



Environment Canada
Environnement Canada

Environment Canada
Prairie and Northern Region
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December 21st, 2007

Your File: 3BM-ARC0207
Our File: 4782 029

Richard Dwyer
Licence Administrator
Nunavut Water Board
PO Box 119
Gjoa Haven, NU
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Re: Hamlet of Arctic Bay – Renewal – Type “B” Water Licence 3BM-ARC0207

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

The Hamlet of Arctic Bay is applying to renew their water license until October 31st, 2012 to allow for the municipal use of water and deposit of waste. The renewal application includes commissioning a new sewage lagoon and decommissioning of the current sewage lagoon. As per the most recent inspection report of August 20th, 2006 the sewage treatment system consists of a primary cell that discharges into a limited wetland, stream and eventually the ocean. The current system is no longer adequate. The discharge criteria, decant structure, erosion control, dams and dykes and freeboard were all listed as unacceptable in above stated inspection report. The Hamlet is therefore proposing to build a new sewage lagoon with construction starting in 2008 and commissioning in 2009.

Environment Canada recommends that the following conditions be applied throughout the duration of the license:

General

- The Hamlet must ensure that any effluent discharged must be in compliance with Section 36(3) of the Fisheries Act. According to the *Fisheries Act*, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- The Proponent is to ensure that all construction and blasting activities on the existing sewage lagoon and future lagoon site do not result in sedimentation of any surrounding water bodies. Preventative measures, such as the use of silt curtains/fences should be used to help mitigate any potential impacts.
- Any stockpiled material should be stored above the high water mark of any water body and in such a manner as to prevent sedimentation of surrounding water bodies.
- An updated Operations and Maintenance Manual should be submitted for approval as a

condition of the water licence. .

- An updated Closure and Reclamation Plan should be submitted for approval as a condition of the water licence
- Current design plans for the new sewage lagoon should be submitted for approval as a condition of the water licence.

Monitoring

- No effluent criteria, effluent quality predictions nor monitoring plans are provided in the application. EC requests that the Hamlet provide full details on how the sewage lagoon functions such as, effluent quality, sludge generation and management. EC would like to see effluent quality standards applied to this license at least equivalent to those outlined in the document 'Guidelines for the discharge of treated municipal wastewater in the Northwest Territories'. For a marine discharge of 150-600 liters per capita per day with a mixing conditions similar to a bay or fjord these standards are BOD 120 mg/L and TSS 180 mg/L. Additionally, if the proposed discharge point is close to local harvesting and recreational areas, criteria for fecal coliforms should also be applied.
- Environment Canada recommends that in addition to the proponent monitoring the quality of the effluent being discharged at the outfall of the lagoon, sampling be completed at the outlet of the wetland treatment area, in order to understand treatment efficiency. Alternatively, the municipality may have included the wetland area as a component of the treatment system, and this should be specified.
- The Hamlet should be aware of the work being done to develop a Canada-wide Strategy for the Management of Municipal Wastewater Effluents, under the aegis of the Canadian Council of Ministers of the Environment (CCME). The latest draft of the Canada-wide Strategy, which addresses specific parameters and governance, was released in October 2007

(http://www.ccme.ca/assets/pdf/mww_e_cda_wide_strategy_consultation_e.pdf). As part of the federal government's implementation of the CCME Canada-wide Strategy, it is EC's stated intention to develop a regulation under the *Fisheries Act*. The Canada-wide Strategy will more clearly define regulatory requirements related to the release or discharge of wastewater into surface waters. Environment Canada's goal is to ensure that effluents from wastewater systems are treated before being discharged to the receiving environment so that effluents do not pose unacceptable risks to ecosystem and human health, or to fisheries resources.

The focus is on setting maximum allowable limits for BOD₅, residual chlorine and TSS in municipal wastewater effluent. There will be a period of up to five years during which northern issues are examined and practical limits put forth for wastewater quality. For the Hamlet, this may eventually impact the BOD and TSS discharge criteria.

Spill Contingency

- **All** spills must be documented and reported to the NWT Spill Line at (867) 920-8130.
- The proponent should produce a Spill Contingency Plan which includes the new operations and infrastructure. The plan should facilitate response to spills which might occur during construction and operation and decommissioning of the project. The plan should include a list of available spill response equipment and the names of trained personnel who will be on-site and available in the case of a spill.

Sewage Sludge Disposal

- Maintenance should include removal and disposal of sewage sludge. Estimates should be made of the quantities of sludge likely to be produced, the required frequency of extraction from the lagoons; and operational procedures developed for environmentally sound removal and disposal. These procedures should include characterization to ensure disposal options are appropriate. Environment Canada recommends that prior to desludging occurring, the proponent submit for approval a Sewage Sludge Management

Plan that clearly outlines the chemical composition of the sludge, and how sludge will be stored, treated and eventually disposed of.

If there are any changes in the proposed activities, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 669-4772 or by email at savanna.levenson@ec.gc.ca

Yours truly,

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