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Your file - Votre référence
NWB3REP
Our file - Notre référence
9545-2-3-REP-G

22 January 2004

Phyllis Beaulieu
A/Licensing Administrator
Nunavut Water Board
P.O. Box 119
Goa Haven, Nunavut X0E 1J0

Dear Ms. Beaulieu

Re: Water Licence Application, Repulse Bay

Thank you for providing me with an opportunity to comment on the above-mentioned application.

Conditions Applying to Water Use:

Based on the information provided on page 4 and page 21 of the Supplementary Questionnaire (58 m³ /day) the community requires approximately 22,000 m³ of water per year. Information with respect to the recharge rate of Nuviq Luktujuk Lake has not been provided, except to say that *“there is no effect on the volume of Nuviq Luktujuk Lake”*.

INAC suggests that at some point in the future, the community try to establish a more accurate assessment – in terms of actual volume – of the re-charge rate (vs. withdrawal) of the Lake. This information will come in handy if and when the time comes for the community to assess it's long term requirements.

Assuming that the community, in calculating their water use requirements, have taken into account other contingencies such as population increase, major fires and other similar and unexpected exigencies INAC suggests that the licence limit for water use be set at 22,000 -23,000 m³.

Conditions Applying to Waste Disposal: Solid Waste:

INAC has a number of comments and concerns to offer with respect to the management of the landfill and which should be incorporated into the water licence:

1. Used oil is regularly (open) burned with the garbage. This practice should not be allowed to continue. While, strictly speaking, burning the used oil is preferable to

allowing it to escape into the land or water, it is not much better. Used oil contains a number of contaminants that, when burned at low temperatures, such as in a garbage fire, produce highly toxic by-products that pose a risk to human health and to the environment.

2. The proponent has indicated that no commercial or industrial hazardous waste is being deposited into their landfill, however, the presence of waste oil and lead acid batteries contradict this statement. Furthermore, no mention is made with respect to managing household hazardous wastes.

The Hamlet should develop and implement a hazardous waste management plan which addresses the safe handling, storage and disposal of waste oil and other hazardous wastes (including lead-acid batteries). INAC suggests that the proponent obtain a copy of the Government of Nunavut's *Guideline for the General Management of Hazardous Waste*. INAC is also aware that the GN recently (June 2003) released the *Nunavut Hazardous Waste Management Manual*; the purpose of which is to provide guidance to landfill operators and SAOs in implementing a hazardous waste management program.

3. Storage of used oil and other liquid wastes: The Hamlet should designate a suitable and secure, fenced in area for the storage of used oil and other hazardous waste.
 - i. Drummed used oil and other liquid wastes should be stored in new drums or used drums that are in serviceable condition.
 - ii. The drums should be stored in the upright position and stored in such a manner that each can be regularly inspected for leaks and/or damage.
 - iii. The drums should be located away from water bodies; preferably in a natural depression or a properly bermed area.
 - iv. Drums of liquid waste should be stored on pallets to prevent the bottoms from rusting out.
 - v. The drums should be stored in a secure, separate and fenced-in area. The area should be clearly identified to prevent damage from heavy equipment in the event that it is buried by drifting snow during the winter months.
 - vi. INAC suggests that lead-acid batteries should be stored on pallets and preferably inside of a dedicated container such as a sea can. Batteries should be stacked no more than two tiers high and separated by a layer of plywood or other non-conductive material.

4. According to INAC's last inspection report dated December 17, 2003, runoff from the landfill flows towards the sewage treatment (wetlands) area. The Hamlet should take steps to control this runoff and in general, prevent water from flowing through the landfill.
5. Litter and other debris continues to escape from the landfill site due to an absence of fencing. While it has been noted that the Hamlet is in the process of constructing another landfill site, which will include a perimeter fence, the Hamlet should take steps to contain and control litter from the existing site until such time as the new site has been completed. INAC suggests that temporary fencing might offer an interim solution.
6. The Hamlet should be working towards a landfill management plan that precludes open burning of unsegregated municipal waste as a means of volume reduction. I have attached to this letter, a copy of a policy pertaining to open burning of municipal solid waste, which was developed by the Environmental Protection Service of the Government of the Northwest Territories. The Hamlet may find it to be helpful.
7. Establish an SNP station, to monitor water quality at the new landfill site. Metal concentrations should not exceed the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life* (copper-5 ug/L vs 4 ug/L; iron-2.36 mg/L vs 0.3 mg/L, and zinc-130 ug/L vs 30 ug/L).
8. The Hamlet should be required to submit for review, an abandonment and restoration plan for the eventual decommissioning of the current landfill site.

Non-Regulatory Comments and Suggestions:

1. INAC suggests that the Hamlet investigate the possibility of obtaining a used oil furnace as a means of managing their used oil. These appliances have an excellent track record and have improved significantly over the years in terms of efficiency, performance and ease of maintenance.
2. The Hamlet has indicated that acid from (lead-acid) waste batteries is removed and neutralized. INAC commends the Hamlet for their initiative. INAC suggests, however, that personnel carrying out this task be properly trained and equipped for the job, given the potential for serious injury to personnel should they accidentally mishandle this material. INAC can provide some direction to the Hamlet with respect to training and equipment.
3. INAC notes that the criteria upon which FSC¹ based their recommendations for solid waste management appear to be heavily biased in favour of the cheapest solution. It was therefore a foregone conclusion that land filling would be the preferred option. While this in itself is not necessarily the wrong decision, INAC feels that other options, such as incineration, which may have offered better environmental and long term solutions, were, due to the limitations imposed by the aforementioned criteria, effectively dismissed without further consideration.

¹*Repulse Bay Sewage Treatment and Solid Waste Repulse Bay, Nunavut*. Ferguson, Simek Clark Engineers and Architects. Yellowknife, NWT. March 2002.

Conditions Applying to Waste Disposal: Wastewater/Sewage

The Dillon report² seems to indicate that the wetlands system which the Hamlet is using to treat their sewage, is an effective and efficient system and that it meets all current marine guidelines.

The most recent INAC inspector's report indicates that the inspector was, due unforeseen circumstances, unable to collect effluent samples during his last site visit. INAC is therefore not in a position to comment on whether or not the Hamlet is currently in compliance with accepted effluent guidelines.

INAC notes three areas of concern:

- Litter from the nearby landfill site is impacting the wetland.
- There does not appear to be a system of baffles in place at the sewage drop-off point. A baffle system is necessary to prevent streaming and ditching.
- There does not appear to be any mechanism in place to intercept and collect persistent materials such as plastics.

INAC suggests that the following be included in the water licence:

1. Sample wetland treatment system effluent monthly, during periods of flow, as per the *Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories* (1992), the effluent must meet the following criteria:

Total Suspended Solids - 100 mg/L	pH - 6-9
BOD - 80 mg/L	Oil and Grease - no visible sheen
Total Coliforms - 10,000 CFU/100 mL	Ammonia - monitor only
2. Garbage and other debris should be regularly removed from the wetlands treatment area. Steps should be taken to prevent litter from impacting this area (refer to # 5 under: "Solid Waste",)
3. The Hamlet should follow the recommendations offered on page 22 of the FSC report³ which was included with this licence application.


²*Repulse Bay Wetlands Sewage Treatment System. Impact Assessment.* Dillon Consulting Ltd. Yellowknife, NWT. June 1998.

³*Repulse Bay Sewage Treatment and Solid Waste Repulse Bay, Nunavut.* Ferguson, Simek Clark Engineers and Architects. Yellowknife, NWT. March 2002.

General Comments:

1. Control all activities, including maintenance procedures and refueling, to prevent the entry of petroleum products or other deleterious substances into the water.
2. Prepare and submit a spill contingency plan for review. The Government of the Northwest Territories' Environmental Protection Service developed a very useful set of spill planning and reporting guidelines to complement their *Spill Contingency Planning and Reporting Regulations*; both of which have been adopted by the Government of Nunavut. INAC suggests that the Hamlet will find these guidelines to be helpful in developing a spill plans. INAC is willing to review the Hamlet's spill plan and provide advice.
3. Report all spills of oil, fuel, or other deleterious material immediately to the 24-Hour Spill Line at (867) 920-8130. Collect calls are accepted.
4. Ensure that appropriate training of municipal staff is completed to ensure quality control in sampling collection and preparation.

Thank you again for providing INAC with an opportunity to comment on this licence. If you have any questions or require clarification on any of the above comments, please do not hesitate to contact me by phone or by e-mail.



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Municipal Solid Wastes Suitable for Open Burning

Municipal solid wastes (MSW) that are conditionally suitable for open burning are paper products, paperboard packing and untreated wood wastes only.

Conditions for this burning are:

1. The principle of source reduction should be utilized to reduce, reuse and recycle materials otherwise bound for landfill.
2. The appropriate materials are segregated and burned in a controlled manner and at a controlled site which is separate from the working landfill so that the fire cannot spread.
3. Standard burning conditions shall apply, such as burning on days where winds are light and blowing away from the community.
4. Materials are burned in manageable volumes so that fires do not get out of control.
5. Having applicable permits for burning.
6. Managed by authorized, qualified personnel from the community.
7. The above conditions are also recommended in the NWT Municipal and Community Affairs Solid Waste Modified Landfill Guidelines, which have been adopted for Nunavut.

Building demolition wastes should not be burned unless they have been sorted to remove non-wood waste such as roofing materials, electrical wire, plastics, asbestos and other non-wood wastes.

Waste wood treated with preservatives such as creosote, pentachlorophenol or heavy metal solutions shall not be burned. Examples of treated wood materials include railroad ties, telephone/hydro poles, pilings, cribbing and foundations.

Following a review of the specific landfill location, additional local conditions or controls may be applied.

Where geographic conditions do not allow for the proper operation of a modified landfill, such as limited availability of cover materials and unsuitable ground conditions, communities may have to assess other alternatives of MSW management i.e.: balefill and/or incineration.

The open burning of non-segregated MSW remains an unacceptable option for the management of MSW. Continuation of this practice should not be allowed unless a site-specific assessment fails to identify a feasible and practical alternative. At this point, some form of segregation will be required.