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Your File: 3BM-CLY0308

Our file: 4782 043

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**RE: NWB 3BM-CLY0308 – Hamlet of Clyde River – “Type B” Water License Renewal**

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 under the *Canadian Environmental Protection Act*, and Section 36(3) of the *Fisheries Act*.

The Hamlet of Clyde River is applying to renew their water license to allow for the municipal use of water and the deposit of waste. The current sewage treatment system consists of a single cell lagoon which decants seasonally into a natural wetland, with eventual discharge into the Patricia Bay. However, the capacity of the lagoon is no longer adequate to provide sufficient sewage treatment for the population of Clyde River, nor does it meet the conditions outlined in the expiring water licence. The Hamlet is in the process of improving the existing sewage treatment facilities through increasing the capacity by constructing a new sewage lagoon to work in conjunction with the existing lagoon. Given the operating problems in the past (i.e., lagoon breach in June 2008), EC strongly supports this improvement of the sewage facilities being done in a timely manner.

No improvements are planned for the solid waste site at this time; however rehabilitation of the facility is planned to occur between 2009 and 2011, as funding becomes available.

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 Hamlet is to ensure that all construction and blasting activities done in connection with sewage lagoon upgrades 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 Operations and Maintenance Manual should be submitted for approval as a condition of the water licence. Generally the plan should include:
  - A description of how facilities are operated and maintained;
  - How often these tasks are performed; and
  - Who is responsible for their completion.

- A Closure and Reclamation Plan for the existing solid waste and sewage treatment facilities should be submitted for approval as a condition of the water licence, no later than 9 months prior to closure of the facilities.
- The submission of an annual report as a condition of the license, including monitoring results and updates to plans.

### Fuel Storage and Spill Contingency

- The proponent should update the Draft Spill Response Plan for approval as a condition of the water licence for the existing facilities. The plan should facilitate response to spills which might occur during construction and operation and decommissioning of the facilities. 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.
- Secondary containment or surface liners (drip pans, fold a tanks, etc.) should be placed under all containers or vehicle fuel tank inlet and outlet points, hose connections and hose ends during fuel or hazardous substance transfers. Secondary containment should be of adequate size and volume to contain and hold fluids for the purpose of preventing spills (the worst-case scenario).
- Transfer operations should be attended by trained personnel at all times.
- Please note that any spill of fuel or hazards materials, adjacent to or into a water body, **regardless of quantity**, shall be reported immediately to the NWT 24-hour Spill Line, **(867) 920-8130**.
- Environment Canada operates a 24 hour emergency spill line that is monitored by Emergency and Enforcement Officers. The number to be called to contact the Duty Officer is **(867) 766-3737**.
  - The number for EC given in the Draft Spill Response Plan is no longer current. This number should be removed and replaced with the above contact information.

### Sewage Treatment Facility

- 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'; these standards are BOD<sub>5</sub> 120 mg/L and TSS 180 mg/L. These limits should be set at the last point of control, this being the discharge structure from the lagoon, not the end of the wetlands. However, the quality of effluent leaving the wetland should still be monitored in order to determine the performance of the wetland as a secondary treatment system.
- 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/mwwe\\_cda\\_wide\\_strategy\\_consultation\\_e.pdf](http://www.ccme.ca/assets/pdf/mwwe_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 BOD<sub>5</sub>, 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.
- A minimum 1 m of freeboard should be maintained within the sewage lagoon at all times, or as specified by a geotechnical engineer for the new lagoon structure.
- Environment Canada recommends that a Sludge Management Plan be submitted for approval. EC recommends the following on sewage sludge disposal:
  - Maintenance should include periodic 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.

- Environment Canada recommends that proper signage is in place indicating the locations of the sewage lagoon and wetland treatment areas.

### **Monitoring**

- Appropriate signage should be erected identifying all Surveillance Network Program (SNP) stations.
- Monitoring frequency performed by the Hamlet should be sufficient to inform how the system can best be managed to optimize treatment. For example, timing of discharge will be a factor in how effectively the wetland can take up nutrients and incorporate solids; discharge should occur gradually over the warmer months to ensure that the effluent has enough treatment time in the wetland system.

### **Solid Waste Disposal Facility**

- Waste segregation practices should be identified and used to ensure removal of salvageable items and hazardous materials from the general wastes. Dedicated locations should be identified for hazardous wastes, including batteries and waste oil, honey bags, animal caresses, and contaminated soil. Signage indicating the location of the various disposal cells for each waste type in the solid waste disposal facilities should be erected.
- EC recommends that waste oil and/or fuel barrels should be stored in a lined and bermed area. Please note that all hazardous materials should be neutralized and stored in sealed and labeled containers. Effluent that has accumulated within the hazardous waste storage containment area should be treated as hazardous waste and decanting of snow or water from the area of the hazardous waste storage area should proceed only if the appropriate chemical analysis has determined the contents meet the requirements of Section 36(3) of the *Fisheries Act*.
- Drainage management will be needed to minimize leachate generation from the solid waste facility. As part of the O&M plan, the Hamlet should identify testing and disposal of any collected leachate. These issues should be addressed prior to any discharge to ensure the requirements of the *Fisheries Act* will be met.
- Fencing of the solid waste site should be done to facilitate control of access to the landfill and to prevent the spread of debris.
- Open burning of municipal waste is strongly discouraged by EC, as this results in the formation and spread of some extremely toxic compounds due to incomplete combustion of plastics and other household materials.

If there are any changes in the proposed activities, EC should be notified, as further review may be necessary. Please contact me with any questions or comments with regards to the foregoing at (867) 669-4746 or by email at [jane.fitzgerald@ec.gc.ca](mailto:jane.fitzgerald@ec.gc.ca)

Yours truly,

Jane Fitzgerald  
Environmental Assessment Coordinator  
Environmental Protection Operations

cc: Carey Ogilvie (Head, EA-North, Environment Canada)  
Anne Wilson (Water Pollution Specialist, Environment Canada)