



Indian and Northern
Affairs Canada

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NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

August 9, 2004

File: NWBIPOL0311/A(15)

By email and regular mail

Bruce Donald
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Subject: NWB and INAC letter of direction regarding Polaris Mine Landfill Cover Cap design for Little Red Dog Quarry

Dear Mr. Donald,

The Nunavut Water Board ("NWB") and Indian and Northern Affairs Canada ("INAC") have reviewed Teck Cominco Limited's (the "Proponent") Little Red Dog Quarry Landfill Cover Cap Design ("LRD Cap Design"). As part of the review process the report was distributed for external review. The following four submissions were received prior to the August 3rd, 2004 deadline for comments: BGC Engineering Inc. (consultant for INAC); AMEC (consultant for INAC); INAC-Water Resources, Iqaluit; and Environment Canada, Iqaluit. The submissions are available on the NWB's FTP site at the following link:

[http://ftp.nunavut.ca/nwb/NWBI%20MINING/NWBI%20POL0311%20Polaris/Technical%20Reviews/G\(2\)%20Soil%20Disposal%20LRDQ/](http://ftp.nunavut.ca/nwb/NWBI%20MINING/NWBI%20POL0311%20Polaris/Technical%20Reviews/G(2)%20Soil%20Disposal%20LRDQ/)

The NWB and INAC believe, in principle, that the 1.8 metre thick cover cap proposed for the LRD Quarry appears to be reasonable given the climatic conditions to be expected at the Polaris mine site. However, in their submissions, some reviewers expressed a number of concerns about the thermal modeling exercise, as well as subsequent implications for the LRD Cap Design. The NWB and INAC also recognize that the reclamation of the Polaris Mine is in its final stages, and as such, there is limited opportunity to address some of these concerns while the Proponent is occupied in meeting the deadlines imposed by the fall shipping season. Before final approval of the LRD Cap Design can proceed, the following conditions need to be addressed by the Proponent:

1. The Proponent shall extend thermistor monitoring to the bottom of the LRD Quarry to permit monitoring of the entire thickness of the waste so that regulators are confident that materials encapsulated in the LRD Quarry are completely frozen.
2. The Proponent shall provide the ASTM (or equivalent) standard for the plate load test and report upon this in the most appropriate Quarterly Report, as required under Part B, Item 6 of water licence NWBIPOL0311.
3. The Proponent shall, at the earliest available opportunity, provide the NWB and INAC with a report that explains how the final cover depth was determined. The report shall take into account the alterations and extrapolation of the initial geothermal analysis, including but not limited to the following: bedrock type, fill, cover type, moisture content, role of convection, laboratory and onsite measurements. The Proponent is recommended to examine the comments made by AMEC and BGC Engineering regarding this issue.

Monitoring of the LRD Quarry is an obligation imposed on the Proponent by the NWB and INAC. Should monitoring of the LRD Quarry during the post-closure period indicate that the structure is not behaving as predicted, the Proponent will be responsible to address the situation, which may entail, among other things, a return to the site to improve or re-construct the cover cap.

Should you have any questions with regard to this letter, please contact the undersigned at your convenience.

Sincerely,

Original signed by:

Philippe di Pizzo
Executive Director
Nunavut Water Board

Original signed by:

Spencer Dewar
Acting Manager, Land Administration
Indian and Northern Affairs Canada

c.c. Polaris Distribution List