

## Elaine Briere - MVLWB

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**From:** Fitzgerald,Jane [Ye] [Jane.Fitzgerald@EC.GC.CA]  
**Sent:** Wednesday, August 12, 2009 11:35 AM  
**To:** permits@mvlwb.com  
**Subject:** Addendum to EC's comment letter on MV2008L3-0004 Hamlet of Enterprise Type B Water Licence

Tyree,

I'd like to add an addendum to EC's letter of comment on the Hamlet of Enterprise's Type B Water Licence application (MV2008L3-0004) that was submitted yesterday.

- Regarding the submission of an Operations and Maintenance Manual (see page two of EC's 11 August 2009 comment letter), in addition to the list of items that generally should be included in the plan given in the letter, (i.e., (1) A description of how facilities are operated and maintained; (2) How often these tasks are performed; and (3) Who is responsible for their completion), a section on the management and ultimate disposal of hazardous wastes should also be included.

If you have any comments or questions pleas let me know.

Thank you,

Jane Fitzgerald  
Environmental Assessment Coordinator

EPOD  
Environment Canada  
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## Elaine Briere - MVLWB

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**From:** Fitzgerald,Jane [Yel] [Jane.Fitzgerald@EC.GC.CA]  
**Sent:** Tuesday, August 11, 2009 4:50 PM  
**To:** permits@mvlwb.com  
**Cc:** Wilson,Anne [Yel]; Ogilvie,Carey [Yel]; Kelly,Mary [Yel]  
**Subject:** MV2008L3-0004 - Hamlet of Enterprise - Type B Water Licence Application  
**Attachments:** MV2008L3-0004 - Hamlet of Enterprise - Type B Water Licence Application.pdf

Please find attached EC's response regarding MV2008L3-0004 – Hamlet of Enterprise – Type B Water Licence Application.

Thank you,

Jane Fitzgerald  
Environmental Assessment Coordinator

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<<MV2008L3-0004 – Hamlet of Enterprise – Type B Water Licence Application.pdf>>



Environmental Protection Operations  
Prairie and Northern  
5019 52<sup>nd</sup> Street, 4<sup>th</sup> Floor  
P.O. Box 2310  
Yellowknife NT X1A 2P7

August 11, 2009

Our file: 4782 030  
Your file: MV2008L3-0004

Mackenzie Valley Land and Water Board  
4910 50<sup>th</sup> Ave.  
P.O. Box 2130  
Yellowknife NT X1A 2P6

Attention: Tyree Mullaney  
Regulatory Officer

*via email: [permits@mvlwb.ca](mailto:permits@mvlwb.ca)*

**RE: MV2008L3-0004 – Hamlet of Enterprise – Type B Water Licence Application**

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 Enterprise is applying for a water license to allow for the deposit of municipal sewage and solid waste. The current sewage treatment system consists of a two cell lagoon which decants continuously into a natural wetland. The current solid waste facility accepts domestic solid waste from the hamlet and campground, no commercial waste is accepted.

Clarification on the following points is required:

- Regarding the operation of the Sewage lagoon, how and when is sewage effluent transferred from the first to the second cell and from the second cell to the wetland?
- What is the receiving environment of the treated sewage effluent following secondary treatment in the wetlands (i.e. where does the wetland flow to)?

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.
- 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 Spill Contingency 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**.
- The number for EC given in the Spill Contingency Plan is no longer current and should be removed.

### **Sewage Treatment Facility**

- There is a discrepancy in the amount of sewage reported to be generated by the Hamlet between the Water License application and the 2002 Planning Study. In section 1, item 8 of the WL application (page 4) it is stated that 36,500m<sup>3</sup> (or 35,500,000L) of sewage is deposited into the lagoon each year, however in the 2002 Planning Study by FSC it was estimated the sewage produced in 2002 was 2,062,872L and in 2022 would be 2,791,920L. Based on these predictions, the 2002 Planning Study estimated that the current sewage lagoon would continue to retain Enterprises Sewage until 2040, given its estimated capacity of 4,500,00L. If the predictions by the 2002 Planning Study were incorrect and 36,500,000L of sewage is being generated per year, future information on how the system is able to retain sewage generated over the winter given it's capacity of

only 4,500,000L. How does this increase in sewage production change the estimated life expectancy of the current system?

- 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 discharge point 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.
  - EC notes that the CCME Strategy for the Management of Municipal Wastewater has been signed, and that northern jurisdictions can expect performance standards for BOD<sub>5</sub> and TSS to be regulated following a five year period which starts in 2009. We anticipate that the standards for these parameters may be higher than the 25 mg/L for each that is proposed for the southern jurisdictions and the Yukon, and that they will be considerably lower than the NWT blue book guideline levels. Also, it should be noted that carbonaceous Biological Oxygen Demand (cBOD) will be the regulated parameter, and it would be prudent to add this to the list of licence parameters now, in order to gain some idea of the system track record over the next five years.
- A minimum 1 m of freeboard should be maintained within the sewage lagoon at all times.
- 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**

- 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.
- Appropriate signage should be erected identifying all Surveillance Network Program (SNP) stations.

### **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, animal carcasses, contaminated soil, and bulky metals. 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, including that from households, should be neutralized and stored in sealed and labelled 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.

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 at (867) 669-4772 or jane.fitzgerald@ec.gc.ca with any questions or comments.

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)