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via e-mail

RE: Hamlet of Kugaaruk – Kugaaruk Water License Renewal – 3BM-PEL

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 Kugaaruk is applying to renew their water license to allow for the municipal use of water and deposit of waste. The renewal application includes upgrades to the sewage lagoon and solid waste management facility.

Sewage Treatment Facilities

The Hamlet currently operates a single cell lagoon which decants continuously May- September into a natural wetland, with eventual discharge into the Ocean. However, the capacity of the lagoon is no longer adequate to provide sufficient sewage treatment to the growing population of Kugaaruk. The treatment system is also currently experiencing seepage at a rate that is unacceptable. The Hamlet is therefore proposing to improve the existing sewage treatment facilities through increasing the capacity by re-constructing and raising the berms and blasting out the bottom of the lagoon. A liner will be installed in the new berm to eliminate seepage of effluent into the environment. Work on the sewage lagoon is expected to occur in two phases over two years.

Improvements to the Solid Waste Landfill include the installation of a fence around the perimeter of the site and the installation of signage. Changes are proposed for the solid waste landfill in order to control windblown debris.

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*. The proponent shall not deposit, nor permit the deposit of any wastes, chemicals or sediment into any water body. 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 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.

Monitoring

- No effluent criteria, effluent projections and 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 equivalence 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 *coliform* should also be applied.
- Environment Canada recommends that in addition to the proponent monitoring the quality of the effluent being discharge in order to understand treatment efficiency.
- 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 Canada-wide Strategy, which addresses specific parameters and governance, was released in draft form in November 2006 (http://www.ccme.ca/assets/pdf/mwwe_consultation_pkg_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 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. EC is available to review such a plan with the Hamlet.

Sewage Sludge Disposal

- Maintenance should include removal and disposal of sewage sludge; this does not appear to have been considered. 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.

Solid Waste Management

- To ensure hazardous waste or industrial materials are not discharged into the solid waste disposal area EC encourages better management of household hazardous waste (eg. reduction,

segregation, containment and final disposal to an approved facility). An updated Maintenance and Operation Plan is needed for up-grades to the facility as well as reflect commitments to waste reduction and proper handling of hazardous waste.

- Are there closure plans for the existing landfill site? EC recommends that a Closure and Reclamation Plan be submitted for approval at least 12 months prior to closing the facility.

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) 975-4631 or by email at cindy.parker@ec.gc.ca.

Yours truly,

Original signed by

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Environmental Assessment Specialist

cc: (Carey Ogilvie, Manager Environment Canada, Yellowknife, NWT)
(Anne Wilson, Water Pollution Specialist, Yellowknife, NWT)