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February 6, 2008

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

RE: Water License Inspection of Brevoort Island L.R.R. Station – September 18th, 2007

The Water Resources Officer (WRO) appreciates the assistance and cooperation provided by Mr. K. Kalen, Environmental Officer, North Warning System, and Mr. Scott Charland, Senior Mgr Nasittuq Corporation, who accompanied the Inspector during the inspection of the site.

The following report is based on observations made at the time of the inspections at the Brevoort Island Long Range Radar Station. A review of the terms and conditions of the water license was conducted following the site inspection and sampling with both Mr. Kalen and Mr. Charland.

Immediately following the inspection a Water Use Inspection Form outlining the concerns of the inspector was signed off by the parties with the Inspector.

Part A: Scope and Conditions

No issues were found with respect to the location of the camp as it relates to the information contained within the current license. The current license was issued February 17th, 2004 to the Department of National Defence, Government of Canada.

One amendment was also noted. The amendment was issued on March 21st, 2005 and affected Parts A, D and H of the current License.

The license, as issued, remained, a Type “B” license classed as Municipal undertakings.

Part B: General Conditions

The issues of water use fees and security were not included within the context of this inspection.

A review of the Nunavut Water Board FTP – Public Registry was conducted during the writing of this report. An annual report for the 2006 annum, completed by Nasittuq Corp was located. This report is a requirement under the terms and conditions of the Water License. The annual report must include but should not be limited to those items listed in Section 1 (i) through (vi) of this Part.

Upon review of the report it was noted that the report was deficient in the following;

- No monthly or annual quantities of water use or waste disposal were provided.
- No summary of data collected under the monitoring program was provided

The proponent is reminded that an annual report is required to be filed by March 31st 2008 for the year ending December 31st 2007. The annual report **must** include but not be limited to those items listed in Section 1 (i) through (vi) inclusive, of this part as well as any information required by the Inspector.



During the period of 2007 a total of four inspection of the site were completed in relation to a release of fuel from the site. During the September 2007 Water License Inspection the Licensee was directed by the Inspector to include the following information in the 2007 Annual report;

- Expected date in 2008 for resumption of clean up and operations activities on site
- General work plan as it relates to the continued remediation efforts on site
- Submission of a sampling and monitoring program to monitor possible fuel migration
- Submission of a sampling and monitoring program to address current water license requirements
- Submission of a plan to address the current non-compliance with respect to waste and sewage disposal at the facility

Failure to file a complete report as outlined in the license is a violation of the Act and will subject the licensee to the enforcement measures and penalties provided for under the Act.

The licensee is reminded that it is the responsibility of the licensee to ensure that any documentation submitted by the licensee to the Nunavut Water Board is acknowledged by the Manager of Licensing.

During the period of inspection the Inspector noted that flow meters had not been installed on the intake lines. Installation of volumetric meters is required to comply with the terms and conditions of the current water license.

Part C: Conditions Applying To Water Use

At the time of the inspection the licensee was allocated the use of 10 Cubic meters of water per day for all purposes. Water of all uses is to come from the designated Water Supply Lake.

The Licensee is reminded to ensure that the intake hoses are equipped with a screen to prevent the entrapment of fish. Samples were collected at the time of the inspection.

Analytical results received by the inspector show the following parameters in excess of the Canadian Council of Ministers of the Environment (CCME) guidelines for drinking water;

Parameter	Result	CCME Guideline
Aluminum	473 µg/L	<100 µg/L
Iron	380 µg/L	≤ 300 µg/L

An inspection of the intake system was conducted; a filter system and UV system were both present however the UV system was not in operation at the time of the inspection. The Licensee is cautioned that while the results do not indicate an immediate threat to health prolonged exposure to high levels of trace metals is not advised.

Additionally, it was noted that heavy equipment was in use adjacent to the intake structure and both along the Water source and into the foreshore of the waters edge. The Licensee is reminded to take the appropriate measures to ensure compliance with section 5 of this Part which reads;

5. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

Part D: Conditions Applying to Waste Disposal

During the inspections of the camp the following items were noted and brought to the attention of Mr. Kalen and Mr. Charland during the period of inspection.



As per section 2 of this Part:

The Licensee shall incinerate all combustible waste, and shall ensure that all non-combustible waste is disposed of in the approved on-site landfill facility.

The Incinerator on site was found located in the main building. No incinerator was found to in use or present on site at the land Farm facility however the Inspector noted that on-going burning of bulk wastes had been on-going in the facility for some period of time. The licensee is cautioned that they are to **incinerate** all combustible waste in an approved incinerator that will meet or exceed the Canada-wide Standards for Dioxins and Furans and the Canada-wide Standard for Mercury Emissions. Non-Combustible materials are to be disposed of in a approved on site land fill facility.

As per Section 4 of this Part;

The Licensee shall discharge to, and contain all grey water in, a sump located at least thirty (30) metres from the high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created

An inspection of the grey water/ black water outfall area was not able to locate a sump, natural depression, Lagoon or retention pond to which the waste is to be deposited. At the time of the inspection it was noted that grey water and backwater from the facility appear to be discharged together from the facility.

This must be addressed by the period of the next inspection. Failure to address this violation will result in enforcement action being undertaken on behalf of the Government of Canada.

As per section 5 of this Part;

The Licensee shall manage all sewage through the use of Incinolet toilets, and dispose of all resulting ash in the approved on-site landfill facility .

During the period of inspection it was noted that Sewage was not being processed on site via Incinolet toilets. Black water instead was being processed via the grey water system and discharged directly into the environment.

The Licensee, as noted above was directed to address this violation of the issued water license by the period of the next inspection.

Samples of the discharge were collected during the period of inspection. Results received by the inspector show the following parameters in excess of the NWT Limits for Effluent Parameters for Specific Discharges

Parameter	Result	CCME Guideline
Aluminum	5820 µg/L	2000 µg/L
Iron	1140 µg/L	300 µg/L
Manganese	458.9 µg/L	50 µg/L
Copper	628 µg/L	200 µg/L

Additionally, as per Amendment #1, issued by the Nunavut Water Board on March 21st 2005, the Licensee is required to collect monthly samples from Monitoring Station FOD-2 (Final Discharge Point of Sewage Disposal Facilities) during period when sewage is being actively discharged. The 2006 Annual report does not contain any of the above results as required.

It should be noted that Amendment #1 also inserted under Part A: SCOPE ,DEFINITIONS & ENFORCEMENT the following;

Item #3 ***“Sewage Disposal Facilities” comprises the area and engineered lagoon and decant structures designed to contain and treat sewage as described in the water license amendment application filed on August 6, 2004.***



A review of the Nunavut Water Board FTP site was unable to locate the application for amendment submitted by the Licensee on August 6, 2004. The Inspector seeks clarification on the scope and intent of the application from the Licensee with respect to any proposed construction of a sewage lagoon or retention area. This information should be submitted as an addendum to the 2007 annual report due on March 31st 2008.

The Licensee is reminded to include in the 2007 annual report due on March 31st 2008 a list of hazardous materials shipped out of the camp, and the location of the approved treatment facility to which they were sent. All of the foregoing is required information to be included in the annual report. Shipping and receiving invoices are not required so long as the records are available for inspection during the 2008 inspection season.

Part E: Conditions For Camps and Access Infrastructures

No issues were brought to the attention of the inspector under this section.

Part F: Conditions Applying To Emergency Response

A review of the Water Board FTP site could not locate an approved Emergency Response Plan which as per Section 2 of this part was to have been revised within 30 days of the issuance of the current license.

If the required Plan has been submitted to the Nunavut Water Board for approval, the Licensee is directed to provide a copy of the plan as well as a copy of the approval from the Nunavut Water Board to the Inspector within 30 days of receipt of this Inspection Report.

The licensee is reminded that it is the responsibility of the licensee to ensure that any documentation submitted by the licensee to the Nunavut Water Board is acknowledged by the Manager of Licensing.

If an approved plan is not completed, the Licensee is directed to provide, as an addendum to the 2007 Annual report, due on March 31st 2008 a revised and up to date copy of the Emergency Response plan.

The Licensee is reminded that as per Section (iii) of this Part the Licensee is required to submit a detailed report on each spill occurrence no later than 30 days following the initial event.

Part G: Conditions Applying To Abandonment And Restoration

As noted in the current License issued by the Nunavut Water Board the licensee is required to submit Abandonment and Restoration Plans 6 months prior to the completion of on site activities.

Part H: Conditions Applying To Monitoring Programs

As per Section 1 of this Part the Licensee was to measure and record in cubic meters the daily quantities of water utilized for Camp operations and all purposes. This information is to be submitted in the Annual report.

As per Section 2 of this Part the Licensee was to determine and record the GPS co-ordinates of all locations where wastes associated with the camp operations are deposited. This information is to be submitted in the Annual report.

As per section 6 the Licensee (as inserted by Amendment #1) is required to establish and maintain monitoring station at the following locations;

- BAF-1 Water Supply lake
- BAF-2 Final discharge point of Sewage Disposal facilities



As per section 7 and 8 the Licensee (as inserted by Amendment #1) is required, during period of sewage discharge to sample from the BAF-2 Monitoring station. The licensee shall analyze the samples collected for the following parameters;

BOD	Faecal Coliforms
pH	Conductivity
Total Suspended Solids	Ammonia Nitrogen
Nitrate-Nitrite	Oil and Grease
Total Phenols	Sulphate
Sodium	Potassium
Magnesium	Calcium
Total Arsenic	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	

As per section 4 of this Part the Licensee is reminded that the results of the above sampling are required to be submitted in the Annual Report as per Part B Section 1(ii).

The Licensee is reminded that failure to comply with the terms and conditions of the issued water license constitutes an offence under the Nunavut Water and Nunavut Surface Rights Tribunals Act.

Non-Compliance:

During the inspection a number of items were noted and are to be corrected before the period of the next Inspection.

- o Open burning of garbage at the land fill facility is to cease
- o Location of the treatment facility where hazardous wastes generated or marshalled on site are to be shipped- to be included in annual report.
- o Submission of Emergency Response Plan and approval of the Nunavut Water Board as addendum to 2007 annual report.
- o Installation of metering system to accurately record water use.
- o Submission of a plan to address the release of sewage directly to the environment contrary to the issued license within 30 days of receipt of this report.
- o Submission of a plan to address the monitoring requirements of the current license.

Andrew Keim
Inspector's Name

Inspector's Signature

Attached under separate cover;
Photos taken during Inspection of September 18th, 2007

Cc:
Peter Kusugak – Manager Field Operations Section- Indian and Northern Affairs Canada
Phyllis Beaulieu – Manager licensing – Nunavut Water Board