Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Your File: 1BR-RAN
Our File/CIDM's #:
9545-2-3RANG/251165

Sept 3, 2008

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0A 1J0

Re: 1BR-RAN – Rankin Inlet Landfarm Project, Government of Nunavut (CGS) – New Type B Water Licence Application.

Please be advised that Indian and Northern Affairs Canada (INAC) has completed a review of a new Type B Water License Application for the Rankin Inlet Landfarm Project in the Kivalliq Region (see attached Technical Review Memo).

I would like to bring to your attention that it was noted in the recent INAC inspection report dated July 23rd, 2008 that the Rankin Inlet water licences NWB3RAN0207 and 3BM-GRA0207 have expired. It is strongly recommended that the municipality of Rankin Inlet and Government of Nunavut (CGS) provide to the NWB new water licence applications for all activities associated with water use and waste disposal within the municipality. Also, all plans associated with the application including Abandonment and reclamation plans, Operations and maintenance plans as well as outstanding past annual reports are all required to be completed and submitted with the above referenced applications.

Please feel free to contact me should you have any questions or comments. I can be reached at (867) 975-4568 or by email at RumboltI@inac-ainc.gc.ca.

Sincerely,

Original signed by

Ian Rumbolt
Regional Coordinator

Technical Review Memo

To: Richard Dwyer - Licensing Administrator, Nunavut Water Board

From: Ian Rumbolt – Regional Coordinator, Indian & Northern Affairs Canada

Re: 1BR-RAN – Rankin Inlet Landfarm Project, Government of Nunavut (CGS) – New Type B Water Licence Application.

The application was submitted to the Nunavut Water Board (NWB) on July 31, 2008 by FSC Architects & Engineers on behalf of Government of Nunavut (CGS). In conducting the review documents on the NWB's FTP-site under 1BR-RAN were referred to.

Project:

This project is being proposed to allow for an upgrade in the Rankin Inlet Fuel Facility. Approximately 5000 m^3 of hydrocarbon contaminated soil will be removed from the fuel facility and transported to the proposed lined, engineered landfarm to be remediated. The landfarm will be located adjacent to the new Rankin Inlet Municipal Solid Waste Site and will be accessible from the same road. The construction of the landfarm is scheduled to begin during the summer 2009 and remediation of the contaminated soil should be completed in less than 5 years.

Comments/Recommendations:

General Comments:

The Abandonment and Restoration (A&R) and the Spill Contingency Plans provided by FSC Architects & Engineers on behalf of the Community Government & Services (CGS) should be revised and completed as stand alone documents and resubmitted to the NWB for approval.

Water Licence Application – Supplemental Information for Hydrocarbon-Impacted Soil Storage and Landfarm Treatment Facilities.

1) No effluent discharges of contaminated material are permitted without prior approval from INAC Inspectors and the NWB. Contaminated liquid collected within the treatment area must be analyzed to determine compliance with the CCME Guidelines for the protection of Aquatic Life 2003 for hydrocarbons before discharging to receiving waters.

2) ***Item 3b. of the Site Assessment Considerations "While the Iqalugaarjuup Nunanga (Meliadine River) Nunavut Territorial Park is located to the North it will neither influence nor be influenced by this project****".* This may be true, but how will the two small lakes to the Southwest of the proposed landfarm be affected? A contingency and mitigation plan must be provided to deal with the possibility of seepage from the landfarm. One consideration would be to dig a trench around the landfarm with an HDPE liner to collect any seepage.

3) ***Item 2 of the Soil Storage and Landfarm Treatment Design Considerations "Information regarding the installation of barriers to prevent access to the site, the site will not be fenced".*** INAC recommends that a fence is built around the landfarm to prevent the misuse and inappropriate dumping of materials inside of the landfarm. Soil or snow contaminated with heavy metals, glycols and/or heavy oils should not be placed in the landfarm due to the length of time required to remediate these materials.

4) ***Item 2b. of the Operations and Maintenance Considerations "Contaminated soil thickness in treatment cell; Soils will not generally exceed 1 metre".*** The recommended depths for contaminated soil should range between 30 and 45 cm. The thicker the soil depths, the more tilling is required to aerate thus potentially affecting the time required to properly remediate the contaminated soil.

5) ***Item 2c. of the Operations and Maintenance Considerations "Method of mechanical aeration in treatment cells; Soils will be turned with a loader".*** Proper equipment must be used for tilling the contaminated soil and care should be taken when using this equipment. Any misuse could cause tears to the liner which may result in seepage outside of the landfarm.

6) ***Item 2g. of the Operations and Maintenance Considerations "The site is designed to accept 6000 cubic meters. Field testing will be undertaken monthly during warm weather months. Once field testing suggests the soil is remediated, confirmation samples will be taken".*** INAC recommends that an independent consultant with expertise in soil sampling techniques obtain samples after the remediation process is complete to ensure reliability.

7) ***Item 2i. of the Operations and Maintenance Considerations "Staff operational training programs; management of the site will be contracted to qualified contractors".*** Precautions have to be taken when tilling the soil inside the landfarm with loaders. The operators have to be careful not to puncture or rip the liner with the equipment.

Rankin Inlet, NU – Fuel Facility Upgrade – Landfarm Project Outline

8) ***In the document Rankin Inlet, NU – Fuel Facility Upgrade – Landfarm Project Outline, it states"The Rankin Inlet Fuel Facility is being upgraded. As part of the upgrade, approximately 5,000 cubic metres of hydrocarbon contaminated soils must be removed from site and remediated".*** As this is an approximate number, we can assume that more than 5,000 m^3 of contaminated soils will be removed from the fuel facility and remediated at the landfarm. The landfarm is designed for only 6,000 m^3 of contaminated soils which gives little room for extra contaminated soil not accounted for. What will happen to any extra soil that will be brought to the site? How will this affect the remediation process if the thickness of the soil increases in the landfarm? The applicant should address this in the contingency plan.

NIRB Notice of Part 4 Screening for Community Government & Services' "Rankin Inlet Fuel Facility Upgrade – Landfarm" Project Proposal

9) In the NIRB document above, the proponent provides a list of equipment that will be used for the landfarm construction and operation. One of the pieces of equipment includes a water truck which will be used for soil compaction. However, in the Water Licence Application form under section 7 - Quantity of Water Involved it states "There will be no water used at this site". In our opinion the only water that should be used on the contaminated soil is rain water. Any extra water added to the landfarm may cause an over accumulation of contaminated liquid which may lead to spills.

Cc. Kevin Buck, Manager of Water Resources – Indian & Northern Affairs Canada, Nunavut Regional Office
Bernie MacIsaac, Manager of Field Operations – Indian & Northern Affairs Canada, Nunavut Regional Office