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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 1BR-KEI722

January 17, 2017

Charlotte Lamontagne, A/Director
Lands & Contaminated Site (NRO)
On behalf of David Rochette,
Regional Director General
Department of Indigenous & Northern Affairs Canada
P. O. Box 2200, Iqaluit, NU X0A 0H)

Email: charlotte.lamontagne@aandc-aadnc.gc.ca

RE: NWB Water Licence No. 1BR-KEI722

Dear Ms. Lamontagne:

Please find attached Licence No. **1BR-KEI722** issued to Indigenous and Northern Affairs Canada (INAC) 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 Land Claims Agreement or NLCA)*. The terms and conditions of the attached Licence related to Water use and Waste deposit 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 deposit must cease, or the Licensee may be in contravention of the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. 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's interest, to hold a public hearing. The Licensee should submit any application 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 from interested persons on issues identified. This information is attached for your consideration.¹

Sincerely,

Thomas Kabloona
Nunavut Water Board
Chair

TK/sj/ip

Enclosure: Licence No. **1BR-KEI1722**
Comments – INAC – Water Resources Division

Cc: Kitikmeot – Distribution List

¹ Indigenous and Northern Affairs Canada (INAC) – Water Resources Division, August 29, 2016.

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A. INTRODUCTION

The CAM-E (Keith Bay), former intermediate Distant Early Warning (DEW) Line facility is located approximately 75 kilometres east of Kugaaruk, in the Kitikmeot Region of Nunavut. The facility, which was constructed in 1957 by the Department of National Defence (DND), operated until 1963 after which the responsibility for the site and facility was transferred to Indigenous and Northern Affairs Canada (INAC). Between 2011 – 2014 INAC retained consultants to conduct a number of investigation(s) and assessments of the site following which a Remedial Action Plan, Archeological Assessment Report and an Environmental Impact Assessment Report were generated.

Based on the Canadian Council of Ministers of the Environment (CCME), National Classification System for Contaminated Sites (NCSCS), the CAM-E (Keith Bay) site was identified as a Class I or high priority site requiring clean-up action. This is due to the proximity of the site to Kugaaruk and the potential risk posed to residents by the physical and chemical hazards associated with the site. To address the risk posed by the site, INAC applied to the Nunavut Water Board (Board or NWB) for a five (5) year, Type “B” licence to use Water and deposit Waste in support of remediation activities proposed for the site.

B. APPLICATION SCOPE

The scope of activities and undertakings proposed in the application and supporting information (Application) for the remediation project (the Project) includes the following:

- Mobilization/Demobilization of equipment, materials/wastes and personnel;
- Enhancement of access routes and site routes;
- Camp set-up and operation;
- Hazardous material removal and off-site disposal;
- Construction and operation of on-site non-hazardous waste landfill;
- Construction and operation of on-site Tier II landfill;
- Building and structure demolition, removal and disposal in the on-site landfill;
- Non-hazardous materials / Debris consolidation and off-site disposal;
- Excavation and treatment / off-site disposal of contaminated soils;
- Quarrying of gravel and overburden materials;
- Landfarm construction / operation/decommissioning;
- Site regrading; and
- Construction / decommissioning of sewage lagoon.

C. PROCEDURAL HISTORY

The Nunavut Water Board (NWB) received the above-mentioned Application, which consisted of the following documents, on July 19, 2016:

- Cover Letter – Letter of Application for Water Use Licence;
- Section 1 – General Water Use Licence Application Form (Completed);
- Section 2 – Exploration / Remote Camp Supplementary Questionnaire;
- Appendix A1 – Executive Summary – English;
- Appendix A2 – Executive Summary – Nunavut Inuktitut;
- Appendix B – CAM -E (Keith Bay) Phase III Environmental Site Assessment Report;
- Appendix C – CAM – E (Keith Bay) Remedial Action Plan (RAP);

- Appendix D – Current Project Schedule;
 - Appendix E – Fuel and Hazardous Material Spill Contingency Plan;
 - Appendix F – Site Maps– Site Location Map; Map of Current Site Features and NTS Map Sheet;
 - Appendix G – CAM -E (Keith Bay) Environmental (Impact) Assessment (Screening) Report;
 - Appendix H – Nunavut Planning Commission (NPC) Determination (NPC Letter – Conformity Check not required); and
 - Appendix I – Nunavut Impact Review Board (NIRB) Screening Decision Report.
- On July 29, 2016, the NWB acknowledged receipt and distributed the Application for a thirty (30) public review period with the deadline for submission set for August 29, 2016. On or before the comment deadline period elapsed, a submission was received from Indigenous and Northern Affairs Canada – Water Resources Division (INAC – WRD). INAC – WRD in its submission recommended measure(s) to improve the Spill Contingency Plan submitted in support of the Application.

D. GENERAL CONSIDERATIONS

The following sections provide general overviews of the rationale for some of the main terms and conditions included in the Licence.

Term of the Licence

In accordance with s. 45 of the *Act*, the NWB may issue a licence for a term not exceeding twenty-five (25) years. The Applicant, INAC, requested a five (5) year term for the licence, which the Board considers to be consistent with that of licences issued for similar undertakings. The Board has therefore granted the five (5) year-term requested by the Applicant.

Annual Report

Similar to the terms and conditions generally included in all licences issued by the Board, the NWB has included under Part B, Item 1 of this Licence, requirements for the Licensee to submit to the Board for review prior to the 31st of March, annually, a report detailing Water use and Waste deposit activities for the undertaking for the preceding year. The Board provides public access to the information submitted in licensees' annual reports through its ftp site as well as upon request from interested parties.

The NWB has included on its website a standardized form for annual reporting that licensees can use to submit reporting information, supplemented by other relevant details. A copy of the NWB's generic Annual Report Form can be obtained from the NWB upon request or electronically from the NWB's FTP site using the following link:

<ftp://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/>.

Water Use

The Applicant requested the use of approximately fourteen (14) cubic metres of Water annually in support of domestic purposes and construction and reclamation activities associated with the Project, which the Board considered reasonable and consistent with the type of the undertaking involved and has, therefore, granted under Part C, Item 1 of the Licence. The proposed water source, determined as being adequate to support the Project's needs, is a freshwater lake located at the northeast end of the main station. Preliminary samples taken from the proposed source

indicate that coliform levels exceeded Health Canada Guidelines; however, it is anticipated that with adequate treatment the Water will be suitable for potable uses. Upon initial arrival on site and prior to setting up its water treatment facility, the proponent indicated that it will use bottled water temporarily. Once the treatment facility is established, raw water will be transported from the lake to the Project site using a pipeline or truck.

E. Deposit of Waste

In the Application, the Applicant identified several waste types that are expected to be generated by the Project. Some of the wastes generated will be disposed of at approved facilities in southern Canada while others will be treated at on-site facilities. The following sections provide an overview of the way in which some of the major waste types associated with or generated by the project will be managed based on information contained in the Application.

Sewage

Sewage generated by personnel will be disposed of at a sewage lagoon to be constructed, and the Effluent from the facility meeting discharge criteria in the Licence will be released into the receiving environment, onto land. Conditions related to effluent criteria for the sewage lagoon are included under Part D of the Licence.

Contaminated Soil

Approximately 100 cubic metres of DCC Tier I soil and 1200 cubic metres of Type A hydrocarbon impacted soils exist at the Project site. The proposed remediation approach for this soil is disposal at an engineered, on-site Non-Hazardous Waste Landfill (NHWL) to be constructed. In terms of Tier II soil, approximately 36,000 cubic metres has been identified at the Project's site for which the proposed remediation approach is to excavate it and dispose of in an on-site, Tier II landfill. As for Type B hydrocarbon impacted soils, 1,900 cubic metres in quantity, this soil has been identified for on-site treatment at a Landfarm Facility. Conditions related to the management of contaminated soil identified at the Project site are included under Part D in the Licence.

Hazardous Waste

Twenty-five (25) cubic metres of asbestos has been identified at the Project site for which the proposed remediation option is to double bag and dispose of at the Non-Hazardous Wastes Landfill. Other types of Hazardous Waste identified at the Project site include PCBs and lead amended paint materials (200 cubic metres in quantity) and Batteries (16 units in total). The proposed remediation approach is to dispose of these materials at appropriate off-site facilities. Conditions related to the management of Hazardous Waste are included under Part D of the Licence.

Non-Hazardous Waste

Approximately 1,700 cubic metres of Non-Hazardous Waste material that includes barrels, compressed gas cylinders, building infrastructure, and other non-hazardous waste are to be disposed of at an on-site Non-hazardous Waste Landfill to be constructed on-site. Conditions pertaining to the management of the Non-Hazardous Waste Landfill are included under Part D in the Licence.

Buried Debris Areas

Eight (8) areas containing a total of 3,200 cubic metres of buried material requiring excavation

have been identified on-site. The proposed remediation approach for this material is to provide additional cover to the Class C sites (six in total) and to landfill the materials from the Class A/B sites (two in total).

F. SPILL CONTINGENCY PLANNING

The Applicant submitted a spill contingency Plan, which the Board has approved under Part I, Item 1 of the Licence. In addition, the Board has included conditions requiring the Licensee to submit for the Board's review, within thirty (30) days of issuance of the Licence, an addendum to the approved Plan that addresses minor deficiencies identified under Part I, Item 2 of the Licence

G. ABANDONMENT AND RESTORATION

The Applicant submitted a Remedial Action Plan (RAP) for the Project that the Board has approved under Part J, Item 1 of the Licence. If the Licensee's chosen approach to remediation are not reflective of the options presented in the plan, the Licensee is required to submit to the Board for review and acceptance any changes or modifications to the RAP at least thirty (30) days prior to initiating such changes as specified under Part J, Item 2 of the Licence.

H. OPERATIONS AND MAINTENANCE MANUAL

In accordance with Part F, the Licensee is required to submit to the Board for review and approval, separate or stand-alone Operations and Maintenance Plans for the following facilities, at least forty-five (45) days prior to commissioning:

- Sewage Lagoon Facility;
- Non-Hazardous Waste Landfill;
- Landfarm Facility; and
- Tier II Landfill.

Each of the Plans must address, in addition to the required operations and maintenance issues, monitoring requirement, including Quality Assurance and Quality Control (QA/QC) procedures for the relevant facilities. Conditions related to the above-requirements are included under Part F, Item 1 in the Licence

I. DRAWINGS PLANS AND DRAWINGS

The Licensee is required to submit to the Board for review and acceptance, at least thirty (30) days prior to commencing construction activities, for-construction drawings and design plans for the relevant facilities intended to contain, withhold, or divert water and/or waste in accordance with Part H of the Licence. Further, the Licensee is required to provide to the Board for review, within ninety (90) days of completion of construction activities, as-built plans and drawings that are appropriately stamped and signed by an Engineer.

J. MONITORING

The Licensee is required to undertake all relevant monitoring measures required under the licence. Further the Licensee is required to submit a long-term monitoring plan that also addresses QA/QC requirements at least sixty (60) days prior to undertaking post-closure, long-term monitoring under Part K, Item 9 of this Licence.

DECISION

LICENCE NUMBER: 1BR-KEI1722

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated July 19, 2016 for a new Water Licence made by:

INDIGENOUS AND NORTHERN AFFAIRS CANADA (INAC)

to allow for the use of Water and deposit of Waste during temporary camp operations and activities related to the CAM-E (Keith Bay) Site Remediation Project, located within the Kitikmeot Region, Nunavut, at the following general geographical coordinates:

Latitude: 68° 18' 13.4"N	Longitude: 88° 05' 10.7" W
Latitude: 68° 18' 13.4" N	Longitude: 88° 10' 51.39" W
Latitude: 68° 14' 10.8" N	Longitude: 88° 51' 51.39" W
Latitude: 68° 14' 10.8" N	Longitude: 88° 05' 10.7" W – Project Extents

Camp coordinates – to be determined and provided prior to establishment

DECISION

After having been satisfied that the Application was for a location that falls outside of an area with an approved Land Use Plan¹ as determined by the NPC and exempt from review in accordance with paragraph 92(1) (a) of the Nunavut Planning and Project Assessment Act (NuPPAA) by the NIRB², 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 an intervening party, 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 No. 1BR-KEI1722 be issued subject to the terms and conditions contained therein (Motion #: 2016-B1-023).

Signed this 17th day of January 2017 at Gjoa Haven, NU.

Thomas Kabloona
Nunavut Water Board, Chair

TK/sj/ip

¹ Nunavut Planning Commission (NPC) Determination, January 27, 2016.

² Nunavut Impact Review Board (NIRB) Screening Decision Report, May 13, 2016.



NUNAVUT WATER BOARD WATER LICENCE

Licence No. 1BR-KEI1722

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

INDIGENOUS AND NORTHERN AFFAIRS CANADA (INAC)

(Licensee)

P.O. BOX 2200, IQALUIT, NUNAVUT X0A 0H0

(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-KEI1722 / TYPE "B"**

Water Management Area: **GULF OF BOOTHIA WATERSHED (#34)**

Location: **CAM-E (KEITH BAY) SITE REMEDIATION PROJECT,
KITIKMOET REGION, NUNAVUT**

Classification: **INDUSTRIAL UNDERTAKING**

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

Quantity of Water use not
to Exceed: **FOURTEEN (14) CUBIC METRES PER DAY**

Date of Licence Issuance: **JANUARY 17, 2017**

Expiry of Licence: **JANUARY 16, 2022**

This Licence renewal, 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 deposit of Waste for an Industrial Undertaking classified as per Schedule 1 of the *Regulations* at the CAM-E (Keith Bay) Site Remediation Project, located approximately 75 kilometres east of the Hamlet of Kugaaruk 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

In this Licence: **1BR-KEI1722**

“**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, 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*;

“Final Discharge Point” means the point at which the Licensee no longer exerts care and/or control over the quality and/or quantity of the effluent from a treatment process;

“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 engineered hydrocarbon impacted soil treatment facility designed and constructed to treat approximately 1,900 cubic metres of Type B soil identified in Areas 1 and 2 as described in the complete Application received by the Board on July 19, 2016;

“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;

“Hazardous Waste” means Waste classified as “hazardous” by Nunavut Territorial or Federal Legislation, or as “dangerous goods” under the *Transportation of Dangerous Goods Act* at the time of clean-up;

“Non-Hazardous Waste Landfill” means the facility designed and constructed to treat non-hazardous waste generated by the Project as described in the Application received July 19, 2016.

“Monitoring Program” means a program established to collect data on surface Water and groundwater quality to assess impacts to the environment of an appurtenant undertaking.

“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 made pursuant to that agreement;

“Regulations” means the *Nunavut Waters Regulations* sor 2013/669 18th April, 2013;

“Sewage” means all toilet Wastes and Greywater;

“Sewage Disposal Facility” comprises the lagoon system designed and constructed to treat sewage generated by the Project’s personnel as described in the Water Licence Application received July 19, 2016;

“Solid Waste” means non-hazardous Waste;

“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;

“Tier I Soil” means soil containing contaminant concentrations within the types and ranges defined as DCC Tier I in Appendix E of the NTI Agreement, including its preamble and schedules, and any amendments to that agreement made pursuant to it (see Table No.1);

“Tier II Soil” means soil containing contaminant concentrations within the types and ranges defined as DCC Tier II in Appendix E of the NTI Agreement including its preamble and schedules, and any amendments to that agreement made pursuant to it (see Table No.1);

“Tier II Soil Disposal Facility” comprises the engineered facility designed and constructed to treat Tier II contaminated soils as described in the Application on submitted July 19, 2016;

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

“Type A Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of lubricating oil and grease in the F3 and F4 fraction;

“Type B Soil” means soil contaminated with 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 in the F1 and F2 fraction;

“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” refers to the intake structure and equipment designed to withdraw and treat potable Water for domestic uses;

“Waste Disposal Facilities” means all facilities designated for the disposal and treatment of Waste, including the Sewage Disposal Facility, Landfarm Facility, Tier II Soil Disposal Facility, and the Non-Hazardous Waste Landfill described in the complete Application received July 19, 2016.

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 laws.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than the 31st of March of the year following the calendar year being reported, containing the following information:
 - a. The monthly and annual quantities (in cubic metres) of material deposited in the on-site Waste Disposal Facilities;
 - b. Characterization of soils treated at the Landfarm Facility;
 - c. The monthly and annual quantities (in cubic metres) of any effluent discharge from the Landfarm Facility, Sewage Treatment Facility, Non-Hazardous Waste Landfill, and Tier II Soil Disposal Facility;
 - d. The monthly and annual quantities (in cubic metres) of contaminated water in barrels, site contact water, and demolition rinse water discharged;
 - e. A summary of all waste deposited at the all Waste Disposal Facilities;
 - f. A summary of all waste backhauled to any community in Nunavut as required under Part D, Item 4;
 - g. The GPS co-ordinates (in degrees, minutes, and seconds of latitude and

- longitude) of all locations where wastes associated with the Project are deposited;
- h. The GPS co-ordinates (in degrees, minutes, and seconds of latitude and longitude) of all locations of all sources of Water used for the Project and whether the source(s) are on Inuit-owned land or Crown Lands;
 - i. The monthly and annual quantities (in cubic metres) of freshwater used by the Project.
 - j. A summary of any construction work, modification and major maintenance work (including as-built drawings) carried out on the Waste Disposal Facilities approved under the Licence;
 - k. Tabular summaries for all data and information generated under the “Monitoring Program”;
 - l. An analysis of data collected during the “Monitoring Program” and a brief description of any future studies planned by the Licensee;
 - m. A summary of remediation work undertaken during the year and an outline of work anticipated for the following year;
 - n. A summary of any studies requested by the Board that relate to Waste disposal, and or reclamation, and a brief description of any future studies planned;
 - o. A list of unauthorized discharges and summary of follow-up actions taken;
 - p. If applicable, a description of any trenches and sumps excavated, including but not limited to the following: GPS coordinates, dimensions, depth below active layer, and secondary containment features;
 - q. A public consultation/participation report describing any consultation with local organizations and the residents of the nearby communities;
 - r. A brief summary of work done to address concerns or deficiencies listed in inspection reports and/or compliance reports prepared by an Inspector;
 - s. An executive summary in English and in Inuktitut of all plans, reports, or studies conducted under this Licence; and
 - t. Any other details on the use of Water or Waste disposal requested by the Board by the 1st of 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 changes.
 3. The Licensee shall, where applicable, install flow meters or other such devices, or implement suitable methods required for the measuring of Water volumes, as required under Part K.
 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. 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.
7. The Licensee shall, within thirty (30) days of arrival on site, post signs in the appropriate areas identifying the locations of the Water Supply Facility, Waste Disposal Facilities, and the “Monitoring Program Stations”. All postings shall be in the Official Languages of Nunavut
8. 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.
9. The Licensee shall ensure that 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
 - (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 paper copy and 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.
11. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the NWB is received and acknowledged by the Manager of Licensing.
12. This Licence is assignable as provided for in section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee is authorized to withdraw up to a maximum of fourteen (14) cubic metres of water per day, at Monitoring Station KEI-1, five (5) cubic metres per day for domestic camp use and nine (9) cubic metres per day for construction and remediation activities as described in the Application. The water authorized for use under the Licence shall be obtained from the freshwater lake proximal to the Project site as identified in the Application.
2. Streams or water bodies not identified under Part C, Item 1 cannot be used as a Water source unless authorized and approved by the Board in writing.
3. 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.
4. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless authorized.
5. The Licensee shall not cause erosion to the banks of any body of Water and shall provide necessary controls to prevent such erosion.
6. The Licensee shall implement sediment and erosion control measures to prevent the deposition of dust and/or sediment into local Water bodies, arising from activities or on-site vehicular travel.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. 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.
2. The Licensee is authorized to dispose of all acceptable food Waste, paper Waste and untreated wood products in an incinerator.
3. The Licensee shall provide to the Board, for review, documented authorization from any community in Nunavut receiving backhauled wastes from the CAM-E (Keith Bay) Site Remediation Project for storage and/or disposal.
4. The Licensee shall backhaul and dispose of all hazardous Wastes and Waste oil generated by the Project, to an approved Waste disposal facility.
5. The Licensee shall maintain records of all Waste backhauled and records of confirmation of proper disposal of backhauled Waste and include this information within the Annual Report, under Part B, Item 1. These records shall be made available to an Inspector upon request. The Licensee shall not transport hazardous Wastes prior

to registering with the Government of Nunavut as a Waste generator and utilizing the prescribed manifests.

6. The Licensee shall provide notice to an Inspector at least ten (10) days prior to initiating any decant or discharge from the Waste Disposal Facilities.
7. The Licensee shall dispose of all sewage generated by the Project at the Sewage Disposal Facility Authorized under this Licence.
8. All Effluent discharge from the Final Discharge Point of the Sewage Disposal Facility, at Monitoring Program Station KEI-2, shall not exceed the following Effluent quality limits:

Parameter	Maximum Allowable Concentration
BOD ₅	120 mg/L
Total Suspended Solids	180 mg/L
Fecal Coliforms	10E5 CFU/dL
pH	6.0 to 9.0
Oil and Grease	no visible sheen

9. The Licensee is authorized to treat Type B Petroleum Hydrocarbon Contaminated Soil at an on-site Landfarm Facility or as otherwise approved by the Board in writing.
10. The Licensee shall dispose of all soils containing meeting Tier II criteria, as indicated in Table No.1, by depositing such soil into the Tier II Soil Disposal Facility or as otherwise approved by the Board in writing.
11. All discharge of contaminated water stored in barrels, demolition rinse water, and site contact Water at Monitoring Stations KEI-3a and KEI-3b, and Effluent from the Landfarm Facility at Monitoring Station KEI-4a, Non-Hazardous Waste Landfill Facility at Monitoring Station KEI-5a and the Tier II Soil Disposal Facility at Monitoring Station KEI-6a shall not exceed the following Effluent quality limits prior to being released into the receiving environment:

Parameter	Maximum Allowable Concentration
pH	6.0 to 9.0 (pH units)
TSS	50
Oil and Grease	15 mg/L and no visible sheen
Total Lead	0.001 mg/L
Benzene	0.370 mg/L
Toluene	0.002 mg/L
Ethylbenzene	0.090 mg/L
Xylenes	0.18 mg/L

12. If the Effluent referred to in Part D, Items 8 and 11 exceeds the respective discharge limits, it shall be considered Hazardous Waste requiring disposal off-site at an approved facility or as otherwise approved by the Board in writing.
13. The discharge location for all treated Effluents described in Part D, Items 8 and 11, shall be at a minimum of thirty-one (31) metres from the ordinary High Water Mark of any Water body and where direct flow into a Water body is not possible and no additional impacts are created.
14. All pump out water from quarries and borrow pits shall be pumped to areas as described in Part D, Item 13 prior to release to the receiving environment or as otherwise approved by the Board in writing.
15. The Licensee shall provide for the proper storage, treatment, and disposal at an approved facility for any Hazardous Waste materials, including waste oil generated through the demolition and remediation activities associated with the Project, unless otherwise approved by the Board in writing.
16. The Licensee shall utilize offsite and/or existing on-site Waste Disposal Facilities to properly dispose of suitable Waste generated in accordance with the Remedial Action Plan developed for the Project.
17. The Licensee shall not mix or blend soils that exceed the maximum levels of Tier II criteria for the purpose of attaining specific limits for criteria in Table No.1.
18. The Licensee shall dispose of any material coated with Polychlorinated Biphenyl (PCB) amended paints, hazardous materials and soils containing contaminants in excess of *Canadian Environmental Protection Act* (CEPA) Guidelines, with the exception of asbestos, off site at an approved treatment facility, in accordance with the application submitted to the Board by the Applicant on December 4, 2008.

PART E: CONDITIONS APPLYING TO THE UNDERTAKING

1. The Licensee shall ensure that all borrow materials used in construction are obtained from sources clean and free of contaminants, including metal leaching and acid generating potential.
2. Should any constructed facilities fail, the Licensee shall repair such facilities immediately to the appropriate standards as recommended by an Engineer.
3. The Licensee shall implement proper handling, storage, and transportation procedures for hazardous materials during clean-up activities.

4. The Licensee shall minimize disturbance to terrain, permafrost and drainage during extraction of granular material, development and closure of landfills, movement of contractor's equipment, personnel around the site and removal of site debris.
5. The Licensee shall design and construct all stream crossings to minimize erosion and/or deposition of Waste into Water.
6. The Licensee shall ensure that existing creek channels are maintained at their normal width and depth to the extent possible, during and after site remediation.
7. Granular materials and rock rip-rap used for any temporary stream crossings, approaches or as may be required for bank stabilization must be obtained from a source approved by an Inspector, and be clean and free of contaminants. Such material must not be removed or gathered from below the ordinary High Water Mark of any Water body.
8. All sites affected by remediation activities shall be stabilized, contoured as necessary, and suitable erosion control measures implemented to minimize sediment deposition into watercourses located on or adjacent to the site.
9. The Licensee shall dispose of all scrap metal, discarded machinery and parts, and other bulky material in a manner that conforms to the Plans submitted to the Board.

PART F: CONDITIONS FOR CAMP, ACCESS INFRASTRUCTURE AND OPERATION

1. The Licensee shall submit to the Board for approval in writing, at least forty-five (45) days prior to commission, stand-alone operations and Maintenance Plans for the following facilities that includes among other relevant information operational procedures as well monitoring and QA/QC requirements:
 - a. Sewage lagoon Facility;
 - b. Non-Hazardous Waste Landfill;
 - c. Landfarm Facility; and
 - d. Tier II Landfill.
2. Licensee shall provide to the Board and an Inspector the camp location GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude), within thirty (30) days of establishing the camp.
3. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.

4. The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
5. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of Water, ice or snow, and shall be removed prior to spring break-up.
6. With respect to access road, pad construction, demolition or other earthworks, the deposition of debris or sediment into any Water body is prohibited. These materials shall be disposed of above the ordinary High Water Mark in such a fashion that they do not enter the Water.

PART G: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill for the purposes of installing monitoring instrumentation, including monitoring wells and thermistors.
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 dispose of all drill Waste, including Water, chips, muds and salts (CaCl₂) in any quantity or concentration, from land-based drilling, 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 H: CONDITIONS APPLYING TO CONSTRUCTION AND MODIFICATIONS

1. Licensee shall, at thirty (30) days prior to commencing construction activities for the facilities approved under this Licence, provide to the Board for review and acceptance for-construction drawings and design specifications.
2. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facility and Waste Disposal Facilities authorize under this Licence 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.
3. Modifications for which all of the conditions referred to in Part G, Item 3 have not been met may only be carried out with approval from the Board in writing.
 4. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Part, within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Board has approved the Plan *Entitled Fuel and Hazardous Material Spill Contingency Plan*, dated March 2016, that was submitted as additional information with the Application.
2. The Licensee shall provide to the Board for review, within thirty (30) days of issuance of this Licence, an addendum to the Plan in Part I, Item 1, to address the following:
 - a. Inclusion of an NT-NU Spill Report form. Page 13 of the plan referenced the NT-NU Spill Report Form; however, a copy of the form was not included in the Plan; and
 - b. Section 4.6, Pg. 9 of the Plan indicates that accumulated diesel fuel will be burned if it is feasible or safe to do so. INAC – Water Resources Division recommends that absorbent pads be used for removing excess fuel and that the pads used for this purpose be properly disposed of.
3. The Licensee shall ensure that any chemicals, petroleum products or Wastes associated with the project do not enter Water. All sumps and fuel caches shall be located a minimum of thirty-one (31) metres above the ordinary High Water Mark of any adjacent water body and inspected on a regular basis. The Licensee is encouraged to use some form of secondary containment on fuel and chemical storage facilities associated with this undertaking.
4. 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 to contain potential spills.
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 I, Item 5, 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 J: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR TEMPORARY CLOSING

- 1. The Board has approved the plan entitled *Final Report: Remedial Action Plan CAM-E (Keith Bay), Nunavut, dated March 18, 2015* that was submitted as additional information with the application.
- 2. The Licensee shall provide to the Board for review and acceptance, details related to any proposed changes associated with remedial options outlined in the Plan approved under Part J, Item 1, at least thirty (30) days prior to initiating the changes.
- 3. The Licensee shall complete all restoration work for the temporary camp facilities and Waste disposal activities not included in the Plan referenced under Part J, Item 1 of this Licence, prior to expiry of this Licence.
- 4. The Licensee shall backfill and restore all sumps to the pre-existing natural contours of the land.
- 5. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work, and restored as practically as possible to a pre-disturbed state.
- 6. The Licensee shall restore and stabilize all areas affected by the undertaking upon completion of the work.

PART K: CONDITIONS APPLYING TO MONITORING PROGRAM

- 1. The Licensee shall establish and maintain at least the following Monitoring Program Stations at locations included in the Table below or as otherwise approved by the Board in writing:

Monitoring Station ID	Description	Status
KEI-1	Raw water supply intake from fresh water lake	Active (Volume)
KEI-2	Final discharge point from the Sewage Disposal Facility (Sewage Lagoon)	Active (Volume & Quality)
KEI-3a	Area 1 – Final discharge point for treated contaminated water stored in barrels, demolition rinse water, and site contact water	Active (Volume & Quality)
KEI-3b	Area 2 –Final discharge point for treated contaminated water stored in barrels, demolition rinse water, and site contact water	Active (Volume & Quality)
KEI-4a	Final discharge point from the Landfarm Facility	Active (Volume & Quality)
KEI-4b	Monitoring well installed up-gradient of the Landfarm Facility	Active (Quality)
KEI-4c	Monitoring wells installed down-gradient of the Landfarm Facility	Active (Quality)
KEI-4d		
KEI-5a	Final discharge point from the Non-Hazardous Waste Landfill (NHWL) Facility	Active (Volume & Quality)
KEI-5b	Monitoring well installed up-gradient of the NHWL Facility	Active (Quality)
KEI-5c	Monitoring wells installed down-gradient of the NHWL Facility	Active (Quality)
KEI-5d		
KEI-6a	Final discharge point from the Tier II landfill Facility	Active (Volume & Quality)
KEI-6b	Monitoring well installed up-gradient of the Tier II Landfill Facility	Active (Quality)
KEI-6d	Monitoring wells installed down-gradient of the Tier II Landfill Facility	Active (Quality)
KEI-6d		

2. The Licensee shall measure and record in cubic metres, the daily quantities of freshwater utilized for all purposes of the is Licence
3. The Licensee shall measure and record in cubic metres, the daily quantities of Effluent discharged from the Waste Disposal Facilities associated with this Licence.

4. The Licensee shall determine 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.
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 the camp operations are deposited.
6. The Licensee shall monitor compliance with respect to Part D, Items 8 and 11, by collecting a representative composite sample from a minimum of 5% of the total volume to be released from the Final Discharge Point of the relevant Waste Disposal Facilities at Monitoring Program Stations KEI-2, KEI-3a, KEI-3b, and KEI-4a, KEI-5a and KEI-6a.
7. The Licensee shall sample prior to discharge at Monitoring Program Stations KEI-3a, KEI-3b, and KEI-4a, KEI-5a, and KEI-6a and analyze for the following parameters:

pH	Conductivity
Total Suspended Solids	Ammonia Nitrogen
Nitrate – Nitrite	Oil and Grease (visual)
Total Phenols	Sulphate
Total Hardness	Total Alkalinity
Sodium	Potassium
Magnesium	Calcium
Chloride	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	Total Phosphorous
Total Aluminum	Total Manganese
Total Cobalt	Total Arsenic
Total Petroleum Hydrocarbons (TPH)	BOD ₅
Polycyclic Aromatic Hydrocarbons (PAH)	Total Coliform
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	
8. 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.
9. The Licensee is required to submit to the Board for approval in writing, a Long-term Monitoring Plan that also addresses QA/QC requirements, at least sixty (60) days prior to initiating any post-closure long-term monitoring program for the Project site.
10. Additional monitoring requirements may be requested by the Inspector.

11. The Licensee shall include in the Annual Report required under Part B, Item 1, all data, monitoring results and information required by this Part.

Table No.1

**(From INAC Abandoned Military Site Remediation Protocol)
DEW Line Clean-up Criteria (DCC) ^a**

Substance	DCC Tier I ^{b, c}	DCC Tier II ^{b, d}
Arsenic		30
Cadmium		5.0
Chromium		250
Cobalt		50
Copper		100
Lead	200	500
Mercury		2.0
Nickel		100
Zinc		500
PCB's	1.0	5.0

- a. These criteria were adopted specifically for the cleanup of Arctic DEW Line Sites from the 1991 versions of the Quebec Soil Contamination Indicators and the Canadian Council of Ministers of the Environment Interim Canadian Environmental Criteria for Contaminated Sites.
- b. Soil criteria are given in parts per million, ppm.
- c. Soils containing lead and/or PCBs at concentrations in excess of DCC I, but less than DCC II, may be landfilled,
- d. Soils containing one or more substrates in excess of DCC II must be containerized - i.e. removed in a manner which