



**Environment Environnement
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Our file: 4782 033

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Re: Hamlet of Cambridge Bay – Water Licence Renewal – Type “B” – 3BM-CAM0207

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 Cambridge Bay is applying to renew their current water license and to allow for the improvement of the existing sewage lagoon and solid waste facility. The current sewage treatment system consists of a series of six natural lake lagoons that discharge into Cambridge Bay. Although the current sewage treatment system meets water licence effluent criteria, there is some concern about the location of discharge into the Bay, given it's proximity to the community, and the ability of the lagoon capacity to meet the needs of the community over the next twenty years.

The proposed improvements to the sewage lagoon include the construction of berms to enhance the size of the primary and secondary cells, aiding with the removal of solids, and allowing for controlled discharge. The treatment system will also be redirected to discharge through a wetland area before entering Cambridge Bay further east of the community than the current discharge point. It is proposed that the system be decanted manually once a year in mid-August.

The solid waste facility will also be improved through berm construction to control leaching and runoff management. As well, waste will be partitioned for honey bag and carcasses, plastic and bulky wastes, hazardous waste and municipal solid waste.

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 site and solid waste facility 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.
- A Closure and Reclamation Plan for the facilities should be submitted for approval as a condition of the water licence.

Fuel Storage and Spill Contingency

- The Spill Contingency Plan should include 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**.

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 BOD₅ 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. The efficiency of the wetland should be monitored in order to determine the performance of the wetland as a supplementary 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). 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.
- A Sewage Sludge Management Plan for the facilities should be submitted for approval as a condition of the water licence for the upgraded sewage lagoon.
 - The maintenance plan 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 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 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

- Environment Canada supports that procedures outlined in the proponents new Operations and Maintenance Manual, including the insulation of fencing around the site and the segregate of hazardous wastes, including batteries and waste oil, from the general waste stream. EC also supports the creation of a new location for honey bag and animal caresses as outlined in the Detailed Design Report for The Redevelopment of Existing Waste Facilities.
- The proponent should erect signage indicating the location of the various disposal cells for each waste type in the solid waste disposal facilities.

If there are any changes in the proposed activities, EC should be notified, as further review may be necessary. Please contact Savanna Levenson 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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