



**Environment Environnement  
Canada Canada**

Environmental Protection Operations  
Qimugjuk Building 969  
P.O. Box 1870  
Iqaluit, NU X0A 0H0  
Tel: (867) 975-4631  
Fax: (867) 975-4645

June 15, 2009

Our file: 4782 025  
NWB file: 3BM-YRB0308

Richard Dwyer  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Tel: (867) 360-6338  
Fax: (867) 360-6361

*Via email at: [licensingadmin@nunavutwaterboard.org](mailto:licensingadmin@nunavutwaterboard.org)*

**Re: NWB 3BM-YRB0308 – Department of Economic Development & Transportation –  
Resolute Bay Airport Terminal Building – Renewal –Type B**

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 the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

**Background**

The Department of Economic Development & Transportation (ED&T) has applied for a renewal to their existing Type B water license. The solid waste facility and sewage lagoon are located approximately 3 km from the Resolute Bay airport and 8km from the Hamlet of Resolute Bay. These facilities were believed to have been built by Transport Canada in the 1970's to offer support to the airport facilities. The sewage lagoon consists of two unlined cells with exfiltration and over-topping detention pit, which was designed to flow in warm conditions south-west through the solid waste facility and then into Allen Bay. It is understood that under the National Airport Policy that Transport Canada retains responsibility for any required upgrades or relocation.

In the Operations and Maintenance (O&M) manual, ED&T proposes to implement the following at the Sewage Treatment Facilities: remove debris from the toe of the solid waste facility; erect signs at the sewage lagoon; establish monitoring stations (truck discharge and final discharge) and update the O&M manual accordingly; take effluent samples at monitoring stations; establish amount of sewage deposited in the past year; decant sewage from lower cell by a trash pump and hose which can reach the toe of the solid waste facility; and, provide the Board with an annual report.

In the Solid Waste Facilities Operations and Maintenance (O&M) manual, ED&T proposes to implement the following: continued separation of bulk metals; cover exposed materials with local gravel; burn combustible materials; separation of bulk metals and the segregation of hazardous wastes including waste oil, paints, and solvents, from the general waste stream into the landfarm area; and, separation and storage of batteries into a steel container.

EC supports a shorter licence term for this renewal in order for the proponent to fulfill license requirements and address compliance issues. Environment Canada supports the procedures presented in the Sewage Treatment Facilities and the Solid Waste Facilities O&M manuals and recommends that the following conditions also be applied to the renewal of the license:

#### **General**

- The proponent 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.
- The proponent has not submitted an annual report since 2003. Environment Canada recommends that the Board require the submission of annual reports for both the Sewage Treatment Facilities and the Solid Waste Facilities as a condition of the renewal of the license.
- EC recommends that Part C of the Water License referring to water use, be updated to show that water is no longer obtained from Strip Lake, and is now obtained from the Hamlet of Resolute Bay.

#### **Fuel Storage and Spill Contingency**

- ED&T has only provided a limited Spill Contingency Plan for the Sewage Treatment Facility and not for the Solid Waste Facility. EC recommends that a Spill Contingency plan be developed for the Solid Waste Facility. This plan should include, but not be limited to, the placement of spill kits at key locations, provide a list of agencies or person to be contacted in the event of a spill, assign responsibilities to staff and outline a clear path of response, and ensure that all spills, regardless of size are reported to the 24hr Spill Line (867) 920-8130.
- 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).

#### **Sewage Treatment Facility**

- Appropriate limits should be set at the last point of control, this being the discharge structure from the lagoon, not the end of the wetlands. Monitoring should include the quality of effluent leaving the wetland 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 BOD5 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. 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, or as specified by a geotechnical engineer.
- The Inspection Report completed by INAC, January 10, 2008, indicates that there has been “flow under the wall of the lagoon.” ED&T should inspect the lagoon regularly for leaks

and repair any problems as they arise until a new sewage lagoon can be constructed. If any repairs are required a plan should be submitted to the Board for approval.

- 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 wetland treatment areas.

### **Solid Waste Disposal Facility**

- It is recommended that the proponent take measures to prevent runoff from the Solid Waste Facility from entering any of the surrounding waterbodies. EC recommends that a berm or other similar preventative measure be employed to prevent runoff leaving the landfill until it is determined to be non-deleterious.
- EC recommends that waste oil and/or fuel barrels should be stored in a lined and bermed area. Please note that all hazardous materials should be neutralized (if applicable) 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*.
- Environment Canada recommends that the Board require a draft Closure and Reclamation plan for the Historical Landfill area as well as an implementation timeline for proposed activities.
- Open burning of municipal waste is strongly discouraged by EC, as this results in the formation and spread of some extremely toxic compounds due to incomplete combustion of plastics and other household materials, as well as the generation of fine particulate matter.
- Appropriate signage should be erected identifying solid waste facility, the historical waste facility and the asbestos area at the north end of the landfill.
- Fencing of the solid waste site should be erected to facilitate control of access to the landfill and to prevent the spread of debris. Existing scattered debris should be collected from surrounding tundra.

### **Monitoring**

- An investigation conducted by Dillon Consulting Ltd., identified discoloured water and hydrocarbon sheen at the base of the landfill. EC recommends that the proponent install monitoring stations below the Solid Waste Facility to determine if there is currently any impact from leachate.
- No monitoring data has been made available for review. EC recommends that the proponent provide monitoring data and a Monitoring Plan to the Board for review.
- Monitoring frequency performed by the proponent 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.

If there are any changes in the proposed activities, EC should be notified, as further review may be necessary. If you have any questions regarding the foregoing please contact Carrie Spavor at (867) 975-4631 or via email at [carrie.spavor@ec.gc.ca](mailto:carrie.spavor@ec.gc.ca).

Yours truly,

*Original signed by*

Carrie Spavor  
Environmental Assessment Coordinator

c.c: Carey Ogilvie (Head, Environmental Assessment-North, EPO, Yellowknife, NT)  
Anne Wilson (Water Pollution Specialist, EPO, Yellowknife, NT)  
Dave Fox (Air Issues Specialist, EPO, Yellowknife, NT)