

APPENDIX 7B

WATER AND SEDIMENT QUALITY BASELINE REPORT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT



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**BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT**

**SURFACE WATER AND SEDIMENT QUALITY
BASELINE REPORT
(REF. NO. NB102-181/25-2)**

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MARY RIVER PROJECT**

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EXECUTIVE SUMMARY

This document is a compilation of the environmental surface water and sediment quality data for surface water sampling programs performed by Knight Piésold Ltd. and their sub-consultants from 2005 to 2008. The data have been summarized for the four sampling years and compared to applicable criteria, and trends have been analyzed.

Streams naturally have elevated concentrations or values for the following parameters: DO, turbidity, aluminum and iron. There were also some instances in streams where CCME guidelines were exceeded for the following parameters: copper, TSS, silver, selenium, lead, pH, and nickel. High chloride concentrations have been detected downstream of the Deposits, likely as a result of exploration drilling activities. Some average values for pH exceeded the CCME guidelines as did average values for cadmium and mercury at most sites. Selenium routinely was reported at the CCME guideline. When all areas for stream sampling were compared based on Water Quality Index values, the sampling locations within the area between Camp Lake and Milne Port, which were only sampled in 2005 and/or 2006, showed the highest value of 99.5, or “excellent” water quality.

Lake profiling indicated that DO and temperature in Mary Lake, Sheardown Lake and Camp Lake all showed vertical thermal stratification in late July/early August. In late August/September the lakes were isothermic and uniformly mixed throughout the water column. Average values for pH exceeded the CCME range of 6.5 to 8.5 for lakes within the Mine Site area (Mary Lake, Camp Lake and Sheardown Lake). Parameters that were at or above CCME guidelines in Mary Lake included cadmium and mercury. Parameters that were at or above the CCME guidelines in Camp Lake and the northwest and southeast basins of Sheardown Lake included cadmium, mercury and selenium.

In areas where sediment samples were collected, the streambeds were typically cobbles and boulders with the samples being collected from the riffle pools behind the larger boulders. Sediment quality at stream and lake sites across the project area were generally good with naturally higher levels of chromium, copper and, to a lesser extent, arsenic, cadmium, mercury, lead and zinc.

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TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	i
TABLE OF CONTENTS	i
SECTION 1.0 - INTRODUCTION	1
1.1 OBJECTIVES	1
1.2 STUDY AREA.....	1
1.3 SUMMARY OF ANNUAL STUDIES	1
SECTION 2.0 - METHODS	3
2.1 STREAM WATER QUALITY	3
2.1.1 Sampling Locations and Seasons	3
2.1.2 Parameters	3
2.1.3 Sampling Methods.....	4
2.1.4 Laboratory Methods.....	4
2.1.5 Field Quality Assurance/Quality Control.....	4
2.1.6 Data Analysis.....	5
2.2 LAKE WATER QUALITY	6
2.2.1 Sampling Locations and Seasons	6
2.2.2 Parameters	7
2.2.3 Sampling Methods.....	7
2.2.4 Laboratory Methods.....	8
2.2.5 Field Quality Assurance/Quality Control.....	8
2.2.6 Analytical QA/QC.....	9
2.2.7 Analysis of Results	10
2.3 SEDIMENT QUALITY	10
2.3.1 Sampling Locations and Seasons	10
2.3.2 Parameters	11
2.3.3 Sampling Methods.....	11
2.3.4 Laboratory Methods.....	13
2.3.5 Field Quality Assurance/Quality Control.....	13
2.3.6 Data Analysis.....	13
SECTION 3.0 - RESULTS	15
3.1 STREAM WATER QUALITY	15
3.1.1 Mine Site.....	15

3.1.2	Proposed Railway and Steensby Port Area	22
3.1.3	Milne Port Area.....	27
3.1.4	QA/QC	28
3.2	LAKE WATER QUALITY	30
3.2.1	QA/QC	31
3.3	SEDIMENT QUALITY	32
3.3.1	Mine Site.....	32
3.3.2	Railway Alignment and Steensby Port Area.....	39
3.3.3	QA/QC	39
SECTION 4.0 - CONCLUSIONS		40
SECTION 5.0 - REFERENCES		41
SECTION 6.0 - CERTIFICATION		42

TABLES

Table 2.1 Rev 0	2005-2008 Mine Site Stream Water Sample Locations
Table 2.2 Rev 0	2005-2008 Mine Site to Steensby Port Stream Water Sample Locations
Table 2.3 Rev 0	2005-2008 Mine Site to Milne Port Stream Water Sample Locations
Table 2.4 Rev 0	2005-2008 Lake Surface Water Quality Sample Locations
Table 2.5 Rev 0	2005-2008 Sediment Quality Sample Locations
Table 3.1 Rev 0	Stream Water Quality Data Summary Statistics - Mine Site
Table 3.2 Rev 0	Stream Water Quality Data Summary Statistics - Mine Site to Steensby Port
Table 3.3 Rev 0	Stream Water Quality Data Summary Statistics - Milne Port Area
Table 3.4 Rev 0	Lake Water Quality Summary Data and Statistics - 2005-2008
Table 3.5 Rev 0	Sediment Quality Data Summary Statistics

FIGURES

Figure 1.1 Rev 0	Project Location Map
Figure 1.2 Rev 0	Stream Water Quality Sample Locations - Mine Site - 2005-2008
Figure 1.3 Rev 0	Stream Water Quality Sample Locations - Railway Alignment - 2005-2008
Figure 1.4 Rev 0	Stream Water Quality Sample Locations - Milne Port to Mine Site - 2005-2008
Figure 1.5 Rev 0	Lake Water Quality Sample Locations - Mine Site - 2005-2008
Figure 1.6 Rev 0	Lake Water Quality Sample Locations - Steensby Port - 2005-2008
Figure 1.7 Rev 0	Lake Water Quality Sample Locations - Mid-Rail Camp Lake
Figure 1.8 Rev 0	Sediment Quality Sample Locations - Mine Site - 2005 and 2006

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SECTION 1.0 - INTRODUCTION

The Mary River Project (the Project) is a proposed iron ore mine and associated facilities located on North Baffin Island, in the Qikiqtani Region of Nunavut (see Figure 1.1). The Project involves the construction, operation, closure and reclamation of a 21 million tonne per annum (Mt/a) open pit mine that will operate for 21 years. The high-grade iron ore to be mined is suitable for international shipment after crushing and screening with no chemical processing facilities. Three Mt/a of iron ore will be transported via an upgraded existing road to Milne Port where it will be stockpiled for shipment during the open water season. A railway system will transport an additional 18 Mt/a of the ore from the mine area to an all-season deep-water port and ship loading facility at Steensby Port where the ore will be loaded into ore carriers for overseas shipment through Foxe Basin. A dedicated fleet of cape-sized ice-breaking ore carriers and some non-icebreaking ore carriers and conventional ships will be used during the open water season to ship the iron ore to markets.

This environmental baseline study report has been prepared in support of an Environmental Impact Statement (EIS) for the Project, to be submitted by Baffinland Iron Mines Corporation (Baffinland) to the Nunavut Impact Review Board (NIRB).

1.1 OBJECTIVES

This document is a compilation of the environmental surface water quality and sediment quality data for baseline surface water and sediment sampling programs performed by Knight Piésold Ltd. (KPL) and their sub-consultants from 2005 to 2008. The data have been summarized for the four sampling years; compared to applicable criteria, and trends have been analyzed. This report has been prepared to support the Environmental Impact Statement.

1.2 STUDY AREA

For the purpose of this baseline study, the study area includes water bodies in the vicinity of the Milne Port, Milne Inlet Tote Road, Mine Site, Railway and Steensby Port Local Study Areas (LSAs). The location of each of these LSAs is shown on Figure 1.1.

1.3 SUMMARY OF ANNUAL STUDIES

Stream water quality has been studied in the Project area since 2005 by KPL and North/South Consultants Inc. (North/South), with sampling locations being modified each year to reflect changing Project components. During 2005 and 2006, the Project focused on exploration activities. In 2007, exploration continued and operations and facilities were expanded. In 2008, the bulk sample program was initiated. The Surface Water and Sediment Quality Study should be examined with these

activities in mind. Drilling operations did take place prior to 2005, thus it is possible for these activities to have influenced specific areas before the baseline sampling commenced.

Lake water quality/limnology was studied in 2006 by KPL and in 2007 and 2008 by North/South on behalf of KPL. Sediment quality was sampled in 2005 and 2006 by KPL and in 2007 and 2008 by North/South. Stream and lake water quality sample locations are shown on Figures 1.2 through 1.7. Sediment sampling locations are shown on Figure 1.8.

Results of the various studies are presented in the following reports:

- "2005/2006 Baseline Water Quality Summary Report" (Ref. No. NB102-00181/4-5), Knight Piésold Ltd., March 13, 2007
- "2007 Baseline Water Quality Summary Report" (Ref. No. NB102-00181/7-5), Knight Piésold Ltd., June 6, 2008
- "Freshwater Aquatic Environment Baseline Report: Lake Limnology and Lower Trophic Levels: 2007" North/South Consultants Inc., March 2008

SECTION 2.0 - METHODS**2.1 STREAM WATER QUALITY****2.1.1 Sampling Locations and Seasons**

Sampling was generally undertaken during the spring (June), summer (July) and fall (August/September) during the open water season. Sample locations were modified each year based on current and proposed Project activities, and were also dependent on factors such as accessibility, weather conditions, wildlife sightings and flow conditions at the time of sampling. In 2007, samples were collected from certain locations (A0-10, C0-10, E0-03, E0-10, E3-01, E4-01, F0-01, G0-01, G0-09 and L0-01) on a weekly basis by KPL personnel. The weekly sampling of these and additional sites was completed by Baffinland in 2008 to meet regulatory requirements. Since these samples were collected for regulatory purposes rather than baseline, they have not been included in this report.

In general, sampling areas in each year are described as follows:

Year	General Sampling Areas
2005	• Mine Site (includes Mining Area, Mine Infrastructure Area, Exploration Facilities Area) and vicinity • Potential transportation routes to Milne Port and Steensby Port
2006	• Mine Site (includes Mining Area, Mine Infrastructure Area, Exploration Facilities Area) and vicinity • Potential transportation routes to Milne Port and Steensby Port
2007	• Mine Site (includes Mining Area, Mine Infrastructure Area, Exploration Facilities Area) and vicinity • Railway
2008	• Mine Site (includes Mining Area, Mine Infrastructure Area, Exploration Facilities Area) and vicinity • Railway • Steensby Port • Milne Port

In addition to streams, sampling locations included rivers, drainage courses, etc. Tables 2.1 to 2.3 provide a detailed summary of all sample locations including UTM coordinates.

2.1.2 Parameters

In situ parameters (temperature, dissolved oxygen (DO), pH and specific conductance/conductivity) were generally measured at each site and UTM coordinates were recorded using a handheld Global Positioning System (GPS). Grab samples were collected for laboratory analysis for the parameters listed in the laboratory quote in Appendix A of the compendium report (Ref. No. NB102-00181/25-16). Physical characteristics of the stream were also recorded, such as approximate width, depth, flow rate, amount of riparian vegetation, etc.

2.1.3 Sampling Methods

In situ measurements at each location were collected using a YSI 556 MPS (2005), a Hydrolab Quanta (2006, limited use in 2007/2008) or a YSI 600 QS Sonde (2007/2008) and were recorded on sample record forms. Appendix B of the compendium report contains available field record sheets.

Surface water samples were collected by trained field staff using standard protocols. The following steps were taken when collecting samples:

- Samples were collected from flowing sections and were obtained by either wading into the stream or by collecting the sample from the stream bank
- Samples were collected in an upstream direction, and sampling gloves were worn at all times
- Samples were obtained by placing the sample bottle beneath the surface of the water with the bottle opening facing downwards to reduce the amount of surface residue collected
- Samples were collected into clean sample bottles provided by the laboratory. For bottles where acid preservative was required, samples were transferred from a clean bottle into the bottle containing preservative.
- Samples for dissolved metals were filtered in the field at the time of collection using an Acrodisc® 60 mm Syringe with a 0.45 µm Supor® membrane filter and the sample was preserved (acidified with nitric acid). Ten mL of sample water were dispensed from each syringe/filter apparatus prior to filling the sample bottles, as per the manufacturer's directions.

Immediately after collection, samples were stored on ice in coolers and shipped to the laboratory under chain-of-custody. All samples were submitted for testing to Accutest Laboratories Ltd. (Accutest) in Ottawa, ON, who sub-contracted the metals analysis to the ALS Laboratory Group (ASL) in Vancouver, BC.

2.1.4 Laboratory Methods

Analytical methods for parameters measured at Accutest and ALS are provided in Appendix A of the compendium report, and available laboratory certificates of analysis are provided in Appendix C of the compendium report.

2.1.5 Field Quality Assurance/Quality Control

Field quality assurance/quality control (QA/QC) procedures included standard precautions to avoid sample contamination (e.g. gloves were worn during sample collection and handling), use of standard sampling protocols, and inclusion of QA/QC samples.

QA/QC sample descriptions and collection frequencies are summarized below:

- Field Blanks were prepared in the field using deionized water. These samples were field filtered and preserved using the same methodology as for actual water sample collection.

The number of field blanks collected was equivalent to 5% of the total number of samples collected, or one per sampling event, whichever was greater.

- Duplicate samples were collected at several locations at the same time as other samples taken at those locations. The number of duplicates collected was equivalent to 10% of the total number of samples collected, or one per sampling event, whichever was greater.
- Trip blanks were performed whenever possible given weather and shipping constraints. These blanks were prepared by the analytical laboratory by filling one set of sample bottles with deionized water. Trip blanks were transported to the site but left unopened, and submitted for analysis along with the field samples.
- Equipment blanks were performed in 2005 and 2006 by running deionized water over equipment used during sample collection. Approximately one equipment blank was collected per day when equipment required decontamination.

QA/QC samples were analyzed for the same parameters as the actual samples.

Field meters were calibrated prior to departure and/or in the field, depending on the specifications of the instrument and the parameter being measured. Where required, meters were also subject to regular verifications during the field program using distilled or deionized water and standards for turbidity, conductivity and pH.

2.1.6 Data Analysis

2.1.6.1 Analytical Quality Assurance/Quality Control

Analytical and field precision were determined using the analytical results obtained for the duplicate samples, through the application of relative percent difference (RPD) calculations. Data were considered to be imprecise if the RPD between the duplicate samples was 20% or greater, for concentrations that were 5 times greater than the method detection limits (MDL). All imprecise data sets were flagged and investigated, where possible, to determine the cause of the discrepancy.

Field blank samples were used to assess the potential sources of contamination associated with the sample containers, preservatives, filters and filter apparatus, sample handling and transportation, as well as any potential contamination from the analytical procedures. Analytical results for field blanks should not exceed more than 5 times the MDL. Where a result was over five times the MDL the result was bolded in the summary table and noted in the QA/QC section.

Additionally, all water quality data were evaluated qualitatively for potential outliers, and transcription or analytical errors. Where values were encountered that departed considerably from results obtained at the same site during other sampling periods and/or where one replicate sample differed notably from the others, the measurement was flagged as suspect and if possible, an explanation for the differences was considered. When possible, values were verified against analytical laboratory reports for transcription

errors and/or requests were made to the analytical laboratory to verify the values through sample reanalysis and/or verification of reporting accuracy. In 2008, this form of data evaluation was commenced, however due to an extended stoppage of work, analytical checks were no longer possible due to sample holding times being exceeded.

The analytical laboratories are Canadian Association for Laboratory Accreditation (CALA) certified facilities and adhere to routine laboratory QA/QC procedures.

2.1.6.2 Analysis of Results

Summary statistics were generated for each area in the vicinity of the Mine Site, the proposed Railway (Camp Lake to Steensby Port) and Milne Port (Camp Lake to Milne Port) as an area-wide mean, minimum, maximum, standard deviation and percent (%) detectable results for all sampling periods. Measurements below the MDL were assigned a value equal to the detection limit for statistical analysis purposes. Area-wide means were calculated as the mean of all samples. The % detectable results were calculated based on the number of results above the MDL. For samples collected to the north and south of the Mine Site (Camp Lake to Steensby Port and Camp Lake to Milne Port) in 2005 and 2006 only, a count of the number of detectable results is shown instead of a percentage. A Canadian Council of Ministers of the Environment (CCME) Water Quality Index (WQI) value was calculated for each area/site based on all parameters for which a CCME guideline exists. Since the CCME guidelines pertain to total metals and not dissolved, the dissolved metals were not included in the WQI calculation.

Water quality data were compared to the CCME water quality guidelines for the Protection of Aquatic Life (PAL; updated in 2010) as well as the Canadian Drinking Water Quality Guidelines (Health Canada, 2008). Site-specific tables for all stream water quality sampling locations with comparison to CCME Freshwater Guidelines for the Protection of Aquatic Life and Canadian Drinking Water Quality Guidelines are included in Appendix D of the compendium report.

2.2 LAKE WATER QUALITY

2.2.1 Sampling Locations and Seasons

Sampling was generally undertaken during the summer (July) and fall (August/September). Winter (May) samples also have been collected since 2007. Sample locations were modified each year based on current and proposed Project activities, and were also dependent on factors such as accessibility, weather/ice conditions, and wildlife sightings.

In general, sampling areas in each year are described as follows:

Year	General Sampling Areas
2006	• Mine Site (includes Mine Infrastructure Area and Exploration Facilities Area) and Mary Lake
2007	• Mine Site (includes Mine Infrastructure Area and Exploration Facilities Area) and Mary Lake
2008	• Mine Site (includes Mine Infrastructure Area and Exploration Facilities Area) and Mary Lake • Steensby Port and vicinity • Railway (including Mid-Rail Camp Lake)

Sampling sites varied between the ice-cover and open-water season programs, due in part to conditions encountered in the winter (e.g. some sites were frozen to the lake bottom and could not be sampled). Table 2.4 provides a detailed summary of all sample locations for lake water quality.

Total depth, ice thickness (where applicable), and UTM coordinates were also recorded at each site for each sampling period. UTM coordinates were recorded using handheld GPS units. Secchi disk depth was measured at most sites during the open-water season.

2.2.2 Parameters

In situ parameters (temperature, DO, turbidity, pH and specific conductance/conductivity) were generally measured at each site. Grab samples were collected for laboratory analysis for the parameters listed in the laboratory quote in Appendix A the compendium report. *In situ* data was provided by North/South and is provided in Appendix B of the compendium report.

2.2.3 Sampling Methods

For winter sampling, sites were accessed using snowmobiles, and holes were augered through the ice. A water quality meter or a weighted, metered line was used to determine water depth, and an extendible gaff or a weighted, metered line was used to measure ice thickness. Snow depth was measured with a meter stick. Slush ice/snow was removed from sampling sites prior to sample collection.

During the open water season sites were accessed with, and sampled from, a zodiac equipped with a gas-powered motor. Sampling was initiated after the boat was anchored and stabilized. Water depth was measured with a Hydrolab Quanta multi-parameter probe (2006), Strike Master Polar Vision hand-held digital sonar, or its equivalent (2007 and 2008).

During winter sampling, *in situ* measurements were taken using a Hydrolab Quanta (2006), a Horiba U-10 Water Quality Checker (2007), or a YSI 600 QS Sonde (2008). In the open water season, a Hydrolab Quanta was used in 2006. In 2007, measurements were made using a YSI 85, Analite 160 Turbidity Meter, and a YSI 60. In 2008, a Horiba W-22XD was used for

in situ profiling. Depth profiles for DO, temperature, specific conductance, and turbidity were measured at 0.5 to 1 m intervals over the depth of the lake. In 2007, turbidity was measured to a maximum depth of 15 m in the open water season, which was the maximum length of the cable. Available *in situ* and depth profile measurements are provided in Appendix B of the compendium report.

Secchi disk depth was measured at each site where possible as the average of two measurements: the depth at which a black and white disk lowered into the water from the shady side of the boat was no longer visible; and the depth at which the disk reappeared when raised from the water column.

Lake water samples were collected by field staff using standard protocols, including the use of sampling gloves. The Kemmerer or van Dorn water samplers were cleaned before use and were rinsed with water from the site prior to sampling. Water samples were generally collected one metre below the ice (in winter) or water surface (in the open-water season), and one metre above the sediment; however in 2008, there were several sample locations for which only a shore sample was collected due to lack of boat access.

Sample bottles, provided by the analytical laboratories were filled and processed according to instructions provided by the laboratories. Where required, preservatives were added as soon as possible after sample collection and bottles were thoroughly mixed. Samples for dissolved metals were filtered in the field at the time of sample collection using an Acrodisc® 32 mm Syringe with a 0.45 µm Supor® membrane filter and the sample was preserved (acidified with nitric acid). Ten mL of sample water were dispensed from each syringe/filter apparatus prior to filling the sample bottles provided by the analytical laboratory.

Immediately after collection, samples were kept cool and in the dark and shipped to the laboratory under chain-of-custody. All samples were submitted for testing to both ALS and Accutest. Starting in 2008 all samples were submitted for testing to Accutest only who sub-contracted the metals analysis to ALS.

2.2.4 Laboratory Methods

Analytical methods for parameters measured at Accutest and ALS are provided in Appendix A of the compendium report.

2.2.5 Field Quality Assurance/Quality Control

Field QA/QC procedures included standard precautions to avoid sample contamination (e.g. gloves were worn during sample collection and handling), use of standard sampling protocols, and inclusion of QA/QC samples. Lake-specific QA/QC samples were not collected in 2006, as the lake water quality sampling and stream water sampling programs were combined; all QA/QC samples were collected at stream sampling locations.

QA/QC sample descriptions and collection frequencies are summarized below:

- Field Blanks were prepared in the field using deionized water. These samples were treated in the same manner as actual samples. The field blanks were field filtered and preserved using the same methodology as for actual water sample collection. In 2007 and 2008, a minimum of one field blank was submitted to the analytical laboratories during each sampling period.
- Replicate samples were collected at several locations as close in time as possible to other samples taken at these locations. In 2007 and 2008, a minimum of two triplicate samples were collected during each sampling period: one triplicate near the surface; and one triplicate near the bottom.
- Trip blanks were included whenever possible given weather and shipping constraints. These blanks were prepared by the analytical laboratory by filling one set of sample bottles with deionized water. Trip blanks were transported to the site with the empty sample bottles but were left unopened, and were then submitted for analysis along with the field samples.

QA/QC samples were analyzed for the same parameters as the actual samples.

Field meters were calibrated prior to departure and/or in the field, depending on the specifications of the instrument and the parameter being measured. Meters were also subject to regular verifications during the field program using distilled or deionized water and standards for turbidity, conductivity and pH.

2.2.6 Analytical QA/QC

QA/QC water quality samples (i.e. triplicate samples, field blanks, and trip blanks) were assessed according to standard criteria to evaluate precision and identify potential sample contamination issues (i.e. BCMELP 1998). Lake-specific QA/QC samples were not collected in 2006, as the lake water quality sampling and stream water sampling programs were combined (all QA/QC samples were collected at stream sampling locations). In 2007 and 2008 the lake water quality sampling was completed as a separate program from the stream sampling, thus lake-specific QA/QC sampling was completed.

Percent relative standard deviation (PRSD) was calculated for triplicate samples as follows:

$$\text{PRSD} = \text{Standard Deviation (SD) of the triplicate values} / \text{Mean of the triplicate values} \times 100$$

Relative percent mean difference (RPMD) was calculated for duplicate samples as follows:

$$\text{RPMD} = (\text{Duplicate 1} - \text{Duplicate 2}) / ((\text{Duplicate 1} + \text{Duplicate 2}) / 2) \times 100$$

Precision of triplicate and duplicate samples was evaluated using the “rule of thumb” criteria for precision of 18% and 25%, respectively (BCMELP 1998). Where one or more of the replicate values was less than five times the MDL, an analysis of precision was not undertaken, in accordance with guidance provided in BCMELP (1998).

Field blank results were also evaluated for evidence of sample contamination. Values for any parameter that exceeded five times the MDL were considered to be indicative of sample contamination and/or laboratory error.

Additionally, water quality data from 2005-2007 were evaluated qualitatively for potential outliers, and transcription or analytical errors. Where values were encountered that departed considerably from results obtained at the same site during other sampling periods and/or where one replicate sample differed notably from the others, the measurement was flagged as suspect. In these instances, values were verified against analytical laboratory reports for transcription errors and/or requests were made to the analytical laboratory to verify the values through sample reanalysis and/or verification of reporting accuracy. In 2008, this form of data evaluation was commenced, however due to an extended stoppage of work analytical checks were no longer possible due to sample holding times being exceeded.

The analytical laboratories are CALA certified facilities and adhere to routine laboratory QA/QC procedures.

2.2.7 Analysis of Results

Where greater than two sets of data were present for each lake, summary statistics including a lake-wide mean, standard deviation and % detectable results were calculated. When two sets of data were present only a lake-wide mean was calculated. Measurements below the MDL were assigned a value equal to the detection limit for statistical analysis purposes. Lake-wide mean included both surface and bottom samples for each lake for all years. The % detectable results were calculated based on the number of results above the MDL.

Water quality data were compared to the CCME water quality guidelines for the Protection of Aquatic Life (PAL; updated in 2010) and the Canadian Drinking Water Quality Guidelines (Health Canada, 2008).

2.3 SEDIMENT QUALITY

2.3.1 Sampling Locations and Seasons

Sediment sampling was generally undertaken during the fall (August/September). Winter (May) samples were collected in 2007 and 2008. Sample locations were modified each year based on current and proposed Project activities and were dependent on factors such as accessibility, weather/ice conditions, and wildlife sightings.

In general, sampling areas in each year are described as follows:

Year	General Sampling Areas
2005	• Mine Site (includes Mining Area, Mine Infrastructure Area and Exploration Facilities Area), Mary Lake, and vicinity
2006	• Mine Site (includes Mining Area, Mine Infrastructure Area and Exploration Facilities Area), Mary Lake, and vicinity
2007	• Mine Site (includes Mining Area, Mine Infrastructure Area and Exploration Facilities Area), Mary Lake, and vicinity
2008	• Mine Site (includes Mining Area, Mine Infrastructure Area, Exploration Facilities Area), Mary Lake, and vicinity • Steensby Port and surrounding area (includes Steensby Port area lakes and streams)

Sampling sites varied between the ice-cover and open-water season programs in part due to conditions encountered in the winter (i.e., some sites were frozen to the bottom and could not be sampled). Table 2.5 lists all sediment sampling locations from 2005-2008.

2.3.2 Parameters

Analysed sediment quality parameters included nutrients, metals, major ions and particle size. A detailed list of parameters is provided in Appendix A of the compendium report.

UTM coordinates, a site description (i.e. water depth, ice depth) and observations of sediment odour and appearance (texture, colour) were collected at each site.

2.3.3 Sampling Methods

Different sampling methods were employed for lake and stream sediment sampling. In each case the sediment fraction was collected from the top 5 cm of the benthos, in order to facilitate comparison to CCME Canadian Sediment Quality Guidelines (CSQG; 1999, updated to 2010) and because analysis of this fraction would be more likely to detect a post-Project effect than a deeper sample. Available field record sheets are included in Appendix B of the compendium report.

2.3.3.1 Lake Sediment Sampling

Lake sediment samples were collected with an Ekman sampler (225 cm²) in August 2006 and May 2007 and with a Petit Ponar grab sampler (225 cm²) in fall 2007 and 2008. The samplers were slowly lowered and raised (at ~0.3 m/s for North/South and ~0.5 m/s for KP) to minimize turbulence and to prevent creation of shock waves. In 2006 the contents of the Eckman were visually assessed through the top of the device; for more consolidated sediments the contents of the Eckman were released into the plastic pan. If not consolidated the sample was obtained by reaching in through the top of the Eckman. For all other years, once retrieved, the sampler was placed in a plastic pan, the water was gently poured or siphoned off and, if the grab met the

conditions of acceptability, the sample was processed. The grab samples collected by North/South had to meet the following criteria of acceptability:

- Overlying water was either clear (if present) or not excessively turbid
- The sediment-water interface was intact without signs of channelling, sample washout or over-penetration
- Desired depth of penetration was achieved (minimum penetration depth of 6 to 8 cm)
- There was no evidence of incomplete closure of the device or that the sampler was inserted on an angle or tilted upon retrieval

Sub-samples were then collected either from within the sampler (where sediments were not consolidated) or after the sampler had been removed from the pan. The upper 5 cm of sediments were removed with a stainless steel spatula or a graduated corer, avoiding the edges of the sampler. Sub-samples were then placed in a glass bowl for compositing, where required, and the un-used sediments were placed in a bucket to be released after the sampling was completed.

In May 2007, only one grab was collected per site. In the open-water seasons of 2007 and 2008, a minimum of one to two grabs were collected to provide sufficient sample for analysis. Where more than one grab was collected, samples were separated spatially, but as close together as feasible to ensure that sampling disturbances from one grab did not affect another and replicate grab samples were homogenized.

2.3.3.2 Stream Sediment Sampling

In streams (including rivers), sediments were collected from up to 14 different micro-sites within the sampling area, until sufficient sample was collected to fill the required sample containers. Stream sediment samples were collected from within the wetted perimeter of the watercourse, usually in water from 10 to 40 cm deep, as near as possible to the established water quality sample location. Samples were collected by wading in an upstream direction, collecting sediments from the surface of the stream bed in run and riffle areas at micro-sites where sufficient fines (particles <2 mm diameter) had accumulated. Care was taken to minimize the disturbance of the stream bottom in order to preserve site integrity for subsequent sampling for benthic invertebrates.

Sediments were collected using a clean, 500 mL sample jar. The jar was inserted approximately 5 to 10 cm into the bottom sediments and a stainless steel spatula or a clean gloved hand was inserted under the opening of the jar to trap the sediments. The jar was then slowly raised out of the stream, excess water was carefully decanted, and the upper 5 cm maximum of sediments was extruded into a stainless steel bowl for compositing.

Immediately after collection, samples were stored on ice and in coolers. All samples were submitted for testing to Accutest.

2.3.4 Laboratory Methods

Analytical methods for parameters measured at Accutest are provided in Appendix A of the compendium report.

2.3.5 Field Quality Assurance/Quality Control

Standard QA/QC procedures were adhered to during the collection of sediment samples (i.e. wearing gloves) and samples were analyzed at an accredited analytical laboratory. In particular, equipment was thoroughly cleaned between sites and was rinsed with ambient water prior to sampling at each site. Triplicate samples were collected at eight sampling sites in 2007 and two sampling sites in 2008 to provide a measure of variability and precision. In addition to the triplicate samples, homogenate duplicates were collected at two sampling sites in 2008.

2.3.6 Data Analysis

2.3.6.1 Analytical Quality Assurance/Quality Control

QA/QC sediment quality samples (i.e. triplicate and homogenate duplicate) were assessed according to standard criteria to evaluate precision and identify potential sample contamination issues (BCMELP 1998).

Generally all sediment quality data were evaluated qualitatively for potential outliers, and transcription or analytical errors. Where values were encountered that departed considerably from results obtained at the same site during other sampling periods and/or where one replicate sample differed notably from the others, the measurement was flagged as suspect. In these instances, values were verified against analytical laboratory reports for transcription errors and/or requests were made to the analytical laboratory to verify the values through sample reanalysis and/or verification of reporting accuracy.

The analytical laboratory is a CALA certified facility and adheres to routine laboratory QA/QC procedures.

2.3.6.2 Analysis of Results

Means were derived for the purposes of presentation and discussion of results. Any value below an MDL was assigned a value equal to the detection limits for data analysis purposes.

Sediment quality data were compared to the CCME Canadian Sediment Quality Guidelines (CCME 1999, updated to 2008) and to the Ontario Sediment Quality Guidelines (OSQG; MOE 1993) for parameters for which there are no CCME sediment quality guidelines. The CCME CSQG for sediment include a lower level, the Interim Sediment Quality Guidelines (ISQG), and an upper level, the Potable Effect Level (PEL), while the OSQG include Lowest Effect Levels (LEL) and Severe Effect Levels (SEL). The ISQG are currently under development with the intent to derive the guidelines based

on multiple approaches. The ISQG are currently only based on a modification of the National Status and Trends Program (modified NSTP) approach and only cover select parameters. In the future, the ISQG will also consider the Spiked-Sediment Toxicity Test (SSTT) approach. It is recommended by the CCME that the ISQG be used in conjunction with other supporting information (i.e. the OSQG) and that this set of guidelines be treated as full sediment quality guidelines. In consideration of this recommendation, the OSQG LEL and SEL have been used to support the CCME ISQG.

SECTION 3.0 - RESULTS

3.1 STREAM WATER QUALITY

The *in situ* and analytical data summary statistics for water quality samples for 2005 through 2008 are provided in Tables 3.1 to 3.3. The stream water quality data were evaluated according to the CCME CWQG PAL and the WQI. All data was also compared to the Health Canada “Canadian Drinking Water Quality Guidelines” (CDWQG). The available site-specific analytical and *in situ* data for stream water quality sampling locations between 2005 and 2008 are provided in Appendix D of the compendium report.

The following sections summarize the stream water quality for each key Project area.

3.1.1 Mine Site

The Mine Site consists of the following areas: Tom River Area, Upstream of Deposits, Downstream of Deposits, Mary River - Downstream of Mary Lake, Tributary of Mary Lake, Tributaries of Sheardown Lake, Background Tributary to Mary River, Tributaries of Camp Lake and Drainages off of the Deposit. The sampling locations are shown on Figure 1.2. The following is a summary of water quality within the areas.

3.1.1.1 Tom River Area

The Tom River Area is considered to be background water quality compared to all other areas within the Mine Site, as it is situated in a separate watershed, thus no impact from activities within the Mine Site will affect the area.

Water quality data from the Tom River sites were evaluated according to the CCME WQI indicating good water quality between 2005 and 2008. The 2005 to 2008 values averaged 86, which indicates that the “water quality is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2001).

Water temperatures for the Tom River Area sites ranged from -0.10 to 13.55°C. Specific conductance (SpC) values ranged from 0.042 to 0.212 mS/cm. Values for pH were neutral to slightly alkaline, ranging from 6.90 to 8.90.

All dissolved oxygen (DO) concentrations were greater than CCME guidelines and averaged 12.77 mg/L

Alkalinity and hardness were similar in value and ranged from 23 to 106 mg/L CaCO₃ and 22.0 to 118.0 mg/L CaCO₃, respectively. Total Dissolved Solids (TDS) concentrations ranged from 31 to 148 mg/L. Total Suspended Solids (TSS) concentrations were all relatively low, being below the MDL of 2 to 3 mg/L. Sulphate, bromide, chloride, most nitrogen based compounds, phenols, total organic carbon (TOC), dissolved organic carbon (DOC) and total Kjeldhal nitrogen (TKN) were generally detected in low

concentrations. The MDL for some analyses completed in 2006 were above the current CCME guideline of 0.06 mg/L. Concentrations of nitrate ranged from below the MDL to 0.10 mg/L.

Values for turbidity ranged from 0.1 to 18.4 NTU with an average of 2.0 NTU.

Sample sites IO-01 and IO-04 for June 2007 both had total aluminum concentrations above the CCME guidelines (0.125 and 0.116 mg/L, respectively). The concentrations of all other measured parameters were less than their respective CCME guidelines.

No exceedances were indicated when the data was compared to the Canadian Drinking Water Quality Guidelines.

3.1.1.2 Upstream of Deposits

Data from the sites Upstream of Deposits were evaluated using the CCME WQI indicating good water quality between the years 2005 and 2008. The site specific values averaged 80, which indicates that the “water quality is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2010).

Sample sites Upstream of Deposits are located on Mary River (G0-09 and H0-01). Sample site G0-09 is also a weekly sampling site.

Water temperatures for the sites Upstream of Deposits ranged from -0.1 to 12.49°C. Values for SpC ranged from 0.011 to 0.218 mS/cm. Surface water in the sites Upstream of Deposits was neutral to slightly alkaline with pH values ranging between 6.72 and 8.34 with an average pH of 7.76.

DO concentrations were greater than the CCME guidelines and ranged from 10.19 to 14.81 mg/L.

Alkalinity and hardness were similar in magnitude with concentrations that ranged from below the MDL to 102 mg/L as CaCO₃ and from 5.0 to 113.0 mg/L as CaCO₃, respectively. Concentrations of TDS ranged from below the MDL to 150 mg/L with an average concentration of 63 mg/L. Sulphate, bromide, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters below the MDL. Chloride concentrations were generally low.

Values for turbidity ranged from 0.5 to 34.6 NTU and concentrations of TSS ranged from below the MDL to 36 mg/L.

Three of the four sample sites had aluminum concentrations above CCME guidelines in 2006 and 2007, and one site had an exceedance in 2008. Two sample sites also had iron concentrations above the CCME guideline of 0.3 mg/L between 2005 and 2008.

When compared to the Canadian Drinking Water Quality Guidelines, sample site G0-09 had exceedances for pH in 2006 and total iron in 2007. H0-01 also had total iron exceedances in 2007.

3.1.1.3 Downstream of Deposits

The water quality data from the sites Downstream of Deposits were evaluated according to the CCME WQI. These sites received an average value of 74 (Fair), indicating water quality that 'is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels'.

Water temperatures ranged from -0.1 to 17.07°C. Values for SpC ranged from 0.007 to 8.253 mS/cm. The pH for sites Downstream of Deposits varied between neutral and slightly alkaline (6.14 to 8.64) with an average pH of 7.80.

Several concentrations of DO were above CCME guidelines and ranged from 9.28 to 19.67 mg/L.

Alkalinity and hardness varied extensively from each other compared to all other sample areas. Alkalinity values ranged from below the MDL to 143 mg/L as CaCO₃ and hardness ranged from 5.0 to 4210.0 mg/L as CaCO₃.

Concentrations of TSS ranged from below the MDL of 2 to 20 mg/L with 72% of the results being below the MDL. Concentrations of TDS ranged from below the MDL to 5,910 mg/L with an average concentration of 319 mg/L. Sulphate, bromide, most nutrients, phenols, TOC and DOC were generally all low and/or below their respective MDL. The MDL for nitrate in 2005 was equal to the current CCME guideline. Chloride concentrations varied with results below the MDL to 2,890 mg/L. Baffinland Iron Mines Corporation 2009 Annual Report to the Nunavut Water Board, March 31, 2010 provides a more detailed explanation of any potential drilling influences on the surface water quality in this area.

Values of turbidity ranged from below the MDL of 0.1 to 35.9 NTU.

Aluminum and iron had the majority of concentrations above the CCME guidelines. Aluminum concentrations ranged from below the MDL to 2.6900 mg/L. Iron concentrations ranged from below the MDL of 0.03 to 2.960 mg/L.

Sample locations E3-01 and E4-01 had chloride and selenium concentrations above the CCME guidelines of ≤250 mg/L and 0.01 mg/L, respectively. Sample location E3-01 also had arsenic, manganese and lead concentrations above the respective CCME guidelines of 0.01 mg/L, ≤0.05 mg/L respectively. CCME guidelines for lead vary based on hardness. Sample site E3-01 also had a selenium concentration above the CCME guideline of 0.001 mg/L with a concentration of 0.030 mg/L in late August 2007.

When compared to the Canadian Drinking Water Quality Guidelines, the majority of sample locations had a minimum of one (1) *in situ* and/or laboratory pH result, which was outside of the acceptable range of 6.5-8.5. The majority of the sample locations also had a minimum of one (1) iron result above the CCME guideline of 0.3 mg/L. There were two (2) instances where *in situ* temperature and TDS exceeded the respective guidelines of ≤ 15 °C and ≤ 500 mg/L.

3.1.1.4 Mary River - Downstream of Mary Lake

The water quality data from the sites on Mary River, downstream of Mary Lake, were evaluated according to the CCME WQI. These sites received an average value of 81 (Good), indicating water quality that 'is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels'.

Water temperatures ranged from -0.1 to 11.67°C. Values for SpC ranged from 0.040 to 0.178 mS/cm. The pH for the sites on Mary River, downstream of Mary Lake, varied between neutral and slightly alkaline (6.60 to 8.28) with an average pH value of 7.55.

All concentrations of DO were above CCME guidelines and ranged from 9.97 to 14.75 mg/L.

Alkalinity and hardness were similar and ranged from 20 to 68 mg/L as CaCO₃ and from below the MDL to 72.7 mg/L as CaCO₃, respectively. Turbidity ranged from 0.3 to 2.7 NTU. Concentrations of TSS ranged from below the MDL of 2 to 9 mg/L with 95% of the results being below the MDL. Concentrations of TDS ranged from below the MDL to 77 mg/L with an average concentration of 44 mg/L. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC were generally all low and/or below their respective MDLs.

Aluminum, copper, iron, lead and silver had concentrations above CCME guidelines. The aluminum concentrations above the CCME guidelines were 0.102 and 0.360 mg/L. One copper concentration (site A0-10 in June 2006) was at the CCME guideline of 0.004 mg/L. The lead concentration (site A0-10 in June 2006) above the CCME guideline was 0.008 mg/L. The silver concentration (site A0-10 in June 2006) above the CCME guideline was 0.0006 mg/L.

When compared to the Canadian Drinking Water Quality Guidelines, the only concentration above the CDWQG was at A0-10, with an iron concentration exceeding the guideline limit in 2007.

3.1.1.5 Tributary of Mary Lake

At the request of North/South a tributary (B3-01) flowing into Mary Lake from the west was sampled once in 2008. When reviewed it was found that none of the parameters exceeded the CCME guidelines nor the Canadian Drinking Water Quality Guidelines. Statistics were not calculated on data from this site, as only a single sample was collected by KPL.

3.1.1.6 Tributaries of Sheardown Lake

The stream water quality data from the Tributaries of Sheardown Lake were evaluated according to the CCME WQI and these sites have received values indicating good water quality between 2005 and 2008. The 2005 values averaged 86 which indicates that the “water quality is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2001).

Water temperatures for the sites in the Tributaries of Sheardown Lake ranged from 0.05 to 14.25°C. The SpC results ranged from 0.024 to 0.237 mS/cm. Values for pH were near neutral to slightly alkaline, ranging from 6.78 to 8.44.

Several concentrations of DO were above CCME guidelines and ranged from 8.91 to 15.2 mg/L.

Alkalinity and hardness were similar in value and ranged from 12 to 157 mg/L CaCO₃ and 9.0 to 171.0 mg/L CaCO₃, respectively. Concentrations of TDS ranged from below the MDL to 187 mg/L. Concentrations of TSS were generally all low being below the MDL of 2 to 21 mg/L. Sulphate, bromide, nitrogen-based compounds, phenols, TOC, DOC and TKN generally had low concentrations. Chloride concentrations for all thirteen sites ranged from below the MDL of 1 to 21 mg/L with an average of 3 mg/L.

Values of turbidity ranged from 0.1 to 15.8 NTU with an average of 1.3 NTU.

There were no other results that exceeded CCME guidelines in the Tributaries of Sheardown Lake.

When compared to the Canadian Drinking Water Quality Guidelines, sample locations D0-01 and D1-03 had the only concentrations above the guidelines, for iron in 2008 and 2005, respectively.

3.1.1.7 Background Tributary to Mary River

Data from the sites in the Background Tributary to Mary River were evaluated using the CCME WQI. The values for these sites averaged 78 which is indicative of fair water quality and water quality that “is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Background Tributary to Mary River include E2-01 (just upstream of the confluence with Mary River), E2-03, E2-05 and E2-08.

Water temperatures for the Background Tributary to Mary River ranged from 0.27 to 15.32°C. Values for SpC ranged from 0.016 to 0.149 mS/cm. Surface water in the sites in the Background Tributary to Mary River were near neutral to slightly alkaline with pH values ranging between 6.27 to 8.18 with an average of 7.65.

Several concentrations of DO were above CCME guidelines and ranged from 8.87 to 15.61 mg/L.

Alkalinity and hardness concentrations were similar with concentrations ranging from 6 to 84 mg/L CaCO₃ and 7.9 to 94.7 mg/L CaCO₃, respectively. Concentrations of TSS were generally low for all of the sites and ranged from below the MDL to 4 mg/L with 83% of the results being below the MDL. Concentrations of TDS ranged from 34 to 112 mg/L with an average of 64 mg/L. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters below the MDLs.

Values for turbidity ranged from 0.2 to 10.8 NTU.

There were no other results which exceeded CCME guidelines in the Background Tributary to Mary River.

When compared to the Canadian Drinking Water Quality Guidelines, sample location E2-01 had an *in situ* temperature measurement above the guideline of 15 °C.

3.1.1.8 Tributaries of Camp Lake

Data from the Tributaries of Camp Lake sampling locations were evaluated using the CCME WQI. The values for these sites averaged 84 which is indicative of good water quality and water quality that “is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Tributaries of Camp Lake area include J0-01, J1-01, J2-01, K0-01, L0-01 and M0-01.

Water temperatures for the Tributaries of Camp Lake ranged from -0.17 to 17.81°C. Values for SpC ranged from 0.000 to 0.234 mS/cm. Surface waters in the Tributaries of Camp Lake were slightly acidic to slightly alkaline with pH values ranging from 4.94 to 8.71 with an average of 7.84.

Concentrations of DO and values for pH exceeded CCME guidelines. All concentrations of DO were above CCME guidelines and ranged from 9.52 to 16.51 mg/L. Values for pH at sites M0-01 in 2005 and L0-01 in 2007 were 4.94 and 6.33, respectively.

Alkalinity and hardness concentrations were similar with concentrations ranging from 10 to 133 mg/L CaCO_3 and 9.0 to 149.0 mg/L CaCO_3 , respectively. Turbidity values ranged from 0.1 to 4.2 NTU with an average of 0.7 NTU. Concentrations of TSS were generally low for all of the sites and ranged from below the MDL to 5 mg/L with 75% of the results being below the MDL. Concentrations of TDS ranged from below the MDL to 172 mg/L with an average of 91 mg/L. Sulphate, bromide, chloride, most nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters below the MDLs. The MDL for nitrate in 2005 was equal to the current CCME guideline. For all other years, nitrate concentrations ranged from below the MDL to 0.015 mg/L with an average of 0.005 mg/L.

Aluminum, copper, nickel and iron had concentrations above CCME guidelines. The aluminum concentrations above CCME guidelines ranged from 0.0031 to 0.1890 mg/L with an average of 0.0578 mg/L. The copper concentrations above CCME guidelines ranged from 0.00052 to 0.00300 mg/L with an average of 0.00114 mg/L. The nickel concentrations above CCME guidelines ranged from 0.00053 to 0.00344 mg/L with an average of 0.00148 mg/L. The iron concentration above CCME guidelines was 0.50 mg/L in site M0-01 in June 2007.

When compared to the Canadian Drinking Water Quality Guidelines, only one iron concentration was above the guideline of 0.3 mg/L. In addition there were two (2) temperature exceedances and five (5) *in situ* pH values outside the range of 6.5-8.5.

3.1.1.9 Drainages off of the Deposit

Results from the sites in Drainages off of the Deposit were evaluated using the CCME WQI. The values for these sites averaged 80 which is indicative of good water quality and water quality that “is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Drainages off of the Deposit area include E3-08, F0-05, K0-05, K1-01, L1-02, L1-03, L1-06, L1-08 and L2-03.

Water temperatures in the Drainages off of the Deposit ranged from 0.08 to 11.93°C. Values for SpC ranged from 0.025 to 0.915 mS/cm. Surface water in the Drainages off of the Deposit were near neutral to slightly alkaline with pH values ranging from 6.27 to 8.32 with an average of 7.52.

Several concentrations of DO were above CCME guidelines and ranged from 9.22 to 16.04 mg/L.

Alkalinity and hardness concentrations differed substantially with concentrations ranging from 9 to 102 mg/L CaCO_3 and 11.5 to 1204.0 mg/L CaCO_3 , respectively. TDS concentrations ranged from below the MDL to 2,230 mg/L with an average of 151 mg/L. Sulphate, bromide, chloride, most nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters below the MDLs.

Some values or concentrations for TSS and nitrate were above or at CCME guidelines. The one concentration of TSS above the CCME guideline was 56 mg/L. Note that the nitrate MDL in 2005 was equal to the current CCME guideline.

Aluminum, copper, iron and silver had concentrations above the CCME guidelines for a number of samples. The aluminum concentrations above CCME guidelines ranged from below the MDL to 0.7180 mg/L. The copper concentrations ranged from 0.0006 to 0.0041 mg/L. The two iron concentrations above CCME guidelines were 1.51 and 0.812 mg/L. The silver concentration above the CCME guideline was 0.0003 mg/L. The MDL for arsenic in 2005 was equal to the current CCME guideline of 0.005 mg/L. For all other years, arsenic concentrations ranged from below the MDL for those years to 0.00013 mg/L.

When compared to the Canadian Drinking Water Quality Guidelines, sample location E3-08 (only sampled once in 2005) had TDS, chloride, iron and manganese concentrations above these guidelines. Sample location K0-05 also had two (2) iron concentrations above the guideline of 0.3 mg/L. Sample location L1-08 had one (1) pH value outside of the acceptable range of 6.5 – 8.5.

When comparing the stream water quality between areas within the Mine Site based on CCME Water Quality Index values (WQI), the Tom River Area and Tributaries of Sheardown Lake both showed the highest quality of water, with WQI values of 86, or 'good'. This suggests water quality, which 'is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels'. The area with the lowest WQI value (74 or 'fair') was the area Downstream of the Deposits. This is expected, as some impact from drilling has been documented.

3.1.2 Proposed Railway and Steensby Port Area

In general the Proposed Railway and Steensby Port Area sites were chosen based on potential transportation routes. Other sites within this area were chosen based on other requirements of the Project for any given period. The area consists of the following sub-areas: Cockburn Area, Ravn River - Upstream of Angajurjualuk Lake, Rowley River, Steensby Port Area, Mid-Rail Camp Area and Sampling Locations between Camp Lake and Steensby Port. The following is a summary of water quality within the area. Figure 1.3 shows all locations sampled between 2005 and 2008.

3.1.2.1 Cockburn Area

Data from the sites in the Cockburn Area were evaluated using the CCME WQI. The values for these sites averaged 75 which is indicative of fair water quality and water quality that “is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Cockburn Area include: S1-100, S2-065 and S2-070.

Water temperatures in the Cockburn Area ranged from 0.02 to 13.48°C. Values for SpC ranged from 0.005 to 0.015 mS/cm.

All concentrations of DO and some values of pH exceeded CCME guidelines. Concentrations of DO ranged from 10.30 to 14.90 mg/L. Surface water in the Cockburn Area was slightly acidic to near neutral with pH values ranging from 5.88 to 7.55 with an average of 6.57.

Alkalinity and hardness concentrations were similar with concentrations ranging from below the MDL to 6 mg/L CaCO₃ and 1.0 to 3.9 mg/L CaCO₃, respectively. Concentrations of TDS ranged from below the MDL to 49 mg/L. All concentrations of TSS were below the MDL. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters below their respective MDLs.

Values for turbidity ranged from 0 to 9 NTU with an average of 1.6 NTU.

Aluminum had concentrations above the CCME guidelines with concentrations ranging from 0.0089 to 0.2040 mg/L with an average of 0.0496 mg/L. No other parameters were at or above CCME guidelines.

When compared to the Canadian Drinking Water Quality Guidelines all three sites had several *in situ* and laboratory pH values outside the range of 6.5-8.5.

3.1.2.2 Ravn River - Upstream of Angajurjualuk Lake

Data from the site in the Ravn River area upstream of Angajurjualuk Lake were evaluated using the CCME WQI. The values for these sites averaged 75, which is indicative of fair water quality and water quality that “is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Ravn River - Upstream of Angajurjualuk Lake area include: S2-030.

Water temperatures in the area ranged from 0.23 to 6.97°C. Values for SpC ranged from 0.009 to 0.038 mS/cm.

All concentrations of DO and some values for pH exceeded the CCME guidelines. Concentrations of DO ranged from 9.54 to 15.21 mg/L. Surface water in the area was slightly acidic to slightly alkaline with pH values ranging from 6.43 to 8.50 with an average of 7.91.

Alkalinity and hardness were similar with concentrations ranging from below the MDL to 21 mg/L CaCO_3 and 3.0 to 18.0 mg/L CaCO_3 , respectively. Concentrations of TDS ranged from 6 to 66 mg/L. Turbidity ranged from 1 to 4 NTU with an average of 2 NTU. All concentrations of TSS were below the MDL. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters reporting below the MDLs.

Aluminum concentrations above the CCME guidelines ranged from 0.0140 to 0.1530 mg/L with an average of 0.0662 mg/L. No other parameters were at or above CCME guidelines.

When compared to the Canadian Drinking Water Quality Guidelines, sampling location S2-030 had two temperature and two *in situ* pH exceedances as well as one (1) laboratory pH exceedance.

3.1.2.3 Rowley River

Data from the sites in the Rowley River area were evaluated using the CCME WQI. The values for these sites averaged 80 which is indicative of fair water quality and water quality that “is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels” (CCME, 2001).

The only sample site in the Rowley River area is S2-100.

Water temperatures in the Rowley River area ranged from 0.24 to 6.97°C. Values for SpC ranged from 0.008 to 0.029 mS/cm.

All concentrations of DO and some values for pH exceeded the CCME guidelines. Concentrations of DO ranged from 12.17 to 13.94 mg/L. Surface water in the Rowley River area was slightly acidic to slightly alkaline with pH values ranging from 6.14 to 8.48 with an average of 7.26.

Alkalinity and hardness concentrations were similar with concentrations ranging from below the MDL to 13 mg/L CaCO_3 and 4.0 to 9.1 mg/L CaCO_3 , respectively. Concentrations of TSS ranged from below the MDL to 8 mg/L. Concentrations of TDS ranged from 8 to 60 mg/L. Values for turbidity ranged from 0 to 3 NTU. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters reporting below the MDLs.

Aluminum concentrations above the CCME guidelines with concentrations ranged from 0.0120 to 0.1480 mg/L with an average of 0.0510 mg/L. No other parameters were at or above CCME guidelines.

When compared to the Canadian Drinking Water Quality Guidelines, sampling location S2-100 had no exceedances.

3.1.2.4 Steensby Port Area

Data from the sites in the Steensby Port Area were evaluated using the CCME WQI. The values for these sites averaged 90, which is indicative of good water quality and water quality that “is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Steensby Port Area include: km 3 Lake, S-Camp-DS and SL3-OUT (km 10 Lake).

Water temperatures in the Steensby Port Area ranged from 1.30 to 12.06°C. Values for SpC ranged from 0.011 to 0.292 mS/cm.

Several concentrations of DO and some values for pH exceeded the CCME guidelines. Concentrations of DO ranged from 8.79 to 13.37 mg/L with an average of 11.80 mg/L. Surface water in the Steensby Port Area was slightly acidic to near neutral with pH values ranging from 6.36 to 7.28 with an average of 6.91.

Alkalinity and hardness concentrations were similar with concentrations ranging from below the MDL to 91 mg/L CaCO_3 and 3.7 to 107.0 mg/L CaCO_3 , respectively. Concentrations of TSS ranged from below the MDL to 16 mg/L. Concentrations of TDS ranged from 11 to 194 mg/L. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters reporting below the MDLs.

Metals concentrations reporting above CCME guidelines included aluminum and iron. Aluminum concentrations ranged from 0.0065 to 0.6340 mg/L with an average of 0.1034 mg/L. Iron concentrations ranged from below the MDL to 0.95 mg/L with an average of 0.16 mg/L.

When compared to the Canadian Drinking Water Quality Guidelines, sampling locations km 3 Lake and SL3-OUT (km 10 Lake) had the only exceedances, which were for *in situ* and laboratory pH and one (1) iron result.

3.1.2.5 Mid-Rail Camp Area

Data from the sites in the Mid-Rail Camp Area were evaluated using the CCME WQI. The values for these sites averaged 81 which is indicative of good water quality and water quality that “is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels” (CCME, 2001).

Sample sites in the Mid-Rail Camp Area include: Nivek, Nivek-IN and Nivek-OUT.

Water temperatures in the Mid-Rail Camp Area ranged from 0.61 to 16.20°C. Values for SpC ranged from 0.012 to 0.048 mS/cm.

Several concentrations of DO and values for pH exceeded the CCME guidelines. Concentrations of DO ranged from 8.96 to 12.94 mg/L with an average of 11.70 mg/L. Surface water in the Mid-Rail Camp Area was slightly acidic with pH values ranging from 5.57 to 6.96 with an average of 6.22.

Alkalinity and hardness concentrations were similar with concentrations ranging from below the MDL to 10 mg/L CaCO₃ and 3.5 to 16.7 mg/L CaCO₃, respectively. Concentrations of TSS were all below the MDL. Concentrations of TDS ranged from 8 to 33 mg/L. Values of turbidity ranged from 0.4 to 6 NTU. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters reporting below the MDLs.

Metals concentrations reporting above CCME guidelines included aluminum and iron. Aluminum concentrations ranged from 0.0065 to 0.1530 mg/L with an average of 0.0391 mg/L. Iron concentrations ranged from below the MDL to 0.44 mg/L with an average of 0.19 mg/L.

When compared to the Canadian Drinking Water Quality Guidelines, several laboratory and *in situ* pH values were outside of the acceptable range of 6.5-8.5. There was also one (1) iron exceedance for Nivek-Out as well as a manganese exceedance for Nivek.

3.1.2.6 Sampling Locations between Camp Lake and Steensby Port

There are several other sampling locations which were only sampled in 2005 and/or 2006 that are located between Camp Lake and Steensby Port. Statistics were completed for each of these locations for each year sampled (rather than completing statistics on grouped areas of sites that continued to be sampled), and these are shown in Table 3.2.

In 2005 and 2006, the WQI was applied to each sampling location each year. The values for these sites ranged from 74.3, or fair, in which “water quality is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels” (CCME, 2001) to 100, or excellent, in which “water quality is protected with a virtual absence of threat or impairment; conditions very close to natural or pristine

levels" (CCME, 2001). There were no exceedances of CCME guidelines for the samples collected at these locations.

When compared to the Canadian Drinking Water Quality Guidelines, the majority of sampling locations had *in situ* and/or laboratory pH values outside of the acceptable range of 6.5-8.5. There were only three (3) iron concentrations above the guideline of 0.3 mg/L.

When comparing all of the areas included in the Proposed Railway and Steensby Port Area, the sampling locations between Camp Lake and Steensby Port (sampled only in 2005 and/or 2006) had the highest WQI value of 92.1 or 'good'.

3.1.3 Milne Port Area

The Milne Port area sites consist of the following sub-areas: Milne Port Camp and the area between Camp Lake and Milne Port. Sample locations are shown on Figure 1.4. The following is a summary of water quality within each area.

3.1.3.1 Milne Port Camp

Data from the sites in the Milne Port Camp area were evaluated using the CCME WQI. The values for these sites averaged 75 which is indicative of fair water quality and water quality that "is usually protected but occasionally threatened or impaired; conditions sometimes depart from natural or desirable levels" (CCME, 2001).

The only sample site in the Milne Port Camp area is M-Camp-DS.

Water temperatures in the Milne Port Camp area ranged from 2.74 to 13.26°C. Values for SpC ranged from 1.29 to 2.04 mS/cm. Surface water in the Milne Port Camp area was slightly alkaline with pH values ranging from 7.70 to 8.79 with an average of 8.16.

All concentrations of DO exceeded the CCME guidelines. Concentrations of DO ranged from 12.96 to 17.37 mg/L with an average of 14.45 mg/L.

Alkalinity and hardness concentrations differed with concentrations ranging from 70 to 173 mg/L CaCO₃ and 329.0 to 484.0 mg/L CaCO₃, respectively. Concentrations of TDS ranged from 897 to 1,350 mg/L. Values of turbidity ranged from 0.4 to 6 NTU. Sulphate, bromide, chloride, nutrients, phenols, TOC and DOC concentrations were all generally low with several of these parameters reporting below the MDLs.

Concentrations of TSS exceeded CCME guidelines. Concentrations of TSS ranged from 4 to 51 mg/L with an average of 19.67 mg/L. Values for turbidity ranged from 2.1 to 15.7 NTU with an average of 6.73 NTU.

Metals concentrations reporting above CCME guidelines included only aluminum with concentrations ranging from 0.018 to 0.72 mg/L with an average of 0.28 mg/L.

When compared to the Canadian Drinking Water Quality Guidelines, sampling location M-Camp-DS had one (1) laboratory pH and one (1) iron concentration above the respective guidelines, as well as two (2) sodium concentrations above the guideline of 200 mg/L. Both TDS and chloride were above the respective guidelines for all three sampling dates.

3.1.3.2 Area between Camp Lake and Milne Port

Sample locations between Camp Lake and Milne Port were sampled in 2005 and 2006 for potential transportation routes. Data from these sites were evaluated using the WQI for 2005 and 2006. The WQI values ranged from 97.3 to 100, indicating “water quality is protected with a virtual absence of threat or impairment; conditions very close to natural or pristine levels” (CCME, 2001). The total average for all sites combined for both years is 99.5, indicating excellent water quality.

When compared to the Canadian Drinking Water Quality Guidelines, there were only two exceedances, both of which were *in situ* pH values.

When comparing the areas within the Milne Port Area, the sampling locations between Camp Lake and Milne Port (sampled only in 2005 and/or 2006) had the highest WQI value of 99.5, or “excellent”.

3.1.4 QA/QC

Between 2005 and 2008 there were instances when holding times for some parameters, mainly turbidity, NO₂, NO₃ and NO₂+NO₃, were exceeded due to unforeseen circumstances (i.e., weather preventing shipping of samples from site). A summary of samples exceeding holding times is provided in Appendix F of the compendium report.

In situ DO data in 2006 had many suspect values, all of which are summarized in Appendix E of the compendium report. These suspect values were removed from the summary statistics and raw data sets. The data were flagged as suspect if the DO concentrations were below a concentration of 9.50 mg/L for fast flowing cold waters, as DO concentrations below this value are not likely to naturally occur under these conditions. If one data set on a given date was considered suspect, all of the data sets for that date were also suspect, despite the fact that they may have had values that met the previously mentioned restrictions. In 2007 and 2008, in situ DO readings below 9.5 mg/L were left in but bolded to flag them.

The 2005 QA/QC consisted of field blank, filter blank and equipment blank samples. The analysis results indicated that there were few values that exceeded the data quality objectives, with conductivity, total ammonia, turbidity, total aluminum, total tin and dissolved zinc being the only exceptions. In 2006, blank sample results exceeding the data quality objectives included

total ammonia, turbidity, total and dissolved calcium, total and dissolved potassium, total and dissolved sodium and total and dissolved copper. The values for total ammonia and turbidity appeared to be random and were not likely a reflection of the data quality. The continuous data quality objective exceedances noted for total and dissolved calcium, total and dissolved potassium, total and dissolved sodium and total and dissolved copper were likely a result of contaminated deionized water and therefore were not a reflection of the overall quality of the data or the field or laboratory techniques. In 2007, blank sample results exceeding the data quality objectives included sulphate, conductivity, hardness, calcium, magnesium, sodium, potassium and copper.

In 2005 and 2006 a total of 43 duplicate samples were submitted for analysis. Of these 43 sets of samples only 12 pairs of parameters had measured concentrations that were greater than 20% RPD. In 2007 a total of 32 duplicate samples were submitted for analysis. Throughout the season there were 30 pairs of parameters which failed to meet the duplicate sample data quality objectives. Where results were questionable, a re-analysis was performed by the laboratory and the initial results were confirmed. In this case, concentrations with an RPD greater than 20% were bolded and noted in the text.

The 2008 QA/QC conducted consisted of field blanks and duplicate sampling. Several of the duplicate samples exceeded the convention of "five times the MDL". The following parameters were exceeded: alkalinity, conductivity, ammonia and ammonium, pH, TDS, total phosphorus, turbidity, hardness, total and dissolved calcium, total and dissolved magnesium, total and dissolved potassium, total and dissolved sodium, total and dissolved aluminum, total and dissolved barium, total and dissolved copper, total iron, total lead, total and dissolved manganese, total and dissolved molybdenum, total and dissolved nickel, total and dissolved silicon, total and dissolved strontium and total and dissolved zinc.

The precision of the duplicate samples was within the criteria of 18% for RPMD with 19 exceptions. Dissolved sodium and dissolved aluminum in duplicate samples collected from Downstream of Deposits exceeded the criteria (23.4 and 22.2%, respectively). Total aluminum, total copper, total iron, total manganese and total silicon in samples collected from Tributaries of Sheardown Lake exceeded the criteria (57.9, 27.2, 44.9, 57.9 and 30.2%, respectively). Total aluminum and total manganese in samples collected from Tributaries of Camp Lake exceeded the criteria (31.8 and 20.4%, respectively). Turbidity, total and dissolved aluminum in samples collected Upstream of Deposits exceeded the criteria (35.3, 21.8 and 25.8%, respectively). TSS, total phosphorus and turbidity in samples from drainages off the Deposit exceeded the criteria (20.8, 22.9 and 25.3%, respectively). When samples exceeded five times the MDL, the values were bolded and noted in the text.

A summary of samples exceeding the criteria is provided in Appendix F of the compendium report.

3.2 LAKE WATER QUALITY

Summary statistics were generated for each lake as a lake-wide mean, standard deviation and percent detectable results (above MDL) for all sampling periods. For sample locations with two or less samples collected only a lake-wide mean was calculated. Measurements below the MDL were assigned a value at the detection limit for statistical analysis purposes. Lake-wide means were calculated as the mean of both top and bottom samples where 50% or more of the results were detectable.

Water quality data were compared to the CCME water quality guidelines for the protection of aquatic life (1999, updated to 2010) as well as the CWQG (Health Canada, 2008). Table 3.4 provides a summary of the statistics as well as a comparison to the CCME guidelines.

Data from lake samples included shallow and deep sites in Mary Lake, Camp Lake, shallow sites in the northwest basin of Sheardown Lake, the southeast basin of Sheardown Lake, near shore samples from Sheardown Lake, Mid-Rail Camp Lake and Steensby area lakes.

Average water temperatures of lake samples ranged from 3.7 to 16.35°C. Average values for SpC ranged from 0.02 to 0.5 mS/cm. Average concentrations of DO ranged from 10.15 to 13.03 mg/L.

Average values for pH exceeded the CCME guidelines and ranged from 5.96 to 7.7.

Average alkalinity and hardness concentrations were similar and ranged from 6.3 to 70 mg/L CaCO₃ and 4.4 to 80.3 mg/L CaCO₃, respectively. Average turbidity values ranged from 0.4 to 3.7 NTU. Average concentrations of TDS ranged from 12.0 to 144.5 mg/L. Average concentrations of TSS ranged from 2.0 to 2.92 mg/L.

Parameters that were at or above CCME guidelines in Mary Lake included cadmium and mercury with average concentrations of 0.000036 and 0.00005 mg/L, respectively.

Parameters that were at or above CCME guidelines in Camp Lake included cadmium, mercury and selenium with average concentrations of 0.000025, 0.00004 and 0.001 mg/L, respectively.

Parameters that were at or above CCME guidelines in the northwest basin of Sheardown Lake included cadmium, mercury and selenium with average concentrations of 0.000020, 0.00004 and 0.001 mg/L, respectively.

Parameters that were at or above CCME guidelines in the southeast basin of Sheardown Lake included cadmium, mercury and selenium with average concentrations of 0.000024, 0.00004 and 0.001 mg/L, respectively.

The parameters that were at the CCME guideline from the near shore samples of Sheardown Lake was selenium with an average concentration of 0.001 mg/L.

Steensby area lakes and other sites did not record any average concentrations above CCME guidelines.

When compared to the Canadian Drinking Water Quality Guidelines, the following exceedances were noted:

- One iron concentration above the guideline of 0.3 mg/L in the northwest basin of Sheardown Lake
- One *in situ* pH exceedance each in the southeast basin of Sheardown Lake, NS-Nivek and Candidate Reference Lake
- Five temperature measurements above the guidelines in the Steensby area lakes
- Twelve iron concentrations above the guideline of 0.3 mg/L in the Steensby area lakes

Depth profiles were collected for certain sites between 2006 and 2008. The 2006 depth profiles were measured by KPL in Mary Lake, Sheardown Lake (both basins) and Camp Lake in late July, early August, late August, early September. In 2007 the same three lakes were sampled by North/South (including depth profiling) as in 2006 however several additional sites were included in the program. In 2008, lakes for which depth profiling was completed (by North/South) included Mary Lake, Sheardown Lake, Camp Lake as well as Candidate Reference Lake #3 (located east of Mary Lake), Mid-Rail Camp Lake, and several lakes located in the Steensby area.

In 2006, DO and temperature profiles in Mary Lake, Sheardown Lake and Camp Lake all showed vertical thermal stratification in late July, early August. In late August, early September the lakes were isothermic and uniformly mixed throughout the water column.

DO and temperature profiles were measured at additional sites in Mary Lake, Sheardown Lake and Camp Lake in 2007. As discussed in the March 2008 draft report "Freshwater Aquatic Environment Baseline Report: Lake Limnology and Lower Trophic Levels" by North/South, "Lakes were relatively isothermal in May 2007, with temperatures ranging from just above zero to approximately 2°C. In August, only two sites exhibited thermal stratification: site JL0-01-9 in Camp Lake; and site DL0-01-5 in the northwest basin of Sheardown Lake. Temperature generally decreased with depth at other lake sites but did not exhibit a rate of change of 1°C or more in one metre. Surface temperatures were approximately 8 to 11°C in August. Lakes were not stratified in September with temperatures ranging from approximately 5 to 6°C at most sites. The exception was the north arm of Mary Lake where water temperature was notably lower (approximately 2°C)."

In 2008, although not all of the lakes were sampled three times per year, the following trends were noted for all lakes (specific to the seasons in which they were sampled):

- Late July - Temperatures showed very little variance with depth, suggesting turnover.
- Early August - Temperatures showed variance with depth, suggesting thermal stratification.
- Early September - Temperatures showed very little variance, suggesting vertical isothermic conditions (turnover).

3.2.1 QA/QC

As indicated above, lake-specific QA/QC samples were not collected in 2006, as the lake water quality sampling and stream water sampling programs were combined (all QA/QC samples were collected at stream sampling locations).

In 2006 the lake water quality site vertical profiling DO data collected on 01-Aug-06 (DL0-01, DL0-02 and BL0-03), 02-Aug-06 (JL0-01) and 31-Aug-06 (BL0-01) were very sporadic. These readings may have resulted from lowering the Hydrolab Quanta too quickly so that equilibrium conditions were not being achieved prior to data collection, or potentially the unit was not calibrated effectively or was malfunctioning.

The 2007 QA/QC conducted by North/South indicated several parameters exceeding the 18% criterion for PRSD (North/South, 2007). It also indicated one parameter being five times the MDL in a field blank submitted in May 2007. All metals measurements in field and trip blanks in 2007 were either below detection limits or less than five times the MDL.

The 2008 QA/QC conducted by North/South indicated that the precision of the triplicate and duplicate samples was within the criteria of 18% for PRSD with one exception. Dissolved sodium measured in the triplicate samples collected from Mary Lake in May 2008 exceeded the 18% criterion (20.79%). All but five parameters were below the respective MDLs for the field blanks collected in 2008. The five parameters that were not below were at or slightly above, however all were less than five times the MDL. Two trip blanks were collected in 2008 in August and September. The blank collected in August showed all but four parameters below the MDL. The remaining four parameters were all slightly above the limit however were less than five times the limit. The blank collected in September 2008 showed thirty-seven parameters above the MDL, with twenty-two of those being much greater than five times higher than the MDL. The reason for the high concentrations is unknown.

3.3 SEDIMENT QUALITY

The *in situ* and analytical data summary statistics for sediment quality samples are provided in Table 3.5. As indicated above, the sediment quality data were compared to the CCME ISQG (CCME, 1999, updated to 2008), the CCME PEL (CCME, 1999, updated to 2008 CCME) and to the OSQG (MOE, 1993) for parameters for which there are no CCME sediment quality guidelines. The site-specific analytical and *in situ* data for sediment quality sampling locations are provided in Appendix D of the compendium report.

The following sections summarize the sediment quality for each key project area.

3.3.1 Mine Site

The Mine Site consists of the following areas: Tom River Area, Upstream of Deposits, Downstream of Deposits, Mary River - Downstream of Mary Lake, Tributaries of Sheardown Lake, Background Tributary to Mary River, Tributaries of Camp Lake, Mary Lake, Camp Lake, the northwest basin of Sheardown Lake, the southeast basin of Sheardown Lake, Sheardown Lake nearshore, Sheardown Lake offshore and Sheardown Lake Tributary. The following is a summary of the sediment quality within the areas.

3.3.1.1 Tom River Area

Between 2006 and 2007, four composite sediment samples were collected from the two Tom River area sites (I0-01, lower reaches of Tom River, and I0-04, upper reaches of Tom River, downstream of the confluence of I1 tributary with the main stream). The streambed composition was predominantly cobble and boulder with sediment samples being collected from the riffle pools behind the larger boulders.

The sediment sample results were all below their respective CCME guideline limits. However, the following metals and non-metals were notably higher in the upstream sediment samples (I0-04) than in the lower reaches of the Tom River (I0-01): aluminum, barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, nickel, potassium, strontium, vanadium and zinc.

TOC, nitrite, nitrate and total phosphorus concentrations were below the MDL to low in the Tom River sediment samples.

3.3.1.2 Upstream of Deposits

Three sediment samples were collected from two locations upstream of the Deposits from 2005 to 2007. They were as follows from downstream to upstream: H0-01 (Mary River, upstream of all known iron ore deposits) and G0-09. The streambed composition was predominantly cobble and boulder with sediment samples collected from the riffle pools behind the larger boulders.

Sediment metals concentrations were generally low upstream of the Deposits with only one sample parameter exceeding the OSQG limits for iron in 2006. Higher aluminum and manganese concentrations were noted in sites upstream of the Deposits compared to sites further downstream along the Mary River.

TOC, nitrite and nitrate concentrations were low or below the MDLs for all years. Total phosphorus concentrations ranged from not detected to 120 µg/g.

3.3.1.3 Downstream of Deposits

Eight sediment samples were collected from six sites downstream of the Deposits from 2005 to 2007. The sites are as follows from downstream to upstream: C0-01 (upstream of Mary Lake), C0-05, C0-10, E0-01, E0-03 (Mary River, upstream of confluence with E2 tributary and just downstream of known iron ore deposits), G0-03. The streambed composition was predominantly cobbles and boulders with sediments sampled from the riffle pools behind the larger boulders.

Sediment metals concentrations were generally low downstream of the Deposits with one sample parameter exceeding CCME ISQG at three sites; chromium in G0-03 in 2005 and in C0-10 and C0-01 in 2007. Two sample parameters exceeded the OSQG in four sites;

iron in C0-10 and C0-01 in 2007, and nickel in G0-03 in 2005 and in E0-01 and C0-01 in 2007.

TOC, nitrite and nitrate concentrations were low to below the MDLs. Total phosphorus concentrations ranged from not detected to 240 µg/g in E0-03 in 2005.

3.3.1.4 Mary River - Downstream of Mary Lake

Two sediment samples were collected from one site (A0-01) from the Mary River downstream of Mary Lake in 2005 and 2007. The site is also upstream of Angajurjualuk Lake and has a streambed composition of predominantly cobbles and boulders with sediments sampled from the riffle pools behind the larger boulders.

Sediment metals concentrations were generally low with one sample parameter exceeding CCME ISQG; chromium in 2007, and one nickel concentration exceeding the OSQG in 2007.

TOC, nitrite and nitrate concentrations were below or at the limits of detection. Total phosphorus concentrations ranged from 130 µg/g in 2005 to 500 µg/g in 2007.

3.3.1.5 Tributaries of Sheardown Lake

Seven sediment samples were collected from seven sites from the tributaries of Sheardown Lake: D1-01 located upstream of the lake, D0-01 located at the lake outlet, Sheardown Lake-Trib1-DS, Sheardown Lake-Trib1-US, Sheardown Lake-Trib9-US, Sheardown Lake-Trib12-US, and Sheardown Lake-Trib12-DS. The streambed at these locations is predominantly boulders and cobbles with sediment samples collected from the accumulated sediments from the riffle pools behind the larger boulders.

The sediments sampled were generally low in metals with one sample parameter exceeding CCME ISQG at three sites; chromium at Sheardown Lake-Trib1-US, Sheardown Lake-Trib9-US and Sheardown Lake-Trib12-DS in 2007. One sample parameter exceeded OSQG at five sites; nickel at Sheardown Lake-Trib1-DS, Sheardown Lake-Trib1-US, Sheardown Lake-Trib9-US, Sheardown Lake-Trib12-US and Sheardown Lake-Trib12-DS in 2007.

Nutrients and TOC were generally low with one sample parameter exceeding the CCME ISQG at one site; Total Kjeldahl Nitrogen (TKN) at Sheardown Lake-Trib12-US in 2007. Total phosphorus concentrations ranged from below detection (<100 µg/g) to 390 µg/g at D0-01 in 2005.

3.3.1.6 Background Tributary to Mary River

One sediment sample was collected from the background tributary to Mary River in 2005: E2-01 (at the base of the E2 tributary to Mary River). The streambed composition of the site is predominantly sand with visible gravel bars.

Sediment metals concentrations were low with no sample parameters exceeding any of the CCME ISQG or the OSQG. There were generally higher aluminum and manganese sediment concentrations at this site compared to sites downstream.

TOC, nitrite and nitrate concentrations were below the limits of detection. The total phosphorus concentration was 220 µg/g.

3.3.1.7 Tributaries of Camp Lake

Seven sediment samples were collected from seven sites from the tributaries of Camp Lake: FS-01 (located within the L0 main-stem), K0-01, J0-01, Camp Lake-Trib1-US, Camp Lake-Trib1-DS, Camp Lake-Trib2-US and Camp Lake-Trib2-DS. The streambed composition was predominantly cobble and boulder at FS-01 and K0-01 with sediment samples obtained from riffle pools and from behind larger boulders; at J0-01 the streambed was predominantly sand. The streambed composition of the other sites, although not formally recorded during site visits, is likely either cobble and boulder or sand based on knowledge of the areas.

Two sample parameters exceeded the CCME ISQG at three sites; chromium at Camp Lake-Trib1-US and Camp Lake-Trib1-DS in 2007 and copper at FS-01 in 2005 and Camp Lake-Trib1-US in 2007. Two sample parameters exceeded the OSQG at four sites: iron at Camp Lake-Trib1-US in 2007 and nickel at FS-01 in 2005 and Camp Lake-Trib1-US, Camp Lake-Trib1-DS and Camp Lake-Trib2-DS in 2007.

Nutrients and TOC were generally low with TOC concentrations ranging from not detected to 0.53% and nitrate ranging from not detected to 1 µg/g.

3.3.1.8 Mary Lake

Seven composite sediment samples were collected from five sites on Mary Lake: BL0-01 (northern portion of Mary Lake, offshore from the outlet of Tom River and waters that drain from Camp Lake), BL0-05 (southern portion of Mary Lake, offshore from outlet of Mary River), BL0-03, BL0-04 and BL0-06. The sediment composition for these sites can generally be described as fine sands and silts with organic layers and gravel at depth.

Sediment metals and non-metals results were all below their respective CCME guideline limits with the exception of chromium and copper. The chromium sediment concentration at sites BL0-01 in 2006, and BL0-01, and BL0-04 in 2007 were 50, 60 and 82 µg/g, respectively, which exceeded the CCME ISQG guidelines, while BL0-03 and BL0-06 in

2007 exceeded both the CCME ISQG and PEL guidelines with concentrations of 92 and 98 µg/g, respectively. Copper sediment concentration at site BL0-06 in 2007 was 38 µg/g which exceeded the CCME ISQG guideline of 37.3 µg/g. Other notably higher sediment concentrations exceeding the OSQG (either the LEL or the SEL) include: iron at sites BL0-01 in 2006, and BL0-01, BL0-03, BL0-04 and BL0-06 in 2007; manganese at sites BL0-01, BL0-03, BL0-04 and BL0-06 in 2007; and nickel at sites BL0-01 and BL0-05 in 2006 and BL0-01, BL0-03, BL0-04, BL0-05 and BL0-06 in 2007.

Nitrite and nitrate concentrations were generally low to below the limits of detection in the Mary Lake sediment samples. TKN and TOC concentrations were higher, some of which exceeded the OSQG by more than two times. Phosphorus sediment concentrations were also higher with the following sites exceeding the OSQG by up to more than two times: BL0-01 in 2006, and BL0-01, BL0-03, BL0-04 and BL0-06 in 2007.

3.3.1.9 Camp Lake

Six sediment samples were collected from five sites in Camp Lake in 2007: JL0-01, JL0-02, JL0-07, JL0-09 and JL0-010. The lake sediments were generally silt and clay to sand; brown, dark grey/brown or red and brown; and loose to compact.

Sediment metals and non-metals results were all below their respective CCME guideline limits with the exception of chromium and copper. The chromium sediment concentration at sites JL0-01 in May and September 2007, JL0-02 in August 2007, and JL0-07 and JL0-09 in September 2007 were 76, 80, 79, 78 and 50 µg/g, respectively, which exceeded the CCME ISQG guideline of 37.3 µg/g. Copper sediment concentrations at sites JL0-01 in May 2007, JL0-01, JL0-02 and JL0-07 in 2007 were 37, 44, 41 and 45 µg/g, respectively, which exceeded the CCME ISQG guideline of 35.7 µg/g. Other notably higher sediment concentrations exceeding the OSQG at most of the sites include: iron, manganese and nickel.

Nitrite and nitrate concentrations were below the limits of detection to very low in the Camp Lake sediment samples. TKN concentrations were higher, more than five times the OSQG, in most samples and TOC ranged from below the limits of detection to more than two times the OSQG. Phosphorus concentrations were higher and ranged from below the limits of detection to two and a half times the OSQG.

3.3.1.10 Northwest Basin of Sheardown Lake

Thirteen sediment samples were collected from seven sites in the northwest basin of Sheardown Lake: DL0-01-1, DL0-01-2, DL0-01-3, DL0-01-4, DL0-01-5, DL0-01-6 and DL0-01-7. The sediment composition for these sites was generally silt and clay to silt; brown, dark brown or red; and compact. In one instance (DL0-01-1 in 2008) the sediment was too compact to collect a sample.

Sediment metals and non-metals results were all below their respective CCME guideline limits with the exception of arsenic, chromium and copper. Arsenic sediment concentration at site DL0-01-3 in 2008 was 6.3 µg/g which exceeded the CCME ISQG of 5.9 µg/g but not the PEL of 17 µg/g. The chromium concentration at sites DL0-01-1, DL0-01-2, DL0-01-3, DL0-01-4, DL0-01-5 and DL0-01-6 in 2007, and DL0-01-2, DL0-01-3, DL0-01-4 and DL0-01-5 in 2008 ranged from 46 to 94 µg/g, which exceeded the CCME ISQG guidelines of 37.3 and 90 µg/g, the ISQG and PEL, respectively. Copper sediment concentrations at sites DL0-01-1, DL0-01-2, DL0-01-3, DL0-01-4, and DL0-01-5 in 2007, and DL0-01-2, DL0-01-4 and DL0-01-5 in 2008 ranged from 39 to 57 µg/g which exceeded the CCME ISQG guideline of 35.7 µg/g.

Nitrite and nitrate concentrations were generally below the limits of detection to low in the northwest basin of Sheardown Lake. TKN concentrations were higher and most exceeded the OSQG by up to eight times. TOC concentrations were also higher and most sample results exceeded the OSQG by more than four times. Phosphorus concentrations ranged from 500 to 2,700 µg/g, over the OSQG of 600 and 2,000 µg/g, the ISQG and PEL, respectively.

3.3.1.11 Southeast Basin of Sheardown Lake

Five sediment samples were collected from four sites in the southeast basin of Sheardown Lake: DL0-02-1, DL0-02-2, DL0-02-3 and DL0-02-4. The sediment composition for these sites was generally clay, silt and trace sand to coarse and fine sand; brown, grey/brown or brown and green; loose to compact, with some vegetation inclusions.

Sediment metals and non-metals results were all below their respective CCME guideline limits with the exception of chromium. The chromium sediment concentrations at sites DL0-02-1 in May 2007, and DL0-02-1, DL0-02-2 and DL0-02-4 in September 2007 ranged from 71 to 80 µg/g which exceeded the CCME ISQG of 37.3 µg/g. Other notably higher sediment concentrations exceeding the OSQG included: iron, nickel and manganese.

Nitrite and nitrate concentrations were generally below the limits of detection to low in the southeast basin of Sheardown Lake. TKN concentrations ranged from below the limits of detection to more than eight times the OSQG of 0.055%. One TOC concentration was higher than average and was more than five times the OSQG of 1%. Phosphorus concentrations were higher and exceeded the OSQG by up to more than two times.

3.3.1.12 Sheardown Lake Nearshore

Three sediment samples were collected from three stations on the nearshore of Sheardown Lake during crushing and screening operations of the 2008 bulk sample program. D-Hab 4-Stn 1 (composed of sand, trace silt), DD-Hab 4-Stn 2 (composed of sand, trace silt and clay) and DD-Hab 4-Stn 3 (composed of sand, trace silt and clay).

Sediment sample metal and non-metal results were all below their respective CCME guideline limits. The nickel concentration was notably higher and at the OSQG of 16 µg/g at DD-Hab-Stn 2.

Nutrient concentrations were below the limits of detection to low on the nearshore of Sheardown Lake.

3.3.1.13 Sheardown Lake Offshore

Three sediment samples were collected from three stations on the offshore of Sheardown Lake: DD-Hab 9-Stn 1 (composed of sand, trace silt and clay), DD-Hab 9-Stn 2 (composed of clayey sand, some silt) and DD-Hab 9-Stn 3 (composed of sand, trace silt and clay).

Sediment sample metal and non-metal results were all below their respective CCME guideline limits with the exception of arsenic and chromium. Arsenic sediment concentration at DD-Hab 9-Stn 3 was 10.5 µg/g which exceeds the CCME ISQG of 5.9 µg/g but not the PEL of 17 µg/g. Chromium sediment concentrations at all three stations were 40, 71 and 68 µg/g, respectively, which exceed the CCME ISQG of 37.3 µg/g but not the PEL of 90 µg/g. Copper sediment concentrations at DD-Hab 9-Stn 2 and DD-Hab Stn 3 were 39 and 44 µg/g respectively, which exceed the CCME ISQG of 35.7 µg/g. Other notably higher sediment concentrations exceeding the OSQG include: iron, manganese and nickel.

Nutrient concentrations were below the limits of detection to low for most samples from the offshore of Sheardown Lake. Phosphorus concentrations were higher and exceeded the OSQG by up to more than two times.

3.3.1.14 Sheardown Lake Tributary

Three sediment samples were collected from three sites on the Sheardown Lake Tributary in 2008: SDLT1-R1 (composed of sand, trace silt and clay), SDLT1-R 2A (composed of sand, trace silt and clay) and SDLT1-R 4 (composed of sand, trace silt and clay).

Sediment sample metal and non-metal concentrations were all below their respective CCME guideline limits with the exception of cadmium, chromium and copper. Cadmium concentration in site SDLT1-R4 was 0.7 µg/g which exceeded the CCME ISQG of 0.6 µg/g. Chromium concentrations in sites SDLT1-R1 and SDLT1-R4 were 54 and 124 µg/g, respectively, which exceeded the CCME ISQG of 37.3 µg/g and in site SDLT1-R4 exceeded the CCME PEL of 90 µg/g. The copper concentration in site SDLT1-R4 was 41 which exceeded the CCME ISQG of 35.7 µg/g. Other notably higher sediment concentrations exceeding the OSQG include: iron, manganese and nickel.

Nitrite, nitrate, TOC and phosphorus concentrations were generally low to below the limits of detection in the Sheardown Lake Tributary. Concentrations for TKN ranged from 0.01 to 0.07% which exceeds the OSQG of 0.055%.

3.3.2 Railway Alignment and Steensby Port Area

The Railway Alignment and Steensby Port area consists of all southern sites. The following is a summary of sediment quality within the area.

3.3.2.1 Southern Sites

Thirteen sediment samples were collected from thirteen southern sites in 2008: ST3, ST6, ST24, ST28, ST92, ST88, ST81, ST29, ST32, Stream 17, Stream 18, Stream 19 and Stream 24.

Sediment sample metal and non-metal concentrations were all below their respective CCME guideline limits with the exception of mercury, cadmium, chromium, copper, lead and zinc. Mercury concentrations in sites ST28 and ST29 were both 0.2 µg/g which exceeds the CCME ISQG of 0.17 µg/g. Cadmium concentrations in sites ST24 and ST29 were 2.9 and 0.6 µg/g, respectively, which are at or exceed the CCME ISQG of 0.6 µg/g. Chromium concentrations at sites ST3, ST6, ST24, ST88, ST29 and Stream 19 were 73, 40, 81, 63, 44 and 38 µg/g, respectively, which exceed the CCME ISQG of 37.3 µg/g. Copper concentrations at sites ST3, ST6, ST24, ST28, ST29, ST32 and Stream 19 were 43, 69, 42, 54, 117, 64 and 59 µg/g, respectively, which exceed the CCME ISQG of 35.7 µg/g. Lead concentration in site ST24 was 173 µg/g which exceeds the CCME ISQG of 35 µg/g. Zinc concentrations in sites ST24 and ST29 were 911 and 142 µg/g, respectively, which exceed the CCME ISQG of 123 µg/g and in the case of ST24 exceeds the CCME PEL of 315 µg/g. Other notably higher sediment concentrations exceeding the OSQG include: iron and nickel.

Nitrite and nitrate concentrations were generally low to below the limits of detection in the southern sites. Concentrations for TKN ranged from low to more than five times the OSQG of 0.48%. Concentrations for TOC ranged from low to more than three times the OSQG of 10%. Phosphorus concentrations ranged from 300 to 2,100 µg/g, above the OSQG of 2,000 µg/g.

3.3.3 QA/QC

The 2007 QA/QC sampling conducted by North/South indicated that the majority of the triplicate samples for which PRSD could be reliably calculated were within the acceptable level of precision ($\leq 18\%$). PRSD values for 27 triplicate measurements exceeded the PRSD. In particular, PRSD values for the majority of parameters measured at C0-01-sed exceeded this level, indicating relatively heterogeneous sediment quality in this area.

The 2008 QA/QC was conducted by North/South. One triplicate sample and one duplicate sample were collected from the northwest basin of Sheardown Lake. Higher concentrations were noted in the parameters of boron, chromium, manganese and the particle size analysis for clay in the samples. A summary of sediment sample QA/QC results is provided in Appendix F of the compendium report.

SECTION 4.0 - CONCLUSIONS

The following conclusions have been determined as a result of the data analysis for the 2005 to 2008 surface water and sediment quality programs:

- Streams naturally have fair to good water quality as per CCME guidelines Water Quality Index
- Streams naturally have elevated concentrations or values for the following parameters: DO, turbidity, aluminum and iron. There were also some instances where CCME guidelines were exceeded in the following parameters: copper, TSS, silver, selenium, lead, pH, and nickel.
- High chloride concentrations have been detected downstream of the Deposits
- Some average values for pH exceeded the CCME guidelines as did cadmium and mercury at most stream sites. This may be in part due to MDL values being above CCME guidelines. Selenium were routinely at the CCME guideline.
- Stream water quality between Camp Lake and Milne Port showed the highest value of 99.5, or “excellent” water quality when compared to Water Quality Index values
- Lake profiling indicated that DO and temperature in Mary Lake, Sheardown Lake and Camp Lake all showed vertical thermal stratification in late July/early August. In late August/September the lakes were isothermic and uniformly mixed throughout the water column. Average values for pH exceeded the CCME range of 6.5 to 8.5 for lakes within the Mine Site area (Mary Lake, Camp Lake and Sheardown Lake). Parameters that were at or above CCME guidelines in Mary Lake included cadmium and mercury. Parameters that were at or above the CCME guidelines in Camp Lake and the northwest and southeast basins of Sheardown Lake included cadmium, mercury and selenium.
- Sediment quality at sites across the project area was generally good with naturally higher levels of chromium, copper and, to a lesser extent, arsenic, cadmium, mercury, lead and zinc. Some TKN and phosphorus results exceeded the guideline criteria as indicated above.

SECTION 5.0 - REFERENCES

1. British Columbia Ministry of Environment, Lands and Parks (BCMELP), 1998.
2. Canadian Council of Ministers for the Environment. Canadian Water Quality Guidelines for the Protection of Aquatic Life. Updated December 2007.
3. Canadian Council of Ministers of the Environment. Canadian Water Quality Guidelines for the Protection of Aquatic Life. CCME Water Quality Index 1.0, 2001.
4. Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario – Ontario Ministry of the Environment, 1993.
5. “2005/2006 Baseline Water Quality Summary Report” (Ref. No. NB102-00181/4-5), Knight Piésold Ltd., March 13, 2007.
6. “2007 Baseline Water Quality Summary Report” (Ref. No. NB102-00181/7-5), Knight Piésold Ltd., June 6, 2008.
7. “Freshwater Aquatic Environment Baseline Report: Lake Limnology and Lower Trophic Levels” North/South Consultants Inc., March 2008.
8. Health Canada. Guidelines for Canadian Drinking Water Quality Summary Table. May 2008.

SECTION 6.0 - CERTIFICATION

This report was prepared, reviewed and approved by the undersigned.

Prepared by:



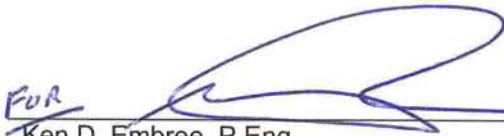
Shannon Roach, CEPIT
Environmental Technologist

Reviewed by:



Steve Aiken, P.Eng.
Manager, Environmental Services

Approved by:



Ken D. Embree, P.Eng.
Managing Director

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TABLE 2.1

**BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT**

**SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
2005-2008 MINE SITE STREAM WATER SAMPLE LOCATIONS**

Print Oct/29/10 14:17:26

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Current	2005	GPS Coordinates ⁽¹⁾		Sampled In:				Notes
Site ID	Site ID	UTM E (m)	UTM N (m)	2005	2006	2007	2008	
Mary River								
A0-01	EKP-2903	559019	7900094	yes	yes	yes	yes	Just upstream from Angajurjua Lake
A0-10 ⁽²⁾	EKP-2834	557391	7903368	yes	yes	yes	yes	Outflow from Mary Lake
B3-01	-	-	-	no	no	no	yes	Inflow to Mary Lake
C0-01 ⁽²⁾	EKP-2835A	556305	7906894	yes	yes	yes	no	Upstream of Mary Lake
C0-05	-	558352	7909170	no	no	yes	yes	Mary River - Between C0-10 and C0-01
C0-10 ⁽²⁾	EKP-2835B	560669	7911633	yes	yes	yes	no	Downstream ~200 m from confluence of D-Lake outflow with Mary River
D0-01	EKP-2901	560765	7911692	yes	yes	yes	yes	Outflow from D-Lake
D1-00	-	560329	7913512	no	no	no	yes	Mouth of Sheardown Lake
D1-01	EKP-2895	560753	7913507	yes	yes	yes	yes	Upstream of D-Lake and road to main deposit
D1-03	EKP-2894	561260	7913655	yes	no	no	no	Upstream of D1-01
D1-05	EKP-2893	561397	7913558	yes	no	no	yes	Upstream of D1-01
D1-07	EKP-2892	562052	7913203	yes	no	no	no	Upstream of D1-01
D1-10	EKP-2891	562533	7912873	yes	no	no	no	Upstream of D1-01
D-Stream-1	-	560964	7912998	no	no	yes	yes	Stream inflow to D-Lake
D-Stream-2	-	560777	7912867	no	no	yes	yes	Stream inflow to D-Lake
D-Stream-3	-	561770	7911809	no	no	yes	yes	Stream inflow to D-Lake
D-Stream-4	-	560629	7912638	no	no	no	yes	Stream inflow to D-Lake
D-Stream-5	-	560719	7912501	no	no	no	yes	Stream inflow to D-Lake
D-Stream-6	-	560893	7912263	no	no	yes	yes	Stream inflow to D-Lake
E0-01	-	560949	7911531	no	yes	yes	yes	Mary River - upstream of confluence with outflow from D-Lake
E2-01	EKP-2843	562348	7911310	yes	yes	yes	yes	E2 tributary, just upstream of confluence with Mary River
E2-03	EKP-2842	562850	7911542	yes	no	no	no	Small tributary to E2, only sampled once (June 2005)
E2-05	EKP-2841	564486	7910340	yes	no	no	no	Mid-stream portion of E2 tributary, between two shallow lakes
E2-08	EKP-2840	567004	7909175	yes	no	no	no	Uppermost sample point on E2 tributary, upstream of small lakes
E0-03 ⁽²⁾	EKP-2856	562974	7912472	yes	yes	yes	no	Just downstream of canyon portion of Mary River
E3-01 ⁽²⁾	EKP-2858	563872	7913003	yes	yes	yes	no	Small tributary draining main deposit area, downstream of salt mixing area
E3-03	EKP-2887	563759	7913203	yes	no	no	no	In situ parameters only. One set of data for June 2005.
E3-08	EKP-2886	563556	7913887	yes	no	no	no	Only sampled once (June 2005). Small stream in main deposit area.
E4-01 ⁽²⁾	EKP-2857	563962	7913062	yes	yes	yes	no	Small tributary draining main deposit area, downstream of salt mixing area
E0-10 ⁽²⁾	-	564405	7913004	no	yes	yes	no	50-100 m downstream of confluence of F tributary with Mary River
F0-01 ⁽²⁾	EKP-2854	564483	7913015	yes	yes	yes	no	Lowest portion of F tributary prior to confluence with Mary River
F0-05 ⁽²⁾	-	565132	7916181	no	yes	yes	no	Mid-stream portion of F tributary, potentially upstream of deposits
G0-01 ⁽²⁾	EKP-2853	564459	7912984	yes	yes	yes	no	Mary River - just upstream of confluence with outflow from F tributary
G0-03	EKP-2890	567204	7912587	yes	yes	yes	yes	Mary River, just below deposits 2, 3 and 3A
G0-05	-	569184	7913059	no	yes	yes	yes	Mary River, 200 to 300 m downstream of confluence with G3 tributary
G3-01	-	569295	7913285	no	yes	yes	yes	G3 tributary - small and to immediate east of deposits 2, 3 and 3A
G0-07	-	570456	7913817	no	yes	yes	yes	Mary River, upstream of deposits 2, 3 and 3A
G0-09 ⁽²⁾	-	571546	7916317	no	yes	yes	no	Mary River, upstream of deposits 2, 3 and 3A
G6-01	-	571406	7916629	no	yes	yes	yes	G6 tributary - just upstream of confluence with Mary River
H0-01	EKP-2902	571409	7917611	yes	yes	yes	yes	Lowest portion of the northeastern tributary to Mary River
H1-01	-	571346	7917850	no	yes	yes	yes	Lowest portion of the northwestern tributary to Mary River
H1-02	-	569211	7921645	no	no	no	yes	Upper reach of the northwestern tributary to Mary River
Tom River								
I0-01	-	555470	7914139	no	yes	yes	yes	Tom River - below road and braided river section
I0-04	-	557152	7918991	no	yes	yes	yes	Tom River - 100 to 200 m below confluence of I1 tributary
I0-06	EKP-2864	557298	7919412	yes	yes	yes	yes	Tom River - upstream of confluence of I1 tributary
I1-01	EKP-2865	557318	7919381	yes	yes	yes	yes	I1 tributary, just upstream of confluence with Tom River
I1-02	-	559750	7919900	no	no	no	yes	I1 tributary, at upper reach of tributary
Camp Lake Area								
J0-01	EKP-2839	555701	7913773	yes	yes	yes	yes	Outflow from J-Lake
J1-01	EKP-2885	556325	7914900	yes	yes	yes	yes	J1 stream, drains into northwest region of J-Lake
J2-01	-	557511	7913865	no	yes	yes	yes	J2 stream, drains into southeastern region of J-Lake
K0-01	EKP-2884	557390	7915030	yes	yes	yes	yes	K0 stream, lowest region - drains to north region of J-Lake
K0-05	EKP-2846	558865	7916090	yes	no	no	yes	Mid-reaches tributary to K0 tributary
K1-01	-	559443	7916930	no	no	no	yes	K1 stream, upper reaches - drains to K0, which drains to north region of Camp Lake
L0-01 ⁽²⁾	EKP-2883	557681	7914959	yes	yes	yes	no	L0 stream, lowest region, drains to northeast region of J-Lake
L1-02	EKP-2847	558765	7915121	yes	no	no	no	L1 is northern tributary to L0 stream
L1-06	EKP-2848	560047	7915874	yes	no	no	no	Small tributary, upstream of L1-02. Sampled once (June 2005).
L1-08	EKP-2849	561076	7915068	yes	no	no	yes	Small tributary upstream of L1-02
L2-03	EKP-2896	559081	7914425	yes	no	no	no	L2 is southern tributary to L0 stream
M0-01	EKP-2880	557801	7914410	yes	yes	yes	yes	M0 stream, lowest region - drains to western region of J-Lake

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NOTES:

- GPS COORDINATES ARE IN UTM NAD 83, ZONE 17W.
- BOLD** INDICATES THAT THE SITE WAS A 2007 FIELD SEASON WEEKLY WATER QUALITY SITE. WEEKLY SAMPLING IN 2008 WAS COMPLETED BY BIMC.
- THIS TABLE INCLUDES LOCATIONS SAMPLED BY KNIGHT PIESOLD PERSONNEL ONLY; SAMPLING COMPLETED BY OTHER COMPANIES IS NOT REFLECTED IN THIS TABLE.

0 REV	29OCT10 DATE	ISSUED WITH REPORT N8102-181/25-2 DESCRIPTION	SMR PREP'D	AD CHK'D	SRA APP'D
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TABLE 2.2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
2005-2008 MINE SITE TO STEENSBY PORT STREAM WATER SAMPLE LOCATIONS

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Current Site ID	2005 Site ID	GPS Coordinates ⁽¹⁾		Sampled In:				Notes
		UTM E (m)	UTM N (m)	2005	2006	2007	2008	
Cockburn Area								
S1-100	EKP-2819	592196	7817661	yes	yes	yes	yes	Cockburn Lake outlet creek
S2-065	-	606957	7846923	no	no	yes	yes	Inflow to Cockburn Lake
S2-070	-	607575	7841240	no	yes	yes	yes	Narrowing flowing water section in northern portion of Cockburn Lake
Ravn River - Upstream of Angajurjua Lake								
S2-030	EKP-2915	592664	7892583	yes	yes	yes	yes	Ravn River, upstream of Angajurjua Lake
Rowley River								
S2-100	EKP-2912	623035	7799885	yes	no	yes	yes	Lower reaches of the Rowley River
Steensby Port Area								
S-Camp-DS	-	594790	7800518	no	no	no	yes	Downstream of Steensby Camp
SL3-Out (Km10 Lake)	-	598700	7808138	no	no	yes	yes	
Km3 Lake	-	597760	7800154	no	no	no	yes	
Mid-Rail Camp Area								
Nivek-IN	-	595781	7876683	no	no	no	yes	
Nivek-Out	-	593784	7873743	no	no	no	yes	
Nivek	-	596471	7875521	no	no	no	yes	
Sampling Locations Between Camp Lake and Steensby Port								
S1-010	EKP-2837	556793	7893941	yes	yes	no	no	Ravn River, downstream of Angajurjua Lake
S1-011	EKP-2836	541193	7893559	yes	no	no	no	Only sampled once (June 2005)
S1-020	EKP-2911	571168	7857573	yes	no	no	no	Only sampled once (September 2005)
S1-030	EKP-2838	572536	7851075	yes	yes	no	no	Fast flowing river joining two lakes, southeast of Nina Bang Lake
S1-040	EKP-2825	572723	7849086	yes	yes	no	no	Fast flowing river, further downstream of S1-030 (same watershed)
S1-050	EKP-2824	575381	7846638	yes	no	no	no	Lower reaches of watershed that drains directly into Tariujaq Arm
S1-060	EKP-2823	577215	7844740	yes	yes	no	no	Lower reaches of small watershed that drains directly into Tariujaq Arm
S1-070	EKP-2822	580144	7840336	yes	yes	no	no	Lower reaches of watershed that drains directly into Tariujaq Arm
S1-080	EKP-2821	588755	7825451	yes	yes	no	no	Lower reaches of watershed to immediate northwest of Cockburn Lake
S1-090	EKP-2820	589516	7823113	yes	no	no	no	Lower reaches of small watershed near southwestern portion of Cockburn Lake
S1-110	EKP-2818	598208	7807296	yes	yes	no	no	Very bouldery wide stream, near Steensby Inlet
S1-120	EKP-2817	594989	7802669	yes	yes	no	no	Stream section among small lakes and swampy areas, near Steensby Inlet
S2-010	-	570650	7905046	no	yes	no	no	Mid reaches of main stem of river that drains into northern central portion of Angajurjua Lake
S2-020	-	585234	7899946	no	yes	no	no	Mid reaches of main stem of river that drains into northeastern portion of Angajurjua Lake
S2-040	-	597777	7880427	no	yes	no	no	Slow moving wide river in very boggy upland area
S2-050	-	606940	7847916	no	yes	no	no	Lowest reaches of first order tributary to Cockburn River, just north of Cockburn Lake
S2-060	EKP-2914	607224	7847820	yes	yes	no	no	Cockburn River, just upstream of confluence with S2-050 tributary waters
S2-120	EKP-2913	626604	7780184	yes	no	no	no	Windless Lake outlet river

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NOTES:

1. GPS COORDINATES ARE IN UTM NAD 83, ZONE 17W.

0	29OCT10	ISSUED WITH REPORT NB102-181/25-2	SMR	AD	SRA
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

TABLE 2.3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
2005-2008 MINE SITE TO MILNE PORT STREAM WATER SAMPLE LOCATIONS

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2006 Site ID	2005 Site ID	GPS Coordinates ⁽¹⁾		Sampled In:				Notes
		UTM E	UTM N	2005	2006	2007	2008	
N1 and N2 Water Quality Sites Downstream of Separate Routes (near Milne Port)								
N1-010	EKP-2801	505899	7976039	yes	yes	no	no	Reference site for N1 and N2 sites, near Milne Port
N1-020	EKP-2802	502527	7973838	yes	yes	no	no	Lower reaches of Phillips Creek watershed, near Milne Inlet
N1-025	-	511928	7966788	no	yes	no	no	Main stem of Phillips Creek, downstream of combined flows from two main tributaries
N1-030	EKP-2803	515322	7965323	yes	yes	no	no	Lower reaches of Phillips Creek eastern tributary
N1 Water Quality Sites								
N1-040	EKP-2804	515013	7964184	yes	yes	no	no	Phillips Creek western tributary, upstream of confluence with N1-030 waters
N1-050	EKP-2805	521853	7948851	yes	yes	no	no	First order tributary to Phillips Creek western tributary
N1-053	-	523055	7944751	no	yes	no	no	Main stem of Phillips Creek western tributary
N1-058	-	525399	7936371	no	yes	no	no	Main stem Phillips Creek western tributary, at outlet of Katiktok Lake
N1-060	EKP-2806	525962	7936771	yes	yes	no	no	First order tributary to Phillips Creek western tributary, merges with Phillips Creek just below N1-058
N1-070	EKP-2808	528474	7926550	yes	yes	no	no	Upper reaches of Ravn River watershed
N1-080	EKP-2810	535444	7919329	yes	yes	no	no	Upper reaches of Ravn River watershed
N1-090	EKP-2812	539684	7921281	yes	yes	no	no	Upper reaches of Ravn River watershed
N2 - Water Quality Sites								
N2-010	-	518676	7963600	no	yes	no	no	First order tributary to Phillips Creek eastern tributary, upstream of N1-030
N2-013	-	521219	7960686	no	yes	no	no	Main stem of Phillips Creek eastern tributary upstream of where N2-010 merges with main stem
N2-020	-	526827	7954660	no	yes	no	no	First order tributary to Phillips Creek, eastern tributary, upstream of where N2-013
N2-030	-	533593	7945985	no	yes	no	no	First order tributary to Phillips Creek eastern tributary, upper reaches of Phillips Creek
N2-060	-	544933	7923192	no	yes	no	no	Upper reaches of Ravn River watershed
N1 and N2 Water Quality Sites Upstream of Separate Routes (near Exploration Property)								
N1-100	EKP-2814	545060	7922182	yes	yes	no	no	Upper reaches of Ravn River watershed, just upstream of an un-named lake
N1-110	EKP-2815	550784	7917490	yes	yes	no	no	Upper reaches of Ravn River watershed
Milne Camp								
M-Camp-DS	-	503219	7976481	no	no	no	yes	Downstream of Milne Camp

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NOTES:

1. GPS COORDINATES ARE IN UTM NAD 83, ZONE 17W.

0	29OCT10	ISSUED WITH REPORT NB102-181/25-2	SMR	AD	SMR
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

TABLE 2.4

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
2005-2008 LAKE SURFACE WATER QUALITY SAMPLE LOCATIONS

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Current Site ID	2005 Site ID	GPS Coordinates ⁽¹⁾		Sampled In				Notes
		UTM E (m)	UTM N (m)	2005	2006	2007	2008	
Mary Lake								
BL0-01	-	554495	7912116	no	yes	yes	yes	Northern portion of Mary Lake
BL0-03	-	552680	7906651	no	no	yes	yes	
BL0-04	-	553817	7904886	no	no	yes	yes	
BL0-05	-	554632	7906031	no	yes	yes	yes	
BL0-06	-	555924	7903760	no	no	yes	yes	Southern portion of Mary Lake
Mary Lake Tributary 2								
MLST2	-	552111	7905088	no	no	no	yes	
Candidate Reference Lake								
CRL-3	-	565703	7904839	no	no	no	yes	
Camp Lake								
JL0-01	-	557108	7914369	no	yes	yes	yes	Central region of Camp Lake
JL0-02	-	557615	7914750	no	no	yes	yes	
JL0-09	-	556335	7913955	no	no	yes	yes	
Sheardown Lake Northwest Basin								
DL0-01-1	-	560080	7913128	no	no	yes	yes	
DL0-01-2	-	560353	7912924	no	no	yes	yes	
DL0-01-3	-	560474	7912833	no	no	yes	no	
DL0-01-4	-	560695	7913043	no	no	yes	yes	
DL0-01-5	-	559798	7913356	no	no	yes	yes	
DL0-01-7	-	560525	7912609	no	no	yes	yes	
Sheardown Lake Nearshore								
SDL1	-	560347	7913430	no	no	no	yes	
SDL2	-	560310	7913469	no	no	no	yes	
SDL3	-	560264	7913482	no	no	no	yes	
SDL4	-	559941	7913085	no	no	no	yes	
SDL5	-	559960	7913039	no	no	no	yes	
SDL6	-	559991	7912998	no	no	no	yes	
Sheardown Lake Southeast Basin								
DL0-02-1	-	560814	7912116	no	no	yes	yes	
DL0-02-3	-	561046	7911915	no	no	yes	yes	
DL0-02-3B	-	560950	7911917	no	no	yes	no	
DL0-02-4	-	561512	7911832	no	no	yes	yes	
DL0-02-6	-	560756	7912167	no	no	yes	no	
Sheardown Lake Tributary 1								
SDLT1-R1	-	560324	7913498	no	no	no	yes	
Mid-Rail Camp Lake								
NS-Nivek	-	594884	7875690	no	no	no	yes	
Steensby Area Lakes								
ST3 (NSC Lake 1)	-	593065	7802932	no	no	no	yes	
ST6 (NSC Lake 2)	-	593046	7802378	no	no	no	yes	
ST24 (NSC Lake 3)	-	594438	7802376	no	no	no	yes	
ST28 (NSC Lake 4)	-	595578	7803287	no	no	no	yes	
ST92 (NSC Lake 5)	-	597616	7803081	no	no	no	yes	
ST195 (NSC Lake 6)	-	601115	7801178	no	no	no	yes	Wrong lake sampled
ST88 (NSC Lake 6)	-	599123	7802100	no	no	no	yes	
ST81 (NSC Lake 8)	-	596850	7799678	no	no	no	yes	
ST29 (NSC Lake 9)	-	594537	7801529	no	no	no	yes	
ST32 (NSC Lake 10)	-	595189	7801595	no	no	no	yes	
3 km Lake (ST353) (NSC Lake 7)	-	597184	7800305	no	no	no	yes	
10 km Lake (ST352)	-	600382	7806693	no	no	no	yes	

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NOTES:

1. GPS COORDINATES ARE IN UTM NAD 83, ZONE 17W.

REV	DATE	DESCRIPTION	REV	AD	SRA
0	29OCT10	ISSUED WITH REPORT N8102-181/25-2	PREP'D	CHK'D	APP'D

TABLE 2.5
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
2005-2008 SEDIMENT QUALITY SAMPLE LOCATIONS

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Current Site ID	2005 Site ID	GPS Coordinates ⁽¹⁾		Sampled In				Notes
		UTM E (m)	UTM N (m)	2005	2006	2007	2008	
Mary Lake								
BL0-01 (Sed)	-	554695	7913212	no	yes	yes	no	Northern portion of Mary Lake near the outlet of Tom River
BL0-03 Sed	-	552680	7906651	no	no	yes	no	
BL0-04 Sed	-	553817	7904886	no	no	yes	no	
BL0-05 (Sed)	-	554771	7906033	no	yes	yes	no	Southern portion of Mary Lake near outlet of Mary River
BL0-06 Sed	-	555924	7903760	no	no	yes	no	
Mary River								
A0-01 (Sed)	-	559019	7900094	yes	no	yes	no	Downstream of Mary Lake subcatchment, just upstream from Angajurjuaľuk Lake
C0-01 (Sed)	-	556305	7906894	yes	no	yes	no	Upstream of Mary Lake subcatchment
C0-05 Sed	-	558352	7909171	no	no	yes	no	
C0-10	-	560531	7911516	no	yes	yes	no	Downstream of all proposed mine facilities, downstream ~200 m from confluence of Sheardown Lake outflow with Mary River
D0-01	EKP-2901	560765	7911692	yes	no	no	no	Lake 2 subcatchment, outflow from Sheardown Lake
D1-01	EKP-2895	560753	7913507	yes	no	no	no	Lake 2 subcatchment, upstream of Sheardown Lake and road to main deposit
E0-01 Sed	-	560949	7911531	no	no	yes	no	Mary River - upstream of confluence with outflow from Sheardown Lake
E0-03	EKP-2856	562086	7911575	yes	no	no	no	North Fork MR subcatchment, just downstream of canyon portion of Mary River
E2-01	EKP-2843	562348	7911310	yes	no	no	no	South Fork MR subcatchment, just upstream of confluence with Mary River
G0-03 Sed	-	567204	7912587	no	no	yes	no	Mary River, just downstream of deposits 2, 3 and 3A
G0-09	-	571546	7916317	no	yes	yes	no	Mary River upstream of all 3 of the identified iron deposits
H0-01	EKP-2902	571409	7914611	yes	no	no	no	North Fork MR subcatchment, southernmost portion of the northeastern tributary to Mary River
Tom River								
I0-01	-	555470	7914139	no	yes	yes	no	Lower reaches of the Tom River, south of road and braided river section
I0-04	-	557152	7918991	no	yes	yes	no	Mid-reaches of the Tom River, 100 to 200 m below confluence of I1 tributary
Camp Lake								
JL0-01-Sed	-	557101	7914386	no	no	yes	no	Central region of Camp Lake
JL0-02-Sed	-	557615	7914750	no	no	yes	no	
JL0-07-Sed	-	556705	7914182	no	no	yes	no	
JL0-09-Sed	-	556335	7913955	no	no	yes	no	
JL0-10-Sed	-	556082	7913753	no	no	yes	no	
Sheardown Lake Northwest Basin								
DL0-01-Sed	-	560075	7913158	no	no	yes	no	
DL0-01-2 Sed	-	560353	7912924	no	no	yes	yes	
DL0-01-3 Sed	-	560474	7912833	no	no	yes	yes	
DL0-01-4 Sed	-	560695	7913043	no	no	yes	yes	
DL0-01-5 Sed	-	559798	7913356	no	no	yes	yes	
DL0-01-6 Sed	-	559723	7913389	no	no	yes	yes	
DL0-01-7 Sed	-	560525	7912609	no	no	yes	yes	
Sheardown Lake Southeast Basin								
DL0-02-Sed	-	560812	7912127	no	no	yes	no	
DL0-02-1 Sed	-	560814	7912116	no	no	yes	no	
DL0-02-2 Sed	-	561161	7911866	no	no	yes	no	
DL0-02-3 Sed	-	561046	7911915	no	no	yes	no	
DL0-02-4 Sed	-	561512	7911832	no	no	yes	no	
Sheardown Lake Tributaries								
SDLT-1 DS	-	560753	7913507	no	no	yes	no	
SDLT-1 US	-	561568	7913498	no	no	yes	no	
SDLT1-R1-Sed	-	560320	7913504	no	no	no	yes	
SDLT1-R2A-Sed	-	560739	7913502	no	no	no	yes	
SDLT1-R4-Sed	-	561490	7913533	no	no	no	yes	
SDLT-9 US	-	561770	7911810	no	no	yes	no	
SDLT-12 DS	-	560776	7912867	no	no	yes	no	
SDLT-12 US	-	561102	7912835	no	no	yes	no	
Camp Lake Tributaries								
CLT-1 DS	-	557645	7914878	no	no	yes	no	
CLT-1 US	-	558504	7915022	no	no	yes	no	
CLT-2 DS	-	557466	7914969	no	no	yes	no	
CLT-2 US	-	557454	7915246	no	no	yes	no	
FS-01	-	558264	7914877	yes	no	no	no	Lake 1 subcatchment
J0-01	EKP-2839	555701	7913773	yes	no	no	no	Lake 1 subcatchment
K0-01	EKP-2884	557390	7915030	yes	no	no	no	Lake 1 subcatchment
Sheardown Lake Nearshore Dust Monitoring								
DD-Hab 4-Stn 1	-	560420	7913355	no	no	no	yes	
DD-Hab 4-Stn 2	-	560374	7913391	no	no	no	yes	
DD-Hab 4-Stn 3	-	560351	7913426	no	no	no	yes	
Sheardown Lake Offshore Dust Monitoring								
DD-Hab 9-Stn 1	-	560259	7913455	no	no	no	yes	
DD-Hab 9-Stn 2	-	560323	7913402	no	no	no	yes	
DD-Hab 9-Stn 3	-	560354	7913358	no	no	no	yes	
Steensby Area								
Lake ST3 (NSC Lake 1)	-	593065	7802932	no	no	no	yes	
Lake ST6 (NSC Lake 2)	-	593046	7802378	no	no	no	yes	
Lake ST24 (NSC Lake 3)	-	594438	7802376	no	no	no	yes	
Lake ST28 (NSC Lake 4)	-	595631	7803308	no	no	no	yes	
Lake ST92 (NSC Lake 5)	-	597616	7803081	no	no	no	yes	
Lake ST88 (NSC Lake 6)	-	599123	7802100	no	no	no	yes	
Lake ST81 (NSC Lake 8)	-	596944	7799639	no	no	no	yes	
Lake ST29 (NSC Lake 9)	-	594508	7801523	no	no	no	yes	
Lake ST32 (NSC Lake 10)	-	595189	7801595	no	no	no	yes	
Steensby Inlet Stream 17	-	595001	7802717	no	no	no	yes	
Steensby Inlet Stream 18	-	594683	7801483	no	no	no	yes	
Steensby Inlet Stream 19	-	594402	7801209	no	no	no	yes	
Steensby Inlet Stream 24	-	594792	7800250	no	no	no	yes	

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NOTES:

1. GPS COORDINATES ARE IN UTM NAD 83, ZONE 17W.

0	200CT10	ISSUED WITH REPORT NR102-181/25-2	RDW	SMR	SRA
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APPD.

TABLE 3.1
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MINE SITE

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Site ID	In Situ Parameters				Laboratory Results																
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	Alkalinity mg/L CaCO3	Br- mg/L	Cl- mg/L	Conductivity uS/cm	NH3+NH4 mg/L N	NO2- mg/L N	NO3- mg/L N	NO2+NO3 mg/L N	Phenols mg/L	SO4- mg/L	TKN mg/L	TOC mg/L	DOC mg/L	TSS mg/L	TDS mg/L	Hardness mg/L CaCO3	Phosphorus Total
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	-	-	-	-	0.021-2314	0.06	2.9	-	0.004	-	-	-	-	25	-	-	-
Mary River - Downstream of Mary Lake:																					
Number of sites	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of samples	41	41	38	41	42	42	42	42	42	42	42	42	42	42	22	22	22	22	42	42	42
Number of Detects	41	41	38	41	42	42	42	42	42	42	42	42	42	42	22	22	22	22	42	42	42
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	-0.01	0.040	9.97	6.60	20	0.05	1	42	0.02	0.002	0.050	0.1	0.001	1	0.10	1.4	1.4	2	27	1.0	0.0
Maximum Detected	11.67	0.178	14.75	8.28	68	0.30	4	136	0.80	0.060	0.100	0.1	0.001	3	0.86	3.6	3.2	9	77	72.7	0.10
Mean	5.52	0.06	12.54	7.55	32.00	0.17	2	68	0.09	0.011	0.094	0.1	0.001	2	0.20	1.9	1.8	2	44	31.8	0.0
Downstream of Deposits																					
Number of sites	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of samples	220	219	189	212	229	229	229	229	229	229	229	229	227	229	124	124	124	124	229	229	229
Number of Detects	220	219	189	212	229	229	229	229	229	229	229	229	227	229	124	124	124	124	229	229	229
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	-0.1	0.007	9.28	6.14	5	0.05	0	13	0.02	0.002	0.1	0.1	0.001	1	0.05	0.8	0.7	2	8	5.0	0.0
Maximum Detected	17.07	8.253	19.67	8.64	143	39.00	2890	9090	0.90	0.100	0.6	0.6	0.002	11	0.41	4.7	4.3	20	5910	4210.0	0.19
Mean	4.99	0.449	12.90	7.80	51	0.81	124	485	0.09	0.013	0.1	0.1	0.001	3	0.16	1.7	1.7	3	319	218.2	0.0
Tributaries of Sheardown Lake																					
Number of sites	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Number of samples	56	56	56	56	57	57	57	57	57	57	57	57	57	57	34	34	34	34	57	57	57
Number of Detects	56	56	56	56	57	57	57	57	57	57	57	57	57	57	34	34	34	34	57	57	57
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	0.05	0.024	8.91	6.78	12	0.05	0	24	0.02	0.002	0.1	0.1	0.001	1	0.09	1.0	1.0	2	16	9.0	0.0
Maximum Detected	14.25	0.237	15.20	8.44	157	0.30	21	288	0.80	0.060	0.2	0.2	0.001	7	0.77	4.6	4.4	21	187	171.0	0.1
Mean	5.22	0.126	12.31	7.75	67	0.23	3	140	0.11	0.020	0.1	0.1	0.001	2	0.14	2.8	2.7	3	91	73.2	0.0
Background Tributary to Mary River																					
Number of sites	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of samples	16	16	16	16	16	16	16	16	16	16	16	16	16	16	6	6	6	6	16	16	16
Number of Detects	16	16	16	16	16	16	16	16	16	16	16	16	16	16	6	6	6	6	16	16	16
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	0.27	0.016	8.87	6.27	6	0.05	0	19	0.02	0.002	0.1	0.1	0.001	1	0.10	1.8	1.6	2	34	7.9	0.003
Maximum Detected	15.32	0.149	15.61	8.18	84	0.80	4	172	1.50	0.060	0.1	0.1	0.004	6	0.34	3.4	3.3	4	112	94.7	0.100
Mean	5.67	0.097	12.27	7.65	52	0.27	1	104	0.30	0.033	0.1	0.1	0.001	2	0.20	2.4	2.2	2	64	53.8	0.024
Upstream of Deposits																					
Number of sites	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of samples	52	52	44	51	52	52	52	52	52	52	52	52	52	52	33	33	33	33	52	52	52
Number of Detects	52	52	44	51	52	52	52	52	52	52	52	52	52	52	33	33	33	33	52	52	52
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	-0.1	0.011	10.19	6.72	5	0.05	1	11	0.02	0.002	0.1	0.1	0.001	1	0.05	0.8	0.7	2	7	5.0	0.0
Maximum Detected	12.49	0.218	14.81	8.34	102	0.30	8	231	0.80	0.060	0.1	0.1	0.003	7	0.75	5.6	5.3	36	150	113.0	0.1
Mean	4.53	0.089	12.66	7.76	47	0.16	2	99	0.06	0.009	0.1	0.1	0.001	3	0.22	2.0	2.0	6	63	48.4	0.0
Tom River Area																					
Number of sites	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Number of samples	46	46	41	46	46	46	46	46	46	46	46	46	46	46	27	27	27	27	46	46	46
Number of Detects	46	46	41	46	46	46	46	46	46	46	46	46	46	46	27	27	27	27	46	46	46
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	-0.1	0.042	9.60	6.90	23	0.05	0	47	0.02	0.002	0.1	0.1	0.001	1	0.10	0.8	0.8	2	31	22.0	0.0
Maximum Detected	13.55	0.212	15.77	8.90	106	0.30	7	227	0.60	0.100	0.1	0.1	0.001	5	0.50	5.2	4.8	3	148	118.0	0.10
Mean	4.57	0.105	12.77	7.79	55	0.18	2	112	0.07	0.020	0.1	0.1	0.001	2	0.19	2.3	2.1	2	71	57.0	0.0
Tributaries of Camp Lake																					
Number of sites	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of samples	89	89	81	88	92	92	92	92	92	92	92	92	92	92	44	44	44	44	92	92	92
Number of Detects	89	89	81	88	92	92	92	92	92	92	92	92	92	92	44	44	44	44	92	92	92
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	-0.17	0.000	9.52	4.94	10	0.05	0	21	0.02	0.002	0.1	0.1	0.001	1	0.10	1.3	1.2	2	14	9.0	0.0
Maximum Detected	17.81	0.234	16.51	8.71	133	0.30	7	265	0.80	0.060	0.3	0.3	0.002	7	0.44	5.8	5.4	5	172	149.0	0.11
Mean	5.82	0.129	12.32	7.84	73	0.17	2	143	0.10	0.015	0.1	0.1	0.001	2	0.19	3.2	3.0	2	91	75.4	0.0
Drainages off Deposit																					
Number of sites	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Number of samples	23	23	22	23	24	24	24	24	24	24	24	24	24	24	12	12	12	12	24	24	24
Number of Detects	23	23	22	23	24	24	24	24	24	24	24	24	24	24	12	12	12	12	24	24	24
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Minimum	0.08	0.025	9.22	6.27	9	0.05	0	26	0.02	0.002	0.1	0.1	0.001	1	0.10	0.1	0.8	1	2	11.5	0.0
Maximum Detected	11.93	0.915	16.04	8.32	102	13.00	1000	2780	0.60	0.060	0.2	0.2	0.002	5	68.00	2.6	2.4	56	2230	1204.0	0.10
Mean	4.03	0.139	12.77	7.52	55	0.79	43	221	0.16	0.028	0.1	0.1	0.001	1	13.10	1.3	1.5	7	151	104.8	0.0

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TABLE 3.1
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MINE SITE

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Site ID	In Situ Parameters				Laboratory Results															CCME WQI	
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	Mercury Total	Molybdenum Total	Nickel Total	Potassium Total	Selenium Total	Silicon Total	Silver Total	Sodium Total	Strontium Total	Thallium Total	Tin Total	Titanium Total	Uranium Total	Vanadium Total	Zinc Total	2008	
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	0.000026	0.073	0.025-0.150(7)	-	0.001	-	0.0001	-	-	0.0008	-	-	-	-	0.03	-	
Mary River - Downstream of Mary Lake:																					
Number of sites	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	81	Good
Number of samples	41	41	38	41	42	42	42	42	42	12	42	41	42	24	42	17	12	42	42		
Number of Detects	41	41	38	41	42	42	42	42	42	12	42	41	42	24	42	17	12	42	42		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	-0.01	0.040	9.97	6.60	0.00001	0.00005	0.0005	0.330	0.001	0.368	0.00001	0.010	0.00438	0.0001	0.0001	0.00	0.000115	0.001	0.001		
Maximum Detected	11.67	0.178	14.75	8.28	0.00010	0.00500	0.0050	2.000	0.005	0.969	0.00060	2.000	0.01020	0.0002	0.0100	0.02	0.000767	0.001	0.010		
Mean	5.52	0.06	12.54	7.55	0.00008	0.00305	0.0033	0.675	0.001	0.520	0.00009	0.726	0.00774	0.0001	0.0061	0.01	0.000543	0.001	0.007		
Downstream of Deposits																					
Number of sites	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	74	Fair
Number of samples	220	219	189	212	229	229	229	229	229	47	229	229	229	120	229	72	47	229	229		
Number of Detects	220	219	189	212	229	229	229	229	229	47	229	229	229	120	229	72	47	229	229		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	-0.1	0.007	9.28	6.14	0.00001	0.00005	0.0005	0.150	0.001	0.323	0.00001	0.120	0.00100	0.0001	0.0001	0.00	0.000113	0.001	0.001		
Maximum Detected	17.07	8.253	19.67	8.64	0.00010	0.05000	0.0500	22.500	0.085	1.870	0.00100	69.000	7.87000	0.0020	0.1000	0.13	0.006880	0.020	0.100		
Mean	4.99	0.449	12.90	7.80	0.00009	0.00392	0.0046	1.455	0.003	0.948	0.00009	3.530	0.27603	0.0002	0.0078	0.01	0.002968	0.001	0.009		
Tributaries of Sheardown Lake																					
Number of sites	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	86	Good
Number of samples	56	56	56	56	57	57	57	57	57	27	57	57	57	46	57	43	27	57	57		
Number of Detects	56	56	56	56	57	57	57	57	57	27	57	57	57	46	57	43	27	57	57		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	0.05	0.024	8.91	6.78	0.00001	0.00005	0.0005	0.214	0.001	0.272	0.00001	0.100	0.00100	0.0001	0.0001	0.00	0.000010	0.001	0.001		
Maximum Detected	14.25	0.237	15.20	8.44	0.00010	0.00730	0.0077	2.740	0.005	4.390	0.00010	2.510	0.02720	0.0002	0.0100	0.04	0.004040	0.002	0.010		
Mean	5.22	0.126	12.31	7.75	0.00006	0.00220	0.0025	1.144	0.002	1.365	0.00006	0.711	0.00869	0.0001	0.0029	0.01	0.001124	0.001	0.004		
Background Tributary to Mary River																					
Number of sites	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	78	Fair
Number of samples	16	16	16	16	16	16	16	16	16	4	16	16	16	13	16	12	4	16	16		
Number of Detects	16	16	16	16	16	16	16	16	16	4	16	16	16	13	16	12	4	16	16		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	0.27	0.016	8.87	6.27	0.00001	0.00010	0.0010	0.360	0.001	0.754	0.00001	0.250	0.00110	0.0001	0.0001	0.00	0.000228	0.001	0.001		
Maximum Detected	15.32	0.149	15.61	8.18	0.00010	0.00500	0.0050	2.000	0.005	1.260	0.00010	2.000	0.01290	0.0002	0.0100	0.01	0.000715	0.001	0.010		
Mean	5.67	0.097	12.27	7.65	0.00008	0.00144	0.0023	0.708	0.003	1.032	0.00008	0.527	0.00617	0.0002	0.0030	0.01	0.000437	0.001	0.004		
Upstream of Deposits																					
Number of sites	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	80	Good
Number of samples	52	52	44	51	52	52	52	52	52	16	52	52	52	28	52	18	16	52	52		
Number of Detects	52	52	44	51	52	52	52	52	52	16	52	52	52	28	52	18	16	52	52		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	-0.1	0.011	10.19	6.72	0.00001	0.00005	0.0005	0.190	0.001	0.297	0.00001	0.150	0.00100	0.0001	0.0001	0.01	0.000175	0.001	0.001		
Maximum Detected	12.49	0.218	14.81	8.34	0.00010	0.00500	0.0050	2.000	0.005	4.510	0.00010	3.600	0.01810	0.0002	0.0320	0.11	0.005800	0.003	0.010		
Mean	4.53	0.089	12.66	7.76	0.00008	0.00335	0.0035	0.878	0.001	1.106	0.00007	1.278	0.00941	0.0001	0.0072	0.02	0.003089	0.001	0.007		
Tom River Area																					
Number of sites	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	86	Good
Number of samples	46	46	41	46	46	46	46	46	46	19	46	46	46	29	46	25	19	46	46		
Number of Detects	46	46	41	46	46	46	46	46	46	19	46	46	46	29	46	25	19	46	46		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	-0.1	0.042	9.60	6.90	0.00001	0.00005	0.0005	0.400	0.001	0.335	0.00001	0.253	0.00250	0.0001	0.0001	0.00	0.000067	0.001	0.001		
Maximum Detected	13.55	0.212	15.77	8.90	0.00010	0.00500	0.0050	2.000	0.005	1.060	0.00010	3.200	0.01470	0.0002	0.0100	0.01	0.003500	0.001	0.010		
Mean	4.57	0.105	12.77	7.79	0.00007	0.00238	0.0026	0.765	0.002	0.656	0.00006	0.917	0.00717	0.0001	0.0047	0.01	0.001255	0.001	0.005		
Tributaries of Camp Lake																					
Number of sites	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	84	Good
Number of samples	89	89	81	88	92	92	92	92	92	23	92	92	92	51	92	39	23	92	92		
Number of Detects	89	89	81	88	92	92	92	92	92	23	92	92	92	51	92	39	23	92	92		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	-0.17	0.000	9.52	4.94	0.00001	0.00005	0.0005	0.370	0.001	0.252	0.00001	0.180	0.00100	0.0001	0.0001	0.00	0.000047	0.001	0.001		
Maximum Detected	17.81	0.234	16.51	8.71	0.00010	0.00500	0.0050	2.000	0.005	2.050	0.00010	3.300	0.01630	0.0002	0.0100	0.01	0.002950	0.001	0.012		
Mean	5.82	0.129	12.32	7.84	0.00008	0.00300	0.0035	0.944	0.002	1.078	0.00008	0.773	0.00816	0.0001	0.0060	0.01	0.001047	0.001	0.007		
Drainages off Deposit																					
Number of sites	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	80	Good
Number of samples	23	23	22	23	23	23	23	23	23	10	23	23	23	21	23	20	10	23	23		
Number of Detects	23	23	22	23	23	23	23	23	23	10	23	23	23	21	23	20	10	23	23		
Percentage of Detects	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum	0.08	0.025	9.22	6.27	0.00001	0.00006	0.0005	0.397	0.001	0.306	0.00001	0.250	0.00130	0.0001	0.0001	0.00	0.000092	0.001	0.001		
Maximum Detected	11.93	0.915	16.04	8.32	0.00010	0.00500	0.0050	20.100	0.005	2.580	0.00030	15.500	5.15000	0.0002	0.0100	0.05	0.002810	0.002	0.010		
Mean	4.03	0.139	12.77	7.52	0.00006	0.00093	0.0015	1.759	0.003	0.824	0.00007	1.196	0.22948	0.0001	0.0018	0.01	0.000029	0.001	0.003		

TABLE 3.1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MINE SITE

NOTES:

- 1. FRESHWATER GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE - CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME), CANADIAN ENVIRONMENTAL GUIDELINES, UPDATED SEPTEMBER 2007.
- 2. CCME WQI - CANADIAN WATER QUALITY GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE, CCME WATER QUALITY INDEX 1.0, 2001.
- 3. WATER QUALITY GUIDELINE LIMITS FOR TOTAL AMMONIA ARE DEPENDENT UPON BOTH TEMPERATURE AND pH. SEE THE CCME GUIDELINES FOR MORE DETAILS.
- 4. ALUMINIUM (Al) GUIDELINE LIMITS ARE DEPENDENT UPON pH. THE LOWER LIMIT OF 0.005 mg/L CORRESPONDS TO A pH OF <6.5, THE UPPER LIMIT OF 0.1 mg/L CORRESPONDS TO A pH OF >= 6.5.
- 5. CADMIUM (Cd) GUIDELINE LIMITS ARE 0.000017 mg/L OR CALCULATED VIA THE FOLLOWING FORMULA: Cd=10⁻⁶*(0.88log(Hardness)-3.2).
- 6. COPPER (Cu) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS OF <120 mg/L; A LIMIT OF 0.003 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L INCLUSIVE; AND A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS OF >180 mg/L.
- 7. LEAD (Pb) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.001 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.007 mg/L.
- 8. NICKEL (Ni) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.025 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.065 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.110 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.150 mg/L.
- 9. CCME WQI IS AN AVERAGE OF ALL WATER QUALITY DATA FOR EACH SITE WITHIN THE RESPECTIVE AREA OVER THE YEARS 2005 TO 2008.
- 10. FOR STATISTICAL PURPOSES, WHERE A RESULT WAS REPORTED AS BELOW THE METHOD DETECTION LIMIT, THE "<" SYMBOL WAS REMOVED AND THE RESULT WAS CONSIDERED TO BE EQUAL TO THE METHOD DETECTION LIMIT.
- 11. SAMPLES ANALYZED BY ACCUTEST LABORATORIES AND ALS VANCOUVER.
- 12. 'ND' REFERS TO NON-DETECT RESULTS (RESULTS BELOW THE METHOD DETECTION LIMIT).
- 13. 'MEAN' WAS CALCULATED FOR AREAS IN WHICH ≥50% OF THE RESULTS WERE DETECTABLE (ABOVE THE MDL).
- 14. FOR SAMPLES THAT WERE ONLY SAMPLED IN 2005 AND/OR 2006, THE 'NUMBER OF SAMPLES AT OR BELOW THE MDL' REPLACES THE % DETECTABLE RESULTS.

I:\110200181\25\AIReport\Report 2, Rev 0 - Surface Water and Sediment Quality Baseline Report\Tables 3.1 to 3.3.xls\NOTES 3.1

0	29OCT10	ISSUED WITH REPORT MB102-181/25-2	RDW	AJ	SBA
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

TABLE 3.2
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MINE SITE TO STEENSBY PORT

Site ID	In Situ Parameters				Laboratory Results																			
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	Aluminum Total	Antimony Total	Arsenic Total	Barium Total	Beryllium Total	Bismuth Total	Boron Total	Cadmium Total	Calcium Total	Chromium Total	Cobalt Total	Copper Total	Iron Total	Lead Total	Lithium Total	Magnesium Total	Manganese Total	Mercury Total	Molybdenum Total	
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	0.005 or 0.1	-	0.0050	-	-	-	-	0.00002	-	-	-	0.002-0.004	0.30	0.001-0.007	-	-	-	0.00003	0.073000	
Cockburn Area																								
Number of samples	25	25	25	25	25	15	25	25	15	15	25	25	25	25	25	25	25	25	12	25	25	25	25	
Minimum	0.02	0.005	10.30	5.88	0.0089	ND	ND	ND	ND	ND	ND	ND	0.200	ND	ND	ND	ND	ND	ND	0.10	ND	ND	ND	
Maximum	13.48	0.015	14.90	7.55	0.2040	ND	ND	0.003	ND	ND	0.06	ND	0.900	ND	ND	0.00100	0.24	0.00030	ND	0.41	0.01380	ND	0.005000	
Mean	5.51	0.009	12.76	6.57	0.0496	-	-	-	-	-	-	-	0.526	-	-	-	-	-	-	0.25	-	-	-	
% Detectable Results	100	100	100	100	100	0	0	60	0	0	4	0	100	0	8	60	32	24	0	100	60	0	19	
Ravn River - Upstream of Angajurjuak Lake																								
Number of samples	10	10	9	10	10	5	10	10	5	5	10	10	10	10	10	10	10	10	4	10	10	10	10	
Minimum	0.23	0.009	9.54	6.43	0.0140	ND	ND	ND	ND	ND	ND	ND	0.500	ND	ND	ND	0.06	ND	ND	0.37	ND	ND	ND	
Maximum	16.06	0.038	15.21	8.50	0.1530	ND	ND	0.005	ND	ND	ND	ND	4.000	ND	ND	0.00158	0.21	0.00020	ND	2.00	0.02000	ND	0.000100	
Mean	5.32	0.025	12.79	7.19	0.0662	-	-	-	-	-	-	-	2.271	-	-	-	0.12	-	-	1.27	0.00858	-	-	
% Detectable Results	100	100	100	100	100	0	0	50	0	0	0	0	100	0	0	40	100	20	0	100	70	0	10	
Rowley River																								
Number of samples	7	7	7	7	7	5	7	7	5	5	7	7	7	7	7	7	7	7	4	7	7	7	7	
Minimum	0.24	0.008	12.17	6.14	0.0120	ND	ND	ND	ND	ND	ND	ND	1.000	ND	ND	ND	ND	ND	ND	0.30	ND	ND	ND	
Maximum	6.97	0.029	13.94	8.48	0.1480	ND	ND	0.004	ND	ND	ND	ND	2.000	ND	ND	0.00116	0.12	0.00010	ND	1.03	0.00070	ND	0.000075	
Mean	4.31	0.016	13.05	7.26	0.0510	-	-	0.005	-	-	-	-	1.396	-	-	-	-	-	-	0.59	-	-	-	
% Detectable Results	100	100	100	100	100	0	0	71	0	0	0	0	100	0	0	57	29	14	0	100	57	0	57	
Steenby Port Area																								
Number of samples	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
Minimum	1.30	0.011	8.79	6.36	0.0065	ND	ND	0.001	ND	ND	ND	ND	0.762	ND	ND	0.00044	ND	ND	ND	0.41	0.00009	ND	ND	
Maximum	12.06	0.292	13.37	7.28	0.6340	ND	0.0001	0.008	ND	ND	0.02	ND	31.800	0.0012	0.0004	0.00286	0.95	0.00047	ND	6.98	0.01250	ND	0.000150	
Mean	5.95	0.101	11.80	6.91	0.1034	-	-	0.004	-	-	0.01	-	8.753	0.0012	0.0004	-	0.16	0.00047	-	2.45	0.00329	-	0.000337	
% Detectable Results	100	100	100	100	100	0	22	100	0	0	33	0	100	11	11	100	67	22	0	100	100	0	78	
Mid-Rail Camp Area																								
Number of samples	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Minimum	0.61	0.012	8.96	5.57	0.0065	ND	ND	0.002	ND	ND	ND	ND	0.479	ND	ND	0.00031	ND	ND	ND	0.58	0.00108	ND	ND	
Maximum	16.20	0.048	12.94	6.96	0.1530	ND	ND	0.004	ND	ND	ND	ND	5.010	ND	ND	0.00099	0.44	0.00013	ND	1.45	0.05630	ND	ND	
Mean	6.56	0.025	11.70	6.22	0.0391	-	-	0.003	-	-	-	-	2.116	-	-	0.00056	0.19	0.00013	-	0.89	0.01774	-	-	
% Detectable Results	100	100	100	100	100	0	0	100	0	0	0	0	100	0	38	100	100	25	0	100	100	25	0	
Camp Lake to Steenby Port - Sites Sampled in 2005-2006																								
S1-010																								
Number of samples	4	4	4	4	4	3	4	4	3	3	4	4	4	4	4	4	4	4		4	4	4	4	
Minimum	0.06	0.012	10.98	6.49	0.008	0.0004	0.001	0.002	0.005	0.0003	0.01	0.0001	1.00	0.001	0.0002	0.0008	0.03	0.0002		0.64	0.0026	0.0001	0.0003	
Maximum	8.92	0.053	15.45	7.33	0.388	0.0004	0.005	0.010	0.005	0.0003	0.05	0.0001	3.96	0.001	0.0003	0.0025	0.45	0.0010		2.45	0.0151	0.0001	0.0050	
Mean	2.54	0.025	13.31	6.90	0.132	0.0004	0.004	0.006	0.005	0.0003	0.02	0.0001	1.92	0.001	0.0003	0.0013	0.16	0.0005		1.19	0.0077	0.0001	0.0015	
# Samples At or Below MDL					0	3	4	1	3	3	4	4	0	4	4	2	1	2		0	1	4	4	
S1-011																								
Number of samples	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	
Minimum	0.22	0.013	13.40	7.48	0.010	0.0004	0.005	0.003	0.005	0.0003	0.05	0.0001	1.99	0.001	0.0003	0.0008	0.05	0.0002		1.03	0.0129	0.0001	0.0003	
Maximum	0.22	0.013	13.40	7.48	0.010	0.0004	0.005	0.003	0.005	0.0003	0.05	0.0001	1.99	0.001	0.0003	0.0008	0.05	0.0002		1.03	0.0129	0.0001	0.0003	
Mean	0.22	0.013	13.40	7.48	0.010	0.0004	0.005	0.003	0.005	0.0003	0.05	0.0001	1.99	0.001	0.0003	0.0008	0.05	0.0002		1.03	0.0129	0.0001	0.0003	
# Samples At or Below MDL					0	1	1	0	1	1	1	1	0	1	1	1	1	1		0	0	1	1	
S1-020																								
Number of samples	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	
Minimum	0.70	0.032	15.81	7.11	0.033	0.0004	0.005	0.003	0.005	0.0003	0.01	0.0001	2.76	0.001	0.0003	0.0009	0.05	0.0002		1.62	0.0008	0.0001	0.0003	
Maximum	0.70	0.032	15.81	7.11	0.033	0.0004	0.005	0.003	0.005	0.0003	0.01	0.0001	2.76	0.001	0.0003	0.0009	0.05	0.0002		1.62	0.0008	0.0001	0.0003	
Mean	0.70	0.032	15.81	7.11	0.033	0.0004	0.005	0.003	0.005	0.0003	0.01	0.0001	2.76	0.001	0.0003	0.0009	0.05	0.0002		1.62	0.0008	0.0001	0.0003	
# Samples At or Below MDL					0	1	1	0	1	1	1	1	0	1	1	0	0	1		0	0	1	1	
S1-030																								
Number of samples	4	4	4	4	4	3	4	4	3	3	4	4	4	4	4	4	4	4		4	4	4	4	
Minimum	1.72	0.030	12.57	6.74	0.004	0.0004	0.001	0.002	0.005	0.0003	0.01	0.0001	3.28	0.001	0.0002	0.0008	0.02	0.0002		1.72	0.0007	0.0001	0.0003	
Maximum	7.37	0.039	14.14	7.53	0.007	0.0004	0.005	0.010	0.005	0.0003	0.05	0.0001	4.00	0.001	0.0003	0.0013	0.05	0.0010		2.01	0.0100	0.0001	0.0050	
Mean	3.52	0.035	13.40	7.05	0.005	0.0004	0.004	0.005	0.005	0.0003	0.02	0.0001	3.60	0.001	0.0003	0.0010	0.03	0.0004		1.88	0.0032	0.0001	0.0015	
# Samples At or Below MDL					2	3	4	1	3	3	4	4	0	4	4	3	4	3		0	3	4	4	
S1-040																								
Number of samples	4	4	4	4	4	1	4	4	1	1	4	4	4	4	4	4	4	4		4	4	4	4	
Minimum	0.88	0.036	11.41	6.50	0.004	0.0004	0.001	0.004	0.005	0.0003	0.01	0.0001	3.00	0.001	0.0002	0.0008	0.03	0.0002		2.00	0.0017	0.0001	0.0003	
Maximum	7.04	0.050	15.71	7.53	0.011	0.0004	0.005	0.010	0.005	0.0003	0.06	0.0001	5.00	0.001	0.0003	0.0010	0.05	0.0010		3.00	0.0100	0.0001	0.0050	
Mean	3.87	0.041	13.14	7.18	0.007	0.0004	0.002	0.009	0.005	0.0003	0.02	0.0001	3.85	0.001	0.0002	0.0010	0.04	0.0008		2.36	0.0079	0.0001	0.0038	
# Samples At or Below MDL					2	1	4	3	1	1	3	4	0	4	4	4	4	4		0	3	4	4	
S1-050																								
Number of samples	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		3	3	3	3	
Minimum	3.46	0.017	11.09	6.12	0.022	0.0004	0.005	0.003	0.005	0.0003	0.01	0.0001	1.75	0.001	0.0003	0.0008	0.02	0.0002		0.77	0.0007	0.0001	0.0003	
Maximum	8.95	0.022	14.35	7.02	0.028	0.0004	0.005	0.003	0.005	0.0003	0.06	0.0003	2.17											

TABLE 3.2
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MINE SITE TO STEENSBY PORT

Site ID	In Situ Parameters				Laboratory Results													CCME WQI		
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	Nickel Total	Potassium Total	Selenium Total	Silicon Total	Silver Total	Sodium Total	Strontium Total	Thallium Total	Tin Total	Titanium Total	Uranium Total	Vanadium Total	Zinc Total	2005	2006	2008
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	0.025-0.150(7)	-	0.001	-	0.00010	-	-	0.0008	-	-	-	-	0.030	-	-	-
Cockburn Area																				
Number of samples	25	25	25	25	25	25	25	12	25	25	25	18	25	15	12	25	25			75 Fair
Minimum	0.02	0.005	10.30	5.88	ND	ND	ND	0.380	ND	ND	0%	ND	ND	ND	0.000068	ND	ND			
Maximum	13.48	0.015	14.90	7.55	ND	0.370	ND	1.460	ND	1.240	0.00470	ND	0.0010	0.011	0.000229	ND	0.003			
Mean	5.51	0.009	12.76	6.57	-	0.000	-	0.731	-	0.804	0.00305	-	-	-	0.000120	-	-			
% Detectable Results	100	100	100	100	0	81	0	100	0	81	100	0	6	17	100	0	19			
Ravn River - Upstream of Angajurjuak Lake																				
Number of samples	10	10	9	10	10	10	10	4	10	10	10	6	10	5	4	10	10			75 Fair
Minimum	0.23	0.009	9.54	6.43	ND	ND	ND	0.284	ND	ND	0%	ND	ND	ND	0.000086	ND	ND			
Maximum	16.06	0.038	15.21	8.50	ND	0.660	ND	1.290	ND	1.170	0.00710	ND	ND	0.011	0.000363	ND	ND			
Mean	5.32	0.025	12.79	7.19	-	-	-	-	-	-	0.00480	-	-	-	-	-	-			
% Detectable Results	100	100	100	100	10	90	0	100	0	90	100	0	0	40	100	0	20			
Rowley River																				
Number of samples	7	7	7	7	7	7	7	4	7	7	7	6	7	5	4	7	7			80 Fair
Minimum	0.24	0.008	12.17	6.14	ND	ND	ND	0.402	ND	ND	0%	ND	ND	ND	0.000086	ND	ND			
Maximum	6.97	0.029	13.94	8.48	ND	0.428	ND	0.742	ND	1.880	0.00515	ND	ND	0.012	0.000261	ND	ND			
Mean	4.31	0.016	13.05	7.26	-	0.000	-	-	-	1.000	0.00323	-	-	-	-	-	-			
% Detectable Results	100	100	100	100	0	86	0	100	0	86	100	0	0	0	100	0	0			
SteenSBY Port Area																				
Number of samples	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9			90 Good
Minimum	1.30	0.011	8.79	6.36	ND	0.231	ND	0.222	ND	1.420	0%	ND	ND	ND	0.000034	ND	ND			
Maximum	12.06	0.292	13.37	7.28	0.0011	1.220	ND	1.600	ND	18.200	0.04160	ND	ND	0.064	0.000242	ND	0.004			
Mean	5.95	0.101	11.80	6.91	0.0011	0.677	-	0.687	-	7.941	0.01541	-	-	0.064	0.000101	-	0.002			
% Detectable Results	100	100	100	100	11	100	0	100	0	100	100	0	0	11	100	11	33			
Mid-Rail Camp Area																				
Number of samples	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8			81 Good
Minimum	0.61	0.012	8.96	5.57	ND	ND	ND	0.205	ND	ND	0%	ND	ND	ND	0.000019	ND	ND			
Maximum	16.20	0.048	12.94	6.96	0.0007	1.260	ND	1.580	ND	1.510	0.04210	ND	ND	0.013	0.000100	ND	0.002			
Mean	6.56	0.025	11.70	6.22	0.0007	0.690	-	0.566	-	0.791	0.01555	-	-	0.010	0.000052	-	0.001			
% Detectable Results	100	100	100	100	25	100	0	100	0	100	100	0	0	13	100	0	38			
Camp Lake to SteenSBY Port - Sites Sampled in 2005-2006																				
S1-010																				
Number of samples	4	4	4	4	4	4	4		4	4	4	3	4	3		4	4	82.9 Good	100 Excellent	
Minimum	0.06	0.012	10.98	6.49	0.001	0.25	0.001		0.0001	0.32	0.0026	0.0002	0.001	0.003		0.0009	0.001			
Maximum	8.92	0.053	15.45	7.33	0.005	0.92	0.005		0.0001	1.83	0.0068	0.0002	0.010	0.014		0.0010	0.010			
Mean	2.54	0.025	13.31	6.90	0.002	0.48	0.004		0.0001	0.73	0.0039	0.0002	0.003	0.008		0.0010	0.004			
# Samples At or Below MDL					3	0	4		4	0	0	3	4	1		3	2			
S1-011																				
Number of samples	1	1	1	1	1	1	1		1	1	1	1	1	1		1	1	100 Excellent		
Minimum	0.22	0.013	13.40	7.48	0.001	0.31	0.005		0.0001	0.45	0.0033	0.0002	0.001	0.003		0.0009	0.001			
Maximum	0.22	0.013	13.40	7.48	0.001	0.31	0.005		0.0001	0.45	0.0033	0.0002	0.001	0.003		0.0009	0.001			
Mean	0.22	0.013	13.40	7.48	0.001	0.31	0.005		0.0001	0.45	0.0033	0.0002	0.001	0.003		0.0009	0.001			
# Samples At or Below MDL					1	0	1		1	0	0	1	1	1		1	1			
S1-020																				
Number of samples	1	1	1	1	1	1	1		1	1	1	1	1	1		1	1	100 Excellent		
Minimum	0.70	0.032	15.81	7.11	0.001	0.49	0.005		0.0001	0.39	0.0035	0.0002	0.001	0.003		0.0009	0.001			
Maximum	0.70	0.032	15.81	7.11	0.001	0.49	0.005		0.0001	0.39	0.0035	0.0002	0.001	0.003		0.0009	0.001			
Mean	0.70	0.032	15.81	7.11	0.001	0.49	0.005		0.0001	0.39	0.0035	0.0002	0.001	0.003		0.0009	0.001			
# Samples At or Below MDL					1	0	1		1	0	0	1	1	1		1	1			
S1-030																				
Number of samples	4	4	4	4	4	4	4		4	4	4	3	4	3		4	4	100 Excellent	100 Excellent	
Minimum	1.72	0.030	12.57	6.74	0.001	0.49	0.001		0.0001	0.49	0.0042	0.0002	0.001	0.003		0.0009	0.001			
Maximum	7.37	0.039	14.14	7.53	0.005	0.60	0.005		0.0001	0.63	0.0060	0.0002	0.010	0.003		0.0010	0.010			
Mean	3.52	0.035	13.40	7.05	0.002	0.55	0.004		0.0001	0.56	0.0048	0.0002	0.003	0.003		0.0009	0.004			
# Samples At or Below MDL					4	0	4		4	0	0	3	4	3		4	3			
S1-040																				
Number of samples	4	4	4	4	4	4	4		4	4	4	1	4	1		4	4	100 Excellent	100 Excellent	
Minimum	0.88	0.036	11.41	6.50	0.001	0.50	0.001		0.0001	0.48	0.0050	0.0002	0.001	0.003		0.0009	0.001			
Maximum	7.04	0.050	15.71	7.53	0.005	0.68	0.005		0.0001	0.69	0.0070	0.0002	0.010	0.003		0.0010	0.010			
Mean	3.87	0.041	13.14	7.18	0.004	0.59	0.002		0.0001	0.57	0.0056	0.0002	0.008	0.003		0.0010	0.008			
# Samples At or Below MDL					4	0	4		4	0	0	1	4	1		4	4			
S1-050																				
Number of samples	3	3	3	3	3	3	3		3	3	3	3	3	3		3	3	90.2 Good	-	
Minimum	3.46	0.017	11.09	6.12	0.001	0.33	0.005		0.0001	0.44	0.0032	0.0002	0.001	0.003		0.0009	0.001			
Maximum	8.95	0.022	14.35	7.02	0.001	0.40	0.005		0.0001	0.86	0.0038	0.0002	0.001	0.003		0.0009	0.006			
Mean	5.86	0.019	12.88	6.51	0.001	0.35	0.005		0.0001	0.61	0.0036	0.0002	0.001	0.003		0.0009	0.003			
# Samples At or Below MDL					3	0	3		3	0	0	3	3	3		3	2			
S1-060																				
Number of samples	4	4	4	4	4	4	4		4	4	4	3	4	3		4	4	74.6 Fair	100 Excellent	
Minimum	0.24	0.010	12.00	5.13	0.001	0.20	0.001		0.0001	0.55	0.0049	0.0002	0.001	0.003		0.0009	0.001			
Maximum	7.38	0.017	16.04	6.94	0.005	0.45	0.005		0.0001	1.02	0.0070	0.0002	0.010	0.005		0.0010	0.010			
Mean	2.22	0.014	14.49	6.07	0.002	0.29	0.004		0.0001	0.73	0.0057	0.0002	0.003	0.004		0.0009	0.004			
# Samples At or Below MDL					4	0	4		4	0	0	3	4	1		4	3			
S1-070																				
Number of samples	4	4	4	4	4	4	4		4	4	4	3	4	3		4	4	76.7 Fair	74.3 Fair	
Minimum	-0.06	0.006	9.44	5.30	0.001	0.19	0.001		0.0001	0.44	0.0030	0.0002	0.001	0.003		0.0009	0.001			
Maximum	8.39	0.010	16.11	8.45	0.005	0.35	0.005		0.0001	0.50	0.0032	0.0002	0.010	0.004		0.0010	0.010			
Mean	2.27	0.009	13.92	5.79	0.002	0.24	0.004		0.0001	0.47	0.0031	0.0002	0.003	0.003		0.0009	0.004			
# Samples At or Below MDL					4	0	4		4	0	0	3	4	1		4	1			
S1-080																				
Number of samples	4	4	4	4	4	4	4		4	4	4	1	4	1		4	4	88.9 Good	82.1 Good	
Minimum	-0.07	0.007	11.24	5.86	0.001	0.12	0.001		0.0001	0.36	0.0019	0.0002	0.001	0.003		0.0009	0.001			
Maximum	7.03	0.012	14.74	6.76	0.005	0.17	0.005		0.0001	0.55	0.0030	0.0002	0.010	0.003		0.0010	0.020			
Mean	3.56	0.009	12.83	6.31	0.004	0.14	0.002		0.0001	0.42	0.0025	0.0002	0.008	0.003		0.0010	0.010			
# Samples At or Below MDL					4	0	4		4	0	0	1	4	1		4	3			
S1-090																				
Number of samples	2	2	2	2	2	2	2		2	2	2	2	2	2		2	2	97.8 Excellent	-	
Minimum	0.87	0.009	8.96	6.56	0.001	0.25	0.005		0.0001	0.46	0.0033	0.0002	0.001	0.005		0.0009	0.002			
Maximum	9.96	0.011	15.76	6.65	0.001	0.41	0.005		0.0001	0.53	0.0045	0.0002	0.001	0.006		0.0009	0.002			
Mean	5.42	0.010	12.36	6.61	0.001	0.33	0.005		0.0001	0.49	0.0039	0.0002	0.001	0.005		0.0009	0.002			
# Samples At or Below MDL					2	0	2		2	0	0	2	2	0		2	0			
S1-110																				
Number of samples	4	4	4	4	4	4	4		4	4	4	3	4	3		4	4	89.5 Good	93.5 Good	
Minimum	0.71	0.014	11.82	5.73	0.001	0.23	0.001		0.0001	1.33	0.0036	0.0002	0.001	0.003		0.0009	0.0			

TABLE 3.2

**BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT**

**SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MINE SITE TO STEENSBY INLET**

NOTES:

1. FRESHWATER GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE - CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME), CANADIAN ENVIRONMENTAL GUIDELINES, UPDATED SEPTEMBER 2007.
2. CCME WQI - CANADIAN WATER QUALITY GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE, CCME WATER QUALITY INDEX 1.0, 2001.
3. WATER QUALITY GUIDELINE LIMITS FOR TOTAL AMMONIA ARE DEPENDENT UPON BOTH TEMPERATURE AND pH. SEE THE CCME GUIDELINES FOR MORE DETAILS.
4. ALUMINIUM (Al) GUIDELINES LIMITS ARE DEPENDENT UPON pH. THE LOWER LIMIT OF 0.005 mg/L CORRESPONDS TO A pH OF <6.5, THE UPPER LIMIT OF 0.1 mg/L CORRESPONDS TO A pH OF >= 6.5.
5. CADMIUM (Cd) GUIDELINE LIMITS ARE 0.000017 mg/L OR CALCULATED VIA THE FOLLOWING FORMULA: $Cd=10^{-(0.86\log(\text{Hardness})-3.2)}$.
6. COPPER (Cu) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS OF <120 mg/L; A LIMIT OF 0.003 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L INCLUSIVE; AND A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS OF >180 mg/L.
7. LEAD (Pb) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.001 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.007 mg/L.
8. NICKEL (Ni) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.025 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.065 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.110 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.150 mg/L.
9. CCME WQI IS AN AVERAGE OF ALL WQI FOR EACH SITE WITHIN THE RESPECTIVE AREA OVER THE YEARS 2005 TO 2008.
10. FOR STATISTICAL PURPOSES, WHERE A RESULT WAS REPORTED AS BELOW THE METHOD DETECTION LIMIT, THE "<" SYMBOL WAS REMOVED AND THE RESULT WAS CONSIDERED TO BE EQUAL TO THE METHOD DETECTION LIMIT.
11. SAMPLES ANALYZED BY ACCUTEST LABORATORIES AND ALS VANCOUVER.
12. 'ND' REFERS TO NON-DETECT RESULTS (RESULTS BELOW THE METHOD DETECTION LIMIT).
13. 'MEAN' WAS CALCULATED FOR AREAS IN WHICH ≥50% OF THE RESULTS WERE DETECTABLE (ABOVE THE MDL).
14. FOR SAMPLES THAT WERE ONLY SAMPLED IN 2005 AND/OR 2006, THE 'NUMBER OF SAMPLES AT OR BELOW THE MDL' REPLACES THE % DETECTABLE RESULTS.

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0	29OCT10	ISSUED WITH REPORT NB102-181/25-2	ROW	AJ	SRA
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD

TABLE 3.3
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MILNE PORT AREA

Site ID	In Situ Parameters				Laboratory Results													
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	TOC mg/L	DOC mg/L	TSS mg/L	TDS mg/L	Hardness mg/L CaCO3	Phosphorus Total	Turbidity NTU	Aluminium Total	Antimony Total	Arsenic Total	Barium Total	Beryllium Total	Bismuth Total	Boron Total
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	-	-	25	-	-	-	8	0.005 or 0.1	-	0.0050	-	-	-	-
Milne Port Area																		
Number of samples	3	3	3	3	3	3	3	3	3	-	3	3	3	3	3	3	3	3
Minimum	2.74	1.29	12.96	7.70	4.900	4.700	4.000	897.000	329.000	-	2.100	0.018	ND	ND	0.010	ND	ND	ND
Maximum	13.26	2.04	17.37	8.79	7.30	6.50	51.00	1350.00	484.00	-	15.70	0.72	ND	ND	0.01	ND	ND	0.14
Mean	6.84	1.71	14.45	8.16	6.00	5.30	19.67	1135.67	412.33	-	6.73	0.28	-	-	0.01	-	-	0.10
% Detectable Results	100	100	100	100	100	100	100	100	100	-	100	100	0	0	100	0	0	100
N1-010																		
Number of samples	6	6	6	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	0.18	0.140	10.58	6.35				97	76.0	0.01	0.21	0.004	0.0004	0.001	0.004	0.005	0.0003	0.01
Maximum	11.41	0.215	13.69	8.52				133	116.0	0.1	0.50	0.039	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	4.22	0.182	12.38	7.71				113	98.5	0.03	0.35	0.012	0.0004	0.003	0.007	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	5	0	3	3	6	3	3	3	6
N1-020																		
Number of samples	6	6	6	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	0.16	0.098	10.15	7.16				57	53.1	0.01	0.14	0.004	0.0004	0.001	0.002	0.005	0.0003	0.01
Maximum	11.38	0.181	13.94	8.31				121	93.0	0.1	5.30	0.080	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	4.70	0.143	12.05	7.76				89	77.1	0.03	1.53	0.032	0.0004	0.003	0.006	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	5	0	1	3	6	3	3	3	6
N1-025																		
Number of samples	3	3	3	3				3	3	3	2	3	0	3	3	0	0	3
Minimum	0.32	0.122	11.71	8.12				81	65.0	0.01	0.60	0.006		0.001	0.010			0.01
Maximum	10.41	0.160	13.03	8.21				108	85.0	0.03	0.70	0.101		0.001	0.010			0.01
Mean	4.80	0.138	12.59	8.17				94	74.3	0.02	0.65	0.040		0.001	0.010			0.01
# Samples At or Below MDL								0	0	2	0	0		3	3			3
N1-030																		
Number of samples	6	6	6	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	0.37	0.077	11.14	7.25				60	39.8	0.01	0.14	0.004	0.0004	0.001	0.002	0.005	0.0003	0.01
Maximum	9.45	0.155	13.31	8.21				104	85.0	0.1	1.00	0.113	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	4.41	0.126	12.48	7.89				82	69.0	0.03	0.52	0.029	0.0004	0.003	0.007	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	3	0	1	3	6	3	3	3	6
N1-040																		
Number of samples	6	6	6	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	0.06	0.130	10.47	7.30				66	75.0	0.01	0.13	0.004	0.0004	0.001	0.001	0.005	0.0003	0.01
Maximum	10.62	0.193	13.11	8.26				133	101.0	0.1	0.40	0.067	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	5.45	0.155	12.00	7.99				91	85.2	0.04	0.27	0.015	0.0004	0.003	0.006	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	3	0	4	3	6	3	3	3	6
N1-050																		
Number of samples	6	6	6	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	0.04	0.104	10.95	7.54				57	54.2	0.01	0.10	0.004	0.0004	0.001	0.002	0.005	0.0003	0.01
Maximum	9.36	0.308	13.80	8.55				205	177.0	0.1	0.90	0.026	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	4.12	0.217	12.76	8.17				134	121.2	0.03	0.45	0.010	0.0004	0.003	0.007	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	6	1	3	3	6	3	3	3	6
N1-053																		
Number of samples	3	3	3	3				3	3	3	2	3	0	3	3	0	0	3
Minimum	-0.08	0.148	10.81	8.15				105	85.0	0.01	0.20	0.005		0.001	0.010			0.01
Maximum	9.96	0.182	13.70	8.32				123	95.0	0.01	0.50	0.007		0.001	0.010			0.01
Mean	5.22	0.163	12.32	8.24				112	88.7	0.01	0.35	0.006		0.001	0.010			0.01
# Samples At or Below MDL								0	0	3	0	2		3	3			3
N1-058																		
Number of samples	2	2	2	2				2	2	2	1	2	0	2	2	0	0	2
Minimum	6.37	0.135	11.59	8.11				90	71.0	0.01	0.70	0.005		0.001	0.010			0.01
Maximum	9.58	0.158	12.99	8.37				106	81.0	0.01	0.70	0.014		0.001	0.010			0.01
Mean	7.98	0.147	12.29	8.24				98	76.0	0.01	0.70	0.010		0.001	0.010			0.01
# Samples At or Below MDL								0	0	2	0	1		2	2			2
N1-060																		
Number of samples	6	6	6	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	-0.06	0.079	10.95	7.36				63	41.0	0.01	0.10	0.004	0.0004	0.001	0.001	0.005	0.0003	0.01
Maximum	13.05	0.284	14.17	8.36				180	160.0	0.1	0.50	0.006	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	5.08	0.198	12.55	8.08				119	109.2	0.03	0.24	0.005	0.0004	0.003	0.006	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	6	3	4	3	6	4	3	3	6
N1-070																		
Number of samples	6	6	5	6				6	6	6	5	6	3	6	6	3	3	6
Minimum	-0.05	0.067	10.32	7.58				54	32.4	0.01	0.16	0.004	0.0004	0.001	0.001	0.005	0.0003	0.01
Maximum	13.74	0.152	13.58	8.16				111	82.0	0.1	0.50	0.008	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	6.05	0.125	11.91	7.93				83	68.3	0.03	0.31	0.005	0.0004	0.003	0.007	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	6	0	4	3	6	3	3	3	6
N1-080																		
Number of samples	7	7	6	7				7	7	7	6	7	3	7	7	3	3	7
Minimum	-0.10	0.047	10.39	6.99				46	25.1	0.01	0.10	0.004	0.0004	0.001	0.001	0.005	0.0003	0.01
Maximum	14.96	0.318	13.65	8.50				209	178.0	0.1	0.60	0.006	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	5.05	0.192	12.40	8.03				126	107.0	0.03	0.32	0.005	0.0004	0.003	0.008	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	6	1	4	3	7	4	3	3	7
N1-090																		
Number of samples	5	5	5	5				5	5	5	5	5	3	5	5	3	3	5
Minimum	1.45	0.094	10.16	7.53				63	54.9	0.01	0.10	0.004	0.0004	0.001	0.002	0.005	0.0003	0.01
Maximum	14.69	0.380	12.78	8.40				224	209.0	0.1	0.50	0.011	0.0004	0.005	0.010	0.005	0.0003	0.05
Mean	6.46	0.254	11.57	7.95				153	147.0	0.04	0.32	0.006	0.0004	0.003	0.006	0.005	0.0003	0.02
# Samples At or Below MDL								0	0	3	1	3	3	5	2	3	3	5
N1-100																		
Number of samples	6	6	5	6				6	6	6	6	6	3	6	6	3	3	6
Minimum	0.74	0.019	11.62	7.02				25	8.6	0.01	0.50	0.020	0.0004	0.001	0.002	0.005	0.0003	0.01
Maximum	9.35	0.091	13.40	7.92				63	46.3									

TABLE 3.3
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MILNE PORT AREA

Site ID	In Situ Parameters				Laboratory Results													
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	Cadmium Total	Calcium Total	Chromium Total	Cobalt Total	Copper Total	Iron Total	Lead Total	Lithium Total	Maganesium Total	Manganese Total	Mercury Total	Molybdenum Total	Nickel Total	Potassium Total
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	0.00002	-	-	-	0.002-0.004	0.30	0.001-0.007	-	-	-	0.00003	0.073000	0.025-0.150(7)	-
Milne Port Area																		
Number of samples	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Minimum	2.74	1.29	12.96	7.70	ND	72.800	ND	ND	ND	ND	ND	ND	33.500	0.014	ND	0.0007	ND	ND
Maximum	13.26	2.04	17.37	8.79	ND	129.00	ND	ND	0.0028	0.71	ND	0.04	46.00	0.017900	0.000012	0.0010	0.0027	12.30
Mean	6.84	1.71	14.45	8.16	-	98.50	-	-	0.0022	0.29	-	0.03	38.43	0.016267	0.000011	0.0008	0.0021	9.4
% Detectable Results	100	100	100	100	0	100	0	0	100	100	33	67	100	100	33	100	33	100
N1-010																		
Number of samples	6	6	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	0.18	0.140	10.58	6.35	0.0001	20.00	0.001	0.0002	0.0008	0.02	0.0002		6.00	0.0007	0.0001	0.0003	0.001	0.42
Maximum	11.41	0.215	13.69	8.52	0.0001	31.10	0.001	0.0003	0.0010	0.04	0.0010		9.23	0.0100	0.0001	0.0050	0.005	0.76
Mean	4.22	0.182	12.38	7.71	0.0001	26.68	0.001	0.0003	0.0009	0.03	0.0006		7.95	0.0060	0.0001	0.0027	0.003	0.52
# Samples At or Below MDL					6	0	6	6	6	5	6		0	5	6	6	6	0
N1-020																		
Number of samples	6	6	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	0.16	0.098	10.15	7.16	0.0001	12.80	0.001	0.0002	0.0008	0.02	0.0002		5.15	0.0007	0.0001	0.0003	0.001	0.30
Maximum	11.38	0.181	13.94	8.31	0.0001	25.30	0.001	0.0003	0.0010	0.07	0.0010		8.00	0.0163	0.0001	0.0050	0.005	0.66
Mean	4.70	0.143	12.05	7.76	0.0001	20.78	0.001	0.0003	0.0009	0.04	0.0006		6.40	0.0080	0.0001	0.0027	0.003	0.39
# Samples At or Below MDL					6	0	6	6	5	2	6		0	4	6	6	6	0
N1-025																		
Number of samples	3	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3
Minimum	0.32	0.122	11.71	8.12	0.0001	16.00	0.001	0.0002	0.0010	0.03	0.0010		6.00	0.0100	0.0001	0.0050	0.005	0.35
Maximum	10.41	0.160	13.03	8.21	0.0001	20.00	0.001	0.0002	0.0010	0.12	0.0010		8.00	0.0100	0.0001	0.0050	0.005	0.51
Mean	4.80	0.138	12.59	8.17	0.0001	17.67	0.001	0.0002	0.0010	0.06	0.0010		7.00	0.0100	0.0001	0.0050	0.005	0.46
# Samples At or Below MDL					3	0	3	3	3	2	3		0	3	3	3	3	0
N1-030																		
Number of samples	6	6	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	0.37	0.077	11.14	7.25	0.0001	8.74	0.001	0.0002	0.0008	0.02	0.0002		4.37	0.0008	0.0001	0.0003	0.001	0.41
Maximum	9.45	0.155	13.31	8.21	0.0001	19.00	0.001	0.0003	0.0010	0.13	0.0010		9.00	0.0157	0.0001	0.0050	0.005	0.65
Mean	4.41	0.126	12.48	7.89	0.0001	15.59	0.001	0.0003	0.0009	0.04	0.0006		7.23	0.0080	0.0001	0.0027	0.003	0.52
# Samples At or Below MDL					6	0	6	6	6	3	6		0	3	6	6	6	0
N1-040																		
Number of samples	6	6	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	0.06	0.130	10.47	7.30	0.0001	20.00	0.001	0.0002	0.0008	0.02	0.0002		5.00	0.0007	0.0001	0.0003	0.001	0.15
Maximum	10.62	0.193	13.11	8.26	0.0001	28.00	0.001	0.0003	0.0010	0.06	0.0010		7.00	0.0100	0.0001	0.0050	0.005	0.39
Mean	5.45	0.155	12.00	7.99	0.0001	24.18	0.001	0.0003	0.0009	0.04	0.0006		5.77	0.0059	0.0001	0.0027	0.003	0.26
# Samples At or Below MDL					6	0	6	6	6	5	6		0	4	6	6	6	0
N1-050																		
Number of samples	6	6	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	0.04	0.104	10.95	7.54	0.0001	13.00	0.001	0.0002	0.0008	0.02	0.0002		5.29	0.0007	0.0001	0.0003	0.001	0.34
Maximum	9.36	0.308	13.80	8.55	0.0001	39.80	0.001	0.0003	0.0010	0.05	0.0010		18.70	0.0100	0.0001	0.0050	0.005	0.54
Mean	4.12	0.217	12.76	8.17	0.0001	28.18	0.001	0.0003	0.0009	0.03	0.0006		12.53	0.0065	0.0001	0.0027	0.003	0.48
# Samples At or Below MDL					6	0	6	6	6	6	6		0	5	6	6	6	0
N1-053																		
Number of samples	3	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3
Minimum	-0.08	0.148	10.81	8.15	0.0001	24.00	0.001	0.0002	0.0010	0.03	0.0010		5.00	0.0100	0.0001	0.0050	0.005	0.15
Maximum	9.96	0.182	13.70	8.32	0.0001	27.00	0.001	0.0002	0.0010	0.03	0.0010		6.00	0.0100	0.0001	0.0050	0.005	0.24
Mean	5.22	0.163	12.32	8.24	0.0001	25.33	0.001	0.0002	0.0010	0.03	0.0010		5.67	0.0100	0.0001	0.0050	0.005	0.21
# Samples At or Below MDL					3	0	3	3	3	3	3		0	3	3	3	3	0
N1-058																		
Number of samples	2	2	2	2	2	2	2	2	2	2	2		2	2	2	2	2	2
Minimum	6.37	0.135	11.59	8.11	0.0001	22.00	0.001	0.0002	0.0010	0.03	0.0010		4.00	0.0100	0.0001	0.0050	0.005	0.16
Maximum	9.58	0.158	12.99	8.37	0.0001	25.00	0.001	0.0002	0.0010	0.03	0.0010		5.00	0.0100	0.0001	0.0050	0.005	0.23
Mean	7.98	0.147	12.29	8.24	0.0001	23.50	0.001	0.0002	0.0010	0.03	0.0010		4.50	0.0100	0.0001	0.0050	0.005	0.20
# Samples At or Below MDL					2	0	2	2	2	2	2		0	2	2	2	2	0
N1-060																		
Number of samples	6	6	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	-0.06	0.079	10.95	7.36	0.0001	13.20	0.001	0.0002	0.0008	0.02	0.0002		1.91	0.0007	0.0001	0.0003	0.001	0.22
Maximum	13.05	0.284	14.17	8.36	0.0001	44.70	0.001	0.0003	0.0010	0.05	0.0010		11.70	0.0100	0.0001	0.0050	0.005	0.30
Mean	5.08	0.198	12.55	8.08	0.0001	32.07	0.001	0.0003	0.0009	0.03	0.0006		7.56	0.0055	0.0001	0.0027	0.003	0.26
# Samples At or Below MDL					6	0	6	6	6	6	6		0	5	6	6	6	0
N1-070																		
Number of samples	6	6	5	6	6	6	6	6	6	6	6		6	6	6	6	6	6
Minimum	-0.05	0.067	10.32	7.58	0.0001	8.86	0.001	0.0002	0.0008	0.02	0.0002		2.49	0.0009	0.0001	0.0003	0.001	0.45
Maximum	13.74	0.152	13.58	8.16	0.0001	19.00	0.001	0.0003	0.0010	0.03	0.0010		8.71	0.0100	0.0001	0.0050	0.005	0.62
Mean	6.05	0.125	11.91	7.93	0.0001	15.94	0.001	0.0003	0.0009	0.03	0.0006		7.07	0.0065	0.0001	0.0027	0.003	0.51
# Samples At or Below MDL					6	0	6	6	5	6	6		0	3	6	6	6	0
N1-080																		
Number of samples	7	7	6	7	7	7	7	7	7	7	7		7	7	7	7	7	7
Minimum	-0.10	0.047	10.39	6.99	0.0001	6.07	0.001	0.0002	0.0008	0.02	0.0002		2.41	0.0007	0.0001	0.0003	0.001	0.39
Maximum	14.96	0.318	13.65	8.50	0.0001	42.90	0.001	0.0003	0.0010	0.05	0.0010		17.20	0.0100	0.0001	0.0050	0.005	0.78
Mean	5.05	0.192	12.40	8.03	0.0001	26.12	0.001	0.0002	0.0009	0.03	0.0007		10.22	0.0063	0.0001	0.0030	0.003	0.65
# Samples At or Below MDL					7	0	7	7	6	7	7		0	6	7	7	7	0
N1-090																		
Number of samples	5	5	5	5	5	5	5											

TABLE 3.3
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MILNE PORT AREA

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Site ID	In Situ Parameters				Laboratory Results											CCME WQI		
	Temp (°C)	SpC (mS/cm)	DO mg/L	pH	Selenium Total	Silicon Total	Silver Total	Sodium Total	Strontium Total	Thallium Total	Tin Total	Titanium Total	Uranium Total	Vanadium Total	Zinc Total	2005	2006	2008
CCME Guideline Limits	-	-	6.5 or 9.5	6.5 - 9.0	0.001	-	0.00010	-	-	0.0008	-	-	-	-	0.030			-
Milne Port Area																		
Number of samples	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
Minimum	2.74	1.29	12.96	7.70	ND	0.6	ND	82.4	0.3190	ND	ND	ND	0.00098	ND	ND			75
Maximum	13.26	2.04	17.37	8.79	ND	2.06	ND	249.0	0.5190	ND	ND	ND	0.00257	ND	0.01000			Fair
Mean	6.84	1.71	14.45	8.16	-	1.1	-	178.8	0.4320	-	-	-	0.001607	-	0.006733			
% Detectable Results	100	100	100	100	0	100	0	100	100	0	0	33	100	0	67			
N1-010																		
Number of samples	6	6	6	6	6		6	6	6	3	6	3		6	6			
Minimum	0.18	0.140	10.58	6.35	0.001		0.0001	0.58	0.0130	0.0002	0.001	0.003		0.0009	0.001	97.9	100	
Maximum	11.41	0.215	13.69	8.52	0.005		0.0001	0.83	0.0210	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	4.22	0.182	12.38	7.71	0.003		0.0001	0.70	0.0167	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					6		6	0	0	3	6	3		6	5			
N1-020																		
Number of samples	6	6	6	6	6		6	6	6	3	6	3		6	6			
Minimum	0.16	0.098	10.15	7.16	0.001		0.0001	0.35	0.0067	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	11.38	0.181	13.94	8.31	0.005		0.0001	1.68	0.0195	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	4.70	0.143	12.05	7.76	0.003		0.0001	0.80	0.0144	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					6		6	0	0	3	6	3		6	4			
N1-025																		
Number of samples	3	3	3	3	3		3	3	3	0	3	0		3	3			
Minimum	0.32	0.122	11.71	8.12	0.001		0.0001	0.34	0.0100		0.010			0.0010	0.010		97.7	
Maximum	10.41	0.160	13.03	8.21	0.001		0.0001	1.15	0.0150		0.010			0.0010	0.010		Excellent	
Mean	4.80	0.138	12.59	8.17	0.001		0.0001	0.70	0.0123		0.010			0.0010	0.010			
# Samples At or Below MDL					3		3	0	0		3			3	3			
N1-030																		
Number of samples	6	6	6	6	6		6	6	6	3	6	3		6	6			
Minimum	0.37	0.077	11.14	7.25	0.001		0.0001	0.30	0.0038	0.0002	0.001	0.003		0.0009	0.001	100	97.7	
Maximum	9.45	0.155	13.31	8.21	0.005		0.0001	0.66	0.0120	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	4.41	0.126	12.48	7.89	0.003		0.0001	0.42	0.0086	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					6		6	0	0	3	6	3		6	6			
N1-040																		
Number of samples	6	6	6	6	6		6	6	6	3	6	3		6	6			
Minimum	0.06	0.130	10.47	7.30	0.001		0.0001	0.23	0.0150	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	10.62	0.193	13.11	8.26	0.005		0.0001	0.47	0.0240	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	5.45	0.155	12.00	7.99	0.003		0.0001	0.31	0.0180	0.0002	0.006	0.003		0.0010	0.007			
# Samples At or Below MDL					6		6	0	0	3	6	3		6	4			
N1-050																		
Number of samples	6	6	6	6	6		6	6	6	3	6	3		6	6			
Minimum	0.04	0.104	10.95	7.54	0.001		0.0001	0.37	0.0068	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	9.36	0.308	13.80	8.56	0.005		0.0001	1.61	0.0220	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	4.12	0.217	12.76	8.17	0.003		0.0001	0.81	0.0151	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					6		6	0	0	3	6	3		5	5			
N1-053																		
Number of samples	3	3	3	3	3		3	3	3	0	3	0		3	3			
Minimum	-0.08	0.148	10.81	8.15	0.001		0.0001	0.23	0.0180		0.010			0.0010	0.010		100	
Maximum	9.96	0.182	13.70	8.32	0.001		0.0001	0.58	0.0220		0.010			0.0010	0.010		Excellent	
Mean	5.22	0.163	12.32	8.24	0.001		0.0001	0.38	0.0197		0.010			0.0010	0.010			
# Samples At or Below MDL					3		3	0	0		3			3	3			
N1-058																		
Number of samples	2	2	2	2	2		2	2	2	0	2	0		2	2			
Minimum	6.37	0.135	11.59	8.11	0.001		0.0001	0.25	0.0160		0.010			0.0010	0.010		100	
Maximum	9.58	0.158	12.99	8.37	0.001		0.0001	0.35	0.0200		0.010			0.0010	0.010		Excellent	
Mean	7.98	0.147	12.29	8.24	0.001		0.0001	0.30	0.0180		0.010			0.0010	0.010			
# Samples At or Below MDL					2		2	0	0		2			2	2			
N1-060																		
Number of samples	6	6	6	6	6		6	6	6	3	6	3		6	6			
Minimum	-0.06	0.079	10.95	7.36	0.001		0.0001	0.27	0.0098	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	13.05	0.284	14.17	8.36	0.005		0.0001	0.47	0.0300	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	5.08	0.198	12.55	8.08	0.003		0.0001	0.34	0.0223	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					6		6	0	0	3	6	3		6	6			
N1-070																		
Number of samples	6	6	5	6	6		6	6	6	3	6	3		6	6			
Minimum	-0.05	0.067	10.32	7.58	0.001		0.0001	0.30	0.0057	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	13.74	0.152	13.58	8.16	0.005		0.0001	0.94	0.0140	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	6.05	0.125	11.91	7.93	0.003		0.0001	0.56	0.0097	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					6		6	0	0	3	6	3		6	5			
N1-080																		
Number of samples	7	7	6	7	7		7	7	7	3	7	3		7	7			
Minimum	-0.10	0.047	10.39	6.99	0.001		0.0001	0.31	0.0027	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	14.96	0.318	13.65	8.50	0.005		0.0001	3.45	0.0270	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	5.05	0.192	12.40	8.03	0.003		0.0001	1.32	0.0150	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL					7		7	0	0	3	6	3		6	6			
N1-090																		
Number of samples	5	5	5	5	5		5	5	5	3	5	3		5	5			
Minimum	1.45	0.094	10.16	7.53	0.001		0.0001	0.28	0.0076	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	14.69	0.380	12.78	8.40	0.005		0.0001	0.60	0.0330	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	6.46	0.254	11.57	7.95	0.003		0.0001	0.44	0.0220	0.0002	0.005	0.003		0.0009	0.005			
# Samples At or Below MDL					5		5	0	0	3	5	3		5	3			
N1-100																		
Number of samples	6	6	5	6	6		6	6	6	3	6	3		6	6			
Minimum	0.74	0.019	11.62	7.02	0.001		0.0001	0.31	0.0012	0.0002	0.001	0.003		0.0009	0.001	100	100	
Maximum	9.35	0.091	13.40	7.92	0.005		0.0001	0.93	0.0070	0.0002	0.010	0.003		0.0010	0.010	Excellent	Excellent	
Mean	4.77	0.066	12.54	7.45	0.003		0.0001	0.61	0.0044	0.0002	0.006	0.003		0.0010	0.006			
# Samples At or Below MDL																		

TABLE 3.3

**BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT**

**SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
STREAM WATER QUALITY DATA SUMMARY STATISTICS - MILNE INLET AREA**

NOTES:

1. FRESHWATER GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE - CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME), CANADIAN ENVIRONMENTAL GUIDELINES, UPDATED SEPTEMBER 2007.
2. CCME WQI - CANADIAN WATER QUALITY GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE, CCME WATER QUALITY INDEX 1.0, 2001.
3. WATER QUALITY GUIDELINE LIMITS FOR TOTAL AMMONIA ARE DEPENDENT UPON BOTH TEMPERATURE AND pH, SEE THE CCME GUIDELINES FOR MORE DETAILS.
4. ALUMINIUM (Al) GUIDELINES LIMITS ARE DEPENDENT UPON pH. THE LOWER LIMIT OF 0.005 mg/L CORRESPONDS TO A pH of <6.5, THE UPPER LIMIT OF 0.1 mg/L CORRESPONDS TO A pH of >= 6.5.
5. CADMIUM (Cd) GUIDELINE LIMITS ARE 0.000017 mg/L OR CALCULATED VIA THE FOLLOWING FORMULA: $Cd=10^{*(0.86\log(Hardness)-3.2)}$.
6. COPPER (Cu) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS OF <120 mg/L; A LIMIT OF 0.003 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L INCLUSIVE; AND A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS OF >180 mg/L.
7. LEAD (Pb) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.001 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.007 mg/L.
8. NICKEL (Ni) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.025 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.065 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.110 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.150 mg/L.
9. CCME WQI IS AN AVERAGE OF ALL WATER QUALITY DATA FOR EACH SITE WITHIN THE RESPECTIVE AREA OVER THE YEARS 2005 TO 2008.
10. FOR STATISTICAL PURPOSES, WHERE A RESULT WAS REPORTED AS BELOW THE METHOD DETECTION LIMIT, THE "<" SYMBOL WAS REMOVED AND THE RESULT WAS CONSIDERED TO BE EQUAL TO THE METHOD DETECTION LIMIT.
11. SAMPLES ANALYZED BY ACCUTEST LABORATORIES AND ALS VANCOUVER.
12. 'ND' REFERS TO NON-DETECT RESULTS (RESULTS BELOW THE METHOD DETECTION LIMIT).
13. WQI FOR 'N1' AND 'N2' SITES IS BASED ON TOTAL AND DISSOLVED METALS.
14. STATISTICS FOR 'N1' AND 'N2' SAMPLING LOCATIONS INCLUDE '# SAMPLES AT OR BELOW MDL', WHICH DIFFERS FROM 'M-CAMP-DS' WHICH HAS '% DETECTABLE RESULTS' BASED ON RESULTS THAT ARE BELOW THE MDL.
15. 'MEAN' WAS CALCULATED FOR AREAS IN WHICH ≥50% OF THE RESULTS WERE DETECTABLE (ABOVE THE MDL).
16. FOR SAMPLES THAT WERE ONLY SAMPLED IN 2005 AND/OR 2006, THE 'NUMBER OF SAMPLES AT OR BELOW THE MDL' REPLACES THE '% DETECT

I:\1102\00181\25\AIReport\Report 2, Rev 0 - Surface Water and Sediment Quality Baseline Report\Tables 3.1 to 3.3.xls\NOTES 3.3

0	29OCT10	ISSUED WITH REPORT NBL02-181/25-2	ROW	AJ	SRA
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Mary Lake															
		Detection Limit	Detection Limit	Detection Limit			BL0-01-S	BL0-01-S	BL0-01-S	BL0-01-S	BL0-01-S	BL0-01-S	BL0-1-S	BL0-03-S	BL0-03-S	BL0-03-S	BL0-03-S	BL0-03-S	BL0-3-S			
		2006	2007	2008			2010	01-Aug-06	31-Aug-06	08-May-07	09-Aug-07	19-Sep-07	11-May-08	06-Aug-08	01-Aug-06	08-May-07	14-Aug-07	20-Sep-07	18-Sep-07	05-Aug-08		
In Situ Parameters																						
Temperature	°C						12.33	6.20	0.8	9.2	2.1		14.1		1.2	10.1	5.2		13.5			
Specific Conductance	mS/cm					≤15	0.093	0.138	0.185	0.111	0.178		0.156		0.078	0.065	0.075		0.092			
Dissolved Oxygen	mg/L				9.5		9.76	9.87	18.31	10.80	12.62		10.51		18.36	10.45	11.03		10.7			
pH	-				6.5-9.5	6.5-8.5	8.26	8.55			8.40		7.93				8.31		7.83			
Average Depth (m)	(m)						1	1														
Measured Depth (m)	(m)								1.0	1.0	1.0				1.0	1.0	1.0					
Total Depth - May Samples Only	m								10.70						18.50							
Ice Thickness - May Samples Only	m								1.80						1.70							
Airspace - May Samples Only	m								0.20						0.00							
Snow Depth - May Samples Only	m								0.25						0.40							
Water Depth	m								8.70	10.5	11.2		10.6		16.80	19.2	14.1		16.5			
Turbidity	NTU								0	3.00	1.97		4.7		0	0.87	1.60		2.1			
Secchi Disk Depth	m						0.63	1.27		2.2			4.0	1.89		4.75	3.3		3.5			
General Parameters and Nutrients																						
pH	-	-		1	6.5-9.5	6.5-8.5	7.13	7.48	7.39	8.29	8.10	8.13	7.96		6.71	8.05		7.92	7.77			
Conductivity	µS/cm	5	5	5			95	144	203	127	190	257	143		91	73		84	85			
Turbidity	NTU	0.1	0.1	0.1			6.3		0.3	1.3	0.8	0.2	0.9		0.2	0.7		0.7	1.6			
Hardness	mg/L as CaCO ₃	1	0.5	0.5			50	75	99.2	64.1	96.1	130	74.8		43.3	35.2		39.4	42.6			
Total dissolved Solids (TDS)	mg/L					≤500	62	94							59	48		55	55			
TDS (COND - CALC)	mg/L	5	5	5		≤500			132	83	123	167	93		2	3		2	3			
Total Suspended Solids (TSS)	mg/L		2	2					2	2	2	2	2		2	3		2	3			
Alkalinity	mg/L as CaCO ₃	5	5	5			50	72	103	62	90	120	71		48	34		38	41			
Bromide (Br)	mg/L	0.05	0.05	0.05			0.05	0.05	0.05	0.25	0.25	0.25	0.25		0.05	0.25		0.25	0.25			
Chloride (Cl)	mg/L	1	1	1		≤250	1	2	3	2	6	8	3		2	2		3	3			
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	3	3	5	5	3		1	2		2	1			
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.04	0.11	0.04	0.02	0.36	0.21	0.05		0.06	0.02		0.13	0.05			
Nitrite (NO ₂)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.008	0.002	0.002	0.004	0.005	0.005		0.002	0.002		0.002	0.005			
Nitrate (NO ₃)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10		0.10	0.10			
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10		0.10	0.10			
Total Phosphorus	mg/L	0.01	0.003	0.003			0.02	0.01	0.01	0.003	0.004	0.007	0.006		0.003	0.003		0.003	0.006			
Total Organic Carbon (TOC)	mg/L		0.5	0.5					2.2	1.4	1.7	2.0	2.0		1.6	2.8		1.5	1.7			
Dissolved Organic Carbon	mg/L		0.5	0.5					2.1	1.3	1.7	1.8	1.9		1.5	1.9		1.5	1.5			
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1					0.17	0.22	0.35	0.32	0.29		0.05	0.21		0.12	0.21			
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001		0.001	0.001		0.001	0.001			
Total Metals and Non-Metals																						
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.144	0.135	0.0094	0.0542	0.0253	0.004500	0.030200			0.0083	0.0250		0.0162	0.058300		
Antimony	mg/L	-	0.00010	0.0001		0.006	0.00010	0.00010	0.00010	0.00010	0.00010	0.000100	0.000100			0.00010	0.00010		0.00010	0.000100		
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.001	0.001	0.00010	0.00010	0.00039	0.0000001	0.000100			0.00010	0.00010		0.00011	0.000100		
Barium	mg/L	0.01	0.000050	0.00005			0.01	0.01	0.00985	0.00633	0.00849	0.013400	0.007210			0.00472	0.00407		0.00419	0.004610		
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.00050	0.00050	0.000500	0.000500			0.00050	0.00050		0.00050	0.000500		
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.00050	0.00050	0.000500	0.000500			0.00050	0.00050		0.00050	0.000500		
Boron	mg/L	0.01	0.010	0.01		5	0.01	0.01	0.010	0.010	0.010	0.01000	0.010000			0.010	0.010		0.010	0.010000		
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.000017	0.0001	0.0001	0.000017	0.000017	0.000017	0.00001	0.000010		0.0000240	0.000017		0.000017	0.000010			
Calcium	mg/L	1	0.050	0.05			10	15	20.2	13.3	19.7	25.2	15.6		8.77	7.49		8.43	8.04			
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.001	0.001	0.00050	0.00050	0.00050	0.000500	0.000500		0.00050	0.00050		0.00050	0.000500			
Cobalt	mg/L	0.0002	0.00010	0.0001			0.0002	0.0002	0.00010	0.00010	0.00010	0.000100	0.000100		0.00010	0.00010		0.00010	0.000100			
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.001	0.001	0.00133	0.00088	0.00429	0.001220	0.001320		0.00073	0.00070		0.00187	0.000960			
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.18	0.17	0.030	0.073	0.050	0.03000	0.036000		0.030	0.030		0.030	0.069000			
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.001	0.001	0.000050	0.000094	0.000054	0.00005	0.000050		0.000050	0.000060		0.000050	0.000060			
Lithium	mg/L		0.0050	0.005			0.0050	0.0050	0.0050	0.0050	0.00500	0.005000	0.005000		0.0050	0.0050		0.0050	0.005000			
Magnesium	mg/L	1	0.10	0.1			6	9	12.3	7.63	11.2	15.3	8.44		5.10	4.05		4.45	4.79			
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.01	0.02	0.000816	0.00326	0.00261	0.001040	0.001880		0.000468	0.00117		0.000882	0.001820			
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.0001	0.0001	0.000050	0.000050	0.000050	0.00001	0.000010		0.000050	0.000050		0.000050	0.000010			
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.005	0.005	0.000275	0.000170	0.000245	0.000319	0.000180		0.0000134	0.000009		0.000120	0.000123			
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.005	0.005	0.00090	0.00052	0.00056	0.000800	0.000680		0.00050	0.00050		0.00050	0.000510			
Phosphorus	mg/L		0.30	0.003					0.30	0.30	0.30	0.30	0.30		0.30	0.30		0.30				
Potassium	mg/L	0.01	2.0	0.05			0.60	0.79	2.0	2.0	2.0	1.28	0.809		2.0	2.0		2.0	0.537			
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.001	0.001	0.0010	0.0010	0.0010	0.001000	0.001000		0.0010	0.0010		0.0010	0.001000			
Silicon	mg/L		0.050	0.05			1.14	0.750	0.904	1.140000	0.796000				0.524	0.424		0.438	0.646000			
Silver	mg/L	0.0001	0.000010	0.00001	0.0001	0.0001	0.0001	0.0001	0.000010	0.000010	0.000010	0.00001	0.000010		0.000010	0.000010		0.000010	0.000010			
Sodium	mg/L	0.05	2.0	0.05		≤200	0.62	1.														

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME 2010	Canadian Drinking Water Guidelines 2010	Mary Lake																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		2006	2007	2008			BL0-04-S 31-Jul-06	BL0-04-S 08-May-07	BL0-04-S 14-Aug-07	BL0-04-S 18-Sep-07	BL0-04-S 11-May-08	BL0-4-S 05-Aug-08	BL0-05-S 31-Jul-06	BL0-05-S 05-Sep-06	BL0-05-S 08-May-07	BL0-05-S 14-Aug-07	BL0-05-S 13-Sep-07	BL0-05-S 18-Sep-07	BL0-5-S 06-Aug-08	BL0-06-S 14-Aug-07	BL0-06-S 18-Sep-07	BL0-06-S 05-Aug-08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Mary Lake																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		Detection	Detection	Detection			BL0-01-B	BL0-01-B	BL0-01-B	BL0-01-B	BL0-01-B	BL0-01-B	BL0-01-B	BL0-01-B	BL0-03-B	BL0-03-B	BL0-03-B	BL0-03-B	BL0-03-B	BL0-03-B	BL0-04-B	BL0-04-B	BL0-04-B	BL0-04-B	BL0-04-B	BL0-04-B	BL0-04-B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		Limit	Limit	Limit			2010	2010	01-Aug-06	31-Aug-06	08-May-07	09-Aug-07	19-Sep-07	11-May-08	06-Aug-08	01-Aug-06	08-May-07	14-Aug-07	18-Sep-07	20-Sep-07	05-Aug-08	31-Jul-06	08-May-07	14-Aug-07	18-Sep-07	11-May-08	05-Aug-08																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME	Canadian Drinking Water Guidelines	Mary Lake										Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects
							BLO-05-B	BLO-05-B	BLO-05-B	BLO-05-B	BLO-05-B	BLO-05-B	BLO-05-B	BLO-06-B	BLO-06-B	BLO-06-B					
		2006	2007	2008			2010	2010	31-Jul-06	05-Sep-06	08-May-07	14-Aug-07	13-Sep-07	18-Sep-07	06-Aug-08	14-Aug-07					
In Situ Parameters																					
Temperature	°C					≤15	5.90	6.27	1.8	7.6		6.1	7.4	8.4	5.5	7.7	46	6.8	3.6	46	100%
Specific Conductance	mS/cm						0.046	0.077	0.080	0.062		0.080	0.077	0.064	0.078	0.076	46	0.1	0.0	46	100%
Dissolved Oxygen	mg/L				9.5		10.55	9.82	7.75	10.26		12.73	10.99	3.75	12.75	11.36	46	11.6	2.8	46	100%
pH	-				6.5-9.5	6.5-8.5	7.52	6.71				8.02	6.75			6.77	26	7.7	0.6	26	100%
Average Depth (m)	(m)						20	17									8	7.8	8.0	8	100%
Measured Depth (m)	(m)								20.0	17.5		11.0		8.5			27	7.7	7.8	27	100%
Total Depth - May Samples Only	m								23.00								8	18.9	5.4	8	100%
Ice Thickness - May Samples Only	m								1.60								8	1.6	0.2	8	100%
Airspace - May Samples Only	m								0.00								8	0.1	0.1	8	100%
Snow Depth - May Samples Only	m								0.40								8	0.4	0.1	8	100%
Water Depth	m								21.40	18.4		11.9	20.8	9.4	8.8	8.7	38	15.3	5.0	38	100%
Turbidity	NTU								0	-		1.35	8.7	1.75	1.54	8.4	34	2.7	2.9	34	100%
Secchi Disk Depth	m						1.43	1.43		3.15		3.4	2.5	3.6	3.1		38	2.6	1.1	38	100%
General Parameters and Nutrients																					
pH	-	-		1	6.5-9.5	6.5-8.5	6.66	6.81	6.72	8.15		7.91	7.56				44	7.6	0.5	44	100%
Conductivity	µS/cm	5	5	5			50	84	91	71		90	69				44	106.8	50.0	44	100%
Turbidity	NTU	0.1	0.1	0.1			2.3	3.5	0.5	1.1		0.7	2.8				42	1.5	1.7	42	100%
Hardness	mg/L as CaCO ₃	1	0.5	0.5			25	37	42.1	33.8	41.5		33.7				44	52.7	26.6	44	100%
Total dissolved Solids (TDS)	mg/L					≤500	33	55									8	59.4	23.6	8	100%
TDS (COND - CALC)	mg/L	5	5	5		≤500							45				36	71.7	33.9	36	100%
Total Suspended Solids (TSS)	mg/L		2	2					2	2		2	2				36	2.4	1.5	7	19%
Alkalinity	mg/L as CaCO ₃	5	5	5			25	39	46	32		42	32				44	51.0	24.4	44	100%
Bromide (Br)	mg/L	0.05	0.05	0.05			0.05	0.05	0.05	0.25		0.25	0.25				44	0.18	0.10	0	0%
Chloride (Cl)	mg/L	1	1	1		≤250	2	3	3	2		4	3				44	3.1	1.6	42	95%
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	1	2		3	3				44	2.3	1.2	36	82%
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.04	0.02	0.02	0.21		0.03	0.02				44	0.07	0.08	29	66%
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.009	0.002	0.002		0.002	0.005				44	0.004	0.002	14	32%
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10		0.10	0.10				44	0.1	0.0	0	0%
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10		0.10	0.10				44	0.1	0.0	0	0%
Total Phosphorus	mg/L	0.01	0.003	0.003			0.01	0.02	0.003	0.003		0.003	0.007				44	0.006	0.005	25	57%
Total Organic Carbon (TOC)	mg/L		0.5	0.5					1.5	1.5		1.5	1.4				36	1.7	0.3	36	100%
Dissolved Organic Carbon	mg/L		0.5	0.5					1.5	1.6		1.5	1.2				36	1.6	0.2	36	100%
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1					0.05	0.32		0.10	0.14				36	0.2	0.1	24	67%
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001		0.001	0.001				44	0.001	0.00	0	0%
Total Metals and Non-Metals																					
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.094	0.109	0.0143	0.0378	0.0323		0.104000				44	0.052	0.045	44	100%
Antimony	mg/L		0.00010	0.0001		0.006			0.00010	0.00010	0.00010		0.000100				36	0.0001	0.00	0	0%
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.001	0.001	0.00010	0.00010	0.00010		0.000100				44	0.0003	0.0004	4	9%
Barium	mg/L	0.01	0.000050	0.00005		1	0.01	0.01	0.00469	0.00390	0.00486		0.004460				44	0.00654	0.00268	36	82%
Beryllium	mg/L	-	0.00050	0.0005					0.00050	0.00050	0.00050		0.000500				36	0.0005	0.00	0	0%
Bismuth	mg/L	-	0.00050	0.0005					0.00050	0.00050	0.00050		0.000500				36	0.0005	0.00	0	0%
Boron	mg/L	0.01	0.010	0.01		5	0.01	0.01	0.010	0.010	0.010		0.010000				44	0.01	0.00	0	0%
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.000017	0.0001	0.0001	0.000017	0.000017	0.000017		0.000010				44	0.000036	0.000046	2	5%
Calcium	mg/L	1	0.050	0.05			5	8	8.61	7.20	8.95		7.19				44	10.8	5.0	44	100%
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.001	0.001	0.00050	0.00050	0.00050		0.000500				44	0.0006	0.0002	0	0%
Cobalt	mg/L	0.0002	0.00010	0.0001			0.0002	0.0002	0.00010	0.00010	0.00010		0.000100				44	0.0001	0.0	0	0%
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.001	0.001	0.00065	0.00067	0.00067		0.001290				44	0.0011	0.0007	40	91%
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.09	0.11	0.030	0.052	0.037		0.121000				44	0.07	0.05	32	73%
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.001	0.001	0.000050	0.000051	0.000086		0.000120				44	0.00024	0.00036	23	52%
Lithium	mg/L		0.0050	0.005					0.0050	0.0050	0.0050		0.005000				36	0.005	0.00	0	0%
Magnesium	mg/L	1	0.10	0.1			3	5	4.98	3.87	4.72		3.70				44	6.1	3.1	44	100%
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.01	0.01	0.00404	0.00149	0.00136		0.003060				44	0.00359	0.00416	38	86%
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.0001	0.0001	0.000050	0.000050	0.000050		0.000010				44	0.00005	0.00003	0	0%
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.005	0.005	0.000123	0.000097	0.000138		0.000118				44	0.00103	0.00189	36	82%
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.005	0.005	0.00052	0.00050	0.00050		0.000510				44	0.0014	0.0017	20	45%
Phosphorus	mg/L		0.30	0.03					0.30	0.30	0.30		0.30				24	0.30	0.00	0	0%
Potassium	mg/L	0.01	2.0	0.05			0.39	0.56	2.0	2.0	2.0		0.503				44	1.4	0.7	20	45%
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.001	0.001	0.0010	0.0010	0.0010		0.001000				44	0.001	0.00	0	0%
Silicon	mg/L		0.050	0.05					0.558	0.484	0.459		0.605000				36	0.63	0.23	36	100%</

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Camp Lake											
		Detection Limit	Detection Limit	Detection Limit			JL0-09-S	JL0-09-S	JL0-09(S)	JL0-01-D	JL0-01-D	JL0-01-D	JL0-01-D	JL0-01-D	JL0-01-D	JL0-01(BA)	JL0-01(B)	JL0-02-D
		2006	2007	2008			2010	05-Aug-07	17-Sep-07	30-Jul-08	02-Aug-06	07-Sep-06	06-May-07	05-Aug-07	17-Sep-07	11-May-08	30-Jul-08	06-May-07
In Situ Parameters																		
Temperature	°C					≤15	8.5	5.8	7.8		7.03	1.4	6.0			7.8	1.3	
Specific Conductance	mS/cm						0.101	0.100	0.121		0.097	0.114	0.101			0.121	0.121	
Dissolved Oxygen	mg/L				9.5		10.71	11.75	11.93		10.54	16.91	4.32			12.14	14.56	
pH	-				6.5-9.5	6.5-8.5			7.82		6.96					7.35		
Average Depth (m)	(m)										16							
Measured Depth (m)	(m)						1.0	1.0				14.0	16.0	18.0			10.0	
Total Depth - May Samples Only	m											17.10					13.00	
Ice Thickness - May Samples Only	m											1.80					2.10	
Airspace - May Samples Only	m											0.15					0.25	
Snow Depth - May Samples Only	m											0.25					0.02	
Water Depth	m						18.6	15.9	12.8			15.15	16.8	18.9		17.5	10.65	
Turbidity	NTU						1.15	0.49	79.8			0				0.9	0	
Secchi Disk Depth	m						5.1	5.9	5.3	7.8	6.84		5.35	5.6		6.1		
General Parameters and Nutrients																		
pH	-	-		1	6.5-9.5	6.5-8.5	8.30	8.01	7.9		7.04	6.84	8.30	8.02	7.95	7.9	6.83	
Conductivity	µS/cm	5	5	5			108	112	108		103	119	106	112	132	109	122	
Turbidity	NTU	0.1	0.1	0.1			0.6	0.3	0.5			0.1	0.5	0.4	0.4	1	0.2	
Hardness	mg/L as CaCO ₃	1	0.5	0.5			54.7	55.6	54.7		50	60.1	54.1	55.2	67.8	54.7	61.3	
Total dissolved Solids (TDS)	mg/L					≤500					67							
TDS (COND - CALC)	mg/L	5	5	5		≤500	70	73	70			77	69	73	86	71	79	
Total Suspended Solids (TSS)	mg/L	2	2	2			2	2	2			2	2	2	2	2,000	2	
Alkalinity	mg/L as CaCO ₃	5	5	5			54	56	55		52	62	53	55	66	55	65	
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25		0.05	0.05	0.25	0.25	0.25	0.25	0.05	
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	1	1	1		1	1	1	1	1	1	1	
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	2	1		2	1	1	3	2	1	1	
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.02		0.06	0.02	0.02	0.02	0.03	0.02	0.02	
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.002	0.002	0.005		0.012	0.002	0.002	0.002	0.005	0.005	0.002	
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10		0.10	0.10	0.10	0.10	0.10	0.10	0.10	
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10		0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Total Phosphorus	mg/L	0.01	0.003	0.003			0.003	0.007	0.008		0.01	0.003	0.003	0.003	0.003	0.004	0.003	
Total Organic Carbon (TOC)	mg/L		0.5	0.5			2.1	1.9	1.9			1.9	2.0	1.9	1.7	2	1.9	
Dissolved Organic Carbon	mg/L		0.5	0.5			2.0	1.7	1.8			1.9	2.0	1.8	1.6	1.8	1.9	
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.10	0.10	0.11			0.05	0.10	0.10	0.28	0.10	0.24	
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001		0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Total Metals and Non-Metals																		
Aluminum	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0082	0.0063	0.01450		0.008	0.0016	0.0175	0.0061	0.00100	0.03790	0.0010	
Antimony	mg/L	-	0.00010	0.0001		0.006	0.00018	0.00010	0.00010			0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00010	0.00010	0.00010		0.001	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	
Barium	mg/L	0.01	0.000050	0.00005		1	0.00496	0.00443	0.00507		0.01	0.00559	0.00490	0.00470	0.00614	0.00542	0.00554	
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	
Boron	mg/L	0.01	0.010	0.01		5	0.010	0.010	0.01000		0.01	0.010	0.010	0.010	0.01000	0.01000	0.010	
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.000017	0.000017	0.000017	0.00001		0.0001	0.000017	0.000017	0.000017	0.00001	0.000013	0.000017	
Calcium	mg/L	1	0.050	0.05			11.0	11.2	10.9		9	11.9	11.0	11.2	12.9	11.0	12.1	
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.00050	0.00050	0.00050		0.001	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.00010	0.00010		0.0002	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00109	0.00077	0.00101		0.001	0.00092	0.00089	0.00075	0.00144	0.01310	0.00098	
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.030	0.030	0.03000		0.03	0.030	0.030	0.030	0.03000	0.05700	0.030	
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.000083	0.000050	0.00005		0.001	0.000050	0.000050	0.000050	0.00017	0.00022	0.000050	
Lithium	mg/L		0.0050	0.005			0.0050	0.0050	0.00500			0.0050	0.0050	0.0050	0.00500	0.00500	0.0050	
Magnesium	mg/L	1	0.10	0.1			6.55	6.74	6.73		6	7.45	6.52	6.65	7.90	6.97	7.57	
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.0012	0.00129	0.00174		0.01	0.000939	0.0021	0.00130	0.00082	0.00269	0.000772	
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.000050	0.000050	0.00001		0.0001	0.000050	0.000050	0.000050	0.00001	0.00001	0.000050	
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.000165	0.000162	0.000164		0.005	0.000198	0.000164	0.000151	0.00018	0.00018	0.000189	
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.00069	0.00059	0.00072		0.005	0.00069	0.00075	0.00056	0.00076	0.00094	0.00066	
Phosphorus	mg/L		0.30	0.003			0.30	0.30				0.30	0.30	0.30			0.30	
Potassium	mg/L	0.01	2.0	0.05			2.0	2.0	0.753		0.68	2.0	2.0	2.0	0.874	0.768	2.0	
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.0010	0.0010	0.00100		0.001	0.0010	0.0010	0.0010	0.00100	0.00100	0.0010	
Silicon	mg/L		0.050	0.05			0.463	0.481	0.40300			0.491	0.483	0.454	0.51300	0.45600	0.459	
Silver	mg/L	0.0001	0.000010	0.00001	0.0001		0.000010	0.000010	0.000010		0.0001	0.000010	0.000010	0.000010	0.00001	0.00001	0.000010	
Sodium	mg/L	0.05	2.0	0.05		≤200	2.0	2.0	0.811		0.67	2.0	2.0	2.0	0.816	0.750	2.0	
Strontium	mg/L	0.001	0.00010	0.0001			0.00646	0.00538	0.00609		0.007	0.00649	0.00586	0.00534	0.00694	0.00621	0.00650	
Thallium	mg/L	-	0.00010	0.0001	0.0008		0.00010	0.00010	0.00010			0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	
Tin	mg/L	0.01	0.00010	0.0001			0.00010	0.00010	0.00010		0.01	0.00050	0.00010	0.00010	0.00241	0.00010	0.00065	
Titanium	mg/L	-	0.010	0.01			0.010	0.010	0.01000			0.010	0.010	0.010	0.01000	0.01000	0.010	
Uranium	mg/L		0.000010	0.00001		0.02	0.000342	0.000339	0.000383			0.000403	0.000350	0.000328	0.000461	0.000398	0.000404	
Vanadium	mg/L	0.001	0.0010	0.001			0.0010	0.0010	0.0010		0.001	0.0010	0.0					

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Camp Lake								Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects
		Detection Limit	Detection Limit	Detection Limit			JLO-02-D	JLO-02-D	JLO-02(B)	JLO-09-D	JLO-09-D	JLO-09-D	JLO-09(B)						
		2006	2007	2008			2010	05-Aug-07	17-Sep-07	30-Jul-08	06-May-07	05-Aug-07	17-Sep-07	30-Jul-08					
In Situ Parameters																			
Temperature	°C					≤15	6.4	5.9	7.7	1.4	6.1	5.5	7.7	26	5.7	2.7	26	100%	
Specific Conductance	mS/cm							0.100	0.122	0.113	0.100	0.100	0.121	24	0.1	0.0	24	100%	
Dissolved Oxygen	mg/L				9.5		12.60	11.40	12.1	16.80	10.85	11.61	12.04	26	12.7	3.2	26	100%	
pH					6.5-9.5	6.5-8.5		8.21	7.35				7.33	12	7.7	0.5	12	100%	
Average Depth (m)	(m)													3	6.0	8.7	3	100%	
Measured Depth (m)	(m)						10.5	12.0		14.0	17.5	14.0		18	7.5	7.0	18	100%	
Total Depth - May Samples Only	m									17.40				6	15.8	2.2	6	100%	
Ice Thickness -May Samples Only	m									1.90				6	1.9	0.1	6	100%	
Airspace - May Samples Only	m									0.05				6	0.2	0.1	6	100%	
Snow Depth - May Samples Only	m									0.25				6	0.2	0.1	6	100%	
Water Depth	m						11.5	13.4	12.6	15.45	18.6	15.9	12.8	24	14.9	2.7	24	100%	
Turbidity	NTU						0.93	0.49	0.9	0		0.49	0.7	21	4.4	17.3	21	100%	
Secchi Disk Depth	m						5.1	6.0	6.0		5.1	5.9	5.3	22	5.9	0.8	22	100%	
General Parameters and Nutrients																			
pH	-	-		1	6.5-9.5	6.5-8.5	8.06	8.04	7.9	6.80	8.30	8.02	7.91	29	7.7	0.54	29	100%	
Conductivity	µS/cm	5	5	5			107	112	109	117	106	112	111	29	112.5	9	29	100%	
Turbidity	NTU	0.1	0.1	0.1			0.7	0.3	0.6	0.3	0.6	0.3	0.5	27	0.5	0.3	27	100%	
Hardness	mg/L as CaCO ₃	1	0.5	0.5			54.1	56.2	55.4	59.8	53.6	56	56.1	29	56.9	5	29	100%	
Total dissolved Solids (TDS)	mg/L					≤500								3	65.0	3	3	100%	
TDS (COND - CALC)	mg/L	5	5	5		≤500	70	73	71	76	69	73	72	26	74.2	5	26	100%	
Total Suspended Solids (TSS)	mg/L		2	2			2	2	2	2	2	2	2	26	2.0	0.00	0	0%	
Alkalinity	mg/L as CaCO ₃	5	5	5			54	56	55	61	53	56	54	29	57.1	5	29	100%	
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.05	0.25	0.25	0.25	29	0.19	0.09	0	0%	
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	1	1	1	1	1	1	2	29	1.1	0	25	86%	
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	1	1	1	2	1	29	1.5	1	17	59%	
Ammonia (NH ₃ +NH ₄ ⁺)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.02	0.02	0.02	0.02	0.03	29	0.02	0.01	8	28%	
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.002	0.002	0.005	0.0020	0.002	0.002	0.005	29	0.004	0.003	6	21%	
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	29	0.1	0.0	0	0%	
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10	29	0.1	0.0	0	0%	
Total Phosphorus	mg/L	0.01	0.003	0.003			0.003	0.004	0.005	0.02	0.003	0.006	0.006	29	0.006	0.004	16	55%	
Total Organic Carbon (TOC)	mg/L		0.5	0.5			2.1	1.8	2	1.8	2.0	1.9	1.8	26	1.9	0.1	26	100%	
Dissolved Organic Carbon	mg/L		0.5	0.5			2.1	1.7	1.7	1.9	2.0	1.9	1.8	26	1.9	0.2	26	100%	
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.10	0.24	0.25	0.22	0.10	0.10	0.16	26	0.1	0.08	14	54%	
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.007	29	0.001	0.001	1	3%	
Total Metals and Non-Metals																			
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0206	0.0062	0.01460	0.0015	0.0181	0.0068	0.01370	29	0.010	0.009	27	93%	
Antimony	mg/L	-	0.00010	0.0001		0.006	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	26	0.0001	0.00	1	4%	
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	29	0.0002	0.0003	0	0%	
Barium	mg/L	0.01	0.000050	0.00005		1	0.00511	0.00468	0.00512	0.00539	0.00488	0.00458	0.00499	29	0.00565	0.00158	26	90%	
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	26	0.0005	0.00	0	0%	
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	26	0.0005	0.00	0	0%	
Boron	mg/L	0.01	0.010	0.01		5	0.010	0.010	0.01000	0.010	0.010	0.010	0.01000	29	0.01	0.00	0	0%	
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.000017	0.000042	0.000017	0.00001	0.000017	0.000017	0.000017	0.00001	29	0.000025	0.000027	2	7%	
Calcium	mg/L	1	0.050	0.05			10.9	11.2	10.9	11.8	11.1	11.2	10.9	29	11.30	0.88	29	100%	
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	29	0.0006	0.0002	0	0%	
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	29	0.0001	0.0000	0	0%	
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00145	0.00076	0.00433	0.00087	0.00088	0.00079	0.01900	29	0.0022	0.0040	26	90%	
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.032	0.030	0.03000	0.030	0.030	0.030	0.03000	29	0.03	0.01	4	14%	
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.000429	0.000050	0.00011	0.000050	0.000053	0.000050	0.00005	29	0.00019	0.00030	10	34%	
Lithium	mg/L		0.0050	0.005			0.0050	0.0050	0.00500	0.0050	0.0050	0.0050	0.00500	26	0.005	0.00	0	0%	
Magnesium	mg/L	1	0.10	0.1			6.53	6.69	6.84	7.33	6.52	6.74	6.79	29	6.9	0.6	29	100%	
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.0028	0.00136	0.00170	0.001000	0.0021	0.00133	0.00172	29	0.00232	0.00272	26	90%	
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.000050	0.000050	0.000016	0.000050	0.000050	0.000050	0.00001	29	0.00004	0.00003	1	3%	
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.000179	0.000157	0.000185	0.000182	0.000161	0.000151	0.000178	29	0.00067	0.00150	26	90%	
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.00114	0.00060	0.00071	0.00062	0.00069	0.00064	0.00071	29	0.0011	0.0013	26	90%	
Phosphorus	mg/L		0.30	0.003			0.30	0.30		0.30	0.30	0.30		18	0.300	0.00	0	0%	
Potassium	mg/L	0.01	2.0	0.05			2.0	2.0		2.0	2.0	2.0	0.759	29	1.53	0.62	11	38%	
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.0010	0.0010	0.00100	0.0010	0.0010	0.0010	0.00100	29	0.001	0.00	0	0%	
Silicon	mg/L		0.050	0.05			0.461	0.461	0.41100	0.485	0.488	0.464	0.41000	26	0.47	0.04	26	100%	
Silver	mg/L	0.0001	0.000010	0.00001	0.0001	0.0001	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.00001	29	0.00002	0.00003	0	0%	
Sodium	mg/L	0.05	2.0	0.05		≤200	2.0	2.0	0.700	2.0	2.0	2.0	1.08	29	1.54	0.62	11	38%	
Strontium	mg/L	0.001	0.00010	0.0001			0.00612	0.00537	0.00606	0.00621	0.00588	0.00542	0.00638	29	0.0062	0.0006	29	100%	
Thallium	mg/L	-	0.00010	0.0001	0.0008		0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	26	0.0001	0.00	0	0%	
Tin	mg/L	0.01	0.00010																

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Parameters		Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME	Canadian Drinking Water Guidelines	Sheardown Lake NW Basin																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
								DL0-01-1-S	DL0-01-1-S	DL0-01-1-S	DL0-01-1-S	DL0-01-1-S	DL0-01-1(S)	DL0-01-1-S	DL0-01-1-S	DL0-01-2-S	DL0-01-2-S	DL0-01-2-S	DL0-01-2-S	DL0-01-3-S	DL0-01-4-S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			2006	2007	2008			2010	2010	01-Aug-06	06-Sep-06	06-May-07	05-Aug-07	17-Sep-07	11-May-08	31-Jul-08	02-Sep-08	05-Aug-07	17-Sep-07	31-Jul-08	02-Sep-08	06-May-07	05-Aug-07																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Sheardown Lake NW Basin																			
		Detection	Detection	Detection			CCME	Canadian Drinking	Sheardown Lake NW Basin																	
		Limit	Limit	Limit			2010	Water Guidelines	DLO-01-4-S	DLO-01-4-S	DLO-01-4-S	DLO-01-5-S	DLO-01-5-S	DLO-01-5-S	DLO-01-5-S	DLO-01-5-S	DLO-01-5-S	DLO-01-7-S	DLO-01-7-S	DLO-01-7-S	DLO-01-7-S	DLO-01-1-D	DLO-01-1-D	DLO-01-1-D		
		2006	2007	2008	2010	2010	17-Sep-07	31-Jul-08	02-Sep-08	06-May-07	07-Aug-07	17-Sep-07	31-Jul-08	02-Sep-08	07-Aug-07	17-Sep-07	31-Jul-08	02-Sep-08	06-May-07	01-Aug-06	06-Sep-06					
In Situ Parameters																										
Temperature	°C	-	-	-		≤15	5.6	8.4	6.5	1.3	8.9	5.7	8.5	6.5	9.1	5.4	12.2	6.4	1.7	7.77	6.94					
Specific Conductance	mS/cm	-	-	-			0.097	0.114	0.123	0.113	0.094	0.097	0.114	0.122	0.094	0.097	0.118	0.122	0.110	0.090	0.097					
Dissolved Oxygen	mg/L	-	-	-	9.5		11.70	11.56	13.56	18.14	11.55	11.90	11.25	13.63	11.00	11.53	10.93	13.52	14.46	10.74	8.94					
pH		-	-	-	6.5-9.5	6.5-8.5	8.26	7.99	7.93			8.33	7.44	7.2		8.20	7.96	7.94		8.15	7.07					
Average Depth (m)	(m)	-	-	-																19	7					
Measured Depth (m)	(m)	-	-	-			1.0			1.0	1.0				1.0	1.0				18.0						
Total Depth - May Samples Only	m	-	-	-						24.90										21.80						
Ice Thickness - May Samples Only	m	-	-	-						1.80										1.80						
Airspace - May Samples Only	m	-	-	-						0.05										0.00						
Snow Depth - May Samples Only	m	-	-	-						0.25										0.10						
Water Depth	m	-	-	-			7.0	6.4	6.6	23.05	22.5	25.4	23.8	21.2	10.8	10.6	12.0	11.6	20.00							
Turbidity	NTU	-	-	-			0.35	1.7	7.3	0	0.14	0.35	2.0	7.95	0.13	0.29	3.1	7.5	0							
Secchi Disk Depth	m	-	-	-			7.0	6.0	5		8.25	8.8		5	8.25	7.4	6.0	5		4.07	4.2					
General Parameters and Nutrients																										
pH	-	-	-	1	6.5-9.5	6.5-8.5	8.02	7.90	7.9	6.82	8.19	8.02	7.86	7.85	8.14	8.02	7.89	7.87		6.79	7.09	7.09				
Conductivity	µS/cm	5	5	5			109	108	120	120	103	109	109	117	104	109	108	118	119	93	105					
Turbidity	NTU	0.1	0.1	0.1			0.3	0.7	0.8	0.2	0.2	0.3	0.5	0.7	0.3	0.3	0.5	0.7	0.2	0.7	1.0					
Hardness	mg/L as CaCO ₃	1	0.5	0.5			53.6	53.4	62.2	60	53.1	53.6		61	53.1	53.8		61.2	59.5	50	50					
Total dissolved Solids (TDS)	mg/L					≤500														61	68					
TDS (COND - CALC)	mg/L	5	5	5		≤500	71	70	78	78	67	71	71	76	68	71	70	77	77							
Total Suspended Solids (TSS)	mg/L		2	2			2	2	2	2	2	2	2	2	2	2	2	2	2							
Alkalinity	mg/L as CaCO ₃	5	5	5			53	53	57	64	50	53	54	55	51	53	53	56	61	47	52					
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.05	0.05					
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	2	2	2	2	1	2	2	2	1	2	2	3	2	1	1					
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	3	1	1	2	3	3	1	1	3	3	1	1	2	1	2					
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.02	0.02	0.06	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02					
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.002	0.005	0.005	0.0020	0.002	0.002	0.005	0.005	0.002	0.002	0.005	0.005	0.0020	0.005	0.009					
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10					
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10					
Total Phosphorus	mg/L	0.01	0.003	0.003			0.004	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.003	0.007	0.003	0.005	0.003	0.003	0.01	0.01				
Total Organic Carbon (TOC)	mg/L		0.5	0.5			2.1	1.9	1.8	1.7	1.6	1.8	1.9	1.8	1.7	1.7	1.9	1.8	1.8							
Dissolved Organic Carbon	mg/L		0.5	0.5			1.6	1.8	1.7	2.0	1.7	1.6	1.9	1.6	1.8	1.7	2.0	1.7	1.8							
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.27	0.23	0.35	0.07	0.20	0.10	0.19	0.10	0.18	0.10	0.14	0.34	0.05							
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001					
Total Metals and Non-Metals																										
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0037	0.015800	0.0112	0.0012	0.0029	0.0059	0.013900	0.0102	0.0035	0.0037	0.015200	0.0125	0.0019	0.021	0.034					
Antimony	mg/L	-	0.00010	0.0001		0.006	0.00010	0.000100	0.0001	0.00010	0.00010	0.00010	0.00010	0.0001	0.00010	0.00010	0.000100	0.0001	0.00010							
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00010	0.000100	0.0001	0.00010	0.00010	0.00010	0.000100	0.0001	0.00010	0.00010	0.000100	0.0001	0.00010	0.001	0.001					
Barium	mg/L	0.01	0.000050	0.00005		1	0.00444	0.004660	0.00537	0.00570	0.00460	0.00436	0.004730	0.00515	0.00466	0.00439	0.004720	0.00529	0.00549	0.01	0.01					
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.000500	0.0005	0.00050	0.00050	0.00050	0.000500	0.0005	0.00050	0.00050	0.000500	0.0005	0.00050							
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.000500	0.0005	0.00050	0.00050	0.00050	0.000500	0.0005	0.00050	0.00050	0.000500	0.0005	0.00050							
Boron	mg/L	0.01	0.010	0.01		5	0.010	0.01000	0.01	0.010	0.010	0.010	0.01000	0.01	0.010	0.010	0.01000	0.01	0.010	0.01	0.01					
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000017	0.000010	0.00001	0.000017	0.000017	0.000017	0.000017	0.00001	0.000017	0.000017	0.000010	0.000017	0.00001	0.00001	0.00001	0.00001				
Calcium	mg/L	1	0.050	0.05			10.7	10.4	12.2	12.0	10.8	10.7	10.5	12	10.8	10.8	10.6	12	11.7	9	9					
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.00050	0.000500	0.0005	0.00050	0.00050	0.00050	0.000500	0.0005	0.00050	0.00050	0.000500	0.0005	0.00050	0.001	0.001					
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.000100	0.0001	0.00010	0.00010	0.00010	0.000100	0.0001	0.00010	0.00010	0.000100	0.0001	0.00010	0.0002	0.0002					
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00077	0.001200	0.00107	0.00114	0.00088	0.00076	0.001010	0.00092	0.00086	0.00073	0.001620	0.00092	0.00107	0.001	0.001					
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.030	0.03000	0.03	0.030	0.030	0.030	0.03000	0.03	0.030	0.030	0.037000	0.03	0.030	0.03	0.04					
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.00050	0.000050	0.00005	0.000051	0.000050	0.000050	0.000050	0.00005	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.001	0.001				
Lithium	mg/L		0.0050	0.005			0.0050	0.005000	0.005	0.0050	0.0050	0.0050	0.005000	0.005	0.0050	0.0050	0.005000	0.005	0.0050							
Magnesium	mg/L																									

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Sheardown Lake NW Basin																				
Parameters	Units	Method Detection Limit 2006	Method Detection Limit 2007	Method Detection Limit 2008	CCME 2010	Canadian Drinking Water Guidelines 2010	DLO-01-1-D 05-Aug-07	DLO-01-1-D 17-Sep-07	DLO-01-1(B) 11-May-08	DLO-01-1-B 31-Jul-08	DLO-01-1-B 02-Sep-08	DLO-01-2-D 05-Aug-07	DLO-01-2-D 17-Sep-07	DLO-01-2-B 31-Jul-08	DLO-01-2-B 02-Sep-08	DLO-01-3-D 06-May-07	DLO-01-4-S 05-Aug-07	DLO-01-4-D 17-Sep-07	DLO-01-4-B 31-Jul-08	DLO-01-4-B 02-Sep-08
In Situ Parameters																				
Temperature	°C	-	-	-		≤15	7.2	5.7		8.3	6.4	7.8	5.6	8.4	6.4	1.2	9.1	5.7	11.6	6.4
Specific Conductance	mS/cm	-	-	-			0.098	0.097		0.114	0.122	0.098	0.097	0.113	0.122	0.115	0.098	0.097	0.117	0.122
Dissolved Oxygen	mg/L	-	-	-	9.5		12.00	11.40		11.38	13.64	12.11	8.50	11.25	13.7	18.18	10.88	11.40	10.95	13.56
pH		-	-	-	6.5-9.5	6.5-8.5		8.19		7.33	7.35		8.21	7.3	7.35			8.24	7.34	7.36
Average Depth (m)	(m)	-	-	-												6.0	6.0	6.0		
Measured Depth (m)	(m)	-	-	-			22.0	19.0				12.5	18.0							
Total Depth - May Samples Only	m	-	-	-												9.50				
Ice Thickness - May Samples Only	m	-	-	-												2.10				
Airspace - May Samples Only	m	-	-	-												0.15				
Snow Depth - May Samples Only	m	-	-	-												0.02				
Water Depth	m	-	-	-			22.8	22.4		21.5	20.6	13	19.9	17.2	14.7	7.25	6.6	7.0	6.0	6.6
Turbidity	NTU	-	-	-						2.0	6.8	0.23		2.50	7.2	0	0.19	0.35	3.2	7.5
Secchi Disk Depth	m	-	-	-			8.5	8.1		6.4	5.25	9.6	7.4	6.7	5.5		6.6	7.0	5.8	5
General Parameters and Nutrients																				
pH	-	-	-	1	6.5-9.5	6.5-8.5	8.36	8.02	7.93	7.81	7.83	8.30	8.02	7.85	7.85	6.82	8.34	8.02	7.93	7.87
Conductivity	µS/cm	5	5	5			105	109	133	107	118	103	109	106	118	121	103	109	108	118
Turbidity	NTU	0.1	0.1	0.1			0.5	0.4	0.6	18.6	0.8	1.4	0.3	0.6	0.8	0.2	0.3	0.3	0.6	0.7
Hardness	mg/L as CaCO ₃	1	0.5	0.5			52.2	53.5	64.0		61.1	52.6	53.5		60.7	61	53.8	53.4		61.7
Total dissolved Solids (TDS)	mg/L					≤500														
TDS (COND - CALC)	mg/L	5	5	5		≤500	68	71	87	70	77	67	71	69	77	79	67	71	70	77
Total Suspended Solids (TSS)	mg/L		2	2			2	2	2	44	2	3	2	2	2	2	2	2	2	2
Alkalinity	mg/L as CaCO ₃	5	5	5			52	53	65	52	56	50	53	52	56	63	50	53	53	56
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.25	0.25	0.25	0.25
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	1	2	2	2	2	1	2	2	2	2	1	2	2	3
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	3	1	1	1	3	1	1	2	1	3	1	1
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.12	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		0.02	0.02
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.002	0.002	0.005	0.005	0.005	0.002	0.002	0.005	0.005	0.0020	0.002		0.005	0.005
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10
Total Phosphorus	mg/L	0.01	0.003	0.003			0.003	0.003	0.007	0.09	0.003	0.003	0.003	0.006	0.003	0.003	0.003		0.005	0.003
Total Organic Carbon (TOC)	mg/L		0.5	0.5			2.0	1.8	1.6	1.8	1.8	2.0	1.7	1.7	1.8	2.0	2.2	1.8	1.8	1.9
Dissolved Organic Carbon	mg/L		0.5	0.5			2.3	1.8	1.6	1.8	1.6	2.0	1.6	1.7	1.6	1.9	2.0	1.6	2.0	1.6
Total Kjeldahl Nitrogen (TKN)	mg/L	0.05	0.05	0.1			0.27	0.11	0.35	0.16	0.1	0.18	0.10	0.17	0.1	0.05	0.10	0.11	0.15	0.33
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals and Non-Metals																				
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0055	0.0080	0.00710	0.013300	0.0113	0.0051	0.0081	0.016000	0.0114	0.0010	0.0039	0.0035	0.015300	0.0114
Antimony	mg/L	-	0.00010	0.0001		0.006	0.00010	0.00010	0.0001	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.00010	0.0001	0.00010	0.0001	0.0001
Arsenic	mg/L	0.001	0.00010	0.0001	0.005		0.00010	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.00010	0.00010	0.0001
Barium	mg/L	0.01	0.000050	0.00005		1	0.00451	0.00446	0.00612	0.004720	0.00521	0.00443	0.00448	0.004670	0.0052	0.00559	0.00434	0.00453	0.004660	0.00539
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.00050	0.00050	0.0005
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.00050	0.00050	0.0005
Boron	mg/L	0.01	0.010	0.01		5	0.010	0.010	0.01000	0.01	0.01	0.010	0.010	0.01	0.01	0.010	0.010	0.010	0.010	0.01
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000017	0.000017	0.00001	0.00001	0.00001	0.000017	0.000017	0.00001	0.00001	0.000017	0.000017	0.000017	0.00001	0.00001
Calcium	mg/L	1	0.050	0.05			10.7	10.8	10.5	12.2	10.8	10.8	10.8	10.3	12	11.9	10.9	10.9	10.6	12.1
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.00050	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.00050	0.0005	0.0005
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.00010	0.0001	0.0001
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00085	0.00078	0.00121	0.002150	0.00126	0.00084	0.00084	0.001420	0.00092	0.00101	0.00088	0.00080	0.001620	0.00089
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.030	0.030	0.0300	0.03	0.03	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.03
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.000050	0.000050	0.00005	0.00005	0.00005	0.000050	0.000050	0.00005	0.00005	0.000050	0.000050	0.000050	0.000050	0.00005
Lithium	mg/L		0.0050	0.005			0.0050	0.0050	0.00500	0.005	0.005	0.0050	0.0050	0.005	0.005	0.0050	0.0050	0.0050	0.005	0.005
Magnesium	mg/L	1	0.10	0.1			6.27	6.49	7.77	6.55	7.26	6.29	6.51	6.39	7.26	7.33	6.35	6.53	6.56	7.38
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.00160	0.00182	0.00092	0.001510	0.0016	0.00159	0.00185	0.001480	0.00151	0.000434	0.00138	0.00133	0.001470	0.00148
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.000050	0.000050	0.00001	0.00001	0.00001	0.000050	0.000050	0.00001	0.00001	0.000050	0.000050	0.00001	0.00001	0.00001
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.000511	0.000489	0.00069	0.000537	0.000628	0.000527	0.000545	0.000541	0.0006	0.000631	0.000549	0.000538	0.000509	0.000652
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.00063	0.00061	0.00081	0.000660	0.00077	0.00060	0.00066	0.000650	0.0007	0.00079	0.00063	0.00062	0.000610	0.00069
Phosphorus	mg/L		0.30	0.003			0.30	0.30				0.30	0.30			0.30	0.30	0.30	0.000000	
Potassium	mg/L	0.01	2.0	0.05			2.0	2.0	0.941	0.706	0.778	2.0	2.0	0.690	0.771	2.0	2.0	2.0	0.673	0.804
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.0010	0.0010	0.00100	0.001	0.001	0.0010	0.0010	0.001	0.001	0.0010	0.0010	0.0010	0.001	0.001
Silicon	mg/L		0.050	0.05			0.622	0.625	0.80400	0.602000	0.65	0.612	0.618	0.589000	0.659	0.702	0.613	0.616	0.633000	0.651
Silver	mg/L	0.0001	0.000010	0.00001	0.0001		0.00010	0.000010	0.00001	0.00001	0.00001	0.000010	0.000010	0.00001	0.00001	0.000010	0.000010	0.000010	0.00001	0.00001
Sodium	mg/L	0.05	2.0	0.05		≤200	2.0	2.0	0.790	0.611	0.689	2.0	2.0	0.589	0.673	2.0	2.0	2.0	0.553	0.699
Strontium	mg/L	0.001	0.00010	0.0001			0.00697	0.00664	0.00921	0.007040	0.00767	0.00689	0.00648	0.006710	0.00772	0.00626	0.00691	0.00667	0.006730	0.00795
Thallium	mg/L		0.0010	0.001	0.0008		0.00010	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.0001
Tin	mg/L	0.01	0.00010	0.0001			0.00010	0.00010	0.00138	0.0001	0.0001	0.00010	0.00010	0.000120	0.0001	0.00049	0.00010	0.00010	0.00010	0.0001
Titanium	mg/L		0.01																	

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Sheardown Lake NW Basin										Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects
		Detection	Detection	Detection			DL0-01-5-D	DL0-01-5-D	DL0-01-5-D	DL0-01-5-B	DL0-01-5-B	DL0-01-7-D	DL0-01-7-D	DL0-01-7-B	DL0-01-7-B	DL0-01-7-B					
		Limit	Limit	Limit			2006	2007	2008	2010	2010	06-May-07	07-Aug-07	17-Sep-07	31-Jul-08	02-Sep-08					
In Situ Parameters																					
Temperature	°C	-	-	-		≤15	2.1	7.2	5.8	7.8	6.5	8.2	5.4	8.4	8.6	6.4	51	6.8	2.5	51	100%
Specific Conductance	mS/cm	-	-	-			0.118	0.093	0.097	0.113	0.122	0.093	0.097	0.113	0.115	0.122	51	0.107	0.011	51	100%
Dissolved Oxygen	mg/L	-	-	-	9.5		2.74	11.78	11.40	11.49	13.67	11.25	11.40	11.23	11.30	13.52	51	12.11	2.57	51	100%
pH	-	-	-	-	6.5-9.5	6.5-8.5			8.20	7.30	7.36		8.21	7.29	7.26	7.35	35	7.76	0.45	35	100%
Average Depth (m)	(m)	-	-	-													4	7	8	4	100%
Measured Depth (m)	(m)	-	-	-			21.0	21.5	21.0			10.0	10.0				26	7.8	8.3	26	100%
Total Depth - May Samples Only	m	-	-	-			24.90										6	18.73	7.29	6	100%
Ice Thickness -May Samples Only	m	-	-	-			1.80										6	1.90	0.15	6	100%
Airspace - May Samples Only	m	-	-	-			0.05										6	0.07	0.07	6	100%
Snow Depth - May Samples Only	m	-	-	-			0.25										6	0.12	0.10	6	100%
Water Depth	m	-	-	-			23.05	22.5	25.4	23.8	21.2	10.8	10.6	11.9	12.0	11.6	47	16	7	47	100%
Turbidity	NTU	-	-	-			303>			1.5	7.3	0.15	0.29	1.2	3.5	7.5	41	3	4	41	100%
Secchi Disk Depth	m	-	-	-				8.25	8.8	5.9	5	8.25	7.4	3.3	6.0	5	45	6.5	1.6	45	100%
General Parameters and Nutrients																					
pH	-	-	-	1	6.5-9.5	6.5-8.5	6.73	8.15	8.05	7.81	7.86	8.19	8.01	7.85	7.91	7.87	53	7.79	0.46	53	100%
Conductivity	µS/cm	5	5	5			115	103	110	105	118	110	109	103	107	118	53	111	8	53	100%
Turbidity	NTU	0.1	0.1	0.1			0.2	0.2	0.6	0.5	2.8	0.3	0.3	1.5	0.6	0.7	53	0.9	2.5	53	100%
Hardness	mg/L as CaCO ₃	1	0.5	0.5			57.2	52.2	53.8		61.6	52.5	53.9	50.6		61.3	44	56	4.9	44	100%
Total dissolved Solids (TDS)	mg/L	-	-	-		≤500											4	64	4	4	100%
TDS (COND - CALC)	mg/L	5	5	5		≤500	75	67	72	68	77	72	71	67	70	77	49	73	5	49	100%
Total Suspended Solids (TSS)	mg/L	-	-	-			2	2	2	2	4	2	2	2	2	2	49	2.92	6.00	3	6%
Alkalinity	mg/L as CaCO ₃	5	5	5			60	50	54	52	56	53	53	50	52	55	53	54	4	53	100%
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	53	0.21	0.08	0	0%
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	2	1	2	2	2	1	2	2	2	2	53	2	1	53	100%
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	2	3	3	1	1	3	3	1	1	1	53	2	1	51	96%
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	52	0.02	0.02	13	25%
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.0020	0.002	0.002	0.005	0.005	0.002	0.002	0.005	0.005	0.005	52	0.004	0.002	3	6%
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	52	0.1	0.0	0	0%
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	52	0.1	0.0	0	0%
Total Phosphorus	mg/L	0.01	0.003	0.003			0.003	0.003	0.003	0.005	0.045	0.003	0.007	0.005	0.006	0.005	52	0.007	0.013	33	63%
Total Organic Carbon (TOC)	mg/L	-	0.5	0.5			1.7	1.5	1.9	1.8	2	1.6	1.8	1.8	2.0	1.8	49	1.8	0.1	49	100%
Dissolved Organic Carbon	mg/L	-	0.5	0.5			1.8	1.8	1.8	1.8	1.7	1.7	1.9	1.4	2.0	1.7	49	1.8	0.2	49	100%
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.05	0.1			0.05	0.13	0.10	0.16	0.10	0.10	0.10	0.10	0.17	0.33	49	0.15	0.08	35	71%
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	53	0.001	0.00	8	15%
Total Metals and Non-Metals																					
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0017	0.0032	0.0113	0.016400	0.39	0.0036	0.0038	0.05470		0.0134	52	0.017	0.054	52	100%
Antimony	mg/L	-	0.00010	0.0001		0.006	0.00010	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.0001	48	0.0001	0.00	0	0%
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00010	0.00010	0.00010	0.0001	0.0001	0.00010	0.00010	0.0001	0.0001	0.0001	52	0.0002	0.0002	1	2%
Barium	mg/L	0.01	0.000050	0.00005		1	0.00547	0.00453	0.00456	0.004710	0.00788	0.00441	0.00445	0.00505	0.00516	0.00516	52	0.00535	0.00149	48	92%
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.0005	0.0005	0.0005	48	0.0005	0.00	0	0%
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.00050	0.00050	0.0005	0.0005	0.00050	0.00050	0.0005	0.0005	0.0005	48	0.0005	0.00	0	0%
Boron	mg/L	0.01	0.010	0.01		5	0.010	0.010	0.010	0.01	0.01	0.010	0.010	0.01	0.01	0.01	52	0.01	0.00	0	0%
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000017	0.000017	0.000017	0.00001	0.00001	0.000017	0.000017	0.00001	0.00001	0.00001	52	0.000020	0.000023	0	0%
Calcium	mg/L	1	0.050	0.05			11.3	10.6	10.8	10.5	11.5	10.7	10.8	10.5			52	11.08	0.85	52	100%
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.00050	0.00050	0.00050	0.0005	0.00128	0.00050	0.00152	0.0005	0.0005	0.0005	52	0.0006	0.0002	2	4%
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.00010	0.00010	0.0001	0.00034	0.00010	0.00010	0.0001	0.0001	0.0001	52	0.0001	0.00	1	2%
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00087	0.00086	0.00083	0.001530	0.00091	0.00083	0.00088	0.00066	0.00086	0.00086	52	0.0010	0.0003	48	92%
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.030	0.030	0.030	0.03	0.598	0.030	0.116	0.07900			52	0.04	0.08	7	13%
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.000050	0.000050	0.000050	0.00005	0.00059	0.000050	0.000050	0.00008	0.00005	0.00005	52	0.00014	0.00026	5	10%
Lithium	mg/L	0.0050	0.0050	0.005			0.0050	0.0050	0.0050	0.005	0.005	0.0050	0.0050	0.005	0.005	0.005	48	0.005	0.00	0	0%
Magnesium	mg/L	1	0.10	0.1			7.04	6.22	6.49	6.57	7.23	6.35	6.48	6.40	7.23		52	6.7	0.5	52	100%
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.00106	0.00135	0.00233	0.001520	0.0403	0.00134	0.00276	0.00227		0.00151	52	0.00281	0.00580	48	92%
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.000050	0.000050	0.000050	0.00001	0.00001	0.000050	0.000050	0.00001	0.00001	0.00001	52	0.00004	0.00003	0	0%
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.000616	0.000													

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Sheardown Lake SE Basin																				
Parameters	Units	Method Detection Limit 2006	Method Detection Limit 2007	Method Detection Limit 2008	CCME 2010	Canadian Drinking Water Guidelines 2010	DLO-02-1-S	DLO-02-1-S	DLO-02-1-S	DLO-02-1-S	DLO-02-1-S	DLO-02-1-S	DLO-02-1-S	DLO-02-3-S	DLO-02-3b-S	DLO-02-3(S)	DLO-02-3-S	DLO-02-3-S	DLO-02-4-S	DLO-02-4-S
							01-Aug-06	06-Sep-06	08-May-07	07-Aug-07	13-Sep-07	31-Jul-08	02-Sep-08	07-Aug-07	13-Sep-07	11-May-08	31-Jul-08	02-Sep-08	07-Aug-07	13-Sep-07
In Situ Parameters																				
Temperature	°C	-	-	-		≤15	11.58	5.78	1.1	10.1	5.4	14.4	5.7	10.4	5.8		13.9	5.5	10.7	5.9
Specific Conductance	mS/cm	-	-	-			0.086	0.096	0.142	0.084	0.093	0.112	0.127	0.084	0.093		0.111	0.127	0.084	0.093
Dissolved Oxygen	mg/L	-	-	-	9.5		10.18	9.44	18.74	10.84	12.72	10.05	13.62	10.79	12.81		10.26	13.65	10.86	12.28
pH	-	-	-	-	6.5-9.5	6.5-8.5	8.32	7.21			8.31	7.85	7.86		8.25		7.84	7.85		7.92
Average Depth (m)	(m)	-	-	-	-		1	1						1.0	0.3				1.0	1.0
Measured Depth (m)	(m)	-	-	-	-				1.0	1.0	1.0									
Total Depth - May Samples Only	m	-	-	-	-				13.30											
Ice Thickness - May Samples Only	m	-	-	-	-				1.90											
Airspace - May Samples Only	m	-	-	-	-				0.10											
Snow Depth - May Samples Only	m	-	-	-	-				0.10											
Water Depth	m	-	-	-	-				11.30	12	12.4	12.7	11.5	13.7	1.8		14.5	15	7.5	7.2
Turbidity	NTU	-	-	-	-				0	2.16	0.90	6.1	10.9	1.65	0.80		5.9	12.5	1.50	0.80
Secchi Disk Depth	m	-	-	-	-		2.0	1.08		4.2	4.44	3.0	2.5	4.0	1.80		2.8	2.3	4.0	4.35
General Parameters and Nutrients																				
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.05	7.01	7.06	8.20	7.87	7.87	7.87	8.14	7.82	7.97	7.86	7.88	8.08	7.90
Conductivity	µS/cm	5	5	5			89	101	155	97	105	103	122	93	105	146	102	123	92	105
Turbidity	NTU	0.1	0.1	0.1			1.7	3.2	0.5	0.6	0.6	1.6	1.7	0.7	0.6	0.3	1.8	2.2	0.5	0.5
Hardness	mg/L as CaCO ₃	1	0.5	0.5			43	22	74.1	46.8	51.4		61.8	46.6	50.9	70.0		62.5	46.3	51
Total dissolved Solids (TDS)	mg/L					≤500	58	66												
TDS (COND - CALC)	mg/L	5	5	5		≤500			101	63	68	67	79	61	68	95	66	80	60	68
Total Suspended Solids (TSS)	mg/L		2	2					2	3	2	2	2	2	2	2	2	3	2	2
Alkalinity	mg/L as CaCO ₃	5	5	5			44	50	77	46	49	50	55	44	49	70	49	55	44	49
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.05	0.05	0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	2	2	3	2	2	3	4	2	2	4	2	5	2	3
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	2	3	1	1	3	3	1	3	1	3	3	1
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.03	0.02	0.04	0.04	0.02	0.02	0.02	0.04	0.02	0.10	0.02	0.02	0.02	0.02
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.009	0.002	0.002	0.002	0.005	0.005	0.002	0.002	0.005	0.005	0.005	0.002	0.002
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.1	0.10	0.10	0.10	0.10
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.1	0.10	0.10	0.10	0.10
Total Phosphorus	mg/L	0.01	0.003	0.003			0.01	0.01	0.003	0.003	0.003	0.004	0.005	0.003	0.003	0.004	0.007	0.004	0.003	0.003
Total Organic Carbon (TOC)	mg/L		0.5	0.5					2.1	1.4	1.7	1.9	1.6	1.4	1.7	1.7	1.8	1.6	1.6	1.7
Dissolved Organic Carbon	mg/L		0.5	0.5					2.0	1.6	1.5	1.8	1.5	1.5	1.7	1.7	1.7	1.5	1.4	1.7
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1					0.05	0.31	0.35	0.14	0.46	0.16	0.10	0.26	0.19	0.24	0.10	0.10
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals and Non-Metals																				
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.062	0.116	0.0056	0.0361	0.0168	0.160	0.0639	0.0301	0.0186	0.00350	0.05410	0.005	0.0271	0.0188
Antimony	mg/L	-	0.00010	0.0001		0.006			0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.001	0.001	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
Barium	mg/L	0.01	0.000050	0.00005		1	0.01	0.01	0.00736	0.00432	0.00444	0.00589	0.00633	0.00425	0.00455	0.00673	0.00493	0.006	0.00417	0.00457
Beryllium	mg/L	-	0.00050	0.0005					0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Bismuth	mg/L	-	0.00050	0.0005					0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Boron	mg/L	0.01	0.010	0.01		5	0.01	0.01	0.010	0.010	0.010	0.01000	0.01	0.010	0.010	0.01000	0.01000	0.01	0.010	0.010
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.0005	0.0001	0.0001	0.000017	0.000017	0.000017	0.00001	0.00001	0.000017	0.000017	0.00001	0.00001	0.00001	0.000017	0.000017
Calcium	mg/L	1	0.050	0.05			9	10	15.0	9.76	10.6	9.65	12.9	9.73	10.5	14.4	9.85	12.8	9.77	10.6
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.001	0.001	0.00050	0.00050	0.00050	0.00050	0.00067	0.00050	0.00050	0.00050	0.00050	0.0008	0.00050	0.00050
Cobalt	mg/L	0.0002	0.00010	0.0001			0.0002	0.0002	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.001	0.001	0.00010	0.00075	0.00065	0.00142	0.001	0.00068	0.00076	0.00205	0.00102	0.00076	0.00073	0.00066
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.06	0.11	0.052	0.056	0.030	0.22100	0.075	0.047	0.030	0.0300	0.06600	0.033	0.044	0.030
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.001	0.001	0.000286	0.000078	0.000050	0.00020	0.0001	0.000050	0.000050	0.00017	0.00005	0.00005	0.00079	0.000050
Lithium	mg/L		0.0050	0.005					0.0050	0.0050	0.0050	0.00500	0.005	0.0050	0.0050	0.00500	0.00500	0.005	0.0050	0.0050
Magnesium	mg/L	1	0.10	0.1			5	6	8.91	5.53	6.02	5.72	7.27	5.50	6.05	8.44	5.71	7.25	5.51	5.99
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.01	0.01	0.00427	0.00053	0.00258	0.00437	0.0034	0.00476	0.00284	0.00201	0.00062	0.000328	0.00495	0.00286
Mercury	mg/L	0.0001	0.000050	0.00001	0.00002															

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME	Canadian Drinking Water Guidelines	Sheardown Lake SE Basin																	
		2006	2007	2008			2010	2010	DLO-02-4-S	DLO-02-04a	DLO-02-04-S	DLO-02-6-S	DLO-02-1-D	DLO-02-1-D	DLO-02-1-D	DLO-02-1-D	DLO-02-1-D	DLO-02-1-B	DLO-02-1-B	DLO-02-1-B	DLO-02-1-B	DLO-02-3-D	DLO-02-3b-D	DLO-02-3(B)
		31-Jul-08	07-Aug-08	02-Sep-08			08-May-07	01-Aug-06	06-Sep-06	08-May-07	07-Aug-07	13-Sep-07	31-Jul-08	07-Aug-08	02-Sep-08	07-Aug-07	13-Sep-07	11-May-08						
In Situ Parameters																								
Temperature	°C	-	-	-		≤15	9.1	14.1	5.5	1.3	8.48	5.77	2.2	9.8	5.5	8.9	8.5	5.7	9.2	5.8				
Specific Conductance	mS/cm	-	-	-			0.101	0.111	0.127	0.141	0.086	0.096	0.158	0.088	0.093	0.105	0.112	0.127	0.083	0.093				
Dissolved Oxygen	mg/L	-	-	-	9.5		10.99	10.41	14.52	17.95	9.73	9.13	0.12	10.62	12.52	10.95	9.78	13.64	9.40	12.51				
pH	-	-	-	-	6.5-9.5	6.5-8.5	6.76	7.99	7.88		8.12	6.41			8.27	7.18	7.00	7.34		8.24				
Average Depth (m)	(m)	-	-	-	-						9.8	10												
Measured Depth (m)	(m)	-	-	-	-								10.0	11.5	11.4					13.0	0.8			
Total Depth - May Samples Only	m	-	-	-	-																			
Ice Thickness - May Samples Only	m	-	-	-	-																			
Airspace - May Samples Only	m	-	-	-	-																			
Snow Depth - May Samples Only	m	-	-	-	-																			
Water Depth	m	-	-	-	-		8.4	8.6	9	4.60			11.30	12	12.4	12.8	12.7	11.5	13.7	1.8				
Turbidity	NTU	-	-	-	-		11.4	6.3	11.8	0			0	2.20	0.80	14.5	12.0	11.2	2.00	0.80				
Secchi Disk Depth	m	-	-	-	-		1.0	3.0	2.25		2.0	1.08		4.2	4.44	1.1	3.0	2.5	4.0	1.80				
General Parameters and Nutrients																								
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.78	7.85	7.9	7.05	7.02	6.96	6.97	8.23	7.90	7.8	7.76	7.89	8.10	7.80	7.94			
Conductivity	µS/cm	5	5	5			95	102	124	157	89	100	157	101	105	100	102	123	92	105	141			
Turbidity	NTU	0.1	0.1	0.1			3.5	1.6	2.2	0.4	1.7	3.1	0.8	0.7	0.5	4.3	2.5	2.5	0.6	0.5	0.4			
Hardness	mg/L as CaCO ₃	1	0.5	0.5			46		63.1	76.7	43	16	76.1	48.9	51.5	47.3		61.9	45.9	51.2	68.6			
Total dissolved Solids (TDS)	mg/L					≤500					58	65												
TDS (COND - CALC)	mg/L	5	5	5		≤500	62	66	81	102			102	66	68	65	66	80	60	68	92			
Total Suspended Solids (TSS)	mg/L	2	2	2			2	2	3	2			2	2	2	4	5	2	2	2	2			
Alkalinity	mg/L as CaCO ₃	5	5	5			44	49	55	77	44	49	77	48	50	46	49	56	44	49	68			
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.2500	0.25	0.25	0.05	0.05	0.05	0.05	0.25	0.25	0.2500	0.25	0.25	0.25	0.25	0.25			
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	3	2	5	3	2	2	3	2	2	3	3	4	2	2	3			
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	1	3	2	1	3	2	3	1	1	1	3	3	1	3			
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.0200	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.03	0.0200	0.02	0.02	0.05	0.03	0.02			
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.0050	0.005	0.005	0.002	0.005	0.009	0.002	0.003	0.002	0.0050	0.005	0.005	0.002	0.002	0.005			
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.1	0.1	0.10	0.10	0.1			
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.1	0.1	0.1	0.10	0.10	0.1			
Total Phosphorus	mg/L	0.01	0.003	0.003			0.007	0.008	0.003	0.003	0.01	0.01	0.003	0.003	0.003	0.011	0.016	0.003	0.004	0.003	0.005			
Total Organic Carbon (TOC)	mg/L		0.5	0.5			1.9	1.6	1.6	2.1			1.8	1.4	1.6	1.3	1.7	1.7	1.2	1.6	1.7			
Dissolved Organic Carbon	mg/L		0.5	0.5			1.5	1.6	1.5	2.0			1.9	1.5	1.6	1.5	1.7	1.6	1.4	1.5	1.6			
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.10	0.1	0.43	0.06			0.13	0.10	0.10	0.10	0.12	0.27	0.17	0.10	0.20			
Phenols	mg/L	0.001	0.001	0.001	0.004		0.0010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0010	0.001	0.001	0.001	0.001	0.001			
Total Metals and Non-Metals																								
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.185000		0.0874	0.0056	0.062	0.125	0.0085	0.0390	0.0188	0.17400		0.0618	0.0309	0.0221	0.00230			
Antimony	mg/L	-	0.00010	0.0001		0.006	0.000100		0.0001	0.00010			0.00010	0.00010	0.00010	0.00010		0.0001	0.00010	0.00010	0.00010			
Arsenic	mg/L	0.001	0.00010	0.0001	0.005		0.010		0.0001	0.00010	0.001	0.001	0.00010	0.00010	0.00010	0.00010		0.0001	0.00010	0.00010	0.00010			
Barium	mg/L	0.01	0.00050	0.0005		1	0.005930		0.00626	0.00728	0.01	0.01	0.00595	0.00446	0.00434	0.00608	0.00619	0.00425	0.00441	0.00632				
Beryllium	mg/L	-	0.00050	0.0005			0.000500		0.0005	0.00050			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050			
Bismuth	mg/L	-	0.00050	0.0005			0.000500		0.0005	0.00050			0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050			
Boron	mg/L	0.01	0.010	0.01		5	0.010000		0.01	0.010	0.01	0.01	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.01000			
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.000017	0.000010		0.00001	0.000017	0.0001	0.0001	0.000017	0.000017	0.000017	0.00001		0.00001	0.000017	0.000017	0.00001			
Calcium	mg/L	1	0.050	0.05			9.02		12.2	15.4	9	11	15.3	10.1	10.7	9.80	12.7	9.51	10.6	14.0				
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.000510		0.0005	0.00050	0.001	0.001	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050			
Cobalt	mg/L	0.0002	0.00010	0.0001			0.000100		0.0001	0.00010	0.0002	0.0002	0.00010	0.00010	0.00010	0.00011		0.0001	0.00010	0.00010	0.00010			
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.002460		0.00131	0.00100	0.001	0.001	0.00087	0.00076	0.00068	0.00325	0.00093	0.00070	0.00066	0.00100				
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.030000		0.092	0.054	0.07	0.12	0.093	0.064	0.030	0.24300	0.078	0.057	0.030	0.03800				
Lead	mg/L	0.001	0.00050	0.00050	0.001-0.007	0.01	0.000230		0.00011	0.000050	0.001	0.001	0.000050	0.000050	0.000050	0.000050	0.00025	0.00008	0.000053	0.000050	0.00007			
Lithium	mg/L		0.0050	0.005			0.005000		0.005	0.0050			0.0050	0.0050	0.0050	0.00500	0.0050	0.0050	0.0050	0.00500	0.00500			
Magnesium	mg/L	1	0.10	0.1			5.46		6.96	9.24	5	6	9.13	5.76	6.03	5.75	7.31	5.40	5.93	8.15				
Manganese	mg/L	0.01	0.00050	0.0005		≤0.05	0.005180		0.00442	0.00488	0.01	0.01	0.0199	0.00648	0.00276	0.00508		0.0033	0.006					

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Sheardown Lake SE Basin																		
Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME	Canadian Drinking Water Guidelines	DLO-02-3-B	DLO-02-3-B	DLO-02-4-D	DLO-02-4-D	DLO-02-4-B	DLO-02-4-B	DLO-02-6-D	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects
		2006	2007	2008	2010	2010	31-Jul-08	02-Sep-08	07-Aug-07	13-Sep-07	30-Jul-08	02-Sep-08	08-May-07					
In Situ Parameters																		
Temperature	°C	-	-	-		≤15	8.5	5.5	10.1	6.0	9.6	5.5	1.6	34	7.4	3.4	34	100%
Specific Conductance	mS/cm	-	-	-			0.106	0.126	0.084	0.093	0.106	0.143	0.143	34	0.5	2.3	34	100%
Dissolved Oxygen	mg/L	-	-	-	9.5		10.23	13.69	5.40	12.28	10.72	0.127	15.96	34	11.1	3.8	34	100%
pH	-	-	-	-	6.5-9.5	6.5-8.5	7.03	7.31		8.17	7.17	7.29		24	7.6	0.6	24	100%
Average Depth (m)	(m)	-	-	-										4	5.5	5.1	4	100%
Measured Depth (m)	(m)	-	-	-										4	4.5	4.7	16	100%
Total Depth - May Samples Only	m	-	-	-					7.0	6.2			4.0	16	4.5	3.9	4	100%
Ice Thickness - May Samples Only	m	-	-	-									1.80	4	1.9	0.1	4	100%
Airspace - May Samples Only	m	-	-	-									0.10	4	0.1	0.0	4	100%
Snow Depth - May Samples Only	m	-	-	-									0.10	4	0.1	0.0	4	100%
Water Depth	m	-	-	-			14.5	15	7.5	7.2	8.6	9	4.60	30	10.2	3.7	30	100%
Turbidity	NTU	-	-	-			13.7	12.6	2.80	0.90	10.6	11.9	0	30	5.6	5.3	30	100%
Secchi Disk Depth	m	-	-	-			2.8	2.3	4.0	4.35	3.0	2.25		30	2.9	1.1	30	100%
General Parameters and Nutrients																		
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.78	7.86	8.11	7.90	7.79	7.86	7.04	36	7.7	0.4	36	100%
Conductivity	µS/cm	5	5	5			97	121	95	105	96	122	156	36	111.8	20.8	36	100%
Turbidity	NTU	0.1	0.1	0.1			3.0	2.4	1.1	0.5	2.9	2.2	0.4	36	1.5	1.1	36	100%
Hardness	mg/L as CaCO ₃	1	0.5	0.5				60.8	46.7	51		61.2	75.8	30	53.9	14.3	30	100%
Total dissolved Solids (TDS)	mg/L					≤500								4	61.8	4.3	4	100%
TDS (COND - CALC)	mg/L	5	5	5		≤500	63	79	62	68	62	79	101	32	74.0	13.7	32	100%
Total Suspended Solids (TSS)	mg/L		2	2			5	2	2	2	2	2		32	2.3	0.8	16	50%
Alkalinity	mg/L as CaCO ₃	5	5	5			46	54	43	49	45	54	78	36	52.9	10.5	36	100%
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.25	0.25	0.25	0.05	36	0.21	0.08	0	0%
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	3	5	2	2	3	5	1	36	3	1	36	100%
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	3	1	1	3	1	36	2	1	34	94%
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.02	0.02	0.02	0.02	0.02	36	0.03	0.01	10	28%
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	0.002	0.002	0.005	0.005	0.002	36	0.004	0.002	8	22%
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.1	0.1	0.10	0.10	0.10	0.10	0.10	36	0.1	0.0	0	0%
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.1	0.1	0.10	0.10	0.10	0.10	0.10	36	0.1	0.0	0	0%
Total Phosphorus	mg/L	0.01	0.003	0.003			0.013	0.005	0.003	0.003	0.010	0.009	0.003	36	0.006	0.004	21	58%
Total Organic Carbon (TOC)	mg/L		0.5	0.5			1.5	1.8	1.3	1.6	1.6	1.6	2.1	32	1.7	0.2	32	100%
Dissolved Organic Carbon	mg/L		0.5	0.5			1.7	1.4	1.5	1.5	1.6	1.5	2.0	32	1.6	0.2	32	100%
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.16	0.18	0.12	0.10	0.16	0.46	0.10	32	0.2	0.1	22	69%
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001	36	0.001	0.00	5	14%
Total Metals and Non-Metals																		
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.164000	0.0714	0.0645	0.0204	0.171000	0.0825	0.0064	34	0.059	0.057	34	100%
Antimony	mg/L	-	0.00010	0.0001		0.006	0.000100	0.0001	0.00010	0.00010	0.000100	0.0001	0.00010	30	0.0001	0.00	0	0%
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.000100	0.0001	0.00010	0.00010	0.000100	0.0001	0.00010	34	0.0002	0.0003	0	0%
Barium	mg/L	0.01	0.00050	0.0005		1	0.005840	0.00619	0.00483	0.00437	0.005920	0.0064	0.00731	34	0.00606	0.00176	30	88%
Beryllium	mg/L	-	0.00050	0.0005			0.000500	0.0005	0.00050	0.00050	0.000500	0.0005	0.00050	30	0.0005	0.00	0	0%
Bismuth	mg/L	-	0.00050	0.0005			0.000500	0.0005	0.00050	0.00050	0.000500	0.0005	0.00050	30	0.0005	0.00	0	0%
Boron	mg/L	0.01	0.010	0.01		5	0.010000	0.01	0.010	0.010	0.010000	0.01	0.010	34	0.01	0.00	0	0%
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000010	0.00001	0.000017	0.000017	0.000010	0.00001	0.000017	34	0.000024	0.000028	0	0%
Calcium	mg/L	1	0.050	0.05			0.009290	12.7	9.81	10.4	9.11	12.2	15.4	34	11.0	2.8	34	100%
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.000500	0.0005	0.00050	0.00050	0.000500	0.00079	0.00050	34	0.0006	0.0002	3	9%
Cobalt	mg/L	0.0002	0.00010	0.0001			0.000100	0.0001	0.00010	0.00010	0.000110	0.0001	0.00010	34	0.0001	0.00	5	15%
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.001380	0.00092	0.00080	0.00073	0.002420	0.00134	0.00106	34	0.0011	0.0006	30	88%
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.224000	0.091	0.126	0.030	0.208000	0.091	0.116	34	0.09	0.06	29	85%
Lead	mg/L	0.001	0.00050	0.0005	0.001-0.007	0.01	0.000200	0.0001	0.000114	0.000050	0.000270	0.00011	0.000050	34	0.00021	0.00030	18	53%
Lithium	mg/L	-	0.0050	0.005			0.005000	0.005	0.0050	0.0050	0.005000	0.005	0.0050	30	0.005	0.00	0	0%
Magnesium	mg/L	1	0.10	0.1			0.005550	7.14	5.47	6.02	5.41	6.95	9.23	34	6.3	1.7	34	100%
Manganese	mg/L	0.01	0.00050	0.0005		≤0.05	0.004760	0.00414	0.0189	0.00288	0.005160	0.00443	0.00627	34	0.00557	0.00427	30	88%
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.000010	0.00001	0.000050	0.000050	0.000010	0.00001	0.000050	34	0.00004	0.00003	0	0%
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.000288	0.000397	0.000306	0.000346	0.000295	0.000421	0.000509	34	0.00093	0.00151	30	88%
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.000790	0.00073	0.00064	0.00053	0.000840	0.0008	0.00086	34	0.0012	0.0014	24	71%
Phosphorus	mg/L	-	0.30	0.003			0.000000		0.30	0.30			0.30	18	0.267	0.097	2	11%
Potassium	mg/L	0.01	2.0	0.05			0.000683	0.73	2.0	2.0	0.694	0.779	2.0	34	1.31	0.67	18	53%
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.001000	0.001	0.0010	0.0010	0.001000	0.001	0.0010	34	0.001	0.00	0	0%
Silicon	mg/L	-	0.050	0.05			0.979000	0.865	0.584	0.534	0.829000	0.835	0.956	30	0.76	0.23	30	100%
Silver	mg/L	0.0001	0.000010	0.00001	0.0001		0.000010	0.00001	0.000010	0.000010	0.000010	0.000011	0.000010	34	0.00002	0.00003	1	3%
Sodium	mg/L	0.05	2.0	0.05		≤200	0.000672	0.849	2.0	2.0	0.730	0.89	2.0	34	1.			

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Print Oct/26/10 14:13:26																		
Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Sheardown Lake Nearshore											
		Detection Limit	Detection Limit	Detection Limit			SDL1	SDL01-WQ	SDL01-WQ	SDL2	SDL02-WQ	SDL02-WQ	SDL3	SDL03-WQ	SDL03-WQ	SDL4	SDL04-WQ	SDL04-WQ
		2006	2007	2008			2010	2010	25-Jun-08	31-Jul-08	14-Sep-08	25-Jun-08	31-Jul-08	14-Sep-08	25-Jun-08	31-Jul-08	14-Sep-08	25-Jun-08
In Situ Parameters																		
Temperature	°C	-	-	-	-	≤15	3.3		4.7	5.7		3.9	3.0		4.2	2.0		4.4
Specific Conductance	mS/cm	-	-	-	-		0.102		0.130	0.111		0.151	0.094		0.146	0.064		0.135
Dissolved Oxygen	mg/L	-	-	-	9.5		14.30		12.56	13.25		12.87	14.35		13.10	13.40		12.77
pH	-	-	-	-	6.5-9.5	6.5-8.5	7.58		7.97	7.55		8.05	7.55		7.79	7.67		7.82
Average Depth (m)	(m)	-	-	-	-	-												
Measured Depth (m)	(m)	-	-	-	-	-												
Total Depth - May Samples Only	m	-	-	-	-	-												
Ice Thickness -May Samples Only	m	-	-	-	-	-												
Airspace - May Samples Only	m	-	-	-	-	-												
Snow Depth - May Samples Only	m	-	-	-	-	-												
Water Depth	mtu	-	-	-	-	-	1.2		1.2	1.2		1.2	1.2		1.2	1.2		1.2
Turbidity	NTU	-	-	-	-	-			3.9						4.8			3.8
Secchi Disk Depth	m	-	-	-	-	-												
General Parameters and Nutrients																		
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.89	7.79	7.54	7.89	8.01	7.77	7.86	7.85	7.76	7.61	7.85	7.63
Conductivity	µS/cm	5	5	5			109	108	120	116	184	158	95	110	146	51	114	123
Turbidity	NTU	0.1	0.1	0.1			0.6	0.5	1	1.3	0.5	2.1	0.6	0.6	0.9	0.6	0.6	0.8
Hardness	mg/L as CaCO ₃	1	0.5	0.5			53.6		82.8	56.9		72.7	47.8		77.5	26.6		66.9
TDS (COND - CALC)	mg/L	5	5	5		≤500	71	70	78	75	120	103	62	72	95	33	74	80
Total Suspended Solids (TSS)	mg/L	2	2	2			2	2	2	3	2	3	2	2	2	2	2	2
Alkalinity	mg/L as CaCO ₃	5	5	5			53	53	58	49	83	70	46	54	66	28	56	58
Bromide (Br)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Chloride (Cl)	mg/L	1	1	1		≤250	1	2	3	5	7	6	1	2	5	1.00	5	2
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	1	1	1.000	5	5	1	1	4	1.000	3	1
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.06	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	0.005	0.007	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Total Phosphorus	mg/L	0.01	0.003	0.003			0.007	0.005	0.005	0.006	0.005	0.007	0.004	0.004	0.003	0.004	0.006	0.003
Total Organic Carbon (TOC)	mg/L	-	0.5	0.5			1.8	1.9	1.9	3.0	2.8	2.1	1.7	1.9	2	1.1	2.1	1.9
Dissolved Organic Carbon	mg/L	-	0.5	0.5			1.7	1.9	1.8	2.8	2.7	1.9	1.6	1.8	2	1.0	2.0	1.8
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.05	0.1			0.21	0.16	0.10	0.24	0.19	0.18	0.17	0.17	0.10	0.21	0.20	0.10
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Metals and Non-Metals																		
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.01420	0.0213	0.0175	0.06210	0.0158	0.0225	0.01320	0.0195	0.0167	0.0180	0.0132	0.0107
Antimony	mg/L	-	0.00010	0.0001		0.006	0.0001	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.0001	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001
Barium	mg/L	0.01	0.00050	0.00005		1	0.00421	0.00519	0.00519	0.00587	0.00514	0.00632	0.00386	0.00504	0.00656	0.00218	0.00463	0.00527
Beryllium	mg/L	-	0.00050	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.0005	0.0005	0.00050	0.0005	0.0005
Bismuth	mg/L	-	0.00050	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.0005	0.0005	0.00050	0.0005	0.0005
Boron	mg/L	0.01	0.010	0.01		5	0.01	0.01	0.01	0.01000	0.01	0.01	0.01000	0.01	0.01	0.01000	0.01	0.01
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000024	0.00001	0.00001	0.000022	0.00001	0.00001	0.00001	0.00001	0.000011	0.00001	0.00001	0.00001
Calcium	mg/L	1	0.050	0.05			10.7	10.8	12.6	10.9	11.1	13.7	9.48	10.9	15.1	5.30	10.7	12.5
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.0005	0.0005	0.0005	0.00050	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.0005	0.0005
Cobalt	mg/L	0.0002	0.00010	0.0001			0.0001	0.0001	0.0001	0.00010	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.0001	0.0001
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00085	0.00098	0.002	0.00281	0.001	0.002	0.00091	0.00095	0.002	0.00046	0.00094	0.00099
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.03700	0.031	0.03	0.08100	0.03	0.033	0.03	0.033	0.03000	0.03	0.03	0.03
Lead	mg/L	0.001	0.00050	0.00005	0.001-0.007	0.01	0.00005	0.00005	0.00006	0.00011	0.00006	0.00006	0.00006	0.00008	0.0001	0.00005	0.00005	0.00005
Lithium	mg/L	-	0.0050	0.005			0.005	0.005	0.005	0.00500	0.005	0.005	0.005	0.005	0.00500	0.005	0.005	0.005
Magnesium	mg/L	1	0.10	0.1			6.52	6.69	8.21	7.24	7.07	8.77	5.80	6.89	10.3	3.18	6.68	7.73
Manganese	mg/L	0.01	0.00050	0.00005		≤0.05	0.00133	0.0017	0.00171	0.00203	0.00015	0.00183	0.00129	0.00176	0.00019	0.000932	0.00138	0.00143
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Molybdenum	mg/L	0.005	0.00050	0.00005	0.073		0.000473	0.00061	0.000678	0.000901	0.000634	0.000938	0.000465	0.000617	0.00101	0.000264	0.00054	0.00067
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.00058	0.00065	0.00081	0.00143	0.00065	0.00091	0.00059	0.00066	0.00098	0.00050	0.00071	0.00072
Potassium	mg/L	0.01	2.0	0.05			0.663	0.787	1.08	1.13	0.794	0.956	0.621	0.774	1.33	0.345	0.731	0.821
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.001	0.001	0.001	0.00100	0.001	0.001	0.00100	0.001	0.001	0.00100	0.001	0.001
Silicon	mg/L	-	0.050	0.05			0.63700	0.656	0.63	0.92600	0.663	0.816	0.56200	0.647	0.849	0.30800	0.604	0.648
Silver	mg/L	0.0001	0.000010	0.00001	0.0001		0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Sodium	mg/L	0.05	2.0	0.05		≤200	0.556	0.605	9.62	0.506	0.629	1.07	0.572	0.623	11.2	0.277	0.69	0.796
Strontium	mg/L	0.001	0.00010	0.0001			0.00673	0.00739	0.0146	0.00687	0.00739	0.00859	0.00619	0.00752	0.0164	0.00348	0.00708	0.0081
Thallium	mg/L	-	0.00010	0.0001	0.0008		0.0001	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001
Tin	mg/L	0.01	0.00010	0.0001			0.0001	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001
Titanium	mg/L	-	0.010	0.01			0.01	0.01	0.01	0.01000	0.01	0.01	0.01000	0.01	0.01	0.01000	0.01	0.01
Uranium	mg/L	-	0.000010	0.00001		0.02	0											

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Sheardown Lake Nearshore																	
Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME 2010	Canadian Drinking Water Guidelines 2010	SDL5	SDL05-WQ	SDL05-WQ	SDL6	SDL06-WQ	SDL06-WQ	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects
		2006	2007	2008			2010	25-Jun-08	31-Jul-08	14-Sep-08	25-Jun-08	31-Jul-08					
In Situ Parameters																	
Temperature	°C	-	-	-	-	≤15	2	-	4.3	-	-	4.5	11	3.8	1.1	11	100%
Specific Conductance	mS/cm	-	-	-	-	-	0.08	-	0.135	0.095	-	0.130	12	0.114	0.028	12	100%
Dissolved Oxygen	mg/L	-	-	-	9.5	-	13.85	-	12.74	14.3	-	11.68	12	13.26	0.82	12	100%
pH	-	-	-	-	6.5-9.5	6.5-8.5	7.48	-	7.5	7.59	-	7.39	12	7.66	0.20	12	100%
Average Depth (m)	(m)	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Measured Depth (m)	(m)	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Total Depth - May Samples Only	m	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Ice Thickness -May Samples Only	m	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Airspace - May Samples Only	m	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Snow Depth - May Samples Only	m	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Water Depth	m	-	-	-	-	-	1.2	-	1.2	1.2	-	1.2	12	1.2	0.0	12	100%
Turbidity	NTU	-	-	-	-	-	-	-	3.7	-	-	2.9	5	4	1	5	100%
Secchi Disk Depth	m	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
General Parameters and Nutrients																	
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.88	7.84	7.68	7.89	7.86	7.67	18	7.79	0.12	18	100%
Conductivity	µS/cm	5	5	5	-	-	78	109	123	97	114	121	18	115	29	18	100%
Turbidity	NTU	0.1	0.1	0.1	-	-	0.6	0.5	0.9	0.5	0.4	0.8	18	0.8	0.4	18	100%
Hardness	mg/L as CaCO ₃	1	0.5	0.5	-	-	38.3	-	71	49.4	-	63	12	57	15	12	100%
TDS (COND - CALC)	mg/L	5	5	5	-	≤500	51	71	80	63	74	79	18	75	19	18	100%
Total Suspended Solids (TSS)	mg/L	2	2	2	-	-	2	2	2	2	2	2	18	2.11	0.32	2	11%
Alkalinity	mg/L as CaCO ₃	5	5	5	-	-	38	54	58	48	57	57	18	55	12	18	100%
Bromide (Br)	mg/L	0.05	0.05	0.05	-	-	0.25	0.25	0.25	0.25	0.25	0.25	18	0.25	0.00	0	0%
Chloride (Cl)	mg/L	1	1	1	-	≤250	1	2	3	1	2	3	18	3	2	17	94%
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1	-	≤500	1	1	1	1,000	1	1	18	2	1	12	67%
Ammonia (NH ₃ +NH ₄ ⁺)	mg N/L	0.02	0.02	0.02	0.021-231	-	0.04	0.02	0.02	0.020	0.02	0.02	18	0.02	0.01	3	17%
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	0.005	0.005	0.005	0.005	18	0.005	0.00	1	6%
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.10	0.10	0.10	0.10	0.10	18	0.1	0.0	0	0%
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1	-	-	0.10	0.10	0.10	0.10	0.10	0.10	18	0.1	0.0	0	0%
Total Phosphorus	mg/L	0.01	0.003	0.003	-	-	0.003	0.005	0.004	0.003	0.005	0.004	18	0.005	0.001	17	94%
Total Organic Carbon (TOC)	mg/L	-	0.5	0.5	-	-	1.50	1.9	1.9	1.80	2.0	1.9	18	2.0	0.4	18	100%
Dissolved Organic Carbon	mg/L	-	0.5	0.5	-	-	1.50	2.0	1.8	1.80	2.1	1.8	18	1.9	0.4	18	100%
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.05	0.1	-	-	0.1	0.10	0.10	0.20	0.23	0.10	18	0.2	0.1	12	67%
Phenols	mg/L	0.001	0.001	0.001	0.004	-	0.001	0.001	0.001	0.001	0.001	0.001	18	0.001	0.00	6	33%
Total Metals and Non-Metals																	
Aluminum	mg/L	0.005	0.0010	0.001	0.005-0.1	-	0.00920	0.0128	0.0108	0.01120	0.0158	0.0092	18	0.017	0.012	18	100%
Antimony	mg/L	-	0.00010	0.0001	-	0.006	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	18	0.0001	0.00	0	0%
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00010	0.0001	0.0001	0.00010	0.00012	0.0001	18	0.0001	0.00	1	6%
Barium	mg/L	0.01	0.000050	0.00005	-	1	0.00303	0.00472	0.00528	0.00386	0.00528	0.00537	18	0.00483	0.00109	18	100%
Beryllium	mg/L	-	0.00050	0.0005	-	-	0.00050	0.0005	0.0005	0.00050	0.0005	0.0005	18	0.0005	0.00	0	0%
Bismuth	mg/L	-	0.00050	0.0005	-	-	0.00050	0.0005	0.0005	0.00050	0.0005	0.0005	18	0.0005	0.00	0	0%
Boron	mg/L	0.01	0.010	0.01	-	5	0.01000	0.01	0.01	0.01000	0.01	0.01	18	0.01	0.00	0	0%
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	18	0.000012	0.000004	3	17%
Calcium	mg/L	1	0.50	0.05	-	-	7.37	10.8	12.4	9.51	10.8	12.6	18	10.95	2.22	18	100%
Chromium	mg/L	0.001	0.00050	0.0005	-	0.05	0.00050	0.0005	0.0005	0.00050	0.0005	0.0005	18	0.0005	0.00	0	0%
Cobalt	mg/L	0.0002	0.00010	0.0001	-	-	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	18	0.0001	0.00	0	0%
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00067	0.0009	0.00098	0.00083	0.00101	0.00105	18	0.0012	0.0006	15	83%
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.03000	0.03	0.03	0.03000	0.03	0.03	18	0.03	0.01	4	22%
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	18	0.00006	0.00002	7	39%
Lithium	mg/L	-	0.0050	0.005	-	-	0.00500	0.005	0.005	0.00500	0.005	0.005	18	0.005	0.00	0	0%
Magnesium	mg/L	1	0.10	0.1	-	-	4.54	6.74	7.81	5.89	6.76	8.37	18	7.0	1.6	18	100%
Manganese	mg/L	0.01	0.000050	0.00005	-	≤0.05	0.00101	0.00141	0.00144	0.00123	0.00173	0.00141	18	0.00150	0.00030	18	100%
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	18	0.00001	0.00	0	0%
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073	-	0.00034	0.000543	0.000646	0.000533	0.000689	-	18	0.00061	0.00019	18	100%
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150	-	0.00050	0.0007	0.00068	0.00060	0.00076	0.00074	18	0.0007	0.0002	15	83%
Potassium	mg/L	0.01	2.0	0.05	-	-	0.470	0.727	0.823	0.604	0.737	0.858	18	0.79	0.23	18	100%
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.00100	0.001	0.001	0.00100	0.001	0.001	18	0.001	0.00	0	0%
Silicon	mg/L	-	0.050	0.05	-	-	0.42900	0.608	0.685	0.55300	0.631	0.673	18	0.64	0.14	18	100%
Silver	mg/L	0.0001	0.000010	0.00001	0.0001	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	18	0.00001	0.00	0	0%
Sodium	mg/L	0.05	2.0	0.05	-	≤200	0.421	0.627	0.77	0.569	0.713	1.68	18	1.77	3.17	18	100%
Strontium	mg/L	0.001	0.00010	0.0001	-	-	0.00498	0.00717	0.008	0.00627	0.00737	0.00863	18	0.0079	0.0030	18	100%
Thallium	mg/L	-	0.00010	0.0001	0.0008	-	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	18	0.0001	0.00	0	0%
Tin	mg/L	0.01	0.00010	0.0001	-	-	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	18	0.0001	0.00	0	0%
Titanium	mg/L	-	0.010	0.01	-	-	0.01000	0.01	0.01	0.01000	0.01	0.01	18	0.01	0.00	0	0%
Uranium	mg/L	-	0.000010	0.00001	-	0.02	0.000378	0.000603	0.000825	0.000490	0.000607	0.000836	18	0.00073	0.00032	18	100%
Vanadium	mg/L	0.001	0.0010	0.001	-	-	0.00100	0.001	0.001	0.00100	0.001	0.001	18	0.001	0.00	0	0%
Zinc	mg/L	0.01	0.0010	0.001	0.03	≤5.0	0.00100	0.0012	0.001	0.00120	0.001	0.001	18	0.001	0.001	9	50%
Dissolved Metals and Non-Metals																	
Aluminum	mg/L	0.005	0.0010	0.001	-	-	0.00100	0.0012	0.0019	0.00120	0.001200	0.0027	18	0.002	0.002	17	94%
Antimony	mg/L	-	0.00010	0.0001	-	-	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	18	0.0001	0.00	0	0%
Arsenic	mg/L	0.001	0.00010	0.0001	-	-	0.00010	0.0001	0.0001	0.00010	0.0001	0.0001	18	0.0001	0.00	0	0%
Barium	mg/L	0.01	0.000050	0.00005	-	-											

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method Detection Limit 2006	Method Detection Limit 2007	Method Detection Limit 2008	CCME 2010	Canadian Drinking Water Guidelines 2010	Steensby Area Lakes																	
							Lake ST3										Lake ST6							
							NSC Lake 1-S Surface 29-Jul-08	NSC Lake 1-s Surface 02-Sep-08	NSC Lake 1-B Bottom 29-Jul-08	NSC Lake 1-b Bottom 02-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	NSC Lake 2-S Surface 29-Jul-08	NSC Lake 2-s Surface 01-Sep-08	NSC Lake 2-B Bottom 29-Jul-08	NSC Lake 2-b Bottom 01-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects
In Situ Parameters							10.32	6.68	10.32	6.61	4	8.5	2.1	4	100%	10.34	6.93	10.32	6.94	4	8.6	2.0	4	100%
Temperature	°C	-	-	-	-	≤15	0.23	0.25	0.23	0.25	4	0.240	0.012	4	100%	0.11	0.16	0.11	0.16	4	0.135	0.029	4	100%
Specific Conductance	mS/cm	-	-	-	-	-	11.72	12.35	11.7	12.41	4	12.05	0.39	4	100%	11.96	13.85	11.9	13.84	4	12.89	1.11	4	100%
Dissolved Oxygen	mg/L	-	-	-	9.5	6.5-8.5	7.94	7.06	8.03	7.45	4	7.62	0.45	4	100%	7.22	6.67	7.41	6.78	4	7.02	0.35	4	100%
pH	-	-	-	-	-	-																		
Average Depth (m)	(m)	-	-	-	-	-																		
Measured Depth (m)	(m)	-	-	-	-	-																		
Total Depth - May Samples Only	m	-	-	-	-	-																		
Ice Thickness -May Samples Only	m	-	-	-	-	-																		
Airspace - May Samples Only	m	-	-	-	-	-																		
Snow Depth - May Samples Only	m	-	-	-	-	-																		
Water Depth	m	-	-	-	-	-	5.2	5	5.2	5	4	5.1	0.1	4	100%	3.7	3	3.7	3	4	3.4	0.4	4	100%
Turbidity	NTU	-	-	-	-	-	1	4	1	4	4	3	2	4	100%	2	15	1	13	4	8	7	4	100%
Secchi Disk Depth	m	-	-	-	-	-	4.5	3.5	4.5	3.5	4	4.0	0.6	4	100%	3.7	1.35	3.7	1.35	4	2.5	1.4	4	100%
General Parameters and Nutrients																								
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.99	7.93	7.99	7.92	4	7.96	0.04	4	100%	7.71	7.64	7.72	7.6	4	8	0	4	100%
Conductivity	µS/cm	5	5	5	-	-	213	228	213	228	4	221	9	4	100%	99	135	99	136	4	117	21	4	100%
Turbidity	NTU	0.1	0.1	0.1	-	-	0.8	1.2	0.7	1.1	4	1.0	0.2	4	100%	1.5	4.7	1.2	4.6	4	3.0	1.9	4	100%
Hardness	mg/L as CaCO ₃	1	0.5	0.5	-	-	76.1	84.7	76.3	84	4	80	5	4	100%	35.1	45.6	35.1	45.7	4	40.4	6.1	4	100%
TDS (COND - CALC)	mg/L	5	5	5	-	≤500	138	148	138	148	4	143	6	4	100%	64	88	64	88	4	76	14	4	100%
Total Suspended Solids (TSS)	mg/L	-	2	2	-	-	2.00	2	2.00	2	4	2.00	0.00	4	100%	2.00	3	2.00	3	4	2.50	0.58	4	100%
Alkalinity	mg/L as CaCO ₃	5	5	5	-	-	69	70	71	70	4	70	1	4	100%	33	39	33	39	4	36	3	4	100%
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05	-	-	0.25	0.25	0.25	0.25	4	0.25	0.00	4	100%	0.25	0.25	0.25	0.25	4	0.25	0.00	4	100%
Chloride (Cl ⁻)	mg/L	1	1	1	-	≤250	22	24	22	24	4	23	1	4	100%	8	13	8	13	4	11	3	4	100%
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1	-	≤500	4	6	4	6	4	5	1	4	100%	4	8	5	8	4	6	2	4	100%
Ammonia (NH ₃ +NH ₄ ⁺)	mg N/L	0.02	0.02	0.02	0.021-231	-	0.06	0.05	0.04	0.03	4	0.05	0.01	4	100%	0.05	0.02	0.04	0.03	4	0.04	0.01	4	100%
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.01	0.005	0.01	0.005	4	0.005	0.00	4	100%	0.01	0.005	0.01	0.005	4	0.005	0.00	4	100%
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.10	0.1	0.10	0.1	4	0.1	0.00	4	100%	0.10	0.1	0.10	0.1	4	0.1	0.00	4	100%
NO ₂ +NO ₃ ⁻	mg N/L	0.1	0.10	0.1	-	-	0.10	0.1	0.10	0.1	4	0.1	0.00	4	100%	0.10	0.1	0.10	0.1	4	0.1	0.00	4	100%
Total Phosphorus	mg/L	0.01	0.003	0.003	-	-	0.004	0.007	0.007	0.006	4	0.006	0.001	4	100%	0.008	0.012	0.006	0.012	4	0.010	0.003	4	100%
Total Organic Carbon (TOC)	mg/L	-	0.5	0.5	-	-	5.0	5.1	4.9	5	4	5.0	0.1	4	100%	3.5	3.1	3.5	3.3	4	3.4	0.2	4	100%
Dissolved Organic Carbon	mg/L	-	0.5	0.5	-	-	4.4	4.7	4.4	4.6	4	4.5	0.1	4	100%	3.0	2.7	2.7	3	4	2.9	0.2	4	100%
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.05	0.1	-	-	0.37	0.25	0.30	0.21	4	0.3	0.1	4	100%	0.24	0.2	0.33	0.28	4	0.3	0.1	4	100%
Phenols	mg/L	0.001	0.001	0.001	0.004	-	0.001	0.001	0.001	0.001	4	0.001	0.000	4	100%	0.001	0.001	0.001	0.001	4	0.001	0.00	4	100%
Total Metals and Non-Metals																								
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1	-	0.0076	0.0259	0.0064	0.0247	4	0.016	0.011	4	100%	0.0392	0.137	0.0438	0.206	4	0.107	0.080	4	100%
Antimony	mg/L	-	0.00010	0.0001	-	0.006	0.00010	0.0001	0.00010	0.0001	4	0.0001	0.00	4	100%	0.00010	0.0001	0.00010	0.0001	4	0.0001	0.00	4	100%
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00015	0.00022	0.00016	0.00022	4	0.0002	0.00	4	100%	0.00010	0.00013	0.00023	0.00012	4	0.0001	0.0001	4	100%
Barium	mg/L	0.01	0.000050	0.00005	-	1	0.00502	0.00511	0.00493	0.00515	4	0.00505	0.00010	4	100%	0.00271	0.00496	0.00279	0.00552	4	0.00400	0.00146	4	100%
Beryllium	mg/L	-	0.00050	0.0005	-	-	0.00050	0.0005	0.00050	0.0005	4	0.0005	0.00	4	100%	0.00050	0.0005	0.00050	0.0005	4	0.0005	0.00	4	100%
Bismuth	mg/L	-	0.00050	0.0005	-	-	0.00050	0.0005	0.00050	0.0005	4	0.0005	0.00	4	100%	0.00050	0.0005	0.00050	0.0005	4	0.0005	0.00	4	100%
Boron	mg/L	0.01	0.010	0.01	-	5	0.012	0.011	0.012	0.012	4	0.01	0.00	4	100%	0.01	0.01	0.01	0.011	4	0.01	0.00	4	100%
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.00001	0.00001	0.00001	0.00001	4	0.000010	0.00	4	100%	0.00001	0.00001	0.00001	0.00001	4	0.000010	0.00	4	100%
Calcium	mg/L	1	0.050	0.05	-	-	23.3	25.7	23.4	25.8	4	24.55	1.39	4	100%	10.5	14.5	10	13.8	4	12.20	2.28	4	100%
Chromium	mg/L	0.001	0.00050	0.0005	0.06	-	0.00050	0.0005	0.00050	0.0005	4	0.0005	0.00	4	100%	0.00050	0.0005	0.00050	0.0005	4	0.0005	0.00	4	100%
Cobalt	mg/L	0.0002	0.00010																					

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME	Canadian Drinking Water Guidelines	Stensby Area Lakes																							
							Lake ST24										Lake ST28										Lake ST92			
							NSC Lake 3-R Surface 04-Aug-08	NSC Lake 3-s Surface 02-Sep-08	NSC Lake3-B Bottom 04-Aug-08	NSC Lake3-b Bottom 02-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	NSL Lake4-S Surface 04-Aug-08	NSC Lake4-S Surface 08-Sep-08	NSL Lake4-B Bottom 04-Aug-08	NSC Lake4-B Bottom 08-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	NSC Lake 5-S Surface 30-Jul-08	NSC Lake5-s Surface 03-Sep-08	Number of Samples	Mean		
2006	2007	2008	2010	2010	15.08	7.25	12.34	7.12	4	10.4	3.9	4	100%	16.27	4.53	11.01	4.53	4	9.1	5.7	4	100%	14.92	7.66	2	11.3				
Temperature	°C	-	-	-		≤15	0.24	0.25	0.25	0.25	4	0.248	0.005	4	100%	0.09	0.11	0.09	0.11	4	0.100	0.012	4	100%	0.09	0.08	2	0.085		
Specific Conductance	mS/cm	-	-	-	9.5		10.73	12.39	11.9	12.48	4	11.88	0.80	4	100%	10.17	9.69	10.91	9.82	4	10.15	0.55	4	100%	11.52	11.39	2	11.46		
Dissolved Oxygen	mg/L	-	-	-	6.5-9.5	6.5-8.5	8.19	6.85	8.2	7.01	4	7.56	0.73	4	100%	6.54	6.13	6.56	6.15	4	6.35	0.24	4	100%		6.06	1			
pH	-	-	-	-																										
Average Depth (m)	(m)	-	-	-																										
Measured Depth (m)	(m)	-	-	-																										
Total Depth - May Samples Only	m	-	-	-																										
Ice Thickness -May Samples Only	m	-	-	-																										
Airspace - May Samples Only	m	-	-	-																										
Snow Depth - May Samples Only	m	-	-	-																										
Water Depth	m	-	-	-			4.2	4	4.2	4	4	4.1	0.1	4	100%	4.8	2.5	4.8	2.5	4	3.7	1.3	4	100%	0.5	0.8	2	0.7		
Turbidity	NTU	-	-	-			1	3	2	3	4	2	1	4	100%	1	4	4	4	4	3	2	4	100%	5		1			
Secchi Disk Depth	m	-	-	-			3.5	2.35	3.5	2.35	4	2.9	0.7	4	100%	4	2.5	4	2.5	4	3.3	0.9	4	100%						
General Parameters and Nutrients																														
pH	-	-	-	1	6.5-9.5	6.5-8.5	7.75	7.67	7.80	7.65	4	7.72	0.07	4	100%	7.09	6.62	7.10	6.7	4	6.88	0.25	4	100%	7.16	6.91	2	7.04		
Conductivity	µS/cm	5	5	5			216	229	215	229	4	222	8	4	100%	74	91	73	92	4	83	10	4	100%	72	66	2	69		
Turbidity	NTU	0.1	0.1	0.1			0.6	2.3	0.8	2.3	4	1.5	0.9	4	100%	0.6	1.7	0.6	1.7	4	1.2	0.6	4	100%	0.9	2.4	2	1.7		
Hardness	mg/L as CaCO ₃	1	0.5	0.5			57.0	63	56.4	62.5	4	59.7	3.5	4	100%	17.2	19.8	16.7	19.7	4	18.4	1.6	4	100%	12.5	14.4	2	13.5		
TDS (COND - CALC)	mg/L	5	5	5		≤500	140	149	140	149	4	145	5	4	100%	48	59	48	60	4	54	7	4	100%	40	43	2	42		
Total Suspended Solids (TSS)	mg/L		2	2			2	2	2	2	4	2.00	0.00	4	100%	2	2	2	2	4	2.00	0.00	4	100%	2	2	2	2.00		
Alkalinity	mg/L as CaCO ₃	5	5	5			46	43	44	43	4	44	1	4	100%	13	15	15	15	4	15	1	4	100%	12	9	2	11		
Bromide (Br)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.25	4	0.25	0.00	4	100%	0.25	0.25	0.25	0.25	4	0.25	0.00	4	100%	0.25	0.25	2	0.25		
Chloride (Cl)	mg/L	1	1	1		≤250	35	38	34	38	4	36	2	4	100%	12	15	12	15	4	14	2	4	100%	13	12	2	13		
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	5	8	5	8	4	7	2	4	100%	3	5	3	5	4	4	1	4	100%	3	4	2	4		
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.03	0.02	0.02	4	0.02	0.00	4	100%	0.02	0.06	0.04	0.05	4	0.04	0.02	4	100%	0.03	0.02	2	0.03		
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	0.005	0.005	4	0.005	0.000	4	100%	0.005	0.005	0.005	0.005	4	0.005	0.000	4	100%	0.005	0.005	2	0.005		
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.1	0.1	0.1	0.1	4	0.1	0.0	4	100%	0.1	0.1	0.1	0.1	4	0.10	0.00	4	100%	0.1	0.1	2	0.10		
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.1	0.1	0.1	0.1	4	0.1	0.0	4	100%	0.1	0.1	0.1	0.1	4	0.10	0.00	4	100%	0.1	0.1	2	0.10		
Total Phosphorus	mg/L	0.01	0.003	0.003			0.009	0.008	0.008	0.009	4	0.009	0.001	4	100%	0.008	0.008	0.009	0.01	4	0.009	0.001	4	100%	0.006	0.007	2	0.007		
Total Organic Carbon (TOC)	mg/L		0.5	0.5			5.1	5	5.3	4.9	4	5.1	0.2	4	100%	3.7	3.8	3.6	3.8	4	3.7	0.1	4	100%	2.4	2.4	2	2.4		
Dissolved Organic Carbon	mg/L		0.5	0.5			4.8	4.5	4.7	4.4	4	4.6	0.2	4	100%	2.8	3.3	2.9	3.2	4	3.1	0.2	4	100%	2.3	2.3	2	2.3		
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.40	0.24	0.24	0.22	4	0.28	0.08	4	100%	0.1	0.41	0.22	0.25	4	0.2	0.1	4	100%	0.25	0.1	2	0.2		
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	0.001	4	0.001	0.00	4	100%	0.001	0.001	0.001	0.001	4	0.001	0.000	4	100%	0.001	0.001	2	0.001		
Total Metals and Non-Metals																														
Aluminum	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0685	0.013200	0.0672	0.0672	3	0.050	0.032	3	100%	0.0205	0.0534	0.0172	0.0588	4	0.037	0.022	4	100%	0.041200	0.121	2	0.081		
Antimony	mg/L	-	0.00010	0.0001		0.006	0.0001	0.000100	0.0001	0.0001	3	0.0001	0.00	3	100%	0.0001	0.0001	0.0001	0.0001	4	0.0001	0.0000	4	100%	0.000100	0.0001	2	0.0001		
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00021	0.000100	0.00021	0.00021	3	0.0002	0.0001	3	100%	0.0001	0.0001	0.0001	0.0001	4	0.0001	0.0000	4	100%	0.000100	0.0001	2	0.0001		
Barium	mg/L	0.01	0.00050	0.00005		1	0.00563	0.004230	0.00553	0.00553	3	0.00513	0.00078	3	100%	0.0021	0.00346	0.0022	0.00349	4	0.00283									

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method Detection Limit 2006	Method Detection Limit 2007	Method Detection Limit 2008	CCME 2010	Canadian Drinking Water Guidelines 2010	Steensby Area Lakes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
							3 Km Lake								Lake ST81				Lake ST29																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
							NSL Lake7-S Surface 04-Aug-08	NSC Lake7-s Surface 08-Sep-08	NSL Lake7-B Bottom 04-Aug-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	NSL Lake8-S Surface 04-Aug-08	NSC Lake8-s Surface 03-Sep-08	Number of Samples	Mean	NSC Lake 9-S Surface 30-Jul-08	NSC Lake 9-s Surface 01-Sep-08	NSC Lake 9-B Bottom 30-Jul-08	NSC Lake 9-a Bottom 01-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Parameters	Units	Method Detection Limit	Method Detection Limit	Method Detection Limit	CCME	Canadian Drinking Water Guidelines	Steensby Area Lakes																							
							Lake ST32										10 km Lake										Lake ST88		Lake ST195	
							NSC Lake 10-S Surface 31-Jul-08	NSC Lake 10-r Surface 01-Sep-08	NSC Lake 10-A Bottom 31-Jul-08	NSC Lake 10-b Bottom 01-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	NSL Lake10-S Surface 06-Aug-08	NSL Lake10-B Bottom 06-Aug-08	NSC Lake26-s Shore 08-Sep-08	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	NSC Lake6-s Surface 03-Sep-08	NSC Lake6-S Surface 30-Jul-08					
2006	2007	2008	2010	2010																										
In Situ Parameters																														
Temperature	°C	-	-	-		≤15	14.97	6.15	9.76	6.1	4	9.2	4.2	4	100%		9.76			1	9.8						8.68	16.35		
Specific Conductance	mS/cm	-	-	-			0.03	0.03	0.02	0.03	4	0.028	0.005	4	100%		0.02			1	0.020						0.05	0.06		
Dissolved Oxygen	mg/L	-	-	-	9.5		9.81	12.55	11.05	12.74	4	11.54	1.38	4	100%		11.05			1	11.05						12.06	11.1		
pH		-	-	-	6.5-9.5	6.5-8.5	5.99	7.95	5.96	7.35	4	6.81	1.00	4	100%		5.96			1	5.96						5.96			
Average Depth (m)	(m)	-	-	-																										
Measured Depth (m)	(m)	-	-	-																										
Total Depth - May Samples Only	m	-	-	-																										
Ice Thickness - May Samples Only	m	-	-	-																										
Airspace - May Samples Only	m	-	-	-																										
Snow Depth - May Samples Only	m	-	-	-																										
Water Depth	m	-	-	-			9.3	6.5	9.3	6.5	4	7.9	1.6	4	100%		9.3			1	9.3						0.5	0.8		
Turbidity	NTU	-	-	-			2	5	4	5	4	4	1	4	100%		4			1	4						5	6		
Secchi Disk Depth	m	-	-	-			4.8	3.4	4.8	3.4	4	4.1	0.8	4	100%		4.8			1	4.8									
General Parameters and Nutrients																														
pH	-	-	-	1	6.5-9.5	6.5-8.5	6.72	6.74	6.64	6.69	4	7	0	4	100%	6.70	6.56	6.78	3	7	0	3	100%	6.84	6.89					
Conductivity	µS/cm	5	5	5			17	21	18	20	4	19	2	4	100%	17	16	43	3	25	15	3	100%	36	39					
Turbidity	NTU	0.1	0.1	0.1			0.5	1.7	0.6	1.9	4	1.2	0.7	4	100%	0.4	0.4	2.9	3	1.2	1.4	3	100%	1.6	0.5					
Hardness	mg/L as CaCO ₃	1	0.5	0.5				6.2		6.2	2	6.2		4		3.5	3.5	6.3	3	4.4	1.6	3	100%	9.8	7.2					
TDS (COND - CALC)	mg/L	5	5	5		≤500	11	14	12	13	4	13	1	4	100%	11	10	28	3	16	10	3	100%	23	24					
Total Suspended Solids (TSS)	mg/L		2	2			2	2	3	2	4	2	1	1	25%	2	2	2	3	2	0	0	0%	2	2					
Alkalinity	mg/L as CaCO ₃	5	5	5			5	10	5	5	4	6	3	1	25%	6	5	9	3	7	2	2	67%	12	9					
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	0.25	4	0.25	0.00	0	0%	0.25	0.25	0.25	3	0.25	0.00	0	0%	0.25	0.25					
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	2	2	1	2	4	2	1	4	100%	2	2	8	3	4	3	3	100%	4	7					
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	1	1	1	4	1	0	2	50%	1	1	5	3	2	2	2	67%	1	2					
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.02	0.02	4	0.02	0.00	0	0%	0.02	0.02	0.02	3	0.02	0.00	0	0%	0.02	0.03					
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	0.005	0.005	4	0.005	0.000	0	0%	0.005	0.005	0.005	3	0.005	0.000	0	0%	0.005	0.005					
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.1	0.1	0.1	0.1	4	0.1	0.0	0	0%	0.1	0.1	0.1	3	0.1	0.0	0	0%	0.1	0.1					
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.1	0.1	0.1	0.1	4	0.1	0.0	0	0%	0.1	0.1	0.1	3	0.1	0.0	0	0%	0.1	0.1					
Total Phosphorus	mg/L	0.01	0.003	0.003			0.004	0.006	0.003	0.006	4	0.005	0.002	4	100%	0.003	0.003	0.003	3	0.003	0.000	1	33%	0.004	0.003					
Total Organic Carbon (TOC)	mg/L		0.5	0.5			2.7	3	2.7	3	4	2.9	0.2	4	100%	1.3	1.1	1.1	3	1.2	0.1	3	100%	2.3	1.7					
Dissolved Organic Carbon	mg/L		0.5	0.5			2.5	2.8	2.6	2.7	4	2.7	0.1	4	100%	1.1	1.0	1.1	3	1.1	0.1	3	100%	1.9	1.6					
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.28	0.21	0.15	0.12	4	0.2	0.1	4	100%	0.1	0.1	0.1	3	0.10	0.00	0	0%	0.1	0.1					
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.02	0.001	0.001	4	0.006	0.010	3	75%	0.001	0.001	0.001	3	0.001	0.000	0	0%	0.001	0.001					
Total Metals and Non-Metals																														
Aluminum	mg/L	0.005	0.0010	0.001	0.005-0.1		0.018000	0.0578	0.017900	0.056	4	0.037	0.022	4	100%	0.013200	0.012800	0.0898	3	0.039	0.044	3	100%	0.0663	0.012900					
Antimony	mg/L	-	0.00010	0.0001		0.006	0.000100	0.0001	0.000100	0.0001	4	0.0001	0.0000	0	0%	0.000100	0.000100	0.0001	3	0.0001	0.0000	0	0%	0.0001	0.000100					
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.000100	0.0001	0.000100	0.0001	4	0.0001	0.0000	0	0%	0.000100	0.000100	0.0001	3	0.0001	0.0000	0	0%	0.0001	0.000100					
Barium	mg/L	0.01	0.000050	0.00005		1	0.001480	0.00223	0.001490	0.00222	4	0.00186	0.00043	4	100%	0.001280	0.001320	0.00228	3	0.00163	0.00057	3	100%	0.00267	0.001450					
Beryllium	mg/L	-	0.00050	0.0005			0.000500	0.0005	0.000500	0.0005	4	0.0005	0.0000	0	0%	0.000500	0.000500	0.0005	3	0.0005	0.0000	0	0%	0.0005	0.000500					
Bismuth	mg/L	-	0.00050	0.0005			0.000500	0.0005	0.000500	0.0005	4	0.0005	0.0000	0	0%	0.000500	0.000500	0.0005	3	0.0005	0.0000	0	0%	0.0005	0.000500					
Boron	mg/L	0.01	0.010	0.01		5	0.010000	0.01	0.010000	0.01	4	0.01	0.00	0	0%	0.010000	0.010000	0.01	3	0.01	0.00	0	0%	0.01	0.010000					
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000010	0.00001	0.000010	0.00001	4	0.000010	0.000000	0	0%	0.000010	0.000010	0.00001	3	0.000010	0.000000	0	0%	0.00001	0.000010					
Calcium	mg/L	1	0.050	0.05			1.02	1.31	1.02	1.39	4	1.19	0.19	4	100%	0.728	0.722	1.21	3	0.89	0.28	3	100%	2.12	1.28					
Chromium	mg/L	0.001	0.00050	0.0005	0.05		0.000500	0.0005	0.000500	0.0005	4	0.0005	0.0000	0	0%	0.000500	0.000500	0.0005	3	0.00										

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

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Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Mid-Rail Camp Lake							Candidate Reference Lake					
		Detection Limit	Detection Limit	Detection Limit			Nivek Lake	NS-Nivek-S	NS-Nivek-B	Number of Samples	Mean	Standard Deviation	Number of Detects	Percentage of Detects	CRL-3-S	CRL-3-B	Number of Samples	Mean	
		2006	2007	2008			2010	2010	09-Sep-08						Surface 08-Aug-08	Bottom 08-Aug-08			Surface 04-Aug-08
In Situ Parameters		°C																	
Temperature	°C					≤15	3.64	14.5	11.2	3	9.8	5.6	3	100%	14.4	10.2	2	12.3	
Specific Conductance	mS/cm						0.14	0.057	0.058	3	0.085	0.048	3	100%	0.111	0.105	2	0.108	
Dissolved Oxygen	mg/L				9.5		11.71	10.17	10.81	3	10.90	0.77	3	100%	10.66	11.17	2	10.92	
pH	-				6.5-9.5	6.5-8.5	5.57	8.08	6.69	3	6.78	1.26	3	100%	6.26	6.97	2	6.62	
Average Depth (m)	(m)									0							0		
Measured Depth (m)	(m)									0							0		
Total Depth - May Samples Only	m									0							0		
Ice Thickness - May Samples Only	m									0							0		
Airspace - May Samples Only	m									0							0		
Snow Depth - May Samples Only	m									0							0		
Water Depth	m							12	12	2	12.0				10	10	2	10.0	
Turbidity	NTU						9	6.2	2.8	3	6	3	3	100%	0	0	2	0	
Secchi Disk Depth	m							7	7	2	7.0						0		
General Parameters and Nutrients																			
pH	-	-		1	6.5-9.5	6.5-8.5	6.78	7.04	7.04	3	7	0	3	100%	7.83	7.82	2	8	
Conductivity	µS/cm	5	5	5			52	52	53	3	52	1	3	100%	99	96	2	98	
Turbidity	NTU	0.1	0.1	0.1			0.6	0.3	0.5	3	0.5	0.2	3	100%	0.5	0.7	2	0.6	
Hardness	mg/L as CaCO ₃	1	0.5	0.5			17.2	18.0	18.1	3	17.8	0.5	3	100%	50.1	49.1	2	49.6	
TDS (COND - CALC)	mg/L	5	5	5		≤500	34	34	35	3	34	1	3	100%	64	62	2	63	
Total Suspended Solids (TSS)	mg/L		2	2			2	2	2	3	2	0	1	33%	2	2	2	2.0	
Alkalinity	mg/L as CaCO ₃	5	5	5			5	6	9	3	7	2	3	100%	50	49	2	50	
Bromide (Br ⁻)	mg/L	0.05	0.05	0.05			0.25	0.25	0.25	3	0.25	0.00	1	33%	0.25	0.25	2	0.25	
Chloride (Cl ⁻)	mg/L	1	1	1		≤250	11	11	10	3	11	1	3	100%	1	1	2	1	
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1	3	3	3	2	1	3	100%	1	1	2	1	
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.02	0.02	0.02	3	0.02	0.00	1	33%	0.02	0.02	2	0.02	
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	0.005	3	0.005	0.000	1	33%	0.005	0.005	2	0.005	
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.1	0.1	0.1	3	0.1	0.0	1	33%	0.1	0.1	2	0.1	
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.1	0.1	0.1	3	0.1	0.0	1	33%	0.1	0.1	2	0.1	
Total Phosphorus	mg/L	0.01	0.003	0.003			0.003	0.003	0.003	3	0.003	0.000	2	67%	0.003	0.007	2	0.005	
Total Organic Carbon (TOC)	mg/L		0.5	0.5			2.5	1.9	1.6	3	2.0	0.5	3	100%	2.6	2.5	2	2.6	
Dissolved Organic Carbon	mg/L		0.5	0.5			2.1	1.4	1.6	3	1.7	0.4	3	100%	2.4	2.4	2	2.4	
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.18	0.11	0.14	3	0.1	0.0	3	100%	0.22	0.18	2	0.20	
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	0.001	3	0.001	0.000	1	33%	0.001	0.001	2	0.001	
Total Metals and Non-Metals																			
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.0134	0.00390	0.00330	3	0.007	0.006	3	100%	0.00280	0.00150	2	0.002	
Antimony	mg/L	-	0.00010	0.0001		0.006	0.0001	0.00010	0.00010	3	0.0001	0.0000	1	33%	0.00010	0.00010	2	0.0001	
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.0001	0.00010	0.00010	3	0.0001	0.0000	1	33%	0.00010	0.00010	2	0.0001	
Barium	mg/L	0.01	0.000050	0.00005		1	0.00311	0.00262	0.00264	3	0.00279	0.00028	3	100%	0.00309	0.00296	2	0.00303	
Beryllium	mg/L	-	0.00050	0.0005			0.0005	0.00050	0.00050	3	0.0005	0.0000	1	33%	0.00050	0.00050	2	0.0005	
Bismuth	mg/L	-	0.00050	0.0005			0.0005	0.00050	0.00050	3	0.0005	0.0000	1	33%	0.00050	0.00050	2	0.0005	
Boron	mg/L	0.01	0.010	0.01		5	0.01	0.01000	0.01000	3	0.01	0.00	1	33%	0.01000	0.01000	2	0.01	
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.000011	0.00001	0.00001	3	0.000010	0.000001	1	33%	0.00001	0.00001	2	0.000010	
Calcium	mg/L	1	0.050	0.05			4.92	5.27	5.47	3	5.22	0.28	3	100%	11.0	10.6	2	10.80	
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.0005	0.00050	0.00050	3	0.0005	0.0000	1	33%	0.00050	0.00050	2	0.0005	
Cobalt	mg/L	0.0002	0.00010	0.0001			0.0001	0.00010	0.00010	3	0.0001	0.0000	1	33%	0.00010	0.00010	2	0.0001	
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00048	0.00036	0.00041	3	0.0004	0.0001	3	100%	0.00090	0.00041	2	0.0007	
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.053	0.03000	0.03000	3	0.04	0.01	1	33%	0.030	0.0480	2	0.04	
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.00005	0.00005	0.00005	3	0.00005	0.00000	1	33%	0.00005	0.00005	2	0.00005	
Lithium	mg/L		0.0050	0.005			0.005	0.00500	0.00500	3	0.005	0.000	1	33%	0.00500	0.00500	2	0.005	
Magnesium	mg/L	1	0.10	0.1			1.11	1.04	1.03	3	1.1	0.0	3	100%	5.53	5.38	2	5.5	
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.00455	0.00199	0.00264	3	0.00306	0.00133	3	100%	0.00223	0.00418	2	0.00321	
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.00001	0.00001	0.00001	3	0.00001	0.00000	1	33%	0.00001	0.00001	2	0.00001	
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.00005	0.00005	0.00005	3	0.0001	0.0000	1	33%	0.00005	0.00005	2	0.0001	
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.0005	0.00050	0.00050	3	0.0005	0.0000	1	33%	0.00050	0.00050	2	0.0005	
Potassium	mg/L	0.01	2.0	0.05		0.025-0.150	0.643	0.532	0.532	3	0.57	0.06	3	100%	0.373	0.363	2	0.37	
Selenium	mg/L	0.001	0.00010	0.001	0.001	0.01	0.001	0.00100	0.00100	3	0.0010	0.0000	1	33%	0.00100	0.00100	2	0.001	
Silicon	mg/L		0.050	0.05			0.24	0.24600	0.23600	3	0.24	0.01	3	100%	0.58400	0.59500	2	0.59	
Silver	mg/L	0.0001	0.000010	0.00001	0.0001		0.00001	0.00001	0.00001	3	0.00001	0.00000	1	33%	0.00001	0.00001	2	0.00001	
Sodium	mg/L	0.05	2.0	0.05		≤200	1.67	1.49	1.54	3	1.57	0.09	3	100%	0.658	0.608	2	0.63	
Strontium	mg/L	0.001	0.00010	0.0001			0.0452	0.04090	0.04290	3	0.0430	0.0022	3	100%	0.00599	0.00576	2	0.0059	
Thallium	mg/L		0.00010	0.0001	0.0008		0.0001	0.00010	0.00010	3	0.0001	0.0000	1	33%	0.00010	0.00010	2	0.0001	
Tin	mg/L	0.01	0.00010	0.0001			0.0001	0.00011	0.00010	3	0.0001	0.0000	2	67%	0.00022	0.00010	2	0.0002	
Titanium	mg/L		0.010	0.01			0.01	0.01000	0.01000	3	0.01	0.00	1	33%	0.010	0.010	2	0.01	
Uranium	mg/L		0.000010	0.00001		0.02	0.000026	0.000014	0.000013	3	0.00002	0.00001	3	100%	0.000178	0.000175	2	0.00018	
Vanadium	mg/L	0.001	0.0010	0.001			0.001	0.001000	0.001000	3	0.001	0.000	1	33%	0.0010	0.0010	2	0.001</	

TABLE 3.4
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

Print Oct/26/10 14:13:26														
Parameters	Units	Method	Method	Method	CCME	Canadian Drinking Water Guidelines	Mary Lake Tributary 2				Sheardown Lake Tributary 1			
		Detection Limit	Detection Limit	Detection Limit			MLST2	MLST2-WQ	Number of	Mean	SDLT1-R1	SDLT1-R1	Number of	Mean
		2006	2007	2008			2010	2010	25-Jun-08	26-Jul-08	Samples		25-Jun-08	14-Sep-08
In Situ Parameters														
Temperature	°C					≤15	5.2		1	5.2	6.2	1.2	2	3.7
Specific Conductance	mS/cm						0.029		1	0.029	0.113	0.257	2	0.185
Dissolved Oxygen	mg/L				9.5		12.61		1	12.61	12.81	13.24	2	13.03
pH	-				6.5-9.5	6.5-8.5	7.05		1	7.05	7.61	8.12	2	7.87
Average Depth (m)	(m)												0	
Measured Depth (m)	(m)												0	
Total Depth - May Samples Only	m												0	
Ice Thickness -May Samples Only	m												0	
Airspace - May Samples Only	m												0	
Snow Depth - May Samples Only	m												0	
Water Depth	m						0.15	0.15	2	0.2	0.2	0.2	2	0.2
Turbidity	NTU											4.1	1	4
Secchi Disk Depth	m												0	
General Parameters and Nutrients														
pH	-	-		1	6.5-9.5	6.5-8.5	7.38	7.51	2	7	7.88		1	8
Conductivity	µS/cm	5	5	5			32	39	2	36	117		1	117
Turbidity	NTU	0.1	0.1	0.1			0.4	0.4	2	0.4	1.5		1	1.5
Hardness	mg/L as CaCO ₃	1	0.5	0.5			15.3	19.4	2	17.4	57.6		1	57.6
TDS (COND - CALC)	mg/L	5	5	5		≤500	21	25	2	23	76		1	76
Total Suspended Solids (TSS)	mg/L		2	2			2	2	2	2	2.00		1	2
Alkalinity	mg/L as CaCO ₃	5	5	5			14	23	2	19	49		1	49
Bromide (Br)	mg/L	0.05	0.05	0.05			0.250	0.250	2	0.25	0.25		1	0.25
Chloride (Cl)	mg/L	1	1	1		≤250	1.000	1.000	2	1	6		1	6
Sulphate (SO ₄ ²⁻)	mg/L	1	1	1		≤500	1.000	1.000	2	1	1		1	1
Ammonia (NH ₃ +NH ₄)	mg N/L	0.02	0.02	0.02	0.021-231		0.070	0.020	2	0.05	0.02		1	0.02
Nitrite (NO ₂ ⁻)	mg N/L	0.005	0.002	0.005	0.06	3.2	0.005	0.005	2	0.005	0.01		1	0.005
Nitrate (NO ₃ ⁻)	mg N/L	0.1	0.10	0.1	2.9	10	0.100	0.100	2	0.10	0.10		1	0.1
NO ₂ +NO ₃	mg N/L	0.1	0.10	0.1			0.100	0.100	2	0.10	0.10		1	0.1
Total Phosphorus	mg/L	0.01	0.003	0.003			0.005	0.003	2	0.004	0.004		1	0.004
Total Organic Carbon (TOC)	mg/L		0.5	0.5			4.40	5.8	2	5.1	3.1		1	3.1
Dissolved Organic Carbon	mg/L		0.5	0.5			4.10	5.6	2	4.9	2.9		1	2.9
Total Kjeldahl Nitrogen (TKN)	mg/L		0.05	0.1			0.410	0.30	2	0.36	0.23		1	0.2
Phenols	mg/L	0.001	0.001	0.001	0.004		0.001	0.001	2	0.001	0.001		1	0.001
Total Metals and Non-Metals														
Aluminium	mg/L	0.005	0.0010	0.001	0.005-0.1		0.00980	0.0089	2	0.009	0.05840		1	0.058
Antimony	mg/L		0.00010	0.0001		0.006	0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Arsenic	mg/L	0.001	0.00010	0.0001	0.005	0.010	0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Barium	mg/L	0.01	0.000050	0.00005		1	0.00201	0.00248	2	0.00225	0.00589		1	0.00589
Beryllium	mg/L	-	0.00050	0.0005			0.00050	0.00050	2	0.0005	0.00050		1	0.0005
Bismuth	mg/L	-	0.00050	0.0005			0.00050	0.00050	2	0.0005	0.00050		1	0.0005
Boron	mg/L	0.01	0.010	0.01		5	0.01000	0.01000	2	0.01	0.01000		1	0.01
Cadmium	mg/L	0.0001	0.000017	0.000017	0.000017	0.005	0.00001	0.00001	2	0.000012	0.00001		1	0.000013
Calcium	mg/L	1	0.050	0.05			2.95	3.73	2	3.34	10.9		1	10.90
Chromium	mg/L	0.001	0.00050	0.0005		0.05	0.00050	0.00050	2	0.0005	0.00050		1	0.0005
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Copper	mg/L	0.001	0.00010	0.0001	0.002-0.004	≤1.0	0.00229	0.00052	2	0.0014	0.00300		1	0.0030
Iron	mg/L	0.03	0.030	0.03	0.3	≤0.3	0.05700	0.091	2	0.07	0.08400		1	0.08
Lead	mg/L	0.001	0.000050	0.00005	0.001-0.007	0.01	0.00007	0.00005	2	0.00006	0.00021		1	0.00021
Lithium	mg/L		0.0050	0.005			0.00500	0.00500	2	0.005	0.00500		1	0.005
Magnesium	mg/L	1	0.10	0.1			1.95	2.43	2	2.2	7.28		1	7.3
Manganese	mg/L	0.01	0.000050	0.00005		≤0.05	0.00043	0.000831	2	0.00063	0.00145		1	0.00145
Mercury	mg/L	0.0001	0.000050	0.00001	0.000026	0.001	0.00001	0.00001	2	0.00001	0.00001		1	0.00001
Molybdenum	mg/L	0.005	0.000050	0.00005	0.073		0.00005	0.00005	2	0.00005	0.00098		1	0.00098
Nickel	mg/L	0.005	0.00050	0.0005	0.025-0.150		0.00182	0.00093	2	0.0014	0.00146		1	0.0015
Potassium	mg/L	0.01	2.0	0.05			0.360	0.205	2	0.283	1.16		1	1.16
Selenium	mg/L	0.001	0.0010	0.001	0.001	0.01	0.00100	0.00100	2	0.001	0.00100		1	0.001
Silicon	mg/L		0.050	0.05			0.67500	1.15	2	0.91	0.94700		1	0.95
Silver	mg/L	0.0001	0.000010	0.00001	0.0001		0.00001	0.00001	2	0.00001	0.00001		1	0.00001
Sodium	mg/L	0.05	2.0	0.05		≤200	0.297	0.32	2	0.31	0.522		1	0.52
Strontium	mg/L	0.001	0.00010	0.0001			0.00253	0.00403	2	0.0033	0.00675		1	0.0068
Thallium	mg/L		0.00010	0.0001	0.0008		0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Tin	mg/L	0.01	0.00010	0.0001			0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Titanium	mg/L		0.010	0.01			0.01000	0.01000	2	0.01	0.01000		1	0.01
Uranium	mg/L		0.000010	0.00001		0.02	0.000016	0.000024	2	0.00002	0.000877		1	0.00088
Vanadium	mg/L	0.001	0.0010	0.001			0.00100	0.00100	2	0.001	0.00100		1	0.001
Zinc	mg/L	0.01	0.0010	0.001	0.03	≤5.0	0.00440	0.00100	2	0.003	0.00370		1	0.004
Dissolved Metals and Non-Metals														
Aluminium	mg/L	0.005	0.0010	0.001			0.00750	0.00650	2	0.007	0.00800		1	0.008
Antimony	mg/L		0.00010	0.0001			0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Arsenic	mg/L	0.001	0.00010	0.0001			0.00010	0.00010	2	0.0001	0.00010		1	0.0001
Barium	mg/L	0.01	0.000050	0.00005			0.00197	0.00290	2	0.00244	0.00582		1	0.00582
Beryllium	mg/L		0.00050	0.0005			0.00050	0.00050	2	0.0005	0.00050		1	0.0005
Bismuth	mg/L		0.00050	0.0005			0.00050	0.00050	2	0.0005	0.00050		1	0.0005
Boron	mg/L	0.01	0.010	0.01			0.01000	0.010	2	0.01	0.01000		1	0.01
Cadmium	mg/L	0.0001	0.000017	0.000017			0.00001	0.00001	2	0.000010	0.000013		1	0.000013
Calcium	mg/L	1	0.050	0.05			2.96	3.76	2	3.36	11.0		1	11.00
Chromium	mg/L	0.001	0.00050	0.0005			0.00050	0.00050	2	0.0005	0.000500		1	0.0005
Cobalt	mg/L	0.0002	0.00010	0.0001			0.00010	0.00010	2	0.0001	0.000100		1	0.0001
Copper	mg/L	0.001	0.00010	0.0001			0.00056	0.00059	2	0.0006	0.003050		1	0.0031
Iron	mg/L	0.03	0.030	0.03			0.04700	0.0570	2	0.05	0.030000		1	0.03
Lead	mg/L	0.001	0.000050	0.00005			0.00005	0.00005	2	0.000005	0.000100		1	0.00010
Lithium	mg/L		0.0050	0.005			0.00500	0.00500	2	0.005	0.005000		1	0.005
Magnesium	mg/L	1	0.10	0.1			1.93	2.44	2	2.2	7.30		1	7.3
Manganese	mg/L	0.01	0.000050	0.00005			0.000217	0.00059	2	0.00040	0.000525		1	0.00063
Mercury	mg/L		0.000050	0.00001			0.00001	0.00001	2	0.00001	0.000010		1	0.00001
Molybdenum	mg/L	0.005	0.000050	0.00005			0.00005	0.00005	2	0.00005	0.000981		1	0.00098

TABLE 3.4

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
LAKE WATER QUALITY SUMMARY DATA AND STATISTICS - 2005-2008

NOTES:

1. METHOD DETECTION LIMITS CAN VARY FOR INDIVIDUAL SAMPLES BASED ON TURBIDITY. MDLS LISTED IN THIS TABLE ARE THE GENERAL MDL VALUES PROVIDED BY THE LABORATORY.
2. IN-SITU DATA PROVIDED BY NORTH/SOUTH CONSULTANTS INC.
3. FOR STATISTICAL PURPOSES, WHERE A RESULT WAS REPORTED AS BELOW THE METHOD DETECTION LIMIT, THE "<" SYMBOL WAS REMOVED AND THE RESULT WAS CONSIDERED TO BE EQUAL TO THE METHOD DETECTION LIMIT. THE RESULT IS SHOWN IN RED ITALICIZED FONT.
4. WHERE THERE WERE TWO SETS OF LABORATORY RESULTS FOR A SITE, ONLY THE NUMBER OF SAMPLES AND A LAKE-WIDE MEAN WERE CALCULATED. IF ONLY ONE SET OF DATA EXISTS FOR A SITE, NO STATISTICS WERE CALCULATED.
4. SAMPLES ANALYZED BY ACCUTEST LABORATORIES AND ALS VANCOUVER.
5. HOLDING TIMES FOR SPECIFIC GENERAL PARAMETERS WERE EXCEEDED FOR VARIOUS SAMPLES IN JULY 2008. WHERE THE GENERAL PARAMETERS WERE RE-SAMPLED, THE MOST RECENT GENERAL RESULTS WERE USED IN CONJUNCTION WITH THE METALS ANALYZED IN JULY.
6. WHERE THERE WAS NO BOAT ACCESS, SAMPLES WERE COLLECTED FROM SHORE.
5. FRESHWATER GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE - CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME), CANADIAN ENVIRONMENTAL GUIDELINES, UPDATED SEPTEMBER 2007.
7. **BOLDED** VALUES INDICATE RESULTS ABOVE THE RESPECTIVE CCME GUIDELINES.
8. WHERE THE LABORATORY REPORTED METALS AS µg/L, RESULTS HAVE BEEN CONVERTED TO mg/L.
9. WATER QUALITY GUIDELINE LIMITS FOR TOTAL AMMONIA ARE DEPENDENT UPON BOTH TEMPERATURE AND pH, SEE THE CCME GUIDELINES FOR MORE DETAILS.
10. ALUMINIUM (Al) GUIDELINES LIMITS ARE DEPENDENT UPON pH. THE LOWER LIMIT OF 0.005 mg/L CORRESPONDS TO A pH of <6.5, THE UPPER LIMIT OF 0.1 mg/L CORRESPONDS TO A pH of >= 6.5.
11. CADMIUM (Cd) GUIDELINE LIMITS ARE 0.000017 mg/L OR CALCULATED VIA THE FOLLOWING FORMULA: $Cd = 10^{(0.86 \log(\text{Hardness}) - 3.2)}$.
12. COPPER (Cu) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS OF <120 mg/L; A LIMIT OF 0.003 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L INCLUSIVE; AND A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS OF >180 mg/L.
13. LEAD (Pb) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.001 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.002 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.004 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.007 mg/L.
14. NICKEL (Ni) GUIDELINE LIMITS ARE HARDNESS (mg/L CaCO₃) DEPENDENT: A LIMIT OF 0.025 mg/L CORRESPONDS TO A HARDNESS OF <60 mg/L; A LIMIT OF 0.065 mg/L CORRESPONDS TO A HARDNESS BETWEEN 60 AND 120 mg/L INCLUSIVE; A LIMIT OF 0.110 mg/L CORRESPONDS TO A HARDNESS BETWEEN 120 AND 180 mg/L; AND OTHERWISE THE LIMIT IS 0.150 mg/L.
15. CANADIAN DRINKING WATER GUIDELINES REFER TO HEALTH CANADA "GUIDELINES FOR CANADIAN DRINKING WATER QUALITY SUMMARY TABLE" PREPARED BY THE FEDERAL-PROVINCIAL-TERRITORIAL COMMITTEE ON DRINKING WATER OF THE FEDERAL-PROVINCIAL-TERRITORIAL COMMITTEE ON HEALTH AND THE ENVIRONMENT, MAY 2008.
16. VALUES HIGHLIGHTED BLUE EXCEED THE RESPECTIVE CANADIAN DRINKING WATER STANDARDS.
17. PARAMETERS WITH A MAXIMUM ACCEPTABLE CONCENTRATION (MAC) FOR THE CANADIAN DRINKING WATER GUIDELINES ARE Sb, As, Ba, B, Cd, Cr, Pb, Hg, NO₃, Se, U.
18. PARAMETERS LISTED AS AESTHETIC OBJECTIVES (AO) OR OPERATIONAL GUIDANCE VALUES (OG) FOR THE CANADIAN DRINKING WATER GUIDELINES ARE Cl, Cu, Fe, Mn, pH, Na, SO₄, Temperature, TDS, Zn.
19. PARAMETERS LISTED AS INTERIM FOR THE CANADIAN DRINKING WATER GUIDELINES ARE Sb, B, U.

I:\1\02\00181\25\A\Report\Report 2, Rev 0 - Surface Water and Sediment Quality Baseline Report\Table 3.4.xls\NOTES

0	29OCT10	ISSUED WITH REPORT NB102-181/25-2	ML	AJ	SRA
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD

TABLE 3.5

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
SEDIMENT QUALITY DATA SUMMARY STATISTICS

[illegible]

TABLE 3.5
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
SEDIMENT QUALITY DATA SUMMARY STATISTICS

Print Nov/03/10 13:47:41

Sample ID		Moisture %	TKN %	TOC %	Nitrite µg/g as N	Nitrate µg/g as N	NO2+NO3 as N %	Hg µg/g	Ag µg/g	Al µg/g	As µg/g	B µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	V µg/g	Zn µg/g	Sand (>0.050mm) %	Silt (>0.002-0.050mm) %	Clay (<=0.002mm) %		
CCME	ISQG							0.17			5.9						0.6		37.3	35.7									35									123				
	PEL							0.486			17						3.5		90	197									91.3									315				
Ontario Sediment Quality Guidelines	LEL		0.055	1																20000				460			16	600														
	SEL		0.48	10																40000				1100			75	2000														
MDL (2005)		0.0001		0.05	100	100	0.01	0.1	0.1	1	0.03	3	0.05	0.1-5	0.3	1	0.006	0.3	0.5	0.1	0.5	1	1	0.05	0.3	1	1	5	0.7	0.4	0.2	1	0.2	3	0.2	0.9	0.1	0.1	0.1	0.1		
MDL (2006)				0.01	1	1		0.1	0.42	1	1.0	0.5	1	1		100	0.5	1	1	1	1	100	100	1	1	100	1	100	1	1	1		1		1	1	1	1	1	1	1	
Analytical Detection Limit (2007)			0.01	0.01	1	1		0.1	0.42	1	1	0.5	1	1		100	0.5	1	1	1	1	100	100	1	1	100	1	100	1	1	1		1		1	1	1	1	1	1	1	
MRL (2008)			0.01	0.01	1	1		0.1	0.2	1	1	0.5	0.5	1		100	0.5	1	1	0.1	1	100	100	1	1	100	1	100	1	1	1		1		1	1	1	1	1	1	1	
MDL			0.01	0.01	0.01- 0.05	1-100	1-100	0.01	0.1	0.1-0.42	1	0.03-1.0	0.5-3	0.5-1	0.1-5	0.3	1-100	0.006-0.5	0.3-1	0.5-1	0.1-1	0.5-1	1-100	1-100	0.05-1	0.3-1	1-100	1	5-100	0.7-1	0.4-1	0.2-1	1	0.2-1	3	0.2-1	0.9-1	0.1-1				
Reporting Accuracy																																	0.1-1			0.1-1			0.1-1			
Tributaries of Camp Lake																																										
Number of sites		3	4	7	7	7	3	7	7	7	7	7	7	7	3	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	3	7	3	7	7	7	7	7	7	7	7	
Number of samples		3	4	7	7	7	3	7	7	7	7	7	7	7	3	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	3	7	3	7	7	7	7	7	7	7	
Number of Detects		3	0	6	0	2	0	0	0	7	5	2	7	1	0	7	2	6	7	7	7	7	7	7	2	6	7	6	6	1	1	2	6	3	0	7	6	7	4	4	4	
Percentage of Detects		100%	0%	86%	0%	29%	0%	0%	0%	100%	71%	29%	100%	14%	0%	100%	29%	86%	100%	100%	100%	100%	100%	100%	29%	86%	100%	86%	86%	14%	14%	67%	86%	100%	0%	100%	86%	100%	57%	57%	57%	
Minimum		10.2	ND	ND	ND	ND	ND	ND	ND	402	ND	ND	2.0	ND	ND	283	ND	ND	2.799999952	0.8000000012	1130	79	800	20	ND	ND	3	ND	ND	ND	ND	ND	37	ND	3	ND	96	ND	ND	ND		
Maximum Detected		24.8	ND	0.53	ND	1	ND	ND	ND	11600	1.1	4	26	0	ND	4350	0.8	12	81	64	26500	1480	12400	311	1	190	63	240	22	0.9	0.2	9	4	430	1	53	71	99.7	2	2	2	
Mean		18.0	-	0.14	-	-	-	-	-	3949	0.8	-	10.1	-	-	1657	-	5	31	17	10133	530	5144	115	-	82	25	158	5	-	-	4	2	189	-	20	17	99	1	1	1	
Tom River Area																																										
Number of sites		0	2	2	2	2	0	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	2	2	2	2	2	2	2	
Number of samples		0	2	4	4	4	0	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	4	0	4	4	4	4	4	4	4	
Number of Detects		0	0	4	0	2	0	0	0	4	0	0	4	0	0	4	0	3	4	4	4	4	4	4	4	0	2	4	1	3	0	0	0	4	0	0	4	4	4	4	1	2
Percentage of Detects		-	0%	100%	0%	50%	-	0%	0%	100%	0%	0%	100%	0%	-	100%	0%	75%	100%	100%	100%	100%	100%	100%	100%	0%	50%	100%	25%	75%	0%	0%	-	100%	-	0%	100%	100%	100%	25%	50%	50%
Minimum		-	ND	0.03	ND	ND	-	ND	ND	879	ND	ND	4	ND	-	981	ND	ND	5	1	1910	193	1240	28	ND	ND	3	ND	ND	ND	ND	-	2	-	ND	4	4	96	ND	ND	ND	
Maximum Detected		-	ND	0.13	ND	1	-	ND	ND	1540	ND	ND	12	ND	-	4100	ND	3	25	4	12000	402	3200	68	ND	361	11	100	3	ND	ND	-	5	-	ND	21	10	99	2	2	2	
Mean		-	-	0.08	-	-	-	-	-	1133	-	-	7	-	-	1888	-	2	15	2	6993	266	1925	48	-	-	7	-	2	-	-	-	3	-	-	12	6	98	-	-	-	
Mary Lake																																										
Number of sites		0	5	5	5	5	0	5	5	5	5	5	4	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5	5	5	5	5	5	5	
Number of samples		0	5	7	7	7	0	7	7	7	7	7	6	7	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	0	7	0	7	7	7	7	7	7	7	
Number of Detects		0	5	7	0	6	0	0	0	7	7	5	6	3	0	7	0	7	7	7	7	7	7	7	7	1	7	7	7	7	0	0	0	7	0	0	7	7	7	7	7	6
Percentage of Detects		-	100%	100%	0%	86%	-	0%	0%	100%	100%	71%	100%	43%	-	100%	0%	100%	100%	100%	100%	100%	100%	100%	100%	14%	100%	100%	100%	100%	0%	0%	-	100%	-	0%	100%	100%	100%	100%	86%	
Minimum		-	0.03	0.4	ND	ND	-	ND	ND	4480	1.0	ND	19	ND	-	1570	ND	4	18	5	8880	793	4320	156	ND	100	17	400	3	ND	ND	-	3	-	ND	15	23	19	2	ND	ND	
Maximum Detected		-	0.12	1.76	ND	11	-	ND	ND	23900	5.1	2.3	116	1	-	14100	ND	19	98	38	52200	5350	17100	4623	1	782	61	1600	28	ND	ND	-	16	-	ND	85	105	97	79	24	24	
Mean		-	0.08	0.9	-	3	-	-	-	14391	2.9	1	64	-	-	5702	-	13	62	25	31683	3219	12213	1366	-	415	44	1143	16	-	-	-	12	-	-	50	59	47	42	11	11	
Camp Lake																																										
Number of sites		0	5	5	5	5	0	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	5	0	5	5	5	5	5	5	5	
Number of samples		0	6	6	6	6	0	6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	0	6	6	6	6	6	6	6	
Number of Detects		0	6	5	0	6	0	0	0	6	5	5	6	2	0	6	0	5	6	6	6	6	6	6	6	1	6	6	5	5	0	0	0	6	0	0	6	6	6	6	6	
Percentage of Detects		-	100%	83%	0%	100%	-	0%	0%	100%	83%	83%	100%	33%	-	100%	0%	83%	100%	100%	100%	100%	100%	100%	100%	17%	100%	100%	83%	83%	0%	0%	-	100%	-	0%	100%	100%	100%	83%	100%	
Minimum		-	0.03	ND	ND	1	-	ND	ND	577	ND	ND	2	ND	-	715	ND	ND	2	1340	232	929	25	ND	164	2	ND	ND	ND	ND	ND	-	2	-	ND	3	2	34	ND	4	4	
Maximum Detected		-	0.29	2.69	ND	2	-	ND	ND	18900	3.9	3.6	111	1	-	2870	ND	18	80	45	41600	4653	14300	1066	1	341	65	1500	23	ND	ND	-	17	-	ND	71	69	95	52	16	16	
Mean		-	0.15	1.11	-	1	-	-	-	12871	2.7	2	63	-	-	2258	-	14	61	32	29729	3084	8951	707	-	271	50	900	16	-	-	-	11	-	-	50	49	56	34	11	11	

TABLE 3.5
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
SEDIMENT QUALITY DATA SUMMARY STATISTICS

[illegible]

TABLE 3.5
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
SEDIMENT QUALITY DATA SUMMARY STATISTICS

Print Now03/10 13:47:41

Sample ID		Moisture %	TKN %	TOC %	Nitrite µg/g as N	Nitrate µg/g as N	NO2+NO3 as N %	Hg µg/g	Ag µg/g	Al µg/g	As µg/g	B µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	V µg/g	Zn µg/g	Sand (>0.050mm) %	Silt (>0.002-0.050mm) %	Clay (<=0.002mm) %					
CCME	ISQG							0.17			5.9						0.6		37.3	35.7									35									123							
	PEL							0.486			17						3.5		90	197									91.3										315						
Ontario Sediment Quality Guidelines	LEL		0.055	1																20000				460			16	600																	
	SEL		0.48	10																40000				1100			75	2000																	
MDL (2005)		0.0001		0.05	100	100	0.01	0.1	0.1	1	0.03	3	0.05	0.1-5	0.3	1	0.006	0.3	0.5	0.1	0.5	1	1	0.05	0.3	1	1	5	0.7	0.4	0.2	1	0.2	3	0.2	0.9	0.1	0.1	0.1	0.1	0.1	0.1			
MDL (2006)				0.01	1	1		0.1	0.42	1	1.0	0.5	1	1		100	0.5	1	1	1	1	100	100	1	1	100	1	100	1	1	1		1		1	1	1	1	1	1	1	1	1		
Analytical Detection Limit (2007)			0.01	0.01	1	1		0.1	0.42	1	1	0.5	1	1		100	0.5	1	1	1	1	100	100	1	1	100	1	100	1	1	1		1		1	1	1	1	1	1	1	1	1		
MRL (2008)			0.01	0.01	1	1		0.1	0.2	1	1	0.5	0.5	1		100	0.5	1	1	0.1	1	100	100	1	1	100	1	100	1	1	1		1		1	1	1	1	1	1	1	1	1		
MDL		0.01	0.01	0.01-0.05	1-100	1-100	0.01	0.1	0.1-0.42	1	0.03-1.0	0.5-3	0.5-1	0.1-5	0.3	1-100	0.006-0.5	0.3-1	0.5-1	0.1-1	0.5-1	1-100	1-100	0.05-1	0.3-1	1-100	1	5-100	0.7-1	0.4-1	0.2-1	1	0.2-1	3	0.2-1	0.9-1	0.1-1								
Reporting Accuracy																																													
Sheardown Lake Tributary																																													
Number of sites			3	3	3	3	0	3	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3	0	3	3	3	3	3	3	3	3	3	3	
Number of samples			3	3	3	3	0	3	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	3	0	3	0	3	3	3	3	3	3	3	
Number of Detects			3	3	0	3	0	0	0	3	3	2	3	0	0	3	1	3	3	3	3	3	3	3	3	1	2	3	3	3	0	0	0	3	0	3	3	3	3	3	3	3	3	3	3
Percentage of Detects			100%	100%	0%	100%	-	0%	0%	100%	100%	67%	100%	0%	-	100%	33%	100%	100%	100%	100%	100%	100%	100%	33%	67%	100%	100%	100%	0%	0%	-	100%	-	0%	100%	100%	100%	100%	100%	100%	100%	100%		
Minimum			0.01	0.07	1	4	-	ND	ND	3220	1.5	ND	16	ND	-	1890	ND	3	23	10	10100	536	3100	128	ND	ND	23	100	3	ND	ND	-	2	-	ND	9	22	94	ND	2					
Maximum Detected			0.07	0.95	1	4	-	ND	ND	15800	2.5	0.8	40	ND	-	14400	0.7	18	124	41	26300	1440	17300	305	2	216	119	300	13	ND	ND	-	10	-	ND	40	68	97	4	2					
Mean			0.05	0.53	1	4	-	-	-	7420	2.1	0.7	25	-	-	6493	-	9	67	22	16033	860	10127	232	-	144	59	200	7	-	-	-	5	-	-	21	38	96	-						
Steensby Inlet Lake ST3																																													
Number of sites			1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	0		
Number of samples			1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	0	0		
Result			2.25	23.20	1	452	-	ND	ND	4030	2.0	22	26	ND	-	10900	ND	5	73	43	16500	1620	4380	63	7	704	33	1000	5	ND	ND	-	34	-	ND	28	43	ND	ND	ND	ND	ND	ND		
Steensby Inlet Lake ST6																																													
Number of sites			0	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1			
Number of samples			0	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1			
Result			ND	18.20	-	-	-	ND	ND	7470	3.0	11	54	ND	-	7530	ND	7	40	69	20100	1730	5720	120	5	876	18	1600	7	ND	ND	-	25	-	ND	35	63	84	8	8	8	8	8		
Steensby Inlet Lake ST24																																													
Number of sites			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0			
Number of samples			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	0	0			
Result			1.09	9.28	-	-	-	ND	0.6	10000	3.3	18	62	ND	-	23000	2.9	9	81	42	32700	3590	19200	202	4	841	45	1500	173	ND	ND	-	25	-	ND	54	911	ND	ND	ND	ND	ND			
Steensby Inlet Lake ST28																																													
Number of sites			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1				
Number of samples			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1			
Result			0.94	11.20	-	-	-	0.2	0.2	11100	3.7	14	73	ND	-	5620	ND	9	28	54	29100	3620	7670	196	5	872	22	1400	10	ND	ND	-	15	-	ND	45	87	74	7	19	19	19	19		
Steensby Inlet Lake ST92																																													
Number of sites			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1			
Number of samples			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1			
Result			0.02	0.94	-	-	-	ND	ND	5810	ND	2	41	ND	-	4750	ND	5	24	11	23300	2090	5190	124	ND	301	11	1500	6	ND	ND	-	11	-	ND	41	36	38	50	12	12	12	12		
Steensby Inlet Lake ST88																																													
Number of sites			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1				
Number of samples			1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1				
Result			0.04	1.22	-	-	-	ND	ND	7140	ND	1	59	ND	-	4620	ND	7	63	17	25300	2480	5910	150	1	235	27	1100	6	ND	ND	-	12	-	ND	40	43	69	23	8	8	8			

TABLE 3.5
BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT
SURFACE WATER AND SEDIMENT QUALITY BASELINE REPORT
SEDIMENT QUALITY DATA SUMMARY STATISTICS

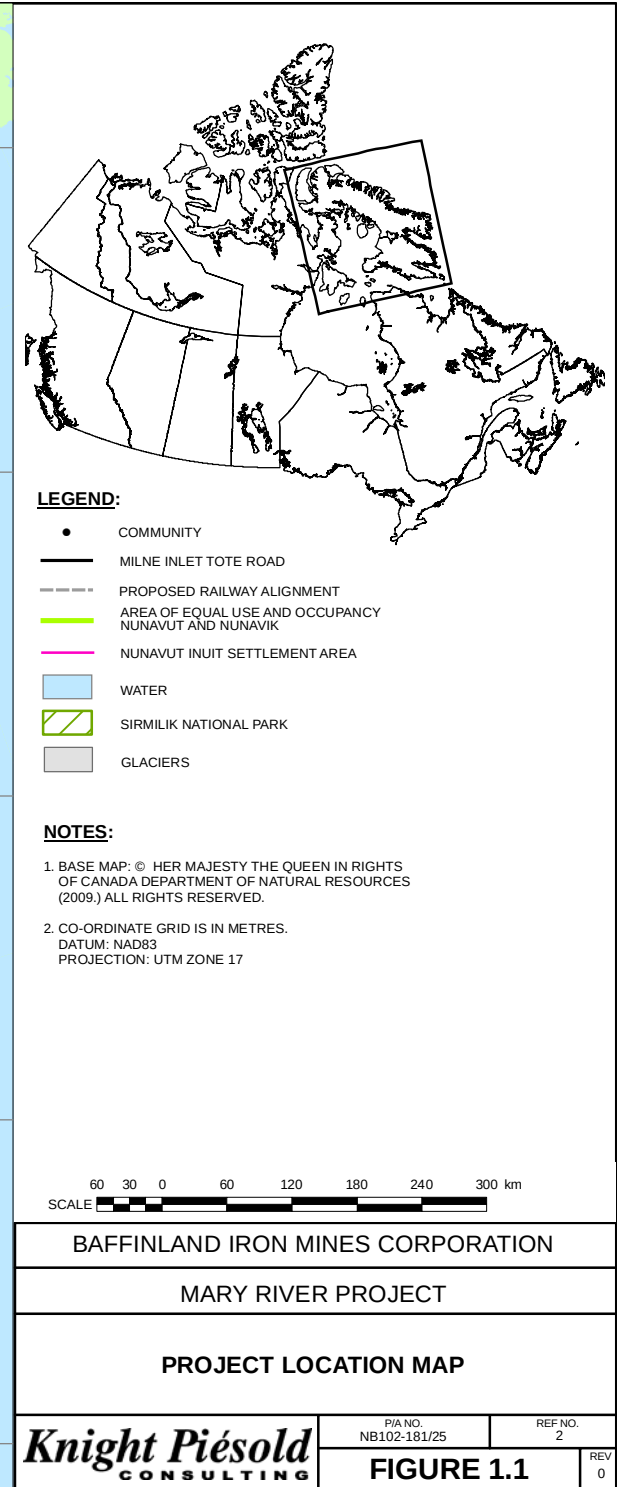
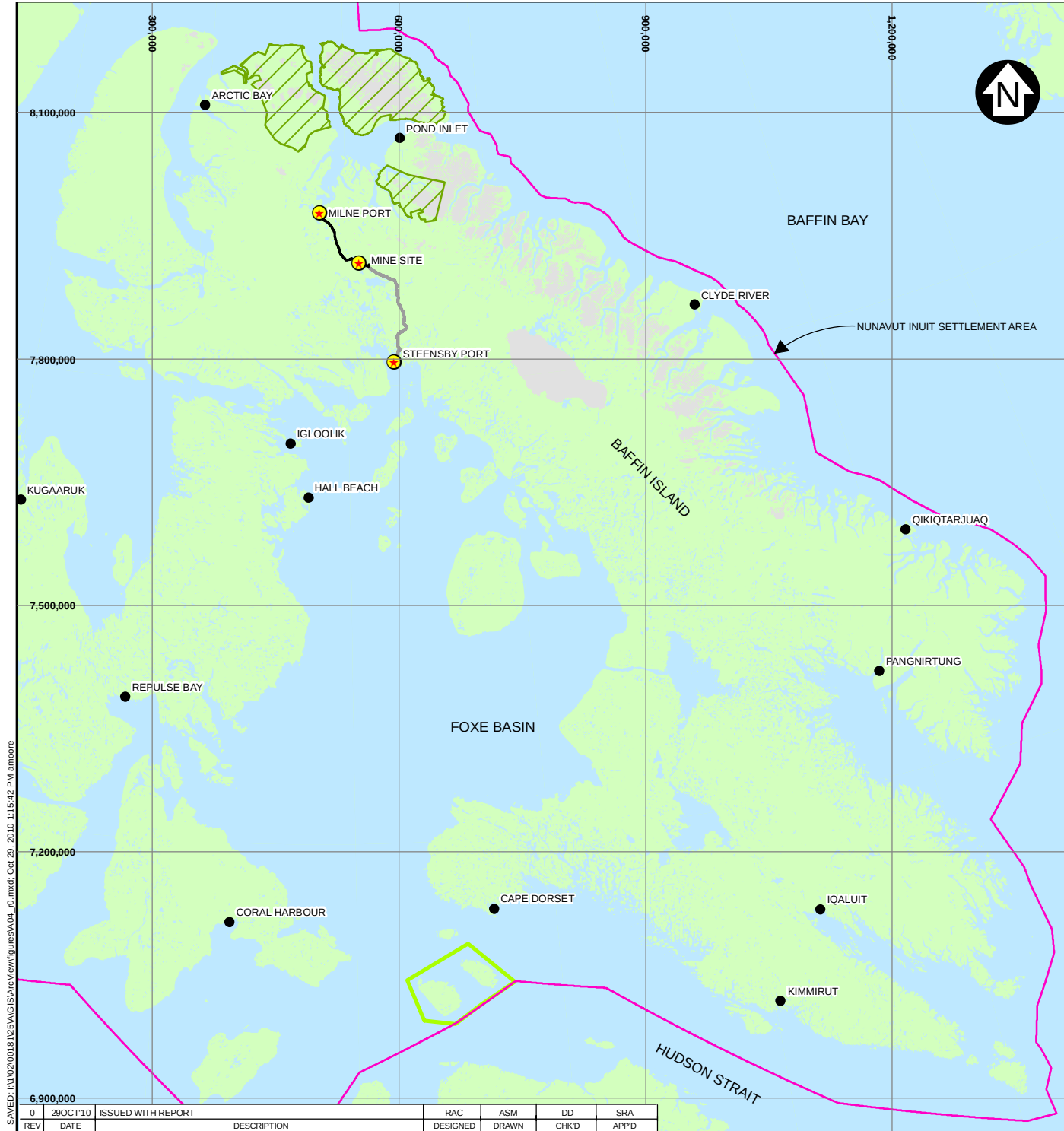
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I:\102\00181\25\A\Report\Report 2, Rev 0 - Surface Water and Sediment Quality Baseline Report\[Table 3.5.xls]Table 3.5

NOTES:

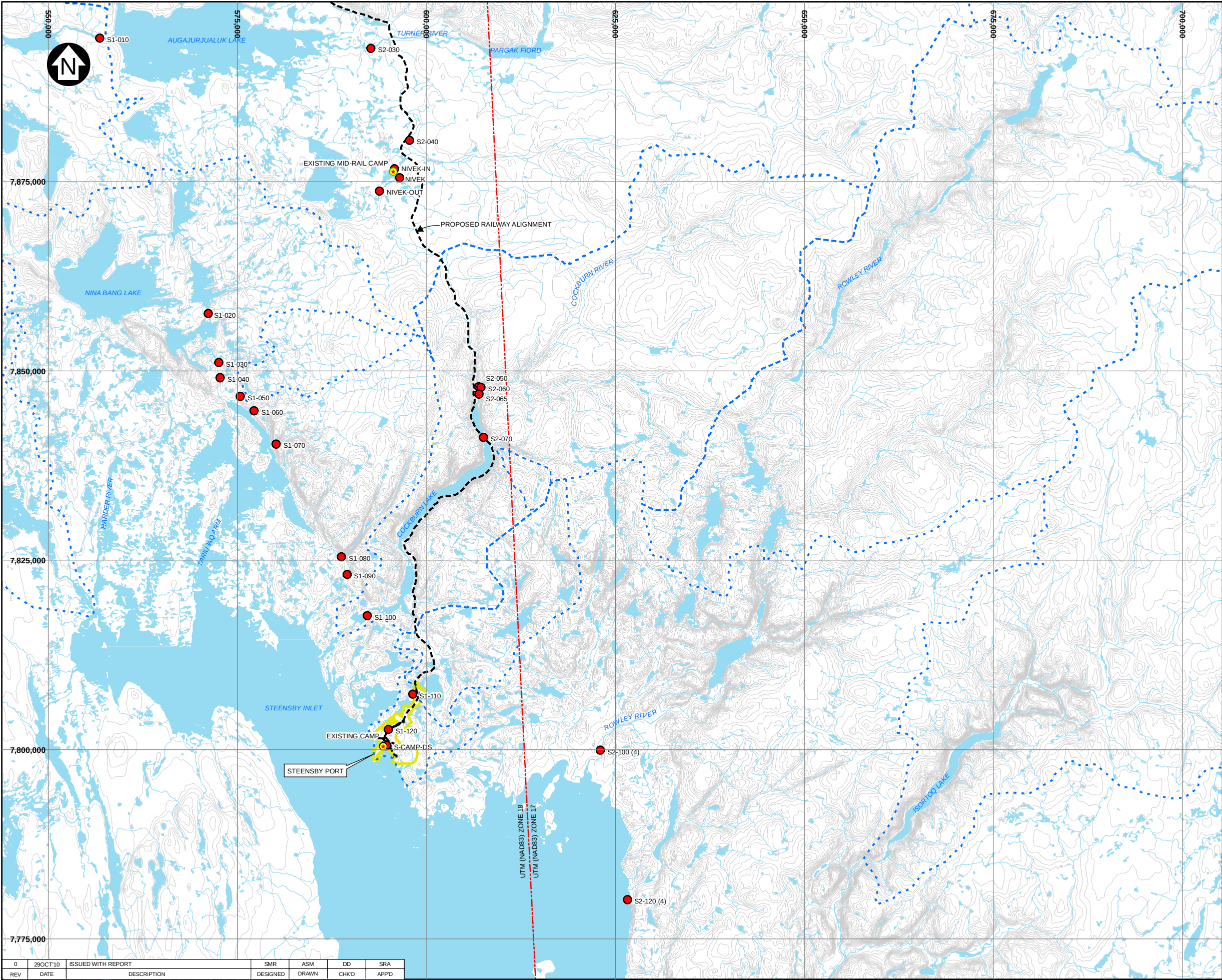
1. CANADIAN SEDIMENT QUALITY GUIDELINES FOR THE PROTECTION OF AQUATIC LIFE - CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME) CANADIAN ENVIRONMENTAL QUALITY GUIDELINES, 2007.
ISQG - INTERIM SEDIMENT QUALITY GUIDELINES PEL - POTABLE EFFECT LEVEL
2. GUIDELINES FOR THE PROTECTION AND MANAGEMENT OF AQUATIC SEDIMENT QUALITY IN ONTARIO - ONTARIO MINISTRY OF THE ENVIRONMENT, 1993.
LEL - LOWEST EFFECT LEVEL SEL - SEVERE EFFECT LEVEL
3. VALUES ARE ROUNDED TO SAME NUMBER OF DECIMAL PLACES AS LOWEST MDL.
4. 2005 SAMPLE IDS HAVE BEEN CHANGED TO CORRESPOND WITH 2006 SAMPLE IDS. THE SITE NAMES WERE ADJUSTED AS FOLLOWS: K0-01 (EKP-2884), J0-01 (EKP-2839), D1-01 (EKP-2895), D0-01 (EKP-2901), H0-01 (EKP-2902), E0-03 (EKP-2856), E2-01 (EKP-2843), C0-01 (EKP-2835A), A0-01 (EKP-2903)
5. A REPORTING ACCURACY FOR GRAIN SIZE IS DETERMINED FROM DATA IN 2005 AND LAB REPORTS FROM ACCUTEST LAB IN 2006 AND 2007.)
6. TOC ANALYSIS 2005 WAS COMPLETED USING A LECO.
7. VALUES HIGHLIGHTED INDICATE AN EXCEEDANCE OF GUIDELINES AS FOLLOWS: **ISQG: RED, BOLD** **PEL: BLUE, BOLD** **LEL: BROWN, BOLD** **SEL: PURPLE, BOLD**
8. MEANS ARE PROVIDED FOR DATA SETS WITH PERCENTAGE OF DETECTS GREATER THAN 50%.
9. ND INDICATES NOT DETECTED.
10. THE ND WERE ASSIGNED THE MDL FOR CALCULATING THE MEAN.
11. SAMPLES ANALYZED BY ACCUTEST LABORATORIES.

0	29OCT10	ISSUED WITH REPORT NB102-181/25-2	RDW	SMR	SRA
REV	DATE	DESCRIPTION	PREPD	CHKD	APPD



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0	29OCT'10	ISSUED WITH REPORT		RAC	ASM	DD	SRA
REV	DATE	DESCRIPTION		DESIGNED	DRAWN	CHK'D	APP'D



LEGEND:

- CAMP
- SURFACE WATER SAMPLE LOCATION
- EXISTING TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- UTM ZONE DIVISION LINE
- CATCHMENT BOUNDARIES
- RIVER/STREAM/DRAINAGE
- WATER
- POTENTIAL DEVELOPMENT AREA (PDA)

NOTES:

- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
- COORDINATE GRID IS UTM NAD83 ZONE17.
- CONTOUR ARE IN METRES. CONTOUR INTERVAL VARIES.
- NOT ALL LOCATIONS WERE SAMPLED EVERY YEAR.

5 2.5 0 5 10 15 20 25 km

SCALE

BAFFINLAND IRON MINES CORPORATION

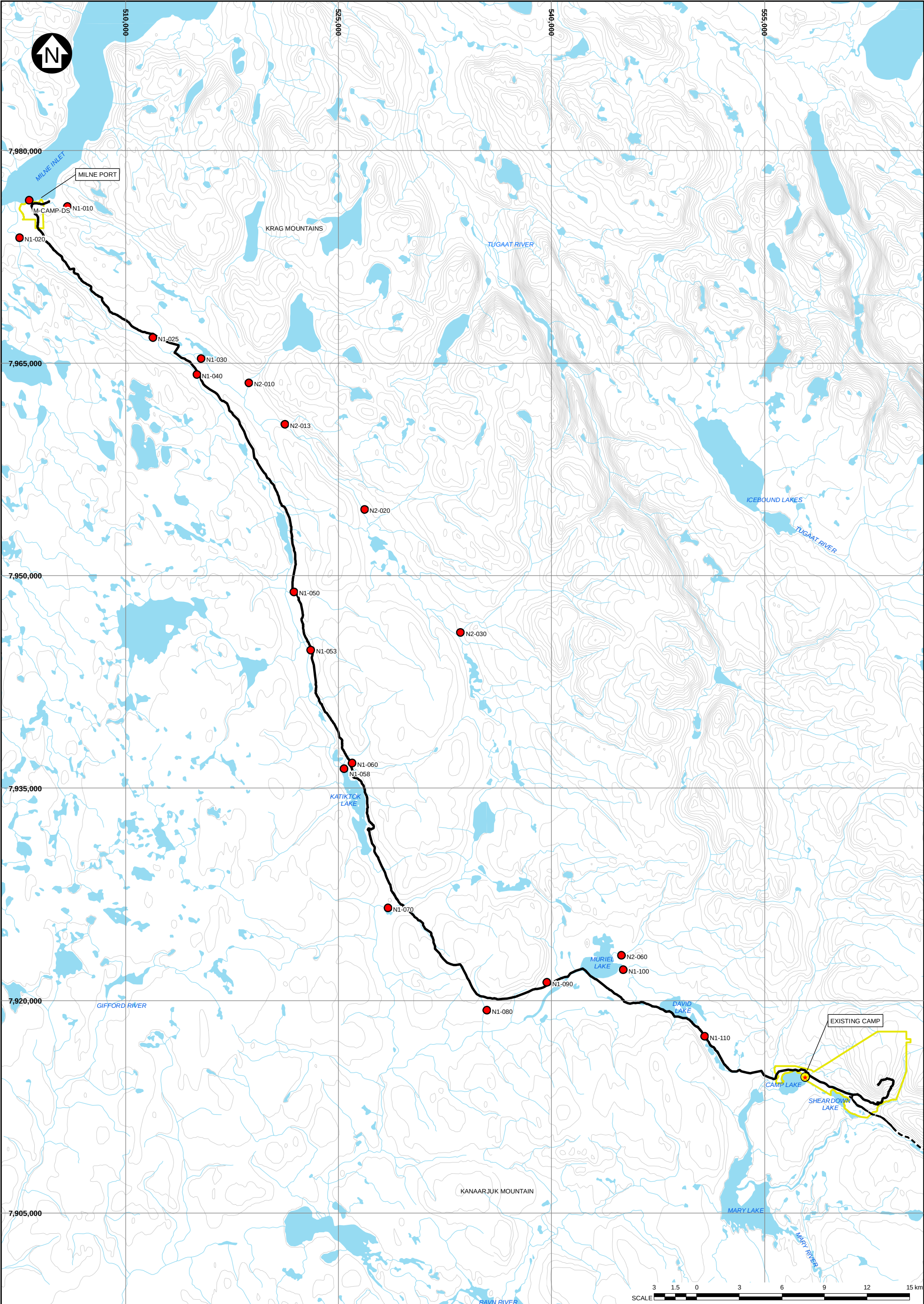
MARY RIVER PROJECT

STREAM WATER QUALITY SAMPLE LOCATIONS
RAILWAY ALIGNMENT
2005-2008

Knight Piésold CONSULTING	PIA NO. NB102-181/25	REF NO. 2	REV 0
	FIGURE 1.3		

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0	29OCT'10	ISSUED WITH REPORT	SMR	ASM	DD	SRA
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D



LEGEND:

- SURFACE WATER SAMPLE LOCATION
- EXISTING TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- RIVER/STREAM/DRAINAGE
- WATER
- POTENTIAL DEVELOPMENT AREA

NOTES:

- BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
- COORDINATE GRID IS UTM NAD83 ZONE 17.
- CONTOUR ARE IN METRES. CONTOUR INTERVAL VARIES.
- NOT ALL LOCATIONS WERE SAMPLED EVERY YEAR.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

STREAM WATER QUALITY SAMPLE LOCATIONS
MILNE PORT TO MINE SITE
2005-2008

Knight Piésold
CONSULTING

P/A NO.
NB102-181/25

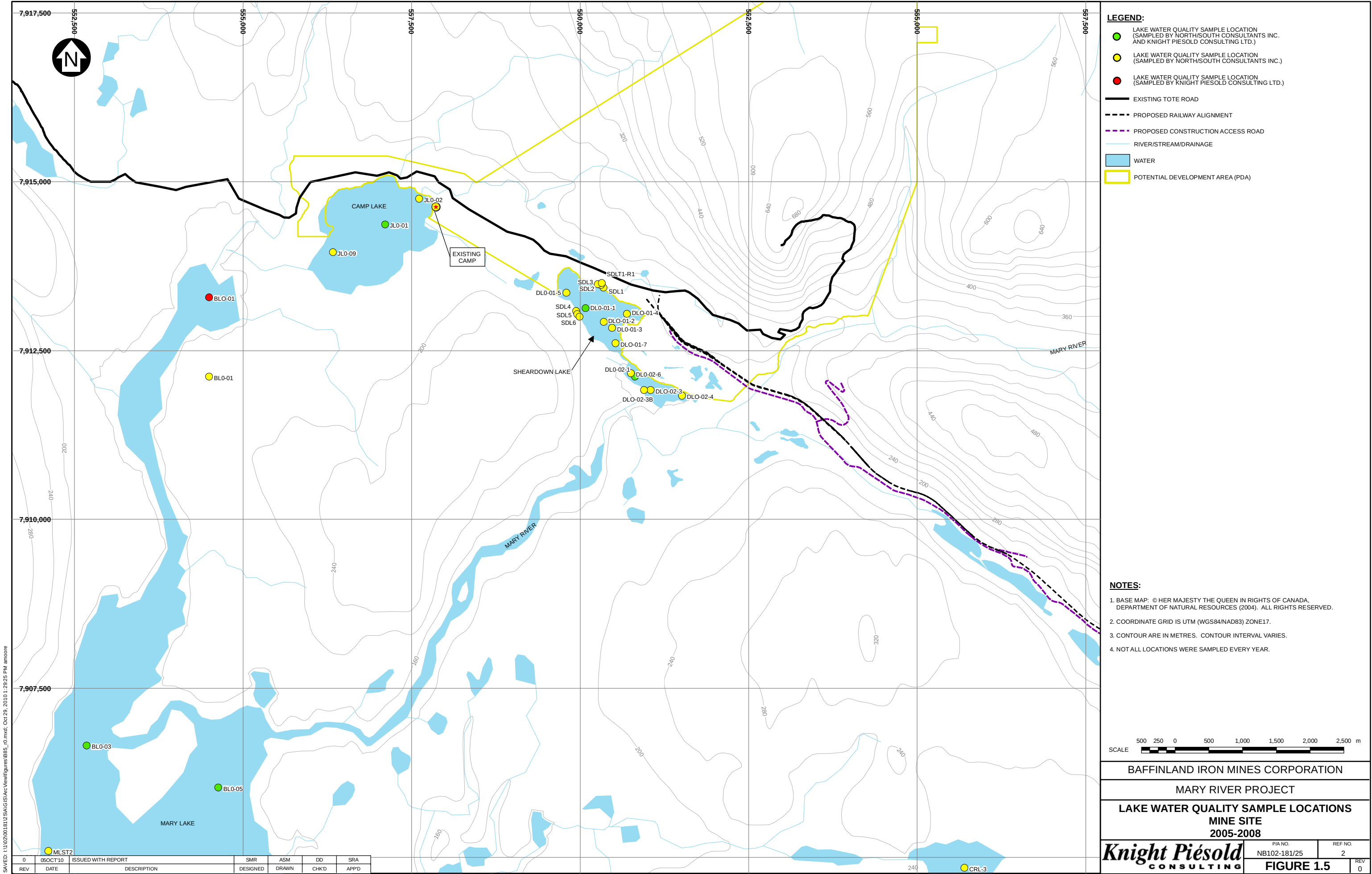
REF NO.
2

REV
0

FIGURE 1.4

0	29OCT10	ISSUED WITH REPORT	SMR	ASM	DD	SRA
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APPD

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LEGEND:

- LAKE WATER QUALITY SAMPLE LOCATION (SAMPLED BY NORTH/SOUTH CONSULTANTS INC. AND KNIGHT PIESOLD CONSULTING LTD.)
- LAKE WATER QUALITY SAMPLE LOCATION (SAMPLED BY NORTH/SOUTH CONSULTANTS INC.)
- LAKE WATER QUALITY SAMPLE LOCATION (SAMPLED BY KNIGHT PIESOLD CONSULTING LTD.)
- EXISTING TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- PROPOSED CONSTRUCTION ACCESS ROAD
- RIVER/STREAM/DRAINAGE
- WATER
- POTENTIAL DEVELOPMENT AREA (PDA)

NOTES:

- BASE MAP: © HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES (2004). ALL RIGHTS RESERVED.
- COORDINATE GRID IS UTM (WGS84/NAD83) ZONE17.
- CONTOUR ARE IN METRES. CONTOUR INTERVAL VARIES.
- NOT ALL LOCATIONS WERE SAMPLED EVERY YEAR.

SCALE 500 250 0 500 1,000 1,500 2,000 2,500 m

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

LAKE WATER QUALITY SAMPLE LOCATIONS
MINE SITE
2005-2008

Knight Piesold
CONSULTING

PIA NO.
NB102-181/25

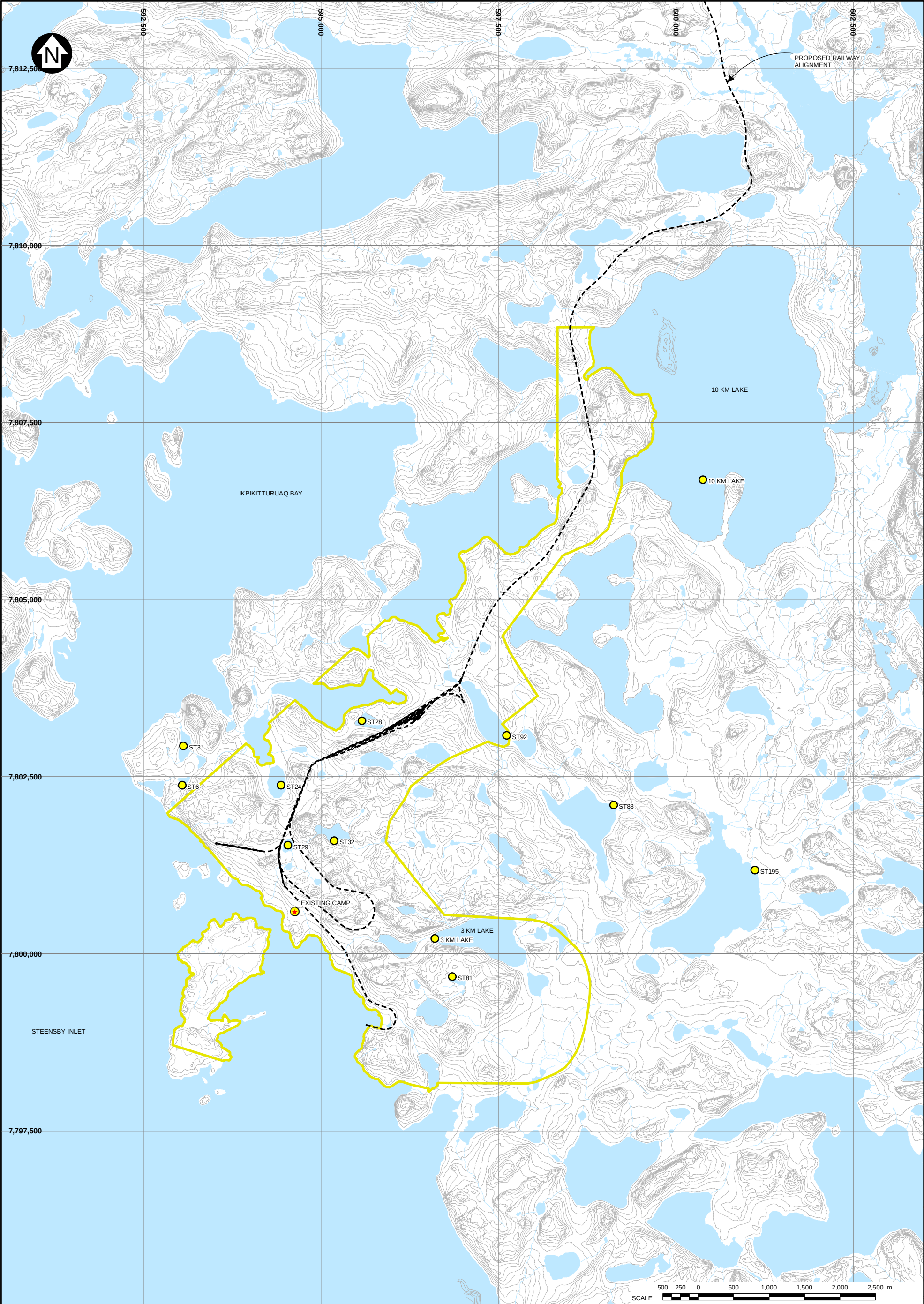
REF NO.
2

FIGURE 1.5

REV
0

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0	05OCT'10	ISSUED WITH REPORT	SMR	ASM	DD	SRA
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D



LEGEND:

LAKE WATER QUALITY SAMPLE LOCATION
(SAMPLED BY NORTH/SOUTH CONSULTANTS INC.
AND KNIGHT PIESOLD CONSULTING LTD.)

LAKE WATER QUALITY SAMPLE LOCATION
(SAMPLED BY NORTH/SOUTH CONSULTANTS INC.)

LAKE WATER QUALITY SAMPLE LOCATION
(SAMPLED BY KNIGHT PIESOLD CONSULTING LTD.)

EXISTING TOTE ROAD

PROPOSED RAILWAY ALIGNMENT

CONTOUR

RIVER/STREAM/DRAINAGE

WATER

POTENTIAL DEVELOPMENT AREA (PDA)

NOTES:

1. TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).

2. COORDINATE GRID IS UTM NAD83 ZONE17.

3. CONTOUR ARE IN METRES. CONTOUR INTERVAL VARIES.

4. NOT ALL LOCATIONS WERE SAMPLED EVERY YEAR.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

LAKE WATER QUALITY SAMPLE LOCATIONS
STEENSBY PORT
2005-2008

Knightsold
CONSULTING

P/A NO.
NB102-181/25

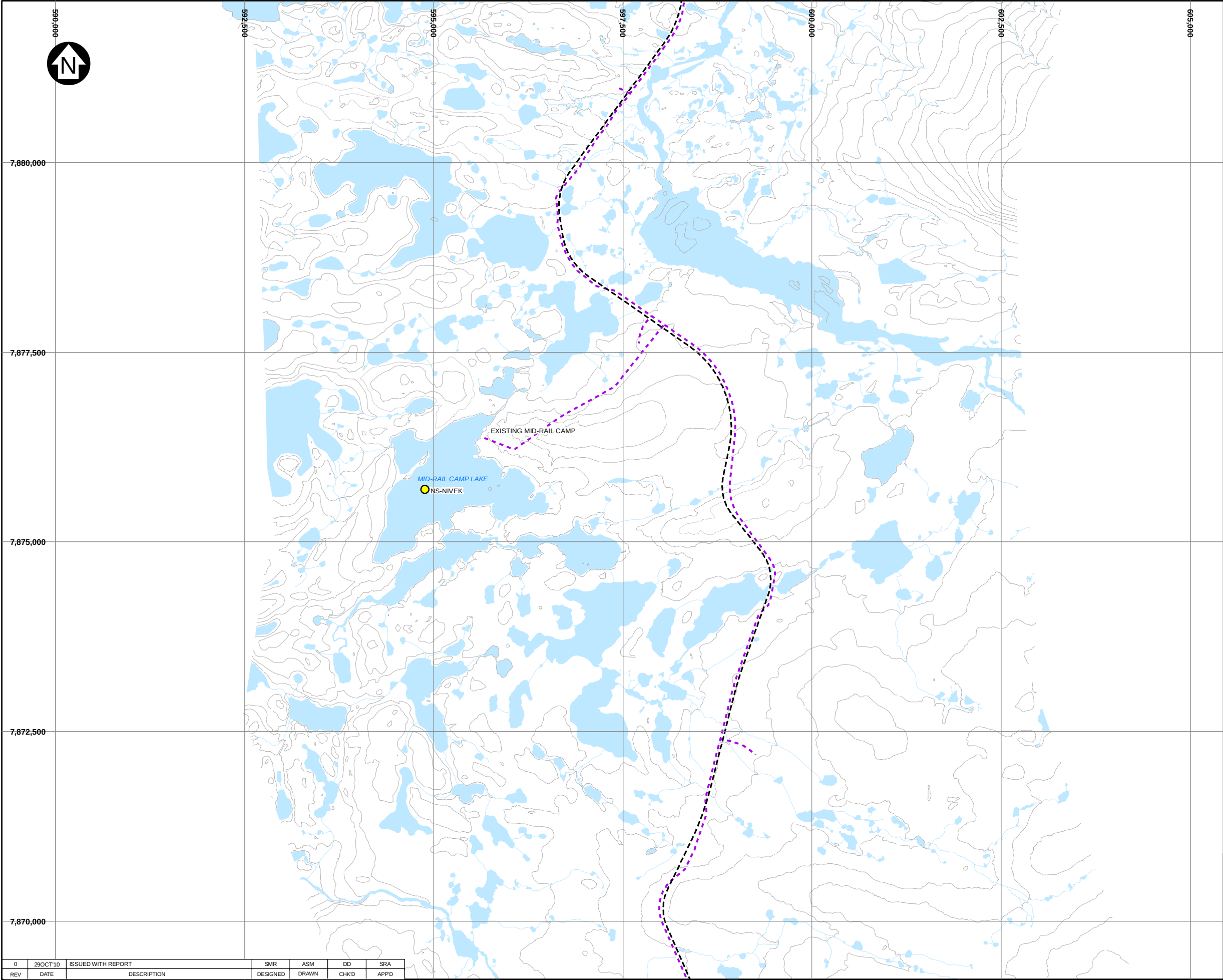
REF NO.
2

FIGURE 1.6

REV
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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APPD

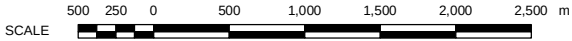
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LEGEND:

- BENTHIC AND SEDIMENT SAMPLE LOCATION
- EXISTING TOTE ROAD
- PROPOSED RAILWAY ALIGNMENT
- PROPOSED CONSTRUCTION ACCESS ROAD
- RIVER/STREAM/DRAINAGE
- WATER

- NOTES:**
1. TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
 2. COORDINATE GRID IS UTM NAD83 ZONE17.
 3. CONTOUR ARE IN METRES. CONTOUR INTERVAL VARIES.
 4. NOT ALL LOCATIONS WERE SAMPLED EVERY YEAR.



BAFFINLAND IRON MINES CORPORATION

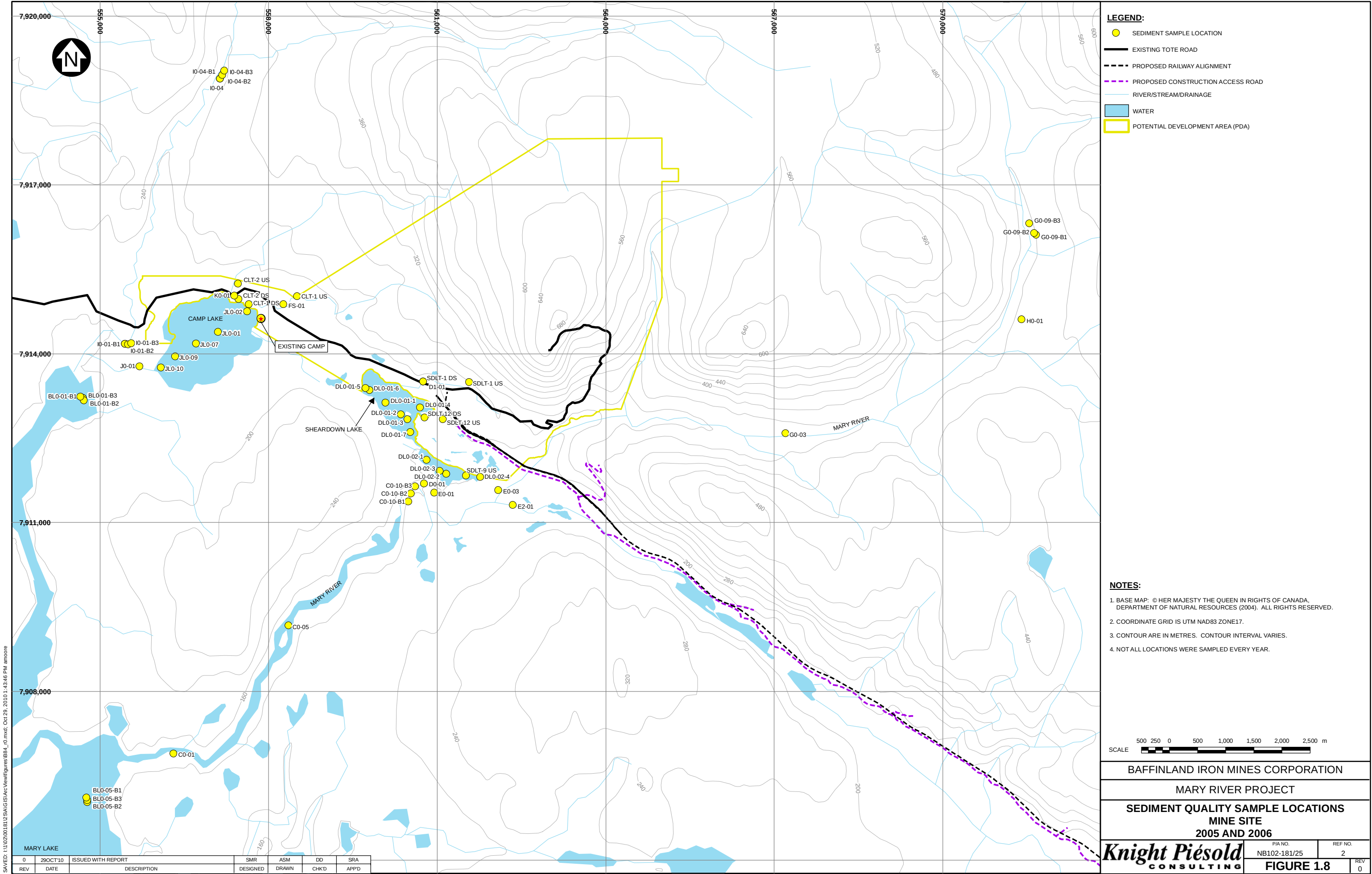
MARY RIVER PROJECT

LAKE WATER QUALITY SAMPLE LOCATIONS
MID-RAIL CAMP LAKE

	PIA NO. NB102-181/25	REF NO. 2
	FIGURE 1.7	

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REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D



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