



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
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Your file - Votre référence
2BM-ULU1520
Our file - Notre référence
CIDM# 1284866

May 6, 2020

Richard Dwyer
Manager of Licensing
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 Completeness
Review of City of Iqaluit Application for Amendment of Type "A" Water Licence
No. 3AMIQA-1626**

Dear Mr. Dwyer,

Thank you for your April 15, 2020 invitation to review the application to amend the City of Iqaluit Type "A" Water Licence No. 3AM-IQA1626.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application package 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*. Information Requests have been provided in the attached Technical Memorandum. CIRNAC wishes to request that the Technical Meeting be conducted by Teleconference. However, CIRNAC will participate in any form of technical meeting decided by the Nunavut Water Board.

If there are any questions or concerns, please contact me at (867) 975-4282 or bridget.campbell@canada.ca.

Sincerely,

Bridget Campbell,
Water Resources Coordinator



Technical Review Memorandum

Date: May 6, 2020

To: Richard Dwyer – Manager of Licensing, Nunavut Water Board

From: Bridget Campbell – Water Management Coordinator, CIRNAC

**Subject: Crown-Indigenous Relations and Northern Affairs Canada
Completeness Review of City of Iqaluit Application for Amendment of
Type “A” Water Licence No. 3AMIQA-1626**

A. BACKGROUND

The City of Iqaluit (the City) is the capital city of the Territory of Nunavut and is located in southern Baffin Island on Frobisher Bay. The City holds a Type “A” Nunavut Water Board (NWB) Water Licence which allows for water withdrawal, wastewater release, and solid waste disposal for municipal purposes. The licence permits the City’s operation of a water treatment plant, a sewage treatment plant, and a landfill currently located in the West 40 region of the city. The West 40 landfill is currently at capacity and the City requires the establishment of another landfill to meet the city’s solid waste disposal needs. The City provided the NWB with an amendment application (the Application) and supporting documentation for their municipal Type “A” Water Licence No. 3AM-IQA1626 on April 9, 2020. The major amendments proposed in the Application include construction and operation of a new solid waste treatment facility (landfill) approximately 6km northwest of the city, a waste transfer station (WTS) within the City’s industrial area, and an access road from the WTS to the landfill.

CIRNAC provides the following comments and Information Requests (IRs) pertaining to the Application. A summary of the subjects of IRs can be found in Table 1. Documents Reviewed as part of the Application can be found in Section B. Detailed comments and IRs can be found in Section C.

Table 1: Summary of Information Requests

Information Request	Subject
IR-01	Source of Gravel and Clay Materials
IR-02	Erosion and Sediment Control Plan
IR-03	Inclusion of Landfill in City Management Plans Previously Submitted
IR-04	Geotechnical Study for the Access Road
IR-05	National Building Code of Canada (NBCC 201 5)
IR-06	Method Statement of Construction Report



IR-07	Closure and Decommissioning Plan
IR-08, IR-09	Design Drawing Details
IR-10	Operation and Maintenance Manual

**B. DOCUMENTS REVIEWED**

The following table (Table 1) provides a summary of the documents reviewed under the Application Package for Renewal of 3BM-IGL1520 and the Supplemental Information Package for Amendment of 3AM-IGL----

Table 1: Documents Reviewed

Attachment	Document Title	Author, File No., Rev., Date
Main Document	Type "A" Water Licence Amendment Application Form	Blue Star Gold Corps., 07-04-2020
Block 5	Topographic Map	Blue Star Gold Corps., 13-03-2020
Block 7	Nunavut Planning Commission Determinations	Nunavut Planning Commission, 03-12-2018
Block 8	Notice of Release of Screening Decision Report	Nunavut Impact Review Board, 13-09-2019
Block 8	Nunavut Impact Review Board Screening Decision Reports	Nunavut Impact Review Board, 13-09-2019
Block 9	Iqaluit Closure and Decommissioning Plan	Dillon Consulting, 01-2020
Block 9	Landfill Engineering Drawings	Dillon Consulting, 24-01-2020
Block 9	Waste Transfer Station Engineering Drawings	Dillon Consulting, 10-2019
Block 9	Method Statement of Construction Report	Dillon Consulting, 01-2020
Block 9	Waste Transfer Station and Landfill Facility Monitoring Program	Dillon Consulting, 01-2020
Block 9	Waste Transfer Station and Landfill O&M Manual	Dillon Consulting, 01-2020
Block 17	Environmental Management Plan	Dillon Consulting, 01-2020
Block 17	Environmental Protection Plan - Operations, Closure and Post-Closure Phases	Dillon Consulting, 01-2020
Block 17	Environmental Protection Plan - Construction Phase	Dillon Consulting, 01-2020
Block 17	Erosion and Sediment Control Plan	Dillon Consulting, 01-2020
Block 20	Solid Waste Management Project Public Consultation Report	City of Iqaluit, 12-2018
Block 23	Preliminary Geotechnical Investigation Report	EXP Services Inc., Rev. 1, 28-01-2020
Block 23	Physical and Biological Assessment	EXP Services Inc., 10-2018
Block 23	Compliance Assessment and Status Report	City of Iqaluit, 09-04-2020
	Executive Summary	City of Iqaluit, 09-04-2020
	Supporting Submission For Application to Amend Type A Water Licence 3AM-IQA1626	City of Iqaluit, 04-2020
	Emergency Response Plan	Dillon Consulting, 24-01-2020
	ICIP - Climate Lens – Greenhouse Gas Mitigation Assessment	Dillon Consulting, 10-2019
	ICIP - Climate Lens – Resiliency Assessment Report	Dillon Consulting, 10-2019



C. TECHNICAL REVIEW COMMENTS AND INFORMATION REQUESTS

1. Source of Gravel and Clay Materials

Comment:

The source of gravel and clay to be used in the new landfill has not yet been shared with the public, as indicated in Question 8 of the Consultation Record. An understanding of the source of building materials is helpful for reviewers to assess full impact of the construction of infrastructure, and for understanding topographical specifications at the quarry site which relate to surface water quality and flow management.

Information Request:

(IR-01) CIRNAC requests that the source of the gravel and clay be communicated with CIRNAC as soon as a location is chosen by the City of Iqaluit.

2. Erosion and Sediment Control Plan

Comment:

The Erosion and Sediment Control Plan describes control measures to be implemented by the City of Iqaluit to reduce the risk of sediment transport off site and into nearby water bodies. The Erosion and Sediment Control Plan covers all phases of the project for the Waste Transfer Station and for the Landfill, but does not describe measures to be undertaken regarding the access road.

Information Request:

(IR-02) CIRNAC recommends that the City of Iqaluit include a section in the Erosion and Sediment Control Plan to indicate the risks and mitigation measures for sedimentation and erosion along the access road.

3. Inclusion of Landfill in City Management Plans Previously Submitted

Comment:

The City of Iqaluit is currently working with Nunami Stantec on a Master Drainage Plan for the City of Iqaluit. The new landfill will require water services from the City and surface water management for precipitation and overland flow events. CIRNAC recommends that the landfill and associated infrastructure be included in the Master Drainage Plan. Further, CIRNAC recommends that landfill operations, including contact water, sediment water, fuels, leachate, and hazardous wastes, be included and/or updated in the Spill Contingency Plan.



Information Request:

(IR-03) CIRNAC requests that the City of Iqaluit indicate if, when, and how the Master Drainage Plan and the Spill Contingency Plan will be updated to include measures pertaining to the new landfill, the waste transfer station, and the landfill access road.

4. Geotechnical Study for the Access Road

Comment:

The Statement of Construction Report indicated completed studies which have not yet been made available for intervenor review. These studies were the *Geothermal Modelling and Geotechnical Recommendations Transfer Station and Landfill in Iqaluit, Nunavut May 2019*, the *City of Iqaluit Geotechnical Investigation Proposed Waste Transfer Station Lots 3586 228/17/18/20 and 3480 220 1, Iqaluit, Nunavut, October, 2018*, and a Quality Control Program. The Statement of Construction Report also indicated planned programs, such as regular safety audits. One important study which was not indicated was a geotechnical study for the proposed access road. CIRNAC would find it beneficial to know whether a geotechnical study for the access road has been completed or if one is planned.

Information Request:

(IR-04) CIRNAC requests that the City of Iqaluit clarify whether a geotechnical study has been completed, or is planned for the access road, and that all the indicated studies and programs be made available during the technical review phase.

5. National Building Code of Canada (NBCC 2015)

Comment:

The National Building Code of Canada (National Research Council Canada, 2015) outlines technical provisions for the design and construction of new buildings, and for the alteration, change of use, and demolition of existing buildings. Different editions of this code exist for different jurisdictions.

Information Request:

(IR-05) CIRNAC recommends that the City of Iqaluit clarify and confirm whether all the structural reinforcement details such as concrete wall details, concrete mat foundation, and so on, meet the minimum requirements of the National Building Code of Canada (National Research Council Canada, 2015), or the minimum requirements of the territorial edition of the code which apply to buildings in Nunavut.



6. Method Statement of Construction Report

Comment:

The Method Statement of Construction Report describes the construction methodology to be used for the proposed new Iqaluit Landfill and Waste Transfer Station. CIRNAC recommends that the report be updated with additional information regarding grading, drainage, and erosion of the access road to provide full details of construction so that interveners can conduct adequate technical reviews of the methods and impacts.

Information Request:

(IR-06) CIRNAC requests that the City of Iqaluit consider adding the following sections to the Method Statement of Construction Report:

- i. An erosion and sediment control section under the Landfill Access Road construction section (Section 6.0); and
- ii. Additional information regarding the grading and drainage components of the new access road, such as ditching and culvert installation, under the Scope of Work (Section 6.2.3).

7. Closure and Decommissioning Plan

Comment:

The Closure and Decommissioning Plan, associated with Block 9 of the Application Form - Description of Undertaking, provide plans for the closure of the Landfill infrastructure. Upon review CIRNAC developed a number of questions. These are indicated in the information request.

Information Request:

(IR-07) CIRNAC recommends that the City of Iqaluit provide the following information in the Closure and Decommissioning Plan:

- i. Information on if and how the leachate retention ponds will be de-commissioned at the end of the 75 year cycle;
- ii. Information on if and how the leachate ponds will be covered by protected shield;
- iii. Information on if and how wildlife, including birds will be prevented from entering the leachate retention ponds during normal operation of the landfill;
- iv. Information on if and how wildlife, including birds, be prevented from entering the leachate retention ponds at closure and decommissioning; and,
- v. Given a certain level of anticipated settlement in the final grading of the site, whether a survey of the site will be completed, and if so at what frequency.



8. Design Drawing Details

Comment:

The design drawing packages *WTS – 90 Percent Drawings* and *Landfill – 90 Percent Drawings*, are associated with Block 9 of the Application Form - Description of Undertaking. These packages provide plans for the construction of the Waste Transfer Station and Landfill infrastructure. The Engineering Drawings provided are preliminary and not intended for construction. Upon CIRNAC review, a number of items are noted which are recommended to be added to the drawings for construction purposes. These are indicated in the information requests.

Information Requests:

(IR-08) CIRNAC recommends that the City of Iqaluit indicate the following items on the Waste Transfer Station Drawings:

- i. The party responsible for the development of the required specifications on the Design Drawings (ex. materials and performance ratings);
- ii. The maintenance routine in order to address any defects of the planned shallow trench around the perimeter of the baling unit;
- iii. The material and method of construction of the indicated trench;
- iv. Details of the Weigh Scale House including location, heating, and ventilation systems;
- v. Details about the emergency generator, including location of storage tank, day tank and piping;
- vi. Emergency generator on equipment schedule;
- vii. Location of fuel storage tanks for fuelling of vehicles;
- viii. Details of the glycol loop; and
- ix. The location of the glycol pump on the pump schedule.

(IR-09) CIRNAC also recommends that the City of Iqaluit indicate the following items on the Landfill Drawings:

- i. Details of the leachate pumping station, which is indicated in the Method Statement of Construction Report.

9. Operation and Maintenance Manual

Comment:

The Operations and Maintenance Manual (O&M Manual) describes the details and procedures for staff to follow to maintain the facility in safe and efficient state so that operations run smoothly and equipment functions to the best of its ability. CIRNAC has



reviewed the O&M Manual and did not find a schedule for reviews of certain project components. To maintain peak performance, CIRNAC recommends including periodic reviews of the condition of the access road to ensure that there are no major depressions and that the grading allows for a proper drainage management. Further, given that permanent erosion and sediment control measures are to be put in place, CIRNAC recommends including a periodic review of these components in the O&M manual.

Information Request:

(IR-10) CIRNAC recommends that a schedule or trigger for periodic reviews be written into the O&M Manual for the condition of the access road and for the erosion and sediment control measures put in place.



D. REFERENCES

Works Cited

National Research Council Canada. (2015). *National Building Code of Canada 2015*. Retrieved from Canadian Commission on Building and Fire Codes: <https://nrc.canada.ca/en/certifications-evaluations-standards/codes-canada/codes-canada-publications/national-building-code-canada-2015>