



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

June 4, 2009

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven, NU X0A 1J0

**Re: 3BM-YRB0308 – Application for Renewal – Department of Economic
Development & Transportation, Government of Nunavut – Resolute
Bay, Airport**

Please be advised that Indian and Northern Affairs Canada (INAC) has completed a review of the above noted application for renewal.

The Nunavut Water Board (NWB) distributed the notification for comment on May 15, 2009.

In conducting this review, I have referred to all documents on the Nunavut Water Board FTP site related to water license 3BM-YRB0308 as well as considered concerns noted by INAC's Water Resources Officer. Attached is a Technical Review Memorandum for your consideration.

Please feel free to contact me should you have any questions or comments. I can be reached at (867) 975-4566 or by email at tanya.trenholm@inac.gc.ca.

Sincerely,

Original signed by

Tanya Trenholm
Pollution Policy Specialist



Technical Review Memorandum

To: Phyllis Beaulieu, Manager of Licensing - Nunavut Water Board

From: Tanya Trenholm, Pollution Policy Specialist - Indian and Northern Affairs
Canada – Water Resources Division

**Re: Renewal Application – Department of Economic Development &
Transportation, Government of Nunavut – Resolute Bay, Airport**

Previous Water Licence # 3BM-YRB0308 (Expired November 30, 2008)

Background Information:

The previous licence (3BM-YRB0308) was issued November 30, 2003 for water use and waste disposal at the Resolute Bay Airport Facility. Waste disposal facilities include a solid waste disposal area and a 2 cell sewage disposal lagoon (with a wetland treatment area). Water was obtained from Strip Lake, but due to water quality concerns, this practice has since ceased. Water is now trucked to the Airport Facility. Delivery of water to the airport facility is undertaken by the Hamlet of Resolute Bay via a water source that had a previous, separate water license (3BM-RUT). It should be noted that the Government of Nunavut, Community and Government Services, applied for this water licence on November 15, 2006. A review of the NWB ftp site revealed that this application was never approved. As such, it would appear that water use and sewage disposal activities for Resolute Bay (3BM-RUT) are occurring in contravention of the Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA).

Pursuant to the National Airports Policy of 1994, Transport Canada (TC) is responsible for determining the environmental condition of the property, including whether remedial action is required. They are also responsible to ensure that any such remediation is carried out. An environmental baseline study was conducted by Dillon Consulting on behalf of TC in 1996. Further to this, an Environmental Site Investigation was completed in April, 1999. Regardless of any responsibility TC has to carry out remediation of historical structures, the expired water licence includes provisions requiring the Government of Nunavut, to develop Abandonment and Restoration Plans six months prior to abandoning any facilities and the construction of new facilities to replace existing ones.

Part A: Scope

The previous licence expired on November 30, 2008. The Proponent was advised by an INAC Water Resources Officer (WRO or Inspector) by way of a January 10, 2008 Inspectors Direction to apply for a licence renewal 3-6 months



in advance of the expiration date of the licence to avoid any delays which could bring the licensee into non-compliance with the legislation.

Part B: Annual Reports

No annual reports have ever been submitted to the Board. This is in contravention of the water licence terms and conditions.

The Proponent was reminded in the 2008 Inspectors Direction by the WRO of the requirement to submit annual reports.

Recommendations:

1. The Licensee must submit all outstanding annual reports to the NWB as per the expired water licence, and the 2008 Inspectors Direction.

Part D: Waste Disposal

Sewage Disposal Facility

The application states the following;

- A lagoon and wetland sewage treatment system is in place.
- There have been no operating problems with the lagoon.
- The general condition of the sewage treatment facilities is 'satisfactory'.

However, the 2008 Inspectors Direction noted the following;

- Part D, Item 3 of the expired licence requires the licensee to develop a plan to address the operational issues at the Sewage Disposal Facility, such as:
 - Effluent samples taken in 2001 by a WRO which were determined to be toxic as indicated by a MicroTox toxicity assessment procedure
 - Concentrations of ammonia and phenols in the effluent exceeded the levels recommended in the *Canadian Guidelines for the Protection of Freshwater Aquatic Life*)
 - Submit the plan to the NWB for review by March 31, 2004.
 - A search of the NWB ftp site revealed no records of this plan
- In addition, the 2008 Inspectors Direction noted the following;
 - The current lagoon system is not lined.
 - an obvious seepage / flow out of the berm of the lagoon.
 - Evidence of high nutrient loading was noted downstream of the lagoon.



- An excerpt from the 1996 Dillon Environmental Baseline Study, which is included in the Resolute Bay Sewage Operation and Maintenance Plan for the 2 cell lagoon system notes that there is 'insufficient capacity of sewage lagoons'. It further notes that the berms are permeable and there is potential for discharge of untreated effluent.

Recommendations:

1. The NWB should require a comprehensive Environmental Assessment of the lagoon systems to be undertaken in order to develop appropriate recommendations and corrective actions. Any recommended corrective actions should include firm timetables for implementation.

Part D: Solid Waste Disposal

The application identifies the following;

- The solid waste site is not fenced
- Bulky metals are separated from other solid wastes
- There is a separate Soil Remediation Facility (landfarm).
- The intention for the construction of a new fenced-in solid waste disposal area is noted, however, no designs, timelines or further information have been provided.

The 2008 Inspectors Direction noted that the Licensee had not segregated any of the materials having been deposited of within the facility. At the time, the Airport Manager informed the WRO that the facility was not being used and was closed. However, the Inspector found evidence of materials being recently deposited within the facility and also, that open burning within the facility was occurring.

Conversations between the WRO and the Airport Manager on May 21, 2009 revealed that the Hamlet has actually completed construction of a new Solid Waste Disposal Facility. Notifications to the NWB of plans for modification have not been found on the NWB ftp site. This is in contravention of the expired water licence (Part E, Items 1-4).

Recommendations:

1. The proponent should clearly advise the NWB as to the status of the historical solid waste disposal facility (i.e. operating or closed).
2. The proponent should clearly advise the NWB as to the status of the newly constructed solid waste disposal facility (i.e. operating or closed).
3. Prior to the approval of this renewal, the proponent should provide appropriate design drawings for the Solid Waste Disposal Facility to the NWB.
4. The proponent should update their O&M Plans to reflect any modifications and the addition of the new solid waste disposal facility.



Soil Remediation Facility (Land farm)

There are no provisions in the expired licence that allow for a land farm. Further, it is unclear as to who commissioned the landfarm (Transport Canada, or the Government of Nunavut) or if it is currently in use.

Recommendations:

If the landfarm is to be included as part of the renewed licence, the following should be considered;

1. The proponent should identify if the landfarm is in use.
2. There should be no discharge of contaminated wastewater permitted without prior approval from the NWB.
3. Contaminated liquid collected within the treatment area must be analyzed for, at least, BTEX compounds to determine compliance with the CCME Guidelines for the protection of Aquatic Life 2003.
4. The land farm should operate such that all remediation takes place within a lined, bermed area.
5. INAC recommends that an independent consultant with expertise in soil sampling techniques obtain samples after the remediation process is complete to ensure that any reuse of treated soils will not impact the surrounding environment including any waters.
6. Contingency, Mitigation and Abandonment and Restoration plans must be provided to address the possibility of seepage from the land farm. One consideration would be to dig a trench around the land farm with an HDPE liner to collect any seepage.
7. The proponent should identify the type(s) of contaminated material (fuels) transferred to the land farm, and make this information available to an Inspector upon request. Soil or snow contaminated with heavy metals, glycols and/or heavy oils should not be placed in the land farm.
8. The recommended depths for contaminated soil should range between 30 and 45 cm. Thicker soil depths require more tilling to provide aeration of the contaminated soils. This could potentially affect the time (lengthen) required for proper remediation.
9. A detailed summary of procedures for the construction and operation of the land farm should be provided to the Nunavut Water Board. Proper equipment and appropriately trained personnel must be employed when tilling the contaminated soil and care should be taken when using the equipment. Any misuse could cause tears to any liner which may result in seepage outside of the land farm.

Part G: Abandonment and Restoration



Part G of the expired licence requires the proponent to submit an A&R plan to the NWB at least 6 months prior to abandoning any facilities and the construction of new facilities to replace existing ones.

Recommendations:

- This condition of the licence should continue to apply.
- As such, the proponent must prepare an A&R Plan for the newly constructed solid waste disposal facility and the closure (?) of the historical facility.

Part H: Monitoring Program

The application states that water sampling and analysis is done, via grab samples by various employees at the Municipality. Specific dates of the sampling occurrences are not provided in the application.

A search of the NWB ftp site revealed no such information. The 2008 Inspectors Direction clearly reiterated the licence requirements to submit data collected under the monitoring program to the NWB in the annual report. As previously noted, no annual reports have been submitted to the NWB relating to the licence 3BM-YRB0308.

Recommendations:

1. A review of the NWB ftp site revealed that no sample results have been submitted to the NWB as per the expired licence. Prior to issuing any renewal the NWB should require sampling be conducted and results be provided, and further, for the licensee to submit a Sampling and Monitoring Plan that will ensure compliance with the water licence.

Conclusions / Closing Recommendations:

1. A number of inconsistencies are apparent between past inspections, and the information provided in the current application which gives rise to significant concerns. Until such a time that further information or a Plan that addresses all of the above noted non-compliance and missing information can be provided, respectfully, INAC can not support an approval of a renewal at this time.
2. The GN - CGS should reapply for water use / sewage disposal for the Hamlet of Resolute Bay, as licence # 3BM-RUT apparently has never been issued by the NWB.
3. This information has been forwarded to an INAC Water Resources Officer for consideration and / or further actions.



Please feel free to contact me at your convenience should you wish to further discuss any part of this submission to the Board. I can be reached at 867-975-4566 or via email, tanya.trenholm@inac.gc.ca.

Cc. Kevin Buck, Manager, Water Resources Division – Indian and Northern Affairs Canada;
Peter Kusugak, Manager of Field Operations – Indian and Northern Affairs Canada.
Andrew Keim, Water Resources Officer – Indian and Northern Affairs Canada