



P.O. Box 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **3BC-FOD0919**

September 23, 2009

Major A. Cameron
North Warning System Office
c/o National Defence Headquarters
101 Colonel By Drive
Ottawa, ON K1A 0K2
Email: Cameron.AD@forces.gc.ca

RE: NWB Licence No. 3BC-FOD0919

Dear Major Cameron,

Please find attached, Licence No. **3BC-FOD0919** 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*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. 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 Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee will be in contravention of the *Nunavut Land Claims Agreement* (NLCA) 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.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public 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 acknowledged by the Manager of Licensing.

The NWB notes that both the Government of Canada and the Government of the Nunavut are signatories to the Canada-Wide Standards for Dioxins and Furans and Mercury Emissions. The Licensee should be aware that Environment Canada (EC) is developing a Technical Document for Batch Waste Incinerators. The technical aspects of the document focus on appropriate incineration equipment and best management practices required to achieve the Canada-Wide Standards for dioxins, furans and mercury. The Licensee should also be aware from EC's comment that any substances listed on schedule 1 of Canadian Environmental Protection Act (List of Toxic Substances) are required to have an Environmental Emergency Plan (EEP). The NWB strongly recommends that the Licensee consult the comments received by interested persons on issues identified. This information is attached for your consideration.¹

Sincerely,



Thomas Kabloona
Nunavut Water Board
Chair

TK/dc/tla

Enclosure: Licence No. **3BC-FOD0919**
Comments

cc: Distribution – Qikiqtani

¹ Environment Canada (EC), August 28, 2009; Government of Nunavut – Department of Culture, Language, Elders and Youth (GN-CLEY), August 28, 2009; Indian and Northern Affairs Canada, February 24, 2009.

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DECISION

LICENCE NUMBER: 3BC-FOD0919

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated July 30, 2009 for a renewal of a Water Licence made by:

GOVERNMENT OF CANADA, DEPARTMENT OF NATIONAL DEFENCE

to allow for the use of water and disposal of waste during operation and maintenance of the FOX-3 Long Range Radar Station located north of Dewar Lakes on Baffin Island within the Qikiqtani Region, Nunavut and generally located at the geographical coordinates as follows:

Latitude: 68° 40' 48"N Longitude: 71° 14' 48"W

DECISION

After having been satisfied that the application was for a location within an area in which there is no valid Land Use Plan and subject to an October 31, 2003 12.4.4(a) Screening Decision by the Nunavut Impact Review Board in accordance with Article 12 of the *Nunavut Land Claims Agreement (NLCA)*, 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)* and Article 13 of the *NLCA*, 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 *NLCA* and of the *NWNSRTA*, waived the requirement to hold a public hearing, and determined that:

Licence Number 3BC-FOD0919 be issued subject to the terms and conditions contained therein. (Motion #: 2009-10-10)

SIGNED this 10th day of September 2009 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board
Chair

TK/dc/tla

LICENCE NUMBER: 3BC-FOD0919**I. INTRODUCTION**

The FOX-3 Station was originally built between 1955-57 as an auxiliary to the Distant Early Warning Line to detect airborne objects within the arctic surveillance area. FOX-3 now serves as a Long Range Radar Station and is currently unmanned for most of the year. However, the site is visited by FOX-M staff on scheduled quarterly maintenance trips. From May to September the site may be returned to manned status with between 5 to 20 persons on-site to support project activities.

FOX-3 is located on a hilltop about 518 metres above sea level and has an airstrip in a valley at about 152 metres above sea level. Total annual precipitation is 23 cm including the moisture equivalent from 115 cm of snow. Maximum and minimum temperatures recorded at the station are 19°C and -46°C respectively.

FOX-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 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 consisting of a septic tank and outfall pipe, which discharges to the land.

II. PROCEDURAL HISTORY

On August 20, 2003, Nasittuq Corporation submitted a new application on behalf of the North Warning System Office, Department of National Defence (Licensee or DND) for a water licence covering water use and waste disposal activities during operations at FOX-3. After reviewing the submission of the Applicant and written comments provided by interested parties, the NWB issued Licence No. NWB6FOD0409 (3BC-FOD0409) on February 17, 2004.

On February 12, 2009 the NWB received an application to amend the expiry of the Licence until September 1, 2009. This amendment was approved on February 27, 2009 following a ten day 'urgent' review period.

A Licence renewal application with supplemental information was received on July 30, 2009. Following a thirty (30) day public review period, and after reviewing all submissions received, the NWB has issued Licence 3BC-FOD0919, subject to the conditions contained herein.

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.

A. 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 INAC 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 on the application, the NWB notes that there were no concerns expressed with respect to the requested licence term of ten (10) years 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, including the submission and implementation of required plans.

B. 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*" can 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://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/>).

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 2008 Annual Report submitted by the Licensee is acceptable.

C. Water Use

The project site has four (4) 10,000 litre water tanks. The Licensee requested to modify the condition respecting the daily quantity of water withdrawal permitted, which was set at ten (10) cubic metres per day. There were no comments with respect to the proposal and the NWB is no longer imposing a daily water withdrawal limit. However, 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.

Specifically, the Licensee requested that the NWB consider permitting a withdrawal rate of forty (40) cubic metres per day three times per month. This would allow the Licensee to fill the water tanks completely, and in one day, once the tanks become depleted. This proposed change to water use equates to 120 cubic metres per month, which is less than half the volume

permitted under the previous licence. Over the course of a twelve (12) month period this would amount to 1440 cubic metres, which is now the annual amount of water permitted under the renewed Licence. All water shall come from Water Lake. Renewed standard conditions for water use are detailed under Part C.

Finally, the NWB notes from the 2009 Inspection Report that the water meter was not working properly. The meter must be functional in order to meet the requirements of the Monitoring Program.

D. Waste Disposal

Sewage Waste

Previously, the Licensee was authorized to dispose of Toilet Wastes using 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 incineration toilets have a limited capacity, which is exceeded during some periods of onsite activity. To address the capacity issue, the Licensee had applied for an amendment to the previous licence in 2004 so that all Sewage, which includes Toilet Wastes and Greywater, could be directed to a Sewage Disposal Facility.

The 2004 amendment application for the Sewage Disposal Facility proposed the use of the septic tank system and outfall pipe that is currently in place on-site. In the amendment approval, dated March 21, 2005, the NWB incorrectly defined the Sewage Disposal Facility as consisting of an “Engineered Lagoon”. This error has been corrected within the definitions section of this Licence under Part A.

However, the NWB is concerned because the Licensee was, and is, required to discharge Sewage Effluent to a Sump. The Sump is to be located at least thirty (30) metres from the 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. In review of the INAC inspection report of 2008 the NWB notes that:

Human wastes are not treated; rather they are discharged directly to the environment via an outfall pipe contrary to the existing license.

Discharge to the land without a Sump is unacceptable to the Board. To ensure immediate corrective action is taken, the Licensee is required under Part D, item 1, to submit to the Board for approval, within thirty (30) days of Licence issuance, a Sewage Disposal Update detailing the actions implemented to comply with the conditions of the Licence relating to Sewage disposal. In the meantime, the Board reminds the Licensee of Part D, Item 2, which regulates all waste disposal activities:

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.

Landfill

The NWB notes that as-built drawings for the landfill referred to in the application have not been submitted. Part F of the Licence has included as a condition, Item 4, requiring the Licensee to submit stamped and signed as-built drawings. An Operation and Maintenance Plan for the landfill must also be submitted for review and approval under Part E, item 1.

The NWB is in receipt of correspondence dated November 28, 2008 from the Nasittuq Corporation to the NWB indicating that the Licensee is backhauling combustible waste to the FOX-M site where it is then transferred for disposal to the Hamlet of Hall Beach landfill. This is being carried out in the interim while an incinerator is being procured for the site and landfill of domestic waste does not occur. The Licensee is reminded of the requirement to provide written authorization from the Hamlet of Hall Beach, or any community, prior to backhauling waste.

E. Spill Contingency Plan

The Board requires within sixty (60) days of Licence issuance, a revision of the site specific Plan entitled “Spill Contingency Plan for FOX-3 (Dewar Lakes, Nunavut)” dated November 25, 2008. The revision shall address issues raised under Part G, Item 1.

The NWB notes that the project site is unmanned during most of the year, similar to operations at the BAF-3 station, for which the Licensee also holds a water Licence. In 2007 there was a large fuel spill at the BAF-3 site and in reviewing the renewal application for that project, INAC recommended the following to the NWB on February 25, 2009:

The Brevoort Island project site will be unmanned from October to April, which increases the risk of spills or related adverse environmental impacts being undetected (please note previous 2007 aviation fuel spill at this site). Therefore, INAC requests that the NWB impose a condition that requires the proponent to install a remote leak detection system which will generate an appropriate site response in a timely manner. (Pg. 3)

The Board is concerned with the potential for future incidents at all unmanned Long Range Radar Sites where there is significant volumes of fuel being stored. However, before imposing additional monitoring requirements on the Licensee, the Board has included a condition under Part G, item 2 that requires the Licensee to submit a feasibility report addressing the above recommendation made by INAC. Upon receipt, the NWB will distribute the information for further review and comment from interested parties before making a decision on the issue.

Given the significant amount of fuel to be stored on site, EC recommends the use of secondary containment with an impervious liner, such as self-supporting insta-berms, for storage of all barreled fuel rather than relying on natural depressions to contain spills. The NWB agrees with EC's recommendations. For this reason, the NWB has included the condition under Part G, item 4 which requires secondary containment for fuel storage areas and has imposed Effluent discharge limits for water released from fuel storage areas under Part D, item 10.

F. Abandonment and Restoration Plan

To ensure that all existing end-of-life facilities are reclaimed in an appropriate manner, the NWB requires Licensees to submit an *Abandonment and Restoration Plan* (A&R Plan). This Plan is to be submitted at least six (6) months prior to the closure of any licensed facility or upon submission of the final design drawings for the construction of new facilities to replace existing ones. The requirement for this submission is detailed under Part H, Item 1.

G. 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 I of the licence. Similarly, the Board is requiring, within ninety (90) days of issuance of the Licence, the submission of a Quality Assurance/Quality Control Plan that provides documentation of proper methods for field sampling, preservation and shipping/sample control and is accompanied by an approval letter from an accredited laboratory responsible for the analytical requirements of the Licence. This requirement is detailed under Part I, Items 8 and 9.



NUNAVUT WATER BOARD
WATER LICENCE

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)
NORTH WARNING SYSTEM OFFICE, C/O NATIONAL DEFENCE HEADQUARTERS
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:

Licence Number/Type: 3BC-FOD0919 TYPE "B"

Water Management Area: NUNAVUT 05

Location: DEWAR LAKES
QIKIQTANI REGION, NUNAVUT

Classification: MUNICIPAL UNDERTAKING

Purpose: DIRECT WATER USE AND DEPOSIT OF WASTE

Quantity of Water use not to Exceed: ONE THOUSAND FOUR HUNDRED AND FORTY (1440)
CUBIC METRES ANNUALLY

Date of Licence Issuance: SEPTEMBER 10, 2009

Expiry of Licence: AUGUST 31, 2019

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

Thomas Kabloona,
Nunavut Water Board
Chair

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**1. Scope**

This Licence allows for the use of water and the disposal of waste for a Municipal Undertaking classified as per Schedule II of the *Regulations* at the FOX-3 Long Range Radar Station, located north of Dewar Lakes, Baffin Island within the Qikiqtani Region, Nunavut.

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing 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;

“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 Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Bermed Fuel Storage Facility” means all fuel storage facility on site that contained within a berm for additional containment;

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

“Effluent” means the liquid Discharge from all site water management facilities;

“Engineer” means a professional engineer registered to practice in Nunavut in accordance with the Engineering, Geological and Geophysical Act (Nunavut) S.N.W.T. 1998, c.38, s.5;

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

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

“Landfill” means the facility designed to contain solid wastes referred to in the renewal application dated July 30, 2009;

“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 Land Claims Agreement” (NLCA) 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 *Northwest Territories Water Regulations* sor/93-303 8th June, 1993, omitting Section 5, Water Use or Waste Deposit Without a Licence;

“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 July 30, 2009;

“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” means an excavation for the purpose of catching or storing liquids such as Greywater, with the water draining to the soil;

“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;

“Waste Disposal Facilities” means the Sewage Disposal Facility and Landfill;

“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 31st 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. A list of unauthorized discharges and a summary of follow-up actions taken;
 - c. Updates or revisions, if applicable, to the Spill Contingency Plan, and Operations and Maintenance Plans; revisions may be subject to Board approval;
 - d. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
 - e. A summary of all information requested and results of the Monitoring Program; and
 - f. Any other details on water use or waste disposal requested by the Board by November 1 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 I, Item 2.
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 Plans accordingly. Revisions to the Plan are to be submitted in the form of an Addendum to be included with the Annual Report, unless directed otherwise by an Inspector. Addendums should be accompanied with a concordance sheet that provides an overview of the changes made to the plan.
7. 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.
8. 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@nunavutwaterboard.org

(b) Inspector Contact:

Water Resources Officer, INAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

9. The Licensee shall submit one paper copy and one 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 English and Inuktitut.

10. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing.
11. This Licence is assignable as provided for in Section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all water from Water Lake as described in the Application and shown on drawing No. H-D67/2-8400-101. The volume of water for the purposes of this Licence shall not exceed one thousand four hundred and forty (1,440) cubic metres annually.
2. Streams cannot be used as a water source unless authorized and approved by the Board in writing.
3. If the Licensee requires water in sufficient volume that the source water body may be drawn down the Licensee shall, at least thirty (30) days prior to commencement of use of water, submit to the Board for approval in writing, the following: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.
4. 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.
5. The Licensee shall not remove any material from below the ordinary high water mark of any water body unless authorized.
6. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
7. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall submit to the Board for approval, within thirty (30) days of Licence issuance, a Sewage Disposal Update include the following information:
 - a. A plan to manage sludge from the Sewage Disposal Facility;
 - b. Dimensions and capacity of the Sump to be located at the Sewage outfall;
 - c. Location of the Sump on a map in relation to water bodies including ephemeral streams, topography and drainage paths; and
 - d. Photos of the sump and outfall system.
2. 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.

3. The Licensee shall not practice on-site land filling of domestic waste, unless in an approved facility or as otherwise approved by the Board in writing.
4. The Licensee is authorized to dispose of all acceptable food waste, paper waste and untreated wood products in an incinerator.
5. 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 residue, from impacting any surrounding waters, unless otherwise approved by the Board in writing.
6. The Licensee shall provide to the Board documented authorization from all communities receiving wastes from the Appurtenant Undertaking.
7. The Licensee shall backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste generated through the course of the operation in an approved waste disposal site. Records shall be made available to an Inspector upon request.
8. The Licensee shall dispose of Greywater through the Sewage Disposal Facility. All Effluent from the Sewage Disposal Facility 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.
9. The Licensee may manage Toilet Wastes through the use of incineration toilets, and dispose of all resulting ash in an approved and licenced 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.
10. All discharge of Effluent at Monitoring Station FOD-3 (Fuel storage area) shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration of any Grab Sample (µg/L)
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

Parameter	Maximum Concentration of any Grab Sample (µg/L)
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Phenols	20
Zinc (total)	500
Benzene	370
Toluene	2
Ethylbenzene	90

11. If Effluent does not meet the Effluent quality limits of Part D, Item 10 above, it shall be considered hazardous waste and disposed off-site at an approved, licensed facility.
12. The Licensee shall, prior to the removal of any treated soil for future use, confirm with the Government of Nunavut, Environmental Protection Service that the soils have been treated so as to meet the legislatively-required treatment objective.
13. 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.
14. The Licensee shall implement measures to prevent leachate or runoff from the Landfill, from entering a water body and that no additional impacts are created, unless otherwise approved by the Board in writing.

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

1. The Licensee shall submit to the Board for approval, within sixty (60) days following Licence issuance, an Operation and Maintenance Plan for the Landfill and handling of solid wastes, developed in accordance with prepared in accordance with the *“Guidelines for Preparing an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities”, October 1996*.
2. The Licensee shall not store material on the surface of frozen streams or lakes including the immediate banks, except what is for immediate use.
3. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
4. 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.

PART F: CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION

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.
4. The Licensee shall provide to the Board for review, within ninety (90) days following issuance of the Licence, as-built plans and drawings signed and stamped by an Engineer for the Landfill.

PART G: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall submit to the Board for approval in writing, within sixty (60) days of issuance of the Licence, a revision to the Plan entitled "Spill Contingency Plan for FOX-3 (Dewar Lakes, Nunavut)" dated November 25, 2008, that was submitted as additional information with the Application, to address the following:
 - a. Requirement for an executive summary in English and Inuktitut;
 - b. The Plan shall be in the name of the Licensee;
 - c. Figure 1 appears to have missing text;
 - d. Include within the Plan, a topographic site map that identifies hazardous material storage areas, Spill kits and site infrastructure in relation to local waterbodies;
 - e. The spill Plan should refer to where MSDS information is located on site;
 - f. Include a copy of the NT/NU Spill Report form to be completed and submitted in the event of a spill;
 - g. INAC has requested to be contacted in the event of a spill. The point of contact

is the Manager of Field Operations, 867-975-4295;

2. The Licensee shall submit to the Board, within sixty (60) days of Licence issuance, a feasibility report addressing the recommendation made by Indian and Northern Affairs Canada to install a remote leak detection system capable of generating a timely site response in the event of a fuel leak while the site is unmanned from October to April.
3. The Licensee shall prevent any chemicals, petroleum products or wastes associated with the project do not enter 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.
4. The Licensee shall provide secondary containment for hazardous waste and fuel storage areas.
5. The Licensee shall ensure that any equipment maintenance and servicing be conducted only 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.
6. 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 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, 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.

PART H: 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 FOX-3 site or any associated facilities, an Abandonment and Restoration Plan that includes 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, or as subsequently revised and approved by the Board in writing.
3. Areas that have been contaminated by hydrocarbons shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, January 2002.

PART I: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall maintain Monitoring Stations at the following locations:

Monitoring Program Station Number	Description	Status
FOD-1	Raw water supply from Water Lake prior to deposit in water tanks	Active (Volume cubic metres)
FOD-2	Final discharge point from the Sewage Disposal Facility	Active (Quality)
FOD-3	Final Discharge Point of the Bermed Fuel Storage Facility	Active (Quality)

2. The Licensee shall measure and record, in cubic metres, the daily quantities of water pumped from Monitoring Station FOD-1 for all purposes.
3. The Licensee shall sample at Monitoring Station FOD-2, monthly during periods of flow. Samples shall be analyzed for the following parameters:

Biological Oxygen Demand	Faecal Coliforms
Total Suspended Solids	pH
Oil and Grease (and visual)	

4. The Licensee shall, prior to the release of Effluent from the Bermed Fuel Storage Facilities at FOD-3, sample for the purpose of verifying compliance with Effluent quality limits for the parameters listed under Part D, Item 10.
5. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with operations and maintenance operations are deposited

6. 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.
7. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
8. The Licensee shall within ninety (90) days following issuance of the Licence, submit to the Board a Quality Assurance/Quality Control (QA/QC) Plan. The Plan shall be include up to date field sampling methods to all applicable standards, acceptable to an accredited laboratory as required by Part I, Item 6 and Part I, Item 7. The Plan shall include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under this Licence.
9. The Licensee shall annually review the QA/QC plan submitted under Part I, Item 8 and modify it as necessary. Revised plans shall be submitted to the NWB with an approval letter from an accredited lab that meets standards set in Part I, Item 6 and Part I, Item 7.
10. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.