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PROJECT MEMORANDUM

To:	Nunavut Water Board	Fax No.:	(867) 360-6369
Attention:	Philippe di Pizzo, Executive Director	CC:	
From:	Holger Hartmaier (Ext. 113)	Date:	March 11, 2002
Subject:	Polaris Mine, Abandonment and Reclamation Plan- Recommendations for Final Approval		
No. of Pages (including this page):	3 Pages	Project No:	0308-001-05

1.0 BACKGROUND

This memorandum summarizes recommendations to be included in the final approval letter to be issued jointly by the Nunavut Water Board (NWB) and the Department of Indian and Northern Affairs (DIAND) to allow TeckCominco Ltd. to proceed with the proposed decommissioning plan at the Polaris Mine.

The recommendations included in this memo are based on the responses submitted by TeckCominco on January 7, 2002, to comments prepared by various parties on the Final A&R Plan (March, 2001) (the Plan) prepared by Gartner-Lee Limited (GLL) for TeckCominco.

The NWB and DIAND have informed TeckCominco by letter, dated March 4, 2002, of the intent to proceed with a joint approval of the proposed Plan by April 15, 2002.

2.0 RECOMMENDATIONS

In general, the overall decommissioning and reclamation activities should be in accordance with the plan as prepared by GLL, with the exception of the reclamation/decommissioning of Garrow Lake and the dock area, which are currently the object of a Fisheries Authorization by Fisheries and Oceans Canada (DFO). Garrow Lake decommissioning activities include the lowering of Garrow Lake, the removal of the dam and water quality of Garrow Lake. Recommendations for final approval of the reclamation plans in these areas are not included in this memorandum, and will be provided separately, based on the response from DFO. These recommendations will also include the responses by TeckCominco to comments by other parties on the proposed reclamation activities in these areas.

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Specific details or issues which should be addressed as part of the terms for final approval of the Plan include the following:

1. With regard to landfill waste disposal at the LRD Quarry and Subsidence Zone, TeckCominco will establish a protocol for the placement of waste materials and backfill in a controlled manner to eliminate the creation of voids and areas of low compaction. Waste disposal practices will include:
 - cutting the landfill debris into sizes and shapes to minimize void spaces as fill material is placed over the debris,
 - crushing debris using equipment, where practical to minimize voids,
 - placing debris into landfill in lifts and covering with fill material prior to being covered by the next lift of debris,
 - controlling moisture from precipitation and run-off to allow freezing to strengthen the fill and minimize future settlement,
 - providing the landfill operators with a technical briefing and instructions on the protocol(s) for placing debris in the landfill as well as the closure specifications for the landfill.
 - appointment of a field supervisor who will have the responsibility to ensure that the protocols for placing debris as well as the geotechnical specifications for the closure of the landfill are followed.
2. Landfill operators will be required to note the type, placement and depth of debris emplacement to ensure that there is an adequate record of the protocol used to place material in the landfill. Photographic documentation will be maintained.
3. The design of the engineered cover for the landfill shall be thick enough such that the landfill remains permanently frozen by being below the active layer. The cover materials shall be tested for freeze-thaw and mechanical durability, according to ASTM standards, prior to being used.
4. The landfill shall be visually inspected as part of the post-closure monitoring plan to confirm geotechnical performance as specified in the Plan.
5. All entrances to the underground mining operations shall be sealed using a bulkhead and backfill to completely fill the tunnel(s). The final design of the seal(s) shall be submitted to the local Mines Inspector for approval prior to construction.
6. To ensure permanent encapsulation of the hydrocarbon contaminated soils to be placed into the abandoned underground mine openings, the following procedures will be followed
 - no free-phase hydrocarbon fluids shall be present in the soils being disposed of underground,
 - the floor of the stope where the hydrocarbon contaminated soils will be placed, shall be wetted in advance, to ensure that any voids in the rock are sealed by ice.

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- a wetted earth plug, which will be allowed to freeze, will be constructed to further isolate the hydrocarbon contaminated soils disposal area from the rest of the underground mine workings.
7. TeckCominco will provide NWB with the final details of the proposed decommissioning of dielectric fluids from non- PCB transformers, prior to the initiation of the disposal of transformers and/or the fluids contained in these transformers.
 8. The freon from the 4 mine air refrigeration units will be pumped back into shipping bottles and returned to the original supplier for recycling or to an approved disposal company.
 9. Disposal of tank sludges, waste oil and glycol shall be acceptable under current regulations and practice.
 10. Post-closure monitoring and sampling will be done in accordance with the Plan and revisions described in Attachment 8 of the TeckCominco responses, as prepared by GLL, dated January 2, 2002.
 11. TeckCominco should designate a representative who will be responsible for ongoing liaison with the NWB with regards to all proposed decommissioning and reclamation activities. A regular reporting schedule should be established, suitable to both parties, so that the NWB is aware of all ongoing and planned activities.
 12. All drawings and specifications related to the execution of the Plan, shall be prepared under the supervision of a professional engineer, in good standing, licensed to practice in Nunavut.

3.0 CLOSURE

The above recommendations will be reviewed in conjunction with the specifics of the Plan at a joint NWB/DIAND workshop meeting scheduled for April 4, 2002 in Yellowknife, with the objective of drafting a final letter of approval to TeckCominco by April 15, 2002.

We trust that this memorandum will meet your requirements at this time. If you have any comments or questions, please do not hesitate to contact me.

Yours truly,
Per BGC Engineering Inc.



Holger Hartmaier, M.Eng., P.Eng.
Senior Geotechnical Engineer

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