



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

Your file - Votre référence
3AM-GRA1631
Our file - Notre référence
GCdocs#139566376

September 17, 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 Rankin Inlet's 2023 and 2024 Annual Reports for Type A Water
Licence No. 3AM-GRA1631**

Dear Robert Hunter,

Thank you for the opportunity to review Municipality of Rankin Inlet's 2023 and 2024 Annual Reports for Type A Water Licence No. 3AM-GRA1631.

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.

CIRNAC notes that any failure to comply with the terms and conditions of Water Licence No. 3AM-GRA1631 is an issue of non-compliance and may result in enforcement action, if the deficiencies outlined in this report are not rectified in a timely manner.

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,

John MacInnis
Senior Environmental Assessment Specialist



Technical Review Memorandum

Date: September 17, 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 Rankin Inlet's 2023 and 2024 Annual Reports for Type A Water Licence No. 3AM-GRA1631

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

The Municipality of Rankin Inlet is located on the Kudlulik Peninsula in Nunavut, on the northwestern shores of Hudson Bay, between Chesterfield Inlet and Arviat. It is the second-largest settlement in Nunavut, after the territorial capital, Iqaluit. It is the regional center for the Kivalliq Region with a population of 2975 (2021 census).

On July 8, 2021, Type A Water Licence No. 3AM-GRA1624 was amended to a Type A Water Licence No. 3AM-GRA1631. The amendment extended the Licence by seven years, changed the authorized location and water source from Char River to Lower Landing Lake, and increased the amount of water that can be pumped from Lower Landing Lake.

Type A Water Licence No. 3AM-GRA1631 authorizes the following activities, works, and undertakings:

- Use of 850,000 cubic meters (m³) of water annually from Nipissar Lake.
- Transfer of 10,000 m³ of water per day from Lower Landing Lake to Nipissar Lake during the open water season.
- Relocation of the pumping station from Char River to Lower Landing Lake for replenishing Nipissar Lake.
- Withdrawal of water from Nipissar Lake to support community needs.
- Continued operation and maintenance of municipal facilities, including the Water Treatment and Supply Facilities and the Sewage Treatment Facility.

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, documents reviewed are presented in Section B, and the results of the review are shown in Section C.



Table 1: Summary of Recommendations.

Recommendation Number	Subject
R-01	Water Quantity Monitoring
R-02	Sewage Discharge Reporting
R-03	Water Quality Monitoring
R-04	Spill Reporting
R-05	Sewage and Water Infrastructure

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 GN-CGS Rankin Inlet Water and Wastewater 2023, Water Licence No. 3AM-GRA1631	Municipality of Rankin Inlet, December 11, 2024
2024 Annual Report for 3AM-GRA1631 Government of Nunavut – Department of Transportation and Infrastructure Nunavut, Water Licence No. 3AM-GRA1631	Municipality of Rankin Inlet, 2025
Crown-Indigenous Relations and Northern Affairs Canada's Review of the 2022 Annual Report for Water Licence 3AM-GRA1631 for the Hamlet of Rankin Inlet in the Kivalliq Region of Nunavut	CIRNAC, June 27, 2023
3AM-GRA1631 Rankin Inlet Annual Report 2022, Response to ECCC and CIRNAC Comments	Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Municipality of Rankin Inlet, August 15, 2023
Crown-Indigenous Relations and Northern Affairs Canada's response to the Government of Nunavut's response to the 2022 Annual Report review comments for Water Licence 3AM-GRA1631 for the Hamlet of Rankin Inlet in the Kivalliq Region of Nunavut	CIRNAC, August 22, 2023
3AM-GRA1631 Rankin Inlet Annual Report 2022, Response to CIRNAC Comments	GN-CGS on behalf of the Municipality of Rankin Inlet, August 23, 2023
3AM-GRA1631 2022 Annual Report CIRNAC response to GN	GN-CGS on behalf of the Municipality of Rankin Inlet, September 8, 2023
3AM-GRA1631 2022 Annual Report GN Response	CIRNAC, September 12, 2023



to CIRNAC comments	
Water Licence Inspection Report Inspection Date September 18, 2024	CIRNAC, October 31, 2024
Water Licence Inspection Report Inspection Date July 20, 2022	CIRNAC, August 2, 2022
Written Warning Nunavut Waters and Nunavut Surface Rights Tribunal Act & Arctic Waters Pollution Prevention Act	CIRNAC, December 12, 2022
Type “A” Water Licence No. 3AM-GRA1631	Nunavut Water Board, July 8, 2021
Community and Government Services, 3AM- GRA1624, Environmental Monitoring Program and Quality Assurance/Quality Control Plan (April 2021)	GN-CGS, May 31, 2021
Community and Government Services, 3AM- GRA1624, Environmental Emergency Contingency Plan (April 2021)	GN-CGS, May 31, 2021

C. RESULTS OF REVIEW

1. Water Quantity Monitoring

Comment:

In its review, CIRNAC identified gaps and/or discrepancies related to daily water reporting requirements, the magnitude of water pumped from Nipissar and Lower Landing Lakes, and elevation measurements.

i. Daily Reporting Requirements

Part J, Item 2 of Water Licence No. 3AM-GRA1631 requires the provision of daily, monthly, and annual quantities of water extracted for all purposes at Monitoring Program Station GRA-1 and Monitoring Program Station GRA-7. The 2023 Annual Report provides totalized daily volumes pumped and the 2024 Annual Report provides an average daily volume. However, neither report provides daily readings to verify that the limit of 10,000 m³ per day is not exceeded.

ii. Water Pumped from Nipissar and Lower Landing Lakes

CIRNAC notes that the magnitude of volumes obtained from Nipissar Lake and pumped from Lower Landing Lake in the 2022, 2023, and 2024 Annual Reports vary substantially:

Annual Report	Nipissar Lake (m ³)	Lower Landing Lake (m ³)
2022	3,523,309	152,620
2023	724,917	72,420
2024	597,314	439,479



CIRNAC expects that the annual water demand from the community and volume pumped from Lower Landing Lake would be comparable on a year over year basis; however, the volumes reported show a wide fluctuation. It is unclear to CIRNAC as to which factors are contributing to the variation in annual water demands in the community.

iii. Elevation Measurements

The 2023 and 2024 Annual Reports provide elevation measurements for Nipissar and Lower Landing Lakes during periods when pumping is occurring. The elevation measurements provided are identical in the 2023 and 2024 Annual Reports despite the variation in volumes pumped between years. CIRNAC notes that some variability in the elevation measurements might be expected due to different pumping rates and/or changes in hydrological inputs between years (e.g., precipitation, snowmelt).

Recommendation:

(R-01) CIRNAC recommends that within 30 days, the Municipality provide:

- a) Daily pumped quantities of water extracted for all purposes at Monitoring Program Station GRA-1 and Monitoring Program Station GRA-7.
- b) An explanation as to the variability in water volumes reported from Nipissar and Lower Landing Lakes in the 2022, 2023, and 2024 Annual Reports.
- c) An explanation for the identical elevation measurements provided in the 2023 and 2024 Annual Reports.

2. Sewage Discharge Reporting

Comment:

CIRNAC's Water Licence Inspection Report, dated September 18, 2024, notes that "discharged sewage is metered in facility and daily logs were available." This data was not provided within the 2023 and 2024 Annual Reports. Furthermore, the 2023 and 2024 Annual Reports indicates that the quantity of sewage volume is equal to the quantity of water used. CIRNAC notes that this does not account for water releases to the environment and/or water uses not associated with sewage production. Reporting accurate sewage discharge measurements is important for: ensuring efficiency in monitoring treatment, determining volumes discharged to the environment, scheduling of maintenance activities, and understanding the system's overall system.

Recommendation:

(R-02) CIRNAC recommends that within 30 days, the Municipality provide:

- a) Accurate quantities of sewage discharged from the Sewage Treatment Facility at Monitoring Program Station GRA-3.
- b) An update as to whether the sewage meter system is active and recording data, and if not, when will it become operational to support the provision of accurate sewage volume discharges.

3. Water Quality Monitoring



Comment:

In its review of the 2023 and 2024 Annual Reports, CIRNAC identified several deficiencies related to the monitoring program. CIRNAC notes that the following issues need to be rectified in order to satisfy the monitoring terms and conditions within Water Licence No. 3AM-GRA1631.

i. Sampling Deficiencies

- Of the four (4) annually required effluent samples, CIRNAC notes that only one (1) effluent sample for GRA-3 was submitted in each of the 2023 and 2024 Annual Reports (July 2023 and December 2024), and the effluent sample analysis for 2024 did not include total mercury, as required under Part J, Item 3 of Water Licence No. 3AM-GRA1631.
- There are missing field measurements (i.e., pH, temperature, conductivity) for all sampling stations and events in the 2023 and 2024 Annual Reports.

ii. QA/QC

- Fecal coliform, total coliforms and *E. coli*, BOD, ammonia, nitrate, nitrite, total phosphorous, and TOC results for GRA-3 were past the hold time prior to sample receipt for the July 2023 monitoring event. The 2024 effluent sample analysis also reported holding time exceedances for microbiological testing (MBHT qualifier in the Certificate of Analysis).
- The results of field blanks and duplicate samples for the QA/QC program were not provided within the Annual Reports. As a result, it is unclear to CIRNAC what sampling methodology was used or if any field duplicates were collected and analyzed during the sampling events. The Hamlet of Rankin Inlet Environmental Monitoring Program and Quality Assurance / Quality Control Plan indicates that field blank and duplicate samples should be collected, but it does not specify how many or how frequently to collect them.

iii. Water Quality Guideline Comparisons

- The July 2023 GRA-3 results were compared to effluent quality limits in Appendix C of the 2023 Annual Report and no exceedances were reported. However, it is unclear to CIRNAC what effluent guidelines were used, as they do not appear in the Water Licence, nor are they referenced within the 2023 Annual Report.
- Analytical results provided in Appendix D of the 2023 Annual Report and in Appendix A of the 2024 Annual Report were compared against the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life, where available. The dissolved mercury concentrations for GRA-3 sampled in December 2024 exceeded the CCME Water Quality Guideline (124 ng/L and the guideline is 26 ng/L). These comparisons and a discussion of exceedances (where applicable) were not included in the 2023 or 2024 Annual Report.



Recommendation:

(R-03) CIRNAC recommends that within 30 days, the Municipality provide:

- a) Quarterly monitoring results for GRA-3, including total mercury results, or clarify why this work was not completed in 2023 and 2024.
- b) Results from field measurements (i.e., pH, temperature, conductivity) for all sampling stations and events in 2023 and 2024, or clarify why this work was not completed.
- c) Clarification on the sampling methodology used, and provide results for field blanks and duplicate samples in 2023 and 2024.
- d) Clarification as to where the reported effluent quality limits are derived, as reported in Appendix C of the 2023 Annual Report.
- e) A discussion as to the exceedance for dissolved mercury at GRA-3 (as per CCME water quality guidelines) and compare analytical results with CCME water quality guidelines in future Annual Reports.

CIRNAC also recommends that the Municipality engage with its third party laboratory to ensure sampling can be completed during the open water season and samples can be received for analysis within the specified hold times.

4. Spill Reporting

Comment:

Schedule B, Item J of Water Licence No. 3AM-GRA1631 requires that the Annual Report provide a list and description, including volumes, of all un-authorized discharges, spills, and summaries of follow-up actions taken.

The 2023 Annual Report describes that two (2) petroleum fuel oil spills were reported to the NWT/NU 24-Hour Spill Reporting Line in 2023. After the spills were reported, investigation and follow-up was undertaken by Sakku Enterprises. It is unclear to CIRNAC which follow-up actions were taken, including how the spills were collected and disposed of, and if any monitoring has been undertaken.

Appendix C of the 2024 Annual Report describes that six (6) spills were reported to the NWT/NU 24-Hour Spill Reporting line and recorded via the Hazardous Spills Database for Rankin Inlet in 2024. However, Appendix C notes that none of the spills were associated with Water Licence No. 3AM-GRA1631.

Recommendation:

(R-04) CIRNAC recommends that within 30 days, the Municipality provide:

- a) A summary of follow-up actions taken for the spills in 2023, including how spills were collected and disposed of, and if any follow-up monitoring had been undertaken.
- b) Clarification as to why the six spills reported to the NWT/NU 24-Hour Spill Reporting line and recorded via the Hazardous Spills Database in 2024 were not associated with Water Licence No. 3AM-GRA1631.

5. Sewage and Water Infrastructure



Comment:

The 2022 Annual Report states that “Sewage treatment facility planning is complete, RFP for detailed design is anticipated to be issued in 2023”. The 2023 and 2024 Annual Reports do not provide an update or summary as to the status of the Sewage Treatment Facility.

The 2024 Annual Report states that “The design of the new water treatment plant and pumphouse is ongoing with expected completion of Fall 2025. The proposed modifications as part of the design will be submitted to the Board. Construction of the newly designed water supply facilities is expected to begin Spring 2025.” The 2024 Annual Report does not outline when construction drawings will be submitted to the Board, in advance of construction, as required by Part F, Item 1, of the Water Licence.

Recommendation:

(R-05) CIRNAC recommends that within 30 days, the Municipality provide an update on:

- a) The status of planning and design of the Sewage Treatment Facility.
- b) When construction drawings will be submitted to the Board for the new water treatment plant and pumphouse, as well as the new water supply facilities.