



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

July 27, 2009

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

**Re: 3BM-KIM0911 – Hamlet of Kimmirut – Application for Amendment**

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

The Nunavut Water Board (NWB) distributed the notification for comment on June 26, 2009.

In conducting this review, I have referred to all documents on the Nunavut Water Board FTP site as it relates to 3BM-KIM0911. 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](mailto: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:** **3BM-KIM0911 – Hamlet of Kimmirut – Application for Amendment**

**Existing Water Licence # 3BM-KIM0911**

### **Background Information:**

This amendment has been requested in relation to the following:

- Sewage effluent discharge criteria
- Flow monitoring requirements for sewage lagoon discharge, and
- Method of sewage disposal during construction of the Enhanced Sewage Disposal facility

Interested parties were also invited to comment on the following plans, which were submitted by the Licensee with the application:

- Plan for Compliance in accordance with Part B Item 11 of the Licence
- Quarry Management Plan in accordance with Part D Item 10 of the Licence, and
- Draft Operations and Maintenance Manual for the Wastewater Treatment Facility in accordance with Part F Item 1 of the Licence

### **Recommendations / Comments**

#### **1. Sewage effluent discharge criteria:**

Trow Associates Inc., acting on behalf of the Proponent, has determined proposed discharge criteria based on the NWT Guidelines for Discharge for Treated Municipal Waste Water - specifically Table 4.1 (k) (Trow refers to 4.1 - #12). Trow is recommending/requesting that the effluent discharge compliance criteria for Biological Oxygen Demand (BOD<sub>5</sub>) be amended to 135 mg/l and TSS be amended to 140 mg/l. Trow has noted that the performance of the Enhanced Sewage Disposal System should be monitored at the outlet of the Lower Lagoon, KIM-6 and KIM-7 (as per current Environment Canada policy).

Trow has considered and based the proposed criteria on a dilution factor for the minimum precipitation for a 20 year return period as the design life of the lagoon is 20 years.



The NWB should consider and, INAC would concur, imposing the compliance criteria at the end of the wetlands (assumed by Trow for end of wetland, 45 mg/L BOD and 45 mg/L of TSS). Wetlands are an integral part of this wastewater treatment process. As such, INAC believes measuring the compliance criteria at this point is more representative and reflective of the functionality of the wastewater treatment system as a whole.

However, if this is not an option the NWB should consider including a third monitoring station at the end of the wetland. This would confirm Trow's assumed proportional removal rates provided by the wetlands.

Additionally, Trow has recommended that the water licence be amended such that in the event results of the monitoring program exceed the effluent criteria, the precipitation records will be reviewed to determine the actual rate of dilution and the affect it would have on the monitoring samples. Trow has assumed that the precipitation data from Iqaluit is applicable to Kimmirut.

INAC does not concur with this request, as precipitation records specific to Kimmirut are not available. However, should Kimmirut specific dilution rates be verified based on data (i.e. the installation of a rain gauge at the site with a licence requirement to record precipitation over the proposed life of the lagoon), this data could be used in future renewals or applications for this facility.

## **2. Method of sewage disposal during construction of the Enhanced Sewage Disposal Facility:**

The application indicates that a Plan for compliance, relating to sewage disposal 'will be shown in the O&M Manual'. Although plans for the development of an enhanced sewage disposal system have been included, a Plan to address sewage disposal during the construction of the enhanced system has not been submitted to the Board for approval, including firm timetables for construction and implementation related to the Plan.

INAC does not condone the release of untreated sewage directly into the environment.

## **3. Operations and Maintenance Plan (Part F, Item 1 of the licence):**

The Operation & Maintenance Plan submitted with the amendment application does not address the following plans, as required via Part F, item 2 of the licence;

- Hazardous Waste Management Plan (The application states that a consultant has been hired to work on this project, but no firm timelines



with respect to the completion and implementation of this project have been identified).

- A plan for the modification of streams and bodies of water within the municipality including crossing

#### **4. Quarry Management Plan in accordance with Part D Item 10 of the Licence**

A Review of the NWB ftp site files relating to 3BM-KIM revealed no such plan for review at this time.

#### **5. Plan for Compliance**

##### **Abandonment and Restoration Plan:**

The Licensee has indicated that 'the consultant will be working on this'. However, no firm timelines for the completion and submission of this plan have been identified.

##### **Sewage Disposal:**

The completion of the new sewage disposal system should address the issue of directly discharging raw sewage into the marine environment. However, as noted above there is no timetable for the completion of this project

The current licence was issued to the Hamlet on the premise that a 2 year period would provide appropriate time to come into compliance with the current license. Design drawings for the new enhanced sewage system have been approved by the Board. At this time it is not assured that the construction of this new system will occur during this upcoming year (as the Licensee has not indicated that funds are secured for the project). It is for this reason that INAC recommends that the Licensee immediately submit a Plan, including firm timetables for construction and implementation, which addresses the issue of raw sewage disposal (current practise), to the Nunavut Water Board for approval.

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](mailto:tanya.trenholm@inac.gc.ca).

Cc. Kevin Buck, Manager, Water Resources Division – Indian and Northern Affairs Canada;