



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
918 Sivumugiaq Street
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Your file - Votre référence
8BM-CAP----
Our file - Notre référence
GCdocs#135313063

April 16, 2025

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's review of
Department of National Defence's Renewal/Amendment Application for the PIN-2
Cape Young Landfill Monitoring Program**

Dear Richard,

Thank you for the opportunity to review Department of National Defence's (DND) Renewal/Amendment Application for the PIN-2 Cape Young Landfill Monitoring Program.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application 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.

The applicant shall confirm with the Nunavut Water Board (the Board) that all outstanding water license fees have been paid in full prior to approval of this application.

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: April 16, 2025

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

From: John MacInnis, Senior Environmental Assessment Specialist, Crown-Indigenous Relations and Northern Affairs Canada

Subject: Crown-Indigenous Relations and Northern Affairs Canada's review of Department of National Defence's Renewal/Amendment Application for the PIN-2 Cape Young Landfill Monitoring Program

Region: Kitikmeot Kivalliq Qikiqtani

A. BACKGROUND

On April 1, 2025, the Board invited interested parties to comment on DND's Renewal/Amendment Application for the PIN-2 Cape Young Landfill Monitoring Program.

The former Distant Early Warning (DEW) Line sites in Nunavut, under the jurisdiction of the DND, were remediated between the 1990s and the 2010s, and a long-term monitoring program of landfills was established following remediation. The objective of the long-term monitoring plan is to collect sufficient information to assess the geotechnical and environmental performance of the landfills.

The long-term landfill monitoring program involves visual inspection, soil and groundwater monitoring, and thermal monitoring at select landfills and is conducted through three (3) phases:

- Phase I: represents the first five years after remediation and landfills are typically monitored annually.
- Phase II: represents the next twenty years of long-term monitoring and the landfills are monitored at a reduced frequency (Years 7, 10, 15, and 25 after remediation).
- Phase III: involves monitoring for long-term issues such as the impacts of climate change and the long-term performance of the landfill design components. Phase III monitoring events are anticipated to be scheduled on a 10-year monitoring interval.

DND is applying to renew and amend an existing Water License (formerly 1BR-CAP1623) in support of the DEW Line long-term landfill monitoring program, which involves changes in water use to support camp and potential future monitoring well maintenance (repair, replacement) and decommissioning activities.

CIRNAC provides the following comments and recommendations about the Application. A summary of subjects and recommendations is shown in Table 1.

**Table 1: Summary of Recommendations.**

Recommendation Number	Subject
R-01	Landfill Monitoring Plan
R-02	Thermal Monitoring at the Tier II Disposal Facility
R-03	Outstanding Requirements of 1BR-CAP1623
R-04	Water Supply Lake

B. DOCUMENTS REVIEWED AND REFERENCED

The following table lists the documents reviewed under the submission and referenced during the review.

Table 2: Documents reviewed and referenced.

Document Title	Author, File No., Rev., Date
Executive Summary _English	Applicant (DND), March 2025
191212 DND DEW Line Monitoring Modifications	Nunavut Water Board, December 2019
2008 NIRB SDR_081218_08DN081	Nunavut Impact Review Board, December 2008
2014 NIRB Exemption_140221_08DN081	Nunavut Impact Review Board, February 2014
Application for Water Licence Renewal	Applicant (DND), March 2025
Landfill Monitoring Plan	Applicant (DND), March 2025
NPC File No. 150282 PIN_2 Cape Young Landfill Monitoring Program	Nunavut Planning Commission, May 2024
NTS_087B_PIN_2	Energy, Mines, and Resources Canada, 1990
Preliminary Phase II Summary	Applicant (DND), February 2024
Remote Camp Questionnaire	Applicant (DND), March 2025
Spill Contingency Plan	Applicant (DND), March 2024
Water Licence Renewal – Amendment for 1BR-CAP1623	Nunavut Water Board, October 2016
NWB Technical Review of Annual Reports for Water Licences for DND DEW Line Site Post-Remediation Long-Term Monitoring Programs	Nunavut Water Board, September 27, 2019
DND Response to NWB Letter Dated September 27, 2019: "NWB Technical Review of Annual Reports for Water Licences for DND DEW Line Site Post-Remediation Long-Term Monitoring Programs	Applicant (DND), November 7, 2019
Attachment 9_QAQC Plan TOR Requirements PIN-2 (1BR-CAP1623)	Applicant (DND), November 2015



C. RESULTS OF REVIEW

1. Landfill Monitoring Plan

Comment:

Table A.1 in the document titled “Landfill Monitoring Plan” provides a monitoring schedule for the PIN-2 site. Table A.1 states that monitoring is planned for 2026 and 2036, but the document titled “Remote Camp Questionnaire” describes that monitoring is planned for 2026, 2031, and 2036. CIRNAC notes that the Applicant did not describe why additional monitoring is planned for 2031 and the Landfill Monitoring Plan does not include figures for the landfill sites.

Recommendation:

(R-01) CIRNAC recommends that the Applicant clarify whether additional monitoring is planned in 2031, and if so, provide a rationale for the undertaking. Update the Landfill Monitoring Plan to reflect any changes in the monitoring schedule and include the missing figures.

2. Thermal Monitoring at the Tier II Disposal Facility

Comment:

The document titled “Preliminary Phase II Summary” describes that four (4) thermistors were installed at the Tier II site, but only two (2) of which are reported to be in “good condition”. It is unclear to CIRNAC how many thermistors are functional and actively recording data, whether the Applicant intends to repair or replace any non-functional equipment, and when the Applicant will provide results from the thermal monitoring.

Recommendation:

(R-02) CIRNAC recommends that the Applicant confirm:

- The number of thermistors that are functional and actively recording ground temperature data;
- If any thermistors will be repaired or replaced, and if not, provide a justification that two (2) thermistors are sufficient for capturing the thermal condition of the site; and
- A timeline for the submission of results from thermal monitoring.

3. Outstanding Requirements of 1BR-CAP1623

Comment:

Part I, Item 2(d) of 1BR-CAP1623 describes that the Spill Contingency Plan is to include “...a site or topographic map (Section 2.4) of the Project area depicting fuel caches, nearby water bodies, spill response equipment, and other relevant information.” CIRNAC notes that fuel caches and spill response equipment are not identified on the map provided in the updated Spill Contingency Plan, effective as of March 1, 2024 (pg. 8). It appears the Applicant has not fulfilled this requirement of the expired Licence.



Part K, Item 10 of 1BR-CAP1623 describes the Applicant shall submit a Quality Assurance/Quality Control (QA/QC) Plan that "...shall include a cover letter from the accredited laboratory, under Part K, Item 9, confirming acceptance of the Plan for analyses to be performed under this Licence."

Correspondence from the Board, dated September 27, 2019, identified that this requirement should be addressed to ensure compliance with 1BR-CAP1623. The Applicant later responded to this correspondence on November 7, 2019, requesting that this requirement not be enforced for the DND DEW Line water licences. The most recent version of the QA/QC Plan for the PIN-2 site, to CIRNAC's knowledge, is dated November 2015 (Table 2), and does not have a cover letter from an accredited laboratory. CIRNAC was unable to identify information on the registry that relieves the Applicant from the requirement of Part K, Item 10.

Recommendation:

(R-03) CIRNAC recommends that the Applicant update the Spill Contingency Plan to include a map that is consistent with the requirements of Part I, Item 2(d) of 1BR-CAP1623, and if applicable, the QA/QC Plan, to reflect the requirements of Part K, Item 10 of 1BR-CAP1623.

4. Water Supply Lake

Comment:

Water Supply Lake, or small, unnamed surface waterbodies near the airstrip and/or landfills, are proposed water sources for undertaking camp and potential future monitoring well maintenance and decommissioning activities. In its review, CIRNAC was unable to identify detailed information about the Water Supply Lake in the documents listed in Table 2, including the status of the existing aquatic habitat or how any future water withdrawals would impact the lake environment.

Recommendation:

(R-04) CIRNAC recommends that the Applicant provide further information on Water Supply Lake, demonstrating that it is a suitable water source.