



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

Your file - Votre référence
3BM-CAP0810

January 10, 2014

Our file - Notre référence
CIDM# 765981

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

Re: 3BM-CAP0810 / Hamlet of Cape Dorset / Licence Renewal Application

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-CAP0810 submitted by the Government of Nunavut – Community and Government Services (GN-CGS). The Nunavut Water Board (“NWB”) circulated the renewal application on November 19th, 2013. All documents related to the request posted on the NWB ftp site under 3BM-CAP0810 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

Regards,

Sent via Email

Rory MacDonald
Water Resources Technician

Cc. Murray Ball, Manager of Water Resources, AANDC
Erik Allain, 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-CAP0810

Re: 3BM-CAP0810 / Hamlet of Cape Dorset / Licence Renewal Application

1. Background

On November 19th, 2013, the Nunavut Water Board (NWB or the Board) distributed the Hamlet of Cape Dorset's application to renew its Type 'B' Municipal Water Licence, #3BM-CAP0810. Interested parties were asked to review the scope of the information and provide technical comments and/or recommendations to the Government of Nunavut – Community and Government Services (GN-CGS) on behalf of the Hamlet of Cape Dorset.

The municipal water licence 3BM-CAP0810 was issued on March 7, 2008 and subsequently expired on March 1, 2010. The renewal application was received under two separate submissions dated February 4th, 2010 and July 22nd, 2011. The Hamlet of Cape Dorset is requesting a five year renewal which will expire on March 2, 2016 as indicated in the renewal application. Due to various deficiencies with the submitted renewal application in 2011, it was redistributed to interested parties for review in November 2013. A letter submitted to the NWB on November 6th, 2013 by GN-CGS states that outstanding deficiencies have been addressed and requests that the renewal application be expedited.

2. Project Description

The Hamlet of Cape Dorset is situated on southern Baffin Island near Foxe Peninsula approximately 400km southwest by air travel of the City of Iqaluit. The current population of the community is approximately 1600 residents. Cape Dorset is permitted water use and waste disposal under the expired licence 3BM-CAP0810. A maximum of 70,000 cubic meters (m³) of water annually is permitted to be drawn from Tee Lake, located about 1km from the water treatment plant situated in the community. The licence also requires that all sewage be directed to the 2007 Sewage Disposal Facility upon commissioning, otherwise all sewage be directed to the 2001 Sewage Disposal Facility and/or the Emergency Sewage Disposal Facility.

Water Supply System

The current water supply system extracts water from Tee Lake using a submersible pump and supplies water to the treatment plant via heat traced intake pipe. Raw water is chlorinated on its way into the treatment plant and again as it leaves the plant into the water trucks. Chlorine residual is measured twice daily. Annual reports submitted by the GN-CGS indicate an average water use of roughly 50,000m³/annually.

Solid Waste Management

Two solid waste management sites are currently being used by the community which include a metal waste site and a domestic waste site (municipal landfill). The volume of materials, lack of segregation, presence of improperly stored hazardous wastes, and the flow of surface runoff through the sites present significant issues which has led to concerns being expressed over the appearance, environmental impacts, public health and safety of the current waste sites.



Options were provided in a report developed by Concentric Associates International Inc. in 2009 which recommend sealift backhaul of bulky metal wastes and propose a number of other recommendations such as a waste segregation protocol and other control measures such as an earthen berm with a gate/fence and site supervisor. Windblown debris has been a recurring issue with the municipal landfill.

Wastewater Treatment / Sewage Lagoon

The community is currently operating a three cell lagoon system which is in poor state and under capacity as noted in several onsite inspection reports. A separate Emergency Lagoon is also being used during times of capacity challenges and throughout the winter months when the three cell lagoon system is inaccessible by sewage truck due to a safety concern (located up a steep gravel road). A new sewage lagoon was constructed in 2007 however it has not yet been commissioned due to outstanding issues with the berm efficiency (i.e. berm is leaking and requires installation of thermistor stations, monitoring wells).

3. Results of Review and Recommendations

AANDC Water Resources Division offers the following comments/recommendations for the Board's consideration.

I. General

- The submitted renewal application on July 22, 2011 and again on November 19th, 2013 requires updates to personnel contact information. The Senior Administrative Officer (SAO) for the Hamlet of Cape Dorset listed in the application under Item 2 is no longer in the position and requires updating contact information to reflect the new SAO.

II. Waste Disposal

- Like many other communities in Nunavut, the municipal landfill in Cape Dorset is not fenced. Windblown debris litters the community which can have negative impacts on appearance and potentially environmental impacts. An update on potential options to address windblown debris should be included in the application review. Mitigation measures such as a fenced municipal landfill should be investigated.
- A long-term solid waste management plan should be developed to address potential contamination issues related to the metal waste disposal site. Options proposed in the *Hamlet of Cape Dorset Metals Disposal Site Study (2009)* by Concentric International Associates Inc. should be considered which include seasonal backhaul of bulky metals and waste segregation protocols.
- Outlined in several onsite inspection reports conducted by AANDC Water Resource Officers and as evident in photographs of the solid waste disposal facility, numerous 45 gallon drums are filled with hazardous waste (i.e. expired batteries) and have collected water. Hazardous wastes are not being properly segregated or disposed. AANDC recommends that the Hamlet ensure that hazardous wastes are properly stored and/or disposed of and segregated as to avoid environmental impacts (contamination of local waterbodies).
- AANDC recommends an onsite water management plan for disposal sites should be developed or included as part of the *Operation and Maintenance Manual* to mitigate and manage site run-off as to not impact the surrounding wetland or waterbodies. AANDC Water Resource Officer Inspection Reports indicate that runoff from the metal waste



disposal site has collected in a small pond down gradient of the waste disposal site. Site runoff also has the potential to impact the receiving marine environment which is an area utilized by community residents who harvest clams, Arctic char, and other marine species for food.

It is stated that in the *Operation and Maintenance Manual* that drainage works direct leachate and runoff to the sewage lagoon. It should be clarified how this process may change with the commissioning of the 2007 Sewage Lagoon and decommissioning of the existing lagoon. 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 municipal landfill and metal waste disposal facility.

III. Abandonment and Reclamation (A&R)

- A&R Plans for the existing wastewater and solid waste disposal sites have not been submitted to the NWB. Under Part G: Conditions Applying to Abandonment, Restoration and Closure, Item 2 of the water licence 3BM-CAP0810, the Licencee shall submit to the Board for approval in writing, within six (6) months of issuance of the licence, a preliminary or conceptual Abandonment and Restoration Plan for the Hamlet of Cape Dorset, Water and Waste Disposal Facilities. To date no preliminary or conceptual A&R Plans have been submitted to the Board with their application. It is recommended that these outstanding A&R Plans be submitted to the NWB prior to renewal.
- A&R Plans for the existing wastewater and solid waste disposal sites have not been submitted to the NWB but the GN-CGS indicates that these plans will be submitted 6 months prior to decommissioning of the existing facility or the construction of a new facility pursuant to Part G, Item 3 of the water licence 3BM-CAP0810. AANDC notes that the construction of new wastewater facility in 2007 (i.e. 2007 Sewage Lagoon) has triggered the requirement for the licensee to submit an A&R Plan (Part G, Item 3). As such, it is recommended that these outstanding A&R Plans be submitted to the NWB prior to renewal.

IV. Monitoring

AANDC is pleased that the GN-CGS is assisting the Hamlet to develop a training program to provide guidance/training to operators on how to properly collect and submit water and wastewater samples for their water licence. AANDC has reviewed the Environmental Sampling Training Program (August 13, 2013) and provides the following suggestions the applicant:

- AANDC suggests that Section 2.5 include a recommendation to sample from the 'cleanest' to the 'dirtiest' locations.
- Section 2.5.2 instructs the sampler not to rinse the sampling bottles since some bottles contain preservatives. AANDC notes that some laboratories provide bottles and preservatives separately with instructions to rinse the bottle, collect the sample, then add the preservative. Are the instructions provided in this document specific to the contracted lab? If there is a possibility to use other labs, then we would suggest that the different sampling scenarios be stated in this section.
- Section 2.5.3.1 indicates that sampling equipment are to be cleaned with soap and water after each sampling location to prevent cross-contamination. AANDC suggests a little more detail be provided to explain the best way to clean the equipment when out in the



field (i.e. can any soap be used? What extra equipment is required for cleaning purposes?).

- Part H: Conditions Applying to the Monitoring Program of the water licence (3BM-CAP0810) sets out the conditions for the monitoring program which includes the maintenance of 24 monitoring locations. As described under Part H, Item 1 of the licence it appears a total of 11 monitoring stations and 4 additional monitoring wells are to be maintained within the 2007 Sewage Lagoon system including P-Lake and the wetland pathway. AANDC recognizes the importance of sampling within this system in order to meet licence conditions and discharge criteria, however a number of monitoring locations are quite redundant. AANDC recommends for the Board's consideration a re-evaluation of the monitoring locations under Part H, Item 1 and to include but not limited to, points of wastewater influent, effluent discharge, and final point of control (i.e. wetland discharge point).

V. Compliance

The Field Operations Division of AANDC will be commenting in greater detail in regards to the Plan for Compliance submitted by the GN-CGS for 3BM-KIM0911. The Water Resources Division offers some general comments in regards to compliance and they are as follows:

- Although a great deal of work to achieve compliance with the expired licence has been undertaken by the Licensee in the last year, the Hamlet of Cape Dorset remains in non-compliance. The Water Resources Division recommends that the NWB consider the outstanding issues of non-compliance identified in the Municipal Water Use Inspection Report Form dated August 8, 2013 (August 2013 Inspection Report) prior to making a decision.
- The Hamlet of Cape Dorset was one of the communities included in the Inspector's Direction imposed by AANDC on the GN and according to the August 2013 Inspection Report, the GN has not to-date fulfilled all commitments made on the submitted Compliance Plan and are currently in violation of the Inspector's Direction. The Water Resources Division recommends that this violation of the Inspector's Decision be considered by the NWB prior to making a decision.
- AANDC recommends that the Hamlet include within the submitted *Compliance Plan*, the segregation and secure storage of all hazardous materials and/or hazardous waste with the Solid Waste Disposal Facility in a manner as to prevent the deposit of deleterious substance in water (pursuant to water licence 3BM-CAP0810 Part D, Item 11).

4. Conclusion

While there are many plans to achieve compliance, there is still a substantial amount of information that is not yet available for review, and as such, AANDC considers GN-CGS's renewal application for water licence 3BM-CAP0810 to be incomplete at this time.



A 2 year licence renewal was issued by the NWB in 2008 to send a clear message that the NWB will not passively encourage the Hamlet's failure's to comply with licence conditions and that the NWB fully expected the Hamlet to take immediate steps toward full compliance with all licence requirements for its existing facilities. Now, almost 5 years later, AANDC notes that while the Hamlet has made improvements toward compliance, they have not yet achieved full compliance as required. AANDC cannot recommend renewal of water licence 3BM-CAP0810 until such time that the NWB and the Field Operations Division at AANDC are satisfied that: (a) the GN-CGS has fulfilled outstanding requirements contained within the water licence, inspection reports, and the Inspectors Direction and (b) the GN-CGS have fulfilled their commitments in the submitted Plan for Compliance.

AANDC recommends that GN-CGS consider submitting an amendment/renewal application that could facilitate a review of any contentious terms and conditions of the licence 3BM-CAP0810 that may warrant re-examination, such as the current requirement for a relatively high number of water quality monitoring locations.