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**RE: 3BM-TAL0813 – Type “B” – Submission Related to Amendment and Renewal Application, Hamlet of Taloyoak**

Dear Mr. Irqiut and Mr. Alam:

The Nunavut Water Board (NWB or Board) received the submissions mentioned below from the Government of Nunavut – Community and Government Services (GN-CGS), on behalf of the Hamlet of Taloyoak (Hamlet), in support of an application to renew and amend Type “B” water licence 3BM-TAL0813. The Hamlet requested a ten-year renewal of its licence as well as an amendment to the Licence scope to include the operation of an un-engineered wetland associated with the Hamlet’s sewage and solid waste disposal facilities.

➤ **August 22, 2013 Submission**

1. Application for water licence and Cover Letter; and
2. Environmental Laboratory Report.

The preliminary review of the August 22, 2013 submission determined that additional information was required and that the deficiencies identified needed to be clarified. Review of the subsequent information.

➤ **September 11, 2013 Submission**

1. Environmental Monitoring Program – Sample Collection Training Program;
2. Quality Assurance/ Quality Control Plan;

➤ **October 9, 2013 Submission:**

1. Interim Compliance Plan dated September 30, 2013.

After further consideration, the NWB in its November 19, 2013 correspondence<sup>1</sup> requested that

<sup>1</sup> Letter from E. Skiby, NWB, to Kitikmeot Distribution List, Re: Request for comments re: The inclusion and consideration for licensing of an

interested persons provide comments with respect to the inclusion of the un-engineered wetland as a regulated facility and any further information that may be required in order to consider this request. Before the extended deadline for submission<sup>2</sup>, January 11, 2014, comments were received from Aboriginal Affairs and Northern Development Canada (AANDC), Environment Canada (EC), and the Kitikmeot Inuit Association (KIA). The intervening parties, in their submissions, expressed no objections in principle to the licensing of the un-engineered wetland area for the disposal of sewage, however, concerns were expressed with respect to the overall effectiveness, and functionality of the wetland, including the ability to control effluent if the discharge criteria are not met.

In addition, the intervening parties identified potential issues for the Board to consider as part of the completeness of the application; however, the parties did not explicitly state that the comments within their submission were related to the Application as a whole. The intervening parties, however, provided several recommendations for the Board's consideration:

## **ISSUES**

The following sections provide a summary of the comments, concerns, and recommendations for consideration by the Board with respect to the potential inclusion of the un-engineered wetland as part of the scope of the amendment/renewal for Licence 3BM-TAL0813.

### **1. Waste Disposal Facilities**

Under Part D of the Licence, an amendment is required to allow for any activities related to sewage disposal, treatment, and discharge; Solid waste collection, and containment or disposal that do not fall under the current scope of the Licence.

#### **1.1 Sewage Disposal**

The application describes the lagoon system as a series of two cells, a primary cell that receives raw sewage from truck discharge and is stored over the winter, and a secondary cell or detention cell which receives sewage from the primary cell over a semi-submerge berm during the summer melting period. Flows from the secondary cell are directed to a natural outfall into a shallow channel over a meandering wetland where natural remediation occurs prior to discharge into the ocean.

Both EC and AANDC expressed concerns with the overall effectiveness of the wetland and highlighted the following areas:

- **Lagoon/ retention time**

EC in its review recommends the existing retention time be evaluated, and that an assessment be done for the purposes of planning the retention or control structures for the natural lake lagoon, as treatment of wastewater would benefit from a retention period of 365 days.

AANDC expressed similar concerns about the retention time, especially during spring freshet when the wetland area may be overwhelmed with effluent from the retention/

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un-engineered wetland area for the disposal of sewage for the Hamlet of Taloyoak for municipal License 3BM- TAL0813, dated November 19, 2013.

<sup>2</sup> Aboriginal Affairs and Northern Development Canada (AANDC), dated January 13, 2014; Environment Canada (EC), dated January 06, 2013 and Kitikmeot Inuit Association (KIA), dated December 18, 2013.

lagoon area. A last point of control was also recommended that would allow confirmation that waste water meets discharge criteria prior to release into the environment.

## **2. Additional Information Requirements to be Submitted for Board Consideration**

### **2.1 Wetland area or channel**

The application contained a number of photos of the Wetland area or channel where the wetland receives discharge from the lagoon system. AANDC noted that pictures submitted appear to be a stream or creek rather than a wetland. AANDC recommends investigating if treatment is actually through natural remediation as described in application or whether treatment is occurring through dilution. EC noted a more stream-like flow rather than a typical wetland area and that drainage management options be explored to increase retention time, including a characterization to evaluate the capacity and how to optimize treatment.

### **2.2 Management Plans**

The plans listed below are recommended in addition to plans required under the current licence. The applicant would be required to submit these plans in order for the wetland to be considered within the Application as a waste disposal facility.

#### **2.2.1 Monitoring Plan**

EC recommends that a Monitoring Plan be developed, including, but not limited to, the following components:

- a. Lagoon system should be inspected weekly to ensure the integrity of all components;
- b. Effluent sampling during discharge to the wetland area;
- c. Toxicity testing should be performed on the effluent once a year, using the rainbow trout toxicity test. The sample should come from the point designated by the NWB as the final discharge point.
- d. Water quality monitoring of sampling sites along the wetland discharge path
- e. Contingency planning to address situations including, but not limited to and
  - i. Effluent does not meet release criteria at annual release period;
  - ii. Effluent does not meet release criteria and lagoon is full;
  - iii. Erosion of lagoon berms and/or effluent decant point; and
  - iv. Lagoon has less than the required capacity and effluent is not being held long enough for sufficient treatment

EC recommends that the environmental monitoring includes, but is not limited to:

- a. Surface water monitoring;
- b. Groundwater monitoring;
- c. Leachate monitoring; and
- d. Monitoring of the integrity of solid waste disposal facility.

EC recommends that the Proponent develop contingency plans that include, but are not limited to, the following situations:

- a. Monitoring results that indicate the development of a leachate plume outside waste disposal area; and
- b. Monitoring results that indicate contamination of surface water and/or groundwater.

EC recommends that a post-closure (reclamation) plan includes detailed information regarding post-closure monitoring of:

- a. Leachate;
- b. Surface water quality;
- c. Groundwater quality;
- d. Cover integrity (avoidance of cracking, ponding, erosion); and
- e. Integrity of clean water diversion structures (such as ditches).

When developing the monitoring plan the Licensee is strongly encouraged to review submissions regarding the location of monitoring points and the discharge criteria for effluent recommend by the intervening parties.

#### 2.2.2 Spill Contingency Plan

EC recommends that a Lagoon Spill Contingency Plan be developed to address any spills or releases of wastewater that does not meet the release criteria. Potential situations to plan for could include, but are not limited to:

- a. Breach of lagoon berm;
- b. Influent exceeds capacity of lagoon; and
- c. Erosion of lagoon outflow areas.

#### 2.2.3 Hazardous Waste Management Plan

EC recommends that the Proponent develop and implement a Hazardous Waste Management Plan, including as a minimum:

- a. Site requirements, including signage;
- b. Appropriate secondary containment;
- c. Recording keeping and waste tracking;
- d. Leachate Management Plan;
- e. Spill/Release Contingency Plan;
- f. Procedures for handling, storage, shipping and monitoring of hazardous wastes;
- g. Final Disposal Plan; and
- h. Personnel training.

### **3. Additional Requirements determined by the NWB**

#### 3.1 Operation and Maintenance

It is noted that an Operations and Maintenance (O&M) Manual has not been submitted for the current water storage and distribution facility water under licence 3BM-TAL0813. A Requirement was included for the licensee to amend the licence to include waste disposal activities, including a requirement to provide an Operations and Maintenance (O&M) Manual for the Sewage and Solid Waste Disposal Facilities, under Part F, Item 1 of licence 3BM-TAL0813. To date, no manual has been provided. As part of the request to have the un-

engineered wetland licensed and included as part of the waste disposal facilities, the Licensee is required to take into consideration the comments received during this review process, including EC recommendations to provide an O&M manual (including updated drawings for both the Solid Waste Facility and the Sewage Lagoon System).

### 3.2 Solid Waste Facilities

As indicated previously, an amendment is required to allow for any activities related to sewage disposal, treatment and discharge, solid waste collection, containment or disposal that are not currently within the scope of the licence being renewed. A number of comments were received regarding the Solid Waste Facility the Licensee is to review and address comments, including, but not limited to the following:

The run-off or leachate from solid waste disposal facility should be regulated and criteria meet, prior to discharge into the environment or wetland area;

### 3.3 Other

#### 3.3.1 NWB Plan for compliance

As per Part B, Item 10, the Licensee shall submit to the Board for approval, within ninety (90) days of Licence issuance or upon the filing of any application in relation to the Licence within that time, a Plan for Compliance that clearly demonstrates the measures the Licensee will undertake, including an implementation schedule, to achieve full compliance with the conditions of this Licence, including the approval of the waste water and solid waste disposal facilities.

Additional information provided/received since original application:

➤ **March 04, 2014 Submission**

1. Annual Report 2013;

➤ **March 11, 2014 Submission**

1. Filter Process System Plan;
2. Filter Process System – Sections;
3. Control Diagram;
4. Instrumentation and Control;
5. Electrical Layout;
6. Electrical Panels and Elevation;
7. Pump Casing and Screen Details;
8. Pumphouse Elevations; and
9. Process Water Flow Schematic.

➤ **March 13, 2014 Submission:**

1. Annual Reports: 2006 -2010

Although these submissions meet some of the application requirements for the renewal of the Licence and of the Plan of Compliance the Plan itself does not clearly demonstrate the

measures the Licensee will undertake, including an implementation schedule, to achieve full compliance.

Based on this initial review of your submission, and comments received from interested parties during the initial request for information regarding the inclusion of the natural wetland as part of the solid waste disposal facility, the Board has determined that there are information deficiencies with the Application which prevent the Board from considering the Application complete. In addition, the Licensee is advised that until adequate responses are received to the above noted items, the Board will not be in a position to process the application any further.

On April 2, 2014, the AANDC Water Resources Officer, issued an email regarding the 'Taloyoak State of Compliance' requesting clarification on the identified issues and a response by April 10, 2014. In addition to the preceding above and prior to continuing on with the licensing process, the Board requests the GN-CGS provide written confirmation to the NWB with supporting documentation, that (a) the requirements of inspection reports and the Inspector's Direction<sup>3</sup> issued to the Hamlet have been fulfilled; and (b) the commitments made in the Hamlet's Plan for Compliance have been fulfilled

If you have any questions, please contact me at your earliest convenience by e-mail to [erik.skiby@nwb-oen.ca](mailto:erik.skiby@nwb-oen.ca) or by phone at 867 360 6338.

Regards,

*Original Signed By:*

Erik Skiby  
NWB, Assistant Technical Advisor

Cc: Shah Alam, GN-CGS  
Grant Scott, SAO

Attachments: Comments received from AANDC, EC, KIA.

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<sup>3</sup> Letter from A. Keim, Manager Field Operations, Honourable Lorne Kusugak, Minister of Community and Government Services, Re: Use of Water and the Deposit of Waste in a manner Inconsistent and Non-compliant with Authorizations Issued by the Nunavut Water Board under the Nunavut Water and Nunavut Surface Rights Tribunal Act, dated June 28, 2012.