



ᓄᓇᓂᓪ ᐃᓕᓕᓂᓪ ᑲᓂᓕᓂᓪ  
NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

File No.: **8BC-SHE1929**

April 2, 2019

Christopher Greaves  
North Warning System  
Department of National Defence  
National Defence Headquarters  
101 Colonel By Drive  
Ottawa, ON K1A 0K2

Email: [Christopher.Greaves@forces.gc.ca](mailto:Christopher.Greaves@forces.gc.ca)

**RE: NWB Renewal/Amendment Water Licence No. 8BC-SHE1929**

---

Dear Mr. Greaves:

Please find attached Licence No. **8BC-SHE1929** issued to the Government of Canada, Department of National Defence by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)*. The terms and conditions of the attached Licence related to the use of Water and the deposit of Waste are an integral part of this approval.

If the Licensee contemplates the continuing of this Undertaking after the Water Licence expires, it is the responsibility of the Licensee to apply to the NWB for a renewal water Licence. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the renewal Water Licence. Note that if the Licence expires before the NWB issues a new one, then the use of Water and the deposit of Waste must cease, or the Licensee may be in contravention of the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*. However, the expiry or cancellation of a Licence does not relieve the holder from any obligations imposed by the Licence. The NWB recommends that an application for the renewal of this Licence be filed at least **three (3) months** prior to the Licence expiry date. It should be noted that in accordance with s. 75(1)(a) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*, the Board is not allowed to issue a permit or authorization for any project proposal that has not been submitted to the Nunavut Planning Commission (NPC) in accordance with s. 76 of *NuPPAA*.

If the Licensee contemplates or requires an amendment to this Licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment

process. The process and timing may vary depending on the scope of the amendment, however, a minimum of **sixty (60) days** is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by CIRNAC on issues identified. This information is attached for your consideration.<sup>1</sup>

Sincerely,

---

Lootie Toomasie  
Nunavut Water Board,  
Chair

LT/dd/rqd

Enclosure: Renewal/Amendment Licence No. **8BC-SHE1929**

Comments – CIRNAC

Cc: Distribution List – Kitikmeot

---

<sup>1</sup> Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), February 19, 2019

## TABLE OF CONTENTS

<b>DECISION</b> .....	ii
I.        INTRODUCTION .....	iii
II.       PROCEDURAL HISTORY .....	iii
III.      GENERAL CONSIDERATIONS .....	iii
<i>Term of Licence</i> .....	iii
<i>Annual Reporting</i> .....	iv
<i>Water Use</i> .....	iv
<i>Waste Disposal</i> .....	iv
<i>Spill Contingency Plan</i> .....	vi
<i>Abandonment and Restoration Plan</i> .....	vi
<i>Monitoring</i> .....	vii
<b>RENEWAL/AMENDMENT WATER LICENCE</b> .....	1
<b>PART A: SCOPE, DEFINITIONS AND ENFORCEMENT</b> .....	2
1. <b>Scope</b> .....	2
2. <b>Definitions</b> .....	2
3. <b>Enforcement</b> .....	4
<b>PART B: GENERAL CONDITIONS</b> .....	4
<b>PART C: CONDITIONS APPLYING TO WATER USE</b> .....	6
<b>PART D: CONDITIONS APPLYING TO WASTE DISPOSAL</b> .....	7
<b>PART E: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND           OPERATIONS</b> .....	10
<b>PART F: CONDITIONS APPLYING TO DRILLING OPERATIONS</b> .....	10
<b>PART G: CONDITIONS APPLYING TO MODIFICATIONS</b> .....	11
<b>PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING</b> .....	11
<b>PART I: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR           TEMPORARY CLOSING</b> .....	12
<b>PART J: CONDITIONS APPLYING TO THE MONITORING PROGRAM</b> .....	13

## DECISION

### LICENCE NUMBER: 8BC-SHE1929

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated January 28, 2019 for an amendment/replacement of a Water Licence made by:

#### GOVERNMENT OF CANADA, DEPARTMENT OF NATIONAL DEFENCE

to allow for the use of Water and the deposit of Waste for the CAM-3 Long Range Radar (LRR) Station and Logistics Support Site (LSS) that is part of the North Warning System (NWS) located approximately 82 km south of Taloyoak on the Boothia Peninsula on the east side of Shepherd Bay within the Kitikmeot Region, Nunavut, generally located at the geographical coordinates as follows:

Latitude: 68° 48' 38"N      Longitude: 93° 26' 01"W

### DECISION

After having been satisfied that the Application is for a proposal that falls outside of an area with an approved land use plan<sup>1</sup> and, as such, a conformity determination from the Nunavut Planning Commission (NPC) is not required; and as determined by the Nunavut Impact Review Board (NIRB)<sup>2</sup>, a review of the Project is not required in accordance with s. 92(1)(a) of *NuPPAA*, the NWB decided that the application could proceed through the regulatory process. In accordance with s. 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (*NWNSRTA* or *Act*) and Article 13 of the *Nunavut Agreement*, public notice of the Application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *Nunavut Agreement* and of the *Act*, waived the requirement to hold a public hearing, and determined that:

**Replacement Licence No. 8BC-SHE1929 be issued subject to the terms and conditions contained therein. (Motion #: 2018-B1-040)**

Signed this 2<sup>nd</sup> day of April, 2019 at Gjoa Haven, NU.

---

Lootie Toomasie  
Nunavut Water Board,  
Chair

LT/dd/rqd

---

<sup>1</sup> Nunavut Planning Commission (NPC) File # 148955, October 29, 2018.

<sup>2</sup> Nunavut Impact Review Board (NIRB) File # 04DN105, Screening Decision, December 21, 2018.

## **LICENCE NUMBER: 8BC-SHE1929**

### **I. INTRODUCTION**

CAM-3 is a Long Range Radar Station for the North Warning System. The site was built in the 1950's as one of the Distant Early Warning Line radar sites. CAM-3 was modernized as part of this transition. On August 31, 1995 the site changed from manned to unmanned status.

CAM-3 is located approximately 82 km south of Taloyoak on the Boothia Peninsula on the east side of Shepherd Bay. CAM-3 is unmanned and is visited by staff on scheduled quarterly preventative and corrective maintenance trips and on an as needed basis. During the months of May to September, the site may at times, be returned to manned status due to seasonal project activity.

Relevant on-site facilities include site buildings, a freshwater intake, four (4) 10,000 litre water tanks, fuel storage area, and one incinerating toilet. The site also has a sewage disposal facility in place since 1957 consisting of a septic tank and outfall pipe, which discharges to a sump.

### **II. PROCEDURAL HISTORY**

The CAM-3 Site has been in operation since the 1950's. The North Warning System Office, Department of National Defence (Licensee or DND) has held Water Licences for this site continuously since 2004 (NWB6SHE0409 / 3BC-SHE0409), that was amended in 2005 and 2009, and renewed in 2009 (3BC-SHE0919).

On January 28, 2019 the NWB received an application to renew and amend the current Licence which expires on August 31, 2019. Following an internal review of the application, on February 7, 2019 the NWB acknowledged receipt and distributed the application to interested parties for a fifteen-day comment and review period. On February 19, 2019 a submission was received from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC).

In accordance with Schedule 1 of the new *Nunavut Waters Regulations* which came into effect during the term of the current Licence 3BC-SHE0919, the classification of the undertaking changed from "Municipal" to "Other". For that reason, the application was assigned the new file number 8BC-SHE.

### **III. GENERAL CONSIDERATIONS**

The following section outlines the issues identified by the NWB and raised by interested parties. It provides the background on the terms and conditions imposed within the body of the Licence.

#### **Term of Licence**

In accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* s. 45, the NWB may issue a Licence for a term not exceeding twenty-five years. In determining an appropriate term of a water Licence, the Board considers a number of factors including, but not limited to the results of CIRNAC site inspections and the corresponding compliance record of the Applicant,

as well as intervener comments provided during the application review process.

In review of the comments received, the NWB has noted that there were no concerns expressed with respect to the requested Licence term of ten (10) years as proposed by the Applicant. In review of the information available during the renewal process, the NWB concurs with the Applicant that a Licence term of approximately ten (10) years is appropriate.

The Licence duration will allow the Licensee to properly carry out the terms and conditions of the Licence and will ensure that sufficient time is given to submit and implement the plans required under the Licence.

### **Annual Reporting**

The NWB has imposed on the Licensee, the requirement to produce an Annual Report. These Reports are for the purpose of ensuring that the NWB has an accurate annual update of the Licensee's activities related to water use and waste disposal during a calendar year. This information is maintained on the Public Registry and is available to interested parties upon request. A "*Standardized Form for Annual Reporting*" may be used by the Licensee and is available from the NWB file transfer protocol (FTP) site under the Public Registry link at the NWB Website.

Website Public Registry:

<ftp://ftp.nwb-oen.ca/other documents/Standardized Forms/>

This form provides the basis for annual reporting and format, however individual Licences with project specific reporting requirements will need to provide information in addition to that of the standard form. The NWB notes that the format of the 2018 Annual Report submitted by the Licensee is acceptable.

### **Water Use**

The project site has four (4) 10,000 litre water tanks. To allow for the refilling of water tanks in a single day, the NWB has imposed an annual limit of water use and not a daily limit. However, since this Licence is a Type "B", the daily Water withdrawal limit cannot exceed two-hundred and ninety-nine (299) cubic meters per day, and the Licensee must ensure that the source water body is not drawn down, and if so, provide the information in accordance with Part C, item 3.

The Licensee has requested that 50 m<sup>3</sup> of Water per annum, from the total allotted 1440 m<sup>3</sup> per annum, be use for substrate compaction, dust suppression, and for potential treatment of impacted soil (industrial usage). The Board has no issue with this and has updated conditions under Part C.

All water shall come from Water Lake. Renewed standard conditions for water use are detailed under Part C.

### **Waste Disposal**

*Sewage Waste*

Previously, the Licensee was authorized to dispose of Toilet Wastes using Incinolet incineration toilets. While Toilet Wastes are disposed in this manner, Greywater was to be directed to a sump located no closer than thirty one (31) metres from the nearest water body. The NWB understands that the Incinolet toilets have a limited capacity, which is exceeded during some periods of onsite activity. To address the capacity issue, Part D, Item 10 of this Licence allows all Sewage, which includes Toilet Wastes and Greywater, to be directed to a Sewage Disposal Facility.

The Licensee has requested that under Part I, Item 3 of the previous Licence, sampling at point SHE-2 (Final discharge point of Sewage outfall) be discontinued and that the sampling will be replaced with sampling of effluent from the outfall Sump if required to ensure proper operation of the sump or to perform maintenance on the outfall sump. The Board agrees with this principle and has reworded the Licence condition to require sampling only when discharge occurs from the Sewage Sump to the environment.

Wording in this Licence has been updated so the Monitoring Station SHE-2 refers to the final discharge point from the Sewage Sump. Effluent monitoring parameters for Monitoring Station SHE-2 are detailed under Part J, Item 4. Specific Effluent monitoring parameters have been included in the renewal for consistency with other similar Licences approved by the NWB.

#### *Fuel Berm Containment Discharge*

DND requested that they be permitted to discharge water from the Fuel Berm Containment using a Field Screening approach rather than laboratory analysis of multiple criteria. The release criteria in the existing Licence include many constituents that have never been found during previous sampling and that are not typical for a Fuel Berm Containment discharge. The laboratory analysis creates operational challenges for remote sites. Sometimes the time required for laboratory analysis of the water is longer than the water is in a thawed state and discharge is not possible.

DND submitted a proposed “QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX 3, and DYE-M” outlining a protocol for discharge with two cases:

1. If there has been no history of hydrocarbon spills in the area, Field Screening using four hydrocarbon test strips will be used to assess for the presence of hydrocarbons. If testing indicates that hydrocarbons are absent, the water can be discharged.
2. If there has been a history of hydrocarbon spills in the area or if Field Screening using four hydrocarbon test strips identifies the presence of hydrocarbons, samples will be collected for laboratory analysis and discharge may occur once the laboratory confirms the water quality meets release criteria.

In correspondence dated October 2, 2018, the Licensee consulted with Environment and Climate Change Canada (ECCC) on this approach and it was confirmed that ECCC found this approach acceptable.

The NWB accepts the submitted “QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX 3, and DYE-M” and will include Field Screening prior to discharge within Part D, Item 12.

The NWB acknowledges that the previous Licence Fuel Berm Containment discharge criteria do not align with typical NWB Fuel Berm Containment discharge criteria. As such, when laboratory analysis is required, the Discharge Criteria will be limited to hydrocarbon related contamination as is typical for NWB Licences.

#### *Solid waste*

The proponent indicated in the renewal application that non-hazardous waste is disposed of in the Cambridge Bay landfill. The Licensee is directed to condition Part D, item 7 under this Licence, which requires that the Licensee provide to the Board documented authorization from all communities receiving wastes from the project prior to any backhauling of wastes to those communities.

There are future plans to develop an on-site alternative; whereby paper products and packaging, untreated wood and natural fiber textiles would be segregated and incinerated on-site. This alternative would be required to implement the use of an appropriate incinerator as outlined in the Government of Nunavut, *Guideline for the Burning and Incineration of Solid Waste*.

#### *Landfarm*

The Licensee has indicated with the application package that a future Landfarm may be built in the case that soils on site are contaminated with hydrocarbons. The Board has approved as part of this Licence, the applicant's "CAM-3 Landfarm Design and Management Plan" dated October 15, 2018, that was submitted as part of the application package. In addition, the Licence renewal includes conditions in Part D (conditions applying to waste disposal) and Part I (conditions applying to abandonment and restoration or temporary closing) related to the treatment of petroleum hydrocarbon contaminated soil in the Landfarm as well as requirements for discharge of effluent from the Landfarm.

Prior to construction of the Landfarm, the Licensee will also be required to provide final design and construction drawings accompanied with a detailed report, and prepared by a qualified Engineer(s), as well as an Operation and Maintenance Plan for the Landfarm facility.

The Licensee is also reminded of the condition in Part B Item 6 of the Licence requiring the Licensee to review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.

#### **Spill Contingency Plan**

The Board approves the Spill Contingency Plan submitted with the Application.

#### **Abandonment and Restoration Plan**

The NWB has re-imposed the condition from the preceding Licence that the Licensee submit for Board approval, at least six (6) months prior to the Abandonment of the project, an Abandonment

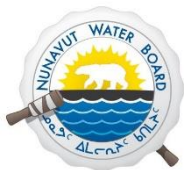


and Restoration Plan. The requirement for this submission is detailed under Part I, Item 1.

### **Monitoring**

To ensure consistency with other similar projects licensed in Nunavut, the Board requires that the Licensee establish, implement and report on the Monitoring Program outlined in Part J of the Licence.

The NWB has included new monitoring requirements for discharge of Fuel Berm Containment such that laboratory analysis for hydrocarbon contamination always occurs even if the Water is discharged based on Field Screening. The Licensee will provide a comparison of the Field Screening results and Laboratory results in the Annual Report.



## **NUNAVUT WATER BOARD RENEWAL/AMENDMENT WATER LICENCE**

**Licence No. 8BC-SHE1929**

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

**GOVERNMENT OF CANADA, DEPARTMENT OF NATIONAL DEFENCE**

(Licensee)

**101 COLONEL BY DRIVE, OTTAWA, ON K1A 0K2**

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of Waste for a period subject to restrictions and conditions contained within this Licence Renewal-Amendment:

Licence Number/Type: **8BC-SHE1929 / TYPE "B"**

Water Management Area: **RASMUSSEN BASIN-LARSEN SOUND WATERSHED (33)**

Location: **SHEPHERD BAY,  
KITIKMEOT REGION, NUNAVUT**

Classification: **OTHER UNDERTAKING**

Purpose: **DIRECT USE OF WATER AND DEPOSIT OF WASTE**

Quantity of Water use not to Exceed: **ONE THOUSAND FOUR HUNDRED AND FORTY (1440) CUBIC METRES PER ANNUM AND LESS THAN THREE HUNDRED (300) CUBIC METRES PER DAY**

Effective Date: **SEPTEMBER 1, 2019**

Expiry of Licence: **AUGUST 31, 2029**

This Licence renewal and amendment, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

**Lootie Toomasie**  
**Nunavut Water Board, Chair**

## **PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**

### **1. Scope**

This Licence allows for the use of Water and the deposit of Waste for a Mining undertaking classified as per Schedule 1 of the *Regulations* at the CAM-3 Long Range Radar Station, located on the east side of Shepherd Bay approximately 82 km south of the Hamlet of Taloyoak, within the Kitikmeot Region, Nunavut.

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of Water and the deposit of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new *Regulations* are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such *Regulations*, to be subject to such requirements; and
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

### **2. Definitions**

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**Amendment**” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“**Applicant**” means the Licensee;

“**Appurtenant Undertaking**” means an undertaking in relation to which a use of water or a deposit of Waste is permitted by a Licence issued by the Board;

“**Board**” means the Nunavut Water Board established under the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Bulk Fuel Storage Facility**” means the fuel storage facility as described in the Application and supporting documents submitted January 28, 2019;

“**Discharge**” means the release of any water or waste to the receiving environment;

“**Effluent**” means treated or untreated liquid Waste material that is discharged into the environment from a structure such as a settling pond, landfarm or a treatment plant;

“**Engineer**” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“**Greywater**” means all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet Wastes;

“**High Water Mark**” means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

“**Inspector**” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“**Landfarm Facility**” means the facility designed to treat hydrocarbon contaminated soil referred to in the renewal application dated January 28, 2019;

“**Licensee**” means the holder of this Licence;

“**Modification**” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

“**Nunavut Agreement**” means the “*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*”, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“**Regulations**” means the *Nunavut Waters Regulations* SOR/2013-69 18<sup>th</sup> April, 2013;

“**Secondary Containment**” means an impermeable structure, external to and separate from primary containment, which prevents unplanned spills of hazardous materials and provides a minimum capacity of 110% of the original vessel. Where multiple vessels are stored within the containment, it must provide a minimum capacity equal to the sum of the largest vessel and 10% of the aggregate volume of all other vessels located in the containment. This structure shall also provide containment and control of hoses and nozzles;

“**Sewage**” means all toilet Wastes and greywater;

**“Sewage Disposal Facility”** means the disposal system as described in the water licence application filed by the applicant on January 28, 2019;

**“Spill Contingency Plan”** means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

**“Sump or Sumps”** A structure or depression that collects, controls, and filters liquid Waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid Waste;

**“Toilet Wastes”** means all human excreta and associated products, but does not include greywater;

**“Waste”** means, as defined in s. 4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

**“Water” or “Waters”** means waters as defined in section 4 of the *Act*;

**“Water Supply Facility”** means the intake, piping, storage tanks, and distribution network designed to provide water for the site.

### 3. **Enforcement**

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of Waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

## **PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31<sup>st</sup> of the year following the calendar year being reported, containing the following information:
  - a. A summary report of Water use and Waste disposal activities;

- b. Quantity of Water (in cubic metres/day) obtained for domestic and other purposes from sources on, in or flowing through Crown Lands reporting period;
  - c. Quantity of Waste backhauled to approved facility for disposal;
  - d. A list of unauthorized discharges and a summary of follow-up actions taken;
  - e. Any revisions to the Spill Contingency Plan or the *QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX-3, and DYE-M* as required by Part B, Item 6, submitted in the form of an Addendum;
  - f. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
  - g. A summary of all information requested and results of the Monitoring Program;
  - h. A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;
  - i. Any other details on Water use or Waste disposal requested by the Board by the 1<sup>st</sup> November of the year being reported.
2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
3. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of Water volumes as required under Part J, Item 3.
4. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.
5. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
6. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
7. The Board has approved or accepted the following Plans for implementation under the relevant sections in the Licence:
  - a. *Spill Contingency Plan for the North Warning System* (March 29, 2018)
  - b. *CAM-3 Landfarm Design and Management Plan* (October 15, 2018)
  - c. *Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3* (July 13, 2018)
  - d. *QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX-3, and DYE-M* (October 15, 2018; accepted by Board)
8. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall

become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.

9. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:
  - (a) **Manager of Licensing:**  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Telephone: (867) 360-6338  
Fax: (867) 360-6369  
Email: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)
  - (b) **Inspector Contact:**  
Manager of Field Operations, CIRNAC  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0  
Telephone: (867) 975-4295  
Fax: (867) 979-6445
10. The Licensee shall submit an electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut ~~and Inuinnaqtun~~.
11. The Licensee shall ensure that all documents or correspondence submitted by the Licensee to the NWB are received and acknowledged by the Manager of Licensing.
12. This Licence is assignable as provided for in Section 44 of the *Act*.
13. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.

**PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain all Water from Water Lake. Total Water use shall not exceed two-hundred and ninety-nine (299) cubic metres per day. The volume of Water for all purposes under this Licence shall not exceed one thousand four hundred and forty (1440) cubic metres per year.
2. The use of Water from streams or any Water bodies not identified in Part C, Item 1, is prohibited unless authorized and approved by the Board in writing.

3. The withdrawal of Water from any stream shall not exceed ten (10) per cent of the low flow of that stream unless approved by the Board in writing.
4. Where the use of Water is of a sufficient volume that the source Water body may be drawn down, the Licensee shall submit, for approval of the Board in writing, the following information: the volume required, a hydrological overview of the water body, details of impacts, and proposed mitigation measures.
5. The Licensee shall submit to the Board for approval in writing, the following information at least thirty (30) days prior to the use of Water of a sufficient volume that the source water body may be drawn down: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.
6. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw Water at a rate such that fish do not become impinged on the screen.
7. The Licensee shall not conduct any work below the ordinary High Water Mark of any water body unless approved by the Board in writing.
8. The Licensee shall not cause erosion to the banks of any body of Water and shall provide necessary controls to prevent such erosion.
9. Sediment and erosion control measures shall be implemented prior to and maintained during the undertaking to prevent entry of sediment into Water.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall implement the Plan entitled "*CAM-3 Landfarm Design and Management Plan*," dated October 15, 2018, as approved by the Board.
2. The Licensee shall implement the Plan entitled "*Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3*," dated July 13, 2018, as approved by the Board.
3. The Licensee shall locate areas designated for Waste disposal at a minimum distance of thirty-one (31) metres from the ordinary High Water Mark of any water body such that the quality, quantity or flow of Water is not impaired, unless otherwise approved by the Board in writing.
4. The Licensee shall not practice on-site land filling of domestic Waste, unless otherwise approved by the Board in writing.
5. The Licensee is authorized to dispose of all acceptable food Waste, paper Waste and untreated wood products in an incinerator.



6. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of Waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding Waters, unless otherwise approved by the Board in writing.
7. The Licensee shall provide to the Board documented authorization from all communities in Nunavut receiving Wastes from the Project prior to any backhauling and disposal of Wastes to those communities.
8. The Licensee shall backhaul and dispose of all hazardous Wastes, Waste oil and non-combustible Waste generated through the course of the operation at a licensed Waste disposal site.
9. The Licensee shall maintain records of all Waste backhauled and records of confirmation of proper disposal of backhauled Waste. These records shall be made available to an Inspector upon request.
10. The Licensee shall direct all Greywater to the Sewage Disposal Facility Sump. All Effluent shall be disposed to a Sump located at a distance of at least thirty-one (31) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created, unless otherwise approved by the Board in writing.
11. The Licensee may manage Toilet Wastes through the use of incineration toilets, and dispose of all resulting ash in the Landfill. In the event that the on-site population exceeds the capacity of the incineration toilet, the Licensee shall direct Toilet Wastes to the Sewage Disposal Facility.
12. Discharge at Monitoring Program Station SHE-3 shall follow the QA/QC Plan for Berm Water Sampling and shall meet one of the two following conditions:
  - a. There is no recorded spills in the area since the last discharge and a field screening from four sampling points using hydrocarbon test strips indicates the absence of hydrocarbons; or
  - b. The discharge does not exceed the following Effluent Quality limits as confirmed by Laboratory results:

<b>Parameter</b>	<b>Maximum Concentration of any Grab Sample (µg/L)</b>
pH	6.0 to 9.5 (pH units)
Oil and Grease	5000
Benzene	370
Toluene	2
Ethylbenzene	90
Lead (dissolved)	50

13. If Effluent does not meet the Effluent quality limits of Part D, Item 12 (b), it shall be considered hazardous waste and disposed off-site to an approved, licensed facility.
14. The Licensee shall submit to the Board for review sixty (60) days prior to the construction of a Landfarm, final design and construction drawings accompanied with a detailed report, and prepared by a qualified Engineer(s), as well as an Operation and Maintenance Plan for the Landfarm facility.
15. All soil placed in the Landfarm must to be treated to meet the appropriate post-treatment, land-use criteria outlined in the Canadian Council of Ministers of the Environment's (CCME) Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008) and the Government of Nunavut – Department of Environment's Guidelines for Contaminated Site Remediation (Revised 2009).
16. All discharge of Effluent at Monitoring Station SHE-4 (Landfarm) shall not exceed the following Effluent quality limits:

<b>Parameter</b>	<b>Maximum Concentration of any Grab Sample (µg/L)</b>
pH	6 to 9 (units)
Oil and Grease	5000
Arsenic (total)	100
Cadmium (dissolved)	10
Chromium (dissolved)	100
Cobalt (dissolved)	50
Copper (dissolved)	200
Lead (dissolved)	50
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Phenols	20
Zinc (total)	500
Benzene	370
Toluene	2
Ethylbenzene	90

17. The Licensee shall treat, as required, the Effluent generated by the Landfarm Facility such that the Effluent discharged shall not exceed the Effluent quality limits established under Part D, Item 16, prior to discharge into the receiving environment.
18. The Licensee shall confirm compliance with respective Effluent quality limits in Part D, Items 12 and 16, prior to discharge.
19. The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned discharges from any facilities. The notice shall include an estimated volume proposed for discharge and the receiving location.

**PART E: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND OPERATIONS**

1. The Licensee shall not store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use.
2. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.
3. The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake corrective measures in the event of any impacts on surface drainage.
4. The Licensee shall construct all winter lake and stream crossings, including ice bridges, entirely of Water, ice or snow. The Licensee shall minimize disturbance by locating ice bridges in an area that requires the minimum approach grading and the shortest crossing route. Stream crossings shall be removed or the ice notched prior to spring break-up.
5. Stream crossing shall be a minimum of five hundred (500) meters from spawning areas.
6. With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the Water.
7. The Licensee shall not mobilize heavy equipment or vehicles unless the ground surface is capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall be suspended if rutting occurs.

**PART F: CONDITIONS APPLYING TO DRILLING OPERATIONS**

1. The Licensee is authorized to drill only for the purpose of installing groundwater monitoring wells at a Landfarm Facility.
2. The Licensee shall not conduct any land based drilling within thirty-one (31) metres of the ordinary high water mark of any water body, unless otherwise approved by the Board in writing.
3. The Licensee shall ensure that all drill waste, including water, chips, muds and salts (CaCl<sub>2</sub>) in any quantity or concentration, from land-based drilling, shall be disposed of in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty-one (31) metres from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are

created.

**PART G: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
  - a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
  - b. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
  - c. such Modifications are consistent with the NIRB Screening Decision;
  - d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
  - e. the Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part F, Item 1 have not been met can be carried out only with written approval from the Board.
3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

**PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING**

1. The Licensee shall implement the Plan entitled “*Spill Contingency Plan for the North Warning System*” dated March 29, 2018 as approved by the Board.
2. The Licensee shall prevent any chemicals, petroleum products or Wastes associated with the project from entering Water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High Water Mark of any adjacent water body and inspected on a regular basis.
3. The Licensee shall conduct any equipment maintenance and servicing in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste and contain potential spills.
4. The Licensee shall maintain secondary containment for hazardous waste and fuel storage area.
5. If during the term of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:

- a. Employ the approved Spill Contingency Plan;
  - b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
  - c. For each spill occurrence, submit to the Inspector and the NWB, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.
6. The Licensee shall, in addition to Part H, Item 4, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.

**PART I: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR TEMPORARY CLOSING**

1. The Licensee shall submit to the Board for approval, six (6) months prior to the abandonment of the CAM-3 Station, an Abandonment and Restoration Plan. The Plan shall include the following where appropriate:
  - a. Water intake facilities;
  - b. Water treatment and waste disposal sites and facilities;
  - c. Petroleum and chemical storage areas;
  - d. Any site affected by waste spills;
  - e. Leachate prevention;
  - f. An implementation schedule;
  - g. Maps delineating all disturbed areas, and site facilities;
  - h. Consideration of altered drainage patterns;
  - i. Type and source of cover materials;
  - j. Future area use;
  - k. Hazardous wastes; and
  - l. A proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.
2. The Licensee shall complete the restoration work within the time schedule specified in the Plan mentioned under Part I Item 1, or as subsequently revised and approved by the Board.
3. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, Revised 2009. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.

**PART J: CONDITIONS APPLYING TO THE MONITORING PROGRAM**

1. The Licensee shall implement the Plan entitled “*QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX 3, and DYE-M,*” dated October 15, 2018, as approved by the Board.
2. The Licensee shall maintain the following Monitoring Program Stations:

<b>Monitoring Program Station Number</b>	<b>Description</b>	<b>Status</b>
SHE-1	Freshwater intake at Water Lake	Active (Volume cubic metres)
SHE-2	Final Discharge Point of the Sewage Disposal Facility Sump	Active (Quality)
SHE-3	Final Discharge Point of the Bulk Fuel Storage Facility	Active (Quality)
SHE-4	Final Discharge Point from the Landfarm	Active when built

3. The Licensee shall measure and record, in cubic metres, the daily quantities of water pumped from Monitoring Program Station SHE-1 for all purposes.
4. The Licensee shall sample at Monitoring Program Station SHE-2, prior to Effluent discharge from the Sewage Disposal Facility Sump. Samples shall be analyzed for the parameters listed:  
  

Biological Oxygen Demand	Faecal Coliforms
Total Suspended Solids	pH
Oil and Grease (and visual)	
5. The Licensee shall, prior to release of effluent from the Bulk Fuel Storage Facility at SHE-3, sample at Monitoring Program Station SHE-3 for the parameters listed in Part D Item 12.
6. The Licensee shall, prior to release of effluent from the Landfarm Facility, sample at Monitoring Program Station SHE-4 for the parameters listed in Part D Item 16.
7. The Licensee shall compare the results recorded for Part J, Item 5 with the results recorded for Part D, Item 12 (a).
8. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where Wastes are deposited.

9. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of Water are utilized for all purposes.
10. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.
11. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
12. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.