



Environmental Protection Operations Directorate (EPOD)  
Prairie and Northern Region (PNR)  
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May 8, 2015

EC file: 6200 000 008 /004  
NWB file: 3AM-GRA101

Phyllis Beaulieu  
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Nunavut Water Board  
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Via e-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**RE:    Application for the renewal of Licence 3AM-GRA1015, Government of Nunavut, Department of Community and Government Services (GN-CGS), Hamlet of Rankin Inlet**

Attention: Phyllis Beaulieu

Environment Canada (EC) has reviewed the Application for the renewal of Licence 3AM-GRA1015; submitted by the Government of Nunavut, Department of Community and Government Services (the Proponent) to the Nunavut Water Board (NWB) for the Hamlet of Rankin Inlet (the Project); in response to the NWB's correspondence dated March 27, 2015. EC has made specific comments on this Project, which can be found below. Additionally, the Proponent is still required to comply with its obligations under relevant legislation; including the *Canadian Environmental Protection Act, 1999*; the pollution prevention provisions of the *Fisheries Act*; the *Migratory Birds Convention Act, 1994*; and the *Species at Risk Act*.

Discharge Criteria and Requirements:

1. Rankin Inlet is currently only achieving primary treatment, and EC encourages the Proponent to prioritise improving treatment to achieve secondary treatment of sewage wastewater within a reasonable time frame. The expiring licence includes no effluent quality criteria, as the marine discharge falls outside the NWB's jurisdiction to regulate. The *Fisheries Act* applies in this case.
2. All effluent discharges must meet the *Fisheries Act* requirement that any deposits to waters frequented by fish be non-deleterious. EC recommends that the Proponent should strive to meet or exceed the *Wastewater Systems Effluent Regulations* SOR/2012-139 *Fisheries Act* Registration 2012-06-29 for effluent quality at the end of the treatment system. Specifically:

- average carbonaceous biochemical oxygen demand (CBOD) due to the quantity of CBOD matter of less than or equal to 25 mg/L;
  - average concentration of suspended solids of less than or equal to 25 mg/L;
  - average concentration of total residual chlorine of less than or equal to 0.02 mg/L;
  - maximum concentration of un-ionized ammonia of less than 1.25 mg/L, expressed as nitrogen (N), at 15°C ± 1°C; and
  - non-acutely lethal effluent.
3. Although the *Wastewater Systems Effluent Regulations* do not currently apply to the North, EC recommends monitoring and sampling be aligned with the requirements of the *Wastewater Systems Effluent Regulations*.

Licence Term:

4. The applicant has requested a 25 year licence term. EC recommends a shorter term as appropriate to review and revisit licence conditions, and suggests a term of 5-8 years.

Sewage Treatment Facility (STF) O&M Plan:

5. EC has identified the following areas where the O&M Plan could provide a better level of detail:
- It is not clear whether the landfill will be able to accommodate the wastewater (WW) sludge that will be generated over the life of the requested licence term (25 yrs.); this should be considered in the updated plan.
  - Will the STF will be able to handle the peak volume of influent that would be expected over the life of the licence? The plan discusses the design flows (section 2.5) and the Water Licence application (page 10) gives a projection of population growth and projected water consumption up to 2040. However, there does not appear to be an estimate of peak wastewater flows into the STP over the design horizon (25 years). This should be considered in the updated plan, along with looking at whether the effluent discharge piping & FDP are prepared for the projected peak discharges over project life.
6. EC recommends the Plan also:
- Describe what upgrades have been made to the STF and/or WW management system, including when the upgrades were completed.
  - Describe any planned future upgrades to the STF and/or WW management system, including a planned upgrade schedule.
  - What is the design life of the STF and the WW management system components?
  - Are there plans to provide more than primary treatment in the future? (Sewage lagoon? Other?)
  - The Plan should include a description of how hazardous wastes & incompatible materials are diverted from the WW system in order to minimize the effects of the effluent on the receiving environment.

Monitoring:

7. GRA-2 has been established in the marine receiving environment and is to be samples 4 times per year. However, there are no monitoring results provided with the last Annual Report on file (2013). Results are also missing for GRA-3, the discharge from the STF. EC requests that monitoring results be provided.

Updated Plans and Reports:

8. The Water Licence applications states that the following documents will be provided:
- The 2015 First Quarter Report will be submitted to the NWB by **April 17, 2015**.
  - The following plans are currently being reviewed and updated versions will be submitted to the NWB by **April 17, 2015**:
    - Updated *Sewage Treatment Facility Operation and Maintenance (O&M) Plan*; and
    - Updated *Environmental Monitoring Program and Quality Assurance/Quality Control Plan*

EC notes that these are not yet available for review in conjunction with the renewal process, but that we will provide comments if they are circulated subsequently.

For further clarification on any aspect of this submission, please contact Michael I. Mohammed at (867)-975-4981 or michael.mohammed@ec.gc.ca.

Sincerely,



Michael I. Mohammed  
Senior Environmental Assessment Coordinator

cc: Loretta Ransom; Acting Head, Environmental Assessment North (NT & NU),  
PNR-EPOD  
EC Internal Distribution