



Water Resources  
Nunavut Regional Office  
P.O. Box 100  
Iqaluit, NU, X0A 0H0

Your file - Votre référence  
3BM-GJO0409

September 28, 2013

Our file - Notre référence  
CIDM# 742834

Phyllis Beaulieu  
Manager, Licensing  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0A 1J0

**Re: Hamlet of Gjoa Haven – Renewal Application – 3BM-GJO0409**

Dear Phyllis Beaulieu:

Please be advised that Aboriginal Affairs and Northern Development Canada (AANDC) have completed a review of the submission for the licence renewal application 3BM-GJO0409 submitted by Dillon Consulting Ltd. on behalf of the Hamlet of Gjoa Haven. The Nunavut Water Board ("NWB") circulated the renewal application on August 28, 2013. All documents related to the request posted on the NWB ftp site under 3BM-GJO0409 were included in my review (See attached Technical Review Memo).

Should you have any questions or comments, please do not hesitate to contact me at (867) 975-4568 or by e-mail at [Rory.MacDonald@aandc-aadnc.gc.ca](mailto:Rory.MacDonald@aandc-aadnc.gc.ca)

Regards,

Sent via Email

Rory MacDonald  
Water Resources Technician

Cc. Murray Ball, Manager of Water Resources, AANDC  
Andrew Keim, A/ Manager of Field Operations, AANDC



Technical Review Memorandum

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

From: Rory MacDonald – Water Resources Technician, AANDC

Existing Licence: 3BM-GJO0409

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**Re: Hamlet of Gjoa Haven – Renewal Application – 3BM-GJO0409**

1. Project Description

The Hamlet of Gjoa Haven is located on the southern tip of King William Island in the Kitikmeot Region of Nunavut. The current population of the community is approximately 1200 and is served by trucked sewage and water under the terms of expired water licence 3BM-GJO0409.

A licence for water use and waste disposal was issued by the Nunavut Water Board on January 8, 2004. A subsequent amendment was issued September 4, 2008 for works related to drainage. The licence expired January 31, 2009 and has not been renewed since. The obligations of the expired licence remain in effect under paragraph 46 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. The terms of the expired water licence permit annual water use of up to 62,000m<sup>3</sup> drawn from Swan Lake. The licence directs that all sewage be disposed at the Sewage Disposal Facility and includes provisions for monitoring of raw water quality, raw sewage, and effluents from both the solid waste and sewage disposal facilities.

An application for renewal was submitted on behalf of the hamlet by the Government of Nunavut – Community and Government Services (GN-CGS) on March 19, 2010. A renewal licence has not been issued due to some outstanding documents including operation and maintenance manuals and other required plans.

2. Results of Review and Recommendations

Aboriginal Affairs and Northern Development Canada (AANDC) Water Resources Division offers the following comments/recommendations for the Board's consideration:

A. General

AANDC is pleased to see the advancement of the renewal application as the Hamlet of Gjoa Haven has been operating under an expired water licence for 45 months. AANDC supports the application for a five (5) year licence term. AANDC notes that there are a number of outstanding compliance issues associated with the current undertaking that should be considered during the renewal process. The application includes a compliance plan outlining short term and long term goals to bring the Hamlet into compliance with the obligations of the expired water licence. A number of commitments and goals have been reached in the short term including submission of requested plans, annual reports and carrying out monitoring activities, however long term goals will be on an ongoing basis in order to meet obligations (i.e. continued monitoring, annual reporting, alternative solutions for measuring sewage discharge). The long term objectives of the plan should be met within the requested 5 year licence renewal.



- Annual reports have not been provided for 2009 and 2010. Part B: General Conditions, Item 1 require that the licensee provide annual reports for each year of the appurtenant undertaking. It is recommended that annual reports be submitted for the missing years as per the conditions outlined under Part B, Item 1 of the licence. If no work has been completed during the missing years, the Proponent should provide correspondence to the Board detailing rationale or issues associated with not submitting their annual reports.

#### B. Water Use

- The AANDC Municipal Water Use Inspection Form dated July 17, noted that water is continually recirculated between the water source intake (Swan Lake) and the pump house to keep the lines free of ice. This is at odds with previous information that a system of heat traced lines (pyrotenics) was used to keep the pipeline open. There appears to be no mechanism to monitor the volume of water used in the recirculation system.

In addition the Water Resources Officer was also informed during the inspection that between February and March of 2012 the pipeline between Swan Lake and the treatment facility nearly froze and the water in the recirculation pipeline was run with a direct discharge outside the plant to prevent freezing and loss of the water line. It is unclear if the water usage was measured and included in the annual reports for water use for all purposes.

Discussions are currently ongoing with the Nunavut Water Board respecting the definition of the term “water use” with specific reference to recirculation. The inclusion of water used in recirculation could result in higher amounts of reported water use contingent on the definition of the term. AANDC recommends that the Proponent monitor water used for all purposes including direct discharge and amounts of water used in the recirculation system pending the outcome of the discussions on the term “water use”.

#### C. Operation and Maintenance

- Inspectors from AANDC Field Operations Unit have expressed concern over water management and site runoff within the Solid Waste Management Area (SWMA) and potential for contamination. Specific concerns were noted by the Water Resources Officer during several inspections, that a second cell for the waste water lagoon has been constructed to catch overflow from the overflow pipe at the current lagoon. The waste water is then channeled into a long ditch that runs down gradient behind SWMA. Run off from the SWMA mixes with effluent from the overflow and continues down to the ocean.

It is stated in the Gjoa Haven Draft Sewage and Solid Waste OM Manual under Section 2.3, “runoff from the site enters the sewage treatment effluent system from the west near the primary settling pond”. Site run off from the Solid Waste Management Area should be managed properly as to not impact the surround wetland or waterbodies. During site inspection by the Water Resource Officer, there is evidence that hazardous materials are scattered throughout the SWMA and many drums of waste oils and other fluids were found outside the SWMA. It has also been noted that water was observed to be running through and exiting the facility and is not contained in any way.

AANDC recommends that the Proponent ensure site runoff is properly managed so that there is no impact to the natural environment in terms of contamination. Additional details should be provided on how water is being managed within the Solid Waste Management Area in addition to the waste water lagoon.

#### D. Modification and Construction; and Abandonment and Reclamation



- The current waste water lagoon in the community is operating beyond its full capacity and remains full throughout the year. Appendix C of the application package notes that a continuous stream of raw sewage has been discharged in some years (i.e. 2006 when berm wall collapsed) into the surrounding wetland area..

A much larger lagoon system is currently being constructed in the community to alleviate issues associated with the existing lagoon which is scheduled to be decommissioned in March 2014. Unfortunately, the new lagoon system is being constructed without approvals from the Nunavut Water Board as is still required under the terms of expired water licence. An application for modification and construction was not submitted by the Proponent and subsequently has not been circulated to parties for review and comment. Furthermore, plans for Abandonment and Reclamation have not been provided to the Board for the decommissioning of the existing lagoon. The review process is a cornerstone of water resource co-management in Nunavut that provides an opportunity to share expertise in planning undertakings that may affect water.

AANDC recommends that the Proponent provide an update and/or plan on the current status of the new lagoon system with an opportunity for parties to review and provide comments as required under Part E: Conditions Applying to Modification and Construction, Items 1, 2 and 3 of licence 3BM-GJO0409.

AANDC would also like an opportunity to review and comment on the Abandonment and Reclamation Plan required under Item 1 (ii) of Part G: Conditions Applying to Abandonment and Restoration for the decommissioning of the existing lagoon.