<0.1	<0.1	<.01	<.01	<.01
Diss. Vanadium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Diss. Zinc	µg/L	0.8	1.2	1.4	<0.5	<0.5

Note: Values found to be less than the testing labs detection limit are indicated by a "<".