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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

April 15, 2002

Four Pages By Email and Telecopier

Mr. John Knapp
Manager, Polaris Operations
Polaris NU X0A 0Y0

Subject: Polaris Mine Decommissioning and Reclamation Plan

Dear Mr. Knapp:

As indicated in our letter of March 4, 2002, please find below the decision of the Nunavut Water Board (NWB) and the Department of Indian and Northern Affairs Canada (DIAND) with respect to the Polaris Mine Decommissioning and Reclamation Plan (Plan) prepared by Gartner-Lee Limited (GLL) for TeckCominco.

In this decision, we have considered the comments received by various parties on TeckCominco's proposed Plan as well as the response submitted by TeckCominco on January 7, 2002 on comments submitted in the first round of consultation.

In general, the NWB and DIAND approve the decommissioning and reclamation activities as proposed by GLL, **with the exception** of the reclamation and decommissioning of Garrow Lake, the dock area and the shoreline, which are subject to *Fisheries Act* authorizations by Fisheries and Oceans Canada (DFO). The decommissioning of Garrow Lake includes the lowering of the lake level and the removal of the dam. Final approval by the NWB and DIAND in these areas is not included in this approval, and will be provided separately in a joint letter of approval with DFO. Additionally, the NWB and DIAND **do not approve** at this time the proposed measures for the decommissioning of the jetty extending into Frustration Lake until TeckCominco provides more information to substantiate their preferred option, which is to leave the jetty in place to avoid disturbance of the aquatic environment. We note that the present jetty, made of rockfill, extends 100 meters into the lake, which supports fish population. Insufficient information is provided in the plan on this option and other possible alternatives and their respective short and long-term impacts on the aquatic environment.

In addition to the decommissioning measures proposed by TeckCominco in the Plan, the following requirements shall be met:

1. With respect to landfill waste disposal at the Little Red Dog Quarry and Subsidence Zone, TeckCominco shall 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 runoff to allow freezing to strengthen the fill and minimize future settlement;
 - Monitoring of ground temperatures within the landfill to demonstrate the development of permafrost conditions;
 - Monitoring of the temperatures of the cover material(s) to ensure that the active zone remains within the cover;
 - Providing the landfill operators with a technical briefing and instructions on the protocols 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 material 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 tunnels from the bulkhead back to the surface and the surface recontoured to fit the natural slope. The final design of the seals shall be submitted to the NWB and DIAND as well as to the 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;
 - 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 the NWB and DIAND 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 fluids contained in these transformers.
 8. The freon from the four mine air refrigeration units will be pumped back into shipping bottles and returned to the original supplier or to an approved recycling/disposal center for recycling.
 9. Disposal of tank sludges, waste oil and glycol shall be disposed of in a manner acceptable under current federal and territorial regulations and guidelines.
 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 will designate a representative who will be responsible for ongoing liaison with the NWB and DIAND with regards to all decommissioning and reclamation activities. A regular reporting schedule will be established, suitable to all parties, so that the NWB and DIAND are 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.
 13. The NWB and DIAND shall receive copies of all tender documents, technical specifications and construction drawings issued by TeckCominco with respect to the Polaris A&R Plan. 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 under the appropriate authority to practice in Nunavut.
 14. The NWB and DIAND shall receive a copy of TeckCominco's overall schedule for the proposed A&R plan as well as regular updates on progress and plans, so that, if required the NWB and DIAND can arrange to visit the site to review specific operations as required.
 15. All drawings and specifications for landfilling operations, including the Little Red Dog Pit, Construction and Operational Landfill and Subsidence Area shall be submitted to the NWB and DIAND for review and approval. Any drawings and specifications detailing the proposed underground disposal of wastes and the sealing of mine portals shall be submitted to the NWB and DIAND for review and approval.

All correspondence required to be sent to DIAND regarding this matter is to be forwarded to the:

Manager, Land Administration
Department of Indian Affairs and Northern Development
Box 100
Iqaluit, NU X0A 0H0
Fax: 867-975-4286
Email: mcleanc@inac.gc.ca

All correspondence required to be sent to the NWB regarding this matter is to be forwarded to the:

Licensing Administrator
Nunavut Water Board
Box 119
Gjoa Haven, NU X0B 1J0
Fax: (867) 360-6369
Email: rbecker@polarnet.ca

Please contact the undersigned should you have questions about this approval.

Sincerely,

Original signed by:

Philippe di Pizzo
Executive Director
Nunavut Water Board

Original signed by:

Carl McLean
Manager, Land Administration
Indian and Northern Affairs Canada

c.c. Distribution List

Polaris Decommissioning Distribution List – March 5, 2002

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Hamlet of Grise Fiord QIA – Grise Fiord HTO – Grise Fiord			(867)980-9052 (867)980-4208 (867)980-4311
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