



Water Resources Division
Nunavut Regional Office
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NWB File: 1BR-LOR0813
CIDMS #: 374151

Dec 22, 2009

Richard Dwyer
License Administrator
P.O. Box 119
Gjoa Haven, NU
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Re: 1BR-LOR0813 – Operation and Maintenance Manuals for Sewage Lagoon, Landfill and Bio-treatment Area (Windrows) – Contaminated Sites Program – Indian and Northern Affairs Canada – Cape Christian

Please be advised that Indian and Northern Affairs Canada (INAC) has completed a review of 1BR-LOR0813 Type "B" Water License 2009 Operation and Maintenance Manuals for the Cape Christian Project. The NWB circulated the Report for comments on November 24, 2009. All associated documents related to this license posted on the NWB ftp site under 1BR-LOR0813 were included in my review (See attached Technical Review Memo).

Should you have any questions or comments, please do not hesitate to contact me at (867) 979-4282 or by email at Ian.Parsons@inac.gc.ca.

Sincerely,

Original signed by

Ian Parsons
Water Resources Technician

Cc. Ian Rumbolt, Acting Manager of Water Resources – Indian and Northern Affairs Canada, Nunavut Regional Office



Technical Review Memorandum

To: Richard Dwyer – License Administrator, NWB
Peter Kusugak – Field Operations Manager, INAC
Dele Morakinyo – Project Manager, Contaminated Sites Program, INAC.

From: Ian Parsons – Water Resources Technician, Indian & Northern Affairs Canada.

Re: 1BR-LOR0813 – Operation and Maintenance Manuals for Sewage Lagoon, Landfill and Bio-treatment Area (Windrows) – Contaminated Sites Program – Indian and Northern Affairs Canada – Cape Christian

The 2009 Operation and Maintenance Manuals report for Sewage Lagoon, Landfill and Bio-treatment Area (Windrows) submitted by INAC, Contaminated Sites Division (Dele Morakinyo) addressed many of the requirements of the Water License # 1BR-LOR0813, Part E, Item 2.

Part E, Item 2 of the water license states that these Manuals be prepared in accordance with the “*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*” (the Guidelines). However, it was noted that the following information was not provided in the 2009 Operation and Maintenance Manuals report for Sewage Lagoon, Landfill and Bio-treatment Area (Windrows).

A) Sewage Lagoon

1) The introduction section of the guidelines states that the Introduction should include purpose of the manual, location of the community, basic geophysical information, maps and drawings of the community and location of sewage lagoon and populations projections.

The O&M Manual should include all of the information mentioned above.

2) The background section of the guidelines states that the Background should include where the community obtains its water, how drinking water is distributed, how sewage and solid waste are collected, sewage generation, composition projections and related tables and charts, solid waste generation, composition projections and related tables and charts, sewage treatment and disposal and history of existing site (when was it constructed, time in use, when new facility is planned for and recent changes to facility).



The manual did not contain a background section. The proponent should provide as much information as possible about the project and site conditions.

3) The Operation and Maintenance of Sewage Disposal Facility section of the guidelines states that this section should include:

- i) Site description showing specific location of the sewage treatment facility, drainage and distance to water bodies by means of maps and drawings.
- ii) Type of lagoon – engineered or natural.
- iii) Discharge method – Continuous, Intermittent or zero.
- iv) List of people by positions and their phone numbers who are responsible for the operation and maintenance of the sewage lagoon.
- v) Description of normal O&M procedures for the lagoon system.
- vi) Frequency of each of the O&M steps carried out, whether it is daily, weekly, monthly, seasonally or annually.
- vii) Sampling procedures and an example of a completed sample sheet
- viii) Site records are necessary to assist in the planning of site operations and meeting regulatory requirements. Information that must be included is:
 - volumes of any effluent discharged to the environment
 - sewage volume collected
 - details of any maintenance undertaken at the site
 - record sheets
- ix) Safety procedures for the operator
- x) Weed and Insect Control.
- xi) Methods of controlling access to the site, such as signs and fencing.
- xii) List of chemicals used in the treatment process, if any.
- xiii) Sludge management.

There were several omissions in this section, which included:

- iv) List of people by positions and their phone numbers who are responsible for the operation and maintenance of the sewage lagoon;
- x) Weed and insect control;



- xi) Methods of controlling excess to the site, such as signs and fencing;
- xii) List of chemicals used in the treatment process, if any, and
- xiii) Sludge management.

4) Operation and Maintenance of Solid Waste Disposal Facility

This Topic is discussed as a separate report.

5) Hazardous Waste Management

The manual contained no hazardous waste management section.

6) Emergency Responses

The manual contained no emergency response section.

7) References

The manual contained no reference section.

B) Solid Waste Disposal Facility

The solid waste disposal facility was to have been prepared in accordance with the *“Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996”*.

However, in the report, the Solid Waste Disposal Facility was stated as being prepared in accordance with the *“Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories; 2003”*. This is in direct conflict of Part E Item 2 of the water license.

The O&M manual was prepared, but the proponent did not follow the “Guidelines” that were referenced.

C) Land Farm Facility

Following Part E Item 2, Part E Item 3 of the water license states that the Land Farm component shall address the following items:

- i) Engineered design drawings of the facility (stamped by a professional engineer registered in Nunavut)
- ii) Feasibility of alternative disposal methods and sites.
- iii) Operation and Maintenance procedures for the facility
- iv) Runoff Diversion and management
- v) Soil Quality Remediation Objectives



vi) Monitoring program for both water and soil

In this section, the proponent is using an alternative method (Windrows) to land farming due to several limiting factors which include space, soil quantity and availability of machinery outlined in the report. The proponent does not give any further explanation.

There are no concerns with the Fuel Management Plan that was submitted. However, in Part III Item E of the water License it states that a site specific Spill Contingency Plan is required and that the requirement for that plan is outlined in Part I. At this time no Site Specific Spill Contingency Plan has been received.

The Abandonment and Restoration Plan submitted by the contaminated sites program of INAC, in conjugation with, "Former U.S. Coast Guard LORAN Station, Cape Christian, Nunavut Remedial Action Plan submitted in January 2007 contains all relevant information of Part J of the water License.

INAC-Contaminated Sites should provide to the Nunavut Water Board all outstanding information referred to above in order to comply with the requirements of Part E of the water license.

This information has been forwarded to our Field Operations Unit.

Cc. Ian Rumbolt, Acting Manager of Water Resources – Indian and Northern Affairs Canada, Nunavut Regional Office