



Water Resources Division  
Resource Management Directorate  
Nunavut Regional Office  
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Your file - Votre référence  
1BR-BAK----  
Our file - Notre référence  
GCDOCS# 105519661

August 31, 2022

Sylvia Ekelik  
Licensing Administrator Assistant  
Nunavut Water Board  
P.O. Box 119  
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E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada's Review of the  
Licence Application for the New Baker Lake Land-Farm, Type B Water Licence  
No. 1BR-BAK----**

Dear Sylvia,

Thank you for the August 18, 2022 invitation to review the referenced licence application, submitted by the Government of Nunavut - Petroleum Products Division, for Type B Water Licence No. 1BR-BAK----

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application 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 comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at (867) 975-3877 or [Joyce.Demers@rcaanc-cirnac.gc.ca](mailto:Joyce.Demers@rcaanc-cirnac.gc.ca) or David Zhong at (867) 975-4555 or [David.Zhong@rcaanc-cirnac.gc.ca](mailto:David.Zhong@rcaanc-cirnac.gc.ca).

Sincerely,

Joyce Demers, B.Sc.,  
Industrial Coordinator



## **Technical Review Memorandum**

**Date:** September 19, 2022

**To:** Sylvia Ekelik – Licensing Administrative Assistant, Nunavut Water Board

**From:** Joyce Demers – Industrial Coordinator, CIRNAC

**Subject:** **Crown-Indigenous Relations and Northern Affairs Canada's Review of the Licence Application for the New Baker Lake Land-Farm, Type B Water Licence No. 1BR-BAK----**

**Region:** ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

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### **A. BACKGROUND**

The Hamlet of Baker Lake, located within the Kivalliq Region of Nunavut, is Nunavut's sole inland community. In March of 2021, Baker Lake experienced a major spill of 10,000 liters of gasoline at the Baker Lake Fuel Facility.

The Government of Nunavut's Petroleum Products Division (PPD) is applying for the Type B Water Licence 1BR-BAK---- for the construction of a land-farm in order to remediate the petroleum contaminated soils recovered in Baker Lake, Nunavut. The proposed water licence is for a period of ten years.

The proposed land-farm is expected to contain 5000 cubic meters of hydrocarbon contaminated soils. The geographical coordinates of the proposed land-farm facility is at latitude 64-65-50.447 N and longitude 71-35-564.12 W, located within the Hamlet of Baker Lake. The construction of the land-farm is scheduled to begin in 2022.

CIRNAC provides the following comments and recommendations pertaining to the application package. 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 review comments can be found in Section C.

**Table 1: Summary of Recommendations**

Recommendation Number	Subject
R1	Abandonment and Restoration Plan Not Provided
R2	Spill kit(s) on Site
R3	Location of All Nearby Water Bodies to Land-farm, Equipment or Hazardous Materials is Unclear
R4	Water Remediation / Treatment Plan Required
R5	Fuel Management Plan Needs to be Provided
R6	Operation and Maintenance Plan Missing Information
R7	Contingency Plan for Operations Not Developed
R8	“Shore Cleaning Operations” Not Explained – Require Details
R9	Cell 2 Water – IAAC Image Not Explained- Require Details
R10	MSDS for Jet-A Fuel Not Provided

**B. DOCUMENTS REVIEWED AND REFERENCED**

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

**Table 2: Documents Reviewed and Referenced**

Document Title	Author, File No., Rev., Date
220726 1BR-BAK---- Application for Land Permit in Baker Lake-IMLE	Sulaimon Ayilara, April 22, 2022
220726 1BR-BAK---- Application for Water Licence-IMLE	Sulaimon Ayilara, July 26, 2022
220726 1BR-BAK---- Supplemental Information Guide for Baker Lake Landfarm July 2022-IMLE	Sulaimon Ayilara, July 26, 2022
220728 1BR-BAK---- Water Licence Application E-mail-IAAE	Sulaimon Ayilara, July 28, 2022
220729 1BR-BAK---- Cell 2 Water-IAAE	No author, No date
220729 1BR-BAK---- Groundwell Test Pit-IAAE	Stantec Architecture, No date
220729 1BR-BAK---- Water Treatment Machine-IAAE	No author, No date
220729 1BR-BAK----Spill Contingency Plan-IAAE	Government of Nunavut – Petroleum Products Division, No date
220729 1BR-BAK----stamped-IAAE	Stantec Architecture, August 6 2020
220817 1BR-BAK---- Certificate of Analysis-IAAE	Hua Wo, July 04, 2022
220817 1BR-BAK---- Spill Contingency Plan for Landfarm-IAAE	Government of Nunavut – Petroleum Products Division, August 2022
220817 1BR-BAK---- Water Licence Application for the Baker Lake Landfarm Project E-mails-IAAE	Sulaimon Ayilara, August 17, 2022
220818 1BR-BAK---- Distribution Review NPC NIRB Received-OAAE	Sylvia Ekelik, August 18, 2022
220818 1BR-BAK---- Notice-OAAE	Nunavut Water Board, August 18, 2021



## C. RESULTS OF REVIEW

### 1. Abandonment and Restoration Plan Not Provided

#### **Comment:**

There is no Abandonment and Restoration Plan for the proposed land-farm included in the application package. This is a concern because all activities must have a plan.

#### **Recommendation:**

(R-01) CIRNAC recommends that the applicant provide an Abandonment and Restoration Plan.

### 2. Spill Kit(s) on Site

#### **Comment:**

It is unclear if the applicant plans on having spill kit(s) readily available at the land-farm. This is a concern because, if there is a spill, it will take time to retrieve the materials needed to contain the spill in a timely and efficient manner.

In the 'Spill Contingency Plan for Landfarm-IAAE' under section '4. SPILL KITS EQUIPMENT' document it states that

“ A summary of the spill kits maintained to support the implementation of the Plan presented in **Spill Response Equipment**.

Location	Content
Seacan Container at the Tank farm near the Landfarm	➤ 2 Spill drum of 55 gallon ...

“

#### **Recommendation:**

(R-02) CIRNAC recommends that spill kit(s) be placed on site during period of operation and fuel / contaminated soil transfers.

### 3. Location of All Nearby Water Bodies to Land-farm, Equipment or Hazardous Materials is Unclear

#### **Comment:**

In the Spill Prevention Plan, there is no indication of the land-farm's exact location, including; equipment, storage of fuel and other hazardous materials, relative to all nearby water



bodies; without adequate distance from water bodies, there is potential for hazardous or deleterious substances to enter into water bodies.

**Recommendation:**

(R-03) CIRNAC recommends the applicant clarify that any/all hazardous materials, the land-farm or equipment will be situated or stored of a minimum of 31 meters away from any water body.

#### **4. Water Remediation / Treatment Plan Required**

**Comment:**

It is unclear if there is a Water Remediation or Treatment Plan to mitigate any potential adverse effects from potentially contaminated contact water building up annually within the land-farm from precipitation and freshet.

**Recommendation:**

(R-04) CIRNAC recommends that the applicant clarify if there is a water remediation / treatment plan that will be implemented to treat post contact water prior to discharge to the environment.

If there is no plan available; CIRNAC recommends that the applicant review the questions below, and ask that they be answered in the creation of their water remediation / treatment plan.

- How is contaminated water collected?
- Where do you plan on storing contaminated water?
- How do you plan on treating the contaminated water?
- How does the contaminated water get to the treatment plant / machine?
- There is an image of a machine in the application. Is this the water treatment plant?
- What's the name of the machine?
- How does the machine run? Fuel? Electricity?
- What does the machine do? How does it separate out the contaminants? What kind of contaminants get separated out?
- To what standard will the treated water be discharged at? Industrial?
- Where does the water get stored after it is treated but before it is released?
- Where are you planning on releasing the treated water? How far away is this released water from any water body (in meters)?



## 5. Fuel Management Plan Needs to be Provided

### **Comment:**

It is unclear if the applicant needs to include a Fuel Management Plan. The applicant states that there will be heavy equipment, including: a loader, an excavator, a dump truck, and a packer. The applicant has not provided details for the fueling of the equipment. This is a concern because, in the event of a spill, there is no appropriate plan in place to contain the spill in a timely and efficient manner.

In the 'Supplemental Information Guide for Baker Lake Landfarm July 2022' document it states that

### **Equipment:**

Loader, Excavator, Dumptruck, Zoomboom, packer."

### **Recommendation:**

(R-05) CIRNAC recommends that the applicant provide a Fuel Management Plan or indicate that the equipment will not be fueled on the proposed land-farm site.

## 6. Operation and Maintenance Plan Missing Information

### **Comment:**

The Operation and Maintenance Plan is lacking in information on operating procedures. This is a concern because those operating procedures determine if there is enough protection with regards to water and therefore allow CIRNAC to make comments based on their mandate.

In the 'Supplemental Information Guide for Baker Lake Landfarm July 2022' document under the "HEALTH AND SAFETY CONSIDERATIONS" title the applicant states that

"The landfarm will be located 2.5km from the Hamlet of Baker Lake, therefore no emissions reaching the general population. All operational procedures including Personal Protective Equipment (PPE) and methodology are outlined within the Operation and Maintenance Plan associated with this landfarm. If properly operated every year, the risk of emissions affecting the general population or landfarm personnel is significantly decreased (EPA 2014)."

### **Recommendation:**

(R-06) CIRNAC recommends that the applicant provides more information with regards to the methodology pertaining to the operation and maintenance plan. The main information



that is needed is to confirm that all spills will be cleaned, all activities are occurring at least 31 meters away from any water body, that any hazardous materials will be contained in appropriate containers and inspected regularly.

## **7. Contingency Plan for Operations Not Developed**

### **Comment:**

The applicant states that in the event that the land-farm becomes in-operable they will develop a plan at that time. This is a concern because, plans should be made prior to avoid confusion and to ensure that there is safe and effective remediation occurring as soon as it is safe to do so.

In the 'Spill Contingency Plan for Landfarm – IAAE' under section '6.2 Operating Contingency Plan' of the document it states that

"A Contingency Plan for operations will be developed when all or part of the Facility becomes in- operable due to the event."

### **Recommendation:**

(R-07a) CIRNAC recommends that the plan be developed before the use of such a plan be needed to avoid delays and more costly clean up operations.

(R-07b) CIRNAC recommends the proponent provide information on what kind of event is foreseen by the proponent that would make the land farm inoperable for any prolonged period of time.

## **8. "Shore Cleaning Operations" Not Explained – Require Details**

### **Comment:**

There is only one sentence in the documents which indicates that a shore needs to be cleaned. This is a concern because no information was provided on this cleaning operation.

In the 'Spill Contingency Plan for Landfarm – IAAE' document under the section Personal Protective Equipment (PPE) it states that

"7. All personnel on shore cleaning operations will wear safety glasses (regular glasses will be satisfactory)."



**Recommendation:**

(R-08) CIRNAC recommends that the applicant clarify the tasks associated with the shore cleaning operations, indicated in the statement above, such as location, why it needs to be cleaned, what it may be contaminated with and if glasses are the only PPE required.

**9. Cell 2 Water – IAAC Image Not Explained – Require Details**

**Comment:**

An image was provided which showed a collection of water. This is a concern because the water collection was never explained in the documents and therefore, the purpose of the image is unclear.

**Recommendation:**

(R-09) CIRNAC recommends that the applicant identify the image and provide an explanation to its use.

**10. MSDS for Jet-A Fuel Not Provided**

**Comment:**

The MSDS for Jet-A fuel was not provided. This is a concern because MSDS provides information on what to do in the event of a spill, as well as other safety information.

In the 'Spill Contingency Plan – IAAE' document it states that

**“(d) a description of the type and amount of contaminants normally stored at the location described in paragraph(c);**

The Petroleum Products Division (PPD) supplies fuel products diesel, gasoline, Jet-A, Naptha to all vehicles, homes, offices, hospitals for energy power. The fuel product spill due to many factors which are beyond control due to weather, damaged valves and piping and many more.”

**Recommendation:**

(R-10) CIRNAC recommends that the applicant ensures that the MSDS for Jet-A fuel is included in the Spill Prevention Plan.