



Environment Canada
Environnement Canada

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Our File: 4715 000 036

June 12, 2008

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
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By email

Re: 1BR-FRA0209 Lady Franklin Point Landfill Monitoring Report

On behalf of Environment Canada (EC) I have reviewed the information submitted in connection with the above-noted monitoring report. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Brief summary of project:

As part of the National Defense Landfill Monitoring Plan for post-closure monitoring of PIN-3 Dew Line Site landfills located at Lady Franklin Point, Defence Construction Canada (DCC) has submitted a landfill monitoring report entitled "The Collection of Landfill Monitoring Data at the PIN-3 Lady Franklin Point - 2006 Final Report (December 2006), by Gartner Lee Limited. Remediation of the landfills was completed in 2004 and the baseline monitoring started in 2005. During five days in August 2006, visual inspection at the six landfill sites was conducted, and thermal monitoring data, soil and groundwater chemical monitoring data at the Tier II Facility and Main Landfill were collected.

Comments:

Environment Canada is of the opinion that some of the landfill surface water may cause, as a result of potential run-off from the landfill sites following heavy rain events or during snow melt, potential deposit of deleterious substances to the gulf water. This advice is based on the post-closure monitoring report findings of landfill erosion, standing water located adjacent to landfills, ponded water, seepages and moist soil conditions.

Photographic records, visual inspection and monitoring data show:

- Minor erosion at two landfill sites (South, Tier II). Overall, no significant landfill erosion or cover issues with occasional small vegetation stress.
- Seepages at two landfill sites (South, NWS). Areas of seepage were not sampled.
- Moist soil conditions adjacent to toes of two landfill sites (Non-Hazardous Waste, Tier II).

- Ponding of surface water on the surface of two landfill sites (NWS, South). Ponded water was not sampled.
- Standing water located adjacent to two landfill sites (Main, NWS).
- Tier II Facility's heavy metal and hydrocarbon levels in groundwater samples are below detection limit except for copper, cobalt, lead and zinc that are in the ppb range. In soil samples (Tier II, Main), levels exceeding detection limits are in the low ppm range except for mercury (below detection limit or ppb range). Petroleum hydrocarbon level in some soil samples was found to be as high as 19 ppm at the Main Landfill Site and 50 ppm at the Tier II Facility, respectively. The report does not say whether the levels exceeding the detection limits are in compliance with the internal DEW Line Site Guidelines.

Concerns:

- Landfill sites located adjacent to gulf water (fish-bearing).
- Potential presence of deleterious substances that could migrate downstream to the gulf water, for example, during heavy run-off or by another migration pathway and "form part of a process of degradation or alteration of the quality of that water".
- Landfill surface water migration pathway:
 - Moist soil conditions observed adjacent to toes of two landfills
 - Standing bodies of water located adjacent to two landfills (Main, NWS) and ponded waters (NWS, South) were not sampled
 - Areas of seepages (indicating possible infiltration) were not sampled. If necessary, how will seepage be collected and treated?
- The data collected for this post-closure monitoring report have not been subjected to detailed analysis, for example:
 - Comparison with the landfill baseline monitoring data (2005).
 - Whether the levels exceeding the detection limits exceed regulatory benchmarks, background levels or compliance with the Site Guidelines.

Recommendations:

EC is of the opinion that the followings actions are needed to properly evaluate the performance of the landfills and assess their environmental risk to the gulf water:

- Sampling of surface water (ponded water, standing water in proximity to landfills) and seepage areas.
- A detailed analysis of monitoring data presented in this monitoring report in conjunction with landfill baseline data (2005), background levels, and Line Site guideline.
- An assessment report summarizing the result of the detailed analysis, and evaluating potential danger to the environment and overall performance of the landfills.

Remarks Regarding the Monitoring Report:

Here is a list of errors detected:

- The appendix section in the Table of Contents does list more topics than there are actual topics in the attached appendices. For example, there is no Main Landfill Site report and no soil samples for NWS, North, South, Non-Hazardous Waste Landfill Sites.
- Errors:
 - NWS Landfill Site Report:

- On p. B-2, Figure B-1 should be referring to the NWS Landfill, not to the “Main Landfill South”.
- On p. B-1, Section B.1.2, 3rd paragraph, Photograph #11 should read Photograph #6.
- North Landfill Site Report:
 - On p. D-2, Figure D-1 should be referring to the North Landfill Site, not to the “West Landfill”.
- Non-Hazardous Waste Landfill Site Report:
 - On p. E-3, Figure E-1 should be referring to the Non-Hazardous Waste Landfill Site, not to the “Existing Airstrip Landfill”.
- Tier II Disposal Facility Site Report:
 - On p. F-3, line #2, Table A-2 should read Table F-2.

Please do not hesitate to contact me at 780-951-8976 with any questions or comments regarding the foregoing.

Sincerely,

Yvon Theriault (Coordinator, EA-North, Edmonton)

cc. Mike Fournier (Coordinator, EA-North, Yellowknife)
Carey Ogilvie (Head, EA-North, Yellowknife)