Water Resources Division
Resource Management Directorate
Nunavut Regional Office
918 Sivumugiaq Street
Iqaluit, NU, X0A 3H0

Your file - Votre référence
3AM-COR2232
Our file - Notre référence
GCdocs#139537997

August 25, 2025

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

Re: Crown-Indigenous Relations and Northern Affairs Canada's Review of Municipality of Coral Harbour's 2023 and 2024 Annual Reports for Type A Water Licence No. 3AM-COR2232

Dear Robert Hunter,

Thank you for the opportunity to review Municipality of Coral Harbour's 2023 and 2024 Annual Reports for Type A Water Licence No. 3AM-COR2232.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the Annual Reports and supporting documents 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* and provides the following Technical Review Memorandum for the Board's consideration.

Please contact me or Andrew Keim by email at john.macinnis@rcaanc-cirnac.gc.ca or andrew.keim@rcaanc-cirnac.gc.ca if there are any questions or concerns.

Sincerely,

JM

John MacInnis
Senior Environmental Assessment Specialist

Technical Review Memorandum

Date: August 25, 2025

To: Robert Hunter, Licensing Administrator, Nunavut Water Board

From: John MacInnis, Senior Environmental Assessment Specialist, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's Review of Municipality of Coral Harbour's 2023 and 2024 Annual Reports for Type A Water Licence No. 3AM-COR2232

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

The Municipality 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 and stored in a 2-cell reservoir with a capacity of 49,500 cubic metres (m^3), assuming a 1 meter freeboard is maintained.

In 2020, 39,973 m^3 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 m^3 per day. Therefore, the daily amount of water used to resupply the reservoir during this part of the year exceeded the 300 m^3 per day threshold for a Type B Water Licence, and the Municipality was required to apply for a new Type A Water Licence to authorize the withdrawal of up to 2,000 m^3 of water per day.

Type A Water Licence No. 3AM-COR2232 authorizes the following activities, works, and undertakings by the Municipality:

- Pumping of 45,000 m^3 of water per annum at a daily rate of up to 2000 m^3 from Post River to the water reservoir during the open water season, to support community needs.
- Continued operation and maintenance of municipal facilities, including the Water Supply Facility, Solid Waste Disposal Facility, and Sewage Disposal Facility.
- Roads management, watercourse crossings, and culvert installations within municipal boundaries.

CIRNAC provides the following comments and recommendations on the 2023 and 2024 Annual Reports. A summary of subjects and recommendations is shown in Table 1, and documents reviewed are presented in Table 2.

Table 1: Summary of Recommendations.

Recommendation Number	Subject
R-01	General Comments
R-02	Water Quantity
R-03	Sewage Discharge Reporting Requirements
R-04	Monitoring Program
R-05	Structural Integrity of the Sewage Disposal Facility
R-06	Operation and Maintenance Plan Update
R-07	Spill Reporting and Follow-Up Actions
R-08	Closure and Reclamation Work
R-09	Waste Management

B. DOCUMENTS REVIEWED

The following table lists documents that were reviewed under the submission.

Table 2: Documents reviewed and referenced.

Document Title	Author, File No., Rev., Date
Annual Report for the Municipality of Coral Harbour 2024, Water Licence No. 3AM-COR2232	Municipality of Coral Harbour, July 17, 2025
Annual Report for the Municipality of Coral Harbour 2023, Water Licence No. 3AM-COR2232	Municipality of Coral Harbour, November 25, 2024
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	CIRNAC, June 24, 2023
3AM-COR2232 – Municipality of Coral Harbour – Response to ECCC and CIRNAC Reviews of the 2022 Annual Report for Water Licence 3AM-COR2232	Government of Nunavut Community and Government Services (GN-CGS) on behalf of the Municipality of Coral Harbour, August 23, 2023
CIRNAC Response to comments provided by the GN-CGS 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	CIRNAC, September 7, 2023
CIRNAC's Response to the GN-CGS response to CIRNAC's comments on the 2022 Annual Report for Water Licence 3AM-COR2232 for the Municipality of Coral Harbour in the Kivalliq Region of Nunavut	CIRNAC, November 10, 2023
2021 Water Licence Inspection Report	CIRNAC, November 16, 2021

Operation & Maintenance Plan for Coral Harbour Municipal Water Licence: Solid Waste Disposal Facilities 2021	Hamlet of Coral Harbour, June 30, 2021
Hamlet of Coral Harbour Environmental Monitoring Program and Quality Assurance/Quality Control Plan (April 2021)	Hamlet of Coral Harbour, February 11, 2022
Hamlet of Coral Harbour Environmental Emergency Contingency Plan (April 2021)	Hamlet of Coral Harbour, April 2021

C. RESULTS OF REVIEW

1. General Comments

Comment:
Table 1 in the 2024 Annual Report provides monthly and annual quantities of freshwater obtained from all freshwater sources. CIRNAC is of the view that the current format for reporting water withdrawals from all sources complicates verifying compliance with Schedule B, item a, in Annual Reports. For instance, Schedule B, Item a requires the daily, monthly, and annual quantities of freshwater withdrawn from Post River at Monitoring Station COR-1, but Table 1 appears to be presenting an aggregate (i.e., reservoir and Post River).

CIRNAC understands that Part E, Item 2 of 3AM-COR2232 establishes effluent water quality limits for Monitoring Station COR-5. CIRNAC is of the view that the establishment of site-specific water quality guidelines for other Monitoring Stations would be beneficial in supporting long-term monitoring at the site. At present, there is a lack of criteria for comparison at some Monitoring Stations (e.g., COR-4). In the absence of water quality guidelines, CIRNAC compared analytical results provided by the Licensee against the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Aquatic Life, Marine, where available, but notes these comparisons are not always well-aligned with the objectives of the CCME guidelines.

Recommendation:
(R-01) CIRNAC recommends that the Board:

- Provide a separate table(s) with future Annual Reports that requires the provision of information to satisfy Schedule B, Item a.
- Consider developing site-specific water quality guidelines for other Monitoring Stations associated with 3AM-COR2232.

2. Water Quantity

Comment:
Schedule B, Item a, of 3AM-COR2232 requires reporting of the daily, monthly, and annual quantities of fresh water withdrawn from Post River at Monitoring Station COR-1.

The 2023 Annual Report does not provide a record of the daily volumes withdrawn from the Post River and states there is "…no information on how much water was pumped into the reservoir from Post River." The 2024 Annual Report also does not provide a record of the daily volumes withdrawn from Post River, and the average daily pumping rate exceeds the limit established in Part D, Item 2. It is CIRNAC's understanding that the daily water quantity reporting requirements would be rectified, based on the GN-CGS's response to CIRNAC's comment on the 2022 Annual Report, but this continues to be an ongoing issue. The Municipality is not fulfilling the reporting requirements of Schedule B or Part D, Item 2, of 3AM-COR2232.

The 2024 Annual Report states that the capacity of the reservoir is 49,500 m^3 and the estimated volume of water pumped from the Post River was reported at 52,454 m^3, which exceeds the 45,000 m^3 annual limit outlined in Part D, Item 3. The 2024 Annual Report describes that the Municipality is going to review pumping volumes in 2025 to determine if the 2024 volumes were overestimated, and if there is water loss due to cracks/holes in the resupply pipeline. It was also noted in the 2024 Annual Report that a new flowmeter was ordered, but did not arrive to be used during the 2024 refill and will be installed for 2025.

Recommendation:

(R-02) CIRNAC recommends that the Municipality:

- Provide an explanation as to why there is no information on how much water was pumped into the reservoir from Post River in 2023.
- Clarify why the estimated volume of water pumped from the Post River in 2024 is more than the allowed volume under Part D, Item 3.
- Provide an update on the review of the method for estimating 2024 pumping withdrawal rates and include a summary in the 2025 Annual Report.
- Provide an update for the schedule to install a flow meter for monitoring refill flows and include the daily quantities of water withdrawn from the Post River in the 2025 Annual Report.

3. Sewage Discharge Reporting Requirements

Comment:

Schedule B, Item b, of 3AM-COR2232 requires reporting of the daily, monthly, and annual quantities of any sewage discharged into the Sewage Containment Cell at Monitoring Station COR-2.

Both the 2023 and 2024 Annual Reports tabulate the quantity of sewage waste discharged equal to the quantity of water used, and state that no meter exists to measure the discharge volume. This assumption does not account for water releases to the environment and/or water use not associated with sewage production.

In its review of the 2022 Annual Report, CIRNAC recommended that the Municipality develop a reporting system for sewage discharge, but this recommendation has not been implemented. Reporting accurate sewage discharge measurements is important for monitoring treatment efficiency, determining volumes discharged to the environment, scheduling maintenance activities, and understanding the overall system capacity.

Recommendation:
(R-03) CIRNAC recommends that the Municipality develops a procedure for measuring the quantity of sewage discharged into the Sewage Containment Cell.

4. Monitoring Program

Comment:
Schedule B, Item d, of 3AM-COR2232 requires that the Annual Report shall include a summary report with all data and information generated under the Monitoring Program, including the QA/QC program, in electronic formats acceptable to the Board.

It is CIRNAC's understanding that there was a bottle shortage preventing sampling in 2022, and the sampling season for 2023 would not be affected, based on the GN-CGS's response to CIRNAC's comment on the 2022 Annual Report. CIRNAC was unable to locate any monitoring data for 2023 and has identified areas that require further clarification with respect to the monitoring data in 2024. CIRNAC also notes that the Municipality has not fulfilled the reporting requirements relating to the monitoring program in 3AM-COR2232.

a) Monitoring Data

Appendix A of the 2024 Annual Report provides a summary table of the effluent monitoring results for COR-5 compared against the effluent discharge limits outlined in Part E, Item 2, of the Water Licence. Effluent samples were collected on June 26, June 27 (for microbiological tests only), September 11, and October 21, 2024.

- The June COR-5 sample was reported in the Summary Table in Appendix A as >2420 CFU/100 mL, which exceeded the 1000 CFU/100 mL effluent limit outlined in 3AM-COR2232. There appears to be a discrepancy in reported units, based on the corresponding sample result (>2420 MPN/100mL) in the Certificate of Analysis in Appendix B of the 2024 Annual Report.
- The COR-5 sample, dated September 11, was reported to exceed the 30 mg/L total suspended solids (TSS) limit resulting from sample collection during a period of heavy rain, which may have caused sediment to be captured in the sample. CIRNAC notes that it appears the TSS exceedance occurred in October, based on the laboratory results in Appendix B, and it is unclear which factors contributed to this exceedance.

- In Appendix A, it was noted that fecal coliform samples were not collected during the September and October sampling events, as the laboratory did not send the correct sampling bottles for the test. It was noted by the Municipality that this will be addressed during the 2025 monitoring program. CIRNAC notes that this appears to be a recurring issue that has not been resolved.

Analytical results in Appendix B were compared by CIRNAC against the CCME Water Quality Guidelines for the Protection of Aquatic Life, Marine. The cadmium concentration for COR-4 (Effluent within the Wetland Treatment Area) sampled on October 21, 2024, exceeded the referenced CCME Water Quality Guidelines. These comparisons and a discussion of exceedances were not included in the 2024 Annual Report.

b) Monitoring Program

CIRNAC notes that the Municipality has not fulfilled the reporting requirements of Part I, Items 2-5, including:

- Daily flow measurements from COR-1 (Raw Water intake at Post River);
- Daily and Monthly flow volumes from COR-2 (Sewage Truck Release Point into the Containment Cell);
- Flow measurements from COR-3 (Effluent discharge from Sewage Containment Cell); and
- At least monthly samples for COR-6 and COR-7.

CIRNAC also notes that the Licensee has not provided results for field blanks and duplicate samples as part of the QA/QC program in the 2024 Annual Report, and has not satisfied the conditions applying to monitoring in Schedule I, Table 1, including:

- Field measurements (pH, temperature, conductivity) for the sampling events;
- Total organic carbon (TOC) from both the September and October sampling events; and
- Fecal coliform from the September sampling event.

Continued gaps in sampling and analysis will undermine the objectives of the monitoring program.

Recommendation:

(R-04) CIRNAC recommends that the Municipality:

- Provide monitoring data for 2023 or provide an explanation as to why no monitoring was done.
- Update the 2024 Annual Report to correct the reported units for fecal coliforms and the date of the TSS exceedance.
- Clarify why the October 21, 2024, COR-5 sample was above the 30 mg/L TSS limit.
- Engage with the third-party laboratory to provide sample bottles in a timely manner to ensure sampling can be completed during open water season.

- Provide data for the stations with missing information/samples in 2024 (i.e., daily flow measurements from COR-1, daily and monthly flow volumes from COR-2; flow measurements from COR-3; monthly samples for COR-6 and COR-7; field measurements for the sampling events; TOC from both the September and October sampling events; and fecal coliform from the September sampling event).
- Provide results for field blanks and duplicate samples or provide an explanation why it was not completed for 2024.

5. Structural Integrity of the Sewage Disposal Facility

Comment:

The 2021 Inspection Report notes that improvements were required for the berm wall directly adjacent to monitoring station COR-3 at the Sewage Disposal Facility and the berm walls in the Sewage Disposal Facility to increase hold time of the effluent prior to discharge, with the intention to improve quality. The 2021 Inspection Report also required the following action: “The Licensee shall submit, no later than January 1st, 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.”

On June 24, 2023, CIRNAC recommended that the Municipality submit the 2022 Engineer’s report for the structural integrity of the Sewage Disposal Facility with the 2022 Annual Report, as well as a status update on the stated requirements enumerated within the September 16, 2021 inspection.

In response to CIRNAC’s comment on the 2022 Annual Report, the Municipality responded that “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.” This study and the Engineer’s report are not referenced in the 2023 and 2024 Annual Reports, and it is unclear if either has been 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.”

CIRNAC notes that delaying these upgrades has the potential to continue exacerbating effluent quality, which has potential impacts on receiving environments.

Recommendation:

(R-05) CIRNAC recommends that the Municipality provide a schedule within 30 days for when the study and Engineer's report will be provided and ensure future inspections are carried out on all engineered facilities associated with the licence at least once annually during the open water season. Failure to provide this report will result in further enforcement action being undertaken which may include an Inspectors Direction.

6. Operation and Maintenance Plan Update

Comment:

In its review of the 2022 Annual Report, CIRNAC requested that a front page be added to the June 30, 2021, Operation and Maintenance Plan that includes a list of updates, in chronological order, with what sections were updated, the dates of the updates, reasons for updates, and by whom the updates were prepared. CIRNAC also recommended that the Municipality include details in the Plan on the runoff diversion berm inspection and maintenance and hazardous waste storage procedures and protocols, including for contaminated soils storage and when secondary containment is required.

An updated Operation & Maintenance Plan for Coral Harbour Municipal Licence: Solid Waste Disposal Facilities was not provided in either the 2023 or 2024 Annual Report. Neither the 2023 nor 2024 Annual Report provides an update on the Plan to reflect CIRNAC's comment on the 2022 Annual Report. An updated Operation & Maintenance Plan for the Sewage Disposal Facility is required as per Part G, Item 5, of the Water Licence.

Recommendation:

(R-06) CIRNAC recommends that the Municipality update the June 30, 2021, Operation and Maintenance Plan as follows:

- Add a page to the front of the Plan, and any future revised Plans, with a list of updates, in chronological order, with what sections were updated, the dates of the updates, reasons for updates, and by whom the updates were prepared.
- Provide details on the runoff diversion berm inspection and maintenance within the Plan, or direct CIRNAC to where in the Plan the runoff diversion berm inspection and maintenance details are included.
- Provide details on the hazardous waste storage procedures and protocols within the Plan, including for contaminated soils storage and when secondary containment is required.

7. Spill Reporting and Follow-up Actions

Comment:

Schedule B, Item h, of 3AM-COR2232 requires that the Annual Report provide "a list and description, including volumes, of all un-authorized discharges, spills and summaries of follow-up action taken."

Two spills of petroleum fuel oil, including the volume of these spills, were reported in the 2024 Annual Report. While the 2024 Annual Report indicates that these two spills were reported via the NWT/NU 24-Hour Spill Reporting Line, a detailed summary of follow-up actions taken to clean these spills were not provided.

Recommendation:
(R-07) CIRNAC recommends that the Municipality provide a summary of follow-up actions taken for each spill in 2024 specific to the product released (i.e., petroleum fuel spill vs. sewage spill), including details on how spills were collected and disposed of and if additional monitoring or corrective actions were taken.

8. Closure and Reclamation Work

Comment:
Schedule B, Item i, of 3AM-COR2232 requires that the Annual Report provide "a summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling."

The 2023 Annual Report stated "No correspondence is available from past SAO, guidance from board is welcomed." As such, it is unclear to CIRNAC whether any closure and reclamation work has been undertaken in 2023 or is planned for 2025.

Recommendation:
(R-08) CIRNAC recommends that the Municipality confirm whether any closure and reclamation work was undertaken in 2023 or if any is planned for 2025.

9. Waste Management

Comment:
The 2021 Inspection noted that the segregation and collection of hazardous waste is on-going. The 2023 Annual Report indicates that hazardous waste (waste oil drums, discarded batteries and empty propane tanks) have been segregated over the years at the Inspector's request and that the Hamlet is requesting guidance on shipping and disposing of the waste.

CIRNAC notes that, although not specifically required under Schedule B, the 2024 Annual Report does not provide any information with respect to shipping of wastes for final disposal. The June 20, 2021, Operation and Maintenance Plan for Coral Harbour Municipal Water Licence: Solid Wase Disposal Facilities indicates that hazardous waste will be stored for up to five years, which is considered sufficient time to accumulate enough waste to make it economical to remove from the community to a licensed waste receiver. It is unclear to CIRNAC if any waste has been removed off-site to date or is planned. CIRNAC reminds the Municipality that it shall maintain records of all waste removed from the site and confirmation of proper disposal, as per Part E, Item 11 of 3AM-COR2232.

Recommendation:

(R-09) CIRNAC recommends that the Municipality confirm if any hazardous waste has been shipped off-site for final disposal or provide a timeline for when this activity is planned.