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Department of Environment

Ministère de l'Environnement

August 21, 2008

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board

via Email to: licensing@nunavutwaterboard.org

RE: NWB FILE # 3BM-ARC0810 – Hamlet of Arctic Bay – Construction of New Wastewater Treatment Facility and Decommissioning of the old Wastewater Treatment Facility

Dear Ms. Beaulieu:

The Government of Nunavut, Department of Environment (DOE) has reviewed the water license amendment application from the Hamlet of Arctic Bay for the construction of a new and decommissioning of the old wastewater treatment facility, and has the following comments and recommendations to make based on the *Environmental Protection Act* regarding monitoring and operation and maintenance.

A. Monitoring

Page 26 of *Design Brief New Sewage Lagoon for the Hamlet of Arctic Bay* proposes a sampling frequency of once at the beginning of decant, and once at the end of decant. DOE suggests the sampling frequency be once at the onset of decant, once during the decant period, as well as once at the end of decant totaling three sampling events. This will contribute to increasing the knowledge base available regarding performance of treatment wetlands in an arctic climate, and will provide better assurance that the treatment wetland is working acceptably.

B. Operation and Maintenance

In general, an operation and maintenance manual related to routine operation and maintenance procedures for the two sewage lagoons should be provided for review. Additionally, the manual should provide details related to sludge management and decanting of lagoons, discussed below.

1. Sludge Management

- Page 20 of “*Design Brief New Sewage Lagoon for the Hamlet of Arctic Bay*” stated that the effluent quality will guide when the lagoon will need to be desludged. The DOE requests more information on the rate of sludge accumulation and the frequency of desludging be provided.
- Page 20 of the report referenced above stated that the sludge has to be tested prior to disposal. However, it is unclear the disposal standard the proponent intends to comply with. The DOE requests more information regarding the standards be provided.
- The sludge is suggested to be disposed off in a separate cell at the Municipal Solid Waste Site. More information should be provided on sludge disposal procedures. How and when (time of year) will sludge removal occur? Where will the communities’ sewage go when the lagoons are being desludged? Will one lagoon be desludged while the other is in operation? Further details on the logistics and practicalities of this maintenance procedure are required. The proponent should be required to submit a plan

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demonstrating how they would comply with the guidelines for sludge management and removal.

2. Decant

Page 16 of the “*Design Brief New Sewage Lagoon for the Hamlet of Arctic Bay*” report indicated decant is to start mid to late August, and end around mid to late September. As the proposed design of the sewage treatment facility relies on wetland treatment, the DOE recommends that decant starts no later than mid-August ending as there may be limited plant growth and biological treatment available in late September.

The GN thanks NWB for the opportunity to provide comments on Arctic Bay's water license amendment application. Please contact us if you have further questions.

Yours sincerely,

Original signed by

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