



January 29, 2022

Manager of Licensing
Nunavut Water Board
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Resource Management Officer, CIRNAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0

**RE: Water Licence 2AM-MRY1325 Monthly Surveillance Network Program (SNP) Report
December 2021**

The following is the monthly report for December 2021 as required under Part I, Item 21 of the Type 'A' Water Licence 2AM-MRY1325 (the Licence) which states:

"The Licensee shall submit to the Board, within thirty (30) days following the month being reported, a Monthly Monitoring Report. The Report shall include:

- a) All data and information required by this Part and generated by the Monitoring Program in the tables of Schedule I*
- b) An assessment of data to identify areas of non-compliance with regulated discharge parameters referred to in Part F"*

Monitoring Program

During the month of December 2021, water samples were collected as part of the Surveillance Network Program (SNP).

Table 1.1 presents a list of samples/monitoring required under the Licence and the details concerning which water quality samples were collected along with sample dates and laboratory identification numbers, as appropriate. Analytical water quality testing results are presented in Tables 2.1 through 2.4. Table 3.1 presents water volumes consumed for domestic and industrial water purposes as well as select volumes of effluent and waste discharged and/or disposed at the Mary River Mine Site and Milne Port during December 2021.

Monitoring Program Results

Water Sampling and Analysis Results

Tables 2.1 through 2.4 provide the analytical results related to the SNP sampling requirements for December 2021. No exceedances of applicable water quality criteria were observed at monitoring stations during December 2021.

Flow and Volume Measurements

Table 3.1 provides a breakdown of volume measurements for December 2021 as required by Part I, Item 9 of the Licence. There were no exceedances of the source specific daily volume withdrawal limits in December 2021.

We trust that the information provided in this monthly report is acceptable and should you have any questions regarding this report please contact the undersigned.

Prepared by:

A handwritten signature in black ink that reads "Allison Parker".

Allison Parker

Environmental Specialist

Reviewed by:

A handwritten signature in black ink that reads "Connor Devereaux".

Connor Devereaux

Environmental Superintendent

cc: Justin Hack (CIRNAC)

Chris Spencer, Hugh Karpik (QIA)

Tim Sewell, Megan Lord-Hoyle, Lou Kamermans, Francois Gaudreau, Martin Beausejour, Sylvain Proulx,

Kendra Button (Baffinland)

Attachments

Attachments – Table 1.1, Tables 2.1 – 2.4, Table 3.1

Attachments

Monthly Water Sampling Results

Table 1.1: Monitoring Program Water Sampling Summary for December 2021

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
Milne Port			
MP-01 (Sewage Treatment Facility)	2021-12-08	L2671157-1	Discharge volume recorded daily; December 1 – 31.
MP-0103 (Travel Blank of MP-01)	2021-12-08	L2671157-3	
MP-01A (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MP-01B (Sewage Treatment Facility)	2021-12-08	L2671142-1	Discharge volume recorded daily; December 1 - 31.
MP-01B02 (Field Blank of MPB-01)	2021-12-08	L2671142-3	
MP-MRY-2 (Freshwater Intake at Phillips Creek)	N/A	N/A	No water withdrawal.
MP-MRY-3 (Freshwater Intake from Km 32 Lake)	N/A	N/A	Withdrawal volume recorded daily; December 1 – 31.
MP-02 (Milne Port Maintenance Shop)	N/A	N/A	No discharge.
MP-03 (Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MP-04 (Treated Oily Water from Milne Port Landfarm Facility to Tundra)	N/A	N/A	No discharge.
MP-04A (Treated Oily Water from Milne Port Snowdump Facility to Tundra)	N/A	N/A	No discharge.
MP-05 Ore Stockpile Sedimentation Pond (East)	N/A	N/A	No discharge.
MP-06 Ore Stockpile Sedimentation Pond (West)	N/A	N/A	No discharge.
MP-C-A (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-B (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-C (Downstream of Construction Area)	N/A	N/A	No flow.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MP-C-D (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-E (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-F (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-H (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-J (Downstream of Construction Area)	N/A	N/A	No flow.
MP-C-K (Downstream of Construction Area)	N/A	N/A	No flow.
MP-Q1-01 (Downstream of Q1 Quarry)	N/A	N/A	No flow.
MP-Q1-02 (Downstream of Q1 Quarry)	N/A	N/A	No flow.
Mary River Mine Site			
MS-01 (Sewage Treatment Facility)	2021-12-09	L2671710-1	Discharge volume recorded daily; December 1 - 31.
MS-01A (Mine Site Polishing Waste Stabilization Pond)	N/A	N/A	Facility not constructed.
MS-01B (Sewage Treatment Facility)	2021-12-09	L2671716-1	Discharge volume recorded daily; December 1 - 31.
MS-02 (Mine Site Maintenance Shop)	N/A	N/A	No discharge.
MS-MRY-1 (Freshwater Intake Camp Lake)	N/A	N/A	Withdrawal volume recorded daily; December 1 - 31.
MS-MRY-04A (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-MRY-04B (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-MRY-04C (Polishing Waste Stabilization Pond)	N/A	N/A	No discharge.
MS-03 (Mine Site Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MS-03B (Mine Site Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-04 (Mine Site Fuel Unloading Station Stormwater)	N/A	N/A	No discharge.
MS-05 (Mine Site Landfarm Facility)	N/A	N/A	Facility not constructed.
MS-06 (Ore Stockpile Pond Stormwater)	N/A	N/A	No discharge.
MS-07 (Run of Mine Ore Stockpile Pond Stormwater)	N/A	N/A	No discharge.
MS-08 (Mine Waste Rock Stockpile Pond)	N/A	N/A	No discharge.
MS-09 (Waste Rock Stockpile East Pond)	N/A	N/A	Facility not constructed.
MS-MRY-6 (Exploration Camp Bulk Fuel Storage Facility Stormwater)	N/A	N/A	No discharge.
MS-MRY-09 (Deposit 1 Surface Water Drainage)	N/A	N/A	No flow.
MS-MRY-10 (Deposit 1 Surface Water Drainage)	N/A	N/A	No flow.
MS-MRY-13A (Downstream Non-Hazardous Landfill)	N/A	N/A	No flow.
MS-MRY-13B (Downstream Non-Hazardous Landfill)	N/A	N/A	No flow.
MS-C-A (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-B (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-C (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-D (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.

Monitoring Program Station	Sampling Date	Lab ID Number	Comment
MS-C-E (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-F (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-G (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MS-C-H (Downstream of Construction and Borrow Areas)	N/A	N/A	No flow.
MQ-C-A (Downstream of QMR2 Quarry)	N/A	N/A	No flow.
MQ-C-B (Downstream of QMR2 Quarry)	N/A	N/A	No flow.
MQ-C-D (Downstream of QMR2 Quarry)	N/A	N/A	No flow.
Steensby Port			
Steensby Exploration Camp is presently inactive.	N/A	N/A	N/A

Table 2.1: Water Quality Results for Water Licence Monitoring Location - MP-01

Analyte	Sample ID			MP-01	MP-0103
	ALS Laboratory Sample ID				
	Sample Date & Time				
	QA/QC Sample Type				
	Units	LOR	Criteria ¹		
pH	pH units	0.10	6.0 - 9.5	8.07	5.32
Total Suspended Solids	mg/L	1.0	120	3.4	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.027	0.013
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.870	<0.050
Phosphorus, Total	mg/L	0.030/0.0030	-	8.58	<0.0030
Fecal Coliforms	CFU/100 mL	-	10,000	0	0
BOD	mg/L	2.0	100	<2.0	<2.0
Oil and Grease, Total	mg/L	5.0/2.0	-	<5.0	<2.0
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-	-

Notes:

Bold highlight indicates result that exceeded the applicable water quality criteria.

¹ Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 5: Effluent Quality Discharge Limits for Sewage Treatment Facilities to the Ocean

Table 2.2: Water Quality Results for Water Licence Monitoring Location - MP-01B

Analyte	Sample ID			MP-01B	MP-01B02
	ALS Laboratory Sample ID			L2671142-1	L2671142-3
	Sample Date & Time			2021-12-08 13:45	2021-12-08 13:40
	QA/QC Sample Type			N/A	Field Blank
	Units	LOR	Criteria ¹		
pH	pH units	0.10	6.0 - 9.5	7.80	6.30
Total Suspended Solids	mg/L	1.0	120	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.010	-	0.024	<0.010
Total Kjeldahl Nitrogen	mg/L	0.050	-	<0.050	<0.050
Phosphorus, Total	mg/L	0.030/0.0030	-	7.15	<0.0030
Fecal Coliforms	CFU/100 mL	-	10,000	0	0
BOD	mg/L	2.0	100	<2.0	<2.0
Oil and Grease, Total	mg/L	2.0	-	<2.0	<2.0
	-	-	No Visible Sheen	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-	-

Notes:

Bold highlight indicates result that exceeded the applicable water quality criteria.

¹Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 5: Effluent Quality Discharge Limits for Sewage Treatment Facilities to the Ocean

Table 2.3: Water Quality Results for Water Licence Monitoring Location - MS-01

Analyte	Sample ID			MS-01
	ALS Laboratory Sample ID			L2671710-1
	Sample Date & Time			2021-12-09 14:45
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.27
Total Suspended Solids	mg/L	1.0	35	<1.0
Ammonia, Total (as N)	mg/L	0.010	4.0	0.092
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.660
Phosphorus, Total	mg/L	0.0060	4.0	1.09
Fecal Coliforms	CFU/100 mL	-	1,000	0
BOD	mg/L	2.0	30	<2.0
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-

Notes:

Bold highlight indicates result that exceeded the applicable water quality criteria.

¹ Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 4: Effluent Quality Discharge Limits for Sewage Treatment Facilities to Freshwater Receiving Environment

Table 2.4: Water Quality Results for Water Licence Monitoring Location - MS-01B

Analyte	Sample ID			MS-01B
	ALS Laboratory Sample ID			L2671716-1
	Sample Date & Time			2021-12-09 15:00
	QA/QC Sample Type			N/A
	Units	LOR	Criteria ¹	
pH	pH units	0.10	6.0 - 9.5	7.58
Total Suspended Solids	mg/L	1.0	35	2.2
Ammonia, Total (as N)	mg/L	0.010	4.0	0.227
Total Kjeldahl Nitrogen	mg/L	0.050	-	0.570
Phosphorus, Total	mg/L	0.0060	4.0	1.19
Fecal Coliforms	CFU/100 mL	-	1,000	0
BOD	mg/L	2.0	30	<2.0
Oil and Grease, Total	mg/L	5.0	-	<5.0
	-	-	No Visible Sheen	No Visible Sheen
Toxicity	-	-	Not Acutely Toxic	-

Notes:

Bold highlight indicates result that exceeded the applicable water quality criteria.

¹ Type A Water Licence (2AM-MRY1325 - Amend. 1) - Table 4: Effluent Quality Discharge Limits for Sewage Treatment Facilities to Freshwater Receiving Environment

Table 3.1: Flow and Volume Measurements - Part I Item 11 - December 2021

DATE	Camp Lake Freshwater for Domestic Use - Daily Water MS-MRY-1 (m ³)	Camp Lake Freshwater for Industrial Use - Daily Water MS-MRY-1 (m ³)	Treated Sewage Effluent from MS-01 to Discharge Location #1 (m ³)	Treated Sewage Effluent from MS-01B to Discharge Location #1 (m ³)	Sewage Sludge Removed from Mine Site WWTPs to Incinerator or Disposal Offsite by Backhaul (m ³)	Sewage Sludge Removed from Mine Site WWTPs to PWSP at Mine (m ³)	Sewage Sludge Removed from Lift Stations to PWSP at Mine Site (m ³)	Km 32 Lake Milne Port Camp Daily Water Use for Domestic Purposes MP-MRY-3 (m ³)	Km 32 Lake Milne Port Camp Daily Water Use for Industrial Purposes MP-MRY-3 (m ³)	Treated Sewage Effluent from MP-01 to Milne Inlet (m ³)	Tr Se Efflu MP Mil (m ³)
1-Dec-21	158.6	9.9	49.0	133.4	1.1	0.0	0.0	71.8	0.0	28.0	28.0
2-Dec-21	138.7	0.0	37.0	122.0	1.3	0.0	0.0	92.9	0.0	27.0	27.0
3-Dec-21	158.6	3.0	33.0	111.6	1.4	0.0	0.0	79.8	0.0	34.0	34.0
4-Dec-21	150.0	0.0	37.0	117.8	2.0	0.0	0.0	76.3	0.0	27.0	27.0
5-Dec-21	133.6	11.6	32.0	118.2	1.4	0.0	0.0	83.6	0.0	24.0	24.0
6-Dec-21	149.3	3.9	38.0	118.6	1.4	0.0	0.0	81.1	0.0	31.0	31.0
7-Dec-21	159.0	10.3	38.0	115.7	1.4	0.0	0.0	84.0	0.0	27.0	27.0
8-Dec-21	165.4	3.9	38.0	112.0	1.2	0.0	0.0	78.6	0.0	25.0	25.0
9-Dec-21	144.8	5.2	27.0	113.3	1.4	0.0	0.0	98.6	0.0	29.0	29.0
10-Dec-21	126.8	0.0	29.0	114.1	1.4	0.0	0.0	89.1	0.0	30.0	30.0
11-Dec-21	174.1	0.0	31.0	128.7	1.2	0.0	0.0	73.7	0.0	25.0	25.0
12-Dec-21	148.0	10.3	23.0	125.2	1.8	0.0	0.0	87.9	0.0	23.0	23.0
13-Dec-21	156.9	5.2	25.0	132.8	1.2	0.0	0.0	65.9	0.0	26.0	26.0
14-Dec-21	138.2	6.9	31.0	103.4	1.4	0.0	0.0	75.3	0.0	24.0	24.0
15-Dec-21	148.1	0.0	37.0	120.8	1.4	0.0	0.0	79.2	0.0	19.0	19.0
16-Dec-21	128.6	4.3	41.0	73.9	0.6	0.0	0.0	69.8	0.0	27.0	27.0
17-Dec-21	105.5	8.6	39.0	80.1	0.9	0.0	0.0	81.3	0.0	27.0	27.0
18-Dec-21	157.2	6.9	34.0	98.3	0.9	0.0	0.0	51.6	0.0	30.0	30.0
19-Dec-21	116.9	6.5	37.0	102.3	1.2	0.0	0.0	75.0	0.0	26.0	26.0
20-Dec-21	131.3	10.8	31.0	126.5	1.0	0.0	0.0	97.7	0.0	26.0	26.0
21-Dec-21	109.6	0.0	29.0	128.6	1.4	0.0	0.0	74.5	0.0	29.0	29.0
22-Dec-21	142.0	4.3	15.0	118.6	0.0	0.0	0.0	72.2	0.0	26.0	26.0
23-Dec-21	123.4	6.5	18.0	127.0	0.3	0.0	0.0	54.9	0.0	26.0	26.0
24-Dec-21	123.9	4.3	11.0	120.4	0.6	0.0	0.0	111.7	0.0	18.0	18.0
25-Dec-21	133.9	4.3	33.0	124.9	1.2	0.0	0.0	82.0	0.0	28.0	28.0
26-Dec-21	144.2	8.2	24.0	122.0	1.2	0.0	0.0	74.5	0.0	26.0	26.0