

**ANNUAL REPORT
FOR THE HAMLET OF RESOLUTE BAY WASTE MANAGEMENT
FACILITIES, 2022**

YEAR BEING REPORTED: 2022

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence # 3BM-RES1520 issued to the Hamlet of Resolute Bay.

- 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 based on quantities used.

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged (Estimated)
January	N/A	Same
February	N/A	Same
March	N/A	Same
April	N/A	Same
May	N/A	Same
June	N/A	Same
July	N/A	Same
August	N/A	Same
September	N/A	Same
October	N/A	Same
November	N/A	Same
December	N/A	Same
ANNUAL TOTAL	N/A	N/A

Note: No water source is under this licence. Therefore, extraction or consumption volume of water is not considered here.

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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;**

No modification and /or major maintenance work was carried out this reporting period. The existing facility is only being used and waiting for the new facility.

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

There was no unauthorized discharges reported in reporting year 2022.

- 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 were carried out during this reporting period.

- 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;**

Resolute Bay is one of the Municipalities included in the current solid waste facility project. Final Business Case is being developed. Detailed design will be developed in 2023/24

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

CGS will work with Municipality on all CIRNAC inspection report identified issues addressing solid waste.

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

No revisions or updates on approved O&M s

- x. **ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:**

The revised design will be presented to the Hamlet Council. Upon approval, the existing water licence will be amended to accommodate the final design and drawings for construction.

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- xi. **FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:**

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CGS will work with Municipality and try to address all noncompliance issues during the summer season 2023.

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Appendix A: RUT-2 Effluent Quality Limits

Appendix B: Certificate of Analysis

Appendix C: Hazardous Materials Spill Database, Resolute Bay 2021

Appendix D: Resolute Bay 2021 CIRNAC Inspection Report

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Appendix A

No leachate quality limits received during year 2022

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**3BM-RES1520 Monitoring Program Results 2021
RUT-2 Effluent Quality limits**

If wastewater flows are greater then 600 Lcd at Sewage Disposal Facility and Monitoring Station RUT-2:

Parameter	Maximum Concentration of any Grab Sample
BOD ₅	80 mg/L
Total Suspended Solids	70 mg/L
Fecal Coliform	1.6x10 ⁶ CFU/100 mL
Oil and Grease	No visible sheen
pH	Between 6 and 9

If wastewater flows are between 150 and 600 Lcd at Sewage Disposal Facility and Monitoring Station RUT-2:

Parameter	Maximum Concentration of any Grab Sample
BOD ₅	120 mg/L
Total Suspended Solids	80 mg/L
Fecal Coliform	1.8x10 ⁶ CFU/100 mL
Oil and Grease	No visible sheen
pH	Between 6 and 9

No Effluent Quality Limit values were received by CGS

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Appendix B

N/A

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Appendix C

No spills reported in reporting year 2022.

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Appendix D

WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Resolute Bay	Gord Marinic
Licence Number	Representative's Title
3BM-RUT2035	Municipal Engineer
Land / Other Authorizations	Land / Other Authorizations
Date of Inspection	Inspector
July 7, 2022	Joseph Monteith
Activities Inspected	
☐ Camp☐ Drilling☐ Mining☐ Construction☒ Reclamation☐ Fuel Storage ☐ Roads/Hauling☐ Other: Water use and storage☐ Other: Waste Disposal	

Conditions:	A- Acceptable	U-Unacceptable	C-Concern	NI-Not Inspected	NA- Not applicable
PART:				Condition	Observation No.*
A: SCOPE, DEFINITIONS AND ENFORCEMENT				A	
B: GENERAL CONDITIONS				U	13-15
C: CONDITIONS APPLYING TO SECURITY				NI	
D: CONDITIONS APPLYING TO WATER USE				C	1-8
E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT				A	10-15
F: CONDITIONS APPLYING TO MODIFICATIONS				A	2,5
G: CONDITIONS APPLYING TO CONSTRUCTION				A	2,5
H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING				C	6
I: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING				A	1
J: CONDITIONS APPLYING TO MONITORING				A	
SCHEDULES				A	
*The observation number corresponds with specific comments provided below.					
Samples taken by Inspector:		Location(s): Latitude: 74°43'01"N Longitude: 94°58'10"W			
☐ Yes ☒ No					

SECTION 1	☐ Comments (s. __)	☐ Non-Compliance with Act or Licence (s. __)	☐ Action Required (s. __)
BACKGROUND On December 20, 2020 the Nunavut Water Board issued 3AM-RUT2035 for the use of water and deposit of waste. The license authorizes the Hamlet of Resolute Bay to withdrawal 217,000 m³ annually to support community needs. There are three water licenses in this community: The Government of Nunavut (GN) holds the Licence for the airport, the Hamlet of Resolute Bay holds the Licence for solid waste management, and Community and Government Services (CGS) hold the Licence for the Utilidor Systems. Due to delays in plans to refurbish the airport (Licence No. 3BM-YRB1621) and solid waste management facility (Licence No. 3BM-RE2025), the Board decided to process the Renewal Application for the Utilidor System independently. Relevant infrastructure include in this license, a Utilidor system which is maintained and operated by the GN-CGS. The water supply system constitutes Char Lake, the old pump-house(decommissioned), the new water pump house, the water treatment plant and associated delivery mediums, whereas sewage effluent travels from buildings via pipes and is discharged untreated into ‘bleeders’ where it is diluted, and any solids are captured by a macerator before exiting into Resolute Bay. The outfall pipe is located on the shore of the Bay at the high tide water mark. Inspector Statement On July 7, 2022, A Water Licence Inspection was conducted on the Hamlet of Resolute Bay, Qikiqtani Region, Nunavut, for water licence 3BM-RUT2035. General Condition On October 6, 2021 Richard Dwyer, Nunavut Water Board, Manager of Licencing emailed WRO Monteith a copy of The Hamlet of Resolute Bay’s 2021 Annual Report. The submission of the annual report was made in			

regards to satisfying Part B: Subsection 1 of the Water Licence. Typically these annual reports are sent out between January and March. From here on in, they will be acknowledge a year behind due to the submission requirements of the community water license reports.

Water Supply Facilities

Old and New Water Pump house at Char Lake(See photo 1):

1. Old water pump house has been stripped of their internal operating equipment. 2 water boilers is all that is left in the old water pump house. The only equipment that was re used was the storage tank for petroleum products. This is the site of a spill report that has caused the odours to be announced by the public. Construction of a new pump house is completed (photo 2);
2. New Pump House(photo 2) contains 3 intake pipes, indoor day tank, generator, heater, external double walled storage tank for fuel with a capacity of 9176 Litres(within 31 metres of the high water mark of Char Lake). Building could have been a form of secondary containment, one entry way has compromised the containment as a form of secondary containment.
3. Signs of sedimentation observed on the banks of char lake, from a hose that is pointed into a sediment control measures, that isn’t properly installed. Pouring water from hose has lifted sediment and taken it into Char Lake (Photos 3 & 4)
4. From the Pump house, freshwater is piped to the Water Treatment Plant to be piped to the Water Treatment Centre (photo 6).

Water Treatment Plant(See photo 6):

5. The upgraded Water Treatment Plant contains sump pits, pumps, a chlorine mix pot, 12,300 cubic metre water storage tank, UV Filtration, 3x charcoal filtrations tanks, and 2 x filter tanks and pipes the treated water to the residents by gravity using underground pipes, also trucked water service.
6. Sign of spill next to Fuel Storage Tank(photo 5).
7. New water meter reads 179679814 m³withdrawn (photo 5).
8. No sign of water usage logs.

Old Trailer Building

9. An old Trailer Building contains a macerator, which takes any solids such toilet paper, and traps it from being discharged with the waste water. (See photo 8)

Water Consumption Reports

10. The licence authorizes the use of 217,000 cubic metres per year.
11. ON December 1,2022 RES, Frontdesk (Belinda). RES@atco.com, ATCO Frontec emailed WRO Monteith a PDF of 2022 Report for Water Consumption Report Total between January 1, 2022 and November 26, 2022. The report shows a total of 1,094,546,981 Litres was withdrawn (photo 11).
12. On November 18, 2022 Gord Marinic, Government of Nunavut(GN), Community Government and Services(CGS) emailed WRO Monteith a PDF of 2022 Utilidor Water withdraw amount listed as 1,094,546,981 Litres withdrawn (photo 10).

Arctic Waters Pollution Prevention Act

Although there is ongoing work to construct a new facility:

13. It was observed that the waste water that discharges from the Utilidor system goes directly into the ocean (photo 9).
14. The direct discharge into the marine environment constitutes a breach of Subsection 4(1) of the *Arctic Waters Pollution Prevention Act* (AWPPA).
15. The direct discharge into the marine environment constitutes a breach of Subsection 5 of the *Arctic Waters Pollution Prevention Regulations* (ASSPPR).

SECTION 2

☐ Comments

☐ Non-Compliance with Act or Licence

☒ Action Required

The following information is a summary of the Actions Required by the licensee to promote and ensure compliance:

• Develop a plan to address the breach of subsection 4(1) of the *Arctic Waters Pollution Prevention Act*.

• Develop a plan to address the breach of subsection 5 of the *Arctic Waters Pollution Prevention Regulation*.

• Provide a rationale for the exceedance in water withdrawal. Do not exceed the authorized withdrawal amount without prior approval by the Nunavut Water Board.

• Submit a spill report for the observation of a spill next to the storage tank for petroleum products at the water treatment facility.

• Consider cutting the sewage culvert discharge pipe back to the 31 metre from the high water mark to be compliant with *the* AWPPA.

• The Licensee is reminded to remain diligent to prevent wastes from entering water, the environment, and to adhere to the discharge requirements listed in this licence.

SECTION 3

☐ Comments

☒ Non-Compliance with Act or Licence

☐ Action Required

Part D: Item 2

The annual quantity of Water used for all purposes from Char Lake shall not exceed two hundred and seventeen thousand (217,000) cubic metres per annum or as otherwise approved by the Board in writing.

Arctic Waters Pollution Prevention Act

Deposit of Waste -Prohibition

4 (1) Except as authorized by regulations made under this section, no person or ship shall deposit or permit the deposit of waste of any type in the arctic waters or in any place on the mainland or islands of the Canadian arctic under any conditions where the waste or any other waste that results from the deposit of the waste may enter the arctic waters.

Arctic Waters Pollution Prevention Regulations

Deposit of Industrial Waste

6 Any person may deposit or permit the deposit of industrial waste if the industrial waste is of a type and in a quantity and is deposited under conditions authorized by or under the *Oil and Gas Production and Conservation Act*, the [Territorial Lands Act](#) or the *Public Lands Grants Act*, whichever is applicable.

Licensee or Representative	Inspector's Name
Gord Maricic	Joseph Monteith
Signature	Signature
	
Date	Date
	December 12, 2022

CC: Licensing Department, NWB
Jeremy Fraser, Manager of Field Operations, CIRNAC

PHOTO LOG

Date	Camera	Inspector	
July 19, 2021	Nikon Cool Pix	Joseph Monteith	
Photo Log #	Location		
Photo 1	Old Pump House, Char Lake, Resolute Bay, NU		
			
Description: Char Lake Water Source, Old Pump House has been decommissioned. Signage observed as Water Source.			

Photo Log #	Location
Photo 2	Resolute Bay, NU
	
Description: New Water Pump House. Old storage tank for petroleum products moved to new pump house. Site is within 31 metres of the high water mark.	

Photo Log #	Location
Photo 3	Resolute Bay, NU
	
Description: Sedimentation observed in Char Lake. Natural Sedimentation observed along the coast further along the shore.	

Photo Log #1	Location
Photo 4	Resolute Bay, NU



Description: GN and ATCO Water meter reads for July 2021. Number of lines matches days of the month. Last reading for July 19, 2021 reads 242663979

Photo Log #1	Location
Photo 5	Resolute Bay, NU



Description: New water meter from Char Lake to Water Treatment Plant – Meter photo skewed by light reflection. Assumed reading at the time of inspection may read 179679814 m³. Photo taken at Water Treatment Plant.

Photo Log #1	Location
Photo 6	Resolute Bay, NU



Description: Water Treatment Plant – Water Storage Reservoir – Capacity 12,500 Cubic Metres. Blue hose used for discharging water from Water Treatment Plant.

Photo Log #1	Location
Photo 7	Resolute Bay, NU



Description: Water Treatment Plant – Water Storage Reservoir – Capacity 12,500 Cubic Metres. Spill observed next to fuel storage tank. Spill Report and clean up required.

Photo Log #1	Location
Photo 8	Macerator Building, Resolute Bay, NU



Description: Macerator in Old Trailer Building – Solids extracted from Macerator, and deposited into a waste bin.

Photo Log #1	Location
Photo 9	Resolute Bay, NU



Description: Utilidor Sewage Discharge Pipe. Direct Discharge to the ocean.



Photo Log #1

Location

Photo 10

Resolute Bay, NU

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The following information is compiled pursuant to the requirements of Part B, Item 1 of Water license #3BM issued to the Hamlet of Resolute Bay, NU.

i) - iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic meters of each and all waste discharged;

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

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged (Estimated)
January	91,728,064	SAME
February	83,206,514	SAME
March	95,659,673	SAME
April	95,144,827	SAME
May	123,397,843	SAME
June	95,089,023	SAME
July	123,389,337	SAME
August	114,822,243	SAME
September	94,095,805	SAME
October	95,360,862	SAME
November	82,652,790	SAME
December	0	SAME
ANNUAL TOTAL	1,094,546,981	SAME

Note: The average consumption volume is considered equal to the discharge volume in each month because there is no meter in the intake or discharge pipe.

Description: 2021 Water Consumption Report Total for Truck service 1,094,546,981 Litres withdrawn.

Photo Log #1

Location

Photo 11

Resolute Bay, NU

2022 WATER CONSUMPTION

	January	February	March	April	May	June	July	August	September	October	November	December
1	730,945	516,564	891,187	639,482	779,075	184,420	683,877	863,069	796,124	703,632	685,500	
2	546,653	632,785	719,866	675,499	664,410	748,815	732,925	868,211	757,373	673,003	684,686	
3	633,783	725,533	857,771	725,571	732,502	726,253	642,366	892,598	735,833	613,249	686,768	
4	630,601	621,897	782755	658,011	742,140	743,005	794,022	937,906	770,072	709,331	693,164	
5	623,216	676,196	826681	653,791	705,532	739,578	1,024,909	873,217	721,648	672,498	742,141	
6	645,747	655,456	685,479	671,839	688,255	709,392	989,180	835,396	732,653	742,942	662,018	
7	612,049	657,390	726,323	648,025	763,555	739,973	896,751	887,981	726,974	617,989	693,998	
8	689,579	634,293	656,000	687,994	759,972	728,022	899,769	759,306	835,245	878,995	680,184	
9	570,455	649,374	725,501	653,342	3,673,796	717,854	892,326	811,385	618,560	498,846	721,587	
10	628,491	638,528	685,875	681,255	2,312,207	707,673	958,457	790,048	713,408	667,948	648,920	
11	643,627	644,522	713,360	693,882	758,751	730,510	877,565	781,851	677,038	289,821	740,426	
12	645,639	666,560	660,375	707,611	711,284	759,537	917,291	765,586	722,510	1,031,760	684,778	
13	622,713	602,681	684,516	695,243	751,415	769,576	779,175	763,862	585,861	708,383	788,885	
14	651,410	671,114	686,335	691,821	836,113	714,917	881,288	1,001,349	688,307	794,565	534,331	
15	698,890	630,780	702,990	708,369	524,482	682,879	881,864	501,275	672,615	540,752	730,170	
16	607,844	632,425	700,211	701,175	784,798	732,097	1,002,967	752,319	665,874	672,122	681,923	
17	656,608	654,507	711,954	758,883	756,339	738,086	939,636	766,976	646,119	612,444	671,975	
18	648,414	643,853	665,211	686,801	692,810	735,874	898,072	765,147	730,029	682,173	700,036	
19	666,234	716,210	649,866	692,693	763,127	774,514	864,075	743,261	624,018	680,546	728,367	
20	648,373	641,468	726,399	701,805	698,450	741,435	935,000	810,820	649,824	641,349	686,255	
21	639,214	656,541	667,397	712,223	793,428	695,043	901,376	699,304	624,456	682,351	731,255	
22	658,512	636,775	692,559	745,328	662,858	825,444	907,776	725,264	685,461	726,910	652,482	
23	671,402	667,087	673,347	714,168	763,069	-41,542	881,014	777,774	619,548	833,134	711,556	
24	647,531	650,183	679,937	711,000	699,107	1,271,529	918,911	763,916	623,128	523,882	707,979	
25	647,299	674,630	685,908	726,876	748,070	661,097	964,020	768,958	635,928	690,821	722,570	
26	643,002	620,892	728,210	685,018	731,307	737,603	716,184	770,892	889,223	676,391	809,078	
27	668,792	639,648	668,430	736,388	751,046	666,915	855,154	723,847	525,274	691,307		
28	683,249	844,942	642,668	691,762	725,373	707,682	873,887	1,399,195	682,166	701,824		
29	710,965		510,438	806,583	741,107	626,692	894,088	773,891	648,717	697,472		
30	606,663		840,236	666,452	1,244,873	641,742	856,750	825,491	694,152	676,203		
31	799,409		685,542		184,420		881,125	857,212		643,768		
Total Imp G	20,177,309	18,302,834	21,042,140	20,928,890	27,143,671	20,916,615	27,141,800	25,257,307	20,698,138	20,976,411	18,181,032	0
Total Liters	91,728,064	83,206,514	95,659,673	95,144,827	123,397,843	95,089,023	123,389,337	114,822,243	94,095,805	95,360,862	82,652,790	240,766,147
										Yearly Total Imp. G		0
										Yearly Total Liters		1,094,546,981

Description: 2022 Utilidor Water withdraw amount listed as 1,094,546,981 Litres withdrawn.

Report #[Click here to enter text.](#)

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