



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU, X0A 0H0

Your file - Votre référence
3AM-COR2232
Our file - Notre référence
GCDocs#116857938

September 7, 2023

Robert Hunter
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
sent via e-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC) Response to comments provided by the Government of Nunavut, Department of Community and Government Services (GN) on CIRNAC's Review of the 2022 Annual Report for Water Licence 3AM-COR2232 for the Municipality of Coral Harbour in the Kivalliq Region of Nunavut

Dear Mr. Hunter,

Thank you for the August 29, 2023 invitation to review the referenced comments provided by the GN on CIRNAC's review of the 2023 Annual Report, submitted by the Government of Nunavut, Department of Community and Government Services on behalf of the Licensee. The annual review was for Coral Harbour's Type A Water Licence No. 3AM-COR2232.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the responses pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC response in the attached Technical Memorandum.

It should be noted that at this time it remains unclear to CIRNAC which water quality criteria the water quality parameters in Schedule I are being compared to. CIRNAC reminds the Nunavut Water Board of our request that they specify the water quality criteria as a term and condition of the water licence.

If there are any questions or concerns, please contact me, Andrew Keim at 305-501-4047 or Andrew.Keim@canada.ca.

Sincerely,

Keim,
Andrew

Digitally signed by Keim, Andrew
DN: C=CA, O=GC, OU=INAC-
AINC, CN="Keim, Andrew"
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Andrew Keim,
Manager - Water



Technical Review Memorandum

Date: Sept 7, 2023

To: Robert Hunter, Licensing Administrator, Nunavut Water Board

From: Andrew Keim, Manager- Water, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC)
Response to comments provided by the Government of Nunavut,
Department of Community and Government Services (GN) on CIRNAC's
Review of the 2022 Annual Report for Water Licence 3AM-COR2232 for the
Municipality of Coral Harbour in the Kivalliq Region of Nunavut

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

The Hamlet of Coral Harbour is located on the southern shore of Southampton Island, on the northern rim of Hudson Bay. The population of the community was 1035 (2021 Census) and is projected to grow to 1253 by the year 2031. Water is extracted from the Post River, which is the community's water source, and stored in a 2-cell reservoir with a capacity of 49,500 cubic metres (m³), assuming 1 meter freeboard is maintained. The reservoir is filled during the open water season when up to 45,000 m³ of water is extracted from the Post River in approximately 25 days.

In 2020, 39,973 m³ of water was pumped from the Post River into the reservoir over a 24-day period. The daily rate of water withdrawal from the Post River during the reservoir resupply was approximately 2,000 m³ per day. Therefore, the daily amount of water used by the Applicant to resupply the reservoir during this part of the year exceeds the 300 m³ per day threshold for a Type "B" Water Licence as set out in Schedule 2 of the Nunavut Waters Regulations, so the Applicant was required to apply for a new Type "A" Water Licence to authorize the withdrawal of up to 2,000 m³ of water per day rather than simply renewing the previous Type "B" Water Licence No: 3BM-COR1521, which expired on April 23, 2021 (the Expired Type "B" Licence).

The Applicant's original application for the renewal of the Expired Type "B" Licence was received by the NWB on May 18, 2021. Subsequently, following discussions between the NWB and the Applicant, the Applicant submitted an application for a new Type "A" Water Licence to replace the Expired Type "B" Licence on September 29, 2021. Effective April 04, 2022, Type "A" Water Licence No: 3AM-COR2232 was issued for 45,000 m³ per annum.

On August 29, 2023 the NWB provided CIRNAC with the GN response to Environment and Climate Change Canada and CIRNAC's comments made regarding the Hamlet of Coral Harbour's Water Licence No: 3AM-COR2232 2022 Annual Report. The NWB provided 5



working days, until the September 5th to respond. A reminder was also sent on the 6th of September. CIRNAC apologizes, however due to other commitments our response has been delayed until today the 7th of September.

CIRNAC provides the following for the Board's consideration. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical reviews can be found in Section C.

Table 1: Summary of Recommendations

Recommendation Number	Subject
R-01	Quantity of water used
R-02	Daily water quantity reporting requirements
R-03	Sewage discharge reporting requirements
R-04	Sludge removal reporting
R-05	Water quality monitoring and Sewage Disposal Facility grab samples
R-06	Operation and Maintenance Plan 2021 Update
R-07	Structural integrity of the Sewage Disposal Facility

B. DOCUMENTS REVIEWED

The following table (Table 2) provides a summary of the documents reviewed under the submission.

Table 2: Documents Reviewed

Document Title	Author, File No., Rev., Date
3AM-COR2232 2022 Annual Report	Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Municipality of Coral Harbour
TYPE "A" WATER LICENCE NO: 3AM-COR2232	Nunavut Water Board, 04 April 2022
TYPE "A" WATER LICENCE NO: 3AM-COR2232 Reasons for Decision	Nunavut Water Board, 04 April 2022



Document Title	Author, File No., Rev., Date
3BM-COR1521 2021 Annual Report	Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Hamlet of Coral Harbour
Water Licence Inspection Form	CIRNAC, 16 September 2021
Operation & Maintenance Plan for Coral Harbour Municipal Water Licence: Solid Waste Disposal Facilities 2021	June 30, 2021
3AM-COR2332 Response to Inquiries document	August 28, 2023- Government of Nunavut

C. RESULTS OF REVIEW

Response to the Government of Nunavut's Department of community and Government Services.

In response to the Government of Nunavut's overarching comment on the roles and responsibilities of the Municipalities and the Government of Nunavut, the suggestion that the Government of Nunavut does not have and maintain a nexus of control and responsibility over the Water Licenses issued to the communities is breaking with established convention. Since 1999, the Government of Nunavut has maintained a department and Minister dedicated to servicing and maintaining the infrastructure and licensing needs of the Municipalities including the production of applications, annual reports and maintenance of Compliance plans. CIRNAC remains confident, in their recommendations to the Nunavut Water Board, that we are referencing the appropriate responsible party for submissions.

If the Government of Nunavut would like to ensure that the municipalities are included and aware of CIRNAC's reviews and Recommendations to the Annual Reports submitted by the Government of Nunavut, CIRNAC suggests that the Government of Nunavut include the most recent names and contact information for the Hamlet Mayors and administration so that CIRNAC can include them in our submissions to the Board in future reviews. This will ensure that the Municipalities are aware of the issues and can be involved in CIRNAC's continuing cooperative efforts to problem solve and find creative and positive solutions to these on going issues.

CIRNAC accepts this response and recommendation from the Government of Nunavut and looks forward to reviewing future annual reports and working together.

1. Quantity of water used

Comment:



Water licence 3AM-COR2232 allows for 45,000 cubic metres of water per annum to be pumped from Post River only to a water reservoir during open water season to support community needs. Table 2 of the 2022 Annual Report estimates 28,000 cubic metres of water was transferred from Post River to Raw Water Cells between September 14, 2022 and October 29, 2022. Table 1 of the 2022 Annual Report indicates 37,123.237 cubic metres of water is obtained annually from all sources; between 1,246.358 and 3672.794 cubic metres of water is obtained from all sources monthly.

Recommendation:

(R-01) CIRNAC recommends the Government of Nunavut provide the name or origin of the undefined sources of water tabulated in Table 1, and clarify why the annual total of water obtained from all sources in Table 1 is more than the total of water removed from Post River in Table 2.

Government of Nunavut's Response:

Error in the table labelling. Total quantity is from the reservoir. This has been updated. The reservoir can hold over 54,000 m³ and was not fully empty from the previous year. Thus only 28,000 m³ was pumped from Post River.

CIRNAC's comments:

CIRNAC thanks the GN for this response and considers this response satisfactory.

2. Daily water quantity reporting requirements

Comment:

Water licence 3AM-COR2232 requires reporting of the daily, monthly and annual quantities in cubic metres of fresh water withdrawn from Post River at Monitoring Station COR-1. Pumping at a daily rate of up to 2,000 m³ from Post River to the water reservoir during open water season is not to be exceeded. Table 1 and 2 of the 2022 Annual Report only include the monthly and annual water withdrawn quantities.

Recommendation:

(R-02) CIRNAC recommends that the Government of Nunavut include the daily quantities of water withdrawn from Post River in the 2022 Annual Report, and specify if any daily rates exceeded 2,000 m³.

Government of Nunavut's Response:

There is currently no flow meter to record daily flow. This will be rectified.



CIRNAC's comments: CIRNAC is satisfied with the Response from the GN and looks forward to reviewing the 2023 Annual report.

3. Sewage discharge reporting requirements

Comment:

Water licence 3AM-COR2232 requires reporting of the daily, monthly and annual quantities in cubic metres of any sewage discharged into the Sewage Containment Cell at Monitoring Station COR-2. The 2022 Annual Report states no meter exists to measure the sewage discharge volumes, therefore sewage discharge volumes are considered equal to the water consumption volumes of 37,123.237 cubic metres annually.

Recommendation:

(R-03) CIRNAC recommends the Government of Nunavut devise a reporting system for measuring the quantity of sewage discharged into the Sewage Containment Cell.

Government of Nunavut's Response:

Sewage quantities are conservatively measured based on water delivery billing records for all hamlets with trucked sewage collections. Designs use population projections and established northern formulas – please clarify what daily sewage discharge reporting is needed for.

CIRNAC's comments:

CIRNAC thanks the GN for this response and provides the following information. The Water license, a document that is vested in the sole authority of the Nunavut Water Board to issue or cancel pursuant to the *Nunavut Land Claim Act* and the *Nunavut Water and Nunavut Surface Rights Tribunal Act* requires the following;

Part E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT

1. The Licensee shall direct all Sewage to the Sewage Disposal Facility or as otherwise directed by the Board.

And,

Schedule B of the License : Annual Reporting requirements

The Annual Report referred to in Part B, Item 1, shall include the following:

- b. The daily, monthly and annual quantities in cubic meters of any Sewage discharged into the Sewage Containment Cell at Monitoring Station COR-2;



In consideration of the above, it is clear that the necessity to provide this information in the Annual Report is a matter of compliance with the issued license. The license is clear that this is a requirement for reporting. Justification for such reporting requirements also is found within the legislation and in fact goes to the protection of the freshwater environment and aquatic life. CIRNAC looks forward to further engagement as required to assist the Government of Nunavut in maintaining compliance with the issued License.

4. Sludge removal reporting

Comment:

Water licence 3AM-COR2232 requires reporting of the annual quantities in cubic metres of sludge removed from the Sewage Disposal Facility. CIRNAC was unable to locate the sludge removal values in the 2022 Annual Report.

Recommendation:

(R-04) CIRNAC recommends the Government of Nunavut specify where the 2022 sludge removal measurements are reported.

Government of Nunavut's Response:

There is no sludge removal reporting. Planning money has been requested to upgrade the wastewater treatment facility, sewage remediation will be a part of that as well as replacing the current structure. There is currently no timeline on when that funding will be approved. If approved, a sewage remediation plan will be developed and submitted to NWB as part of the project

CIRNAC's comments:

CIRNAC accepts this response but would suggest that in future reporting that if no sludge removal activities were undertaken that there appears a statement to that effect in the Annual report. The Schedule B provided in the license has this requirement as C in the list.

5. Water quality monitoring and Sewage Disposal Facility grab samples

Comment:

Water licence 3AM-COR2232 requires water quality monitoring at 7 stations (COR-1 to COR-7). All effluent discharged from the Sewage Disposal Facility at Monitoring Program Station COR-5 shall not exceed the effluent quality limits of Part E item 2. The 2022 Annual Report provides no analytical results for water quality monitoring stations nor grab samples. According to the water licence inspection on September 16th, 2021, monitoring station COR-5 failed to meet discharge criteria due to effluent leaching out of the sewage lagoon. CIRNAC has reviewed the email chain included in the 2022 Annual Report regarding sample bottle ordering and shipping.



Recommendation:

(R-05) CIRNAC recommends the Government of Nunavut submit the water quality monitoring station and grab sample analytical results with the 2022 Annual Report or specify if none were collected in 2022. CIRNAC recommends the Government of Nunavut provide a summary report for Station ID COR-5 and all grab samples compared to effluent quality limits in the 2022 Annual Report, and specify if there were any exceedances.

Government of Nunavut's Response:

There was a bottle shortage and therefore no sampling was done in 2022. A sentence has been added. Sampling season for 2023 has not been affected.

CIRNAC's comments:

CIRNAC thanks the GN for this response. If the GN requires assistance in locating or contacting suppliers they may consider contacting CIRNAC who can provide the name of labs that may also have stock that can be used.

6. Operation and Maintenance Plan 2021 Update

Comment:

Appendix B of the 2022 Annual Report is titled "Operation and Maintenance Plan 2021 Updated." The plan submitted with the 2022 Annual Report is dated June 30, 2021.

Recommendation:

(R-06) CIRNAC recommends the updated Operation and Maintenance plan be submitted with the 2022 Annual Report. CIRNAC recommends the Government of Nunavut add a page at the front of the plan that records updates and lists, in chronological order, what sections were updated, when they were updated and for what reason, and by whom. This would allow for ease of plan users to note the changes that have been made.

Government of Nunavut's Response:

Has been added.

CIRNAC's comments:

CIRNAC thanks the GN for this response. CIRNAC however is unclear, what have you added. We reviewed the updated annual report and O&M manual but failed to locate a page at the front of the plan that records updates and lists, in chronological order, what sections



were updated, when they were updated and for what reason, and by whom. We look forward to that document being submitted as soon as this has been completed.

7. Structural integrity of the Sewage Disposal Facility

Comment:

According to the water licence inspection on September 16, 2021, there are concerns related to the structural integrity of the Sewage Disposal Facility. The water licence inspection stated “the Licensee shall submit, no later than January 1, 2022, a letter to the Inspector summarizing the improvements to be made to the Sewage Disposal Facility to improve effluent qualities at monitoring station no. COR-5. This letter will include but not be limited to; how the facility will be improved, when the work will be completed and how this information will be reported to the Inspector once completed.” Part G item 8 states “an inspection of all engineered facilities associated with this Licence shall be carried out at least once annually, during open water season, by an Engineer (Civil, Municipal or Geotechnical). The Engineer’s report shall be submitted to the Board along with the Annual Report, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer’s recommendations.” No Engineer’s report was submitted with the 2022 Annual Report.

Recommendation:

(R-7) CIRNAC recommends the Government of Nunavut submit the 2022 Engineer’s report for the structural integrity of the Sewage Disposal Facility with the 2022 Annual Report, along with a status update on the stated requirements from the September 16, 2021 water licence inspection.

Government of Nunavut’s Response:

A study is currently being undertaken to determine the category of structure, the appropriate personnel to undertake the inspection, and the required frequency of inspection. This report is expected to be submitted to CIRNAC in 2024.

Discussions were held with Christine Wilson and Andrew Keim to remove Part G item 8 from the water license. Structural inspections require specialized personnel; being an engineer does not automatically make you qualified to do an inspection and CGS cannot misrepresent qualifications. CGS has committed to review all non-tax-based municipal license to determine the correct person to do it

CIRNAC’s comments:

CIRNAC appreciates the response provided by the GN. CIRNAC continues to look forward to working with the GN to address these deficiencies and to cooperatively engage on



solutions to maintaining and inspecting the infrastructure throughout the Territory. CIRNAC continues to offer what support we can through our Field Operations Unit to facilitate inspections of facilities and through the Waters Unit to address reporting and compliance issues.