

**ANNUAL REPORT
FOR THE HAMLET OF GRISE FIORD, 2021**

YEAR BEING REPORTED: 2021

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence # 3BM-GRI2025 issued to the Hamlet of Grise Fiord.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste.

Month Reported	Quantity of Water Obtained from all sources (m³)	Quantity of Sewage Waste Discharged (Estimated)
January	541.328	Same
February	493.513	Same
March	500.656	Same
April	364.419	Same
May	341.681	Same
June	409.056	Same
July	450.232	Same
August	457.908	Same
September	487.598	Same
October	427.347	Same
November	462.700	Same
December	475.142	Same
ANNUAL TOTAL	5,411.580	Same

Note: The water consumption volume is considered equal to the sewage discharge volume because there is no meter at the end of the discharge pipe.

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- iv. A summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;

Water storage tank #3 was repaired summer 2021 but failed again in October. A consultant was engaged to inspect the Tank #3 and determine steps to repair it for service in summer 2022.

- v. A list of unauthorized discharges and summary of follow-up action taken;

No unauthorized discharges for the infrastructure under licence 3BM-GRI2025 occurred in 2021.

- vi. A summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

No abandonment and restoration work was conducted during this reporting year.

- vii. A summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;

The business case to upgrade the water treatment plant will be completed April 2022.

The initial planning study for a new solid waste site was completed in Fiscal Year 2020/21. The cost estimates have indicated that the current funding cannot support the construction of a new state-of-the-art 20-year landfill. The focus of the project will shift to making improvements to the current site. A second planning contract to assess and prioritize the improvements to the current site with the available is expected to begin in 2022.

- viii. Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and

None

- ix. Updates or revisions to the approved Operation and Maintenance Plans.

None

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x. ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

CGS will work with the Municipality during summer 2022 to ensure all sampling requirements under the water licence are met.

xi. FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

No CIRNAC Inspection took place in 2021.

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Appendix A: Effluent Quality Limits

Appendix B: Certificate of Analysis

Appendix C: Hazardous Materials Spill Database, Grise Fiord 2021

Appendix D: Grise Fiord 2021 CIRNAC Inspection Report

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Appendix A

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**3BM-GRI2025 Grise Fiord Monitoring Program Results 2021
GRI-4 Effluent Quality limits**

Parameter	Maximum Concentration of any Grab Sample	Sampling Results GRI-4 23-Aug-21
BOD ₅	120 mg/L	15 mg/L
Total Suspended Solids	180 mg/L	68 mg/L
Fecal Coliform	1x10 ⁶ CFU/100 mL	185 CFU/100 mL
Oil and Grease	No visible sheen	3.4 mg/L
pH	Between 6 and 9	7.61

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Appendix B

C.O.C.: G096021

REPORT No. B21-28158

Report To:

Hamlet of Grise Fiord

P.O. Box 77 Grise Fiord,
Grise Fiord NU X0X 0J0

Attention: Marty Kuluguqtuq

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 02-Sep-21

JOB/PROJECT NO.: Waste Water

DATE REPORTED: 24-Sep-21

P.O. NUMBER:

SAMPLE MATRIX: Waste Water

WATERWORKS NO.

			Client I.D.	Grise Fiord Lagoon-3	Grise Fiord Lagoon-4		
			Sample I.D.	B21-28158-1	B21-28158-2		
			Date Collected	17-Aug-21	23-Aug-21		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hardness (as CaCO ₃)	mg/L	1	SM 3120	07-Sep-21/O	66	67	
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	03-Sep-21/O	206	203	
pH @25°C	pH Units		SM 4500H	03-Sep-21/O	7.54	7.61	
Conductivity @25°C	µmho/cm	1	SM 2510B	03-Sep-21/O	543	548	
Total Suspended Solids	mg/L	3	SM2540D	03-Sep-21/K	52	68	
Chloride	mg/L	0.5	SM4110C	03-Sep-21/O	28.6	29.0	
Nitrite (N)	mg/L	0.1	SM4110C	03-Sep-21/O	< 0.1	< 0.1	
Nitrate (N)	mg/L	0.1	SM4110C	03-Sep-21/O	< 0.1	0.1	
Sulphate	mg/L	1	SM4110C	03-Sep-21/O	5	4	
Aluminum	mg/L	0.01	SM 3120	07-Sep-21/O	0.04	0.06	
Arsenic	mg/L	0.0005	EPA 200.8	07-Sep-21/O	< 0.0005	< 0.0005	
Cadmium	mg/L	0.005	SM 3120	07-Sep-21/O	< 0.005	< 0.005	
Calcium	mg/L	0.02	SM 3120	07-Sep-21/O	18.8	19.1	
Chromium	mg/L	0.002	SM 3120	07-Sep-21/O	< 0.002	< 0.002	
Cobalt	mg/L	0.005	SM 3120	07-Sep-21/O	< 0.005	< 0.005	
Copper	mg/L	0.002	SM 3120	07-Sep-21/O	0.031	0.029	
Iron	mg/L	0.005	SM 3120	07-Sep-21/O	0.407	0.514	
Lead	mg/L	0.02	SM 3120	07-Sep-21/O	< 0.02	< 0.02	
Magnesium	mg/L	0.02	SM 3120	07-Sep-21/O	4.70	4.64	
Manganese	mg/L	0.001	SM 3120	07-Sep-21/O	0.045	0.051	
Mercury	mg/L	0.00002	SM 3112 B	08-Sep-21/O	< 0.00002	< 0.00002	
Nickel	mg/L	0.01	SM 3120	07-Sep-21/O	< 0.01	< 0.01	
Potassium	mg/L	0.1	SM 3120	07-Sep-21/O	14.9	14.8	
Sodium	mg/L	0.2	SM 3120	07-Sep-21/O	27.2	26.8	
Zinc	mg/L	0.005	SM 3120	07-Sep-21/O	0.039	0.035	
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	08-Sep-21/K	34.0	37.3	

NOTE: Fecal Coliform passed acceptable holding time of 48 hrs upon arrival at Lab.



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Greg Clarkin , BSc., C. Chem
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from

C.O.C.: G096021

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			Sample I.D.		B21-28158-1	B21-28158-2		
			Date Collected		17-Aug-21	23-Aug-21		
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Phenolics	mg/L	0.002	MOEE 3179	08-Sep-21/K	0.003	< 0.002		
BOD(5 day)	mg/L	3	SM 5210B	03-Sep-21/K	16	15		
Total Organic Carbon	mg/L	0.2	EPA 415.2	02-Sep-21/O	27.9	28.8		
Oil & Grease-Total	mg/L	1.0	SM 5520	10-Sep-21/K	5.4	3.4		
Fecal Coliform	cfu/100mL	1	MOE E3371	02-Sep-21/O	2500	185		

NOTE: Fecal Coliform passed acceptable holding time of 48 hrs upon arrival at Lab.



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Appendix C

No spills were reported to the NT-NU Spill Report Line and are listed on the Hazardous Materials Spills Database for Grise Fiord in 2021

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No inspection was completed for Grise Fiord in 2021