Effective June 16, 2006

P.O. Box 119
Gjoa Haven, NU XOB 1JO
Tel: (867) 360-6338
Fax: (867) 360-6369

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NUNAVUT IMALIRIYIN KATIMAYINGI
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

WATER LICENCE
APPLICATION FORM

Application for: (check one)

☒ **New** ☐ **Renewal** ☐ **Amendment** ☐ **Assignment** ☐ **Cancellation**

LICENCE NO:
(for NWB use only)

1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE

North Warning System Office
c/o National Defence Headquarters
101 Colonel By Drive
Ottawa, Ontario K1A 0K2
Attn: Major A. Cameron - R&C 3-4

Phone: (613) 998-8602
Fax: (613) 998-9261
e-mail: Cameron.AD@forces.gc.ca

2. ADDRESS OF CORPORATE OFFICE IN CANADA (if applicable)

The Same

Phone: _____
Fax: _____
e-mail: _____

3. LOCATION OF UNDERTAKING (describe and attach a topographical map, indicating the main components of the Undertaking)

FOX-3 - Dewar Lakes - NWB6 FOD0409 - Type "B"- Existing Licence

Latitude: (68°40'48" N) Longitude: (71°14'48" W)
NTS Map Sheet No. N/A Scale: N/A

4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)

DND/NWSO Long Range Radar Station

5. TYPE OF PRIMARY UNDERTAKING (A supplementary questionnaire **must** be submitted with the application for undertakings listed in **"bold"**)

☐ **Industrial**
☐ **Mining and Milling**(includes exploration/drilling)
☒ **Municipal** (includes camps/lodges)
☐ Power
☐ Agricultural
☐ **Conservation**
☐ Recreational
☐ **Miscellaneous** (describe below):

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings

6. WATER USE

☒ To obtain water
☐ To cross a watercourse
☐ To modify the bed or bank of a watercourse
☐ Flood control
☐ To divert a watercourse
☐ To alter the flow of , or store, water

☐ Other (describe):

7. QUANTITY OF WATER INVOLVED (cubic metres per day including both quantity to be used and quality to be returned to source)

Water use ☒ $100m^3$/day or less
☐ Greater than $100m^3$/day; if greater, indicate quantities to be used for each purpose (camp, drilling, etc.)

Approximately 16,000 liters per year.

Water returned to source
_____ m^3/day

8. WASTE (for each type of waste describe: composition, quantity (cubic metres per day), methods of treatment and disposal, etc.)

☒ Sewage – Incinolets and occasional use (summer months only) of the existing sewage outfall facility
☒ Waste oil – Retrograde to licensed disposal facility
☒ Solid Waste – Burn in burn bin and landfill
☒ Greywater – Controlled discharge at designated location(s) on site
☒ Hazardous – Retrograde to licensed disposal facility
☐ Sludges
☒ Bulky Items/Scrap Metal – Stockpile and retrograde
☐ Other describe):

9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name, mailing address and location; attach if necessary)

Not applicable - DND Property

Land Use Permit

DIAND	☐ Yes	☐ No	If no, date expected _____
Regional Inuit Association	☐ Yes	☐ No	If no, date expected _____
Commissioner	☐ Yes	☐ No	If no, date expected _____

10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES (direct, indirect, cumulative impacts, etc.)

NIRB Screening ☐ Yes ☐ No If no, date expected
Reference: Monenco-Eyretechnics Group October 1987 - Initial Environmental Evaluation of the North Warning System Project - Eleven Long Range Radar Sites and the Short Range Radar Development Site - Volume One.

11. INUIT WATER RIGHTS

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement?

If yes, has the applicant entered into an agreement with the Designated Inuit organization to pay compensation for any loss or damage that may be caused by the alteration. If no compensation agreement has been made, how will compensation be determined?

The project will NOT substantially affect the quality, quantity, or flow of water through Inuit Owned Lands.

12. CONTRACTORS AND SUB-CONTRACTORS (name, address and functions)

Nasittuq Corporation (Facility Manager)
Suite 100, 170 Laurier Ave. W., Ottawa, ON K1P 5V5

13. STUDIES UNDERTAKEN TO DATE (list and attach copies of studies, reports, research, etc.)
See Box 10 - Above

14. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN

Supplementary Questionnaire (where applicable: see section 5) ☐ Yes ☒ No If no, date expected – **Previously Provided**

Inuktitut and/or Inuinnaqtun/English Summary of Project ☐ Yes ☒ No If no, date expected – **Previously Provided**

Application fee of $30.00 (Payee Receiver General for Canada) ☐ Yes ☒ No If no, date expected – **N/A**

Water Use fee of $30.00 (unless otherwise indicated in Section 9 of the *NWT Waters Regulations;* Payee Receiver General for Canada)
☐ Yes ☒ No If no, date expected – **N/A**

15. PROPOSED TIME SCHEDULE (unless otherwise indicated, the NWB will consider the application for a five (5) year term)

☐ one year or less (or) ☒ Multi Year

Start Date: September 1, 2009 Completion Date: September 1, 2019

A. Cameron	Major		30 July 2009
Name (Print)	**Title (Print)**	**Signature**	**Date**

For Nunavut Water Board office use only

APPLICATION FEE **Amount: $____** **Pay ID No.: ____**

WATER USE DEPOSIT **Amount: $____** **Pay ID No.: ____**

FOX-3

The following highlights some areas of particular interest for this application, which we feel are appropriate for this new license, or which we have noted while administering the current license:

1. Sewage Handling System and Effluent Sampling Point FOD-2

The sewage (blackwater) and greywater are combine in the sewage system. The sewage system comprises a sump, holding tank, and masticating pump within the building train, and a sewage outfall pipe leading to an outfall pipe leading to an outfall area on the land. The system has been in place since 1957. In 1995, the site changed from manned to unmanned status. Since then the site is visited by FOX-M Hall Beach staff on scheduled quarterly preventive/corrective maintenance trips and on an "as needed basis". Little sewage is generated during these visits. During the months of May to September, the site may be returned to manned status (ramped up) to support project activity. The amount of sewage depends on the number of people on-site.

Sewage is not discharged daily. When the sewage tanks nears or reaches capacity, the sewage is discharge out the sewage outfall pipe to the designed outfall area. Up to 10 m^3 is discharged at one time from two to five times a year, depending on the number of people that have visited the site. When the site is ramped up, sewage may be discharge once a week.

The site has one incinerating toilet which reduces sewage to ash; the ash is disposed on in the approved landfill. The incinerating toilet's cycling time (interval between usage) does not make it practical to support anything but a short site visit by a few staff. It is primarily in place in case the site fails in the winter and freezes. Under these conditions, a small crew would be dispatched to the site to restore power and thaw the site. The incinerating toilet would be used until the sewage system was thawed and returned to a serviceable state. It cannot meet the demands of a ramped up sited.

We request the sewage effluent sampling be done during the month when the site is ramped up when there is active discharge, or a minimum once annually during those years when there is no ramp up. The sampling point is FOD-2, the end of the sewage outfall pipe, as shown in the site plan – Annex "B" to the Exploration/Remote Camp Supplementary Questionnaire previously provided.

Sewage effluent samples will be analyzed for:

a) Biochemical Oxygen Demand ("BOD"), total suspended solids ("TSS"), fecal coliforms, pH, phenols and oil and grease;
b) Total arsenic, total copper, total iron, total mercury, total zinc, sulphate, total cadmium, total chromium, total lead, and total nickel; and

c) Nitrate-nitrite, sodium, magnesium, conductivity, ammonia nitrogen, potassium, and calcium.

2. Raw Water Intake Monitoring Point FOD-1

Water use varies depending on the number of people on site from 0 m^3 /day (unmanned status) to a maximum of 2.9 m^3 /day (height of seasonal activity), ramped up site at full capacity). The seasonal activity from May to September varies from year-to-year; one season may have no projects, while the next season's projects may have the site at full capacity.

Please note that water is not drawn daily from the water lake. The site has four 10 m^3 (10,000 litres) raw water tanks. When the water in the tanks reaches a low level, an alarm alerts staff to fill the tanks with water from the lake.

In order to fill up the four water tanks in one day and in order to meet the peak seasonal demand of a ramped up site, potentially at full capacity, we request a license that allows the drawing of 40 m^3 /day (40,000 litres) up to three times in a month. This totals 120 m^3 (120,000 litres) in a 31 day month. This is less than half of the water usage currently allowed (310 m^3 in a 31 day month, draw at 10 m^3 /day) by the existing license NWB6FOD0409 – Type "B" ("Existing License). Please note that the filling of the water tanks up to three times in a month is only a potential seasonal occurrence if the site is at full capacity. When the site is unmanned, and only quarterly preventive/corrective maintenance visits occur, the water usage is greatly reduced and the raw water tanks may be filled up to three times during the entire period from October and April.

We request a license that requires the recording of the daily quantity of raw water drawn from the water lake. We wish to confirm that the monitoring point for the water intake, FOD-1, is the flow meter installed inside the building train in the fill line to the raw water tanks and is not at the intake at the water lake itself. The flow meter was installed at this location for ease of reading and maintenance. We trust this is acceptable.

3. Emergency Response and Spill Reporting

We request that the Nunavut Water Board issue the new licence requiring spill reports based on the minimum reportable quantities of Schedule "B" of the Spill Contingency Planning and Spill Reporting Regulations as shown on the web site of the Nunavut Department of the Environment. The Existing License calls for the reporting of all spills. Current policy is to report all spills internally, regardless of volume. This information is used to determine if there are any deficiencies in the Petroleum, Oil & Lubricants (POL) system, e.g. pressure relief values required or not working, flex hoses which may be weeping indicating they require replacement, etc. As a result we have spill reports for as little as 0.1 litres. Upon further review of the Spill

Contingency Planning and Spill Reporting Regulations, it is noted that spills are to be reported as per Schedule "B". As an example, the reportable limit for flammable liquids is 100 litres. By following the minimum reportable quantities of Schedule "B", we will be in compliance to the standards set by the Nunavut Department of the Environment.