BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

TOTE ROAD FISH HABITAT MONITORING
2021 ANNUAL REPORT
EARLY REVENUE PHASE - TOTE ROAD UPGRADES

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

SECTION 1.0 - INTRODUCTION

1.1 MARY RIVER PROJECT

The Mary River Project (the Project) is an iron ore mining project operated by Baffinland Iron Mines Corporation (Baffinland) located in the North Baffin region of Baffin Island, Nunavut. The Mary River Mine Site coordinates are approximately latitude 71° 19' 35" North and longitude 79° 22' 30" West. Detailed descriptions of the Project and annual activities can be found in reports from Knight Piésold (2007b, 2008) and Baffinland (2009 to 2020, incl.).

The Tote Road was first established in the 1960s and extends approximately 100 kilometres between the Mary River Mine Site (Mine Site) and Milne Port. Currently, the Tote Road is used as a means of transport of iron ore, personnel, equipment, and supplies between the Mine Site and Milne Port. Since 2013, there have been ongoing upgrades to sections of the Tote Road as part of the construction and operation of the Early Revenue Phase (ERP) for the Project and in an effort to mitigate sedimentation and erosion concerns, and to safely and efficiently transport iron ore from the Mine Site to Milne Port. Tote Road upgrades have included the following activities:

- Clear span bridges were constructed in 2014 replacing sea container crossings;
- Widening, straightening and realignment of the Tote Road at strategic locations;
- Addition of protective armouring on road embankments and erosion mitigation measures; and
- Continued installation, movement and/or extension of culverts at identified stream crossings to improve transportation safety and minimize erosion/sedimentation, while maintaining fish passage.

A Tote Road Earthworks Execution Plan (TREEP) was developed in April 2017 (Golder 2017) to address outstanding concerns (damaged culverts, embankment erosion, etc.) along the Tote Road. The TREEP outlined the planned sedimentation mitigation measures to be completed along the Tote Road in 2017 and subsequent years. Work executed by Baffinland in 2021 followed the guidance, recommendations and designs presented in the TREEP as well as the original 2013 designs prepared by Hatch Limited (Hatch).

1.2 AUTHORIZATION FOR WORKS

Fisheries and Oceans Canada (DFO) (1998) defined Harmful Alteration, Disruption or Destruction (HADD) as: "any meaningful change in one or more habitat components that can reasonably be expected to cause a real reduction in the capacity of the habitat to support the life requisites of

fish". A HADD occurs when the physical, chemical, or biological features of a water body are sufficiently altered, such that habitat becomes less suitable for one or more life history processes of fish. Detailed descriptions of the 2007 HADD authorization and any related amendments and Letters of Advice can be found in previous annual reports (Knight Piésold 2007b, 2008; Baffinland 2009 to 2020, incl.) and the Fish Habitat No Net Loss and Monitoring Plan as described by Knight Piésold (2007a). Habitat compensation is defined by DFO (1998) as "the replacement of natural habitat, increase in the productivity of existing habitat, or maintenance of fish production by artificial means in circumstances dictated by social and economic conditions, where mitigation techniques and other measures are not adequate to maintain habitats for Canada's fisheries resources".

A total of thirty-seven (37) fish-bearing crossings that were originally identified as HADD (August 2007 *Fisheries Act* Authorization), potential compensation, and Letter of Advice (LOA) sites in the August 2007 No Net Loss and Monitoring Plan and/or subsequent amendments and monitored annually since 2008/2009 were re-surveyed in spring 2021 (Figure 1). Fishless crossings that were originally identified as HADD, potential compensation, and LOA sites in the August 2007 No Net Loss and Monitoring Plan and/or subsequent amendments that are periodically surveyed to confirm continued lack of fish use were not visited in 2021 following two consecutive years (2019-2020) of surveys.

In addition to monitoring of fish passage at stream crossings, crossings were surveyed for potential issues with condition and/or performance. Crossings requiring remediation for potential fish passage issues (e.g., perched culverts) were identified, and a proposed remediation plan was prepared for discussion with the DFO during winter 2022.

1.3 REPORTING

A written report summarizing the monitoring results is to be submitted to the specified office locations of the Department of Fisheries and Oceans, Fish Habitat Management, Eastern Arctic Area, on or before December 31 of each year. Annual reports have previously been submitted for the years 2007 to 2020 (Knight Piésold 2007b, 2008 and Baffinland 2009 to 2020, incl.).

This 2021 Annual Report, herein, covers the period of activity up to and including December 31, 2021. It summarizes the fish habitat monitoring results and provides a record for additional works or undertakings completed in accordance with the approved No Net Loss and Monitoring Plan (Knight Piésold 2007a) and conditions of the authorization, subsequent amendments, and Letters of Advice. The report also summarizes the proposed remediation works.

SECTION 2.0 - PROJECT DESCRIPTION

2.1 CONSTRUCTION WORK

Design summaries and descriptions of work along the Tote Road completed up to the end of 2009 are presented, in detail, in Knight Piésold (2007c) and Baffinland (2009). Road construction activities and installation of fish access improvement structures at some crossings are described in Baffinland's annual reports to DFO (2010 to 2020, incl.).

In order to safely and efficiently transport iron ore from the Mine Site to Milne Port during the early operational period of the mine, the existing Tote Road has been further upgraded (sections were straightened, widened and/or moved) to accommodate large haul trucks and in efforts to mitigate sedimentation and erosion. The first phase of the upgrades involved replacement of sea container crossings with bridges. Bridge installation was completed during the winter of 2013/14 and seacan container crossings were removed at all locations by early 2017. Modifications to accommodate upgrades to the Tote Road and specific water crossings to support the ERP of the Project commenced in 2013 and remain ongoing. Baffinland has received approvals from DFO in the form of LOAs (Appendix A) and email correspondence to proceed with these changes.

There was no construction work at fish-bearing stream crossings along the Tote Road in 2021. Future Tote Road improvements/realignments required in support of on-going operations and future expansion projects will continue to follow the historical LOAs, original Hatch 2013 drawings and the TREEP. Baffinland will work with the DFO as necessary to ensure planned modifications to fish bearing crossings are in compliance of the *Fisheries Act* and the interim codes of practice for culvert maintenance and temporary cofferdams and diversion channels (as published).

2.2 FISH HABITAT ASSESSMENT

Watercourses initially identified as HADD (n = 25), compensation (n = 12), and LOA (n = 23) sites (Knight Piésold 2007a) were assessed for quality of available fish habitat at least once between 2006 and 2009 (Baffinland 2009). Three sites (CV-183, CV-181, and BG-16) originally identified as potential compensation sites at the onset of the program were not revisited in recent surveys because:

- Sites CV-183 and CV-181 no longer exist (these crossings were removed during initial construction upgrades in the winter of 2008/2009).
- Site BG-16 was originally identified as a compensation site during the 2007 habitat assessment based on a desktop assessment rather than a field assessment. After a habitat assessment conducted at the crossing in 2009 confirmed that BG-16 was not a fish bearing crossing, it was removed from the compensation site classification (Baffinland 2009).

In 2020, two additional fishless sites (CV-176 and CV-167) were removed from the compensation site and LOA classifications, respectively. The stream crossed at CV-176 was significantly altered during the installation of authorized infrastructure involving diversions and infills of stream reaches, where laydowns were constructed at the Port Site, and no longer exists in its natural state. Site CV-167 is not aquatic habitat.

Sites providing confirmed fish habitat were monitored annually from 2010-2021 while fishless sites have been monitored periodically, including in 2019 and 2020, to confirm the continued presence of natural barriers to fish passage preventing access to the crossing area habitat (Knight Piésold 2007b, 2008, Baffinland 2009 to 2020, incl.).

The primary objectives of the 2021 spring monitoring program were to assess the presence of fish, habitat quality, and upstream accessibility through installed culverts at fish-bearing sites and identify crossings requiring remediation to allow for fish passage. The objective of the program conducted in fall 2021 was to revisit sites identified in spring as requiring remediation and design remediation measures which Baffinland will discuss with the DFO prior to implementation. Habitat and fish surveys involved observations of substrate, flow characteristics, and potential fish use along 50 m reaches upstream and downstream of each applicable crossing. Fish presence was determined through visual surveys and the use of a backpack electrofisher. In previous years, both methods have proven to be highly reliable techniques for determining fish presence/absence in the clear, shallow streams that are typical of the study area. All captured fish were identified to species, enumerated, measured for fork length (mm) and examined for evidence of any external health issues including deformities, erosions, lesions, or tumours (DELTs), physical injuries, and poor overall health (i.e., skinny individuals). Descriptions of habitat and condition of culverts were noted and photographs taken. Results of the 2021 stream crossing monitoring surveys are presented in Section 3.0; photo logs for all of the sites are provided in Appendix B.

Monitoring will continue in 2022 to assess fish passage at crossings on fish-bearing streams, to continue to assess the condition and performance of crossings, and to evaluate the effectiveness and performance of 2021 remediation works.

2.3 FISH HABITAT COMPENSATION

Compensation works completed for the Tote Road prior to 2009 are described in detail in Knight Piésold (2007a) and the results of recent compensation works (e.g., rustic fishway at BG-30) and detailed fish habitat and fish use surveys from 2009 to 2020 are presented in Baffinland (2009 to 2020, incl.). Following successful completion of habitat works at BG-30 (Baffinland 2012), there was a net habitat gain of approximately 1,050 km^2, which together with other gains met the compensation goals described in Knight Piésold (2007a). Fish presence upstream of the fishway

in BG-30 has been confirmed during site visits from 2013-2021, indicating continuous structural integrity and successful fish passage.

SECTION 3.0 - AQUATIC MONITORING

An aquatic monitoring program was developed to ensure that all measures and works specified in the No Net Loss and Monitoring Plan (Knight Piésold 2007a), as well as the *Fisheries Act* Authorization and amendments, and the TREEP have been implemented and are functioning as intended. Details of aquatic monitoring conducted up to 2020 are provided in Knight Piésold (2007b, 2008) and Baffinland (2009 to 2020, incl.). Aquatic monitoring in 2021 focused on assessing any changes to fish habitat and accessibility at all fish-bearing crossings.

3.1 CONSTRUCTION AND TURBIDITY MONITORING

There was no in-stream construction work in HADD, compensation, and LOA classification crossings during periods of flow that required turbidity monitoring in 2021.

3.2 WATER QUALITY MONITORING OF BASELINE FISHERIES CULVERTS

Water quality monitoring data from Knight Piésold baseline monitoring work performed during 2005 and 2006, in conjunction with monitoring of the same crossings from 2015-2021 are presented in Table 1.

3.3 FISH USE ASSESSMENTS

Spring fish use assessments were conducted at the thirty-seven (37) fish-bearing sites along the Tote Road from 27 June to 5 July 2021 (Figure 1, Table 2). The same sites were resurveyed in fall from 25 August to 7 September 2021 (Figure 1, Table 3). Water temperature, velocities, and depths within the culverts at the inflow and outflow and the height of any perches were recorded.

Tables 4 and 5 summarize Arctic Char catch statistics from sites surveyed during the spring and fall 2021 surveys, respectively. Tables 6 and 7 summarize spring and fall Ninespine Stickeback catch data from sites where they were found at the thirty-seven (37) stream crossings surveyed along the Tote Road in 2021. See Appendix B for additional sites where stickleback have been observed over the duration of the monitoring program. Table 8 summarizes habitat and fish use assessments for the surveyed sites and provides descriptions of potential fish passage or habitat issues noted in the spring survey and potential remedial actions to be completed pending discussions with the DFO. A detailed summary of issues and remedial actions is provided in Section 3.5. A photographic log of habitat at each surveyed crossing is provided in Appendix B.

Spring electrofishing surveys captured three hundred and forty-nine (349) juvenile Arctic Char at twenty-eight (28) crossings (Table 4). Fish were observed, but not captured at eight (8) of the remaining nine (9) fish-bearing crossings during the spring 2021 Tote Road monitoring program. Numerous char were captured upstream and downstream of the culverts at BG-01 and CV-225 in

spring (20 June to 5 July) through a separate electrofishing and hoopnetting program conducted to support the Phase 2 assessment process. As in previous years, site CV-115, which had been previously identified as fish-bearing (in 2010), was nearly dry when surveyed in the spring 2021 despite being surveyed at or near peak freshet following a period of extensive rain. The most recent survey during which the stream at CV-115 was sufficiently wetted to provide fish habitat during survey periods was in 2016, when it consisted of isolated pools each containing a few stranded juvenile Arctic Char (Baffinland 2016). Eighty-six (86) Ninespine Stickleback were captured at seven (7) of the crossings in spring (Table 6).

Fall electrofishing surveys captured one hundred and forty-two (142) juvenile char and twenty-nine (29) stickleback at twelve (12) crossings (Tables 5 and 7). Fall fish distribution and abundance were lower than spring due to lower water levels (some watercourses lacked sufficient water for fish use (e.g., CV-106) and decreasing water temperatures in early September (< 5°C at the time of the survey in most streams) triggering fish movements back into nearby lakes for overwintering. No fish were captured in the four (4) streams that were surveyed on 7 September when water temperatures had reached 0°C and lower velocity areas had begun to freeze.

Site-specific Arctic Char catches in spring ranged from zero to sixty-six (66) fish and catch-per-unit-effort (CPUE) ranged from 0.00 to 8.92 fish/minute (Table 4). Site-specific Ninespine Stickleback catches in spring ranged from zero to twenty-nine (29) fish and CPUE ranged from 0.00 to 6.04 fish/minute (Table 6). Most of the stickleback (77 fish) were captured at only three sites (BG-04, CV-001, and CV-224); all within the southern third of the Tote Road watersheds where they have consistently been most abundant.

Site-specific Arctic Char catches in fall ranged from zero to forty (40) fish and CPUE ranged from 0.00 to 6.20 fish/minute (Table 5). The majority of char (n = 103) were captured from watercourses near Muriel Lake south of the mine site. Relatively few fish were captured in the Phillips Creek drainage to the north. Site-specific Ninespine Stickleback catches in spring ranged from zero to thirteen (13) fish and CPUE ranged from 0.00 to 2.02 fish/minute (Table 7). Most of the stickleback (26 fish) were captured at only two sites (BG-04 and BG-29).

The fork length of captured Arctic Char ranged from 43-215 mm (mean 104 mm) in spring and 42-245 mm (mean 107 mm) in fall (Tables 4 and 5). Nearly 50% of the spring catch was 70-109 mm with a mode of 90-99 mm (Figure 2). Most of the fall catch ranged from 60-109 mm but showed two peaks; at 70-79 mm and 100-109 mm. Ninespine Stickleback ranged in size from 25-71 mm in spring and 8-72 mm in fall, indicating the presence of some young-of-the-year (Tables 6 and 7).

There were no DELTs present on any of the captured fish from spring and fall 2021, which is typical for char and stickleback in the study area. Additionally, no abnormal behaviour, physical injuries, or other indications of poor condition were observed during the field programs.

3.4 COMPENSATION WORKS

All compensation works completed prior to 2021 continued to be successful in 2021, including fish use of the rustic fishway installed at BG-30. For more details on habitat compensation activities, see Baffinland (2009 to 2020, incl.).

3.5 REMEDIATION WORKS

Tote Road monitoring in spring 2021 identified eleven (11) sites with potential issues requiring remediation at the culvert crossings (Table 8). To improve conditions at each of these sites, potential remediation actions were identified. Baffinland will discuss the proposed remedial actions with the DFO during winter 2022 to decide upon a practical course of action and implementation schedule. Six (6) of these crossings (CV-129, CV-114, CV-111, CV-106, BG-50, and CV-216) involved culverts that were identified as perched in spring 2021. Previous remediation measures involving the construction of rocky ramps or backwatering structures have shown some success at crossings with small perch heights (e.g., CV-129, CV-216), but they may not be sustainable in the long-term. Stream crossing installations have periodically been damaged or destroyed from high freshet flows and/or from snow and ice removal activities at some stream crossings prior to freshet. Some crossings (e.g., BG-50, CV-111) have significant perching that may only be remediated with culvert reinstallation. Baffinland will work with the DFO prior to instream remediation work proceeding to decide upon a practical course of action for addressing the perched culvert outlets at all six (6) of these crossings.

The fish passage culvert at CV-224 was completely blocked with ice when surveyed after peak freshet in spring 2021; the overflow culvert, not accessible to fish, was not frozen at this time and was passing flow downstream. However, large numbers of stickleback and juvenile char were found staging downstream of the frozen culvert. Similar ice damming issues were noted for CV-225 and BG-01 in spring 2021. All three (3) of these sites flow into the north end of Camp Lake and the overlying road is thick, insulating the ice in the culverts. Baffinland regularly applies steam to culverts as necessary to remove ice and snow blockages before and during freshet to ensure the effective movement of water during freshet conditions, however; steaming efforts during the 2021 freshet preparation period were affected by manpower limitations onsite due to a Covid-19 outbreak. Site personnel were impacted with the Covid-19 virus, isolation requirements, and health and safety measures mandated by Nunavut Public Health. During this time, Baffinland was under an “outbreak order” from Nunavut Public Health and the Public Health Agency of Canada.

Essential staff remained onsite but due to the Covid-19 outbreak, operations were impacted. Increased monitoring of culvert crossings that typically re-freeze following the initial steam application will be continued for freshet 2022 to ensure culverts remain open to provide full access for fish. Seepage observed in 2020 under the road near CV-076 was not observed during the 2021 surveys; however, this may be due to higher water levels in the area obscuring observation of the seepage. Baffinland will continue to monitor this site to confirm if seepage persists and, if confirmed, prepare a remedial action plan.

Crossings CV-225 and BG-01 continue to experience additional issues that affect fish passage and habitat. Very high culvert exit velocities were noted for CV-225 and, to a lesser extent, BG-01, in spring 2021, which can prevent smaller juveniles from accessing upstream habitat early in the open-water season. Potential remediation may require additional and/or larger culverts installed at these locations. In addition, a portion of the old road crossing at CV-225 (downstream of the current crossing) remains in the stream channel, blocking flows into one of the two natural downstream channels for this watercourse.

The spring 2021 survey identified that culverts at CV-057 were nearly completely buried by sediment. The sedimentation at CV-057 is potentially caused by erosion of the road embankment and/or elevated sediment transport due to erosion of fine-grained glaciofluvial deposits upstream of the crossing during spring freshet conditions. Baffinland will remove the accumulated sediment during non-flowing winter months. This work was not completed during the open-water season to prevent mobilization of sediment in the stream. Larger culverts, improved armouring of the road embankments, and implementation of upstream sediment control measures at locations where sediment enters the waterbody may also be required to prevent ongoing infilling of the culverts. Options for addressing the sedimentation at CV-057 will be discussed with the DFO prior to remediation work proceeding during non-flowing winter conditions.

Baffinland will discuss proposed remediation works with the DFO prior to instream remediation work proceeding at these fish bearing crossings, as necessary to ensure planned modifications to culverts and road embankments are in compliance of the *Fisheries Act* and the interim codes of practice for culvert maintenance and temporary cofferdams and diversion channels (as published).

SECTION 4.0 - AUTHORIZED HADD CROSSING INSTALLATION SUMMARY

The locations for current authorized HADD crossings and habitat compensation sites are presented in Figure 1 and Table 9. As of November 30, 2008, all authorized HADD water crossings were installed. Remedial work up to August 2009 at the habitat compensation sites was substantially completed, and by October 2011, additional habitat compensation investigations and access structure installation were complete at select crossings. In 2012, new culverts were installed at two HADD crossings (BG-04 and BG-32) and habitat compensation works were completed at BG-30. No additional work was completed in 2013 due to pending potential upgrades to large portions of the Tote Road as part of the ERP of the Project. In 2013/14, bridges were installed at four (4) crossings and culvert replacement/extension was initiated on another crossing. The now obsolete sea containers were removed from the CV-223 crossing during late fall 2014 and from BG-50 in late 2016, and from the remaining two (2) crossings in early 2017. During winter 2018/2019, culverts were extended at HADD crossing CV-078 and two (2) improperly installed culverts at HADD site CV-111 were replaced with a single culvert. A complete and updated list of the HADD crossings and habitat compensation sites, including crossing IDs, is provided in Table 9. The data in this table reflect those that were presented in detail in previous reports (Knight Piésold 2007b and 2008, Baffinland 2009), as well as the results from the most recent Tote Road surveys that were completed since 2010 (Baffinland 2010 to 2021, incl.).

SECTION 5.0 - REFERENCES

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TABLES AND FIGURES

TABLE 1. WATER QUALITY MONITORING OF BASELINE FISHERIES, 2005, 2006, 2015-2021

Table 1.1: Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-025 (CV128)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date																												
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2006			2015				2016				2017		2018				2019				2020							
												14-Jun-06	03-Aug-06	08-Sep-06	03-Jul-15	03-Jul-15	12-Aug-15	12-Aug-15	30-Jun-16	30-Jun-16	25-Aug-16	25-Aug-16	30-Jun-17	30-Jun-17	03-Jul-18	03-Jul-18	02-Sep-18	02-Sep-18	21-Jun-19	21-Jun-19	10-Aug-19	10-Aug-19	22-Jun-20	22-Jun-20	22-Jun-20	19-Jul-20	19-Jul-20	19-Jul-20	14-Aug-20	14-Aug-20
															US	DS	US	DS	US	DS	DS	US	US	DS	US	DS	US	DS	US	DS	US	DS	US	US Field Blank	DS	US	DS	DS Travel Blank	US	DS
In Situ Parameters																																								
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	0.32	10.41	3.66	-	-	7.2	7.2	6.1	7.7	9.6	9.2	3.3	3.6	5.9	5.9	4.9	4.9	6.1	6.0	14.5	14.2	6.4	-	8.1	16.5	17.1	-	12.3	13.5
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-	-	0.133	0.12	0.16	0.53	0.58	0.139	0.139	0.390	0.800	0.169	0.116	0.147	0.1575	0.0786	0.0785	0.1357	0.1375	0.0756	0.0754	0.1712	0.1705	0.107	-	0.1193	0.2385	0.2533	-	0.2531	0.2825
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	5.5-9.5	13.02	11.71	13.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.41	-	12.49	10.46	11.02	-	100.6	124.2
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105.9	105.1	103.5	106.2	101.6	103.7	102.4	102.3	97.9	97.8	102.2	98.5	102.2	101.3	107.3	105.4	100.8	-	105.5	106.8	114.7	-	10.82	12.95
pH	pH units	-	-	-	-	-	-	-	-	-	6.5 - 9.0	8.18	8.12	8.21	8.33	8.14	8.3	8.2	7.9	8.3	8.09	8.05	7.62	7.67	8.00	8.16	8.13	7.78	7.92	8.00	8.32	8.25	7.91	-	8.04	8.38	8.4	-	8.28	8.36
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	76	120	99	-	-	50	50	-	-	-	-	30	30	~25	~25	~40	~35	-	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	too much ice	0.3	0.6	-	-	0.5	0.5	-	-	-	-	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-	26.73	-	-	-	-	-	-	-	-	-	60	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																																								
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.85	7.37	7.51	7.79	7.84	8.16	8.04	8.11	8.15	8.08	8.20	7.83	7.84	7.82	7.83	8.22	8.17	7.91	7.77	8.25	8.32	7.78	5.71	7.89	8.29	8.29	6.27	8.21	8.32
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	145	125.00	166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	111	<3.0	124	249	269	<3.0	257	298
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10	-	0.6	0.70	-	1.1	1.19	0.45	0.45	10.2	10.8	0.28	0.28	2.43	2.27	2.11	1.92	0.22	0.28	0.48	0.66	0.24	0.31	0.85	<0.10	1.2	0.52	1.08	<0.10	0.73	1.34
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10	0.5	0.5	0.50	-	73	65.0	85	42	42.0	63.0	62.0	58	53	84.0	84.0	38	42.0	40	41	81	79.0	44.7	45.1	85.6	85.9	58	<0.50	63.8	129	138	<0.50	137	158
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	-	-	-	<2.0	<2.0	<2.0	<2.0	**54.8**	**44.4**	<2.0	7.9	8.4	13.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.7	<2.0	<2.0	<2.0	2.2	<2.0
TDS	mg/L	30	5	20	20	20	10/20	20/10	10	13/10	-	94	81	108	77	67	72 *	67 *	50	240	78	79	37	44	51	51	85	85	49	54	112	108	56	<10	68	173	148	<10	159	184
Dissolved Anions																																								
Alkalinity (mg/L $CaCO_3$)	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	72	67	86	37	41	61	61	42	38	84	84	29	34	37	37	83	83	47	47	93	92	52	<10	56	123	494	<10	125	129
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	1	<1	1	0.53	0.54	0.85	0.89	0.62	0.60	1.46	1.49	0.89	0.88	0.58	0.61	1.36	1.39	0.52	0.55	1.31	1.33	3.11	<0.50	4.29	7.62	12.4	<0.50	8.83	19.7
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-			-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.025	0.026	-	-	-	-	-	-	-	-	-	-	-	-
SO_4^-	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	2	<1	4	0.42	0.47	0.0039	0.0031	0.38	0.36	1.18	1.19	0.38	0.39	0.33	0.37	0.73	0.72	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients																																								
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]	0.1	0.03	0.08	<0.15	<0.15	<0.15	0.19	<0.15	<0.15	<0.15	<0.15	0.16	<0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.005	<0.005	0.016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.0010
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	<0.10	<0.10	<0.10	<0.020	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.021	<0.020	<0.020	<0.020	<0.020	<0.020	0.109	0.0961
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-	<0.10	<0.10	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.022	<0.022	<0.022	<0.022	-	-	-	-	-	-	-	-
Ammonia, Total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	-	-	-	<0.050	<0.050	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	-	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	<0.010	0.011	<0.010	0.0073	0.0086
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	<0.01	<0.01	0.03	0.0036	0.0044	0.0039	0.0031	0.0677	0.0354	0.0044	0.0085	0.0107	0.0102	0.0045	0.0046	<0.0030	<0.0030	0.0033	0.0033	<0.0030	<0.0030	0.0031	<0.0030	0.0067	0.0047	0.0092	<0.0030	0.0038	0.0052
Dissolved Phosphorus	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																																								
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	1.7	1.60	1.7	1.6	<1.0	<1.0	1.8	1.6	1.84	1.79	1.37	1.33	2.04	0.62	1.72	1.74	1.67	1.96	3.93	1.08	3.91	5.74	5.6	0.95	5.6	5.36
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	1.9	1.90	1.7	1.7	1.8	1.4	1.8	2.9	2.09	2.15	1.54	1.85	2.30	0.54	2.17	2.32	2.05	2.19	3.92	1.36	3.95	6.16	6.05	1.25	5.44	5.17
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	<0.015	<0.015	<0.15	0.19	<0.15	<0.15	<0.15	<0.15	0.16	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-	-
Chlorophyll-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																																								
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.006	0.01	0.101	0.029	0.029	0.022	<0.010	0.827	0.759	<0.010	0.014	0.123	0.129	0.047	0.0587	0.0085	0.0053	0.0279	0.0314	0.0078	0.0078	0.0298	0.0192	0.071	0.0103	0.0233	<0.0050	0.0049	0.0208
Antimony	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-			<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.00010	<0.00010	0.00023	0.00022	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	0.0001	0.00011	<0.00010	0.00015	0.00017
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	<0.01	<0.01	<0.01	-	-	-	-	0.00801	0.00742	0.00663	0.00672	0.00378	0.00386	0.00315	0.00315	0.00589	0.00589	0.00352	0.00351	0.00728	0.00748	0.00322	<0.00010	0.0051	0.00559	0.00792	<0.00010	0.00606	0.00928
Berylium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	-	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.01	<0.01	<0.01	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0001	<0.0001	<0.0001	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	17	16	20	9.47	9.42	15.0	15.2	12.5	11.6	19.1	19.4	8.61	9.76	9.45	9.66	18.6	18.6	9.54	10	20.1	19.9	13.8	<0.050	15.1	30.1	32.3	<0.050	31.5	35.6
Cecium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	-	-	-	-	0.000062	0.000058	<0.000010	<0.000010	0.000019	0.000023	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	-	-	-	-	0.00125	0.00115	<0.00050	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0002	<0.0002	<0.0002	-	-	-	-	0.00042	0.00038	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00073
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	<0.03	<0.03	0.12	<0.050	<0.050	<0.050	<0.050	0.805	0.734	<0.050	<0.050	0.133	0.147	0.036	0.049	0.012	0.012	0.022	0.030	0.016	0.15	0.124	<0.010	0.127	0.128	0.241	<0.010	0.184	0.257
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.001	<0.001	<0.001	<0.00050	<0.00050	<0.00010	<0.00010	0.00069	0.00061	<0.00010	<0.00010	0.000125	0.000158	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000055	<0.000050	0.000083	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	-	-	0.0016	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	0.0014	<0.0010	0.0014	0.0016
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	7	6	8	4.24	4.27	6.97	7.23	6.39	5.86	8.93	8.60	4.12	4.18	4.04	4.19	8.41	7.96	4.62	4.60	8.6	8.45	5.7	<0.0050	6.26	13.9	14.2	<0.0050	14.9	16.1
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.01	<0.01	<0.01	0.0012	0.0013	0.00099	0.00061	0.0247	0.0215	0.00181	0.00265	0.00658	0.0065	0.00211	0.00223	0.00118	0.00122	0.00147	0.00173	0.00159	0.00129	0.00425	<0.00050	0.00938	0.00467	0.0222	<0.00050	0.00765	0.0149
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001/5	0.000005	0.0000050	0.000026	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.00050	<0.00050	0.000059	0.000062	0.000157	0.000164	0.000059	0.000078	0.000057	0.000066	0.000122	0.000127	0.000058	0.000068	0.000166	0.000215	0.000096	<0.000050	0.00015	0.000116	0.000154	<0.000050	0.000148	0.000189
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	0.00093	0.00085	<0.00050	<0.00050	<0.00050	<0.00050	0.00428	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	-	-	-	-	-	-	-	0.054	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.50	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.51	0.35	0.51	<1.0	<1.0	0.448	0.454	0.687	0.670	0.564	0.561	0.452	0.455	0.326	0.330	0.491	0.491	0.329	0.325	0.558	0.555	0.424	<0.050	0.657	0.677	0.756	<0.050	0.697	0.766
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-					0.00235	0.00231	0.00121	0.00122	0.00093	0.00093	0.00072	0.00074	0.00094	0.00095	0.00065	0.00062	0.0013	0.00125	0.00085	<0.00020	0.00138	0.00125	0.00158	<0.00020	0.00141	0.00166
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.001	<0.001	<0.001	<0.00040	<0.00040	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.10	0.10	0.10	0.10	-	-	-	-	-		-	-	1.98	1.75	0.437	0.451	0.54	0.54	0.32	0.33	0.41	0.4	0.31	0.33	0.54	0.55	0.39	<0.10	0.51	0.54	0.54	<0.10	0.52	0.45
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.61	0.34	1.15	<0.50	<0.50	0.62	0.63	<0.50	<0.50	0.89	0.88	0.53	0.520	0.332	0.341	0.75	0.737	0.324	0.334	0.788	0.788	0.528	<0.050	0.799	0.894	1.04	<0.050	1.01	1.13
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.012	0.01	0.015	-	-	-	-	0.0074	0.0070	0.0114	0.0116	0.0047	0.0056	0.0057	0.0058	0.0125	0.0129	0.0055	0.0056	0.0127	0.013	0.0095	<0.0010	0.0164	0.021	0.0264	<0.0010	0.0253	0.0289
Sulphur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	-	-	-	-		-	-	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-		-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	-	-	-	<0.00030	<0.00030	<0.000010	<0.000010	0.000016	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-		-	-	0.00138	0.00131	<0.00010	<0.00010	0.00012	0.00015	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.01	<0.01	<0.01	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	-	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	-	-	-	-		-	-	0.0256	0.0238	<0.00030	0.00042	0.00399	0.0045	0.00145	0.00164	<0.00030	<0.00030	0.00083	0.00129	0.00032	<0.00030	0.00104	<0.00030	0.00227	0.00044	0.00061	<0.00030	<0.00030	0.00057
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-		-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	-	-	-	<0.0010	<0.0010	0.00135	0.00135	0.000505	0.000481	0.00212	0.00209	0.000299	0.000353	0.000346	0.000347	0.00147	0.00154	0.000367	0.000381	0.00211	0.00219	0.000507	<0.000010	0.00105	0.0011	0.00168	<0.000010	0.00112	0.00188
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	-	-	-	-	0.00163	0.00149	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.01	<0.01	<0.01	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0032	<0.0030	<0.0030	<0.0030	0.0038	<0.0030	<0.0030	0.0036
Zircounim	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	0.00083	0.00076	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00033
Dissolved Metals and Non-Metals																																								
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	<0.005	<0.005	0.005	0.029	0.0108	0.0068	0.0122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0077	<0.0050	0.0169	<0.0050	0.0069	<0.0050	0.003	0.0065
Arsenic	mg/L	0.005	0.001	0.0001	-	-	-	-	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	0.00012	0.00013	<0.00010	<0.00010	0.00011
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00298	0.00024	0.00462	0.00566	0.00783	<0.00010	0.00642	0.00859
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.000005	0.0000050	-	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.05	-	-	-	-	0.05	0.050	-	16	16	21	9.65	9.46	14.1	14.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.6	0.067	14.8	29	31.8	<0.050	30.2	37
Chromium	mg/L	0.001	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010
Cobalt	mg/L	0.0003	0.0002	-	-	-	-	-	0.0001	0.00010	-	<0.0002	<0.0002	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.0002	-	-	-	-	0.0002	0.00020	-	<0.001	<0.001	<0.001	0.00034	0.00033	0.00041	0.00043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00033	<0.00020	0.00051	0.0003	0.00035	<0.00020	0.0004	0.00067
Iron	mg/L	0.02	0.03	0.01	-	-	-	-	0.01	0.010	-	<0.03	<0.03	<0.03	0.030	0.015	<0.010	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.063	<0.010	0.053	0.075	0.105	<0.010	0.097	0.099
Lead	mg/L	0.0002	0.001	0.00005	-	-	-	-	0.00005	0.000050	-	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.05	-	-	-	-	0.005	0.0050	-	8	6	8	4.44	4.46	6.62	6.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.84	0.0131	6.53	13.6	14.3	<0.0050	14.9	15.8
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	<0.01	<0.01	<0.01	0.00102	0.00072	0.00064	0.00084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00215	<0.00050	0.00383	0.00376	0.0201	<0.00050	0.00701	0.0122
Mercury	mg/L	-	-	0.00001	-	-	-	-	0.000005	0.0000050	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.005	<0.005	<0.005	0.000059	0.000063	0.000123	0.000123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000096	<0.000050	0.00014	0.00012	0.00016	<0.000050	0.000141	0.000195
Nickel	mg/L	0.001	0.005	0.0005	-	-	-	-	0.0005	0.00050	-	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.05	-	-	-	-	0.05	0.050	-	0.52	0.26	0.55	0.361	0.348	0.465	0.463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.412	<0.050	0.65	0.674	0.757	<0.050	0.796	0.834
Selenium	mg/L	0.005	0.001	0.00005	-	-	-	-	0.00005	0.000050	-	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	0.00125	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	-	-	-	-	-	0.00005	0.000050	-	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010
Sodium	mg/L	0.05	0.05	0.5	-	-	-	-	0.05	0.050	-	0.64	0.28	0.6	<0.50	<0.50	0.62	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.534	0.056	0.793	0.878	1.03	<0.050	0.942	1.13
Strontium	mg/L	0.001	0.001	-	-	-	-	-	0.001	0.0010	-	0.012	0.011	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0091	<0.0010	0.0154	0.0212	0.0272	<0.0010	0.0221	0.0247
Thallium	mg/L	0.0002	-	0.00001	-	-	-	-	0.00001	0.000010	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.00001	-	-	-	-	0.00001	0.000010	-	-	-	-	0.000315	0.000317	0.00127	0.00127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000454	<0.000010	0.000916	0.00111	0.00167	<0.000010	0.00107	0.0018
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	<0.01	<0.01	<0.01	0.0021	<0.0010	<0.0010	0.0011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0021	0.0022	0.0027	<0.0010	0.0028	<0.0010	<0.0010	0.0029

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown.

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.1: Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-025 (CV128)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date					
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2021					
												15-Jun-21	15-Jun-21	15-Jun-21	16-Aug-21	16-Aug-21	16-Aug-21
												DS	US	US Field Duplicate	DS	DS Field Duplicate	US
In Situ Parameters																	
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	4.5	4.8	-	7.3	-	10.4
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-	-	102.7	105.1	-	164.8	-	164.8
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	5.5-9.5	12.77	12.66	-	11.95	-	11.99
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	99.1	99.2	-	100.6	-	101.2
pH	pH units	-	-	-	-	-	-	-	-	-	6.5 - 9.0	7.90	8.09	-	8.29	-	8.27
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																	
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.91	7.97	6.27	7.81	5.60	7.85
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	108	108	<1.0	173	<1.0	173
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10	-	1.41	2.07	0.32	0.59	<0.10	0.48
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10	0.5	0.5	0.50	-	52.6	53.4	<0.50	86.1	<0.50	87.8
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	1.4	5.2	<1.0	2.3	<2.0	<2.0
TDS	mg/L	30	5	20	20	20	10/20	20/10	10	13/10	-	43	53	<20	92	<10	89
Dissolved Anions																	
Alkalinity (mg/L $CaCO_3$)	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	64.6	67.5	1.2	88.6	<1.0	88.7
Br	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	1.93	1.93	<0.50	1.83	<0.50	1.79
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	-	-	-	-	-	-
Nutrients																	
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]	-	-	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	0.028	0.027	<0.020	<0.020	<0.020	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-	-	-	-	-	-	-
Ammonia, Total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	0.020	<0.010	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.0048	0.0061	<0.0030	<0.0030	<0.0030	<0.0030
Dissolved Phosphorus	mg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																	
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.88	3.37	1.04	3.04	0.64	3.05
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.61	3.51	1.06	5.33	3.66	5.13
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	0.220	0.260	0.180	0.130	<0.050	0.110
Chlorophyll-a	mg/m3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																	
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.0599	0.0418	<0.0050	0.0364	<0.0050	0.0236
Antimony	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	0.00012	0.00012	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.00483	0.00466	<0.00010	0.00683	<0.00010	0.00680
Beryllium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	-	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	12.0	12.1	<0.050	19.2	<0.050	19.3
Cecium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.00050	<0.00050	<0.00050	0.00060	<0.00050	0.00059
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.060	0.040	<0.010	0.049	<0.010	0.031
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.000050	0.000137	<0.000050	<0.000050	<0.000050	0.000061
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	5.88	5.85	<0.0050	9.23	<0.0050	9.29
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.00381	0.00259	<0.00050	0.00265	<0.00050	0.00200
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001/5	0.000005	0.0000050	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	0.000079	0.000086	<0.000050	0.000156	<0.000050	0.000156
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.632	0.636	<0.050	0.612	<0.050	0.601
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.00106	0.00099	<0.00020	0.00119	<0.00020	0.00113
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L			-	0.05	0.05	0.10	0.10	0.10	0.10	-	0.60	0.59	<0.10	0.58	<0.10	0.56
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.925	0.915	<0.050	1.17	<0.050	1.20
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0076	0.0076	<0.0010	0.0122	<0.0010	0.0122
Sulphur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	<0.50	<0.50	<0.50	0.64	<0.50	0.63
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	-	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	0.00213	0.00191	<0.00030	0.00158	<0.00030	0.00086
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	0.000715	0.000731	<0.000010	0.00220	<0.000010	0.00221
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zircounim	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals and Non-Metals																	
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.0099	0.0121	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic	mg/L	0.005	0.001	0.0001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.00428	0.00440	<0.00010	0.00688	<0.00010	0.00696
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.05	-	-	-	-	0.05	0.050	-	11.7	11.9	<0.050	19.0	<0.050	19.5
Chromium	mg/L	0.001	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.0002	-	-	-	-	0.0002	0.00020	-	0.00039	0.00040	<0.00020	0.00052	<0.00020	0.00054
Iron	mg/L	0.02	0.03	0.01	-	-	-	-	0.01	0.010	-	0.017	0.018	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00005	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.05	-	-	-	-	0.005	0.0050	-	5.67	5.75	<0.0050	9.38	0.0063	9.53
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.00284	0.00303	<0.00050	0.00289	<0.00050	0.00082
Mercury	mg/L	-	-	0.00001	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	0.000083	0.000078	<0.000050	0.000150	<0.000050	0.000150
Nickel	mg/L	0.001	0.005	0.0005	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.05	-	-	-	-	0.05	0.050	-	0.583	0.598	<0.050	0.630	<0.050	0.633
Selenium	mg/L	0.005	0.001	0.00005	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	-	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	-	-	-	-	0.05	0.050	-	0.888	0.903	<0.050	1.23	<0.050	1.22
Strontium	mg/L	0.001	0.001	-	-	-	-	-	0.001	0.0010	-	0.0072	0.0074	<0.0010	0.0121	<0.0010	0.0122
Thallium	mg/L	0.0002		0.00001	-	-	-	-	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.00001	-	-	-	-	0.00001	0.000010	-	0.000674	0.000691	<0.000010	0.00211	<0.000010	0.00214
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown.

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.2 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-050 (CV099)

Parameters	Units	Method Detection Limit 2005	Method Detection Limit 2006	LOR 2015	LOR 2016	LOR 2017	LOR 2018	LOR 2019	LOR 2020	LOR 2021	CCME Guideline	2005 13-Jun-05	2005 06-Aug-05	2005 09-Sep-05	2006 14-Jun-06	2006 03-Aug-06	2006 08-Sep-06	2015 03-Jul-15 US	2015 03-Jul-15 DS	2015 12-Aug-15 US	2015 12-Aug-15 DS
In Situ Parameters																					
Temperature	ºC	-	-	-	-	-	-	-	-		-	0.11	9.36	4.13	0.04	8.31	2.74	-	-	9.3	8.2
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-	0.104	0.220	0.308	0.112	0.254	0.305	0.112	0.111	0.337	0.338
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5	13.69	10.95	12.74	13.80	12.02	13.37	-	-	-	-
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	103.5	101.7
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0	7.54	8.31	8.07	8.17	8.36	8.55	8.27	8.28	8.55	8.53
Wetted Width	m	-	-	-	-	-	-	-	-		-	-	-	-	ice	11	12	6	6	2	2
Average Depth	m	-	-	-	-	-	-	-	-		-	-	-	-	0.1	0.15	0.3	0.1	0.1	0.15	0.15
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-	-	-	-	-	0.82	1.88	-	-	-	-
Physical Parameters																					
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	-	-	-	7.68	8.14	8.13	8.13	8.13	8.37	8.36
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	105	235	296	122	259	315	-	-	-	-
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-	0.84	0.23	<0.10	0.9	0.2	-	0.32	0.48	1.07	0.12
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	54.2	128	177	62	144	162	81	80	157	156
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	-	-	-	-	-	-	<2.0	2.0	<2.0	<2.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	57	123	170	79	168	205	93	77	168	157
Dissolved Anions																					
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	52	134	156	61	141	163	80	81	161	160
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-		-	<0.3	<0.3	<0.3	<0.05	<0.05	<0.05	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	1.1	0.6	1.9	<1	1	3	1.2	1.22	4.14	4.15
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-		-	-	-	-	-	-	-	-	-	-	-
SO_4^-	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-		-	0.6	1.1	2.5	2.0	2.0	6.0	1.1	1.2	4.80	5.12
Nutrients																					
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-		0.021 - 231 [a]	0.3	0.2	0.6	0.09	0.04	<0.02	<0.15	<0.15	0.23	0.17
NO_2^- (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.06	<0.06	<0.06	<0.005	<0.005	0.017	-	-	-	-
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.020	<0.020	0.031	0.037
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022		-	<0.06	<0.06	<0.06	<0.10	<0.10	<0.10	-	-	-	-
Total Ammonia as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	<0.02	<0.02	<0.10	<0.01	<0.01	<0.01	<0.0030	<0.0030	<0.0030	0.0034
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-		-	<0.02	<0.02	<0.10	-	-	-	-	-	-	-
Organic Compounds																					
Phenols	mg/L	-	-	-	-	-	-	-	-		0.004	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	1.8	1.7	2.7	2.8
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	1.8	1.8	2.7	2.8
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	-	-	-	<0.15	0.23	0.23	0.17
Chlorophyll-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																					
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.026	0.005	<0.004	0.015	<0.005	<0.005	0.012	0.014	<0.010	<0.010
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-	-	-
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.0010	<0.0010	0.00010	0.00011
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.002	0.004	0.005	<0.01	<0.01	<0.01	-	-	-	-
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-	-	-
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-	-	-
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000090	<0.000090	<0.000010	<0.000010
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	13.0	29.3	39.8	16	34	37	17.6	18	35.9	34.9
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	-	-	-	-	-	-	-
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-	-	-
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	<0.05	<0.02	<0.02	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	<0.050
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.00050	<0.00050	<0.00010	<0.00010
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	5.29	13.2	18.7	6	15	17	8.01	7.96	19	18.4
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.0079	<0.0007	<0.0007	<0.01	<0.01	<0.01	<0.0010	<0.0010	<0.00050	<0.00050
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.00050	<0.00050
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.53	0.45	0.54	0.52	0.34	0.52	<1.0	<1.0	0.614	0.626
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	-	-
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00040	<0.00040	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.10	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.39	0.67	1.15	0.37	0.67	1.61	0.76	0.75	2.64	2.55
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0068	0.0140	0.0198	0.010	0.018	0.022	-	-	-	-
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	-	-	-	-	-	-	-	-	-	-
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.0002	<0.0002	<0.0002	-	-	-	<0.00030	<0.00030	<0.000010	<0.000010
Thorium	mg/L			-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-	-	-
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	-	-
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-	-	-
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-				-	-	-	-
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	-	-	-				<0.0010	<0.0010	0.000982	0.001040
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.0009	<0.0009	<0.0009	<0.001	<0.001	0.001	-	-	-	-
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	0.002	<0.001	<0.001	<0.01	<0.01	<0.01	<0.0030	0.0044	<0.0030	0.0193
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	-	-
Dissolved Metals and Non-Metals																					
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-	-	-
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010	0.00011	0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.002	0.004	0.005	<0.01	<0.01	<0.01	-	-	-	-
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-	-	-
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-	-	-
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	-	-	-	-
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	12.3	29.7	37.4	15	33	37	18.4	18.8	34.7	34.7
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.001	0.002	0.002	<0.001	<0.001	<0.001	-	-	-	-
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-	-	-
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	0.00030	0.00031	0.00050	0.00055
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	<0.05	<0.02	<0.02	<0.03	<0.03	<0.03	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	5.67	13.3	17.3	6	15	17	8.59	7.92	17.1	17
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.0060	<0.0007	<0.0007	<0.01	<0.01	<0.01	<0.00050	<0.00050	<0.00050	<0.00050
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.000010	<0.000010	0.000107	0.000112
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.000050	0.000059	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.52	0.44	0.52	0.52	0.34	0.53	<0.00050	<0.00050	0.616	0.631
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	0.386	0.360	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000050	<0.000050	-	-
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	0.42	0.67	1.10	0.34	0.68	1.61	0.76	0.73	2.41	2.39
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0070	0.0147	0.0188	0.009	0.019	0.023	-	-	-	-
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	-	-
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-	-	-
Uranium	mg/L	-	-	0.00001	-	-	-	-	0.00001	0.000010	-	-	-	-	-	-	-	0.00023	0.000251	0.000911	0.000966
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.0009	0.0046	0.0046	<0.001	<0.001	0.001	-	-	-	-
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	0.009	0.002	0.002	<0.01	<0.01	<0.01	0.0017	0.0044	<0.0010	0.0182

Parameters	2016 30-Jun-16 DS	2016 30-Jun-16 US	2016 25-Aug-16 DS	2016 25-Aug-16 US	2017 29-Jun-17 US	2017 29-Jun-17 DS	2018 03-Jul-18 US	2018 03-Jul-18 DS	2018 02-Sep-18 US	2018 02-Sep-18 DS	2019 21-Jun-19 US	2019 21-Jun-19 DS	2019 11-Aug-19 US	2019 11-Aug-19 DS	2020 22-Jun-20 US	2020 22-Jun-20 DS	2020 20-Jul-20 US	2020 20-Jul-20 DS	2020 14-Aug-20 US	2020 14-Aug-20 DS	2020 14-Aug-20 DS Travel Blank
In Situ Parameters																					
Temperature	10.83	12.19	9	9.1	1.6	2.2	6.1	6.2	5.10	4.50	7.00	7.10	12.4	11.9	1.60	1.7	13.80	13.50	9.30	9.00	9.00
Specific Conductance	-	-	0.347	0.353	0.136	0.1489	0.1536	0.1518	0.2694	0.2699	0.1631	0.1634	0.3530	0.3534	0.0672	0.0681	0.2853	0.2816	0.3798	0.3798	0.3798
Dissolved Oxygen (mg/L)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.83	13.8	10.23	10.49	98.80	100.90	100.90
Dissolved Oxygen (%)	97.4	97	102.5	107.5	101.6	103.3	98.10	98.20	99.30	98.30	98.90	98.70	100.5	98.6	98.80	99.1	98.50	100.60	11.37	11.65	11.65
pH	7.97	7.93	8.24	8.3	7.77	7.81	8.12	8.09	8.38	8.33	8.26	8.28	8.37	8.37	7.69	7.81	8.35	8.45	8.52	8.50	8.50
Wetted Width	-	-	-	-	2	2	~15	~20	7.80	4.60	-	-	-	-	-	-	-	-	-	-	-
Average Depth	-	-	-	-	0.3	2	-	-	0.09	0.12	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	-	-	-	-	0.396	3.4	-	-	0.13	0.11	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																					
pH	8.09	8.08	8.42	8.46	7.8	7.8	8.11	8.10	8.43	8.40	8.24	8.21	8.48	8.46	7.68	7.65	8.41	8.42	8.55	-	6.32
Conductivity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70.00	70.70	293.00	293.00	389.00	390.00	<2.0
Turbidity	0.42	0.47	0.13	0.16	1.93	2.43	0.92	0.69	0.12	0.11	0.20	0.19	0.15	0.12	0.65	0.69	0.13	<0.10	<0.10	<0.10	<0.10
Hardness	59	60	185	187	36	34	82	81	166	166	100	98	173	179	37.3	37.7	150	150	208	203	<0.50
TSS	<2.0	<2.0	<2.0	<2.0	11.3	13.6	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.00	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	70	65	176	178	36	38	99	95	160	165	102	100	196	230	32	44	153	158	216	221	18
Dissolved Anions																					
Alkalinity	60	61	176	179	31	30	75	77	154	160	95	96	183	184	35	35	145	145	185	183	<1.0
Br^-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	1.16	1.06	8.54	8.68	<0.50	<0.50	1.18	1.20	4.05	4.14	1.32	1.39	7.96	8.05	0.61	0.62	6.84	7.10	13.80	13.80	<0.50
Fluoride	0.021	<0.020	0.03	0.029	<0.020	<0.020	0.021	0.021	0.042	0.042	-	-	-	-	-	-	-	-	-	-	-
SO_4^-	1.03	0.84	7.13	6.77	<0.30	<0.30	0.87	0.87	3.72	3.81	-	-	-	-	-	-	-	-	-	-	-
Nutrients																					
NH_3+NH_4	<0.15	<0.15	<0.15	0.16	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.0010	<0.0010
NO_3^- (Nitrate)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0050	0.01	<0.0050
NO_2+NO_3	-	-	-	-	-	-	-	-	-	-	<0.022	<0.022	<0.022	<0.022	-	-	-	-	-	-	-
Total Ammonia as N	<0.020	<0.020	<0.020	0.048	<0.020	<0.020	<0.020	<0.020	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050
Total Phosphorus	0.0051	0.0037	0.0041	0.0137	0.0114	0.014	0.0040	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.01	0.01	<0.0030	<0.0030	<0.0020	0.0020	<0.0020
Dissolved Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																					
Phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	1.3	1.3	2.5	2.5	2.13	2.16	2.45	2.33	2.81	2.90	2.80	2.60	2.69	2.75	2.80	2.92	3.19	3.41	2.97	2.98	<0.50
TOC	1.4	1.5	2.6	2.8	2.43	1.27	2.66	2.56	3.39	2.44	3.23	3.47	3.11	3.15	3.14	3.17	3.62	3.71	2.92	2.93	<0.50
TKN	<0.15	<0.15	<0.15	0.16	0.15	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-
Chlorophyll-a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																					
Aluminum	0.021	0.015	<0.010	<0.010	0.111	0.108	0.0086	0.0208	<0.0050	<0.0050	0.0148	0.01	<0.0050	0.0071	0.0472	0.0419	<0.0050	0.01	<0.0030	<0.0030	<0.0030
Antimony	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	<0.00010	<0.00010	0.00014	0.00014	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	0.00015	0.00015	<0.00010	<0.00010	<0.00010	0.00	0.00017	0.00015	<0.00010
Barium	0.00241	0.00253	0.0066	0.0068	0.00186	0.00175	0.00271	0.00278	0.00555	0.00565	0.00347	0.00335	0.00753	0.00765	0.00330	0.00162	0.00616	0.00601	0.00712	0.00701	<0.00010
Beryllium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.00	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	13.7	13.2	41.3	41.2	8.06	7.67	19.10	18.9	37.80	38.50	22.40	21.90	38.2	40.8	8.77	9.03	34.10	34.50	43.80	44.00	<0.050
Cesium	<0.000010	<0.000010	<0.000010	<0.000010	0.000014	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00	<0.00010	<0.00010
Cobalt	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00	<0.00050	0.00	0.00	0.00	0.00	<0.00050
Iron	<0.050	<0.050	<0.050	<0.050	0.124	0.111	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	0.04	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	<0.00010	<0.00010	<0.00010	<0.00010	0.000128	0.000144	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.00	0.00	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	<0.0010	<0.0010	0.0021	0.0021	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0011	0.0010	0.0011	0.0017	0.0019	<0.0010	<0.0010	0.0019	0.0018	0.0024	0.0024	<0.0010
Magnesium	6.04	6.63	19.9	20.5	3.76	3.59	8.33	8.14	17.30	16.90	9.50	9.85	18.3	18.6	4.03	3.93	16.10	16.20	22.30	22.00	<0.0050
Manganese	0.00056	<0.00050	<0.00050	<0.00050	0.00406	0.00406	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00	0.00	<0.00050	<0.00050	0.00	0.00	<0.00010
Mercury	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	<0.000050	<0.000050	0.000131	0.000141	<0.000050	<0.000050	<0.000050	<0.000050	0.0001	0.0001	<0.000050	<0.000050	0.000132	0.000133	<0.000050	<0.000050	0.0001	0.0001	0.0001	0.0001	<0.000050
Nickel	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	0.339	0.389	0.69	0.686	0.337	0.325	0.334	0.332	0.544	0.54	0.410	0.40	0.671	0.675	0.298	0.242	0.659	0.65	0.721	0.686	<0.050
Rubidium	0.00033	0.00036	0.00057	0.00061	0.0005	0.00048	0.00	0.00033	0.00045	0.00045	0.00034	0.00039	0.00067	0.00067	0.00034	0.00028	0.00058	0.00063	0.00056	0.00062	<0.00020
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	0.501	0.471	0.709	0.945	0.4	0.4	0.53	0.52	0.81	0.83	0.60	0.60	0.74	0.75	0.29	0.30	0.85	0.81	1.00	0.96	<0.10
Silver	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010
Sodium	0.66	0.71	4.03	4.02	<0.50	<0.50	0.63	0.63	2.29	2.23	0.839	0.83	3.36	3.38	0.438	0.321	3.160	3.27	5.680	5.580	<0.050
Strontium	0.0074	0.0072	0.0242	0.0242	0.0041	0.0038	0.0108	0.0105	0.0225	0.02	0.0118	0.01	0.0269	0.0269	0.0047	0.0046	0.0215	0.02	0.0296	0.0277	<0.00020
Sulfur	0.59	<0.50	2.79	3.04	<0.50	<0.50	<0.50	0.52	1.77	1.63	0.63	0.58	1.78	1.97	<0.50	<0.50	1.94	1.82	3.55	3.83	<0.50
Tellurium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.0009	0.0007	<0.00030	0.00033	0.00499	0.00417	<0.00030	0.000630	<0.00030	<0.00030	<0.00030	0.000490	<0.00030	<0.00030	0.00188	0.00172	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Tungsten	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.000173	0.000137	0.00122	0.00117	0.000046	0.000064	0.000291	0.000318	0.001010	0.000998	0.000381	0.000391	0.0012	0.00124	0.000065	0.000070	0.000803	0.000842	0.001390	0.001450	<0.000010
Vanadium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	0.0045	<0.0030	0.007	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0037	<0.0030	<0.0030	<0.0030	0.01	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	0.00024	0.00025	<0.00020	<0.00020	<0.00020	<0.00020	0.00	0.00	<0.00020
Dissolved Metals and Non-Metals																					
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008	0.008	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010
Antimony	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	0.000	0.000	0.000	<0.00010	<0.00010
Barium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.001	0.006	0.006	0.007	0.007	<0.00010
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.410	8.630	33.400	33.400	46.600	44.500	0.068
Chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010	<0.00010
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00020	0.000	0.001	0.001	0.001	0.001	<0.00020
Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.960	3.920	16.100	16.200	22.300	22.400	<0.0050
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.001	<0.00050	<0.00050	<0.00010	<0.00010	<0.00010
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	0.000	0.000	0.000	0.000	<0.000050
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.234	0.240	0.704	0.682	0.789	0.771	<0.050
Selenium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.342	0.361	3.250	3.260	5.660	5.510	<0.050
Strontium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.004	0.005	0.022	0.022	0.026	0.026	<0.00020
Thallium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.000	0.001	0.001	0.001	0.001	<0.000010
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	0.003	<0.0010	0.001	<0.0010	<0.0010	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown.

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.2 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-050 (CV099)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date			
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2021			
												14-Jun-21	14-Jun-21	16-Aug-21	16-Aug-21
												DS	US	DS	US
In Situ Parameters															
Temperature	ºC	-	-	-	-	-	-	-	-		-	0.5	0.4	7.5	7.6
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-	57.2	57.6	303	302
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5	14.36	14.27	11.82	11.77
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-	100.2	99.2	100.7	100.5
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0	7.69	7.72	8.45	8.55
Wetted Width	m	-	-	-	-	-	-	-	-		-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-		-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-	-	-	-	-
Physical Parameters															
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.68	7.69	8.30	8.33
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	67.2	66.9	318	317
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.10	-	4.20	5.42	0.10	0.11
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	31.4	30.9	169	168
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	20.7	25.3	<1.0	1.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	45	28	166	160
Dissolved Anions															
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	44.7	43.6	165	165
Br	mg/L	0.3	0.05	-	-	-	-	-	-		-	-	-	-	-
Cl	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	1.03	1.06	4.67	4.59
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-		-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-		-	-	-	-	-
Nutrients															
NH_4+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-		0.021 - 231 [a]	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	<0.020	0.022	<0.020	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022		-	-	-	-	-
Total Ammonia as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [2]	<0.010	<0.010	<0.10	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.0309	0.0209	<0.0030	<0.0030
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-		-	-	-	-	-
Organic Compounds															
Phenols	mg/L	-	-	-	-	-	-	-	-		0.004	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.51	3.86	5.96	4.30
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.77	3.81	6.18	6.25
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	0.230	0.250	0.160	0.170
Chlorophyll-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-
Pheophytin-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-
Total Metals and Non-Metals															
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.120	0.122	<0.0050	0.0053
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	0.00011	<0.00010	0.00010	0.00012
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.00197	0.00189	0.00583	0.00586
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	8.09	7.96	36.9	36.6
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	0.000014	0.000014	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.00050	<0.00050	<0.00050	<0.00050
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.121	0.120	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	0.000134	0.000134	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	<0.0010	<0.0010	0.0016	0.0016
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	3.56	3.55	17.6	18.2
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.00526	0.00503	<0.00050	<0.00050
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.000050	<0.000050	0.000070	0.000063
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.419	0.428	0.626	0.642
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.00060	0.00064	0.00052	0.00056
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L			-	0.05	0.05	0.1	0.10	0.10	0.10		0.47	0.49	1.14	1.15
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.414	0.414	2.33	2.44
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0047	0.0045	0.0222	0.0214
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	<0.50	<0.50	1.61	1.55
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L			-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	0.00567	0.00542	<0.00030	<0.00030
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	0.000072	0.000057	0.000977	0.000962
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	0.00027	0.00024	<0.00020	<0.00020
Dissolved Metals and Non-Metals															
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.0146	0.0152	<0.0050	<0.0050
Antimony	mg/L	0.0004		0.0001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.00140	0.00139	0.00612	0.00611
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	7.23	6.98	37.1	36.9
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	<0.00020	<0.00020	0.00043	0.00047
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	0.016	0.016	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	3.26	3.27	18.6	18.4
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.00392	0.00406	<0.00050	<0.00050
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	0.000058	0.000056
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.359	0.350	0.653	0.658
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	0.409	0.411	2.41	2.44
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0042	0.0039	0.0224	0.0220
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	0.00060	0.00062	<0.00030	<0.00030
Uranium	mg/L	-	-	0.00001	-	-	-	-	0.00001	0.000010	-	0.000066	0.000046	0.000949	0.000946
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	<0.0010	<0.0010	0.0012	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown.

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.3 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-053 (CV093)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date																				
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2006	2015		2016		2017		2018		2019		2020		2021							
												14-Jun-06	03-Aug-06	08-Sep-06	12-Aug-15	12-Aug-15	30-Jun-16	30-Jun-16	29-Jun-17	29-Jun-17	03-Jul-18	03-Jul-18	21-Jun-19	21-Jun-19	27-Jul-19	27-Jul-19	28-Jun-20	28-Jun-20	14-Jun-21	14-Jun-21	16-Aug-21	16-Aug-21	16-Aug-21
															US	DS	DS	US	US	DS	US	DS	US	DS	US	DS	US	DS	DS	US	DS	DS Travel Blank	US
In Situ Parameters																																
Temperature	ºC	-	-	-	-	-	-	-	-		-	-0.08	9.96	5.77	5.5	5.9	11.3	5.6	3.2	3.8	0.5	2.2	3.4	7.6	4.8	8.9	3.9	8.0	3.5	0.3	4.9	-	3.7
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-	0.148	0.160	0.182	0.340	0.320	11.570	11.570	0.197	0.182	0.211	0.197	0.2043	0.2032	0.2934	0.2754	0.1997	0.2005	147.2	125.8	274.1	-	278.1
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5	13.70	10.81	12.46	-	-	-	-	-	-	-	-	-	-	-	-	13.1	11.9	13.44	14.34	12.46	-	12.75
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-	-	-	-	99.4	101.1	99.4	99.0	101.8	102.0	97.4	98.1	100.8	99.8	97.5	99.2	99.8	100.6	102.3	100.0	99.7	-	97.1
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0	8.32	8.15	8.24	8.42	8.43	8.02	7.99	7.90	7.85	8.12	8.12	8.22	8.40	8.21	8.40	8.05	8.07	8.05	8.14	8.25	-	8.40
Wetted Width	m	-	-	-	-	-	-	-	-		-	.20	.33	.28	2.5	2.5	-	-	1.3	3.8	0.2	1.1	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-		-	0.15	0.20	0.20	0.50	0.50	-	-	0.09	0.06	0.04	0.03	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-	2	4.62	6.85	-	-	-	-	0.02223	0.10944	0.002	0.015	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																																
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.91	7.84	7.64	8.36	8.26	8.27	8.2	8.13	8.15	8.15	8.17	8.2	8.36	8.08	8.31	8.16	8.28	8.13	8.09	8.16	5.51	8.05
Conductivity	µS/cm	1	5	-	-	-	-	-	1.0	-	-	161	165	190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154	134	287	<1.0	288
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.10	-	0.5	0.2	-	0.19	1.22	0.92	1.31	0.31	1.74	0.66	0.99	0.23	0.74	0.20	2.20	0.18	0.93	15.6	2.53	0.35	<0.10	0.19
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	85	86	95	152	158	99	100	81	84	112	108	128	123	-	-	-	-	77.2	66.9	150	<0.50	151
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	-	-	-	<2.0	2.0	<2.0	4.4	2.1	5.5	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	2.6	25.8	2.8	1.5	<2.0	<2.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	105	107	123	147	159	115	105	89	86	128	116	143	139	138	149	138	121	90	82	154	<10	151
Dissolved Anions																																
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	80	85	93	155	163	103	99	77	81	99	98	117	115	-	-	-	-	90.8	80.8	143	<1.0	147
Br	mg/L	0.3	0.05	-	-	-	-	-	-		-	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	<1	<1	<1	0.74	3.07	0.61	0.57	<0.50	0.6	1.10	1.95	1.16	2.72	-	-	-	-	2.10	1.14	1.71	<0.50	1.65
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-		-	-	-	-	-	-	0.036	0.03	0.028	0.027	0.053	0.035	-	-	-	-	-	-	-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-		-	3	2	7	2.66	3.9	1.22	1.24	0.62	1	3.02	2.04	-	-	-	-	-	-	-	-	-	-	-
Nutrients																																
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-		0.021 - 231 [a]	0.04	<0.02	<0.02	0.23	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.005	<0.005	0.015	-	-	-	-	-	-	-	-	<0.010	<0.010	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	<0.10	<0.10	<0.10	0.023	0.026	<0.020	0.023	<0.020	<0.020	0.054	0040	0.038	0.032	-	-	-	-	0.038	0.020	<0.020	<0.020	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022		-	<0.10	<0.10	<0.10	-	-	-	-	-	-	-	-	0.038	0.032	-	-	-	-	-	-	-	-	-
Ammonia total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [e]	-	-	-	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.010	0.010	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	<0.01	<0.01	<0.01	<0.0030	0.0037	0.0216	0.0657	0.0042	0.0046	<0.0030	<0.0030	<0.0030	<0.0030	-	-	-	-	0.0090	0.0037	<0.0030	<0.0030	<0.0030
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																																
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-		0.004	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	1.8	2.4	<1.0	<1.0	1.18	1.05	1.17	1.34	1.71	1.74	-	-	-	-	2.54	2.13	2.65	1.14	2.21
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	1.8	2.1	1.2	<1.0	1.41	2.72	1.49	1.46	2.28	2.63	-	-	-	-	2.36	1.98	4.85	4.27	5.31
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	0.23	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	0.120	0.100	0.060	0.100	0.100
Chlorophyll-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																																
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [g]	<0.005	<0.005	0.007	0.018	0.012	0.025	0.139	0.0133	0.048	0.0315	0.0346	0.0211	0.0332	-	-	-	-	0.224	0.0703	0.0173	<0.0050	0.0206
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	<0.00010	<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	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.001	<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	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	<0.01	<0.01	<0.01	-	-	0.00459	0.00434	0.00172	0.00297	0.0019	0.00283	0.00229	0.00415	-	-	-	-	0.00397	0.00222	0.00310	<0.00010	0.00274
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.01	<0.01	<0.01	-	-	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	-	-	-	-	<0.010	<0.010	0.013	<0.010	0.015
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	24	25	27	44	43.6	31.2	31.6	25.8	26.9	35.4	34.8	38.4	37.7	-	-	-	-	26.4	23.0	45.5	<0.050	45.6
Cesium	mg/L	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	-	-	<0.000010	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	0.000042	0.000014	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0002	<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	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-	-	-	<0.00050	<0.00050	<0.00050	0.0110	<0.00050
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	0.179	<0.050	0.057	0.022	0.026	0.021	0.023	-	-	-	-	0.173	0.049	0.015	<0.010	0.023
Lead	mg/L	0.0002	0.001	0.0005	0.001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [f]	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	0.000217	0.000061	<0.000050	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	<0.0010	<0.0010	<0.0010	<0.0010	0.002	0.0014	0.0026	0.0024	-	-	-	-	0.0019	<0.0010	0.0031	<0.0010	0.0034
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	6.0	5.0	6.0	11.8	13.8	5.02	5.19	3.5	4.13	5.74	5.15	6.60	6.10	-	-	-	-	3.92	3.14	8.56	<0.0050	8.60
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00128	<0.00050	0.00074	0.00053	0.00085	-	-	-	-	0.00465	0.00148	0.00069	<0.00050	0.00064
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.0000050	0.000026	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.005	<0.005	<0.005	<0.00050	<0.00050	0.000093	0.000091	<0.000050	0.000068	0.000118	0.000094	0.000127	0.000130	-	-	-	-	0.000122	0.000064	0.000223	<0.000050	0.000209
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	-	<0.00050	<0.00050	0.00133	<0.00050	
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	-	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.24	0.15	0.23	0.339	0.515	0.618	0.539	0.299	0.475	0.383	0.437	0.443	0.682	-	-	-	-	0.631	0.326	0.564	<0.050	0.558
Rubidium	mg/L	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	0.00122	0.00107	0.00023	0.00064	<0.00020	0.0006	0.00021	0.00112	-	-	-	-	0.00129	0.00050	0.00043	<0.00020	0.00021
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	0.0001	0.0001	-	0.05	0.05	0.1	0.1	0.10	0.10	-	<0.0001	<0.0001	<0.0001	-	-	0.643	0.846	0.44	0.59	0.79	0.64	0.87	0.75	-	-	-	-	1.03	0.52	1.14	<0.10	1.21
Silver	mg/L		-	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001					-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.34	0.23	0.58	0.61	1.75	<0.50	<0.50	<0.50	<0.50	0.234	0.232	0.251	0.275	-	-	-	-	0.313	0.241	0.331	<0.050	0.310
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.019	0.018	0.022	-	-	0.0295	0.0284	0.0216	0.0242	0.0337	0.0336	0.0369	0.0434	-	-	-	-	0.0299	0.0227	0.0462	<0.0010	0.0453
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	-	-	-	-	-	0.74	<0.50	<0.50	0.66	1.2	0.9	2.10	1.27	-	-	-	-	0.52	<0.50	3.29	<0.50	2.70
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.01	<0.01	<0.01	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	-	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	mg/L	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	0.000414	0.000573	-	-	-	-	-	-	-	-	-	-	-	-	0.000447	0.000145	0.000445	<0.000010	0.000277
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	<0.01	<0.01	<0.01	<0.0010	0.0025	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	0.0022	<0.0010	<0.0010

Notes
CV-093 was not sampled in August 2019 because it was dry, however, physical paramters from a Tote Road Monitoring Program sample taken on July 27, 2019 are included.
CV-093 was not sampled in July or August 2020 because it was dry, however, physical parameters from a Tote Road Monitoring Program sample taken on June 28, 2020 are included.
Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.
2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.
2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.
* Result qualified by analytical laboratory.
SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:
(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.
Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.4 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-060 (CV078)

Parameters	Units	Method Detection Limit 2005	Method Detection Limit 2006	Method Detection Limit 2011	LOR 2015	LOR 2016	LOR 2017	LOR 2018	LOR 2019	LOR 2020	LOR 2021	CCME Guideline
In Situ Parameters												
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	5.5-9.5
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	-
pH	pH units	-	-	-	-	-	-	-	-	-	-	6.5 - 9.0
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters											-	
pH	pH units	-	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0
Conductivity	µS/cm	1	5	5	-	-	-	-	-	-	1.0	-
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-
Hardness	mg/L as $CaCO_3$	0.5	1	0.5	10	10	10	10/20	0.5	0.5	0.50	-
TSS	mg/L	30	5	1	2	2	2	2	2	2	1.0	-
TDS	mg/L	-	-	2	20	20	20	10	20	10	13/10	-
Dissolved Anions												
Alkalinity	mg/L as $CaCO_3$	2	5	5	10	10	10	10	10	10	1.0	-
Br^-	mg/L	0.3	0.05	0.25	-	-	-	-	-	-	-	-
Cl^-	mg/L	0.2	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-
Fluoride	mg/L	-	-		-	0.02	0.02	0.02	-	-	-	-
SO_4^-	mg/L	0.5	1	1	0.3	0.3	0.3	0.3	-	-	-	-
Nutrients												
NH_3+NH_4	mg/L N	0.1	0.02	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]
NO_2^- (Nitrite)	mg/L N	0.06	0.005	0.1	-	-	-	-	0.01	0.01	0.010	0.06
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9
NO_2+NO_3	mg/L N	0.06	0.1	0.1	-	-	-	-	0.022	0.022	-	-
Ammonia total as N	mg/L	-	-		0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-
Dissolved Phosphorus	mg/L	0.02	-		-	-	-	-	-	-	-	-
Organic Compounds												
Phenols	mg/L	0.001	0.001	0.001	-	-	-	-	-	-	-	0.004
DOC	mg/L	-	-	0.5	1	1	0.5	0.5	0.50	0.50	0.50	-
TOC	mg/L	-	-	0.5	1	1	0.5	0.5	0.50	0.50	0.50	-
TKN	mg/L	-	-	0.1	0.15	0.15	0.15	0.15	-	-	0.050	-
Chlorophyll-a	mg/m3	-	-	0.2	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m3	-	-	0.2	-	-	-	-	-	-	-	-
Total Metals and Non-Metals												
Aluminum	mg/L	0.004	0.005	0.003	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]
Antimony	mg/L	0.0004	-	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Arsenic	mg/L	0.005	0.001	0.0001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005
Barium	mg/L	0.001	0.01	0.00005	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-
Beryllium	mg/L	0.005	-	0.0005	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Bismuth	mg/L	0.0003	-	0.0005	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-
Boron	mg/L	0.05	0.01	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-
Cadmium	mg/L	0.0001	0.0001	0.00001	0.00009	0.00001	0.00001	0.0000050	0.0000050	0.000005	0.0000050	0.000017
Calcium	mg/L	0.05	1	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-
Cesium	mg/L	-	-		-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-
Chromium	mg/L	0.001	0.001	0.0005	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-
Cobalt	mg/L	0.0003	0.0002	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Copper	mg/L	0.0008	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]
Iron	mg/L	0.02	0.03	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3
Lead	mg/L	0.0002	0.001	0.00005	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]
Lithium	mg/L	-	-	0.005	-	0.001	0.001	0.001	0.001	0.001	0.0010	-
Magnesium	mg/L	0.005	1	0.1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-
Manganese	mg/L	0.0007	0.01	0.00005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026
Molybdenum	mg/L	0.0003	0.005	0.00005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073
Nickel	mg/L	0.001	0.005	0.0005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]
Phosphorus	mg/L	-	-		-	0.05	0.05	0.05	0.05	0.05	0.050	-
Potassium	mg/L	0.02	0.01	0.05	1	0.05	0.05	0.05	0.05	0.05	0.050	-
Rubidium	mg/L	-	-		-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-
Selenium	mg/L	0.005	0.001	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001
Silicon	mg/L	-	-	0.05	-	0.05	0.05	0.1	0.1	0.10	0.10	-
Silver	mg/L	0.0001	0.0001	0.000001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001
Sodium	mg/L	0.05	0.05	0.0012	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-
Strontium	mg/L	0.001	0.001	0.0001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-
Sulfur	mg/L	-	-		-	0.5	0.5	0.5	0.5	0.5	0.50	-
Tellurium	mg/L	-	-		-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-
Thallium	mg/L	0.0002	-	0.0001	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008
Thorium	mg/L	-	-		-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Tin	mg/L	0.001	0.01	0.0001	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Titanium	mg/L	0.003	-	0.01	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-
Tungstun	mg/L	-	-		-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Uranium	mg/L	-	-	0.00001	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015
Vanadium	mg/L	0.0009	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03
Zirconium	mg/L					0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-
Dissolved Metals and Non-Metals												
Aluminum	mg/L	0.004	0.005	0.003	0.005	-	-	-	-	0.005	0.0050	0.005
Antimony	mg/L	0.0004	-	0.0001	0.0001	-	-	-	-	0.0001	0.00010	-
Arsenic	mg/L	0.005	0.001	0.0001	-	-	-	-	-	0.0001	0.00010	0.0001
Barium	mg/L	0.001	0.01	0.00005	-	-	-	-	-	0.0001	0.00010	-
Beryllium	mg/L	0.005	-	0.0005	0.00001	-	-	-	-	0.0001	0.00010	-
Bismuth	mg/L	0.0003	-	0.0005	0.05	-	-	-	-	0.00005	0.000050	-
Boron	mg/L	0.05	0.01	0.01	-	-	-	-	-	0.01	0.010	-
Cadmium	mg/L	0.0001	0.0001	0.00001	-	-	-	-	-	0.000005	0.0000050	-
Calcium	mg/L	0.05	1	0.05	0.0002	-	-	-	-	0.05	0.050	0.00001
Chromium	mg/L	0.001	0.001	0.0005	0.01	-	-	-	-	0.0005	0.00050	0.05
Cobalt	mg/L	0.0003	0.0002	0.0001	0.00005	-	-	-	-	0.0001	0.00010	-
Copper	mg/L	0.0008	0.001	0.0005	0.05	-	-	-	-	0.0002	0.00020	-
Iron	mg/L	0.02	0.03	0.03	0.0005	-	-	-	-	0.01	0.010	0.0002
Lead	mg/L	0.0002	0.001	0.00005	0.00001	-	-	-	-	0.00005	0.000050	0.01
Magnesium	mg/L	0.005	1	0.1	0.0005	-	-	-	-	0.005	0.0050	0.05
Manganese	mg/L	0.0007	0.01	0.00005	0.05	-	-	-	-	0.0005	0.00050	0.0005
Mercury	mg/L	-	-	0.00001	0.00005	-	-	-	-	0.000005	0.0000050	0.00001
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	-	0.00005	0.000050	0.00005
Nickel	mg/L	0.001	0.005	0.0005	0.5	-	-	-	-	0.0005	0.00050	0.0005
Potassium	mg/L	0.02	0.01	0.05	-	-	-	-	-	0.05	0.050	0.05
Selenium	mg/L	0.005	0.001	0.001	0.00001	-	-	-	-	0.00005	0.000050	0.00005
Silver	mg/L	0.0001	0.0001	0.000001	0.00001	-	-	-	-	0.00005	0.000050	-
Sodium	mg/L	0.05	0.05	0.0012	-	-	-	-	-	0.05	0.050	0.5
Strontium	mg/L	0.001	0.001	0.0001	0.001	-	-	-	-	0.001	0.0010	-
Thallium	mg/L	0.0002	-	0.0001	0.00001	-	-	-	-	0.00001	0.000010	0.00001
Tin	mg/L	0.001	0.01	0.0001	-	-	-	-	-	0.0001	0.00010	-
Titanium	mg/L	0.003	-	0.01	-	-	-	-	-	0.0003	0.00030	-
Uranium	mg/L	-	-	0.00001	0.00001	-	-	-	-	0.00001	0.000010	0.00001
Vanadium	mg/L	0.0009	0.001	0.001	-	-	-	-	-	0.0005	0.00050	-
Zinc	mg/L	0.001	0.01	0.003	0.001	-		-	-	0.001	0.0010	0.001

Date (2005, 2006, 2015, 2016)

Parameters	13-Jun-05	06-Aug-05	09-Sep-05	13-Jun-06	02-Aug-06	08-Sep-06	12-Aug-15 US	12-Aug-15 DS	30-Jun-16 DS	30-Jun-16 US	25-Aug-16 DS	25-Aug-16 US
In Situ Parameters												
Temperature	0.22	9.28	4.02	-0.06	13.05	3.95	9.6	9.3	8.16	9.36	9.8	10
Specific Conductance	0.079	0.222	0.284	0.097	0.237	0.267	0.314	0.315	7.264	7.264	0.299	0.297
Dissolved Oxygen (mg/L)	13.48	10.95	12.72	14.17	11.43	12.55	-	-	-	-	-	-
Dissolved Oxygen (%)	-	-	-	-	-	-	102.7	102.3	100.4	100.1	102.5	103.8
pH	7.36	8.30	7.96	8.22	8.26	8.36	8.53	8.48	7.81	7.93	8.24	8.25
Wetted Width	-	-	-	ice	9	9	3	3	-	-	-	-
Average Depth	-	-	-	0.15	0.25	0.2	0.1	0.1	-	-	-	-
Flow Rate	-	-	-	-	0.74	0.96	-	-	-	-	-	-
Physical Parameters												
pH	-	-	-	7.56	8.10	8.10	8.16	8.32	8.09	8.09	8.42	8.42
Conductivity	83	234	269	104	244	277	-	-	-	-	-	-
Turbidity	0.40	<0.10	<0.10	0.5	<0.10	-	1.45	0.24	0.26	0.17	0.13	0.14
Hardness	41.0	124	160	52	137	141	156	152	60	59	165	163
TSS	-	-	-	-	-	-	2.4	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	63	123	120	68	159	180	159 *	143 *	65	70	152	148
Dissolved Anions												
Alkalinity	40	120	141	51	132	146	158	152	61	64	161	158
Br^-	<0.3	<0.3	<0.3	<0.05	<0.05	<0.05	-	-	-	-	-	-
Cl^-	0.9	0.2	0.6	<1	<1	<1	3.08	0.79	<0.50	<0.50	1.19	1.19
Fluoride	-	-	-	-	-	-	-	-	<0.020	<0.020	0.023	0.024
SO_4^-	0.6	0.8	1.9	2.0	1.0	5.0	3.84	2.68	<0.30	0.31	3.37	3.35
Nutrients												
NH_3+NH_4	0.2	0.6	0.8	<0.02	<0.02	<0.02	0.24	0.25	<0.15	<0.15	<0.15	<0.15
NO_2^- (Nitrite)	<0.06	<0.06	<0.06	<0.005	<0.005	0.018	-	-	-	-	-	-
NO_3^- (Nitrate)	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	0.030	0.026	<0.020	<0.020	<0.020	<0.020
NO_2+NO_3	<0.06	<0.06	<0.06	<0.10	<0.10	<0.10	-	-	-	-	-	-
Ammonia total as N	-	-	-	-	-	-	<0.050	<0.050	0.021	<0.020	0.027	0.041
Total Phosphorus	<0.02	<0.02	<0.10	<0.01	<0.01	<0.01	0.0044	<0.0030	0.0193	0.0282	0.01	0.0139
Dissolved Phosphorus	<0.02	<0.02	<0.10	-	-	-	-	-	-	-	-	-
Organic Compounds												
Phenols	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-
DOC	-	-	-	-	-	-	2.4	1.9	1	<1.0	1.5	1.5
TOC	-	-	-	-	-	-	2.2	1.8	1.1	1.0	1.6	1.6
TKN	-	-	-	-	-	-	0.24	0.25	<0.15	<0.15	<0.15	<0.15
Chlorophyll-a	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals												
Aluminum	0.006	<0.004	<0.004	0.006	<0.005	<0.005	0.059	0.016	0.011	0.016	<0.010	<0.010
Antimony	<0.0004	<0.0004	<0.0004	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	0.00011	<0.00010	<0.00010	<0.00010	0.0001	<0.00010
Barium	<0.001	0.002	0.003	<0.01	<0.01	<0.01	-	-	0.00166	0.0019	0.00389	0.00385
Beryllium	<0.005	<0.005	<0.005	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.0003	<0.0003	<0.0003	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium	13.2	35.5	44.7	17	41	41	45	43.1	17.4	16.8	45.9	45.6
Cesium	-	-	-	-	-	-			<0.000010	<0.000010	<0.000010	<0.000010
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Iron	<0.05	<0.02	<0.02	<0.03	<0.03	<0.03	0.053	<0.050	<0.050	<0.050	<0.050	<0.050
Lead	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Lithium	-	-	-	-	-	-	-	-	<0.0010	<0.0010	0.0015	0.0016
Magnesium	1.91	8.74	11.7	3	9	11	14	11.7	3.94	4.03	12.2	11.9
Manganese	0.0016	<0.0007	<0.0007	<0.01	<0.01	<0.01	0.000850	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.000050	<0.000050	0.000093	0.000091
Nickel	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	-	-	-	-	-	-	-	-	<0.050	<0.050	<0.050	<0.050
Potassium	0.26	0.26	0.27	0.22	0.28	0.30	0.508	0.355	0.21	0.216	0.344	0.355
Rubidium	-	-	-	-	-	-	-	-	<0.00020	0.00022	0.00032	0.00034
Selenium	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	-	-	-	-	-	-	-	-	0.368	0.385	0.789	0.749
Silver	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	0.31	0.27	0.36	0.31	0.31	0.47	1.71	0.61	<0.50	<0.50	0.72	0.7
Strontium	0.0098	0.0226	0.0293	0.013	0.029	0.030	-	-	0.0123	0.0121	0.035	0.0337
Sulfur	-	-	-	-	-	-	-	-	<0.50	<0.50	1.52	1.46
Tellurium	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	<0.003	<0.003	<0.003	-	-	-	-	-	0.0006	0.00083	<0.00030	0.00032
Tungstun	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	-	-	-	-	-	-	0.000577	0.000403	0.000072	0.000073	0.000468	0.000458
Vanadium	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	-	-	-	-	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Metals and Non-Metals												
Aluminum	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.0050	<0.0050	-	-	-	-
Antimony	<0.0004	<0.0004	<0.0004	-	-	-	-	-	-	-	-	-
Arsenic	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010	-	-	-	-
Barium	<0.001	0.002	0.003	<0.01	<0.01	<0.01	-	-	-	-	-	-
Beryllium	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-	-
Bismuth	<0.0003	<0.0003	<0.0003	-	-	-	-	-	-	-	-	-
Boron	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-
Cadmium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	-	-	-	-
Calcium	13.1	37.5	42.4	16	40	40	41.3	42.8	-	-	-	-
Chromium	<0.001	0.002	0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-
Cobalt	<0.0003	0.0004	<0.0003	<0.0002	<0.0002	<0.0002	-	-	-	-	-	-
Copper	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	0.00034	0.00024	-	-	-	-
Iron	<0.05	<0.02	<0.02	<0.03	<0.03	<0.03	<0.010	<0.010	-	-	-	-
Lead	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.000050	<0.000050	-	-	-	-
Magnesium	2.09	9.19	11.0	3	9	10	12.8	10.9	-	-	-	-
Manganese	0.0013	<0.0007	<0.0007	<0.01	<0.01	<0.01	<0.00050	<0.00050	-	-	-	-
Mercury	-	-	-	-	-	-	<0.000010	<0.000010	-	-	-	-
Molybdenum	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	0.000125	0.000086	-	-	-	-
Nickel	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.00050	<0.00050	-	-	-	-
Potassium	0.26	0.28	0.26	0.20	0.27	0.28	0.488	0.361	-	-	-	-
Selenium	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050	-	-	-	-
Silver	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	1.61	0.61	-	-	-	-
Sodium	0.30	0.28	0.34	0.30	0.30	0.46	-	-	-	-	-	-
Strontium	0.0099	0.0247	0.0281	0.012	0.028	0.030	-	-	-	-	-	-
Thallium	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010	-	-	-	-
Tin	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	-	-	-	-
Titanium	<0.003	<0.003	<0.003	-	-	-	-	-	-	-	-	-
Uranium	-	-	-	-	-	-	0.000549	0.000409	-	-	-	-
Vanadium	<0.0009	0.0043	0.0042	<0.001	<0.001	0.002	-	-	-	-	-	-
Zinc	<0.001	0.001	0.002	<0.01	<0.01	<0.01	<0.0010	0.0026	-	-	-	-

Date (2017, 2018, 2019)

Parameters	29-Jun-17 US	29-Jun-17 DS	03-Jul-18 US	03-Jul-18 DS	02-Sep-18 US	02-Sep-18 US Duplicate	02-Sep-18 DS	22-Jun-19 US	22-Jun-19 DS	11-Aug-19 US	11-Aug-19 DS
In Situ Parameters											
Temperature	3.8	4.4	5.2	5.5	6.0	6.0	5.6	4.3	3.9	13.6	13.6
Specific Conductance	0.154	0.123	0.1668	0.1668	0.237	0.2367	0.2371	0.1616	0.1619	0.3037	0.3044
Dissolved Oxygen (mg/L)	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (%)	102.20	102.80	97.70	97.60	99.30	99.30	96.30	99.30	98.60	98.7	99.8
pH	7.65	7.87	8.19	8.18	8.39	8.39	8.3	8.22	8.23	8.26	8.36
Wetted Width	11	10	12.4	12.7	4.5	4.5	4.3	-	-	-	-
Average Depth	2	0.19	0.1	0.12	0.08	0.08	0.12	-	-	-	-
Flow Rate	2.90	2.78	1.11	0.75	0.10	0.10	0.08	-	-	-	-
Physical Parameters											
pH	7.93	7.91	8.18	8.17	8.42	8.37	8.41	8.24	8.22	8.39	8.46
Conductivity	-	-	-	-	-	-	-	-	-	-	-
Turbidity	0.5	0.37	0.29	0.56	<0.10	<0.10	<0.10	0.13	0.14	0.15	0.21
Hardness	46	44	91	90	146	150	147	106	105	153	156
TSS	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	50	56	102	101	140	155	155	99	103	163	166
Dissolved Anions											
Alkalinity	41	43	85	82	149	146	149	103	104	166	171
Br^-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	<0.50	<0.50	0.69	0.7	0.98	0.99	1.16	0.59	0.64	1.21	1.41
Fluoride	<0.020	<0.020	0.023	0.023	0.037	0.038	0.037	-	-	-	-
SO_4^-	<0.30	<0.30	0.62	0.62	2.02	2.02	2.03	-	-	-	-
Nutrients											
NH_3+NH_4	-	-	-	-	-	-	-	-	-		-
NO_2^- (Nitrite)	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
NO_3^- (Nitrate)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
NO_2+NO_3	-	-	-	-	-	-	-	<0.022	<0.022	<0.022	<0.022
Ammonia total as N	<0.020	<0.020	<0.020	<0.020	-	-	-	<0.010	<0.010	0.014	<0.010
Total Phosphorus	0.0085	0.0304	<0.0030	<0.0030	0.015	<0.0030	<0.0030	<0.0030	<0.0030	0.012	<0.0030
Dissolved Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds											
Phenols	-	-	-	-	-	-	-	-	-	-	-
DOC	1.75	1.78	1.75	1.74	1.72	1.86	1.72	1.73	1.81	1.62	1.7
TOC	2.24	2.13	2.13	1.76	2.01	2.45	2.62	2.34	2.54	3.39	2.23
TKN	<0.15	<0.15	<0.15	<0.15	<0.15	0.18	<0.15	-	-	-	-
Chlorophyll-a	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals											
Aluminum	0.0271	0.024	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.009	0.0097	0.0053	0.0074
Antimony	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	0.00011
Barium	0.00131	0.00128	0.00202	0.00213	0.00349	0.00348	0.00351	0.00236	0.00260	0.00459	0.0045
Beryllium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	12.6	12.1	26	25.3	41.4	42.3	41.1	30.4	29.1	44.1	42.8
Cesium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Iron	0.075	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	0.0012	0.0012
Magnesium	3.44	3.4	6.38	6.53	10.3	10.8	10.7	7.61	7.79	11.5	11.2
Manganese	0.00113	0.00096	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Mercury	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050
Molybdenum	<0.000050	<0.000050	<0.000050	<0.000050	0.000078	0.000075	0.000067	<0.000050	<0.000050	0.000105	0.000091
Nickel	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	0.24	0.245	0.227	0.234	0.301	0.299	0.304	0.252	0.262	0.365	0.368
Rubidium	0.00021	0.00022	<0.00020	<0.00020	0.00022	0.00025	0.00026	0.00021	0.00023	0.00035	0.00042
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	0.3	0.29	0.44	0.45	0.65	0.64	0.65	0.52	0.52	0.68	0.65
Silver	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	<0.50	<0.50	0.338	0.34	0.584	0.58	0.581	0.355	0.356	0.67	0.661
Strontium	0.0078	0.0079	0.0178	0.0179	0.0311	0.0315	0.0313	0.0207	0.0214	0.0367	0.0361
Sulfur	<0.50	<0.50	<0.50	<0.50	1.05	1.03	1.02	<0.50	0.53	2.67	1.23
Tellurium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.00091	0.00087	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00049	<0.00030	<0.00030	0.00038
Tungstun	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.000047	0.000039	0.000181	0.000185	0.000432	0.000421	0.000421	0.000200	0.000223	0.000521	0.00049
Vanadium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals and Non-Metals											
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-
Uranium	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-

Date (2020, 2021)

Parameters	22-Jun-20 US	22-Jun-20 DS	20-Jul-20 US	20-Jul-20 DS	20-Jul-20 DS01	14-Aug-20 US	14-Aug-20 DS	14-Jun-21 DS	14-Jun-21 US	16-Aug-21 DS	16-Aug-21 US
In Situ Parameters											
Temperature	1.9	1.9	15.6	15.2	15.2	8.5	8.3	1.2	1.0	7.3	7.3
Specific Conductance	0.0960	0.0966	0.257	0.2582	0.2582	0.3185	0.3189	72.4	72	274.5	274.1
Dissolved Oxygen (mg/L)	13.57	13.63	9.93	9	9	100.4	99.6	13.34	14.18	11.83	11.80
Dissolved Oxygen (%)	13.57	98.10	99.4	98.50	98.50	11.75	11.72	99.6	99.8	100.8	100.6
pH	7.98	7.97	8.39	8.4	8.4	8.45	8.39	7.69	7.72	8.48	8.43
Wetted Width	-	-	-	-	-	-	-	-	-	-	-
Average Depth	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters											
pH	7.84	7.81	8.38	8.36	8.37	8.49	8.46	7.79	7.79	8.28	8.29
Conductivity	99.4	100	266	268	268	326	329	78.4	77.3	286	286
Turbidity	0.36	0.45	<0.10	<0.10	<0.10	<0.10	<0.10	4.18	2.24	<0.10	0.23
Hardness	53	53.3	143	143	143	183	181	37.7	37.3	155	154
TSS	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	12.8	8.1	<1.0	<1.0
TDS	55	53	138	154	152	194	183	46	49	147	152
Dissolved Anions											
Alkalinity	50	50	142	143	143	170	168	49.6	53.1	154	154
Br^-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	<0.50	0.61	1.44	1.8	1.52	2.57	2.79	0.98	0.86	1.87	1.90
Fluoride	-	-	-	-	-	-	-	-	-	-	-
SO_4^-	-	-	-	-	-	-	-	-	-	-	-
Nutrients											
NH_3+NH_4	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.0010	<0.010	<0.010	<0.010	<0.010
NO_3^- (Nitrate)	<0.020	<0.020	0.027	0.041	<0.020	0.0362	0.0371	<0.020	<0.020	<0.020	<0.020
NO_2+NO_3	-	-	-	-	-	-	-	-	-	-	-
Ammonia total as N	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	0.0132	0.0034	<0.0030	<0.0030	<0.0030	<0.0020	<0.0020	0.0096	0.0085	<0.0030	<0.0030
Dissolved Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds											
Phenols	-	-	-	-	-	-	-	-	-	-	-
DOC	2.93	2.83	2.47	2.28	2.11	1.92	2	3.08	3.08	3.12	3.15
TOC	3.04	3.24	2.74	2.77	2.67	1.55	1.81	3.08	3.09	5.34	5.22
TKN	-	-	-	-	-	-	-	0.190	0.180	0.150	0.190
Chlorophyll-a	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals											
Aluminum	0.0164	0.0277	<0.0050	0.0067	0.0054	<0.0030	0.0033	0.0752	0.0329	<0.0050	<0.0050
Antimony	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	0.00013	<0.00010	<0.00010	<0.00010	<0.00010
Barium	0.00153	0.00216	0.00383	0.00418	0.0039	0.00428	0.00442	0.00175	0.00129	0.00389	0.00388
Beryllium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.010	<0.010	0.011	0.011	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.0000050	0.0000075	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	15.2	14.3	41	40	40.5	48	49.5	11.8	11.2	39.9	40.1
Cesium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	<0.000010	<0.000010	<0.000010
Chromium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	<0.00050	0.00097	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Iron	0.017	0.034	<0.010	<0.010	<0.010	<0.010	<0.010	0.069	0.033	<0.010	<0.010
Lead	0.000051	0.000085	<0.000050	0.000051	<0.000050	<0.000050	<0.000050	0.000075	<0.000050	<0.000050	<0.000050
Lithium	<0.0010	<0.0010	0.0015	0.0014	0.0014	0.0017	0.0017	<0.0010	<0.0010	0.0011	0.0012
Magnesium	3.6	3.45	9.96	10	10.3	13.7	13.7	2.81	2.68	12.4	12.4
Manganese	0.00098	0.00192	<0.00050	<0.00050	<0.00050	<0.00010	0.00016	0.00375	0.00295	<0.00050	<0.00050
Mercury	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	<0.000050	<0.000050	0.000069	0.000068	0.000071	0.000093	0.000098	<0.000050	<0.000050	0.000071	0.000066
Nickel	<0.00050	0.0007	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	0.229	0.338	0.366	0.389	0.387	0.346	0.351	0.308	0.275	0.382	0.380
Rubidium	<0.00020	0.00034	0.00035	0.00043	0.00043	0.00029	0.00031	0.00048	0.00027	0.00036	0.00031
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	0.28	0.3	0.88	0.88	0.88	0.88	0.87	0.36	0.28	1.00	1.01
Silver	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	0.275	0.437	0.795	0.812	0.813	1.19	1.18	0.351	0.360	0.986	0.995
Strontium	0.0102	0.0097	0.0307	0.0309	0.0314	0.0407	0.0413	0.0093	0.0085	0.0302	0.0300
Sulfur	<0.50	<0.50	1.16	1.27	1.29	2.29	2.23	<0.50	<0.50	1.19	1.18
Tellurium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	<0.00010	<0.00010
Titanium	0.00053	0.00093	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00241	0.00099	<0.00030	<0.00030
Tungstun	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.000062	0.000079	0.000333	0.000369	0.000369	0.00056	0.000577	0.000080	0.000045	0.000495	0.000479
Vanadium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	<0.0030	0.01	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals and Non-Metals											
Aluminum	0.00830	0.0065	0.0089	<0.0050	<0.0050	0.0011	<0.0010	0.0077	0.0074	<0.0050	<0.0050
Antimony	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	<0.00010	<0.00010	0.00011	0	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	0.00151	0.00152	0.00415	0	0.00423	0.00436	0.00419	0.00140	0.00114	0.00411	0.00421
Beryllium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.010	<0.010	0.011	0	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	15.10000	15	40	40	40.1	50.4	50.8	10.9	10.7	40.7	40.5
Chromium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	0.00031	0.00033	0.0003	0	0.00025	0.0003	0.00027	<0.00020	<0.00020	0.00026	0.00026
Iron	0.01100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010
Lead	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	3.73000	3.84	10.4	10	10.5	13.9	13.2	2.57	2.60	12.8	12.8
Manganese	0.00092	0.00077	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010	0.00442	0.00450	<0.00050	<0.00050
Mercury	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	<0.000050	<0.000050	0.000074	0	0.000074	0.000095	0.000112	<0.000050	<0.000050	0.000066	0.000072
Nickel	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	0.22600	0.227	0.404	0	0.401	0.494	0.422	0.260	0.254	0.411	0.404
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	0.28600	0.286	0.851	1	0.806	1.23	1.18	0.339	0.342	1.03	1.02
Strontium	0.00960	0.0097	0.0328	0	0.0332	0.0381	0.0385	0.0084	0.0080	0.0306	0.0312
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.00036	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	0.00006	0.000061	0.000331	0	0.000369	0.000537	0.000548	0.000065	0.000037	0.000466	0.000456
Vanadium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	0.00250	0.0029	0.0028	0	0.0016	0.0011	0.0018	<0.0010	<0.0010	<0.0010	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.5 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-070 (BG50)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date																														
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2005			2006			2015				2016				2017		2018					2019				2020					
												07-Jun-05	06-Aug-05	09-Sep-05	13-Jun-06	02-Aug-06	08-Sep-06	03-Jul-15	03-Jul-15	11-Aug-15	11-Aug-15	30-Jun-16	30-Jun-16	25-Aug-16	25-Aug-16	29-Jun-17	29-Jun-17	03-Jul-18	03-Jul-18	03-Jul-18	02-Sep-18	02-Sep-18	22-Jun-19	22-Jun-19	09-Aug-19	09-Aug-19	22-Jun-20	22-Jun-20	20-Jul-20	20-Jul-20	14-Aug-20	14-Aug-20
																		US	DS	US	DS	DS	US	DS	US	US	DS	US	US Duplicate	DS	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
In Situ Parameters																																										
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	0.26	9.75	6.05	-0.05	13.74	6.53	-	-	11.4	11.3	10.4	7.2	11.5	11.3	5.9	8.5	6.3	6.3	6.5	7.9	7.9	3.1	3.1	15.6	15.6	2.3	2.4	14.2	14.3	8.5	9
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-	-	0.067	0.139	0.145	0.112	0.137	0.152	0.130	0.084	0.183	0.180	6.109	6.213	0.175	0.175	0.126	0.171	0.104	0.104	0.1041	0.1394	0.1418	0.1177	0.1177	0.1707	0.1736	0.1194	0.1192	0.1618	0.1629	0.1988	0.2003
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	5.5-9.5	13.06	10.71	11.89	13.58	10.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.58	13.49	10.16	10.19	99.9	101.3
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101.5	101.9	98.5	99.4	101.4	100.5	102.4	111.7	96.1	96.1	96.6	100.4	101.2	99.0	99.1	102.5	102.7	99	98.4	98.8	99.5	11.73	11.72
pH	pH units	-	-	-	-	-	-	-	-	-	6.5 - 9.0	7.58	8.03	7.70	8.02	8.1	8.16	8.20	8.17	8.42	8.42	6.21	7.47	8.22	8.15	7.78	7.76	8.17	8.17	8.06	8.37	8.40	8.16	8.12	8.31	8.36	7.91	7.89	8.2	8.24	8.37	8.38
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	-	-	-	52	42	38	-	-	6	6	-	-	-	-	5	10.6	-	-	7.9	-	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	-	-	0.2	0.2	-	-	-	-	2	0.19	-	-	0.09	-	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.09	-	-	-	-	-	-	-	-	-	3.8	1.06742	-	-	0.244	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																																										
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	-	-	-	7.7	7.61	7.64	7.98	7.99	8.20	8.17	7.86	7.94	8.32	8.28	7.94	7.92	7.97	7.95	7.99	8.34	8.39	8.09	8.11	8.14	7.78	7.81	7.8	8.24	8.23	8.39	8.4
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	72	149	143	124	140	171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	123	172	170	203	206
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-	0.33	0.25	0.16	0.5	0.3	-	0.29	0.28	0.2	0.2	0.6	0.46	0.28	0.26	0.44	0.72	0.63	0.8	0.6	0.24	0.23	0.23	0.25	0.30	0.37	0.52	0.59	0.15	0.17	0.22	0.21
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	32.4	79.5	82.0	61	75	80	63	62	80	81	48	48	85	93	55	55	52	52	53	81	85	74	74.2	84.8	87.4	62.3	62.5	77.8	83.7	102	105
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	-	-	-	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	54	74	86	81	91	111	70	73	86 *	84 *	60	65	83	84	66	66	68	72	55	90	95	77	80	104	112	92	93	94	95	131	128
Dissolved Anions																																										
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	33	74	71	62	74	87	63	63	82	80	47	50	84	89	51	50	43	51	47	83	85	73	74	89	83	58	58	77	83	99	100
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	<0.3	<0.3	<0.3	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	0.9	0.8	0.9	<1	<1	2	1.29	1.30	2.06	2.20	1.26	1.26	1.89	1.88	1.29	1.3	1.12	1.13	1.16	1.55	1.76	1.46	1.45	1.62	2.20	3.12	2.67	3.46	3.52	4.87	5.04
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.020	<0.020	0.024	0.025	<0.020	<0.020	<0.020	<0.020	<0.020	0.03	0.029	-	-	-	-	-	-	-	-	-	-
SO_4^-	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	0.7	0.5	0.6	2	<1	3	0.82	1.03	1.55	2.28	0.65	0.62	1.25	1.21	0.64	0.61	0.58	0.58	0.6	0.84	0.91	-	-	-	-	-	-	-	-	-	-
Nutrients																																										
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]	0.2	0.1	<0.10	0.04	0.11	<0.02	<0.15	<0.15	0.28	0.22	<0.15	<0.15	0.2	<0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.06	<0.06	<0.06	<0.005	<0.005	0.013	-	-	-	-					-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.0010
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	0.06	<0.05	<0.05	<0.10	<0.10	<0.10	<0.020	0.035	<0.020	0.052	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.154	2.62	0.031	0.03	<0.020	<0.020	<0.0050	0.01
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022		-	0.06	<0.06	<0.06	<0.10	<0.10	<0.10	-	-	-	-					-	-	-	-	-	-	-	<0.022	<0.022	0.154	2.62	-	-	-	-	-	-
Ammonia total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	-	-	-	-	-	-	-	-	-	-	<0.020	0.054	0.061	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	<0.02	<0.02	<0.10	<0.01	<0.01	<0.01	0.0043	0.0058	0.0040	0.0038	0.0044	0.0032	0.0231	0.0088	0.0061	0.0066	0.004	0.0037	0.004	<0.0030	<0.0030	0.0119	0.0033	0.0049	<0.0030	0.0056	0.0071	<0.0030	0.0033	0.0036	0.0038
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																																										
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	2.1	2.1	2.5	2.6	2.1	1.9	2.1	2.3	2.24	2.14	1.9	2.07	1.87	2.48	2.41	2.68	2.79	2.33	2.44	3.47	3.42	2.99	3.36	2.53	2.54
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	2.1	1.9	2.7	2.6	2.3	2.2	2.5	2.2	2.48	2.79	2.16	2.18	2.08	3.19	3.00	3.39	3.27	2.79	2.64	3.69	3.77	3.34	3.54	2.44	2.38
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	-	-	-	<0.15	<0.15	0.28	0.22	<0.15	<0.15	0.2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-	-	-							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																																										
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.008	<0.004	<0.004	<0.005	<0.005	0.006	<0.010	<0.010	<0.010	<0.010	0.018	0.014	<0.010	<0.010	0.0282	0.0269	0.0063	0.0067	0.0085	<0.0050	0.0058	0.0183	0.0086	0.0101	0.0503	0.0262	0.0441	0.0057	0.0098	0.0033	0.009
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-			<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	0.00013	<0.00010	<0.00010	0.00010	<0.00010	0.00014	0.00012
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.001	0.004	0.004	<0.01	<0.01	<0.01	-	-	-	-	0.00347	0.0034	0.00545	0.00569	0.00391	0.00394	0.00328	0.00337	0.00336	0.00532	0.00527	0.00484	0.00471	0.00594	0.0069	0.00469	0.00468	0.00534	0.00542	0.00603	0.00607
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.0000050	0.0000050	0.000005	0.0000050	0.000017	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000123	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	8.86	18.3	18.5	14	17	19	14.1	13.9	20.2	19.2	10.5	10.6	19	21.2	12.3	12.5	12.1	12.1	12.2	18.9	20.5	16.3	16.5	19.1	20.6	13.5	13.7	19	19.4	24.9	25
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	0.0008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<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	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.0008	0.0009	<0.0008	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.00050	0.00063	<0.00050	0.00055	<0.00050	0.00051
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	<0.02	<0.02	<0.02	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.016	0.016	0.018	0.021	0.019	0.027	0.016	0.035	0.081	0.042	0.043	0.02	0.025	0.03	0.029
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.00050	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000117	<0.000050	0.00006	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	-	-	-	-	-	<0.0010	<0.0010	0.0012	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0014	0.0015
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	2.49	8.23	8.71	7	8	8	6.28	6.36	9.52	9.21	5.19	5.14	9.19	9.72	5.89	5.87	5.37	5.39	5.41	8.21	8.16	7.88	8.26	8.41	8.47	6.86	6.65	9.21	8.79	10.9	10.7
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.0071	0.0010	0.0009	<0.01	<0.01	<0.01	<0.0010	<0.0010	<0.00050	0.00118	0.00154	0.00144	0.00101	0.00106	0.00222	0.00208	0.00089	0.00084	0.00093	0.00073	0.00078	0.00131	0.00091	0.00125	0.00264	0.00327	0.00331	0.00113	0.00132	0.00088	0.00081
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.00050	<0.00050	0.000063	0.000054	0.000067	0.000065	0.000054	0.00006	<0.000050	<0.000050	0.000071	0.000066	0.000076	0.000056	0.000064	0.000097	0.000114	0.000064	0.000083	0.00006	0.000073	0.000085	0.000075
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	0.00071	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00077	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	-	-	-	-	-	-	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.49	0.47	0.50	0.62	0.45	0.51	<1.0	<1.0	0.669	0.665	0.482	0.475	0.639	0.68	0.557	0.563	0.443	0.437	0.445	0.583	0.578	0.581	0.557	0.609	0.719	0.6	0.581	0.636	0.611	0.627	0.654
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	-	-	0.00053	0.00051	0.00075	0.00073	0.00062	0.00058	0.00049	0.00048	0.00045	0.00065	0.00064	0.00065	0.00064	0.00074	0.00108	0.00061	0.00069	0.00066	0.00073	0.00076	0.00079
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00040	<0.00040	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.1	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	0.4	0.393	0.545	0.567	0.48	0.47	0.37	0.36	0.37	0.4	0.4	0.50	0.50	0.56	0.61	0.57	0.57	0.61	0.59	0.66	0.63
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.30	0.52	0.54	0.5	0.53	0.94	0.89	0.91	1.57	1.56	0.85	0.84	1.41	1.52	0.96	0.95	0.745	0.738	0.749	1.08	1.1	0.958	0.939	1.08	1.20	1.37	1.35	2.06	2.05	2.73	2.66
Sulfur	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	-	-	-	-	-	0.0073	0.007	0.0128	0.0134	0.0077	0.0083	0.0081	0.0081	0.0083	0.0125	0.013	0.0103	0.0102	0.0136	0.0147	0.0088	0.0093	0.0129	0.0122	0.0163	0.0163
Tellurium	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	-	-	-	-	-	-	-	-	-	-	<0.50	<0.50	0.59	0.66	0.53	<0.50	<0.50	<0.50	<0.50	0.57	0.55	<0.50	<0.50	<0.50	<0.50	0.64	0.6	0.86	0.84	0.93	1.1
Strontium	mg/L	0.001	0.001	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.0057	0.0094	0.0098	0.009	0.01	0.014	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.0002	<0.0002	<0.0002	-	-	-	<0.00030	<0.00030	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-	-	-	0.00076	0.00049	0.00038	<0.00030	0.00106	<0.0015	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00081	0.00033	0.00049	0.00266	0.00076	0.00079	<0.00030	0.0005	<0.00030	<0.00030
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	-	-	-	-	-	-	<0.0010	<0.0010	0.000460	0.000435	0.000216	0.000211	0.000419	0.000445	0.000233	0.000233	0.000223	0.000219	0.00023	0.000415	0.000433	0.000331	0.000322	0.000442	0.000487	0.000381	0.000387	0.000452	0.000463	0.000595	0.000608
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	0.0010	<0.001	<0.001	<0.01	<0.01	<0.01	<0.0030	<0.0030	<0.0030	0.00380	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0088	<0.0030	0.108	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals and Non-Metals																																										
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	0.0056	<0.0050	<0.0050	<0.0050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0059	0.0074	<0.0050	<0.0050	0.0013	0.0028
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.001	0.004	0.004	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00451	0.00471	0.00496	0.00566	0.0061	0.00633
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.000011	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	9.62	18.3	17.2	13	17	19	14.9	13.9	17.9	18.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.5	13.7	17.6	18.5	22.7	23.4
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	0.001	0.00041	0.00072	0.00045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00042	0.00047	0.00046	0.00048	0.0005	0.00051
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	<0.02	0.02	<0.02	<0.03	<0.03	<0.03	0.052	<0.010	0.017	<0.010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.018	0.02	0.015	0.014	0.019	0.018
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	0.000085	<0.000050	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	2.67	8.24	7.80	7	8	8	6.24	6.64	8.57	8.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.95	6.88	8.2	9.1	10.9	11.3
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.0068	<0.0007	<0.0007	<0.01	<0.01	<0.01	0.00271	<0.00050	0.00105	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00217	0.00236	<0.00050	0.00063	0.00032	0.00035
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	0.00008	0.000055	0.000067	0.000072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000057	0.00007	0.000063	0.000081	0.000082	0.000085
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.52	0.48	0.49	0.61	0.46	0.49	0.589	0.58	0.672	0.688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.589	0.597	0.552	0.642	0.71	0.748
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	0.34	0.52	0.51	0.49	0.52	0.9	0.97	0.91	1.42	1.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.45	1.46	1.91	2.06	2.88	3.06
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0061	0.0100	0.0092	0.008	0.01	0.014	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0086	0.0086	0.0118	0.0129	0.0148	0.015
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-		-	-	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	mg/L	-	-	0.00001	-		-	-	0.00001	0.000010	-	-	-	-	-	-	-	0.000244	0.000314	0.000398	0.000411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000355	0.00035	0.000424	0.00043	0.000542	0.00057
Vanadium	mg/L	0.0009	0.001	-	-		-	-	0.0005	0.00050	-	<0.0009	0.0027	0.0022	<0.001	<0.001	<0.001	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-		-	-	0.001	0.0010	-	0.003	0.002	0.009	<0.01	<0.01	<0.01	0.00750	0.0013	<0.0010	0.0039	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	0.0017	<0.0010	0.0014	<0.0010	0.0013

Notes
Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.
2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.
2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.
* Result qualified by analytical laboratory.
SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown.
(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.
Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.5 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-070 (BGS0)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date				
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2021				
												14-Jun-21	14-Jun-21	14-Jun-21	17-Aug-21	17-Aug-21
												DS	DS Field Duplicate	US	DS	US
In Situ Parameters																
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	3.5	-	3.3	6.5	6.6
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-		129.9	-	130	176	175.3
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	5.5-9.5	13.39	-	13.17	12.17	12.20
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	101.6	-	99.6	100.8	101.4
pH	pH units	-	-	-	-	-	-	-	-	-	6.5 - 9.0	7.88	-	7.75	8.36	8.34
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	8.01	7.97	7.90	7.97	8.00
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	135	136	136	185	183
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.10	-	1.18	1.16	1.12	0.27	0.23
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	66.2	66.5	65.3	92.4	91.4
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	1.3	1.3	1.4	<2.0	1.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	84	84	77	96	97
Dissolved Anions																
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	82.4	75.2	76.7	91.4	92.1
Br	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	3.23	3.24	3.27	3.69	3.41
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	-	-	-	-	-
Nutrients																
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]	-	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.010	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	0.026	0.025	0.024	<0.020	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-	-	-	-	-	-
Ammonia total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	<0.010	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.0044	0.0053	0.0081	<0.0030	<0.0030
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.67	4.17	4.09	3.58	3.52
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	4.06	3.75	3.82	5.83	5.91
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	0.190	0.230	0.250	0.160	0.150
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.0191	0.0229	0.0119	0.0078	<0.0050
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	0.00012	0.00012	0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.00533	0.00523	0.00502	0.00570	0.00569
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.0000050	0.0000050	0.000005	0.0000050	0.000017	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	14.5	14.7	14.7	20.2	20.1
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.00050	<0.00050	<0.00050	0.00055	0.00055
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.039	0.038	0.030	0.018	0.014
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	7.44	7.27	7.22	9.51	9.65
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.00331	0.00289	0.00222	0.00114	0.00106
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	0.000074	0.000081	0.000074	0.000082	0.000074
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.819	0.805	0.791	0.687	0.687
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.00091	0.00085	0.00076	0.00074	0.00069
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.1	0.10	0.10	-	0.63	0.65	0.62	0.62	0.62
Silver	mg/L	0.0001	0.00001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	1.75	1.71	1.73	2.27	2.30
Sulfur	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0102	0.0104	0.0102	0.0142	0.0141
Tellurium	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	0.53	0.60	0.60	0.90	0.89
Strontium	mg/L	0.001	0.001	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	<0.00070	<0.00080	0.00033	0.00033	<0.00030
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	0.000446	0.000443	0.000433	0.000538	0.000530
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals and Non-Metals																
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.00493	0.00512	0.00489	0.00584	0.00581
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	14.3	14.3	14.2	20.8	20.4
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	0.00041	0.00043	0.00040	0.00048	0.00049
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	0.019	0.020	0.020	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	7.39	7.48	7.23	9.82	9.79
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.00347	0.00371	0.00346	<0.00050	<0.00050
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	0.000074	0.000071	0.000078	0.000072	0.000072
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.794	0.803	0.771	0.722	0.702
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	1.73	1.75	1.73	2.29	2.32
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0099	0.0098	0.0100	0.0146	0.0143
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	mg/L	-	-	0.00001	-			-	0.00001	0.000010	-	0.000422	0.000417	0.000407	0.000521	0.000514
Vanadium	mg/L	0.0009	0.001	-	-			-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-			-	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.
2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.
2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.
* Result qualified by analytical laboratory.
SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown.
(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.
Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.6 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-080 (CV040)

Parameters	Units	Method Detection Limit 2005	Method Detection Limit 2006	LOR 2015	LOR 2016	LOR 2017	LOR 2018	LOR 2019	LOR 2020	LOR 2021	CCME Guideline
In Situ Parameters											
Temperature	ºC	-	-	-	-	-	-	-	-		-
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0
Wetted Width	m	-	-	-	-	-	-	-	-		-
Average Depth	m	-	-	-	-	-	-	-	-		-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-
Physical Parameters											
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-
Dissolved Anions											
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-
SO_4^-	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-
Nutrients											
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]
NO_2^- (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-
Ammonia total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-	-	-
Organic Compounds											
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-
Chlorophyll-a	mg/m$_3$	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m$_3$	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals											
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.1	0.10	0.10	-
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-
Dissolved Metals and Non-Metals											
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-
Titanium	mg/L	0.003	-	-	-		-	-	0.0003	0.00030	-
Uranium	mg/L	-	-	0.00001	-		-	-	0.00001	0.000010	-
Vanadium	mg/L	0.0009	0.001	-	-		-	-	0.0005	0.00050	-
Zinc	mg/L	0.001	0.01	0.001	-		-		0.001	0.0010	-

Parameters	2005 13-Jun-05	2005 06-Aug-05	2005 09-Sep-05	2006 13-Jun-06	2006 13-Jun-06	2006 02-Aug-06	2006 08-Sep-06
In Situ Parameters							
Temperature	0.07	10.80	4.78	-0.1	-0.1	14.96	4.91
Specific Conductance	0.047	0.243	0.318	0.084	0.084	0.264	0.306
Dissolved Oxygen (mg/L)	13.48	10.39	12.74	13.65	13.65	10.46	-
Dissolved Oxygen (%)	-	-	-	-	-	-	-
pH	6.99	8.39	8.05	7.97	7.97	8.37	8.50
Wetted Width	-	-	-	ice	-	3	4
Average Depth	-	-	-	-	-	0.25	0.2
Flow Rate	-	-	-	-	-	0.28	-
Physical Parameters							
pH	-	-	-	7.40	7.47	8.22	8.18
Conductivity	54	257	303	92	93	273	321
Turbidity	0.37	0.13	<0.10	0.6	0.5	0.2	-
Hardness	25.1	138	178	48	48	153	159
TSS	-	-	-	-	-	-	-
TDS	46	126	200	60	61	177	209
Dissolved Anions							
Alkalinity	24	130	167	45	45	147	167
Br^-	<0.3	<0.3	<0.3	<0.05	<0.05	<0.05	<0.05
Cl^-	0.9	0.7	2.4	<1	<1	1	5
Fluoride	-	-	-	-	-	-	-
SO_4^-	0.6	0.8	2.1	2	2	<1	4.00
Nutrients							
NH_3+NH_4	0.2	0.5	0.6	0.05	0.09	0.04	<0.02
NO_2^- (Nitrite)	<0.06	<0.06	<0.06	<0.005	<0.005	<0.005	0.015
NO_3^- (Nitrate)	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.10
NO_2+NO_3	<0.06	<0.06	<0.06	<0.10	<0.10	<0.10	<0.10
Ammonia total as N	-	-	-	-	-	-	-
Total Phosphorus	0.030	<0.02	<0.10	<0.01	<0.01	<0.01	<0.01
Dissolved Phosphorus	<0.02	<0.02	<0.10	-	-	-	-
Organic Compounds							
Phenols	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DOC	-	-	-	-	-	-	-
TOC	-	-	-	-	-	-	-
TKN	-	-	-	-	-	-	-
Chlorophyll-a	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-
Total Metals and Non-Metals							
Aluminum	0.005	<0.004	<0.004	0.006	0.005	<0.005	<0.005
Antimony	<0.0004	<0.0004	<0.0004	-	-	-	-
Arsenic	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001
Barium	0.001	0.006	0.007	<0.01	<0.01	<0.01	<0.01
Beryllium	<0.005	<0.005	<0.005	-	-	-	-
Bismuth	<0.0003	<0.0003	<0.0003	-	-	-	-
Boron	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	6.07	33.9	42.9	11	11	38	40
Cesium	-	-	-	-	-	-	-
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002
Copper	<0.0008	<0.0008	0.0008	<0.001	<0.001	<0.001	<0.001
Iron	<0.05	<0.02	<0.02	<0.03	<0.03	<0.03	<0.03
Lead	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.001
Lithium	-	-	-	-	-	-	-
Magnesium	2.41	12.9	17.2	5	5	14	15
Manganese	0.0029	<0.0007	<0.0007	<0.01	<0.01	<0.01	<0.01
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.005
Nickel	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005
Phosphorus	-	-	-	-	-	-	-
Potassium	0.39	0.69	0.78	0.60	0.60	0.70	0.78
Rubidium	-	-	-	-	-	-	-
Selenium	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001
Silicon	-	-	-	-	-	-	-
Silver	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	0.31	1.20	2.04	0.41	0.42	1.42	3.45
Strontium	0.0027	0.0187	0.0235	0.005	0.005	0.023	0.027
Sulfur	-	-	-	-	-	-	-
Tellurium	-	-	-	-	-	-	-
Thallium	<0.0002	<0.0002	<0.0002	-	-	-	-
Thorium	-	-	-	-	-	-	-
Tin	<0.001	0.001	<0.001	<0.01	<0.01	<0.01	<0.01
Titanium	<0.003	<0.003	<0.003	-	-	-	-
Tungsten	-	-	-	-	-	-	-
Uranium	-	-	-	-	-	-	-
Vanadium	<0.0009	<0.0009	<0.0009	<0.001	<0.001	0.001	<0.001
Zinc	<0.001	0.0010	<0.001	<0.01	<0.01	<0.01	<0.01
Zirconium	-	-	-	-	-	-	-
Dissolved Metals and Non-Metals							
Aluminum	<0.004	<0.004	<0.004	<0.005	<0.005	<0.005	<0.005
Antimony	<0.0004	<0.0004	<0.0004	-	-	-	-
Arsenic	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001
Barium	<0.001	0.005	0.007	<0.01	<0.01	<0.01	<0.01
Beryllium	<0.005	<0.005	<0.005	-	-	-	-
Bismuth	<0.0003	<0.0003	<0.0003	-	-	-	-
Boron	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	6.06	35.0	40.5	11	11	38	39
Chromium	<0.001	0.002	0.002	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002
Copper	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	<0.001
Iron	<0.05	<0.02	<0.02	<0.03	<0.03	<0.03	<0.03
Lead	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.001
Magnesium	2.50	13.3	16.0	5	5	14	15
Manganese	0.0022	<0.0007	<0.0007	<0.01	<0.01	<0.01	<0.01
Mercury	-	-	-	-	-	-	-
Molybdenum	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.005
Nickel	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005
Potassium	0.39	0.72	0.76	0.61	0.60	0.73	0.80
Selenium	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.001
Silver	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	0.29	1.25	1.96	0.42	0.46	1.38	3.12
Strontium	0.0027	0.0192	0.0224	0.005	0.005	0.023	0.026
Thallium	<0.0002	<0.0002	<0.0002	-	-	-	-
Tin	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.01
Titanium	<0.003	<0.003	<0.003	-	-	-	-
Uranium	-	-	-	-	-	-	-
Vanadium	<0.0009	0.0047	0.0045	<0.001	<0.001	<0.001	<0.001
Zinc	0.001	0.002	0.002	<0.01	<0.01	<0.01	<0.01

Parameters	2015 03-Jul-15 US	2015 03-Jul-15 DS	2015 11-Aug-15 US	2015 11-Aug-15 DS	2016 29-Jun-16 DS	2016 29-Jun-16 US	2016 25-Aug-16 DS	2016 25-Aug-16 US
In Situ Parameters								
Temperature	-	-	12.8	12.7	15.7	16	-	11.1
Specific Conductance	0.130	0.125	0.387	0.390	0.151	0.151	-	0.391
Dissolved Oxygen (mg/L)	-	-	-	-	-	-	-	-
Dissolved Oxygen (%)	-	-	101.7	102.3	99.8	103.6	-	99.8
pH	8.32	8.16	8.61	8.65	8.19	8.23	-	8.36
Wetted Width	-	-	7	7	-	-	-	-
Average Depth	-	-	0.2	0.2	-	-	-	-
Flow Rate	-	-	0	0	-	-	-	-
Physical Parameters								
pH	8.18	8.19	8.53	8.50	8.1	8.19	8.47	8.51
Conductivity	-	-	-	-	-	-	-	-
Turbidity	0.44	0.54	0.19	0.15	1.48	1.05	0.28	0.33
Hardness	95	94	168	169	68	69	193	202
TSS	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0
TDS	77	90	178 *	170 *	65	65	208	201
Dissolved Anions								
Alkalinity	112	99	175	177	68	75	187	191
Br^-	-	-	-	-	-	-	-	-
Cl^-	2.48	2.28	8.34	8.66	1.81	1.84	13.5	13.8
Fluoride	-	-	-	-	<0.020	<0.020	0.026	0.027
SO_4^-	1.58	1.47	4.81	5.36	0.76	0.84	6.03	6.52
Nutrients								
NH_3+NH_4	0.17	<0.15	0.37	0.28	<0.15	<0.15	0.24	0.17
NO_2^- (Nitrite)	-	-	-	-	-	-	-	-
NO_3^- (Nitrate)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
NO_2+NO_3	-	-	-	-	-	-	<0.020	0.085
Ammonia total as N	<0.050	<0.050	<0.050	<0.050	<0.020	<0.020	-	-
Total Phosphorus	0.0040	0.0032	<0.0030	<0.0030	0.0067	0.0038	0.0048	0.0034
Dissolved Phosphorus	-	-	-	-	-	-	-	-
Organic Compounds								
Phenols	-	-	-	-	-	-	-	-
DOC	2.2	2.2	3.4	3.5	1.6	1.4	3.2	3
TOC	2.4	2.5	3.6	3.5	1.9	2.1	3.6	3.3
TKN	0.17	<0.15	0.37	0.28	<0.15	<0.15	0.24	0.17
Chlorophyll-a	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-
Total Metals and Non-Metals								
Aluminum	0.019	0.025	0.011	<0.010	0.096	0.042	0.024	0.02
Antimony	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	<0.0010	<0.0010	0.00010	<0.00010	<0.00010	<0.00010	0.00014	0.00011
Barium	-	-	-	-	0.0055	0.00502	0.0119	0.0118
Beryllium	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	-	-	-	-	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.0010	<0.0010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium	-	-	42.3	40.5	16.9	16.8	44.7	46.1
Cesium	-	-	-	-	0.000012	<0.000010	<0.000010	<0.000010
Chromium	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	<0.0010	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	<0.0010	<0.0010
Iron	<0.050	<0.050	<0.050	<0.050	0.11	<0.050	<0.050	<0.050
Lead	<0.00050	<0.00050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Lithium	-	-	-	-	<0.0010	<0.0010	0.0022	0.0023
Magnesium	9.67	9.14	19.6	19.6	6.2	6.64	19.8	21.1
Manganese	<0.0010	<0.0010	<0.00050	0.00187	0.00217	0.00082	0.00172	0.00115
Mercury	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum	<0.00050	<0.00050	<0.00050	<0.00050	0.00007	0.000073	0.000203	0.000224
Nickel	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	-	-	-	-	<0.050	<0.050	<0.050	<0.050
Potassium	<1.0	<1.0	1.23	1.23	0.745	0.706	1.31	1.34
Rubidium	-	-	-	-	0.00127	0.00097	0.00156	0.00133
Selenium	<0.00040	<0.00040	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	-	-	-	-	0.731	0.71	1.38	1.41
Silver	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	2.52	2.30	7.72	7.27	1.54	1.69	8.73	9.23
Strontium	-	-	-	-	0.0101	0.0102	0.0308	0.0295
Sulfur	-	-	-	-	<0.50	0.55	2.56	2.87
Tellurium	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.00030	<0.00030	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	-	-	-	-	0.00455	0.00162	0.00166	0.00112
Tungsten	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.0011	0.0010	0.00326	0.00293	0.000507	0.000533	0.00361	0.00367
Vanadium	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	<0.0030	<0.0030	<0.0030	0.0043	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Metals and Non-Metals								
Aluminum	<0.0050	<0.0050	<0.0050	0.0101	-	-	-	-
Antimony	-	-	-	-	-	-	-	-
Arsenic	<0.00010	<0.00010	0.00010	<0.00010	-	-	-	-
Barium	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-
Cadmium	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-
Calcium	22.5	22.3	37.9	39.6	-	-	-	-
Chromium	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-
Copper	0.00057	0.00054	0.00076	0.00077	-	-	-	-
Iron	<0.010	<0.010	<0.010	0.014	-	-	-	-
Lead	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-
Magnesium	9.49	9.32	17.8	17	-	-	-	-
Manganese	<0.00050	<0.00050	<0.00050	0.00118	-	-	-	-
Mercury	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-
Molybdenum	0.000067	0.000073	0.000176	0.000174	-	-	-	-
Nickel	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	-
Potassium	0.644	0.607	1.24	1.24	-	-	-	-
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	-	-	-	-
Silver	-	-	-	-	-	-	-	-
Sodium	2.54	2.41	7.10	6.67	-	-	-	-
Strontium	-	-	-	-	-	-	-	-
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	-
Tin	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-
Uranium	0.00101	0.00096	0.00300	0.00288	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-
Zinc	0.0025	0.0037	<0.0010	0.0029	-	-	-	-

Parameters	2017 29-Jun-17 US	2017 29-Jun-17 DS	2018 04-Jul-18 US	2018 04-Jul-18 DS	2018 03-Sep-18 US	2018 03-Sep-18 DS	2018 03-Sep-18 DS Field Blank	2019 22-Jun-19 US	2019 22-Jun-19 DS	2019 09-Aug-19 US	2019 09-Aug-19 DS
In Situ Parameters											
Temperature	3.8	2.4	8.1	8.5	3.4	3.3	3.3	2.70	2.50	17	16.2
Specific Conductance	0.177	0.101	0.2026	0.1968	0.3137	0.3133	0.31	0.1952	0.19	0.3854	0.3800
Dissolved Oxygen (mg/L)	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (%)	109.2	100.8	94.1	94.4	96.3	95.3	95.3	97.40	97.10	101.8	100
pH	7.64	7.84	8.24	8.24	8.27	8.24	8.24	8.26	8.23	8.48	8.37
Wetted Width	12.1	30.8	9.2	7.7	9.2	7.3	7.3	-	-	-	-
Average Depth	0.14	0.12	0.06	0.08	0.10	-	-	-	-	-	-
Flow Rate	1.13	1.55	0.07	0.133	.052	.144	.144	-	-	-	-
Physical Parameters											
pH	7.73	7.75	8.24	8.24	8.43	8.37	5.77	8.26	8.26	8.21	8.41
Conductivity	-	-	-	-	-	-	-	-	-	-	-
Turbidity	0.77	0.71	0.62	0.64	0.5	0.27	<0.10	0.17	0.22	0.33	0.44
Hardness	35	37	106	102	176	182	<10	121	121	180	187
TSS	<2.0	5.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	44	46	112	118	195	205	<20	133	127	208	204
Dissolved Anions											
Alkalinity	32	27	103	100	171	168	<10	120	118	182	188
Br^-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	0.57	0.57	3.16	2.91	13.5	13.8	<0.50	4.08	4.52	16.8	14.4
Fluoride	<0.020	<0.020	0.031	0.024	0.042	0.041	<0.020	-	-	-	-
SO_4^-	0.3	<0.30	1.3	0.89	3.62	3.52	<0.30	-	-	-	-
Nutrients											
NH_3+NH_4	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
NO_3^- (Nitrate)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2.2	<0.020
NO_2+NO_3	-	-	-	-	-	-	-	<0.022	<0.022	2.2	0.022
Ammonia total as N	<0.020	<0.020	<0.020	<0.020	-	-	-	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	0.0158	0.0159	<0.0030	0.0031	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Dissolved Phosphorus	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds											
Phenols	-	-	-	-	-	-	-	-	-	-	-
DOC	3.93	3.56	3.2	3.05	3.27	3.16	0.51	3.00	3	3.34	3.1
TOC	4.45	4.17	3.4	3.28	4.01	3.61	0.62	4.10	3.85	3.83	3.73
TKN	0.29	0.26	<0.15	<0.15	0.18	0.27	<0.15	-	-	-	-
Chlorophyll-a	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals											
Aluminum	0.0527	0.065	0.0092	0.0121	0.0239	0.011	<0.0050	0.0067	0.0113	0.0224	0.0225
Antimony	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00013	0.00012
Barium	0.00266	0.00274	0.00574	0.00561	0.0101	0.0104	<0.00010	0.00634	0.00648	0.0123	0.0125
Beryllium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	8.08	8.64	25.1	24.6	41.2	43.6	<0.050	27.9	28.5	42.4	46.1
Cesium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	0.000013
Chromium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Iron	0.056	0.068	0.01	0.014	0.031	0.023	<0.010	<0.010	0.013	0.033	0.027
Lead	0.000081	0.00009	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	0.0011	<0.0010	0.0012	0.0012	0.0018	0.0015
Magnesium	3.65	3.65	10.6	9.91	17.8	17.8	<0.0050	12.0	11.7	18.1	15.7
Manganese	0.00244	0.00296	0.0005	0.00086	0.00112	0.00162	<0.00050	<0.00050	0.00156	0.00139	0.00279
Mercury	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050
Molybdenum	<0.000050	<0.000050	0.000068	0.000089	0.000208	0.000219	<0.000050	0.000092	0.000131	0.000259	0.000272
Nickel	0.00342	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	0.503	0.506	0.716	0.68	0.992	1	<0.050	0.724	0.754	1.26	1.22
Rubidium	0.00058	0.00062	0.00082	0.00086	0.0009	0.00092	<0.00020	0.00086	0.00094	0.00144	0.00185
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	0.37	0.4	0.79	0.75	1.3	1.32	<0.10	0.84	0.83	1.3	1.34
Silver	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	<0.50	<0.50	2.06	1.98	6.08	5.98	<0.050	2.81	2.67	6.61	5.03
Strontium	0.0047	0.005	0.0156	0.0154	0.0274	0.0303	<0.0010	0.0177	0.0181	0.0328	0.039
Sulfur	<0.50	<0.50	0.57	<0.50	1.6	1.63	<0.50	0.70	0.62	1.22	0.87
Tellurium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	0.00245	0.00325	0.00041	0.00053	0.0013	0.00059	<0.00030	<0.00030	0.00065	0.00130	0.00107
Tungsten	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.000129	0.000132	0.00135	0.00123	0.00317	0.00306	<0.000010	0.00157	0.00148	0.00354	0.00284
Vanadium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	<0.0030	<0.0030	<0.0030	0.0042	<0.0030	0.007	<0.0030	<0.0030	0.0056	<0.0030	0.0053
Zirconium	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	0.00022	0.00024
Dissolved Metals and Non-Metals											
Aluminum	-	-	-	-	-	-	-	-	-	-	-
Antimony	-	-	-	-	-	-	-	-	-	-	-
Arsenic	-	-	-	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Bismuth	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-
Calcium	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-
Cobalt	-	-	-	-	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-	-	-	-	-
Magnesium	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	-
Mercury	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-
Potassium	-	-	-	-	-	-	-	-	-	-	-
Selenium	-	-	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-	-	-
Sodium	-	-	-	-	-	-	-	-	-	-	-
Strontium	-	-	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-	-	-
Tin	-	-	-	-	-	-	-	-	-	-	-
Titanium	-	-	-	-	-	-	-	-	-	-	-
Uranium	-	-	-	-	-	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-	-	-	-	-

Notes
Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.
2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.
2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.
* Result qualified by analytical laboratory.
SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:
(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.
Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.6 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-080 (CV040)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date									
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2020						2021			
												22-Jun-20	22-Jun-20	22-Jun-20	21-Jul-20	21-Jul-20	14-Aug-20	14-Aug-20	14-Jun-21	14-Jun-21	17-Aug-21	17-Aug-21
												US	DS	DS Travel Blank	US	DS	US	DS	DS	US	DS	US
In Situ Parameters																						
Temperature	ºC	-	-	-	-	-	-	-	-		-	1.3	1.4		14.1	13.80	8.2	7.90	1.1	1.2	8.7	6.8
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-	0.0786	0.0764		0.3699	0.36	0.4612	0.4573	39.9	40.1	325.9	336.1
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5	13.72	13.58		10.31	10.08	100.2	98.90	13.96	14.11	11.92	11.96
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-	97.2	96.4		100.2	97.40	11.82	141.72	100.5	102.0	100.4	101.2
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0	7.86	7.89		8.42	8.37	8.46	8.44	7.60	7.40	8.52	8.49
Wetted Width	m	-	-	-	-	-	-	-	-		-	-	-		-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-		-	-	-		-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-	-	-		-	-	-	-	-	-	-	-
Physical Parameters																						
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.62	7.65	5.72	8.43	8.38	8.53	8.5	7.44	7.50	8.31	8.36
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	81.4	79.7	<3.0	390	378	473	468	43.8	44.3	333	352
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.10	-	0.5	0.64	0.1	0.12	0.26	0.55	0.31	5.10	6.82	0.22	0.17
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	43.5	41.6	<0.50	181	177	234	234	19.8	19.8	172	178
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	12.9	17.0	<1.0	<1.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	49	49	<13	207	200	257	258	35	37	123	187
Dissolved Anions																						
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	40	39	<10	170	166	202	204	22.5	22.8	169	175
Br	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	1.02	0.94	<0.50	17	15.2	31.3	29.6	1.08	1.28	8.12	10.9
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients																						
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]	-	-	-	-	-	-	-	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.010	<0.010	<0.010	<0.010	<0.010	0.001	<0.0010	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	<0.020	<0.020	<0.020	<0.020	<0.020	0.0165	0.0172	<0.020	0.024	0.057	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonia total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.0113	0.0133	<0.0030	<0.0030	0.0039	0.0039	0.0023	0.0125	0.0134	<0.0030	<0.0030
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																						
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	4.71	4.61	1.19	4.41	4.67	3.8	3.98	3.31	3.53	4.89	4.68
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	5.15	5.21	1.53	4.9	4.92	3.45	3.7	3.60	3.61	7.11	6.80
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	-	-	-	-	0.170	0.190	0.190	0.180
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																						
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.0351	0.0558	<0.0050	0.0075	0.0154	0.0033	0.0155	0.186	0.223	0.0127	0.0101
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	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	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.00010	<0.00010	<0.00010	0.00013	0.00012	0.00014	0.00015	<0.00010	<0.00010	0.00011	0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.00296	0.00282	<0.00010	0.0114	0.0114	0.0126	0.0123	0.00285	0.00330	0.00880	0.00916
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0000050	0.0000055	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	10.3	10.2	<0.050	43.7	45	52.1	53.9	5.33	5.42	42.4	40.2
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000032	0.000046	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	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	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	0.00053	<0.00050	<0.00050	0.00089	0.00098	0.0008	0.0008	<0.00050	<0.00050	0.00082	0.00078
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.04	0.065	<0.010	<0.010	0.042	<0.010	0.028	0.197	0.229	0.016	0.013
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	0.000066	0.000081	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000227	0.000265	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	0.0019	0.0019	0.0025	0.0026	<0.0010	<0.0010	0.0014	0.0016
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	4.29	4.11	<0.0050	20	18.9	24.8	24.3	2.18	2.15	16.2	18.6
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.00332	0.00428	<0.00050	0.00087	0.00568	0.00144	0.00591	0.00766	0.00803	0.00243	0.00179
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	0.000007	0.0000055	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.000050	0.000056	<0.000050	0.000159	0.000183	0.00022	0.000229	0.000053	<0.000050	0.000169	0.000166
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.00050	<0.00050	<0.00050	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	0.449	0.425	<0.050	1.13	1.150	1.39	1.360	0.338	0.343	0.945	1.03
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.00063	0.00067	<0.00020	0.00143	0.00164	0.00102	0.00119	0.00105	0.00130	0.00109	0.00087
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.1	0.10	0.10	-	0.38	0.41	<0.10	1.38	1.41	1.57	1.61	0.55	0.65	1.48	1.58
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.564	0.447	<0.050	7.9	7	11.5	10.9	0.427	0.404	3.96	5.69
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0055	0.0054	<0.0010	0.0293	0.0311	0.0365	0.0386	0.0036	0.0037	0.0312	0.0273
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	0.99	<0.50	<0.50	1.71	1.63	3.01	3	<0.50	<0.50	1.22	1.44
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	0.00154	0.00274	<0.00030	0.00032	0.0007	<0.00030	0.00083	0.00841	<0.020	0.00061	<0.00050
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	0.000197	0.000208	<0.000010	0.00288	0.0027	0.004	0.00381	0.000187	0.000183	0.00227	0.00269
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00051	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.0030	<0.0030	<0.0030	<0.0030	0.0052	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-	-	0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	<0.00020	0.00029	<0.00020	0.00020	0.00022	<0.00020
Dissolved Metals and Non-Metals																						
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.0096	0.011	<0.0050	<0.0050	0.006	0.0024	0.002	0.0109	0.0141	<0.0050	<0.0050
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	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	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	0.00011	0.000	<0.00010	0.000	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.00267	0.0024	<0.00010	0.0107	0.011	0.013	0.012	0.00147	0.00149	0.00892	0.00955
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	10.2	9.86	<0.050	41.1	41.800	53.2	54.300	4.72	4.67	42.6	40.4
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	0.000	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	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	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	0.00036	0.00031	<0.00020	0.00088	0.001	0.00078	0.001	<0.00020	0.00021	0.00078	0.00075
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	0.013	0.012	<0.010	<0.010	0.013	<0.010	<0.010	0.012	0.017	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	4.37	4.12	<0.0050	19	17.600	24.5	23.800	1.95	1.97	15.9	18.7
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.00252	0.00256	<0.00050	0.00072	0.005	0.0013	0.005	0.00633	0.00665	0.00194	0.00160
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	<0.0000050	0.0000063	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	0.000165	0.000	0.00019	0.000	<0.000050	<0.000050	0.000153	0.000148
Nickel	mg/L	0.001	0.005	-	-	-	-	-	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
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.449	0.425	<0.050	1.13	1.150	1.39	1.360	0.338	0.343	0.945	1.03
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	0.000	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	0.532	0.457	<0.050	7.44	6.550	12.1	10.900	0.384	0.427	3.74	5.69
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0053	0.0051	<0.0010	0.0284	0.032	0.0346	0.036	0.0030	0.0030	0.0326	0.0275
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00040	<0.00030	<0.00030
Uranium	mg/L	-	-	0.00001	-	-	-	-	0.00001	0.000010	-	0.000168	0.000167	<0.000010	0.00272	0.003	0.00384	0.004	0.000116	0.000117	0.00209	0.00259
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	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
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	0.0029	0.0028	<0.0010	<0.0010	0.004	<0.0010	0.002	<0.0010	<0.0010	0.0016	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Baffinland

Table 1.7 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-100 (CV217)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date: 2005			2006			2015	
		2005	2006	2015	2016	2017	2018	2019	2020	2021		07-Jun-05	06-Aug-05	09-Sep-05	13-Jun-06	29-Jul-06	10-Sep-06	12-Aug-15	12-Aug-15
																		US	DS
In Situ Parameters																			
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	0.74	9.35	6.59	1.56	7.36	3.02	9.6	9.4
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-	-	0.019	0.081	0.088	0.031	0.083	0.091	0.100	0.101
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	5.5-9.5	12.14	11.62	12.82	12.71	13.40	-	-	-
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	102.30	102.8
pH	pH units	-	-	-	-	-	-	-	-	-	6.5 - 9.0	7.20	7.60	7.02	7.38	7.59	7.92	8.08	8.07
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	59	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2.5	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																			
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	-	-	-	6.97	7.03	6.97	7.80	7.81
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	27	90	93	38	86	97	-	-
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-	0.50	0.99	0.55	0.7	1.1	1.4	1.0	1.1
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	8.57	42.0	46.3	16	41	43	37	38
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	-	-	-	-	-	-	2	2
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	31	<30	<30	25	56	63	50 *	46 *
Dissolved Anions																			
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	8	43	45	16	44	47	38	35
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	<0.3	<0.3	<0.3	<0.05	<0.05	<0.05	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	0.8	1.0	1.2	<1	1	2	4.96	5.29
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-
SO_4^-	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	0.7	0.6	0.7	2	2	3	1.30	1.35
Nutrients																			
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [a]	0.5	<0.10	0.4	0.04	0.05	0.04	0.27	0.28
NO_2^- (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.06	<0.06	<0.06	<0.005	0.018	0.008	-	-
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.020	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-	<0.06	<0.06	<0.06	<0.10	<0.10	<0.10	-	-
Ammonia total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	-	-	-	-	-	-	<0.050	<0.050
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	<0.02	<0.02	<0.10	<0.01	<0.01	0.02	0.0080	0.0058
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.10	-	-	-	-	-
Organic Compounds																			
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	2.2	2.2
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	2.3	2.3
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	-	-	-	0.27	0.28
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																			
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.025	0.039	0.020	0.023	0.043	0.066	0.091	<0.010
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.002	0.004	0.005	<0.01	<0.01	<0.01	-	-
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	1.51	8.62	9.34	3.0	8.0	9.0	7.76	7.77
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	-	-	-	-	-
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	0.0009	0.0010	0.0008	<0.001	<0.001	0.001	<0.0010	<0.0010
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.05	0.03	0.02	0.07	0.04	0.04	0.121	<0.050
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.00010	<0.00010
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	1.16	4.97	5.59	2.0	5.0	5.0	5.07	4.94
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.0183	0.0012	0.0009	<0.01	<0.01	<0.01	0.00319	0.00084
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	0.001	0.001
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.0010	<0.0010
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	-	-	-	-	-	-	-	-
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.81	0.58	0.60	0.49	0.58	0.57	0.631	0.627
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.1	0.10	0.10	-	-	-	-	-	-	-	-	-
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.34	0.68	0.70	0.31	0.72	0.93	2.81	2.91
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0012	0.0049	0.0054	0.002	0.006	0.007	-	-
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	-	-	-	-	-	-	-	-
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	-	-	-	-	-	-	0.000319	0.000324
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	-	-
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	0.0020	0.0020	<0.001	<0.01	<0.01	<0.01	<0.0030	<0.0030
Zirconium	mg/L	-	-	-	0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-
Dissolved Metals and Non-Metals																			
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.013	0.006	0.004	0.009	<0.005	0.007	<0.0050	0.090
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.002	0.004	0.005	<0.01	<0.01	<0.01	-	-
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	-	-
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	1.60	9.05	8.60	3	8	9	7.39	7.78
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	<0.0008	0.0009	0.0010	<0.001	<0.001	<0.001	0.00066	0.00080
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	0.04	<0.02	<0.02	0.06	<0.03	<0.03	<0.010	0.107
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	1.24	5.23	5.12	2	5	5	4.40	4.56
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.0175	<0.0007	<0.0007	<0.01	<0.01	<0.01	0.00058	0.00181
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	-	-	-	-	-	-	<0.000010	<0.000010
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	0.000065	0.000080
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.85	0.61	0.58	0.48	0.54	0.57	0.599	0.680
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	0.37	0.72	0.68	0.31	0.72	1.02	2.68	2.82
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0013	0.0052	0.0049	0.002	0.006	0.007	-	-
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-
Uranium	mg/L	-	-	0.000010	-	-	-	-	0.00001	0.000010	-	-	-	-	-	-	-	0.000296	0.000329
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.0009	0.0015	<0.0009	<0.001	<0.001	<0.001	-	-
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	0.002	0.002	0.001	<0.01	<0.01	<0.01	<0.0010	0.0029

Parameters	Date: 2016				2017		2018					2019				2020						
	29-Jun-16	29-Jun-16	25-Aug-16	25-Aug-16	29-Jun-17	29-Jun-17	04-Jul-18	04-Jul-18	04-Jul-18	02-Sep-18	02-Sep-18	22-Jun-19	22-Jun-19	09-Aug-19	09-Aug-19	22-Jun-20	22-Jun-20	21-Jul-20	21-Jul-20	13-Sep-20	13-Sep-20	13-Sep-20
	US	DS	DS	US	US	DS	US	US Travel Blank	DS	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS	DS Field Duplicate
In Situ Parameters																						
Temperature	5.6	6.4	8.7	10.7	4.4	3.2	2.7	2.7	2.6	8.0	8.7	2.7	2.6	15.8	15.2	2.6	2.0	13.0	12.1	4.17	4.00	4.00
Specific Conductance	0.640	0.800	0.102	0.095	0.166	0.125	0.0826	0.0826	0.0824	0.0723	0.0904	0.0691	0.0695	0.0894	0.0852	0.0578	0.0593	0.0944	0.0921	126.4	152.1	152.1
Dissolved Oxygen (mg/L)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.4	13.8	11.54	11.45	12.16	12.40	12.40
Dissolved Oxygen (%)	107.4	109.5	94.1	100.0	107.1	101.9	93.5	93.5	93.5	102.8	103.3	97.6	97.3	105.2	105	98.7	99.3	108.4	104.9	94.5	94.8	94.8
pH	7.74	8.36	8.19	8.11	7.45	7.71	7.76	7.76	7.92	8.23	8.30	7.97	8.08	8.45	8.17	7.74	7.64	7.95	7.91	7.92	7.97	7.97
Wetted Width	-	-	-	-	-	15.4	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Depth	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	-	-	-	-	-	4.5276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																						
pH	7.42	7.41	8.08	7.96	7.65	7.72	7.65	6.29	7.67	7.97	7.95	7.64	7.68	7.63	7.75	7.52	7.49	7.75	7.81	7.83	7.81	7.82
Conductivity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	62	98	98	133	165	162
Turbidity	1.1	1.1	2.0	1.0	1.06	1.01	0.72	0.19	1.88	0.75	0.69	0.57	0.66	0.61	0.68	1.33	0.86	1.19	1.13	0.24	2.14	4.24
Hardness	27	29	42	38	28	33	34	<10	34	34	37.0	36.9	37.5	36.6	37.9	26.2	27.1	39.6	39.0	46	52	52
TSS	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5
TDS	40	25	52	38	34	41	48	<10	53	65	67	47	53	41	43	54	55	64	58	70	78	89
Dissolved Anions																						
Alkalinity	30	31	41	35	17	27	33	<10	32	35	34	37	37	38	38	24	25	36	36	41	41	46
Br^-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	2.44	2.49	3.87	3.79	2.50	3.74	5.66	<0.50	5.68	5.39	10.90	4.42	4.51	4.05	4.66	3.43	3.62	6.50	6.50	13.0	20.8	19.8
Fluoride	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	-	-	-	-	-	-	-	-	-	-
SO_4^-	0.70	0.72	1.15	0.97	0.71	1.06	1.06	<0.30	1.11	0.86	1.28	-	-	-	-	-	-	-	-	-	-	-
Nutrients																						
NH_3+NH_4	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
NO_3^- (Nitrate)	<0.020	<0.020	0.03	<0.020	<0.020	<0.020	0.027	<0.020	0.027	<0.020	<0.020	0.027	0.025	0.025	0.027	<0.020	0.02	0.23	<0.020	<0.020	0.032	0.040
NO_2+NO_3	-	-	-	-	-	-	-	-	-	-	-	0.027	0.025	0.025	0.027	-	-	-	-	-	-	-
Ammonia total as N	<0.020	0.05	<0.020	<0.020	0.029	<0.020	<0.020	<0.020	<0.020	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	0.0068	<0.0030	0.0071	0.0095	0.0084	0.0087	0.0041	<0.0030	0.0032	0.006	0.050	0.0043	0.0037	<0.0030	<0.0030	0.013	0.008	<0.0030	0.004	0.0033	<0.0030	0.0045
Dissolved Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																						
Phenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	1.8	1.9	2.3	1.9	2.01	1.88	1.92	<0.50	1.97	2.17	2.22	2.45	2.43	2.15	2.07	3.46	3.21	2.64	2.96	2.92	3.82	2.66
TOC	1.9	1.8	2.3	2.0	2.24	2.17	2.18	0.65	2.25	2.51	2.84	2.81	2.92	2.33	2.83	3.77	3.87	3.02	3.15	4.16	3.76	4.72
TKN	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	<0.15	<0.15	<0.15
Chlorophyll-a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																						
Aluminum	0.042	0.150	0.052	0.037	0.033	0.071	0.0189	<0.0050	0.018	0.0249	0.0204	0.0202	0.0391	0.0378	0.0367	0.0375	0.0436	0.0423	0.0452	0.0156	0.094	0.165
Antimony	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	0.00368	0.00433	0.00576	0.00502	0.00389	0.00457	0.00410	<0.00010	0.00413	0.00438	0.00455	0.00446	0.00475	0.00526	0.00571	0.00352	0.00376	0.00540	0.00502	0.00531	0.00656	0.00757
Beryllium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	5.19	5.58	8.32	7.66	5.61	6.66	6.90	<0.050	6.88	6.82	7.40	7.19	7.19	7.34	8.00	5.26	5.17	7.98	8.00	8.77	10.2	9.92
Cesium	<0.000010	0.000016	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000016	0.000027
Chromium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	<0.0010	0.0011	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	0.001	0.0010	0.001	0.00084	0.00115	0.00123
Iron	0.052	0.186	0.058	<0.050	0.058	0.10	0.032	<0.010	0.033	0.031	0.025	0.035	0.061	0.045	0.041	0.057	0.058	0.056	0.049	0.025	0.113	0.175
Lead	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	0.000	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000055	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000117	0.000193
Lithium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011
Magnesium	3.30	3.59	5.04	4.71	3.48	4.08	4.19	<0.0050	4.13	4.13	4.56	4.40	4.37	4.09	4.46	3.20	3.33	4.73	4.69	5.88	6.74	6.79
Manganese	0.00201	0.00408	0.00217	0.00159	0.00400	0.00380	0.00264	<0.00050	0.00267	0.00115	0.00151	0.00383	0.00461	0.00179	0.00183	0.00505	0.00556	0.00284	0.00272	0.00157	0.00581	0.00838
Mercury	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	0.000065	0.000069	0.000099	0.000075	0.000063	0.000078	0.000089	<0.000050	0.000080	0.000077	0.000086	0.000085	0.000073	0.000106	0.000115	0.000058	0.000071	0.000094	0.000102	0.000094	0.000134	0.000136
Nickel	0.00077	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00057	0.00059
Phosphorus	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	0.516	0.580	0.717	0.645	0.613	0.688	0.594	<0.050	0.598	0.581	0.639	0.628	0.628	0.585	0.624	0.601	0.609	0.682	0.666	0.751	0.900	0.969
Rubidium	0.00073	0.00109	0.00138	0.00110	0.00082	0.00101	0.00095	<0.00020	0.00098	0.00093	0.00097	0.00090	0.00102	0.00102	0.00131	0.00081	0.00084	0.00114	0.00110	0.00111	0.00150	0.00182
Selenium	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	0.390	0.603	0.636	0.525	0.470	0.520	0.470	<0.10	0.480	0.380	0.380	0.440	0.500	0.48	0.5	0.450	0.430	0.620	0.610	0.52	0.70	0.83
Silver	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	1.40	1.49	2.25	2.39	1.55	2.09	2.70	<0.050	2.85	2.60	5.10	2.34	2.21	1.95	1.99	1.54	1.74	3.36	3.37	6.65	9.95	9.42
Strontium	0.0046	0.0048	0.0079	0.0074	0.0049	0.0060	0.0081	<0.0010	0.0081	0.0079	0.0122	0.0072	0.0072	0.0079	0.0086	0.0048	0.0051	0.0090	0.0087	0.0133	0.0188	0.0181
Sulfur	<0.50	<0.50	<0.50	0.53	0.51	<0.50	0.52	<0.50	0.51	0.53	0.64	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	0.56	0.71	1.11	1.13
Tellurium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010
Tin	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	<0.0020 *	0.00821	0.00203	0.00165	<0.0015	0.00388	0.00051	<0.00030	0.00055	0.0008	0.00064	0.00086	0.00217	0.00184	0.00149	0.0012	0.00166	0.00199	0.00169	<0.00060	0.00478	0.00833
Tungsten	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	0.000210	0.000238	0.000368	0.000319	0.000193	0.000261	0.000263	<0.000010	0.000260	0.000279	0.000310	0.000262	0.000250	0.000333	0.000347	0.000235	0.000279	0.000460	0.000424	0.000537	0.000684	0.000754
Vanadium	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	<0.0030	<0.0030	0.0053	<0.0030	<0.0030	<0.0030	0.0107	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.003
Zirconium	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00022
Dissolved Metals and Non-Metals																						
Aluminum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.013	0.019	0.015	0.015	<0.0050	0.0196	0.0136
Antimony	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	0.004	0.005	0.005	0.00541	0.00603	0.00590
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.120	5.170	7.800	7.540	9.16	10.2	10.1
Chromium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.001	0.001	0.001	0.0008	0.0009	0.0008
Iron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.028	0.026	0.016	0.019	<0.010	0.023	0.017
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.270	3.440	4.890	4.890	5.64	6.46	6.48
Manganese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.004	0.004	0.002	0.002	<0.00050	0.00282	0.00261
Mercury	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.000	0.000	0.000	0.000113	0.000128	0.000126
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.586	0.603	0.684	0.680	0.782	0.913	0.934
Selenium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.590	1.890	3.370	3.390	6.24	9.34	9.41
Strontium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.005	0.005	0.009	0.009	0.01500	0.02020	0.02070
Thallium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	<0.00010
Titanium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00030	0.001	<0.00030	0.000	<0.00030	<0.00060	0.00044
Uranium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.000	0.000	0.000	0.000519	0.000618	0.000639
Vanadium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0010	0.0010	<0.0010	0.0015	<0.0010	0.0014	<0.0010

Notes
Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.
2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.
2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.
* Result qualified by analytical laboratory.
SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:
(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.
Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.7 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-100 (CV217)

Parameters	Units	Method Detection Limit		LOR							CCME Guideline	Date			
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2021			
												13-Jun-21	13-Jun-21	17-Aug-21	17-Aug-21
												DS	US	DS	US
In Situ Parameters															
Temperature	ºC	-	-	-	-	-	-	-	-	-	-	2.0	4.2	7.6	8.2
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-	-		68.9	62	95.4	96.7
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	5.5-9.5	13.52	13.23	12.04	11.83
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	99.1	102.6	102.8	102.6
pH	pH units	-	-	-	-	-	-	-	-	-	6.5 - 9.0	7.55	7.83	8.45	8.20
Wetted Width	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters															
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.60	7.55	7.54	7.81
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	71.4	65.1	101	107
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-	1.66	1.56	0.46	0.46
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	28.5	26.6	40.6	42.8
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	1.5	2.1	1.0	<2.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	43	45	57	58
Dissolved Anions															
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	39.0	31.6	40.4	41.5
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	5.17	4.44	6.96	6.56
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-	-	-	-	-	-	-
Nutrients															
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-	-	0.021 - 231 [#]	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	0.032	0.031	<0.020	0.039
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022	-	-	-	-	-	-
Ammonia total as N	mg/L			0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [#]	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.0100	0.0062	0.0035	<0.0030
Dissolved Phosphorus	mg/L	0.02		-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds															
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-	-	0.004	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.71	4.18	2.75	3.00
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	4.02	4.15	5.30	5.36
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	0.240	0.180	0.110	0.110
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals															
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.0416	0.0406	0.0214	0.0189
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.00422	0.00392	0.00498	0.00530
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	5.64	5.37	7.81	8.12
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	0.00065	0.00063	0.00079	0.00089
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.050	0.063	0.029	0.023
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.000050	<0.000050	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	3.62	3.39	4.96	5.12
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.00399	0.00460	0.00159	0.00117
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	0.000080	0.000067	0.000095	0.000089
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.866	0.837	0.711	0.736
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.00115	0.00106	0.00109	0.00113
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L			-	0.05	0.05	0.1	0.1	0.10	0.10		0.50	0.51	0.51	0.55
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	2.45	2.15	3.65	3.55
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0068	0.0061	0.0094	0.0098
Sulfur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	<0.50	<0.50	0.68	0.94
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	0.00138	<0.0020	0.00062	0.00052
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L			0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	0.000333	0.000279	0.000446	0.000455
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-	-	0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals and Non-Metals															
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.0165	0.0144	0.0106	0.0068
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.00401	0.00366	0.00522	0.00547
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.010	<0.010	<0.010	<0.010
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	5.53	5.19	7.87	8.31
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	0.00061	0.00057	0.00077	0.00085
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	0.024	0.026	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	3.56	3.31	5.09	5.36
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.00512	0.00590	<0.00050	<0.00050
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	0.000075	0.000068	0.000083	0.000090
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.848	0.802	0.745	0.788
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	2.41	2.10	3.73	3.67
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0065	0.0058	0.0096	0.0098
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	0.00031	0.00035	<0.00030	<0.00030
Uranium	mg/L			0.000010	-	-	-	-	0.00001	0.000010	-	0.000318	0.000279	0.000424	0.000433
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	<0.0010	<0.0010	0.0058	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.8 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-110 (BG24)

Parameter	Units	Method Detection Limit		LOR							CCME Guideline	Date																												
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2005			2006			2015		2016				2017		2018				2019				2020						
												07-Jun-05	06-Aug-05	09-Sep-05	13-Jun-06	29-Jul-06	10-Sep-06	12-Aug-15	12-Aug-15	29-Jun-16	29-Jun-16	25-Aug-16	25-Aug-16	29-Jun-17	29-Jun-17	04-Jul-18	04-Jul-18	31-Aug-18	31-Aug-18	22-Jun-19	22-Jun-19	09-Aug-19	09-Aug-19	22-Jun-20	22-Jun-20	21-Jul-20	21-Jul-20	14-Aug-20	14-Aug-20	14-Aug-20
																		US	DS	DS	US	DS	US	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS	DS Field Blank
In Situ Parameters																																								
Temperature	ºC	-	-	-	-	-	-	-	-		-	3.76	9.54	7.0	1.99	7.11	4.35	6.8	6.9	5.1	5.0	4.5	5.1	1.8	3.5	2.4	2.5	3.6	3.9	1.9	2.0	6.8	7.2	0.9	1.0	8.9	10.2	3.1	3.4	3.4
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-	0.019	0.079	0.082	0.075	0.076	0.095	0.05	0.05	0.112	0.114	0.371	0.367	0.116	0.105	0.132	0.134	0.2278	0.2352	0.1486	0.1513	0.4873	0.4753	0.093	0.0863	0.3193	0.3294	0.399	0.665	0.665
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5	10.4	10.91	11.71	12.8	13.55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.1	14.0	11.73	11.3	99.5	98.1	98.1
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	104.30	103.00	104.9	105.8	99.3	103.2	101.8	103.6	96.8	96.3	101.5	98.3	98.5	97.6	101.9	100.3	98.7	98.1	100.6	91.2	13.36	13.08	13.08
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0	8.07	7.58	7.02	7.55	7.51	7.88	8.58	8.51	7.75	7.84	7.91	7.97	7.41	7.68	8.02	7.83	8.33	7.29	8.11	7.94	8.31	8.18	7.75	7.74	8.34	8.33	8.24	8.04	8.04
Wetted Width	m	-	-	-	-	-	-	-	-		-	-	-	-	6	17	5	1.5	1.5	4.8	4.8	-	-	5.9	4.4	1.4	2.7	1.45	1.6	-	-	-	-	-	-	-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-		-	-	-	-	0.4	0.9	0.3	0.25	0.25	0.2	0.2	-	-	0.17	0.45	0.22	0.1	0.04	0.1	-	-	-	-	-	-	-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-	-	-	-	1.1	3.64	0.39	-	-	-	-	-	-	0.71213	0.5148	0.111	0.097	0.012	0.021	-	-	-	-	-	-	-	-	-	-	-
Physical Parameters																																								
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	-	-	-	7.40	6.95	6.95	8.34	8.29	7.84	7.91	8.15	8.30	7.90	7.91	7.97	8.03	8.45	8.37	8.13	8.15	8.25	8.29	7.62	7.74	8.31	8.26	8.3	8.26	6.47
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	26	88	82	84	78	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86.5	91	322	347	694	674	<2.0
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-	0.42	3.64	1.93	0.5	2.3	4.9	0.16	0.27	0.41	0.39	0.34	0.22	0.49	0.42	0.73	0.84	0.20	0.43	0.40	0.60	0.25	0.58	0.43	0.50	0.23	0.50	0.1	2.79	<0.10
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	7.14	43.6	43.4	47	41	52	133	136	52	52	168	169	43	43	68	69	130	139	91.2	92.3	193	185	39.5	42	132	134	227	233	<0.50
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	-	-	-	-	-	-	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	<30	51	<30	55	51	77	146 *	139 *	45	45	183	183	42	40	75	65	130	155	102	106	269	267	66	64	175	186	378	392	10
Dissolved Anions																																								
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	5	43	41	41	40	53	135	141	51	53	152	149	41	42	49	65	126	131	90	91	148	151	37	40	111	116	158	163	<1.0
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-		-	<0.3	<0.3	<0.3	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	1.3	0.6	0.7	1	<1	4	5.18	5.26	0.8	0.8	16.5	18.0	1.04	1.07	1.26	1.39	6.98	7.41	2.35	2.51	50.1	45.7	13.8	3.12	25.8	26.50	97.9	90.5	<0.50
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-		-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.1	0.022	0.021	0.037	0.037	0.069	0.064	-	-	-	-	-	-	-	-	-	-	-
SO_4^-	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-		-	1.2	<0.5	0.5	2	2	4	5.54	5.38	0.8	0.6	12.2	13.7	0.46	0.58	0.91	0.91	7.38	6.48	-	-	-	-	-	-	-	-	-	-	-
Nutrients																																								
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-		0.021 - 231 [a]	0.7	0.4	0.6	<0.02	<0.02	<0.02	0.24	0.29	<0.15	<0.15	<0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NO_2^- (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.06	<0.06	<0.06	<0.005	0.017	0.009	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0010
NO_3^- (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	0.12	<0.05	<0.05	<0.10	<0.10	<0.10	0.03	0.03	<0.020	<0.020	0.07	0.08	<0.020	<0.020	0.02	<0.020	<0.020	<0.020	0.025	0.026	0.047	0.038	1.55	0.37	0.054	0.04	0.369	0.321	<0.0050
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022		-	0.12	<0.06	<0.06	<0.10	<0.10	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	0.025	0.026	0.047	0.038	-	-	-	-	-	-	-
Ammonia, total as N	mg/L	-	-	0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	-	-	-	-	-	-	<0.050	<0.050	0.07	0.07	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	-	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0	<0.0050	<0.0050	<0.0050
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.02	<0.02	<0.10	<0.01	<0.01	0.01	<0.0030	<0.0030	<0.0030	0.01	0.00	0.00	0.0086	0.0082	0.0060	0.0046	<0.0030	<0.0030	0.0064	0.0031	<0.0030	<0.0030	0.0095	0.0070	<0.0030	0.0033	0.0022	0.0041	<0.0020
Dissolved Phosphorus	mg/L	0.02	-	-	-	-	-	-	-		-	<0.02	<0.02	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic Compounds																																								
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-		0.004	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	2.3	2.3	<1.0	<1.0	2.0	2.0	1.46	1.57	1.98	1.90	2.29	2.35	2.18	2.25	2.09	2.07	3.14	3.00	3.11	3.01	2.37	3.02	<0.50
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	-	-	-	-	-	-	2.3	2.4	<1.0	<1.0	2.2	2.1	1.64	1.76	2.38	2.27	2.70	4.32	3.34	2.99	2.5	2.47	3.6	3.78	3.29	3.49	2.26	2.87	0.56
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	-	-	-	-	-	-	0.24	0.29	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15	<0.15	-	-	-	-	-	-	-	-	-	-	-
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Metals and Non-Metals																																								
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.017	0.075	0.073	0.010	0.072	0.153	<0.010	0.018	0.022	0.015	0.011	<0.010	0.0214	0.0225	0.0219	0.0195	0.006	0.0137	0.0248	0.0271	0.01	0.0244	0.0337	0.0382	0.0096	0.0247	0.0039	0.0819	<0.0030
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<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	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	0.00013	<0.00010	<0.00010	<0.00010	0.0001	0.00012	0.00012	<0.00010
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	<0.001	0.004	0.004	<0.01	<0.01	<0.01	-	-	0.00197	0.00176	0.00778	0.00702	0.00165	0.0017	0.00228	0.00236	0.00485	0.00602	0.00327	0.00353	0.00972	0.0101	0.00194	0.00193	0.00611	0.00687	0.0137	0.0141	<0.00010
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	<0.010	<0.010	0.011	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	0.013	<0.010	<0.010	0.018	0.017	0.043	0.037	<0.010
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	1.43	9.01	8.72	8	8	12	29.9	32.2	10.9	10.8	35.3	35.8	8.82	8.83	14.7	14.8	28.4	30.1	19.0	19.1	40.8	41.3	8.56	8.99	27.3	28.2	45.9	45.6	<0.050
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000022	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	0.00248	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	0.00022	<0.00010
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<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	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	<0.0008	0.0009	<0.0008	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	0.00059	<0.00050	0.00088	0.00083	0.00097	0.00099	<0.00050
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	<0.02	0.05	0.06	0.03	0.05	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.017	0.016	<0.010	0.023	0.018	0.024	<0.010	0.035	0.034	0.039	<0.010	0.026	<0.010	0.099	<0.010
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	<0.0002	0.0004	<0.0002	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000065	<0.000050	<0.000050	<0.000050	<0.000050	0.000128	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	-	-	-	-	-	-	-	-	<0.0010	0.0013	0.0041	0.0044	<0.0010	<0.0010	0.0015	0.0015	0.0025	0.0024	0.0021	0.002	0.0046	0.0046	<0.0010	<0.0010	0.0043	0.0043	0.008	0.0072	<0.0010
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	0.868	5.12	5.24	5	5	7	16.4	17.4	5.94	5.95	19.3	19.3	4.99	5.12	7.71	7.78	14.4	15.4	10.2	10.5	20.9	20.3	4.76	4.82	14.6	15.4	25.2	25	<0.0050
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.0097	0.0024	0.0014	<0.01	<0.01	<0.01	0.00054	0.00335	0.00126	<0.00050	0.00526	0.0008	0.00062	0.00087	0.00052	0.00074	<0.00050	0.00383	<0.00050	0.00108	0.00065	0.0038	0.00122	0.0016	<0.00050	0.00287	0.00047	0.00639	<0.00010
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	<0.00050	<0.00050	<0.000050	<0.000050	0.000109	0.000112	<0.000050	<0.000050	0.000057	0.000052	0.000102	0.000151	0.000066	0.000077	0.000159	0.000155	<0.000050	<0.000050	0.000114	0.000134	0.000168	0.000174	<0.000050
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.0010	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	-	-	-	-	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.77	0.48	0.51	0.50	0.51	0.50	0.565	0.649	0.297	0.269	0.818	0.731	0.308	0.317	0.294	0.31	0.584	0.7	0.408	0.458	0.978	1.0	0.39	0.388	0.997	1.02	2.16	2.06	<0.050
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	0.00033	0.00024	0.00094	0.00046	0.00031	0.00032	0.00029	0.00034	0.00038	0.00074	0.00036	0.00055	0.0007	0.00111	0.00038	0.00041	0.00044	0.00078	0.00069	0.00127	<0.00020
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	-	-	-	0.05	0.05	0.1	0.1	0.10	0.10	-	-	-	-	-	-	-	-	-	0.393	0.381	0.743	0.73	0.4	0.41	0.54	0.54	0.6	0.61	0.59	0.58	0.74	0.76	0.42	0.42	0.68	0.69	1.17	1.25	<0.10
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	0.43	0.51	0.48	0.57	0.48	1.61	5.22	5.33	0.77	0.75	8.94	9.62	0.83	0.81	1.1	1.16	4.81	4.51	2.04	1.96	19.5	17.3	2.33	2.34	18.1	17.8	49.9	45.4	<0.050
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0011	0.0049	0.0048	0.005	0.005	0.008	-	-	0.0056	0.0056	0.025	0.0262	0.0044	0.0045	0.0083	0.0085	0.0192	0.0205	0.0112	0.0119	0.0345	0.0329	0.0062	0.006	0.0274	0.0262	0.0701	0.063	<0.00020
Sulphur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	-	-	-	-	-	-	-	-	<0.50	<0.50	4.8	5.24	<0.50	<0.50	0.73	0.53	2.83	2.57	0.97	1.02	11.9	10.7	0.68	0.63	5.32	5.28	17.9	16.4	<0.50
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-	0.00087	0.00052	0.00055	<0.00030	0.00075	0.00088	0.00074	0.00071	<0.00030	0.00061	0.00100	0.00114	0.00036	0.00127	0.0012	0.00162	0.00041	0.00103	<0.00030	0.00479	<0.00030
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L	-	-	0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	-	-	-	-	-	-	0.000941	0.000943	0.000116	0.000109	0.0012	0.00131	0.000068	0.000071	0.000217	0.000219	0.000954	0.000937	0.000398	0.000437	0.00153	0.00148	0.000099	0.000115	0.000893	0.000936	0.0023	0.0022	<0.000010
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	0.0040	0.0010	0.0020	<0.01	<0.01	<0.01	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	-	-	-	-	-	-	-	-	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00023	<0.00020
Dissolved Metals and Non-Metals																																								
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.010	0.009	0.007	<0.005	<0.005	<0.005	<0.0050	<0.0050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.009	0.012	<0.0050	0.006	0.0012	0.0048	<0.0010
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.0004	<0.0004	<0.0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	<0.001	0.003	0.004	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00171	0.00	0.00629	0.01	0.0147	0.0146	<0.00010
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.010	<0.010	0.019	0.02	0.043	0.038	<0.010
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	1.54	9.19	8.14	9	8	11	28.0	28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.18	8.5700	27.9	28.0000	48.5	50.2	<0.050
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010	0.00014	<0.00010
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.0003	<0.0003	<0.0003	<0.0002	<0.0002	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	<0.0008	<0.0008	<0.0008	<0.001	<0.001	<0.001	0.00066	0.00063	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00038	0.000	0.00079	0.001	0.001	0.00094	<0.00020
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	<0.02	0.02	<0.02	<0.03	<0.03	<0.03	<0.010	<0.010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.011	0.01	<0.010	<0.010	<0.010	0.013	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	0.933	5.30	4.87	6	5	6	15.4	15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.62	5	15	15	25.8	26.3	<0.0050
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.0092	0.0007	<0.0007	<0.01	<0.01	<0.01	<0.00050	0.00275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	0.00	<0.00050	0.00	0.00041	0.00458	<0.00010
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	-	-	-	-	-	-	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.0003	<0.0003	<0.0003	<0.005	<0.005	<0.005	0.000093	0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	0.000129	0.000	0.000145	0.000173	<0.000050
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.00050	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.83	0.51	0.49	0.52	0.50	0.50	0.577	0.635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.364	0.38	1.02	1.07	2.5	2.33	<0.050
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.000050	<0.000050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	0.000054	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	0.47	0.53	0.47	0.58	0.50	1.64	5.04	4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.44	2.52	17.7	17.90	53.3	51.1	<0.050
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0011	0.0045	0.0044	0.005	0.005	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0059	0.006	0.0277	0.028	0.0672	0.063	<0.00020
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.0002	<0.0002	<0.0002	-	-	-	<0.000010	<0.000010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	<0.003	<0.003	<0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00030	0	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium	mg/L	0.00001	-	0.00001	-	-	-	-	0.00001	0.000010	-	-	-	-	-	-	-	0.000883	0.00088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000081	0.000086	0.000898	0.000933	0.00214	0.00215	<0.000010
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.0009	0.0013	<0.0009	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	0.003	0.003	0.002	<0.01	<0.01	<0.01	<0.0010	0.0019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0010	0.00	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

Table 1.8 Water Quality Monitoring Of Baseline Fisheries Culverts Surface Water Quality Summary For Sample Site N1-110 (BG24)

Parameter	Units	Method Detection Limit		LOR							CCME Guideline	Date			
		2005	2006	2015	2016	2017	2018	2019	2020	2021		2021			
												13-Jun-21	13-Jun-21	17-Aug-21	17-Aug-21
												DS	US	DS	US
In Situ Parameters															
Temperature	ºC	-	-	-	-	-	-	-	-		-	1.3	0.9	3.9	3.6
Specific Conductance	mS/cm	-	-	-	-	-	-	-	-		-	49.1	46.5	313.4	310
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-		5.5-9.5	13.13	13.78	13.06	13.22
Dissolved Oxygen	%	-	-	-	-	-	-	-	-		-	94.1	98.0	101.6	101.9
pH	pH units	-	-	-	-	-	-	-	-		6.5 - 9.0	7.83	7.84	8.47	8.51
Wetted Width	m	-	-	-	-	-	-	-	-		-	-	-	-	-
Average Depth	m	-	-	-	-	-	-	-	-		-	-	-	-	-
Flow Rate	m^3/s	-	-	-	-	-	-	-	-		-	-	-	-	-
Physical Parameters															
pH	pH units	-	-	0.01	0.1	0.1	0.1	0.1	0.1	0.10	6.5 - 9.0	7.68	7.61	8.29	8.30
Conductivity	µS/cm	1	5	-	-	-	-	-	-	1.0	-	51.8	49.1	339	335
Turbidity	NTU	0.1	0.1	0.1	0.1	0.1	.1	0.1	0.1	0.10	-	3.40	2.38	0.62	0.41
Hardness	mg/L as $CaCO_3$	0.5	1	10	10	10	10/20	0.5	0.5	0.50	-	22.8	21.3	131	129
TSS	mg/L	-	-	2	2	2	2	2	2	1.0	-	7.6	5.1	1.3	1.1
TDS	mg/L	30	5	20	20	20	10	20	10	13/10	-	32	29	176	172
Dissolved Anions															
Alkalinity	mg/L as $CaCO_3$	2	5	10	10	10	10	10	10	1.0	-	26.5	23.0	122	120
Br^-	mg/L	0.3	0.05	-	-	-	-	-	-		-	-	-	-	-
Cl^-	mg/L	0.2	1	0.5	0.5	0.5	0.5	0.5	0.5	0.50	-	2.08	1.88	21.0	20.9
Fluoride	mg/L	-	-	-	0.02	0.02	0.02	-	-		-	-	-	-	-
SO_4	mg/L	0.5	1	0.3	0.3	0.3	0.3	-	-		-	-	-	-	-
Nutrients															
NH_3+NH_4	mg/L N	0.1	0.02	0.15	0.15	0.15	-	-	-		0.021 - 231 [a]	-	-	-	-
NO_2 (Nitrite)	mg/L N	0.06	0.005	-	-	-	-	0.01	0.01	0.010	0.06	<0.010	<0.010	<0.010	<0.010
NO_3 (Nitrate)	mg/L N	0.05	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.020	2.9	0.021	0.022	<0.020	<0.020
NO_2+NO_3	mg/L N	0.06	0.1	-	-	-	-	0.022	0.022		-	-	-	-	-
Ammonia, total as N	mg/L			0.05	0.02	0.02	0.02	0.01	0.01	0.010	Variable [a]	<0.010	<0.010	<0.010	<0.010
Total Phosphorus	mg/L	0.02	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	-	0.0037	0.0071	<0.0030	<0.0030
Dissolved Phosphorus	mg/L	0.02		-	-	-	-	-	-		-	-	-	-	-
Organic Compounds															
Phenols	mg/L	0.001	0.001	-	-	-	-	-	-		0.004	-	-	-	-
DOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.58	3.00	3.48	3.98
TOC	mg/L	-	-	1	1	0.5	0.5	0.50	0.50	0.50	-	3.18	2.90	5.69	5.95
TKN	mg/L	-	-	0.15	0.15	0.15	0.15	-	-	0.050	-	0.280	0.230	0.140	0.140
Chlorophyll-a	mg/m_3	-	-	-	-	-	-	-	-		-	-	-	-	-
Pheophytin-a	mg/m_3	-	-	-	-	-	-	-	-		-	-	-	-	-
Total Metals and Non-Metals															
Aluminum	mg/L	0.004	0.005	0.01	0.01	0.005	0.005	0.005	0.005	0.0050	0.005 - 0.100 [b]	0.0795	0.0439	0.0376	0.0214
Antimony	mg/L	0.0004	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	0.005	<0.00010	<0.00010	0.00012	0.00012
Barium	mg/L	0.001	0.01	-	0.0002	0.0002	0.0001	0.0001	0.0001	0.00010	-	0.00162	0.00127	0.00703	0.00621
Beryllium	mg/L	0.005	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	0.01	0.01	0.01	0.01	0.01	0.010	-	<0.010	<0.010	0.016	0.016
Cadmium	mg/L	0.0001	0.0001	0.00009	0.00001	0.00001	0.000005	0.000005	0.000005	0.0000050	0.000017	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	4.95	4.54	27.2	26.9
Cesium	mg/L	-	-	-	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Chromium	mg/L	0.001	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.00050	0.002 - 0.004 [c]	0.00075	<0.00050	0.00107	0.00104
Iron	mg/L	0.02	0.03	0.05	0.05	0.05	0.01	0.01	0.01	0.010	0.3	0.079	0.046	0.031	0.018
Lead	mg/L	0.0002	0.001	0.0005	0.0001	0.0001	0.00005	0.00005	0.00005	0.000050	0.001 - 0.007 [c]	0.000096	<0.000050	<0.000050	<0.000050
Lithium	mg/L	-	-	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	<0.0010	<0.0010	0.0043	0.0045
Magnesium	mg/L	0.005	1	0.5	0.05	0.05	0.005	0.005	0.005	0.0050	-	2.82	2.62	15.2	14.9
Manganese	mg/L	0.0007	0.01	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	0.00218	0.00128	0.00157	<0.00050
Mercury	mg/L	0.0001	0.0001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000005	0.0000050	0.000026	<0.0000050	<0.0000050	<0.0000050	0.0000070
Molybdenum	mg/L	0.0003	0.005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.073	<0.000050	<0.000050	0.000137	0.000135
Nickel	mg/L	0.001	0.005	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	0.025 - 0.150 [c]	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus	mg/L	-	-	-	0.05	0.05	0.05	0.05	0.05	0.050	-	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	0.02	0.01	1	0.05	0.05	0.05	0.05	0.05	0.050	-	0.444	0.392	1.11	1.08
Rubidium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	0.00057	0.00044	0.00061	0.00047
Selenium	mg/L	0.005	0.001	0.0004	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.001	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L			-	0.05	0.05	0.1	0.1	0.10	0.10		0.36	0.28	0.96	0.92
Silver	mg/L	0.0001	0.0001	-	0.00005	0.00005	0.00005	0.00005	0.00005	0.000050	0.0001	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	0.5	0.5	0.5	0.05	0.05	0.05	0.050	-	1.37	1.18	16.0	16.0
Strontium	mg/L	0.001	0.001	-	0.001	0.001	0.001	0.001	0.001	0.0010	-	0.0040	0.0034	0.0283	0.0282
Sulphur	mg/L	-	-	-	0.5	0.5	0.5	0.5	0.5	0.50	-	<0.50	<0.50	5.67	5.53
Tellurium	mg/L	-	-	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020
Thallium	mg/L	0.0002	-	0.0003	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.0008	<0.000010	<0.000010	<0.000010	<0.000010
Thorium	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Tin	mg/L	0.001	0.01	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	0.0003	0.0003	0.0003	0.0003	0.0003	0.00030	-	0.00303	0.00155	0.00149	<0.00080
Tungsten	mg/L	-	-	-	0.0001	0.0001	0.0001	0.0001	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Uranium	mg/L			0.001	0.00001	0.00001	0.00001	0.00001	0.00001	0.000010	0.015	0.000087	0.000050	0.000997	0.000970
Vanadium	mg/L	0.0009	0.001	-	0.0005	0.0005	0.0005	0.0005	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.003	0.003	0.003	0.003	0.003	0.003	0.0030	0.03	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium	mg/L	-	-		0.0003	0.0003	0.0003	0.0002	0.0002	0.00020	-	<0.00020	<0.00020	0.00021	<0.00020
Dissolved Metals and Non-Metals															
Aluminum	mg/L	0.004	0.005	0.005	-	-	-	-	0.005	0.0050	-	0.0149	0.0128	0.0053	<0.0050
Antimony	mg/L	0.0004	-	0.0001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic	mg/L	0.005	0.001	-	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Barium	mg/L	0.001	0.01	-	-	-	-	-	0.0001	0.00010	-	0.00121	0.00106	0.00703	0.00652
Beryllium	mg/L	0.005	-	0.00001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth	mg/L	0.0003	-	0.05	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Boron	mg/L	0.05	0.01	-	-	-	-	-	0.01	0.010	-	<0.010	<0.010	0.015	0.015
Cadmium	mg/L	0.0001	0.0001	-	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	0.05	1	0.0002	-	-	-	-	0.05	0.050	-	4.71	4.38	27.4	26.9
Chromium	mg/L	0.001	0.001	0.01	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt	mg/L	0.0003	0.0002	0.00005	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper	mg/L	0.0008	0.001	0.05	-	-	-	-	0.0002	0.00020	-	0.00023	<0.00020	0.00101	0.00097
Iron	mg/L	0.02	0.03	0.0005	-	-	-	-	0.01	0.010	-	0.016	0.014	<0.010	<0.010
Lead	mg/L	0.0002	0.001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	0.005	1	0.00005	-	-	-	-	0.005	0.0050	-	2.69	2.51	15.2	15.0
Manganese	mg/L	0.0007	0.01	0.0005	-	-	-	-	0.0005	0.00050	-	0.00132	0.00077	0.00112	<0.00050
Mercury	mg/L	-	-	0.05	-	-	-	-	0.000005	0.0000050	-	<0.0000050	<0.0000050	<0.0000050	0.0000061
Molybdenum	mg/L	0.0003	0.005	0.00005	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	0.000136	0.000114
Nickel	mg/L	0.001	0.005	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	0.02	0.01	0.5	-	-	-	-	0.05	0.050	-	0.390	0.361	1.10	1.09
Selenium	mg/L	0.005	0.001	-	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Silver	mg/L	0.0001	0.0001	0.00001	-	-	-	-	0.00005	0.000050	-	<0.000050	<0.000050	<0.000050	<0.000050
Sodium	mg/L	0.05	0.05	-	-	-	-	-	0.05	0.050	-	1.34	1.15	15.9	15.8
Strontium	mg/L	0.001	0.001	0.00001	-	-	-	-	0.001	0.0010	-	0.0037	0.0032	0.0289	0.0285
Thallium	mg/L	0.0002	-	-	-	-	-	-	0.00001	0.000010	-	<0.000010	<0.000010	<0.000010	<0.000010
Tin	mg/L	0.001	0.01	0.001	-	-	-	-	0.0001	0.00010	-	<0.00010	<0.00010	<0.00010	<0.00010
Titanium	mg/L	0.003	-	-	-	-	-	-	0.0003	0.00030	-	0.00048	0.00036	0.00033	<0.00030
Uranium	mg/L	0.00001		0.00001	-	-	-	-	0.00001	0.000010	-	0.000074	0.000048	0.000967	0.000922
Vanadium	mg/L	0.0009	0.001	-	-	-	-	-	0.0005	0.00050	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc	mg/L	0.001	0.01	0.001	-	-	-	-	0.001	0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010

Notes

Site Performance Objective's (SPOs) are identified in Baffinland's 2AM-MRY-1325 Water Licence.

2006 dissolved oxygen values in mg/L; 2015, 2016, 2017, 2018 and 2019 dissolved oxygen values in % saturation.

2018 TDS LOR was 10 in June, 20 in September; 2019 TDS LOR was 20 in June, 10 in August. 2019 Mercury LOR was 0.00001 in June, 0.00005 in August.

* Result qualified by analytical laboratory.

SPO and CCME guideline values are pH or Hardness dependent. The lowest to highest applicable guideline value is shown:

(a) pH /Temp dependent; (b) pH dependent; (c) Hardness dependent.

Analytical values which exceed SPO or calculated CCME guideline value are indicated below:

1	Shaded values exceed CCME guidelines.
1	Bold values exceed SPO guidelines.

TABLE 2. FISH-BEARING STREAM CROSSING SITES SURVEYED IN SPRING 2021

Location ID	Authorization Type	UTM [1]		2021 Spring Survey [2]				
		Easting	Northing	Date	DS Culvert Velocity (m/s)	US Culvert Velocity (m/s)	Perch (m)	Water Temperature (°C)
CV-129	HADD	512,381	7,966,783	27-Jun	0.68	0.46	0.10	5.0
CV-128	HADD	513,556	7,965,889	27-Jun	-	-	-	-
CV-115	LOA	519,222	7,958,135	27-Jun	Nearly Dry	Nearly Dry	0.00	-
CV-114	HADD	520,278	7,956,528	27-Jun	0.52	0.94	0.10	5.0
CV-112	LOA	521,033	7,954,935	27-Jun	0.33	0.62	0.00	4.0
CV-111	HADD	521,355	7,954,524	27-Jun	1.65	0.63	0.23	2.5
CV-106	LOA	521,663	7,953,392	03-Jul	0.21	0.17	0.00	6.0
CV-104	HADD	521,732	7,952,788	03-Jul	0.37	0.85	0.00	4.5
CV-102	LOA	521,934	7,950,591	03-Jul	0.36	0.54	0.00	5.0
CV-099	HADD	521,886	7,948,843	03-Jul	1.39	1.59	0.00	3.5
CV-079	HADD	525,538	7,937,314	03-Jul	0.93	0.62	0.07	2.0
CV-078	HADD	525,852	7,936,787	03-Jul	0.10	0.69	0.00	2.0
CV-076	LOA	526,586	7,935,498	03-Jul	0.44	1.08	0.00	4.0
CV-072	HADD	526,897	7,934,576	03-Jul	0.12	1.71	0.00	1.0
CV-060	HADD	527,622	7,930,342	04-Jul	0.16	0.28	0.00	7.0
CV-059	LOA	528,094	7,929,347	04-Jul	0.08	0.10	0.00	6.0
CV-058	LOA	528,322	7,928,839	04-Jul	0.02	0.19	0.00	6.0
CV-057	LOA	528,379	7,928,657	04-Jul	0.05	0.00	0.00	6.0
BG-50	HADD	529,294	7,926,852	04-Jul	-	-	0.57	4.5
CV-049	HADD	529,654	7,926,545	04-Jul	0.76	0.70	0.00	3.0
CV-030	LOA	540,123	7,921,310	04-Jul	0.00	0.00	0.00	5.0
BG-32	HADD	540,729	7,921,597	04-Jul	0.27	0.97	0.00	5.0
CV-217	HADD	542,321	7,922,189	04-Jul	-	-	0.00	3.0

Location ID	Authorization Type	UTM [1]		2021 Spring Survey [2]				
		Easting	Northing	Date	DS Culvert Velocity (m/s)	US Culvert Velocity (m/s)	Perch (m)	Water Temperature (°C)
CV-216	HADD	542,764	7,921,724	04-Jul	0.53	0.95	0.12	4.0
BG-30	COMP	546,070	7,919,844	04-Jul	1.16	0.27	0.05	7.0
BG-29	LOA	546,229	7,919,877	04-Jul	0.05	0.21	0.00	5.0
BG-27	LOA	547,876	7,919,355	05-Jul	0.59	1.05	0.00	4.0
BG-24	HADD	548,766	7,918,878	05-Jul	1.23	0.56	0.00	4.0
BG-17	HADD	550,703	7,917,643	05-Jul	0.78	0.92	0.00	6.0
BG-04	HADD	553,250	7,915,100	05-Jul	0.70	0.80	0.00	8.0
CV-001	COMP	553,544	7,914,897	05-Jul	0.43	0.01	0.05	8.0
CV-223	HADD	555,705	7,914,676	05-Jul	-	-	0.00	8.0
CV-224	HADD	556,238	7,915,044	05-Jul	Culvert Frozen During Survey	Culvert Frozen During Survey	0.00	6.0
CV-225	HADD	557,421	7,915,187	05-Jul	2.06	0.84	0.10	7.0
BG-01	HADD	558,000	7,914,928	05-Jul	2.20	1.08	0.05	7.0
CV-186	LOA	560,705	7,913,498	04-Jul	0.11	0.20	0.00	7.0
CV-187	COMP	560,957	7,913,414	04-Jul	0.05	0.15	0.00	7.0

1 - NAD 83, Zone 17W

2 - Depths and velocities were recorded within the culvert at the inflow and outflow; DS = downstream end of culvert; US = upstream end of culvert. Velocities were not recorded for bridge crossing CV-128 or for bridge/culvert crossings BG-50, CV-217, and CV-223.

TABLE 3. FISH-BEARING STREAM CROSSING SITES SURVEYED IN FALL 2021

Location ID	Authorization Type	UTM [1]		2021 Fall Survey [2]						
		Easting	Northing	Date	DS Culvert Velocity	DS Culvert Depth (m)	US Culvert Velocity	US Culvert Depth (m)	Perch	Water Temperature (°C)
CV-129	HADD	512,381	7,966,783	01-Sep	0.80	0.16	0.86	0.18	0.10	5.0
CV-128	HADD	513,556	7,965,889	01-Sep	-	-	-	-	-	-
CV-115	LOA	519,222	7,958,135	01-Sep	Nearly Dry	-	Nearly Dry	-	0.00	5.0
CV-114	HADD	520,278	7,956,528	01-Sep	0.75	0.10	0.80	0.10	0.13	5.0
CV-112	LOA	521,033	7,954,935	01-Sep	0.17	0.25	1.05	0.06	0.00	5.0
CV-111	HADD	521,355	7,954,524	01-Sep	1.43	0.06	0.71	0.10	0.27	4.5
CV-106	LOA	521,663	7,953,392	01-Sep	0.00	0.00	0.00	0.00	0.00	DRY
CV-104	HADD	521,732	7,952,788	01-Sep	0.23	0.25	0.61	0.12	0.00	5.0
CV-102	LOA	521,934	7,950,591	01-Sep	0.33	0.10	0.38	0.07	0.00	5.5
CV-099	HADD	521,886	7,948,843	01-Sep	0.92	0.22	1.04	0.21	0.00	4.0
CV-079	HADD	525,538	7,937,314	01-Sep	0.99	0.16	0.74	0.33	0.07	4.0
CV-078	HADD	525,852	7,936,787	01-Sep	0.10	0.60	1.00	0.17	0.00	4.0
CV-076	LOA	526,586	7,935,498	01-Sep	0.13	0.14	0.44	0.10	0.00	5.0
CV-072	HADD	526,897	7,934,576	01-Sep	0.18	0.26	0.77	0.12	0.00	3.5
CV-060	HADD	527,622	7,930,342	02-Sep	0.29	0.17	0.35	0.25	0.00	4.0
CV-059	LOA	528,094	7,929,347	02-Sep	0.09	0.50	0.36	0.18	0.00	4.0
CV-058	LOA	528,322	7,928,839	02-Sep	0.00	0.54	0.11	0.40	0.00	4.0
CV-057	LOA	528,379	7,928,657	02-Sep	0.41	0.06	0.00	0.37	0.00	4.0
BG-50	HADD	529,294	7,926,852	02-Sep	1.31	0.10	0.36	0.21	0.57	5.0
CV-049	HADD	529,654	7,926,545	02-Sep	0.86	0.28	1.38	0.18	0.00	5.0
CV-030	LOA	540,123	7,921,310	02-Sep	0.01	0.16	0.05	0.36	0.00	4.0
BG-32	HADD	540,729	7,921,597	02-Sep	0.31	0.50	1.04	0.35	0.00	4.0
CV-217	HADD	542,321	7,922,189	Not assesssed during fall						

Location ID	Authorization Type	UTM [1]		2021 Fall Survey [2]						
		Easting	Northing	Date	DS Culvert Velocity	DS Culvert Depth (m)	US Culvert Velocity	US Culvert Depth (m)	Perch	Water Temperature (°C)
CV-216	HADD	542,764	7,921,724	02-Sep	1.18	0.15	1.04	0.20	0.12	4.0
BG-30	COMP	546,070	7,919,844	02-Sep	1.06	0.05	0.58	0.07	0.00	3.0
BG-29	LOA	546,229	7,919,877	02-Sep	0.02	0.32	0.09	0.22	0.00	4.0
BG-27	LOA	547,876	7,919,355	02-Sep	0.32	0.06	0.23	0.05	0.00	3.5
BG-24	HADD	548,766	7,918,878	02-Sep	0.48	0.18	0.82	0.08	0.00	3.0
BG-17	HADD	550,703	7,917,643	02-Sep	0.93	0.20	0.71	0.27	0.00	5.0
BG-04	HADD	553,250	7,915,100	02-Sep	1.15	0.14	0.98	0.16	0.05	4.0
CV-001	COMP	553,544	7,914,897	07-Sep	0.37	0.05	0.00	0.28	0.05	0.0
CV-223	HADD	555,705	7,914,676	Not assesssed during fall						
CV-224	HADD	556,238	7,915,044	07-Sep	0.61	0.05	0.66	0.10	0.00	0.0
CV-225	HADD	557,421	7,915,187	07-Sep	0.98	0.08	1.05	0.10	0.17	0.0
BG-01	HADD	558,000	7,914,928	07-Sep	1.70	0.06	1.30	0.28	0.00	0.0
CV-186	LOA	560,705	7,913,498	25-Aug	0.11	0.16	0.72	0.16	0.00	5.0
CV-187	COMP	560,957	7,913,414	25-Aug	0.00	0.21	0.15	0.05	0.00	5.0

1 - NAD 83, Zone 17W

2 - Depths and velocities were recorded within the culvert at the inflow and outflow; DS = downstream end of culvert; US = upstream end of culvert. Velocities were not recorded for bridge crossing CV-128. Bridge/culvert crossings CV-217 and CV-223 were not assessed during the fall.

TABLE 4. ARCTIC CHAR CATCH DATA FROM FISH-BEARING STREAM CROSSINGS ALONG THE TOTE ROAD, SPRING 2021

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-129	DS	325	1	0.18	1	161.0	-	161	161
	US	311	1	0.19	1	160.0	-	160	160
	Total	636	2	0.19	2	160.5	0.71	160	161
CV-128 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-115	DS	Nearly Dry, No Fish Present							
	US								
	Total								
CV-114	DS	232	5	1.29	5	99.6	16.13	83	122
	US	152	0	0.00	0	-	-	-	-
	Total	384	5	0.78	5	99.6	16.13	83	122
CV-112	DS	221	6	1.63	6	93.0	17.23	64	114
	US	160	0	0.00	0	-	-	-	-
	Total	381	6	0.94	6	93.0	17.23	64	114
CV-111	DS	185	7	2.27	4	103.5	21.63	81	131
	US	100	0	0.00	0	-	-	-	-
	Total	285	7	1.47	4	103.5	21.63	81	131
CV-106	DS	190	2	0.63	1	54.0	-	54	54
	US	177	0	0.00	0	-	-	-	-
	Total	367	2	0.33	1	54.0	-	54	54
CV-104	DS	164	7	2.56	6	75.0	15.13	55	90
	US	144	0	0.00	0	-	-	-	-
	Total	308	7	1.36	6	75.0	15.13	55	90
CV-102	DS	189	12	3.81	9	52.8	4.94	43	57
	US	158	2	0.76	2	65.5	19.09	52	79
	Total	347	14	2.42	11	55.1	9.08	43	79
CV-099	DS	144	11	4.58	7	101.4	19.24	75	130
	US	143	0	0.00	0	-	-	-	-
	Total	287	11	2.30	7	101.4	19.24	75	130
CV-079	DS	141	6	2.55	2	101.0	11.31	93	109
	US	112	2	1.07	2	141.5	13.44	132	151
	Total	253	8	1.90	4	121.3	25.49	93	151

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-078	DS	143	8	3.36	1	73.0	-	73	73
	US	101	0	0.00	0	-	-	-	-
	Total	244	8	1.97	1	73.0	-	73	73
CV-076	DS	107	9	5.05	4	72.5	2.08	70	75
	US	104	8	4.62	6	78.7	4.72	72	85
	Total	211	17	4.83	10	76.2	4.89	70	85
CV-072	DS	110	10	5.45	5	90.0	5.24	84	98
	US	107	1	0.56	1	90.0	-	90	90
	Total	217	11	3.04	6	90.0	4.69	84	98
CV-060	DS	172	2	0.70	2	118.0	16.97	106	130
	US	170	6	2.12	4	95.3	13.67	75	104
	Total	342	8	1.40	6	102.8	17.54	75	130
CV-059	DS	128	1	0.47	1	90.0	-	90	90
	US	134	2	0.90	2	91.5	10.61	84	99
	Total	262	3	0.69	3	91.0	7.55	84	99
CV-058	DS	166	3	1.08	1	113.0	-	113	113
	US	133	6	2.71	1	83.0	-	83	83
	Total	299	9	1.81	2	98.0	21.21	83	113
CV-057	DS	111	5	2.70	3	110.7	22.28	85	125
	US	104	0	0.00	0	-	-	-	-
	Total	215	5	1.40	3	110.7	22.28	85	125
BG-50 [6]	DS	151	1	0.40	1	151.0	-	151	151
	US	-	-	-	-	-	-	-	-
	Total	151	1	0.40	1	151.0	-	151	151
CV-049	DS	188	10	3.19	7	116.7	9.93	98	128
	US	114	7	3.68	4	141.8	17.75	120	161
	Total	302	17	3.38	11	125.8	17.70	98	161
CV-030	DS	123	0	0.00	0	-	-	-	-
	US	113	0	0.00	0	-	-	-	-
	Total	236	0	0.00	0	-	-	-	-
BG-32	DS	142	1	0.42	1	63.0	-	63	63
	US	106	12	6.79	0	-	-	-	-
	Total	248	13	3.15	1	63.0	-	63	63
CV-217 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-216 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
BG-30 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
BG-29 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
BG-27	DS	186	24	7.74	24	91.4	25.37	54	169
	US	129	3	1.40	3	128.3	17.67	108	140
	Total	315	27	5.14	27	95.5	27.08	54	169
BG-24	DS	274	60	13.14	40	119.2	29.99	60	185
	US	170	6	2.12	6	155.8	34.03	121	215
	Total	444	66	8.92	46	124.0	32.61	60	215
BG-17	DS	275	6	1.31	6	85.3	26.36	61	135
	US	133	4	1.80	4	87.0	32.93	57	116
	Total	408	10	1.47	10	86.0	27.35	57	135
BG-04	DS	249	11	2.65	1	109.0	-	109	109
	US	218	13	3.58	9	125.9	18.94	93	157
	Total	467	24	3.08	10	124.2	18.64	93	157
CV-001	DS	166	10	3.61	10	129.1	46.29	60	193
	US	102	5	2.94	2	103.0	14.14	93	113
	Total	268	15	3.36	12	124.8	43.30	60	193
CV-223 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-224	DS	176	30	10.23	10	82.2	30.21	51	128
	US	112	0	0.00	0	-	-	-	-
	Total	288	30	6.25	10	82.2	30.21	51	128
CV-225 [7]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
BG-01 [7]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-186	DS	199	15	4.52	7	96.9	16.93	63	116
	US	180	1	0.33	1	100.0	-	100	100
	Total	379	16	2.53	8	97.3	15.71	63	116
CV-187	DS	123	0	0.00	0	-	-	-	-
	US	115	8	4.17	4	134.0	11.58	125	151
	Total	238	8	2.02	4	134.0	11.58	125	151

1 - DS = 50-m transect downstream of the Tote Road crossing; US = 50-m transect upstream of the Tote Road crossing

2 - Includes fish that were shocked, but not netted before they escaped

3 - CPUE = Catch-per-unit-effort (# fish/minute)

4 - n = number of fish measured for fork length (may not equal total catch); SD = standard deviation

5 - Observational survey only in spring 2021: bridge and bridge/culvert sites (CV-128, CV-217, CV-223) are typically too fast, deep, and/or have challenging uneven substrate to effectively electrofish while other sites (CV-216, BG-30, BG-29) experienced an electrofisher malfunction. Fish were observed at all of these sites upstream and downstream of the road crossings.

6 – Electrofishing is typically not conducted upstream of BG-50 because two channels (bridge and culverts) merge immediately upstream of the crossing; therefore, any fish observed/captured upstream are not indicative of successful passage through the culverts.

7 - These two sites were surveyed extensively in the spring with hoopnets and daily electrofishing as part of a separate fish movements study. Arctic Char were captured in hoopnets upstream and downstream of the Tote Road at both sites.

TABLE 5. ARCTIC CHAR CATCH DATA FROM FISH-BEARING STREAM CROSSINGS ALONG THE TOTE ROAD, FALL 2021

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CF	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-129	DS	198	0	0.00	-	-	-	-	-
	US	247	0	0.00	-	-	-	-	-
	Total	445	0	0.00	-	-	-	-	-
CV-128 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-115	DS	Nearly dry, no fish present							
	US								
	Total								
CV-114	DS	178	1	0.34	1	119.0	-	119	119
	US	153	0	0.00	0	-	-	-	-
	Total	331	1	0.18	1	119.0	-	119	119
CV-112	DS	142	2	0.85	2	66.0	33.94	42	90
	US	266	0	0.00	0	-	-	-	-
	Total	408	2	0.29	2	66.0	33.94	42	90
CV-111	DS	123	3	1.46	3	64.3	11.15	56	77
	US	175	0	0.00	0	-	-	-	-
	Total	298	3	0.60	3	64.3	11.15	56	77
CV-106	DS	Stream dry during fall survey							
	US								
	Total								
CV-104	DS	233	0	0.00	0	-	-	-	-
	US	162	0	0.00	0	-	-	-	-
	Total	395	0	0.00	0	-	-	-	-
CV-102	DS	67	0	0.00	0	-	-	-	-
	US	112	0	0.00	0	-	-	-	-
	Total	179	0	0.00	0	-	-	-	-
CV-099	DS	358	2	0.34	2	111.0	16.97	99	123
	US	174	1	0.34	1	118.0	-	118	118
	Total	532	3	0.34	3	113.3	12.66	99	123
CV-079	DS	230	8	2.09	8	149.9	36.55	101	216
	US	107	0	0.00	0	-	-	-	-
	Total	337	8	1.42	8	149.9	36.55	101	216

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPI	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-078	DS	273	10	2.20	10	134.2	25.37	86	165
	US	111	0	0.00	0	-	-	-	-
	Total	384	10	1.56	10	134.2	25.37	86	165
CV-076	DS	91	0	0.00	0	-	-	-	-
	US	104	0	0.00	0	-	-	-	-
	Total	195	0	0.00	0	-	-	-	-
CV-072	DS	100	0	0.00	0	-	-	-	-
	US	128	0	0.00	0	-	-	-	-
	Total	228	0	0.00	0	-	-	-	-
CV-060	DS	167	0	0.00	2	84.5	13.40	75	94
	US	144	0	0.00	1	89.0	-	89	89
	Total	311	0	0.00	3	86.0	9.80	75	94
CV-059	DS	130	0	0.00	0	-	-	-	-
	US	141	0	0.00	0	-	-	-	-
	Total	271	0	0.00	0	-	-	-	-
CV-058	DS	140	0	0.00	0	-	-	-	-
	US	117	0	0.00	0	-	-	-	-
	Total	257	0	0.00	0	-	-	-	-
CV-057	DS	103	0	0.00	0	-	-	-	-
	US	179	0	0.00	0	-	-	-	-
	Total	282	0	0.00	0	-	-	-	-
BG-50 [6]	DS	85	8	5.65	8	119.1	18.13	105	158
	US	-	-	-	-	-	-	-	-
	Total	85	8	5.65	8	119.1	18.13	105	158
CV-049	DS	174	4	1.38	4	118.3	38.89	60	140
	US	138	0	0.00	0	-	-	-	-
	Total	312	4	0.77	4	118.3	38.89	60	140
CV-030	DS	147	0	0.00	0	-	-	-	-
	US	134	0	0.00	0	-	-	-	-
	Total	281	0	0.00	0	-	-	-	-
BG-32	DS	263	8	1.83	1	105.0	-	105	105
	US	250	11	2.64	1	124.0	-	124	124
	Total	513	19	2.22	2	114.5	13.44	105	124
CV-217 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]		Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-216	DS	137	0	0.00	0	-	-	-	-
	US	150	0	0.00	0	-	-	-	-
	Total	287	0	0.00	0	-	-	-	-
BG-30	DS	135	0	0.00	0	-	-	-	-
	US	131	0	0.00	0	-	-	-	-
	Total	266	0	0.00	0	-	-	-	-
BG-29	DS	327	32	5.87	17	81.9	21.43	49	127
	US	60	8	8.00	8	97.1	41.37	58	150
	Total	387	40	6.20	25	86.8	29.28	49	150
BG-27	DS	127	1	0.47	1	70.0	-	70	70
	US	120	0	0.00	0	-	-	-	-
	Total	247	1	0.24	1	70.0	-	70	70
BG-24	DS	324	26	4.81	26	103.5	30.69	59	195
	US	154	1	0.39	1	125.0	-	125	125
	Total	478	27	3.39	27	104.3	30.38	59	195
BG-17	DS	185	5	1.62	5	86.6	17.34	68	106
	US	133	0	0.00	0	-	-	-	-
	Total	318	5	0.94	5	86.6	17.34	68	106
BG-04	DS	358	9	1.51	9	125.6	69.21	68	245
	US	218	2	0.55	2	89.5	3.54	87	92
	Total	576	11	1.15	11	119.0	63.61	68	245
CV-001 [7]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-223 [5]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-224 [7]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-225 [8]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
BG-01 [8]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-186 [8]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-
CV-187 [8]	DS	-	-	-	-	-	-	-	-
	US	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-

1 - DS = 50-m transect downstream of the Tote Road crossing; US = 50-m transect upstream of the Tote Road crossing

2 - Includes fish that were shocked, but not netted before they escaped

3 - CPUE = Catch-per-unit-effort (# fish/minute)

4 - n = number of fish measured for fork length (may not equal total catch); SD = standard deviation

5 - Bridge and bridge/culvert sites CV-128, CV-127 and CV-223 were not fished during fall 2021 because these rivers are typically too fast, deep, and/or have challenging uneven substrate to effectively electrofish.

6 - Electrofishing is typically not conducted upstream of BG-50 because two channels (bridge and culverts) merge immediately upstream of the crossing; therefore any fish observed/captured upstream are not indicative of successful passage through the culverts.

7 - These sites were surveyed when water temperatures had reached 0°C. Streams were starting to freeze rendering electrofishing highly ineffective and fish were not observed.

8 - Observational survey only in fall 2021. Fish were observed upstream and downstream at these sites.

TABLE 6. NINESPINE STICKLEBACK CATCH DATA FROM FISH-BEARING STREAM CROSSINGS ALONG THE TOTE ROAD, SPRING 2021

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-129	DS	325	1	0.18	1	42.0	-	42	42
	US	311	0	0.00	0.00	-	-	-	-
	Total	636	1	0.09	1	42.0	-	42	42
CV-102	DS	189	1	0.32	1	42.0	-	42	42
	US	158	0	0.00	0	-	-	-	-
	Total	347	1	0.17	1	42.0	-	42	42
BG-50 [5]	DS	151	2	0.79	2	55.5	6.36	51	60
	US	-	-	-	-	-	-	-	-
	Total	151	2	0.79	2	55.5	6.36	51	60
CV-030	DS	123	3	1.46	3	44.3	16.86	25	56
	US	113	2	1.06	2	60.0	7.07	55	65
	Total	236	5	1.27	5	50.6	15.11	25	65
BG-04	DS	249	24	5.78	24	53.9	9.17	32	71
	US	218	1	0.28	1	30.0	-	30	30
	Total	467	25	3.21	25	52.9	10.17	30	71
CV-001	DS	166	23	8.31	23	51.3	6.66	39	61
	US	102	0	0.00	0	-	-	-	-
	Total	268	23	5.15	23	51.3	6.66	39	61
CV-224	DS	176	29	9.89	9	43.2	5.21	35	53
	US	112	0	0.00	0	-	-	-	-
	Total	288	29	6.04	9	43.2	5.21	35	53

Notes: Table includes sites at which stickleback were captured in spring 2021. Stickleback were not captured or observed at any remaining fish-bearing streams in spring 2021.

1 - DS = 50-m transect downstream of the Tote Road crossing; US = 50-m transect upstream of the Tote Road crossing

2 - Includes fish that were shocked, but not netted before they escaped

3 - CPUE = Catch-per-unit-effort (# fish/minute)

4 - n = number of fish measured for fork length (may not equal total catch); SD = standard deviation

5 - Electrofishing is typically not conducted upstream of BG-50 because two channels (bridge and culverts) merge immediately upstream of the crossing; therefore any fish observed/captured upstream are not indicative of successful passage through the culverts.

TABLE 7. NINESPINE STICKLEBACK CATCH DATA FROM FISH-BEARING STREAM CROSSINGS ALONG THE TOTE ROAD, FALL 2021

Location ID	Transect [1]	Electrofishing Duration (s)	Total Catch [2]	CPUE [3]	Fork Length (mm) [4]				
					n	Mean	SD	Min	Max
CV-030	DS	147	0	0.00	0	-	-	-	-
	US	134	1	0.45	1	8.0	-	8	8
	Total	281	1	0.21	1	8.0	-	8	8
BG-32	DS	263	2	0.46	2	51.0	2.83	49	53
	US	250	0	0.00	0	-	-	-	-
	Total	513	2	0.23	2	51.0	2.83	49	53
BG-29	DS	327	13	2.39	3	52.3	1.15	51	53
	US	60	0	0.00	0	-	-	-	-
	Total	387	13	2.02	3	52.3	1.15	51	53
BG-04	DS	358	13	2.18	13	58.2	10.74	36	72
	US	218	0	0.00	0	-	-	-	-
	Total	576	13	1.35	13	58.2	10.74	36	72

Notes: Table includes sites at which stickleback were captured in spring 2021. Stickleback were not captured or observed at any remaining fish-bearing streams in spring 2021.

1 - DS = 50-m transect downstream of the Tote Road crossing; US = 50-m transect upstream of the Tote Road crossing

2 - Includes fish that were shocked, but not netted before they escaped

3 - CPUE = Catch-per-unit-effort (# fish/minute)

4 - n = number of fish measured for fork length (may not equal total catch); SD = standard deviation

TABLE 8. SUMMARY OF FISH HABITAT STATUS, FISH PASSAGE, AND REMEDIATION WORK ALONG THE TOTE ROAD IN 2021

Location ID	Fish Habitat at Crossing (Y/N)	Fish Captured / Observed DS in 2021	Fish Captured / Observed US in 2021	Potential Project-Related Fish Passage or Habitat Issues	Remediation Actions
CV-129	Y	Y	Y	YES - Slight perch; damaged culvert requires repair.	Small height of perch, not impeding fish passage but damaged culvert may cause issues if damaged further.
CV-128	Y	Y	Y	NONE	N/A
CV-115	Y	N	N	NONE - Stream almost dry in 2021	N/A
CV-114	Y	Y	N	YES - Ramps to both perched culverts were either washed away during freshet or damaged during snow removal activities.	Ramps may not be a suitable long-term solution at this location. Evaluate culvert reinstallation.
CV-112	Y	Y	N	NONE	N/A
CV-111	Y	Y	N	YES - Culvert has a perch (0.23-0.27 m) that is likely preventing most if not all fish access to upstream habitat.	Evaluate culvert reinstallation.
CV-106	Y	Y	N	YES - Ramp installed in 2018 to mitigate a slight perch was not effective at maintaining surface flows under low water conditions, resulting in intermittent access to the culvert.	Review rocky ramp design to evaluate low water level conditions and subsequent implementation of adjustments.
CV-104	Y	Y	N	NONE	N/A
CV-102	Y	Y	Y	NONE	N/A
CV-099	Y	Y	Y	NONE	N/A
CV-079	Y	Y	Y	NONE	N/A
CV-078	Y	Y	N	NONE	N/A
CV-076	Y	Y	Y	YES – Continue to monitor site for seepage beneath road and if seepage persists locate and plug upstream leak. Diminshed flow in summer/fall may cause leakage to stop.	Monitoring to continue in 2022.
CV-072	Y	Y	Y	NONE	N/A
CV-060	Y	Y	Y	NONE	N/A
CV-059	Y	Y	Y	NONE	N/A
CV-058	Y	Y	Y	NONE	N/A

Location ID	Fish Habitat at Crossing (Y/N)	Fish Captured / Observed DS in 2021	Fish Captured / Observed US in 2021	Potential Project-Related Fish Passage or Habitat Issues	Remediation Actions
CV-057	Y	Y	N	YES - Remove sediment obstructing the flow through the culvert and/or reduce upstream sediment input to stream.	Remove sediment during winter.
BG-50	Y	Y	N	YES - Culverts remain perched and rocky ramp installed in 2019 was washed out by high flows during spring freshet. Fish continue to use habitat in the channel downstream of these culverts.	Evaluate culvert reinstallation.
CV-049	Y	Y	Y	NONE	N/A
CV-030	Y	N	N	NONE	N/A
BG-32	Y	Y	Y	NONE	N/A
CV-217	Y	Y	Y	NONE	N/A
CV-216	Y	Y	Y	YES - Culvert perching has reoccurred due to damage to the downstream structure designed to create backflow.	Implementation of repairs to downstream structure.
BG-30	Y	Y	Y	NONE	N/A
BG-29	Y	Y	Y	NONE	N/A
BG-27	Y	Y	Y	NONE	N/A
BG-24	Y	Y	Y	NONE	N/A
BG-17	Y	Y	Y	NONE	N/A
BG-04	Y	Y	Y	NONE	N/A
CV-001	Y	Y	Y	NONE	N/A
CV-223	Y	Y	Y	NONE	N/A
CV-224	Y	Y	N	YES - Fish passage culvert was still frozen and impassable after peak freshet.	Frozen culverts blocking fish passage in early spring were rectified upon observation of this condition. Increased monitoring of this culvert crossing following the initial steam application will be continued for freshet 2022 to ensure culverts remain open to provide full access for fish.

Location ID	Fish Habitat at Crossing (Y/N)	Fish Captured / Observed DS in 2021	Fish Captured / Observed US in 2021	Potential Project-Related Fish Passage or Habitat Issues	Remediation Actions
CV-225	Y	Y	Y	YES - High velocity flows are typical through the culverts in spring. Old road crossing obstructing flow to other channel (which remains blocked).	Culverts will be reviewed to ensure sufficient (size/quantity) for spring freshet. Backwatering has improved the perch, but high spring velocities remain. Removal of old road during winter will occur to restore flow to other channel downstream.
BG-01	Y	Y	Y	YES - Silt fence debris washed into stream and embankment erosion during periods of rain entering the stream.	Review erosion control measures to ensure prevention of debris from entering the stream and armouring of the road embankment to occur.
CV-186	Y	Y	Y	YES - Silt curtain upstream of the road is becoming buried with accumulated sediment and may eventually block upstream passage.	Silt curtain will be reinstalled and regular cleaning/maintenance conducted to maintain consistent fish passage.
CV-187	Y	N	Y	NONE	N/A

TABLE 9. INSTALLATION SUMMARY OF REMAINING HADD AND HABITAT COMPENSATION SITES ALONG THE TOTE ROAD

Crossing ID	UTM[1]		Crossing Size Classification	Authorization (HADD or Compensation)[2]	Initial Work Completion Date[3]	Additional Work Completion Date[4]	Years Monitored	Additional Monitoring Required
	Easting	Northing						
CV-129	512381	7966783	Large	HADD	17-Sep-07	July 2011 Winter 2014/15 September 2019 September 2020	2008-2021	Continue monitoring of rocky ramp for successful passage and if any changes are made to the culverts
CV-128	513556	7965889	Extra-large	HADD	23-Sep-07	Winter 2013/14 March 2017	2009-2021	Routine Only
CV-114	520278	7956528	Medium	HADD	29-Sep-07	July 2011 September 2019 September 2020	2009-2021	Once alternative remediation is identified, monitor success of measures
CV-111	521355	7954524	Medium	HADD	28-Sep-07	Winter 2018/19 September 2019	2009-2021	Once alternative remediation is identified, monitor success of measures
CV-104	521732	7952788	Medium	HADD	01-Oct-07	November 2016	2009-2021	Routine Only
CV-099	521886	7948843	Large	HADD	04-Oct-07	Winter 2014/15 December 2017	2008-2021	Routine Only
CV-079	525538	7937314	Large	HADD	08-Jul-08	June 2018	2008-2021	Routine Only
CV-078	525852	7936787	Large	HADD	09-Jul-08	N/A	2008-2021	Routine Only
CV-072	526897	7934576	Large	HADD	05-Mar-08	N/A	2009-2021	Routine Only
CV-060	527622	7930342	Medium	HADD	27-Feb-08	N/A	2009-2021	Routine Only
BG-50	529294	7926852	Extra-large	HADD	30-Oct-07	Winter 2013/14 Winter 2014/15 November 2016 September 2019	2008-2021	Once alternative remediation is identified for the culvert channel, monitor success of measures
CV-049	529654	7926545	Large	HADD	10-Mar-08	N/A	2009-2021	Routine Only
BG-32	540729	7921597	Large	HADD	04-Apr-08	August 2012 September 2017	2009-2021	Routine Only
CV-217	542321	7922189	Extra-large	HADD	17-Apr-08	Winter 2013/14 Winter 2014/15 March 2017	2009-2021	Routine Only

Crossing ID	UTM[1]		Crossing Size Classification	Authorization (HADD or Compensation)[2]	Initial Work Completion Date[3]	Additional Work Completion Date[4]	Years Monitored	Additional Monitoring Required
	Easting	Northing						
CV-216	542764	7921724	Large	HADD	08-Jun-08	October 2017 September 2019 September 2020	2009-2021	Continue monitoring backwatering structure or alternative remediation for effectiveness and fish passage
BG-30	546070	7919844	Small	Compensation - RA	2012	August 2012	2010-2021	Routine monitoring and maintenance of constructed fishway
BG-24	548766	7918878	Medium	HADD	15-May-08	N/A	2008-2021	Routine Only
BG-17	550703	7917643	Large	HADD	09-May-08	N/A	2009-2021	Routine Only
BG-04	553250	7915100	Medium	HADD	05-May-08	August 2012 February 2018 June 2018	2009-2021	Routine Only
CV-001	553544	7914897	Small	Compensation - RH	08-May-08	Winter 2014/15	2009-2021	Routine Only
CV-223	555705	7914676	Extra-large	HADD	03-May-08	Winter 2013/14	2008-2021	Routine Only
CV-224	556238	7915044	Medium	HADD	04-May-08	January 2018	2008-2021	Routine Only
CV-225	557421	7915187	Large	HADD	21-Sep-07	August 2010 Winter 2014/15 Spring 2020	2008-2021	Continue monitoring of backwater structure
BG-01	558000	7914928	Medium	HADD	20-Sep-07	August 2010 October 2017 September 2019	2008-2021	Continue monitoring for passage in high culvert water velocity
CV-187	560957	7913414	Small	Compensation - RH	14-Jun-08	N/A	2008-2021	Routine Only

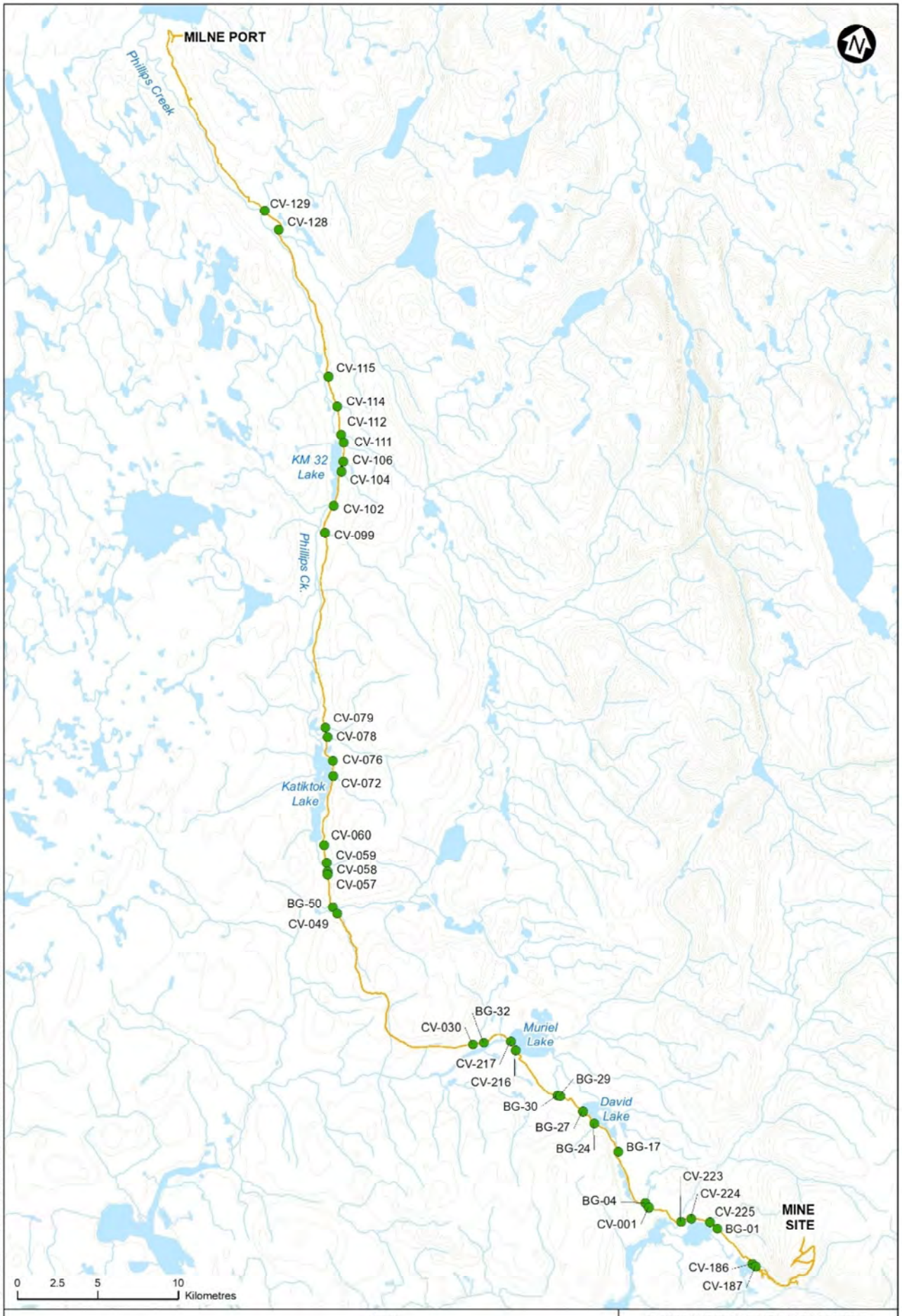
1 - NAD 83, Zone 17W

2 - Includes current HADD and compensation sites and not those eliminated from calculations following 2010 surveys; RA = restored access, RH = restored habitat

3 - Includes work outlined during the initial planning and construction phase

4 - Includes repair work, installation of fish access improvement structures, and ERP upgrades

FIGURE 1. MAP OF TOTE ROAD SITES SURVEYED IN SPRING 2021 FISH AND FISH HABITAT ASSESSMENT FIELD PROGRAMS



FISH HABITAT

- YES

TOTE ROAD

NOTES:

1. BASE DATA SOURCE: CANVEC 1:250 000
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

TOTE ROAD 2021 LOCATIONS OVERVIEW

North/South Consultants Inc. Aquatic Environment Specialists

DATE CREATED: 11/10/2021

Document Path: W:\PROJECTS\BIM_Baffinland Iron Mine\BIM - Tote Road Monitoring_short_2021_MC\GIS\MXDs\20211110_2021ToteRdSites_Overview_cp.mxd

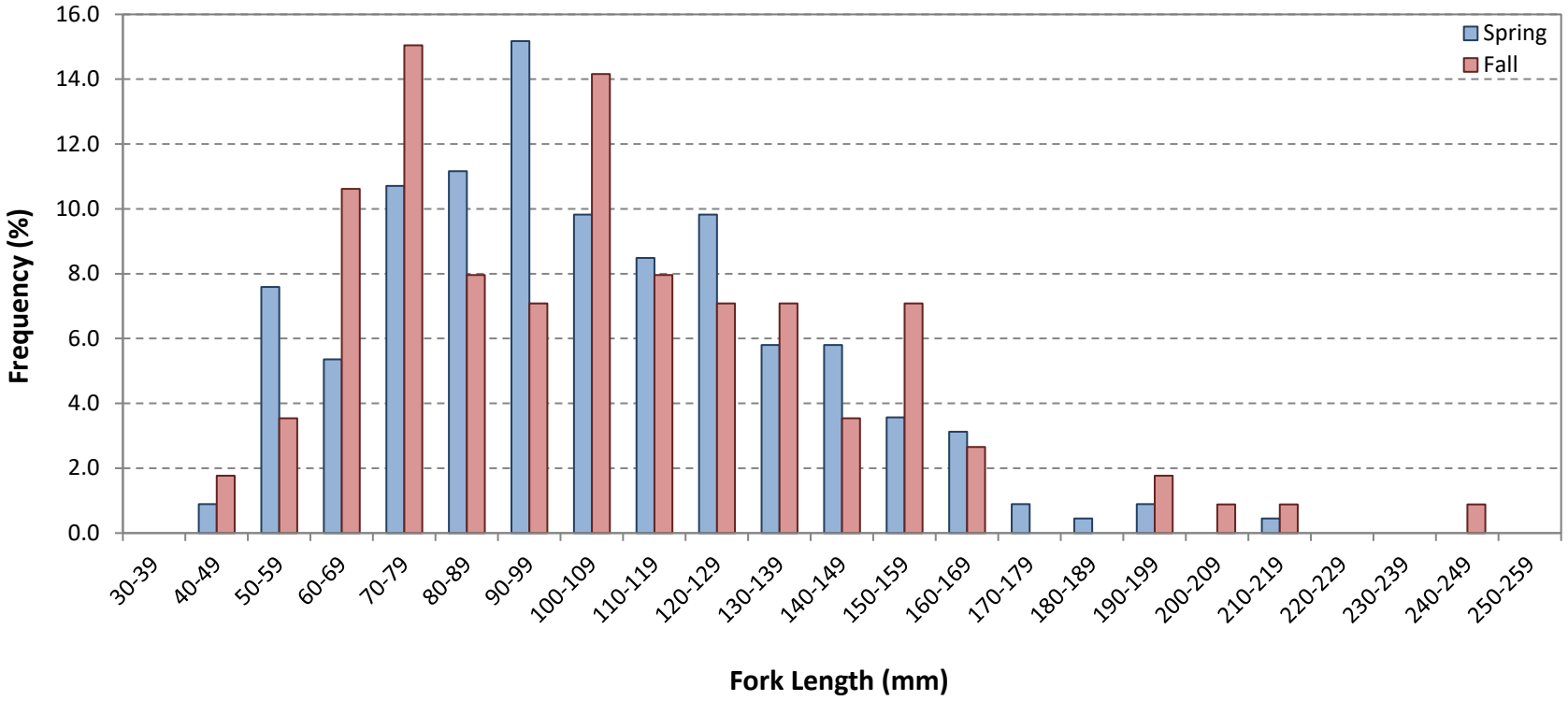


FIGURE 2. FORK LENGTH-FREQUENCY FOR ARCTIC CHAR CAPTURED DURING SPRING AND FALL 2021 SURVEYS OF FISH BEARING SITES ALONG THE TOTE ROAD

APPENDIX A

DFO AUTHORIZATIONS AND AMENDMENTS

Fisheries and Oceans Canada | Pêches et Océans Canada

301-5204 50th Avenue
Yellowknife, NT
X1A 1E2

September 20, 2013

our file *Votre référence*

Our file *Notre référence*
07-HCAA-CA7-00050

Oliver Curran
Baffinland Iron Mines Corporation
2275 Upper Middle Road East, Suite 300
Oakville, ON
L6H 0C3

Dear Mr. Curran:

Subject: Proposal not likely to result in impacts to fish and fish habitat.

Fisheries and Oceans Canada – Fisheries Protection Program (DFO) received your proposal on August 29, 2013. Please refer to the file number and title below:

DFO File No.: **07-HCAA-CA7-00050**
Title: **Mary River Iron Ore Project, Baffin Island (Baffinland), Nunavut**

You may be aware of changes to the *Fisheries Act*, however these have not affected the review of your project at this time. For more information on current changes to the *Fisheries Act* please refer to the DFO website at www.dfo-mpo.gc.ca/media/infocus-alaune/2012/habitat-eng.htm.

Your proposal has been reviewed to determine whether it is likely to result in impacts to fish and fish habitat which are prohibited by the habitat protection provisions of the *Fisheries Act* or those prohibitions of the *Species at Risk Act* that apply to aquatic species.*

Our review consisted of:

Changes to Culverts along the Tote Road, Submission dated August 29, 2013 from Oliver Curran - Baffinland Iron Mines Corporation

Freshwater Aquatic Baseline Synthesis Report 2005-2011 (January 2012), Baffinland Iron Mines Corporation, Mary River Project, Prepared by North/South Consultants Inc.

*Those sections most relevant to the review of development proposals include 20, 22, 32 and 35 of the *Fisheries Act* and sections 32, 33 and 58 of the *Species at Risk Act*. For more information please visit www.dfo-mpo.gc.ca.

We understand that you propose to carry out the following culvert upgrades along the Tote Road:

Culvert ID	Proposed Culvert Diameter (m)	Proposed Culvert Length (m)	Area of Rip Rap (m2)	Proposed Culvert Upgrate
BG31A	1.2	19.5	24.96	Extend 1m left & 2.5m right
BG30	1	22	17.33	Extend 7m right
BG29	1	31	0	Extend 7.5m left & 8.5m right
BG27B	0.5	31	4.33	Extend 5m left & 8m right
BG27C	0.5	31	0	Extend 5m left & 8m right
BG27A	0.5	31	0	Extend 4.5m left & 8.5m right
BG17A	1.2	36.5	24.96	Extend 8m left & 13.5m right
BG17B	1.2	37.5	24.96	Extend 15.5m left & 7m right
BG04A	1.2	24	0	Extend 5.5m left & 3.5m right
BG04B	1.2	24	0	Extend 5m left & 4m right
CV224A	1	26	0	Extend 6m left & 5m right
CV224B	1	26.5	0	Extend 6.5m left & 5m right
CV225B	1.2	18	0	Replace with new length of 18m
CV225A	1	18.5	17.33	Replace with new length of 18.5m
BG01C	1.2	37	24.96	Extend 11m left & 8m right
BG01A	1.2	36.5	24.96	Extend 11.5m left & 7m right
BG01B	1.2	37	24.96	Extend 12m left & 7m right
BG01D	0.5	10	0	New Culvert
BG01F	0.5	18	0	New Culvert
BG01E	1.0	10	0	New Culvert
BG01G	0.5	23	0	New Culvert
CV186	1	27	0	Extend 6m left
CV187A	0.5	20.5	0	Extend 6m left & 4.5m right
CV187B	0.5	16	0	New Culvert
CV166A	1	23.5	17.33	Extend 8.5m right
CV166B	0.5	22.5	0	Extent 7.5m right
CV115A	0.5	17.5	0	Extend 2.5m left
CV115B	1	17	0	Extend 2m left

Provided that your plans are implemented as described DFO has concluded that your proposal is not likely to result in impacts to fish and fish habitat.

You will not need to obtain a formal approval from DFO in order to proceed with your proposal.

.../3

If the plans have changed or if the description of your proposal is incomplete you should contact this office to determine if the advice in this letter still applies.

Please be advised that any unauthorized impacts to fish and fish habitat which result from a failure to implement this proposal as described could lead to corrective action such as enforcement.

If you have any questions please contact the undersigned at (867) 669-4927 or by email at Georgina.Williston@dfo-mpo.gc.ca.

Yours sincerely,

Georgina Williston

Georgina Williston
Fisheries Protection Biologist

cc. Stuart Niven- Fisheries and Oceans Canada
Jim Millard- Baffinland Iron Mines Corporation
Bevin LeDrew- Sikumiut Environmental Management Ltd.

Fisheries and Oceans Canada | Pêches et Océans Canada

301-5204 50th Ave
Yellowknife, NT
X1A 1E2

Our file *Notre référence*
NU-07-0050

December 16, 2013

Baffinland Iron Mines Corp.
275 Upper Middle Road East Suite 300
Oakville, ON L6H 0C3

Dear Mr. Curran:

Subject: Implementation of mitigation measures to avoid and mitigate serious harm to fish.

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on August 28, 2013.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act*.

Our review consisted of:

Baffinland Submission: Tote Road Upgrade-Four Seacan Bridge Replacements, Tote Road Upgrade- Fish Bearing Culvert submission, Attachments 1 &2, August 2013.

We understand that you propose to: Upgrade the following crossings along the Tote Road.

The following seacan crossings will be removed and replaced with clear span bridges

- STA 17 (CV 128)
- STA 62 (BG50)
- STA 80 (CV 217)
- STA 97 (CV223)

The following culvert crossings will be upgraded as follows:

Culvert ID	Proposed Culvert Diameter (m)	Proposed Culvert Length (m)	Area of Rip Rap (m2)	Proposed works to be completed
CV217B	1.2	16	24.96	Extend 1m right
CV217C	1.2	16	24.96	Extend 1m right
CV217A	1.2	16	24.96	Extend 1m right
CV217D	0.15		0	Abandon
CV216B	1.2	17.5	0	Extend 1.5m left & 1m right
CV216C	1.2	16.5	0	Extend 1.5m left
CV216A	1.2	18.5	0	Extend 1.5m left & 2m right
CV216D	0.5	14.5	0	Replace with new length of 14.5m
CV216E	0.5	14	0	Abandon and replace with new length of 14m
CV216F	0.5	12	0	Replace with new length of 12m
CV223B	1.2	28	24.96	Extend 13m left
CV223C	1.2	28	24.96	Extend 13m left
CV223D	1.2	29	24.96	Extend 14m left
CV223A	2	24	69.33	Extend 14m left
CV223E	1.2	19.5	0	Extend 4.5m left
CV223F	1.2	19	0	Extend 4m left
CV115C	0.5	15.5	0	Extend 3.5m right
CV115D	0.5	17	4.33	Extend 8m left
CV114A	1	15.5	17.33	Extend 0.5m right
CV114B	0.5	14	0	Extend 5m left
CV114C	0.5	11	4.33	Replace with new length of 11m
CV114D	0.5	11.5	4.33	Extend 2m left & 0.5m right
CV112A	1.2	17.5	24.96	Extend 2.5m right
CV112B	0.5	24	0	Extend 9m right
CV112C	0.5	21	4.33	Extend 9m left
CV111	1	24	17.33	Extend 4.5m left & 1.5m right
CV106	1	19	17.33	Extend 4m left
CV104A	1.2	19	24.96	Extend 4m left
CV104B	1.2	19	24.96	Extend 4m left
CV102A	1	22.5	17.33	Extend 7.5m left
CV102B	0.5	21.5	0	Extend 6.5m left
CV102C	0.5	21.5	0	Extend 6.5m left
CV102D	0.5	20.5	0	Extend 5.5m left
CV099B	1.2	17	24.96	Replace with new length of 17m

.../3

Culvert ID	Proposed Culvert Diameter (m)	Proposed Culvert Length (m)	Area of rip rap (m2)	Proposed works to be completed
CV099A	1.2		0	Remove culvert
CV099C	2	18.5	69.33	Replace with new length of 18.5m
CV099D	0.5		0	Remove culvert
CV099E	0.5		0	Remove culvert
CV099F	0.5	14	0	Extend 2m right
CV087B	1.2	19	24.96	Extend 6.5m left & 0.5m right
CV087A	1.2	18.5	24.96	Extend 6m left & 0.5m right
CV087C	0.5	18	0	Extend 6m right
CV079B	1.2	16.5	0	Extend 1.5m left
CV079A	1.2	16.5	0	Extend 1.5m left
CV079C	0.15		0	Remove culvert
CV079D	0.15		0	Remove culvert
CV078A	1.2	16.5	0	Extend 1.5m left
CV078B	1	19.5	0	Extend 1.5m left
CV078C	1	19.5	0	Extend 1.5m left
CV078D	2	22	0	Extend 2m right
CV076	1	11.5	0	Replace with new length of 11.5m
CV072B	1.2	17.5	0	Replace with new length of 17.5m
CV072C	1.2	17.5	0	Replace with new length of 17.5m
CV072A	1.2	17.5	0	Replace with new length of 17.5m
CV060A	1	16.5	0	Extend 1.5m left
CV060B	1	16.5	0	Extend 1.5m left
CV059B	0.5	16.5	0	Extend 3.5m left & 1m right
CV059A	0.5	16	0	Extend 3m left & 1m right
CV059C	0.5	16.5	0	Extend 4m left & 0.5m right
CV059D	0.5	16.5	0	Extend 4m left & 0.5m right
CV057B	0.5	16.5	0	Extend 1.5m left
CV057C	0.5	16.5	0	Extend 1.5m left
CV057A	0.5	16.5	0	Extend 1.5m left
BG50A	1.2	33.5	24.96	Extend 15.5m left
BG50B	1.2	32	24.96	Extend 14m left
CV049A	1.2	24.5	24.96	Extend 5.5m left & 4m right
CV049B	1.2	24.5	24.96	Extend 4.5m left & 5m right
CV030A	1	16	0	Extend 1m left
CV030B	0.5	16	0	Extend 1m left

.../4

To avoid the potential of serious harm to fish and their habitat, we are recommending that the following mitigation measures be included into your plans.

- If in-stream work is required during the open water season it should be completed in the dry by de-watering the work area and diverting and/or pumping flows around cofferdams placed at the limits of the work area.
- Existing stream flows should be maintained downstream of the de-watered work area without interruption, during all stages of the work.
- A fish stranding program should be implemented if necessary by a qualified fisheries person , who is experienced in this area, immediately following isolation and prior to de-watering to ensure that fish are removed from any dewatered area and released alive immediately downstream of the work area.
- Flow dissipaters and/or filter bags, or equivalent, should be placed at water discharge points to prevent erosion and sediment release.
- Silt or debris that has accumulated around the temporary cofferdams should be removed prior to their withdrawal.

Provided that these mitigation measures are incorporated into your plans, the Program is of the view that your proposal will not result in serious harm to fish. No formal approval is required from the Program under the *Fisheries Act* in order to proceed with your proposal.

If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please notify this office at least 10 days before starting your project. A copy of this letter should be kept on site while the work is in progress.

If you have any questions, please contact Georgina Williston at our Yellowknife office at 867-669-4927, by fax at 867-669-4940 or by email at geogina.williston@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Stu Niven
Senior Fisheries Protection Biologist
Fisheries and Oceans Canada

Georgina Williston- Fisheries and Oceans Canada
Bevin LeDrew- Sikumiut Environmental Management Ltd.
Tessa Mackay- Hatch

Fisheries and Oceans Canada | Pêches et Océans Canada

Suite 301 – 5204 59th Ave.
Yellowknife NT, X1A 1E2

Our file *Notre référence*
NU-07-0050

February 20, 2015

James Millard
Environmental Manager
Baffinland Iron Mines Corp.
275 Upper Middle Road East Suite 300
Oakville, ON L6H 0C3

Dear Mr. Millard:

Subject: Implementation of mitigation measures to avoid and mitigate serious harm to fish – Mary River Project, Tote Road Realignment.

The Fisheries Protection Program of Fisheries and Oceans Canada received your proposal on February15, 2015.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act*.

Your proposal has also been reviewed to determine whether it will adversely impact listed aquatic species at risk and contravene sections 32, 33 or 58 of the *Species at Risk Act* (*SARA*).

Our review considered the following:

- Letter from Baffinland Iron Mines Re: Mary River Project – Request for Advice on Realignment of Tote Road at Culvert CV076, Km 53 Tote Road, DFO File dated February 15, 2015 and submitted by James Millard with 1 attachment.
- Attachment 1 - Mark-up of proposed field change, Drawing H349000-3000-10-012-0073

We understand that you propose to:

- Realign the existing Tote Road at Culvert CV076, 160 meters upstream from the existing crossing and install one culvert which is 1.2m in diameter and 18 m in length.
- Install culverts during the winter months when the stream is frozen to bottom.
- Remove existing culvert from the old Tote Road alignment.

Since there are no *SARA* species or their habitats identified in the project area, no additional approvals under *SARA* will be required for your proposed activities.
To avoid the potential for serious harm to fish that is prohibited under the *Fisheries Act*, the mitigation measures set out in your project plans are to be followed.

Provided that you implement the required mitigation measures for your project, and follow the guidance available on the DFO website at http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html, the Program is of the view that your proposal should not result in serious harm to fish or contravene sections 32, 33 or 58 of the *Species at Risk Act*. No formal approval is required from the Program under the *Fisheries Act* or the *Species at Risk Act* in order to proceed with your proposal.

It remains your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*, and that you meet the requirements under the *Species at Risk Act* as it may apply to your project. If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please be advised that it is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to http://www.dfo-mpo.gc.ca/pnw-ppe/violation-infraction/index-eng.html.

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal or territorial requirements that apply to your project.

If you have any questions, please contact Georgina Williston at our Yellowknife office at (867) 669-4927, by fax at (867) 669-4940, or by email at georgina.williston@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Julie Dahl
Regional Manager, Regulatory Reviews
Fisheries Protection Program

cc.
Georgina Williston- Fisheries and Oceans Canada
Oliver Curran-Baffinland Iron Mines Corp.
Erik Madsen-Baffinland Iron Mines Corp.

Canada

Fisheries and Oceans Canada | Pêches et Océans Canada

5204-50th Avenue
Yellowknife, NT
X1A 1E2

Your file *Votre référence*

December 9, 2014

Our file *Notre référence*
NU-07-0050

Baffinland Iron Mines Corp.
Attention: Jim Millard, Environmental Manager
2275 Upper Middle Road, Suite 300
Oakville, ON
L6H 0C3

Dear Mr. Millard:

Subject: Implementation of mitigation measures to avoid and mitigate impacts to fish and fish habitat and listed aquatic species at risk – Mary River Project

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on November 27, 2014.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act*.

Your proposal has also been reviewed to determine whether it will adversely impact listed aquatic species at risk and contravene sections 32, 33 or 58 of the *Species at Risk Act* (*SARA*).

Our review considered the following:

- Letter from Baffinland Iron Mines RE: Realignment of Tote Road at Culvert CV099. Dated November 27, 2014 and submitted by James Millard, with 1 attachment.
- Attachment 1- Mark up of proposed field change, Drawing H349000-3000-10-012-0052

We understand that you propose to:

- Realign the existing Tote Road and install one 2 metre diameter culvert in the stream bed and two 1.2 metre overflow culverts. Culverts will be approximately 27 metres in length.

- Install culverts during the winter months when the stream is frozen to bottom.
- Remove existing culverts along the old Tote Road alignment.

Since there are no *SARA* species or their habitats identified in the project area, no additional approvals under *SARA* will be required for your proposed activities.

To avoid the potential for serious harm to fish that is prohibited under the *Fisheries Act*, the mitigation measures set out in your project plans are to be followed.

Provided that you implement the required mitigation measures for your project, and follow the guidance available on the DFO website at http://www.dfo-mpo.gc.ca/pnw-ppe/measures/index-eng.html, the Program is of the view that your proposal should not result in serious harm to fish or contravene sections 32, 33 or 58 of the *Species at Risk Act*. No formal approval is required from the Program under the *Fisheries Act* or the *Species at Risk Act* in order to proceed with your proposal.

It remains your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*, and that you meet the requirements under the *Species at Risk Act* as it may apply to your project. If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please be advised that it is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to http://www.dfo-mpo.gc.ca/pnw-ppe/violation-infraction/index-eng.html.

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal or territorial requirements that apply to your project.

If you have any questions, please contact Georgina Williston at our Yellowknife office at 867-669-4927 or by email at Georgina.Williston@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Julie Dahl
Regional Manager, Regulatory Reviews
Fisheries Protection Program

cc. Oliver Curran- Baffinland Iron Mines
Erik Madsen – Baffinland Iron Mines

Fisheries and Oceans Canada | Pêches et Océans Canada

5204-50th Avenue
Yellowknife, NT
X1A 1E2

Your file *Votre référence*

October 27, 2014

Our file *Notre référence*
NU-07-0050

Baffinland Iron Mines Corp.
Attention : Jim Millard, Environmental Manager
2275 Upper Middle Road, Suite 300
Oakville, ON
L6H 0C3

Dear Mr. Millard:

Subject: Implementation of mitigation measures to avoid and mitigate impacts to fish and fish habitat and listed aquatic species at risk – Mary River Project

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on October 17, 2014.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act*.

Your proposal has also been reviewed to determine whether it will adversely impact listed aquatic species at risk and contravene sections 32, 33 or 58 of the *Species at Risk Act* (*SARA*).

Our review considered the following:

- Letter from Baffinland Iron Mines RE: Realignment of Tote Road at Culvert CV225B. Dated October 16, 2014 and submitted by James Millard, with 2 attachments.
- Attachment 1- Mark of proposed field change, Drawing H349000-3000-10-012-0139
- Attachment 2- Project Wide, Civil Standard Drawing, Typical Culvert Detail, H349000-1000-10-041-0003

We understand that you propose to:

- Realign the existing Tote Road and install two new 1.2 metre culverts in the stream bed and one 1.0 metre culvert 45 m away as an overflow. Culverts will be approximately 27metres in length.

Canada

.../2

- Install culverts during the winter months when the stream is frozen to bottom.
- Remove the two existing 1.2m culverts along the old Tote Road alignment.

Since there are no *SARA* species or their habitats identified in the project area, no additional approvals under *SARA* will be required for your proposed activities.

To avoid the potential for serious harm to fish that is prohibited under the *Fisheries Act*, the mitigation measures set out in your project plans are to be followed.

Provided that you implement the required mitigation measures for your project, and follow the guidance available on the DFO website at http://www.dfo-mpo.gc.ca/pnw-ppe/measures/index-eng.html, the Program is of the view that your proposal should not result in serious harm to fish or contravene sections 32, 33 or 58 of the *Species at Risk Act*. No formal approval is required from the Program under the *Fisheries Act* or the *Species at Risk Act* in order to proceed with your proposal.

It remains your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*, and that you meet the requirements under the *Species at Risk Act* as it may apply to your project. If your plans have changed or if the description of your proposal is incomplete, or changes in the future, you should consult our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) or consult with a qualified environmental consultant to determine if further review is required by the Program.

Please be advised that it is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to http://www.dfo-mpo.gc.ca/pnw-ppe/violation-infraction/index-eng.html.

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal or territorial requirements that apply to your project.

If you have any questions, please contact Georgina Williston at our Yellowknife office at 867-669-4927 or by email at Georgina.Williston@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Julie Dahl
Regional Manager, Regulatory Reviews
Fisheries Protection Program

cc. Oliver Curran- Baffinland Iron Mines
Erik Madsen – Baffinland Iron Mines
Stu Niven – Fisheries and Oceans Canada

APPENDIX B

PHOTOGRAPHIC LOG OF HABITAT ASSESSMENTS AT TOTE ROAD CROSSINGS, SPRING 2021

Tote Road Site BG-01

Location and Crossing Description

UTM Coordinates: 17W 558000 E 7914928 N **Dates Surveyed:** 05-Jul-21; 07-Sep-21

Summary: This stream provides summer rearing habitat for both species. Culvert outflow velocities may occasionally impede smaller fish.

Photos

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-01: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Tote Road Site BG-04

Location and Crossing Description

UTM Coordinates: 17W 553250 E 7915100 N **Dates Surveyed:** 05-Jul-21; 02-Sep-21

Summary: Site provides summer rearing habitat for both species. No fish passage issues in 2021.

Photos

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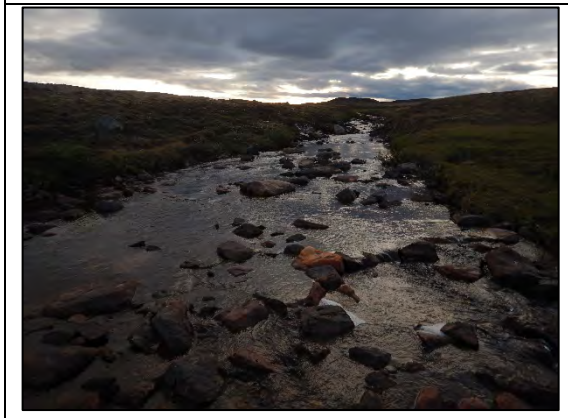

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-04: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes** **Ninespine Stickleback – Yes**

Tote Road Site BG-17

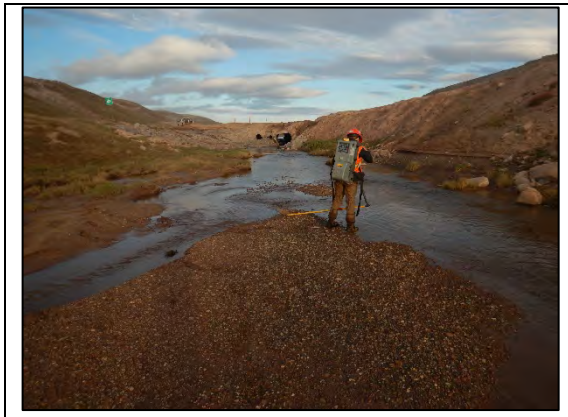
Location and Crossing Description

UTM Coordinates: 17W 550703 E 7917643 N

Dates Surveyed: 05-Jul-21; 02-Sep-21

Summary: Site provides summer rearing habitat for both species. No fish passage issues in 2021.

Photos



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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-17: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes** **Ninespine Stickleback – Yes**

Tote Road Site BG-24

Location and Crossing Description

UTM Coordinates: 17W 548766 E 7918878 N **Dates Surveyed:** 05-Jul-21; 02-Sep-21

Summary: Site provides summer rearing habitat for juvenile Arctic Char. No fish passage issues in 2021.

Photos

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-24: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes**
			Ninespine Stickleback – No

Tote Road Site BG-27

Location and Crossing Description

UTM Coordinates: 17W 547876 E 7919355 N **Dates Surveyed:** 05-Jul-21; 02-Sep-21

Summary: Site provides summer rearing habitat for juvenile Arctic Char. No fish passage issues in 2021.

Photos

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-27: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes**
			Ninespine Stickleback – No

Tote Road Site BG-29

Location and Crossing Description

UTM Coordinates: 17W 546229 E 7919877 N **Dates Surveyed:** 04-Jul-21; 02-Sep-21

Summary: Stream provides abundant summer rearing habitat for both species. There were no fish access issues in 2021.

Photos

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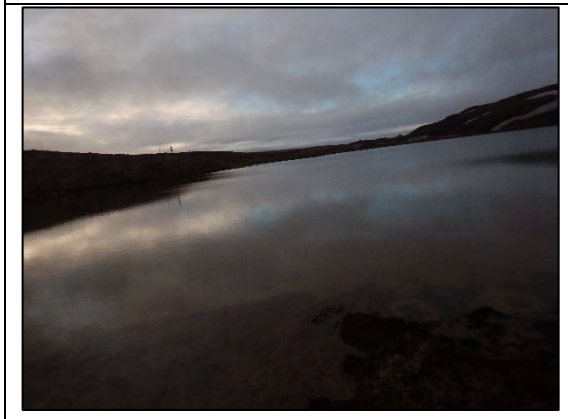

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-29: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes**
			Ninespine Stickleback – Yes

Tote Road Site BG-30

Location and Crossing Description

UTM Coordinates: 17W 546070 E 7919844 N **Dates Surveyed:** 04-Jul-21; 02-Sep-21

Summary: Stream provides abundant rearing habitat, particularly upstream of the road in a large pond. Access to the upstream pond was created with a rocky ramp as part of the Tote Road Compensation Plan. There were no fish access issues in 2021.

Photos

A

B

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-30: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes**
			Ninespine Stickleback – No

Tote Road Site BG-32

Location and Crossing Description

UTM Coordinates: 17W 540729 E 7921597 N

Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: Consistently provides abundant, good quality rearing habitat for both species. No fish passage issues in 2021.

Photos

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B

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D

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-32: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes** **Ninespine Stickleback – Yes**

Tote Road Site BG-50

Location and Crossing Description

UTM Coordinates: 17W 529294 E 7926852 N **Dates Surveyed:** 04-Jul-21; 02-Sep-21

Summary: Large river with abundant habitat for both species. One channel is crossed by a bridge and the other with two culverts. Monitoring previously indicated culverts were perched, blocking fish movements, and remediation work was conducted in fall 2019. Remediation structures were destroyed by high flows during the 2020 freshet. Culverts remained highly perched in 2021. Alternative remediation will be discussed with the DFO.

Photos

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing BG-50: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes**
			Ninespine Stickleback – Yes

Tote Road Site CV-001

Location and Crossing Description

UTM Coordinates: 17W 553544 E 7914897 N **Dates Surveyed:** 05-Jul-21; 07-Sep-21

Summary: This stream typically provides summer rearing habitat for both species. There was a slight perch at the downstream end of the culvert during fall when water levels were lower, but it was not sufficient to prevent fish access upstream. No fish passage issues in 2021.

Photos

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B

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-001: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes**
			Ninespine Stickleback – Yes

Tote Road Site CV-030

Location and Crossing Description

UTM Coordinates: 17W 540123 E 7921310 N **Dates Surveyed:** 04-Jul-21; 02-Sep-21

Summary: Arctic Char use of this stream is minimal due to consistently low water levels and lack of a defined channel, but Ninespine Stickleback are typically abundant. No culvert passage issues in 2021.

Photos

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Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-030: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

Baffinland Iron Mines Mary River Project	North/South Consultants Inc. Aquatic Environment Specialists	**Fish Habitat**	**Arctic Char - Yes** **Ninespine Stickleback – Yes**