



Environment Canada / Environnement Canada

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August 5, 2002

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Our File: 4782 026

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Re: Rankin Inlet Municipal Water Licence Renewal - Water Licence NW3RAN

On behalf of Environment Canada (EC), I have reviewed the above renewal documentation consisting of the water licence application and supplementary questionnaire, the Rankin Inlet Solid Waste - Final Report (NorthTech Consulting) and excerpt from the Wastewater Treatment Plant Operating Procedures. The following comments are offered for your consideration:

Sewage Disposal

- The current practice includes removal of solids (and this is often bypassed in winter), with the sewage being pumped to a deep marine outfall. Disposal of sludge is a problem, as it is not dewatered, and could present handling challenges in freezing weather for transport to the more distant new landfill. EC recommends that the Hamlet investigate options for sanitary disposal of screenings.
- In light of problems meeting licence limits, the Hamlet should evaluate the options for secondary treatment.
- It is a requirement of the Fisheries Act that all effluent discharged into waters frequented by fish be non-deleterious. To provide an indication of effluent toxicity, EC recommends that annual bioassay testing be done for the end-of-pipe discharge, as an SNP condition. EC is available to assist with such testing.

Solid Waste Disposal

- A new solid waste disposal facility is being designed, and is slated to be commissioned in 2004. EC recommends that the renewal licence require details of the proposed new facility be submitted for approval, and that the site is engineered to facilitate segregation, salvage, and handling of hazardous wastes. With respect to the operation of a new facility, EC supports the prohibition on burning of garbage specified in the 1998 Northtech report; other compaction measures should be described. A plan for the abandonment and restoration (A&R) /decommissioning of the current facility will also be needed.
- Fencing at the existing solid waste site should be repaired to prevent windblown wastes from entering any water bodies. Fencing sections can be reused at the new facility.

Environment Canada



- The actual disposal of waste oil is unclear; the application states that it is currently burned in a trench, while the supplementary questionnaire states a contractor takes almost all waste oil, and the remainder is shipped out of the community. If the former is correct, improved practices should be implemented. Proper handling of waste hydrocarbons and other hazardous materials (such as batteries) should be outlined in an operations and maintenance manual. These need to be segregated from the waste stream, into secure facilities for holding of hazardous materials until shipped out for disposal.
- Although a new facility is underway, improvements in practices at the existing facility will pay off when at closure of the site. Considerable surface flow goes through the site during the open water season, and some work on drainage management now should be done to prevent problems with this at closure. Use of a salvage area should be instigated to attempt diversion of materials for re-use, and this practice can be carried forward to the new facility.
- Several plans need to be updated and submitted, including the A&R plan, operation and maintenance plan, and spill contingency plan. The latter should note locations of the inventory of spill response materials.

Surveillance Network Program

- Additional stations will need to be set up for any new facility, but the existing stations are adequate for the current configuration.
- The SNP was amended August 1, 1995, following commissioning of the current sewage plant, and sampling from the sewage outfall was eliminated. EC recommends this be reinstated, with station 0779-3 being tested for the parameters outlined in the Sept. 1, 1993 SNP (copy attached). Biannual (twice yearly) sampling would be acceptable rather than monthly.
- EC would like to see the solid waste runoff sampled annually for the existing site, and ammonia nitrogen added to the parameters tested.
- Pass/fail bioassay testing using rainbow trout and daphnia bioassay tests is recommended as an SNP condition.
- Results should be provided in annual reports or otherwise made available to reviewers.

Please do not hesitate to contact me at (867) 669-4735 with any questions or comments regarding the foregoing.

Yours truly,



Anne Wilson
Water Pollution Specialist

cc: Steve Harbicht (Head, Assessment & Monitoring, EPB)
Paula Pacholek (Environmental Assessment Coordinator, EPB)

NORTHWEST TERRITORIES WATER BOARD

LICENSEE:	HAMLET OF RANKIN INLET
LICENCE NUMBER:	N6L3-0779
EFFECTIVE DATE OF LICENCE:	September 1, 1993
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM:	September 1, 1993

SURVEILLANCE NETWORK PROGRAM

A. Location of Surveillance Stations

<u>Station Number</u>	<u>Description</u>
0779-1	The Nipissak Lake pumphouse.
0779-2	Williamson Lake pumphouse prior to entering distribution system.
0779-3	Treated sewage from Sewage Disposal Facilities where it enters the outfall pipe.
0779-4	Run-off below the Solid Waste Disposal Facilities just before entering the ocean.

B. Sampling and Analysis Requirements

- Effluent at Station Number 0779-3 shall be sampled monthly and analyzed for the following parameters:

Ammonia-Nitrogen	pH
BOD ₅	Suspended Solids
Fecal Coliform	Total Phosphate

- Effluent at Station Number 0779-3 shall be sampled annually and analyzed for the following parameters:

Calcium	Total Chromium
Conductivity	Total Copper
Magnesium	Total Iron
Oil and Grease	Total Lead
Organochlorine	Total Nickel
Potassium	Total Mercury
Sodium	Total Organic Carbon
Sulphate	Total Phenols
Total Cadmium	Total Zinc

3. Water at Station Number 0779-4 shall be sampled monthly, during periods of open water, and the run-off analyzed for the following parameters:

Ammonia-Nitrogen	Total Cadmium
BOD ₅	Total Copper
Calcium	Total Chromium
Conductivity	Total Iron
Fecal Coliform	Total Lead
Magnesium	Total Nickel
Oil and Grease	Total Mercury
pH	Total Organic Carbon
Potassium	Total Phenols
Sodium	Total Phosphate
Sulphate	Total Zinc
Suspended Solids	

4. Water Station Number 0779-4 shall be sampled annually, during periods of open water, and the run-off analyzed for the following parameter:

Organochlorine

5. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater", or by such other methods approved by the Analyst.
6. All analyses shall be performed in a laboratory approved by the Analyst.

C. Flow and Volume Measurement Requirements

1. The monthly and annual quantities of water pumped from the "Surveillance Network Program" Station Number 0779-1 for drinking purposes shall be measured and recorded in cubic metres.

D. Reports

1. The Licensee shall submit all of the information generated by the "Surveillance Network Program" annually as specified in Part B, Item 1 of the Licence.

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