



Environment Canada
Environnement Canada

Environment Canada
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Our file: 4782 045
Your file: 3BM-PAN0207

Phyllis Beaulieu
Manager of Licencing
Nunavut Water Board
PO Box 119
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Via Email

Re: Hamlet of Pangnirtung – Renewal – Type “B” Water Licence 3BM-PAN0207

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 Pangnirtung is applying to renew their water licence to allow for the municipal use of water and deposit of waste. The Hamlet of Pangnirtung installed a waste water treatment system that has some issues with performance which are documented in the Dillon Consulting study “Pangnirtung Waste Water Treatment Plan: Comprehensive Performance Evaluation.” Several recommendations have been made in the report involving upgrades to the current system. The final system design is to be decided upon by the Council shortly. The Hamlet has also had some problems with the solid waste facility. The Technical summary submitted with the application states that the site was inappropriately sited due to ecological concerns, is poorly operated, poorly maintained and is nearing its capacity. In addition, Dillon Consulting did another feasibility study on the solid waste management in Pangnirtung. In the last inspection report concerns were raised over the open piles of commercial fish waste and bags of sewage sludge that were left unburied. There was also some seepage from these piles that was flowing from the dump area directly into the environment. The Hamlet is currently deciding upon several options in order to improve the conditions, these include creating a new landfill further from the community, constructing an incinerator, or a combination of both.

Environment Canada recommends the following conditions for inclusion in the renewed water license:

General:

- The Hamlet must ensure that any effluent discharged from the system’s final discharge point is 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 past water licence states that all fish processing waste is to be deposited in the solid waste facility. EC would like to confirm that fish plant wash water is not being deposited into the sewage treatment system. Soap residues may have an adverse effect on the biological community within the treatment system.

- Environment Canada recommends that, while determining the next steps towards improvements needed for the Solid Waste Facility, that the issues surrounding the open piles of waste and runoff from the site are addressed.
 - Firstly, the open piles should be covered to ensure that waste is not migrating from the facility and
 - Secondly, EC strongly recommends that berms be installed to collect and contain the leachate until drainage management can be implemented.
- Environment Canada recommends that, at a minimum, the low capital cost modifications outlined in the report by Dillon Consulting for the Waste Water Treatment Plant be considered. These include:
 - Continuously transfer RAS (Return Activated Sludge) from the Clarifiers to the sewage Receiving Tank or the Screened Sewage Tank;
 - Remove WAS (Waste Activated Sludge) from the Clarifiers to the Aerated Sludge Digester in daily batches;
 - Eliminate the return of sludge from the Aerated Sludge Digester to the Screened Sewage Tank;
 - Re-route the Clarifier scum sludge waste piping to the Aerated Sludge Digester instead of to the Equalization Tank;
 - Increase the size of the Bioreactors' aeration system blower, from 5 hp to 7½ hp, could use existing "Sutorbilt" model 4HVP;
 - Install a new in-line grinder on the feed line to the Bioreactors, following the Equalization Tank;
 - Establish the timing of the operation of the RAS and WAS cycles;
 - Increase the aeration in the digester;
 - Intermittently aerate and decant digester supernatant to increase sludge solids; and
 - Increase the removal frequency of sludge from the Aerated Sludge Digester to the Dewatering Bagger System.
- 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.
- Should any future construction take place during upgrading or moving of the facilities, 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. The past licence references more details or guidelines to be followed, and EC recommends taking these forward for the renewal licence. Generally, the plan should include:
 - A description of how facilities are operated and maintained;
 - How often these tasks are performed;
 - Who is responsible for their completion; and
 - A contingency plan should the facility be inoperable.

Monitoring

- No 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, including effluent quality and sludge generation and management.
- An updated SNP report should be submitted for approval as a condition of the water licence. The location of station KIM-3 should be clearly identified and parameter limits

should be carried forward from the previous licence assuming that the final discharge point is at the lagoon outlet and treatment does not include a wetland.

- 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.

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.

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.

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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