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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

File No.: 1BR-FTA1217

July 26, 2012

Corinne Miller
Transport Canada
Programs – Contaminated Sites
1100 – 9700 Jasper Avenue
Edmonton, AB
T5J 4E6
Email: corinne.miller@tc.gc.ca

RE: NWB Licence No. 1BR-FTA1217

Dear Ms. Miller:

Please find attached Licence No. 1BR-FTA1217 issued to the Transport Canada, Programs - Contaminated Sites 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* (NWSRTA). 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 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 strongly recommends that the Licensee consult the comments received by interested persons on issues identified. This information is attached for your consideration.¹

¹ Aboriginal Affairs and Northern Development Canada (AANDC), May 4, 2012; Environment Canada (EC), April 20, 2012.

Sincerely,



Thomas Kabloona
Nunavut Water Board
Chair

TK/kk/pb

Enclosure:

Licence No. **1BR-FTA1217**
Comments – AANDC, EC

cc: Distribution – Kitikmeot

DECISION

LICENCE NUMBER: 1BR-FTA1217

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated March 16, 2012 for a new Water Licence made by:

TRANSPORT CANADA, PROGRAMS—CONTAMINATED SITES

to allow for the disposal of waste during remediation activities at the Cambridge Bay Airport – Firefighter Training and Apron Areas Remediation Project located at Cambridge Bay within the Kitikmeot Region, Nunavut, generally located at the geographical coordinates as follows:

Latitude: 69° 06' 40'' N Longitude: 105° 09' 40'' W

DECISION

After having been satisfied that the application was for a location that falls outside of an area with an approved Land Use Plan and subject to a 12.4.4(a) Screening Decision by the Nunavut Impact Review Board² in accordance with Article 12 of the *Nunavut Land Claim 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 (Act)* 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 *Act*, waived the requirement to hold a public hearing, and determined that:

Licence Number 1BR-FTA1217 be issued subject to the terms and conditions contained therein. (Motion #: 2012-03-L05)

SIGNED this 25th day of July 2012 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board
Chair

TK/kk/pb

² NIRB Screening Decision dated July 12, 2012.

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NWB LICENCE No. 1BR-FTA1217

I. BACKGROUND

Franz Environmental Inc. (FRANZ) was retained by Public Works and Government Services Canada (PWGSC) and Transport Canada (TC), Prairie & Northern Region and Environmental affairs Division to complete a Phase II/III Environmental Site Assessment (ESA) at the Cambridge Bay Airport, Cambridge Bay, Nunavut. The work was completed to identify environmental liabilities and assess remediation/risk management options at areas of potential environmental concern (APEC). FRANZ conducted a detailed options analysis to assess remediation options for Site remediation, and recommended Petroleum Hydrocarbons (PHC) contaminated soils and groundwater (including metals) at Fire Training Area (FTA) and former F.H. Ross Tank Site (Apron) be excavated and treated in an onsite land treatment unit (LTU or Landfarm).

EBA Engineering Consultants Ltd. (EBA) was retained by TC to design the Landfarm to be constructed at Cambridge Bay Airport area for on-site treatment of the hydrocarbon contaminated soil from the Apron Area and the FTA. It would have a capacity of 11,000 m³ (7700 m³ from the FTA and 3300 m³ from the Apron Area).

The Landfarm will consist of a soil treatment cell and a water retention cell or sump and will be constructed with a 1% slope that allows collecting any leachate in the sump area. The facility will be lined with a 30 mil hydrocarbon-resistant geo-membrane material. The treatment cell will be sized to accept the entire estimated volume of contaminated soil at one time.

II. PROCEDURAL HISTORY

The NWB received a water licence application from TC on June 15, 2011 for the deposit and treatment of hydrocarbon impacted soil from the FTA for treatment at the proposed Cambridge Bay Airport LTU. Following receipt, the NWB conducted a preliminary technical review and administrative review of the application and informed the Proponent that a site-specific Spill Contingency Plan and Abandonment and Restoration Plan, and an Operation and Maintenance Manual are required prior to the distribution of application for public review and comments.

Additional information was submitted by TC on November 3, 2011 and March 16, 2012. The submitted plans and amended application was for the construction and operation of a LTU designed to treat a combined volume of approximately 11,700 cubic metres of petroleum hydrocarbon contaminated soils originating from the FTA and Apron Area.

The complete licence application (Application) included the following documents:

- General Water Licence Application;
- Project Summaries, English, Inuktitut and Inuinnaqtun;
- Phase II/III Environmental Site Investigation;

- HHER Assessment;
- Phase II/III Environmental Site Assessment;
- Maps and figures;
- Location Site Plans;
- Land Farm Treatment Unit Design;
- Operations and Maintenance Plan;
- Spill Contingency Plan;
- Stand Alone Abandonment and Restoration Plan; and
- NIRB Exemption dated February 27, 2012.

On April 5, 2012, following a preliminary internal technical review the NWB concluded that the Application met the requirements of section 48(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or Act) and forwarded notice of the Application to regulators, council of the municipality most affected by the project and other interested parties. All parties were invited to make representations to the NWB within thirty (30) days.

Comments were submitted by Aboriginal Affairs and Northern Development Canada (AANDC), and Environment Canada (EC) before May 5, 2012. No public concern was expressed during the notice period. Therefore, the NWB waived the requirement to hold a public hearing and proceeded with the application process.

On July 12, 2012, the Nunavut Impact Review Board (NIRB) after reassessing the additional information, issued a Screening Decision as per Section 12.4.4 of the *Nunavut Land Claim Agreement* (NLCA) stating that the proposal may be processed without a review under Part 5 or 6, and recommended project-specific terms and conditions.

Based upon the results of the detailed assessment of the Application, including consideration of any potential accidents, malfunctions, or impacts to water that the overall project might have in the area, the Board has approved the Application and has issued Water Licence 1BR-FTA1217.

III. GENERAL CONSIDERATIONS

TERM OF LICENCE

In accordance with Section 45 of the Act, the NWB may issue a licence for a term not exceeding twenty-five (25) years. The Applicant requested a five-year Licence, which the NWB believes is appropriate for the type of remediation activities proposed in the application. The Board has therefore granted the term requested.

ANNUAL REPORT

Under the reporting section in the Licence, Part B, Item 1, the Licensee is required to submit to the Board for information, on an annual basis, a report that pertains to possible deposition of

wastes. The NWB maintains the annual reporting information on its public registry. The information is also made available to interested persons upon request.

WASTE DISPOSAL

The Applicant stated that no waste will be generated on site during the proposed remediation activities. According to the information provided in the Application, the Applicant is proposing to construct an on-site Landfarm situated in the vicinity of the Cambridge Bay Airport to treat approximately 11,700 cubic metres of Type B soil.

EFFLUENT DISCHARGE

The Applicant indicated that if the leachate is required to be discharged it must first meet the discharge levels within Canadian Council of Ministers of Environment (CCME) *Canadian Water Quality Guidelines for the Protection of Aquatic Life* for surface water reception.

The Board has considered the Applicant's request and has decided that in the absence of Nunavut specific guidelines for discharge to groundwater and given the lack of information provided in the Application regarding the permafrost and groundwater regime to maintain that discharge will percolate into the groundwater, the CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life* for surface water reception shall be applied to Effluent discharged from the Landfarm in accordance with the Federal Guidelines. As such, the Board has set effluent quality limits in Part D Item 4 of this Licence for pH, oil and grease, benzene, toluene, and ethylbenzene that are consistent with the CCME Guidelines and other licenses for similar undertakings. In addition, as FRANZ's ESA identified lead and zinc high concentrations in FTA and Apron areas, the Board has set effluent quality limits for lead and zinc.

OPERATIONS AND MAINTENANCE

The Application included an Operation and Maintenance (O&M) Plan entitled "Operations and Maintenance Plan Cambridge Bay Airport Land Treatment Unit (LTU), Nunavut" dated March, 2012. The Board has approved the Plan under Part E, Item 1 of the Licence. However, the Applicant is required, within six (6) months of the issuance of the Licence, to submit an Addendum to the Plan that will include the following information:

- a. Runoff diversion and management plans;
- b. Dust controlling measures at the LTU;
- c. Details regarding the timing, construction and installation of the groundwater monitoring wells; and
- d. A Quality Assurance/Quality Control Plan approved by an accredited laboratory as required under Part J, Item 11.

The Applicant is required to provide to the Board, within 90 days of completion of the construction of any dams, dykes or structures to contain, withhold, divert or retain water or waste, including facilities or systems for the treatment and disposal of hydrocarbon contaminated soil, all respective design drawings and construction reports, including all as-built drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions. These plans and drawings shall be stamped by an Engineer.

DRILLING

The Applicant indicated that eight (8) groundwater monitoring wells will be installed. The Licence includes standard conditions under Part F related to drilling operations for the purpose of installing groundwater monitoring wells.

SPILL CONTINGENCY PLANNING

The Board has approved, under Part H, Item 1 of the Licence, the Plan entitled “Cambridge Bay Land Treatment Unit Spill Contingency Plan”, dated March, 2012 that was submitted as additional information with the Application. The Applicant is required under Part B, Item 1 and as per Part B, Item 7, to submit to the Board for review any revisions of the Plan.

ABANDONMENT AND RESTORATION

The Board has approved, under Part I, Item 1 of the Licence, the Plan entitled “Stand Alone Abandonment and Restoration Plan Cambridge Bay Airport Land Treatment Unit (LTU), Nunavut” dated March, 2012 that was submitted as additional information with the Application. The Applicant is required to submit, under Part B, Item 1 and as per Part B, Item 7 of the Licence, any revisions of the Plan to the Board for review. In addition, conditions have been included under Part I, Item 3 to ensure that the Licensee removes from the site, all infrastructure and site materials, including all fuel caches, drums, barrels, material and equipment prior to the expiry of this Licence.

MONITORING

In its O&M Plan, the Applicant proposed to conduct site monitoring twice per year: once during spring freshet in June and once during mid-summer in August-September. The monitoring will include the sampling of eight (8) groundwater monitoring wells and the sump inside the LTU. The sump will be tested prior to any required discharge and prior to the decommissioning of the facility. The CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life* for surface water reception shall be applied to Effluent discharged from the Landfarm. The Board has set effluent quality limits in Part D Item 4 of this Licence for pH, oil and grease, lead, zinc, benzene, toluene, and ethylbenzene.

Soil sampling program will be conducted at the beginning of each field season to identify the

levels of PHC contamination in the soil. The soil criteria used for this site will be under the CCME *Canada Wide Standards for Petroleum Hydrocarbon Contaminated Soils Tier 1: Coarse Grain Soil, Industrial Site*.

All sampling procedures will be in accordance with the standards contained in the CCME *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites Volume I & II*.

Under Part J, Item 11 of the Licence, the Applicant is required within six (6) months of the issuance of the Licence to submit to the Board for review, a Quality Assurance/Quality Control (QA/QC) Plan. The Plan must be approved by an accredited laboratory confirming that the plan is acceptable. The monitoring results are to be provided to the NWB as part of the annual report. This requirement is included under Part J, Item 13 of the Licence.



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

TRANSPORT CANADA, PROGRAMS-CONTAMINATED SITES

(Licensee)

1100 –9700 JASPER AVENUE, EDMONTON AB T5J 4E6

(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: 1BR-FTA1217 TYPE “B”

Water Management Area: NUNAVUT 04

Location: CAMBRIDGE BAY AIRPORT – FIREFIGHTING TRAINING
AND APRON AREAS REMEDIATION PROJECT
KITIKMEOT REGION, NUNAVUT

Classification: INDUSTRIAL UNDERTAKING

Purpose: DEPOSIT OF WASTE

Quantity of Water use not
to Exceed: NO WATER USE AUTHORIZED

Date of Licence Issuance: JULY 25, 2012

Expiry of Licence: OCTOBER 31, 2017

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 disposal of waste for an undertaking classified as Industrial as per Schedule II of the *Regulations* at the Cambridge Bay Airport – Firefighting Training and Apron Areas Remediation Project, located in Cambridge Bay 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 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*;

“**Effluent**” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond or a treatment facility

“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;

“Grab Sample” means a single water or wastewater sample taken at a time and place representative of the total discharge;

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

“Land Treatment Unit (“LTU” or “Landfarm”) comprises the area and associated infrastructure, including the soil disposal cell and water retention cell, designed to contain and remediate hydrocarbon impacted soils as described in the application for the water licence received by the Board on March 16, 2012 and as illustrated in drawing no. 22101988-MM-RF-0 signed and stamped by EBA Engineering Consultants Ltd.

“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;

“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 in impermeable soil for the purpose of catching or storing water or waste;

“Treatment Objective” means the treatment objective for the Land Treatment Unit which is based on the Canadian Council of Ministers of the Environment (CCME) *Canada – Wide Standard for Petroleum Hydrocarbon in Soil*, revised January 2008; and as determined by the Government of Nunavut, Environmental Protection Service based on the 2009 *Environmental Guideline for Site Remediation*; See Table No. 1;

“Type B Soil” means soil contaminated with petroleum hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis

consists of fuel oil and /or diesel fuel and /or gasoline; this soil does not contain polychlorinated biphenyl (PCB).

“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.

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 of all waste disposal activities including:
 - i. Quantity and quality of effluent discharged from Landfarm; and
 - ii. Quantity and characterization of soils placed within the Landfarm for treatment.
 - b. A list of unauthorized discharges and a summary of follow-up actions taken;
 - c. Any revisions to the Spill Contingency Plan, Abandonment and Restoration Plan, and Operation and Maintenance Plan as required by Part B, Item 5, submitted in the form of an Addendum;
 - 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, an analysis and interpretation of the results, and any follow-up measures that may be required; and
 - f. Any other details on Waste disposal requested by the Board by November 1 of the year being reported.

2. The Licensee shall comply with the Monitoring Program described in this Licence, and any amendments to the Monitoring Program as may be made from time to time, pursuant to the conditions of this Licence.
3. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Board.
4. The Licensee shall post signs in the appropriate areas to identify the stations of the Monitoring Program and to inform the public of the location of the Landfarm. All signage postings shall be in the Official Languages of Nunavut.
5. 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.
6. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
7. 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 Plans are to be submitted in the form of an Addendum to be included with the Annual Report required by Part B, Item 1, complete with a revisions list detailing where significant content changes are made.
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@nunavutwaterboard.org

(b) Inspector Contact:

Manager of Field Operations, INAC

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 one (1) paper copy and one (1) 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.
11. 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.
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. No water use is authorized under this Licence.
2. The Licensee shall not remove any material from below the ordinary high water mark of any water body.
3. The Licensee shall not conduct any activity that will cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
4. The Licensee shall implement and maintain sediment and erosion control measures prior to and during the operation to prevent entry of sediment and/or dust into Water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall treat, to the Treatment Objective, Type B Soil in the Landfarm, or as otherwise approved by the Board.
2. The Licensee shall maintain the Landfarm to the satisfaction of the Inspector.
3. The Licensee shall provide at least ten (10) days written notice to the Inspector prior to any planned discharges from the Landfarm. The notice shall include the estimated discharge volume, Effluent quality or results of monitoring under Part J, Item 6, and the proposed location for the discharge.

4. All Effluent discharged from the Landfarm at monitoring station FTA-1, shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration of any Grab Sample (µg/L)
pH	6 to 9 (pH units)
Oil and Grease	5000
Lead (dissolved)	1
Benzene	370
Toluene	2
Ethylbenzene	90
Zinc	500

5. If effluent does not meet the effluent quality limits in Part D, Item 4, it shall be treated until it meets the above-referenced limits, or it shall be considered hazardous waste and disposed off-site at an approved facility or as otherwise approved by the Board in writing.
6. The discharge location for all Effluents described in Part D Item 4 shall be located at a minimum of thirty one (31) metres from the ordinary high water mark of any water body and where direct or indirect flow into a water body is not possible and no additional impacts are created.
7. The Licensee shall dispose of soils containing contaminants in excess of the Treatment Objectives off site at an approved treatment facility.
8. 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 to meet all legislatively-required treatment objectives.

PART E: CONDITIONS APPLYING TO CONSTRUCTION AND OPERATIONS

1. The Board has approved the Plan entitled “Operations and Maintenance Plan Cambridge Bay Airport Land Treatment Unit (LTU), Nunavut” dated March, 2012.
2. The Licensee shall within six (6) months of the issuance of the Licence submit to the Board for review, an Addendum to the Plan approved under Part E, Item 2 in accordance with the “*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*”. that shall include or address the following items:
- Runoff diversion and management;
 - Dust controlling measures at the LTU;
 - Details regarding the construction and installation of the groundwater monitoring wells, and methods of sampling; and

- d. A Quality Assurance/Quality Control Plan approved by an accredited laboratory as required under Part J, Item 11.
3. The Licensee shall provide to the Board, within 90 days of completion of the construction of any dams, dykes or structures to contain, withhold, divert or retain water or waste, including facilities or systems for the treatment and disposal of hydrocarbon contaminated soil, all respective design drawings and construction reports, including all as-built drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions. These plans and drawings shall be stamped by an Engineer.
4. The Licensee shall, during the excavation of soils to be treated within the Landfarm, implement measures prior to, during and following the excavation of soils, to prevent migration of sediments from the site that may impact water.
5. The Licensee shall not mix or blend PHC contaminated soils with non-contaminated soils for the expressed purpose of achieving the Treatment Objective.
6. The Licensee shall implement proper handling, storage and transportation procedures for the management of hazardous materials during clean-up activities.
7. The Licensee shall minimize disturbance to terrain, permafrost and drainage during extraction of granular material, movement of contractor's equipment and personnel around the site and removal of site debris.

PART F: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill for the purpose of installing groundwater monitoring wells and other instruments related to monitoring.
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_2) 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.
4. If artesian flow is encountered, drill holes shall be immediately sealed and permanently capped to prevent induced contamination of groundwater or salinization of surface waters. The Licensee shall report all artesian flow occurrences within the Annual Report, including the location (GPS coordinates) and dates.

5. The Licensee shall, where drilling activity has penetrated below the permafrost layer, record the depth of permafrost and location of the drill hole for inclusion in the annual report required by Part B, Item 1.

PART G: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the 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 G, 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 Board has approved the Plan entitled “Cambridge Bay Land Treatment Unit Spill Contingency Plan”, dated March, 2012 that was submitted as additional information with the Application.
2. 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.
3. 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.
4. 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 INAC Manager of Field Operations 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 I: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR TEMPORARY CLOSING

1. The Plan entitled “Stand Alone Abandonment and Restoration Plan Cambridge Bay Airport Land Treatment Unit (LTU), Nunavut” dated March, 2012 has been approved by the Board.
2. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee’s operations.
3. The Licensee shall remove from the site, all infrastructure and site materials, including all fuel caches, drums, barrels, material and equipment prior to the expiry of this Licence.
4. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.
5. 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, January 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.
6. All disturbed areas shall be contoured and stabilized upon completion of work and restored to a pre-disturbed state.
7. The Licensee shall complete all restoration work prior to the expiry of this Licence.

PART J: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall maintain the Monitoring Program Stations, sampling and analysis requirements as described below at the following locations:

Monitoring Program Station	Description	Frequency	Parameters
FTA-1	Effluent discharged from the Landfarm	Prior to discharge	Volume in accordance with Part J Item 5 Quality in accordance with Part J Item 6
W1	Monitoring well up-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W2	Monitoring well up-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W3	Monitoring well down-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W4	Monitoring well down-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W5	Monitoring well up-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W6	Monitoring well down-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W7	Monitoring well up-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7
W8*	Monitoring well down-gradient of the Landfarm	Once in late summer-fall	Quality in accordance with Part J, Item 7

- W1-W8 monitoring wells are identified as per Figure 2 of the application, Landfarm Treatment Unit (LTU) Design, February 15, 2012, EBA Engineering Consultants Ltd.
2. The Licensee shall confirm the locations and GPS coordinates for all Monitoring Program Stations referred to in Part H, Item 1 with an Inspector.
 3. The Licensee shall measure and record the volume of all soil from all locations entering the Landfarm.
 4. The Licensee shall assess and record the concentration of F1 – F4 fractions in petroleum hydrocarbon contaminated soil, according to the CCME *Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil* that is entering the Landfarm from all sources.

5. The Licensee shall record the volume of all Effluent discharged from the Landfarm at Monitoring Program Station FTA-1.
6. The Licensee shall sample prior to discharge at Monitoring Program Station FTA-1, to verify compliance with the Effluent quality limits under Part D, Item 4
7. The Licensee shall sample at Monitoring Program Stations FTA-1, W1, W2, W3, W4, W5, W6, W7 and W8. Samples shall be analyzed for the following parameters:

Total Suspended Solids	pH
Total Hardness	Total Alkalinity
Conductivity	Nitrate-Nitrite
Ammonia Nitrogen	Chloride
Oil and Grease	Total Phenols
Calcium	Magnesium
Sodium	Potassium
Chloride	Sulphate
Total Aluminium	Total Arsenic
Total Cadmium	Total Cobalt
Total Copper	Total Iron
Total Lead	Total Molybdenum
Total Nickel	Total Selenium
Total Silver	Total Titanium
Total Zinc	
Total Extractable Hydrocarbons (TEH)	
Polycyclic Aromatic Hydrocarbons (PAH)	
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	

8. The Licensee shall sample soil being treated in the Landfarm twice per year, in the spring-summer following thaw and prior to freeze-up in the fall, for the period of active land treatment to monitor contaminant levels until analytical results are below acceptable levels as determined under the CCME Canada Wide Standards for Petroleum Hydrocarbon Contaminated Soils Tier 1, coarse grain soil, Industrial site.
9. 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.
10. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
11. The Licensee shall within six (6) months following issuance of the Licence submit to the Board a Quality Assurance/Quality Control (QA/QC) Plan for inclusion with the O&M Plan required under Part E, Item 2. The Plan shall include up-to-date sampling methods to all applicable standards, acceptable to an accredited laboratory as required by Part J, Item 10. The Plan shall include a covering letter from the accredited

laboratory, confirming acceptance of the Plan for analyses to be performed under this Licence.

12. Additional monitoring requirements may be requested by the Inspector.
13. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.
14. Modifications to the Monitoring Program may be made only upon written request and subsequent approval of the Board in writing.

Table No. 1

Remediation Requirements

		Agricultural	Residential/Parkland	Commercial	Industrial
Fraction 1	Coarse	30 ^b	150	300	2800
	Fine	210 (170 ^a)	150	1300	5600
Fraction 2	Coarse	30 ^b	150	300	2800
	Fine	210 (170 ^a)	150	1300	5600
Fraction 3	Coarse	320 (240 ^a)	260	1700	3300
	Fine	320 (170 ^a)	260 (230 ^a)	2500	6600
Fraction 4	Coarse	320 (240 ^a)	260	1700	3300
	Fine	320 (170 ^a)	260 (230 ^a)	2500	6600
Benzene		0.05	0.5	5	5
Toluene		0.1	0.8	0.8	0.8
Ethylbenzene		0.1	1.2	20	20
Xylene		0.1	1	17	20
Total Petroleum Hydrocarbons		-	500	2500	2500
Lead		70	140	260	400
Polychlorinated biphenyl		0.5	5	50	50

Notes: All values are in parts per million (ppm).

a = Where applicable, for protection of potable groundwater.

b = Assumes contamination near residence

Data from CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil*, (2001) Revised January 2008 and the Government of Nunavut *Environmental Guideline for Site remediation*, (2009).