POLARIS MINE

DECOMMISSIONING AND RECLAMATION PROGRESS REPORT

1st QUARTER 2003

FOR THE

NUNAVUT WATER BOARD & INDIAN AND NORTHERN AFFAIRS CANADA

POLARIS MINE

DECOMMISSIONING AND RECLAMATION ACTIVITIES

QUARTERLY REPORTING – 1ST QUARTER 2003

SUBMITTED TO

THE NUNAVUT WATER BOARD

AND TO THE

DEPARTMENT OF INDIAN AND NORTHERN AFFAIRS CANADA

Date Submitted: August 21, 2003

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1. EXECUTIVE SUMMARY IN INUKTITUT

Refer to Appendix A for an executive summary of plans, reports and studies conducted under this licence during the period January 1, 2003 to March 31, 2003 that has been translated into Inuktitut.

2. INTRODUCTION

This is the first formal Decommissioning and Reclamation report submitted in relation to the Polaris Mine's Decommissioning and Reclamation Plan ('Closure Plan') and in compliance of the new Water Licence NWB1POL0311 issued on April 24, 2003 with and effective date of March 1, 2003.

The Polaris Closure Plan dated March 2001 received its initial conditional approved April 15, 2002. The Closure Plan was jointly conditionally approved by the Nunavut Water Board ('NWB') and the Department of Indian and Northern Affairs Canada ('INAC'). The Closure Plan has subsequently received further approvals. The approvals contain reporting requirements and this document has been prepared to consolidate all of the reporting requirements into one document. This report is being submitted to both NWB and INAC on a quarterly basis with an annual report completed by March 31st of the subsequent year.

3. STATUS OF AUTHORIZATIONS AND/OR APPROVALS

As of March 31, 2003, the status of project approvals were as follows:

1. Closure Plan
    a. The terrestrial portions of the Closure Plan were approved as of April 2002
    b. The approval of the proposal for decommissioning the Frustration Lake Freshwater System was outstanding. Under active review by the NWB and INAC.
    c. The approval for the decommissioning of Garrow Lake dam was outstanding awaiting approval by the NWB, INAC and the Department of Fisheries and Oceans (DFO).
    d. The application for the decommissioning of the marine dock and adjacent shoreline was awaiting approval by the NWB, INAC and DFO.
2. Polaris Water Licence Application
    a. The Application for the new licence was outstanding at the end of March 31, 2003
3. NIRB Screening of the Project
    a. The NIRB screening report had been issued on December 5, 2002 and promptly forwarded to the Minister of the Department of Fisheries and Oceans for review. The Minister's review was outstanding at the end of March 2003.
    b. On March 1, 2003 NIRB referred the Screening recommendations to the Minister of Indian Affairs and Northern Development for review. Approval from the Minister was outstanding at the end of the period.

4. Application for an Authorization under the Fisheries Act to decommission Garrow Lake dam and to decommission the marine dock was submitted to DFO in October 2001. Approval of the application was pending at the end of the period.

4. UNAUTHORIZED DISCHARGES AND SUMMARY OF FOLLOW UP ACTIONS

There were no unauthorized discharges of water or effluent during the 1st Quarter of 2003.

March 20, 2003 there was a spill of diesel fuel which was reported to the N.W.T. Spill Report Line. There was approximately 2000 liters of fuel that spilled during a routine transfer of fuel from the tank farm to the surface accommodation building through a pin hole leak in a metal line. The line was covered by snow. The pipe was drained and repaired. Free product was recovered using absorbent pads and surface contamination clean up. The spill is in an area identified in the Closure Plan as being having metals contaminated soils. The area has been marked and will be cleaned up as part of the planned soils remedial work planned to occur in this area during the summer of 2004.

5. PROGRESS REPORT OF STUDIES / PLANS REQUESTED

There were no reports requested by the NWB related to Polaris's Water Licence during the 1st Quarter of 2003.

The Closure Plan requires submission of the following plans and/or reports:

1. Landfill Operating Protocols – were under development at the end of the quarter.
2. Certified landfill cover design specifications and plans – the design work was commissioned but not complete at the end of the quarter.
3. Certified design drawings and specifications for Garrow Lake Dam Decommissioning – the design work was commissioned but not complete at the end of the quarter.
4. Certified specifications and design drawings for Sealing Mine Entrances – Not started at the end of the period.
5. Certified specifications and design drawings for Decommissioning the marine dock and adjacent shoreline – design work commissioned but not complete at the end of the period.
6. Disposal of Dielectric Fluids – the Closure Plan stated that the dielectric fluids are pure mineral oil and do not contain PCB's (as confirmed by sampling of the fluids). The Closure Plan states that the fluids will be incinerated on site in a 2 stage incinerator as requested by Environment Canada or will be transported to southern Canada for recycling or disposal. As a 2 stage incinerator has been custom designed, fabricated and mobilized to site, it will be used to incinerate the oil.
7. Submission of Tender Documents for the Closure Plan Contracts – Submitted the week of March 17, 2003
8. Submission of Overall Schedule for the Closure Plan – Included in the March 2001 Closure Plan and an update of the schedule is attached in Appendix B of this report.

6. DECOMMISSIONING AND RECLAMATION PROGRESS REPORT

Activity levels were low early in January with only 26 people onsite due to the Christmas period and weather conditions. At the end of the period there were 39 people onsite.
Due to winter conditions (temperature, snow and lack of day light), most work was focused on internal building demolition. Towards the end of the period, more outside work was starting to occur.

6.1. Earthworks (Site Re-Grading)

- No site earthworks occurred during the period due to winter conditions other than plowing and hauling of snow.

6.2. Building Demolition

6.2.1. Mill / Offices / Warehouse Facilities on the Barge

- Throughout the period crews continued to remove plant equipment from the barge in preparation for exterior building demolition once the weather starts to warm up in the spring. Interior building demolition and stationary plant equipment were being removed and transported to LRD quarry to be stored until spring for final disposal.
- Started removal of interior floors in the building.
- Transferring fuel out of tanks in barge in preparation for cleaning the tanks. Not complete at the end of the period.

6.2.2. Product Storage Building

- Completed removal of exterior conveyor between the Product Storage Shed and the ship loader including demolition of the transfer point structure.
- Demolish internal metal retaining wall and haul to LRD to be stockpiled.

6.2.3. Thickener Building

- Demolition completed in 2002. Waiting for ground to thaw to complete foundation earthwork

6.2.4. CRF Building

- Demolition of building and equipment completed in 2002. Foundation earthworks to complete once ground thaws in the spring.

6.2.5. Accommodations Building

- No demolition as in active use

6.2.6. Other Buildings / Structures

- Demolished maintenance building by ship loader.
- Demolished and removed Quonset hut.
- Demolished and removed Core shed (an Atco Trailer).

6.3. Contaminated Soil Remediation

- Excavated floor of Product storage building and hauled to raisebore holes for disposal in the mine.

6.4. General Site Cleanup

- Removing lumber, un-seaworthy sea containers and other materials from yards to LRD quarry.
- Completed construction of the incinerator building.
- Began incineration of glycol in incinerator near end of period.

7. UPDATE OF DECOMMISSIONING AND RECLAMATION SCHEDULE

Appendix B contains an updated decommissioning schedule current as of March 31, 2003. The schedule contains more detail than the original schedule presented in the Closure Plan due to more detailed planning occurring as the project progresses. While there are changes to individual items in the schedule, decommissioning and reclamation of the site is still forecasted to be complete in the fall of 2004 as originally planned.

8. UPDATE OF ESTIMATED MINE DECOMMISSIONING, RECLAMATION AND MONITORING COSTS

Appendix C contains the detailed estimate of Mine Closure Costs updated as of March 31, 2003 in accordance with Part B, Item 3 or Part G, Item 21 and forecasts of cost to the end of 2011.

In summary, total Mine Closure Costs to March 31, 2003 were $17,868,861. Estimated cost to complete decommissioning, reclamation and monitoring through to 2011 are $53,508,826 which has increased from the original budget of $47,500,000. The listing of mine closure costs in Appendix C identifies the areas that have increased in cost.

9. PUBLIC CONSULTATION / PARTICIPATION

During the 1st Quarter of 2003, the following public consultation / participation occurred:

9.1. A Water Licence Pre-Hearing was held in Resolute Bay on January 9, 2003 to identify the issues to be examined during the Water Licence Hearings. Teck Cominco, a range of government agencies and local interested citizens were represented at the meeting.

9.2. Patrick Duxbury, NWB, (Mine Reclamation Co-coordinator), arrived on site January 26, 2003 to obtain some background information on the closure of the site and the work presently completed and underway. Mr. Duxbury met with various public groups to report progress of the closure work and what is occurring on site. As Mr. Duxbury reports to the NWB, further information can be obtained through their offices.

9.3. The public Water Licence Hearing was held in Resolute Bay on March 10 and 11th, 2003. The meeting was attended by Teck Cominco representatives, a range of government agencies, local residents and other interested parties such as the hunter-trapper organization from Grise Fjord.

10. SUMMARY OF WORK DONE IN RESPONSE TO INSPECTION/COMPLIANCE REPORTS

There were no inspection or compliance reports received during the 1st Quarter of 2003.

11. FRESHWATER WATER USE

Freshwater use from Frustration Lake for all uses during the 1st Quarter of 2003 was:

January 2003	19,949 cu. m.
February 2003	18,318 cu. m.
March 2003	18,660 cu. m.
Total March 31 YTD	56,927 cu. m.

12. Physical Monitoring of Site

12.1. Placement of Demolition Debris into Landfills

Demolition debris of buildings / plant and equipment are disposed of in Little Red Dog Quarry Landfill. Refer to Appendix D for a listing of demolition debris and materials stockpiled in LRD pit during the quarter and a diagram showing the location of the placement of the debris. During the early part of the year, materials were stockpiled in the bottom of the quarry pending final cutting up and placement once there is daylight available and winter conditions lessened.

12.2. Placement of Metals / Hydrocarbon Contaminated Wastes Underground in the Mine

Due to winter conditions, work on contaminated soil remediation was not a priority. During the period, 980 cu. m. of metals contaminated soils from the Product Storage Building were removed and stored in the mine by dumping down a raise bore hole. As access to the mine was not available during the winter period, mapping of storage areas will not be conducted until work commences in the underground workings.

12.3. Thermistors Data

12.3.1. Garrow Dam

Garrow Lake dam has three sets of thermistors that are recorded on a monthly basis. This will continue until Garrow Lake has been lowered to its original elevation. This data is reported in Appendix E.

12.3.2. Operational Landfill

The Operational Landfill had five operating thermistor strings. One has been destroyed so four currently remain in operation. The Closure Plan indicates that three will be maintained to confirm that freezing of the landfill has occurred however readings from all operating thermistor strings are being maintained. Refer to Appendix E for reporting of the temperature data.

12.3.3. Little Red Dog Quarry Landfill

Heavy metal pipes have been installed in the pit bottom and will remain in place during the filling of Little Red Dog Quarry. Once placing of the debris is complete, and the pipes are extended to their final elevation, thermistor strings will no be installed in the pipes. No thermistor readings will be available until that time as indicated in the approved monitoring plans.

13. GARROW LAKE STRATIGRAPHIC MONITORING

Monitoring of Garrow Lake occurred in January and March of 2003 consistent with the requirements in Polaris's previous water licence. As the current water licence was under review

and not issued during the quarter, the updated requirements for monitoring Garrow Lake were not known at the time the monitoring occurred. Results from the monitoring from January have already been submitted but are included in this report for completeness. Sampling results are provided in Appendix F.

14. SUMMARY OF EFFLUENT MONITORING AND EFFLUENT CHARACTERIZATION

Appendix G contains the effluent monitoring results as required in Part H in the form set out in Schedule 6 of the Metal Mining Effluent Regulations. As there was no effluent discharged during the period, there is not data to report but this fact is detailed in Appendix G.

15. OTHER DETAILS RELATED TO WATER USE OR WASTE DISPOSAL REQUESTED

None requested.

APPENDIX A

EXECUTIVE SUMMARY IN INUKTITUT

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ᓴᓄᐊᓗ 1, 2003ᒥᑦ

ᒪᑦ 31, 2003ᒧᑦ

<u>ᑭᓱᒨᒪᖔᑦ</u>

ᐅᓇ ᓯᕗᓕᖅᐹᖅ ᑕᖅᑭᓂ ᐱᖓᓱᓂ ᐅᓂᑲᓕᐊᖑᔪᖅ ᖃᓄᐃᑐᓂᕕᓂᖓᓄ ᐅᑎᑎᑕᐅᓇᓱᓂᖓᓄ ᐅᓂᑳᖅ (ᔫᓄᐊᕆ 2003ᒥᑦ ᒪᔫ 2003ᒧᑦ) ᓄᓇᕗᒥ ᐃᒪᓕᕆᔩᖏᑕ ᑲᑎᒪᔩᖏᓄ ᓴᖅᑭᖅᑯᔦᐅᓯᒪᒪᑕ ᐊᒪᓗ ᐃᓄᓕᕆᔩᑐᖅᑯᓄᑦ ᑲᓇᑕᒥ.

ᖃᓄᐃᑐᓂᕕᓂᖓᓄᑦ ᒪᕈᓕᖅᑭᐅᑉ ᐅᔪᖅᓯᖅᕕᖓᓂ ᑲᔪᓯᓚᐅᖅᑐᖅ ᔫᓄᐊᕆᒥᑦ ᒪᔫᒧᑦ 2003ᖑᑎᓗᒍ. ᑕᐃᑯᐊ ᐱᓕᕆᐊᖑᔪᑦ ᐃᒡᓘᑉ ᐃᓗᐊᓂᑐᑦ ᐱᕆᐊᖃᕈᑕᐅᓚᐅᖅᑐᑦ ᔫᓄᐊᕆᒥ ᕖᕗᐊᕆᒥᓗ ᐅᑭᐅᖑᔪᖅ ᐱᔪᑕᐅᓗᓂ. ᓯᓚᒥ ᐱᓕᕆᓂᐅᔪᖅ ᐊᖅᑯᓯᕆᓂᑐᐃᓇᐸᓗᓚᐅᖅᑐᖅ, ᐊᐳᑕᐃᔭᐃᓗᑎᒃ ᐊᒪᓗ ᐃᓗᕕᓂᖅᓂᒃ ᐅᓯᑲᖅᑕᖅᓗᑎᒃ ᐃᓗᓵᓗᓕᐊᖑᓯᒪᔪᖅᒧᑦ (ᐊᐅᐸᖅᑐᖅ ᕿᒥᑯᓗᒃ ᐃᓗᓴᒧᑦ).

<u>ᖃᓄᐃᓕᖓᓕᓂᕆᔭᖓ ᒪᓕᒐᖅᑎᒍᑦ ᒪᓕᑕᐅᖅᑯᔭᐅᓂᖏᑕ ᐊᖏᑕᐅᓂᖏᑦ</u>

ᒪᔫᐅᑉ ᓄᖑᐊᓄᑦ ᑎᑭᓗᒍ, ᒪᕈᓕᖅᑭᐅᑉ ᐅᔪᖅᑭᒃᓯᐅᖅᕕᖓ ᐊᖏᑕᐅᔪᑎᒥᒃ ᐱᓚᐅᑐᑦ ᓄᓇᕗᖅᒥ ᐃᒪᓕᕆᔩᖏᑕ ᑲᑎᒪᔩᖏᓂᑦ ᐊᒪᓗ ᐃᓄᓕᕆᔩᑐᖅᑯᑦ ᓄᓇᒥ ᐱᔪᑎᓕᓂᒃ ᒪᑐᔭᐅᓂᓴᖓᓄᑦ ᐊᖅᑭᓯᒪᔭᖓᓄᖓᔪᖅᒥᒃ. ᐃᓄᓕᒫᖅᓂᒃ ᓇᓚᓂᖅ ᐱᔪᑕᐅᓗᓂ ᒪᕈᓕᖅᑭᐅᑉ ᑐᓯᖅᑭᐅᑎᖓ ᓄᑕᖅᒥ ᐃᒪᖅᒧᑦ ᐱᔪᓇᐅᑎ ᐱᓗᒍ ᑲᔪᓯᓚᐅᖅᑐᖅ ᑭᓯᐊᓂ ᐃᓱᒪᓕᐅᓂᖓᑦ ᐱᔪᓇᐅᑎᒃ ᐱᓗᒍ ᓱᓕ ᑕᐃᓱᒪᓂ ᐃᓱᒪᓕᐅᕈᑕᐅᓚᐅᖏᑐᖅ.

ᒪᕈᓕᖅᑭ ᓱᓕ ᐅᑕᖅᑭᓚᐅᒪᑦ ᒥᓂᔅᑕᖓᑕ ᐃᓄᓕᕆᔩᑐᖅᑯᑦ ᐊᒪᓗ ᒥᓂᔅᑕᖓᓂᑦ ᐃᒪᒥᐅᑕᓕᕆᔨᑯᑦ ᕿᒥᕈᓂᐊᖅᒪᑕ ᖃᓄᐃᒪᖔᑕᓗ ᖃᐅᔨᓴᖅᐸᕆᖅᓗᑎᒃ ᐅᓂᑲᓕᐊᖑᔪᓯᒪᔪᓂᒃ ᒪᑐᓂᓴᐅᑉ ᐊᖅᑭᑕᐅᓯᒪᔪᖅᒥᒃ ᐃᖃᓇᐅᔭᒐᕆᔭᐅᔪᖅᒥᒃ ᓄᓇᕗᖅᒥᐅᑦ ᐃᓄᓯᖏᓄᑦ ᐊᑐᑦᑕᐅᒪᖔᑕ ᑲᑎᒪᔨᑯᖏᓄᑦ.

ᑐᓯᖃᐅᑎᒃ ᐃᒪᒥᐅᑕᓕᕆᔨᑯᓄᑦ ᐱᖅᑕᐅᖅᑯᓗᒍ ᐃᓚᖓ ᑕᓯᖅ ᑭᐊᕈᒥᖓᖅᑑᑉ ᓯᒥᖓ ᐊᒪᓗ ᐅᑎᑎᑕᐅᓂᓴᖓ ᖃᓄᐃᑐᓂᕕᓂᖓᓄᑦ ᑐᓚᒃᑕᖅᕕᒃ ᐊᒪᓗ ᖃᓂᒋᔭᑕ ᓯᔭᖓ ᐅᑕᖅᑭᓚᐅᑐᑦ ᒥᓂᔅᑕᐅᑉ ᕿᒥᕈᓂᐊᖅᒪᒍ ᓄᓇᕗᒥ ᐃᓄᓯᖏᓄᑦ ᐊᒃᑐᑕᐅᒪᖔᑕ ᑲᑎᒪᔩᖏᑕ ᕿᒥᕈᓂᕕᓂᖏᓂᒃ.

<u>ᐊᖏᖅᑕᐅᓯᒪᖏᑐᓂᒃ ᑯᕕᑎᓯᓂᖅ</u>

ᐊᖏᑕᐅᓯᒪᖏᑐᓂᒃ ᑯᕕᑎᓯᓂᖅᑕᖃᓚᐅᖏᑐᖅ ᐃᒪᖅᒥᒃ ᑰᒃᑎᓯᓗᑕᓗᓂᑦ ᑕᖅᑭᓂ ᐱᖓᓱᓂ 2003ᒥ.

ᒪᔫ 20, 2003ᖑᑎᓗᒍ ᐅᖅᓱᐊᓗᒥᒃ ᑯᕕᔪᖃᓚᐅᑐᖅ ᑕᒪᓇᓗ ᐅᖃᐅᓯᕆᓚᐅᕈᑎᒍᑦ ᓄᓇᓯᐊᖅᒥ ᑯᕕᔪᖃᐸ ᐅᖃᓚᕕᐅᓱᓄᑦ. ᐃᒪᖃ 2000 ᓖᑕᓂᒃ ᐅᖅᓱᐊᓗᒥ ᑯᕕᔪᖃᓚᐅᑐᖅ ᐅᖅᓱᐊᓗᒥ ᐅᓯᓗᑎᒃ ᐅᖅᓱᐊᓗᖃᕕᒥᑦ ᖃᖓᓄᑦ ᐊᖏᖅᑲᕕᐅᔪᓄᑦ ᐊᖓᔪᑕᓂᒪᑦ ᑰᒃᑐᖅᒥᒃ ᓴᕕᖅᔫᐅᓗᓂ ᓱᓪᓗᒥᒃ ᓱᓪᓗ ᐅᖅᓱᐃᔫᖅᑕᐅᑎᐊᓚᐅᑐᖅ ᐊᖅᑭᑕᐅᑲᓂᖅᓗᓂᓗ. ᑯᕕᓂᖅᓗᑯᔪᖅ ᓴᓗᒪᖅᓴᖅᑕᐅᓚᐅᖅᑐᖅ ᒥᓗᒃᓯᓱᓂᒃ ᖃᓪᓗᓇᖅᑕᖅᓂᒃ. ᑕᐃᒪᐃᓕᓚᐅᖅᑐᖅ ᓴᓗᒪᖅᓴᑕᐅᔪᒪᓯᒪᔪᖅᒥ ᒪᑐᔭᐅᕙᓕᐊᓂᐅᑉ ᐊᖅᑭᑕᐅᓯᒪᔪᑉ ᐃᓚᒋᖃᓯᐅᑎᓚᐅᑕᖓᓂ ᑕᐃᒪ ᑯᕕᔪᖅ ᓴᓗᒪᖅᓴᑕᐅᓕᓚᐅᑐᖅ ᑐᐊᐸᒧᑦ.

<u>ᖃᓄᐃᓕᖓᓕᖅᒪᖔᑦ ᐅᓂᑳᖅ ᖃᐅᔨᓴᖅᓂᖅ/ᐊᖅᑭᑕᐅᓯᒪᔪᑦ ᑐᓯᕋᐅᑎᐅᓚᐅᑐᑦ</u>

ᑐᓯᕋᓚᐅᖏᑐᑦ ᐅᓂᑲᓕᐅᖅᑯᔫᓗᑎᒃ ᓄᓇᕗᒥ ᐃᒪᓕᕆᔩᖏᑦ ᑐᕋᖓᔪᖅᒥᒃ ᒪᕈᓕᖅᑭᐅ ᐃᒪᖅᒧᑦ ᐱᔪᓇᐅᑎᖓᓂᒃ ᓯᕗᓕᖅᐸᖓᓂ ᐊᕕᒃᑐᓯᒪᔪᑦ ᑕᖅᑭ ᐱᖓᓱ ᐊᓂᒍᕋᖓᑕ 2003ᒥ.

ᒪᑐᓂᕆᔭᖓᑕ ᐊᖅᑭᑕᐅᓯᒪᓂᖓ ᐅᖅᑯᓂᖓ ᐅᓂᑲᓕᐊᖑᓯᒪᔪᓂ ᑐᓂᓯᔭᕆᐊᓖᑦ ᖃᓄᐃᓕᖓᓂᐊᒪᖔᑕ ᐊᒪᓗ/ᐅᕙᓗᓃᑦ ᐅᓂᑲᓕᐊᖑᓯᒪᓗᑎᒃ:

1. ᒪᖅᓗᑯᐃᑦ ᖃᓄ ᐊᐅᓚᓂᖅᑲᕆᐊᖅᑲᒪᖔᑕ ᒪᓕᒋᐊᓕᖏᑦ - ᑲᔪᓯᑎᑕᐅᓕᓚᐅᑐᖅ ᓄᖑᐊᓂ ᐱᒋᐊᓂᖓᑕ.
2. ᐱᔪᓇᐅᑎᖃᑎᑕᐅᔪᒍ ᒪᖅᓗᑰᖅᓂᐅᑉ ᓴᐅᔭᐅᓂᓴᖓᓄᑦ ᖃᓄᐃᓕᖓᓂᐊᖅᒪᖔᑦ - ᖃᓄᐃᓕᖓᓂᓴᖓ ᐱᒋᐊᖅᓯᒪᓕᑐᒐᓗᐊᖅ ᑭᓯᐊᓂ ᐱᔭᕆᓯᒪᓕᓚᐅᖅᑐᖅ ᓄᖑᐊᓂ ᐱᒋᐊᓂᖓᑕ.
3. ᐱᒋᐊᖅᑕᐅᓚᐅᑐᑦ ᖃᓄᐃᓕᖓᓗᑎᒃ ᓯᒥᒃᓯᒪᔪᑦ ᑭᐊᕈ ᑕᓯᖅᒦᖓᖅᑐᖅ ᐃᒍᑎᑕᐅᓂᐊᖅᒪᖔᑦ - ᖃᓄᐃᓕᖓᓂᒃᓴᖓ ᐱᒋᐊᑕᐅᓚᐅᑐᒐᓗᐊᖅ ᑭᓯᐊᓂ ᐱᔭᕆᓯᒪᓚᐅᖅᑐᖅ ᑕᒪᑐᒪ ᐱᒋᐊᖅᓂᖓᓂ.

4. ᐃᓕᓴᕆᐅᒪᔾᔪᑦ ᐊᒻᒪ ᐊᖏᓯᒪᔪᑎᒃ ᐃᓯᑦᑕᑦᕙᖏᑦ ᐅᔾᕋᓯᐅᕖᑦ ᒪᑐᓯᒪᓂᓴᖏᑕ ᑎᑎᕋᐅᔭᑕᐅᔪᑎᒃ - ᓱᓕ ᐱᕆᐸᑦᑕᐅᓚᐅᖏᑐᖅ ᑕᒪᑐᒪ ᓄᖑᐊᓂ.
5. ᐃᔨᒪᓇᐅᒪᔾᔪᔪᑦ ᐊᒻᒪ ᖃᓄ ᐊᖏᓯᒪᓂᐊᕐᒪᖖᑦ ᐃᒍᑎᑦᑕᐅᓂᖓ ᑐᓚᑦᑦᕖᒃ ᐊᒻᒪ ᓯᔾᑉᐸᓯᖓ - ᖃᓄᐃᓕᖓᓂᒃᓴᖓ ᐱᕆᐊᑕᐅᓯᒪᓕᑐᒐᓗᐊᖅ ᑭᓯᐊᓂ ᐱᔾᔭᓯᒪᖏᑐᖅ ᑕᒪᑐᒪ ᓄᖑᐊᓂ.
6. ᐃᒋᐅᖃᐃᓂᖅ ᐅᐊᔾᔭᓕᓇᔪᑎᓄᑦ ᐃᒪᐃᑦ - ᐅᐊᔾᔭᓕᓇᔪᑎᓄᑦ ᐃᒪᐃᑦ ᐃᓚᐅᑉᓯᒪᖏᑐᑦ ᐅᑉᓱᐃᑦ ᐊᒻᒪ ᐱᓯᐱᖃᖏᑐᑦ. ᓇᒪᒋᔭᐅᔪᕐᒥᒃ ᐃᑭᑎᔪᑎᒃᓴᕐᒥᒃ ᐊᖏᓯᓯᒪᔪᑦ ᓴᓇᔭᐅᓚᐅᑐᖅ ᒪᕈᓕᕿᒥᑐᓴᐅᑕᐅᓗᓂ ᐃᑭᑎᔪᑕᐅᓂᐊᕐᑐᖅ ᐅᕐᓱᕐᒥᒃ.
7. ᑲᑐᕋᑎᓂᒃ ᐸᐃᐸᓂᒃ ᑐᓂᔭᐅᓗᑕ ᒪᑐᓂᓴᖖᑕ ᐊᖏᑕᐅᓯᒪᔪᑦ ᒪᓕᓗᒋᑦ ᑲᑐᕋᓂᐊᕐᑐᓂᒃ - ᑐᓂᔭᐅᓚᐅᑐᖅ ᐱᓇᓱᐊᕈᓯᖓᓂ ᒪᔨ 17, 2003ᖑᑎᓗᒍ.
8. ᑐᓂᔭᐅᓗᑎᒃ ᖃᖓᑲᑦ ᖃᓄᐃᓕᐅᖃᑕᓂᐊᒪᖖᑕ ᒪᑐᔭᐅᓂᓴᖓ ᐱᓪᓗᒍ - ᐃᓚᐅᖃᑕᐅᓚᐅᑐᖅ ᑐᔪᑕᐅᔪᓂ ᒪᔨ 2001ᖑᑎᓗᒍ ᐊᒻᒪ ᑕᐃᑲᓂ ᒪᕈᓕᕿᒥ ᐊᖏᑕᐅᓯᒪᔪᑦ ᒪᓕᓗᒋᑦ ᐊᓯᔨᓗᐊᑐᖃᖏᑐᖅ ᖃᓄᐃᓕᐅᕈᑕᐅᔪᒪᓚᐅᑐᓂᒃ.

<u>**ᐃᒍᑎᓇᓂᖅ ᖃᓄᐃᑐᓂᕕᓂᖓᓄᓗ ᐅᑎᑎᓇᓱᒃᓂᐅᔫᑉ ᐅᓂᑲᖓ**</u>

ᔭᓄᐊᕆᐅᑉ ᐱᒋᐊᕐᓂᖓᓂ ᐱᓇᓱᐊᕐᓂᖅ ᓱᑲᐃᑐᓚᐅᑐᒐᓗᐊᖅ ᖁᕕᐊᓱᒃᕕᒃ ᐱᔪᑕᐅᓗᓂ ᐊᒻᒪ ᓯᓚᐅ ᐊᐅᓚᓂᖓᓄᑦ. 39ᖑᓚᐅᑐᑦ ᐃᓄᐃᑦ ᑕᐃᑲᓂ ᒪᔨᐅᑉ ᓄᖑᐊᓂ.

ᐅᑭᐅᖑᓂᖅ ᐱᔪᑕᐅᓗᓂ (ᓂᓚᓱᓂᖓ, ᐊᐳᑦ ᐊᒻᒪ ᑖᕐᓂᖓ), ᑕᒪᕐᒥᓕᒫᖅ ᐱᓕᕆᐊᖑᔪᑦ ᐃᓗᐃᑦ ᐃᓗᐊᓂ ᐱᓕᕆᓂᐅᓚᐅᑐᑦ ᐃᓗᓂ ᓱᕋᑎᕆᓗᑎᒃ. ᓄᖑᐊᓂ ᑕᑯᐊ ᑕᕿᑦ, ᓯᓚᒥᑐᑦ ᐱᒋᐊᕐᑕᐅᓕᓚᐅᑐᑦ.

1. **ᓄᓇᓕᕆᓂᖅ (ᖃᓄᐃᑐᓂᕆᓚᐅᑕᖓᓄᑦ)**
   - ᑕᕙᓂ ᐅᓂᑲᐅᓯᕆᔭᕐᓂ ᓄᓇᓕᕆᓚᐅᖏᑐᑦ ᐱᔪᑎᒋᓗᒍ ᐅᑭᐅᖑᓂᖅ ᐊᐳᓯᕆᓂᐅᑉ ᐊᓯᐊᓂ ᐱᓕᕆᔪᖃᓚᐅᖏᑐᖅ ᓯᓚᒥᒃ ᐊᐳᑕᐃᔭᐃᑐᐃᓇᕐᓗᑎᒃ.
2. **ᐃᒡᓗᓂᒃ ᓱᕋᑎᕆᓂᖅ**
   - **ᐃ. ᓯᖃᓕᑎᕆᕕᒃ/ᑎᑎᕋᕕᒃ/ᓯᕐᓗᐊᖅᑲᕕᒃ ᐅᒥᐊᖑᔭᕐᒥᑐᑦ**
     - ᑕᕙᓂ ᐅᓂᑲᕐᕕᒋᔭᕐᓂ ᐃᖃᓇᐃᔭᕐᑏᑦ ᐱᖁᑎᕈᓗᔭᕐᓂ ᐱᔭᐃᓚᐅᑐᑦ ᐊᒥᐊᖑᔭᕐᒥᑦ ᐅᐸᓗᖓᐃᔭᐃᓗᑎᒃ ᓯᓚᑎᖏᑦ ᐃᓗᐃᑦ ᐃᒍᑎᑦᑕᐅᓂᐊᕐᑎᓗᒋᑦ ᓯᓚ ᐅᖁᓯᕗᓕᐊᓕᕐᐸᑦ ᐅᐱᖓᓴᒃᑯᑦ. ᐃᓗᖏᑦ ᐃᒃᓗᐃᑦ ᐃᒍᑎᑕᐅᓂᑯᐃᑦ ᐊᒥᐊᖑᔭᕐᒥᖏᑐᑦ ᐱᔭᑦᑕᐅᓚᐅᕐᑐᑦ ᐃᓗᕐᓴᓕᐊᓇᓯᒪᔪᕐᒧᖃᑕᐅᕙᓕᐊᓗᑎᒃ ᐊᐅᐸᕐᑐᖅ ᕿᒥᑯᓗᒨᑦ ᓴᐅᔭᐅᔫᒃᓴᐅᑕᐅᓗᑎᒃ ᐅᐱᖓᓴᕐᖑᕐᐸᑦ ᐃᒋᑕᐅᓚᓇᓖᕐᓗᑎᒃ.
   - **ᐱ. ᓴᕕᕋᔭᒃᓴᑯᕕᕕᓂᖅ ᓯᕐᓗᐊᖅ**
     - ᑕᐃᑯᐊ ᐱᔭᕐᓇᑕᐅᓯᒪᔪᑦ ᐱᔭᕐᑕᐅᓂᑯᐃᑦ ᐅᓯᔪᑕᐅᖃᑕᓚᐅᑐᑦ ᐊᑯᓂᒐᓂᓚᐅᑐᖅ ᓯᕐᓗᐊᑉ ᐊᒻᒪ ᐅᒥᐊᔪᐊᒧᑦ ᐅᓯᓕᕐᓱᕕᒃ ᑕᒪᕐᒥᒃ ᐅᓯᔪᑕᓗ ᐃᒍᑎᑦᑕᐅᓚᐅᑐᑦ.
     - ᓱᕋᑎᑕᐅᓚᐅᑐᑦ ᓴᕕᕋᔭᐃᑦ ᐊᑭᓇᖏᑦ ᐊᒻᒪ ᐃᓗᕐᓴᒧᖃᑕᐅᓗᑎᒃ ᐊᐅᐸᑐᖅ ᕿᒥᑯᓗᒧ.
   - **ᑎ. ᑭᓂᕐᑐᓕᐅᕐᕕᒃ ᐃᒡᓗ**
     - ᐃᒍᑎᑦᑕᐅᓂᖓ ᐱᔭᓇᓚᐅᑐᖅ 2002ᖑᑎᓗᒍ. ᐅᑕᕿᔪᑦ ᒪᓂᕋᐅᑉ ᐊᐅᒃᓂᓴᖓᓂᒃ ᐱᔭᓇᑕᐅᖁᓗᒍ ᑐᖓᕕᖓ ᓄᓇᖓ ᐱᓕᓇᐊᖑᓂᐊᕐᒪᑦ.
   - **ᑭ. ᐃᒃᓗ ᓴᒪᓐᑎᒥ ᓴᓇᒪᔪᖅ ᓴᕕᕋᔭᒃᓴᐃᔭᕕᐅᔪᒧᑕᐅᔪᒃᓴᖅ**
     - ᐃᒍᑎᑦᑕᐅᓂᖓ ᐃᒡᓘᑉ ᐊᒻᒪ ᐱᖁᑎᖏᑦ ᐱᔭᓇᑕᐅᓚᐅᑐᖅ 2002ᖑᑎᓗᒍ. ᑐᖓᕕᖓ ᐱᔭᓇᑕᐅᔭᓇᐊᓕᒃ ᓄᓇᖓ ᐊᐅᒃᐸᑦ ᐅᐱᖓᑯᑦ.
   - **ᕆ. ᐊᖏᕋᓇᔭᐅᔪᑦ ᐃᒡᓗᐃᑦ**
     - ᓱᕋᒃᑎᑕᐅᖏᑐᑦ ᐊᑐᑦᑕᐅᒪᑕ ᓱᓕ.
   - **ᒥ. ᐊᓯᖏᑦ ᐃᒡᓗᐃᑦ/ᓱᓇᑯᑖᖃᕕᑦ**
     - ᓱᕋᒃᑎᑕᐅᔪᖅ ᓴᓇᕕᒃ ᐃᒃᓗ ᐅᒥᐊᕐᔪᐊᑉ ᐅᓯᒃᑕᐅᑎᖓᓄᑦ ᓄᓇᑯᔪᕐᔪᐊᕐᒨᑦ.
     - ᓱᕋᒃᑎᕐᓗᒍ ᑕᐃᑲᓂᒍᓂᕐᓗᓂᓗ ᒥᕐᓱᑎᖑᐊᖑᔭᕐ ᐃᒡᓗ.
     - ᓱᕋᒃᑎᕐᓗᒍᓗ ᐲᕐᓗᒍᓗ ᓯᕐᓗᐊᖅᑲᕕᓗᐊᑕᖅ (ᐊᐅᐸᕐᑐᓂ ᐅᓂᐊᒐ ᐊᐅᐸᕐᑐᖅ).

3. **ᓄᓇᖓ ᓱᕈᕐᓯᒪᕚᑉ ᓴᓗᒪᖕᓴᕐᑕᐅᓂᖓ**
   - ᓇᑎᔮᕐᓯᒪᔪᖅ ᓴᕕᕋᔮᒃᓴᖅᑲᕕ ᓯᕐᓗᐊᕕᓂᖅ ᐅᔭᕋᒃᑕᕐᕕᐅᔪᕕᓂᕐᒧᖔᓗᒍ ᐃᒋᑕᕐᓴᖅ.
4. **ᐊᓯᖏᓂᒃ ᐅᔭᕋᓯᐅᕐᕕᒥ ᓴᓗᒪᖕᓴᐃᓖᑦ**
   - ᕿᔪᓂᒃ ᐱᔮᐃᓗᑕ, ᑕᕆᐅᒥ ᐊᑖᓴᐅᔪᓂᕐᑐᑦ ᐃᒃᓯᕕᐅᔫᓗᐃᑦ ᐊᒪᓗ ᐊᓯᖏᑦ ᐱᖅᑯᑎᖃᕕᖏᓂᑦ ᐃᓗᕐᓴᓕᐊᕆᓯᒪᔪᕐᒧᖃᓗᒋᑦ ᐊᐅᐸᑐᖅ ᕿᒥᑯᓗᒧᑦ.
   - ᐱᔮᕆᓗᒍ ᓴᓇᔭᕗᑦ ᐃᑭᑎᕕᒃᓴᖅ ᐃᒡᓗ.
   - ᐃᑭᑎᔪᑎᒧᑦ ᐃᑯᐊᓚᐃᕙᓕᐊᓕᓚᐅᑐᒍᑦ ᐅᕐᑯᓴᐅᒧᑦ ᐃᓚᒃᓴᕐᒥᒃ ᐃᑭᑎᔪᑎᒥ ᑕᒪᑐᒪ ᓄᖑᐊᓂ.

__ᖃᓯᓂᒃ ᐊᑐᕐᓯᒪᓕᒪᖕᒐᑕ ᖃᓄᐃᑐᓂᕕᓂᖓᓄ ᐅᑎᑎᓇᓱᓂᒧᑦ__

ᐊᕿᓯᒪᓚᐅᓯᒪᔭᕗᑦ ᖃᓄᐃᑐᓂᕕᓂᖓᓄ ᐅᑎᑎᓇᓱᒋᐊᖅ $47,500,000ᓂᒃ ᐊᑐᓂᐊᕐᓱᒋᓗᑕ. ᓄᖑᐊᓄᑦ ᒪᔨ 2003 ᐊᑐᓯᒪᓕᑐᒍᑦ $17,869,000ᓂᒃ ᐊᒪᓗ ᐱᔭᕆᓯᒪᓕᕐᐸᑦ $53,509,000ᓂᒃ ᐊᑐᓂᐊᕐᓱᒋᔪᒍᑦ.

__ᐊᐅᐸᕐᑐᖅ ᕿᒥᑯᓗᒧ ᐃᓗᓴᖕᒐᓄᕐᓯᓂᖅ ᐃᓗᕕᓂᕐᓂᒃ/ᐱᕐᑯᑎᓂᒃ ᒪᕐᓗᑯᒋᔭᐅᔪᓂᒃ ᓴᐅᔭᐅᓂᐊᕐᑐᓂᒃ__

ᐃᓚᒋᐊᕈᑎᒃ ᒋᒥᑐᖅ ᒪᕈᓕᕿᐅᑉ ᓯᕗᓕᕐᐸᖕᒐᓂ ᐅᓂᒃᑲᓕᐊᖑᔪᖅ ᐊᔨᖑᐊᕐᑯᑎᑕᓕᒃ ᒪᕐᓗᑯᕐᑕᐅᔪᓂ ᐊᐅᐸᑐᖅ ᕿᒥᑯᓗᒥ ᓴᐅᔭᐅᔫᒃᓴᐃᑦ. ᑕᐃᑲᓂᑐᑦ ᐃᒡᓗᕕᓂᑦ ᐊᒪᓗ ᐱᕐᑯᑎᕕᓃᑦ ᐅᒪ ᖁᓚᓂ ᐅᖃᐅᓯᐅᓯᒪᔪᑦ ᑭᓱᒪᖕᒐᑕ.

__ᐊᕙᑎᐊ ᑕᐅᕙᒃᓱᒪ ᖃᐅᔨᓴᑕᕐᑕᐅᓂᖓ__

ᑕᓯᖅ ᑭᐊᕈᒥᑦ ᐃᒪᕐᒥ ᐱᓚᐅᑐᑦ ᖃᐅᔨᓴᑕᐅᔫᒃᓴᕐᒥᒃ ᑕᕙᓂ ᐅᓂᒃᑳᓯᕆᔭᕐᓂ ᑕᐃᒪᐃᖁᔭᐅᓯᒪᒪᑦ ᐃᒪᒧ ᐱᔪᓇᐅᑎᒥ. ᓂᕆᐅᒋᔭᐅᓚᐅᓂᖓ ᐊᓱᐃᓛᒃ ᑕᐃᒪᐃᑐᓚᐅᑐᖅ ᐊᔨᒋᓗᓂᒋᑦ ᓯᕗᓂᐊᓂ ᖃᓄᐃᑐᓂᕆᓚᐅᑕᖏᑦ ᓇᒥᔭᐅᔪᑦ. ᖃᓄᐃᑐᒪᖕᒐᑦ ᓇᓗᓇᐃᓯᒪᔪᑦ ᐅᓂᒃᑲᓕᐊᖑᓯᒪᔪᓂ ᖃᓗᓇᕐᑎᑐᑦ ᑎᑎᖅᑲᓯᒪᔪᑦ.

APPENDIX B

UPDATE OF

DECOMMISSIONING AND RECLAMATION SCHEDULE

POLARIS MINE - DECOMMISSIONING & RECLAMATION SCHEDULE

UPDATED AS OF MARCH 31, 2003

ACTIVITY	Prior To Period	1st Qtr. 2003			2nd Qtr. 2003			3rd Qtr. 2003			4th Qtr. 2003			1st Qtr. 2004			2nd Qtr. 2004			3rd Qtr. 2004		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
CONTRACTOR MOBILIZATION																						
Pre-mobilization Planning / Order Materials/Equip																						
Ship to Site with Contractor Equipment																						
Offload Ship																						
Setup Warehousing/Laydown Area																						
SETUP TEMPORARY FACILITIES																						
DECOMMISSIONING UNDERGROUND																						
Remove / Salvage Mine Equipment & Crusher																						
Remove Refrigeration Plant																						
Remove Surface Ventilation Fans																						
Seal Mine Openings																						
MILL / BARGE DEMOLITION																						
Initial Cleanup of Barge by Teck Cominco																						
Removal of Barge Services																						
Transfer fuel to Tank Farm & Clean Hull																						
Remove hazardous Materials / Wastes																						
Remove / Salvage Process Equipment																						
Demolish Internal Equipment																						
Demolish Structure																						
Remove Hydrocarbon/Metals Contaminated Soils																						
Regrade Area Surounding Barge																						
PRODUCT STORAGE BUILDING DEMOLITION																						
Cleanup of Building / Remove Liquids from Equip.																						
Demolish Exterior Conveyors																						
Demolish Reclaim Conveyors																						
Remove Cladding from Building																						
Demolish Structure																						
Demolish Foundations																						
Remove Contaminated Soils																						
Regrading Area																						

POLARIS MINE - DECOMMISSIONING & RECLAMATION SCHEDULE

UPDATED AS OF MARCH 31, 2003

ACTIVITY	Prior To Period	1st Qtr. 2003			2nd Qtr. 2003			3rd Qtr. 2003			4th Qtr. 2003			1st Qtr. 2004			2nd Qtr. 2004			3rd Qtr. 2004		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
SHIP LOADER / RECLAIM CONVEYOR DEMOL.																						
Cleanup of Conveyor Areas/Remove Oils																						
Demolish Conveyors																						
DOCK DECOMMISSIONING																						
Inspect / Remove Glycols from Freeze Pipes																						
Remove Metals Contaminated Soils																						
Remove Cells 1 & 2																						
Remove Cells 3 & 4																						
Removal of Temporary Dock																						
Shoreline Recontouring																						
Berm Removal																						
Grade New Beach to Final Profiles																						
TAILINGS SYSTEM DEMOLITION																						
Final Cleanup of Thickener																						
Flush Tails Lines																						
Salvage Equipment																						
Remove hazardous Materials / Wastes																						
Remove Tails Lines																						
Demolish Equipment																						
Demolish Structure																						
Remove Contaminated Soils																						
Regrading																						
GARROW LAKE / DAM DECOMMISSIONING																						
Drawdown Lake																						
Removal of Centre Section of Dam																						
Creek Channel Construction																						
Final Grading / Armouring of Dam Remnants																						
CRF PLANT DEMOLITION																						
Final Cleanup of Plant																						
Remove hazardous Materials / Wastes																						
Demolish Plant Equipment																						
Demolish Buildings																						
Contaminated Soil Cleanup																						
Site Grading (Plant & Surrounding Area)																						

POLARIS MINE - DECOMMISSIONING & RECLAMATION SCHEDULE

UPDATED AS OF MARCH 31, 2003

ACTIVITY	Prior To Period	1st Qtr. 2003			2nd Qtr. 2003			3rd Qtr. 2003			4th Qtr. 2003			1st Qtr. 2004			2nd Qtr. 2004			3rd Qtr. 2004		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
ACCOMODATIONS COMPLEX DEMOLITION																						
Establish Temporary Offices / Building Services																						
Use Accomodations Complex																						
Establish Temporary Camp Accomodations																						
Use Temporary Camp																						
Remove hazardous Materials / Wastes																						
Demolish Buildings																						
Regrade Area																						
Remove Temporary Camp																						
FUEL STORAGE (TANK FARM) DEMOLITION																						
Temporary Modifications																						
Transfer Fuel to Temporary Storage																						
Cleaning of Tanks / Piping																						
Demolish Tanks / Piping																						
Cleanup of Berm & Liner																						
Site Grading																						
BLADDER AREA CONTAMINATED SOILS																						
Cleanup of Hydrocarbon Soils																						
Area Grading																						
MISC. BUILDING DEMOLITION																						
Exploration Quonset Huts																						
Core Shack (Atco Trailer)																						
Emergency Shelter at North Portal																						
Steam Wash Bay & Tire Shop																						
Generator Building																						
Bent Horn Building																						
Dock Office Trailer																						
Airstrip Storage Hut																						
Fresh Water Pump House																						
Frsh Water Tank & Shed																						
Carpenter Shop																						
Shipping Containers (Sea Cans)																						
Foldaways by Temporary Dock (3)																						
Firehall																						

POLARIS MINE - DECOMMISSIONING & RECLAMATION SCHEDULE

UPDATED AS OF MARCH 31, 2003

ACTIVITY	Prior To Period	1st Qtr. 2003			2nd Qtr. 2003			3rd Qtr. 2003			4th Qtr. 2003			1st Qtr. 2004			2nd Qtr. 2004			3rd Qtr. 2004		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
OPERATIONAL LANDFILL CLOSURE																						
Reclocate Construction Landfill																						
Hauling Landfill Cover Cap Material																						
LRD QUARRY Landfill																						
Cut Notch into Quarry / Construct Haul Road																						
Installation of Thermistor Pipe Stands																						
Placing debris in Quarry																						
Grading of Notch to Match Cap																						
Placement of Cap and Final Grading																						
Installation of Thermistors into Pipes																						
MISC. SITE RECLAMATION & EARTHWORKS																						
Reduction in spare parts/supplies by TCML																						
Ship Mill Process Chemicals South for Sale/Recycle																						
Ship Hazardous Materials / Special Wastes from Site																						
Site Cleanup of scrap material during operations																						
Regrading North 40 Area																						
Grading of Reclamation Landfill Area																						
Road Closure / Culvert Removals/Runway																						
DEMOBILIZE FROM SITE																						
Prepare Equipment / Supplies for Shipping from Site																						
Prepare Residual Chemicals / Wastes for shipping																						
Last Ship from Polaris																						

APPENDIX C

UPDATE
OF
ESTIMATED
MINE DECOMMISSIONING, RECLAMATION
AND
MONITORING COSTS

POLARIS MINE DECOMMISSIONING, RECLAMATION AND MONITORING COST ESTIMATE
1st QUARTER 2003 UPDATE

	BUDGET		MARCH 31, 2003 CLAIMED TO DATE		FORECAST FINAL PROJECT COST		NOTES
	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	
DEMOLITION & RECLAMATION (BARE COSTS)							
MINE EQUIPMENT REMOVAL							
Hazardous Materials Removal	35,845		-		35,845		
Mine Refrigeration Plant	145,525		6,000		145,525		
Mobile & Mine Equipment	2,919		-		2,919		
Remove Salvaged Mine Equipment	20,754		3,983		-		
Misc Sub Contract Costs	45,957		-		45,533		
		$ 251,000		$ 9,983		$ 229,822	
MINE ACCESS SEALING							
Seal Mine Portals	60,000		6,199		96,464		
		$ 60,000		$ 6,199		$ 96,464	
CONCENTRATOR BUILDING							
Miscellaneous Materials	22,092		-		22,092		
Mill Equipment Clean-Up - Fuels	16,398		-		-		
Mill Equipment Clean-Up	99,900		39,924		99,900		
Hazardous Materials Removal	151,117		35,882		170,737		
Barge Demolition	608,592		61,267		608,592		
Misc Process Equipment Demolition & Removal	197,432		142,520		197,432		
Misc Sub Contract Costs	88,469		9,601		88,835		
		$ 1,184,000		$ 289,194		$ 1,187,588	
CONCENTRATE STORAGE STRUCTURE & EQUIPMENT							
Concentrate Storage Equipment Clean-Up	26,117		1,905		26,117		
Conveyors	67,600		8,421		67,600		
Concentrate Storage Structure & Equipment	555,283		7,458		555,258		
		$ 649,000		$ 17,784		$ 648,975	
SHIP LOADER & CONVEYOR							
Conveyors	50,000		-		49,580		
		$ 50,000		$ -		$ 49,580	
DOCK & SHORELINE							
Dock & Shoreline Reclamation	869,000		26,965		869,352		
		$ 869,000		$ 26,965		$ 869,352	
THICKENER & TAILINGS LINES							
Hazardous Materials Removal	22,577		1,930		26,453		
Tailings Thickener	377,423		31,701		277,039		
		$ 400,000		$ 33,631		$ 303,492	
GARROW LAKE							
Garrow Lake Siphons & Lake Drawdown	120,391		95,413		105,630		
Dam/Spillway Modifications	95,467		-		95,467		
Escalation Allowance	3,142		-		3,360		
		$ 219,000		$ 95,413		$ 204,457	
CRF PLANT STRUCTURE & EQUIPMENT							
CRF Plant Equipment Clean-Up	7,002		1,040		1,042		
CRF Plant Equipment Removal	17,533		9,406		9,406		
CRF Plant Buildings Demolition	130,455		22,169		27,000		
Misc Sub Contract Costs	11,010		38,255		92,559		
		$ 166,000		$ 70,870		$ 130,007	
ACCOMMODATION COMPLEX STRUCTURE & EQUIPMENT							
Accommodation Complex Building Demolition	249,000		10,211		249,632		
		$ 249,000		$ 10,211		$ 249,632	
FUEL STORAGE & HANDLING EQUIPMENT							
Miscellaneous Materials	3,681		-		3,681		
Purge & Decommission Fuel Tanks	53,404		34,608		422,239		
Hazardous Materials Removal	50,645		807		50,645		
Fuel Pumping & Distribution Systems	87,270		-		97,219		
		$ 195,000		$ 35,415		$ 573,784	
BUILDINGS & CONTAINERS							
Miscellaneous Materials	1,323		-		1,323		
Misc Warehouse / Shipping Equipment	1,221		3,292		3,292		
Misc Buildings Demolition	250,456		29,800		266,327		
		$ 253,000		$ 33,092		$ 270,942	
MISC CONTRACTOR LABOUR							
Unallocated Labour	133,000		1,348		18,722		
		$ 133,000		$ 1,348		$ 18,722	
GENERAL SITE GRADING							
Hazardous Materials Removal	44,719		2,000		44,719		
General Site Grading & Reclamation	7,129		141,241		229,095		
Escalation Allowance	4,152		-		3,680		
		$ 56,000		$ 143,241		$ 277,494	
LANDFILL RECLAMATION							
Landfill Reclamation	432,000		314,297		439,298		
		$ 432,000		$ 314,297		$ 439,298	
CONTAMINATED SOILS - CLEANUP							
Metals & Hydrocarbon Contaminated Soils Cleanup & Disposal	366,623		9,068		487,634		
Hydrocarbon Contaminated Soils (By Polaris)	6,097		13,131		13,131		
Metals Contaminated Soils (By Polaris)	173,605		52,382		56,350		
U/G Handling & Disposal Of Contaminated Soils	48,675		-		48,689		
		$ 595,000		$ 74,581		$ 605,804	

POLARIS MINE DECOMMISSIONING, RECLAMATION AND MONITORING COST ESTIMATE
1st QUARTER 2003 UPDATE

	BUDGET		MARCH 31, 2003 CLAIMED TO DATE		FORECAST FINAL PROJECT COST		NOTES
	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	
QUARRIES & MINE SURFACE RECLAMATION (EARTHWORK)							
Backfill & Re-Contouring	263,000		7,771		264,606		
		$ 263,000		$ 7,771		$ 264,606	
MISC. DEMOLITION & CLEAN-UP							
Misc Unallocated Clean-Up / Demo	380,000		96,666		150,290		
		$ 380,000		$ 96,666		$ 150,290	
EQUIPMENT PURCHASE/RENTAL							
Contractor Equipment Rental	5,274,900		1,438,273		5,274,900		
Contractor Misc Equipment Purchase	719,407		431,759		439,664		
Escalation Allowance	59,693		-		59,240		
		$ 6,054,000		$ 1,870,032		$ 5,773,804	
MISC. SERVICES & SUPPLIES							
Misc Purchased Materials / Supplies	235,333		129,169		158,973		
Escalation Allowance	19,667		-		19,380		
		$ 255,000		$ 129,169		$ 178,353	
FUEL							
Fuel Supply	3,294,536		2,300,673		5,802,430		
Fuel Taxes (Heating & Power Generation)	68,677		72,769		91,446		
Fuel Taxes (Equipment)	467,343		15,214		467,343		
Escalation Allowance	157,444		-		157,080		
		$ 3,988,000		$ 2,388,656		$ 6,518,299	
MAINTENANCE OF EQUIPMENT & FACILITIES							
Mobile Equip Maintenance	1,296,759		1,291,683		1,957,846		
Building Maintenance	506,923		605,294		1,080,258		
Escalation Allowance	101,318		-		100,950		
		$ 1,905,000		$ 1,896,977		$ 3,139,054	
PRE - PURCHASED EQUIPMENT (BY COMINCO)							
Construction Equipment - Purchase (By Owner)	541,000		541,271		541,271		
		$ 541,000		$ 541,271		$ 541,271	
CONTRACTOR'S FIELD SUPPORT & SUPPLIES							
TRANSPORTATION (SHIPPING)							
Packing & Preparation	85,326		13,756		88,846		
Shipping Costs	948,661		561,226		1,219,736		
Escalation Allowance	78,013		-		78,110		
		$ 1,112,000		$ 574,982		$ 1,386,692	
CONTRACTOR MOB, DEMOB & SUPERVISION							
Contractor Mob/Demob	61,883		49,614		152,024		
Contractor Supervisory/Admin Personnel	2,127,339		416,376		2,255,007		
Safety Services & Supplies	36,000		105,576		235,261		1
Misc Temporary Services / Modifications	223,824		486,915		674,246		
Escalation Allowance	13,954		-		13,830		
		$ 2,463,000		$ 1,058,481		$ 3,330,368	
MISC. SERVICES & SUPPLIES							
Communications & TV	374,000		59,703		405,532		
Escalation Allowance	31,000		-		30,780		
		$ 405,000		$ 59,703		$ 436,312	
ACCOMODATIONS							
Catering	1,487,166		492,054		1,509,104		
Escalation Allowance	122,834		-		122,450		
		$ 1,610,000		$ 492,054		$ 1,631,554	
TRAVEL & PERSONNEL							
Travel (Airfares & Expenses)	1,552,881		666,078		4,072,369		
Travel Premium - Revised Rotation Schedule	1,072,773		-		-		
Misc Personnel Transport	72,274		41,183		72,274		
Escalation Allowance	575,072		-		575,130		
		$ 3,273,000		$ 707,261		$ 4,719,773	
CONTRACTOR INDIRECTS							
HO MOB & DEMOB SUPPORT							
Mob & Demob	1,912,000		1,526,300		1,912,376		
		$ 1,912,000		$ 1,526,300		$ 1,912,376	
CONTRACTOR MANAGEMENT SUPPORT							
Personnel	3,928,932		670,506		3,928,932		
Safety & First Aid Personnel to Provide Overlap	184,068		31,350		183,644		
		$ 4,113,000		$ 701,856		$ 4,112,576	
OTHER CONTRACTOR INDIRECTS							
Contractor's General Indirects	4,952,000		2,182,344		4,952,139		
		$ 4,952,000		$ 2,182,344		$ 4,952,139	
ENGINEERING / PROJECT MANAGEMENT							
ENVIRONMENTAL SITE ASSESMENT							
Environmental Consultants - Site Assesment	275,787		249,179		289,301		
Site Assessment - Unallocated	207,874		105,263		207,874		
Escalation Allowance	2,339		-		2,450		
		$ 486,000		$ 354,442		$ 499,625	
CLOSURE PLAN							
Environmental Consultants - Closure Plan	415,772		367,585		415,772		
Escalation Allowance	2,228		-		2,100		
		$ 418,000		$ 367,585		$ 417,872	

POLARIS MINE DECOMMISSIONING, RECLAMATION AND MONITORING COST ESTIMATE
1st QUARTER 2003 UPDATE

	BUDGET		MARCH 31, 2003 CLAIMED TO DATE		FORECAST FINAL PROJECT COST		NOTES
	By Code	Subtotals	By Code	Subtotals	By Code	Subtotals	
ENGINEERING / SPECIAL CONSULTANTS							
Design Consultants - Dock / Loadout	1,316		1,320		1,320		
Design Consultants - Tailings / Garrow Lake	3,520		3,515		3,515		
Design Consultants - Dock / Loadout	79,684		64,069		82,684		
Design Consultants - Tailings / Garrow Lake	54,780		41,460		57,780		
Sitework & Demolition Procedures - Design Services	18,300		6,234		30,155		
Escalation Allowance	2,400		-		2,010		
		$ 160,000		$ 116,598		$ 177,464	
PROJECT MANAGEMENT CONSULTANT (HO STAFF)							
Project Management - Salaries	411,069		528,568		952,780		
Project Management - Reimb Expenses	100,000		37,729		100,000		
Escalation Allowance	31,931		-		-		
		$ 543,000		$ 566,297		$ 1,052,780	
CONSTRUCTION MANAGEMENT (FIELD STAFF)							
Construction Management - Salaries	2,142,878		427,130		1,773,595		
Escalation Allowance	179,122		-		-		
		$ 2,322,000		$ 427,130		$ 1,773,595	
ENVIRONMENTAL TESTING AND SAMPLING							
Environmental Reclamation Supervision - Staff	337,123		-		337,123		
Escalation Allowance	29,550		-		29,550		
Environmental Reclamation Supervision - Testing	330,000		68,404		354,649		
Escalation Allowance	26,327		-		26,280		
		$ 723,000		$ 68,404		$ 747,602	
OWNER'S COSTS							
SALARIES & EXPENSES							
Teck Cominco HO Proj Mgmnt (Staff Lab)	374,631		225,872		374,631		
Teck Cominco HO Proj Mgmnt (Misc Material & Exp)	199,149		108,165		199,406		
Escalation Allowance	34,220		-		33,750		
		$ 608,000		$ 334,037		$ 607,787	
OVERHEAD / HO SUPPORT							
Land Leases, Licences	175,000		-		175,000		
Miscellaneous Permits	45,000		8,018		45,000		
Insurance	445,900		43,878		445,900		
Property Taxes	495,000		37,181		495,000		
Home Office General Admin (Labour & Exp)	722,384		13,256		728,874		
Public Relations	74,292		58,718		74,292		
Legal	57,540		48,021		57,540		
Escalation Allowance	168,560		-		-		
Misc Owner's Overhead	6,324		13,882		6,615		
		$ 2,190,000		$ 222,954		$ 2,028,221	
GENERAL ADMIN							
Closure Management - Polaris Personnel	54,000		-		-		
Escalation Allowance	2,880		-		-		
Closure Wrap Up	5,120		15,667		-		
		$ 62,000		$ 15,667		$ -	
POST RECLAMATION COSTS (2005 - 2011)							
SITE MONITORING AND HOLDING COSTS							
Annual Post Closure Environmental Monitoring (2005 to 2011)	510,000		-		510,000		
Final Sampling Program, Data Evaluation and Reporting in 2011	160,000		-		160,000		
Land Lease/Licence costs from 2005 to 2011	126,000		-		126,000		
Property Taxes - 2005 to 2011	70,000		-		70,000		
Escalation Allowance	135,000		-		135,000		
		$ 1,001,000		$ -		$ 1,001,000	
TOTAL DECOMMISSIONING / RECLAMATION & MONITORING COSTS		**$ 47,500,000**		**$ 17,868,861**		**$ 53,508,826**	

Note #1 - Safety Services and Supplies was previously part of the line item above it 'Contractor Supervisory/Admin Personnel' but has been separated as it has become a significant item in terms of both actual and forecast costs.

APPENDIX D

PLACEMENT OF DEBRIS

PLACEMENT INTO

LITTLE RED DOG QUARRY LANDFILL

PLACEMENT OF DEBRIS INTO LRD QUARRY LANDFILL

1ST QUARTER, 2003

DRAWING OF WASTE PLACEMENT

The following drawing indicates the areas where debris was placed each month during the 1st quarter of 2003 (January 1, 2003 to March 31, 2003). The locations represent the final placement locations and not temporary staging areas. The drawing also includes locations of debris place prior to the beginning of the quarter where the debris was placed at the same elevation in the pit.

This drawing represents the Second Lift (L2) of debris in the pit. The Second Lift of the debris is being placed into Bench 6 of LRD Quarry. The drawing indicates a different colour for each lift, year, and month that the debris was placed. For example 'L2 – 2003 – 01' represents Lift 2, for the month of January, 2003.

RECORD OF WASTE SOURCE/VOLUME & TYPE

Following the diagram are records from each month showing the source of the debris, where it was placed, the quantity and the type of debris.

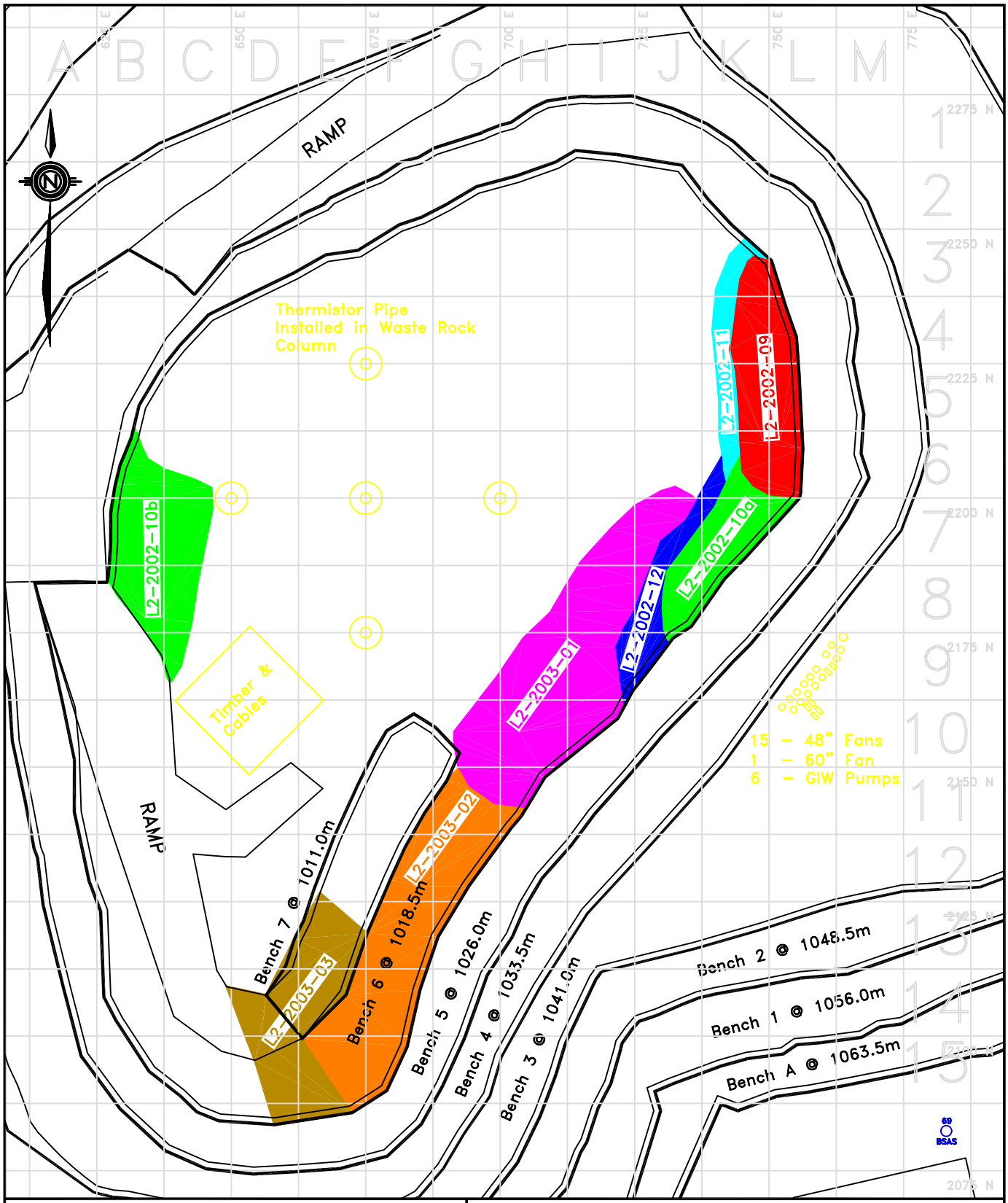
VERIFICATION OF HYDROCARBON REMOVAL

Equipment usually contains sources of hydrocarbons such as lubrication oils, fuels, greases and/or hydraulic oil. Attached to this appendix are signoff sheets indicating equipment that contained hydrocarbons were cleaned and/or drained of the hydrocarbons. After the equipment was drained and/or cleaned, they were inspected by our prime contractor, the demolition subcontractor and an owner representative. No hydrocarbon containing equipment/machinery has been permitted to be taken to LRD Quarry Landfill until this equipment has been signed off that it had been inspected and was acceptably clean.

PHOTOGRAPHIC RECORD

As specified in the Closure Plan, a photographic record of debris placement is being maintained. Attached to this appendix are pictures of typical debris being placed in LRD Quarry. In January, there are few pictures as there is little daylight at this northern location until late in the month.

It is important to note that the first quarter of 2003 is the winter period and so debris was placed in the pit into temporary stockpiles rather than their final burial location. The weather is too cold for the hydraulic shearers and bailer to function properly. Debris shown has been further processed using the bailer for siding and shearers for heavier steel prior to final burial.



POLARIS PROJECT

teckcominco

LRD Quarry – LIFT 02

Demolition Debris Placement

DRAWN BY:	SCALE:	DATE:	DWG #:
TSF	1:1000	March 31, 2003	

Polaris Mine Decommissioning and Reclamation Project

Daily Disposal Record For 1st Quarter 2003

Structural Steel/Concrete/Building Components

Date	Origin location	Disposal Location	Disposal Location Details	Quantity (m3)	Remarks
06-Jan-03	barge	L.R.D.	bench 6	80	Steel + wallboard
07-Jan-03	barge	L.R.D.	bench 6	50	Steel + wallboard
08-Jan-03	barge	L.R.D.	bench 6	50	Steel + wallboard
13-Jan	1 floor mill	L.R.D	bench 6	5	Steel
15-Jan-03	1 floor mill	L.R.D	bench 6	10	Steel
16-Jan-03	barge	L.R.D.	bench 6	5	steel
17-Jan-03	barge	L.R.D.	bench 6	10	steel
18-Jan-03	barge	L.R.D.	bench 6	75	steel
18-Jan-03	barge	L.R.D.	bench 6	20	plastic+rubber pipes
21-Jan-03	barge	L.R.D.	bench 6	20	steel
28-Jan-03	barge	L.R.D.	bench 6	75	steel
29-Jan-03	barge	L.R.D.	bench 6	5	steel
30-Jan-03	barge	L.R.D.	bench 6	5	steel
31-Jan-03	barge	L.R.D.	bench 6	60	steel
04-Feb-03	tire shop	L.R.D.	bench 6	10	rubber
04-Feb-03	storage building	L.R.D.	bench 6	80	sheet metal
05-Feb-03	storage building	L.R.D.	bench 6	40	sheet metal
05-Feb-03	barge	L.R.D.	bench 6	120	steel
06-Feb-03	barge	L.R.D.	bench 6 (J4-J5-J6)	60	steel
08-Feb-03	barge	L.R.D.	bench 6 (J4-J5-J6)	75	steel
10-Feb-03	barge	L.R.D.	bench 6 (J4-J5-J6)	60	steel
10-Feb-03	burn pitt	L.R.D.	bench 6 (J4-J5-J6)	100	mixed steel/wood
10-Feb-03	storage building	L.R.D.	bench 6 (J4-J5-J6)	120	sheet metal
11-Feb-03	storage building	L.R.D.	bench 6 (J4-J5-J6)	60	sheet metal
12-Feb-03	storage building	L.R.D.	bench 6 (J4-J5-J6)	20	sheet metal
13-Feb-03	barge	L.R.D.	bench 6 (J4-J5-J6)	40	steel
13-Feb-03	storage building	L.R.D.	bench 6 (J4-J5-J6)	40	rubber belt
14-Feb-03	storage building	L.R.D.	bench 6 (J4-J5-J6)	70	steel
14-Feb-03	barge	L.R.D.	bench 6 (J4-J5-J6)	40	steel
15-Feb-03	barge	L.R.D.	bench 6 (F13-F14)	240	steel
17-Feb-03	barge	L.R.D.	bench 6 (F13-F14)	60	steel
17-Feb-03	storage building	L.R.D.	bench 6 (F13-F14)	135	steel
18-Feb-03	barge	L.R.D.	bench 6 (F13-F14)	30	steel
18-Feb-03	storage building	L.R.D.	bench 6 (F13-F14)	90	steel
19-Feb-03	storage building	L.R.D.	bench 6 (E15 + F13)	360	steel
19-Feb-03	barge	L.R.D.	bench 6 (J2)	200	mix (wood + steel + wallboard)
20-Feb-03	storage building	L.R.D.	bench 6 (J3-J4-J5)	100	rubber belt + steel
20-Feb-03	barge	L.R.D.	bench 6 (J3-J4-J5)	50	steel
21-Feb-03	barge	L.R.D.	bench 6 (F14-F15)	40	steel

Polaris Mine Decommissioning and Reclamation Project

Daily Disposal Record For 1st Quarter 2003

Structural Steel/Concrete/Building Components

Date	Origin location	Disposal Location	Disposal Location Details	Quantity (m3)	Remarks
21-Feb-03	storage building	L.R.D.	bench 6 (F14-E15)	200	steel
22-Feb-03	barge	L.R.D.	bench 6 (F14-E15)	40	steel
22-Feb-03	storage building	L.R.D.	bench 6 (F14-E15)	60	steel
23-Feb-03	storage building	L.R.D.	bench 6 (F14-E15)	30	steel
24-Feb-03	sea container(shore)	L.R.D.	bench 6 (F14-E15)	70	spare parts
24-Feb-03	barge	L.R.D.	bench 6 (F14-E15)	15	steel
24-Feb-03	shoreline	L.R.D.	bench 6 (B9-C9)	320	container (steel)
25-Feb-03	barge	L.R.D.	bench 6 (F14-E15)	30	steel
25-Feb-03	sea container(shore)	L.R.D.	bench 6 (F14-E15)	50	spare parts
26-Feb-03	arctic club	L.R.D.	bench 6 (E13)	70	sheet metal
26-Feb-03	barge	L.R.D.	bench 6 (E13)	15	steel
26-Feb-03	storage building	L.R.D.	bench 6 (E13)	15	steel
26-Feb-03	shoreline	L.R.D.	bench 6 (B9-C9)	320	container (steel)
27-Feb-03	barge	L.R.D.	bench 6 (E12-E13)	10	steel
28-Feb-03	barge	L.R.D.	bench 6 (E12-E13)	90	steel
28-Feb-03	barge	L.R.D.	bench 6 (I7-I8)	400	steel (cell)
01-Mar-03	barge	L.R.D.	bench 6 (E12-E13)	120	steel
01-Mar-03	shoreline	L.R.D.	bench 6 (D8-D9)	400	steel (container)
02-Mar-03	arctic club	L.R.D.	bench 6 (I9-I10)	50	concrete
02-Mar-03	barge	L.R.D.	bench 6 (I9-I10)	120	steel
02-Mar-03	electric sub.	L.R.D.	bench 6 (I9-I10)	60	sheet metal, mix materials
03-Mar-03	barge	L.R.D.	bench 6 (H9-H10)	140	steel
05-Mar-03	barge	L.R.D.	bench 6 (H9-H10)	20	steel
08-Mar-03	shoreline	L.R.D.	bench 6 (H2)	35	rubber tire
11-Mar-03	barge	L.R.D.	bench 6 (G10)	15	steel
Mar-27-03	Barge	L.R.D	bench 6 (D5)	80	Siding from south wall
Mar-30-03	Barge	L.R.D.	bench 6 (D5)	160	Siding from south wall
Mar-31-03	Barge	L,R,D	bench6(j5)	60	Steel
TOTAL DEBRIS TAKEN TO LRD QUARRY				**5,705**	


2003 01 27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2003 02 08


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APPENDIX E

THERMISTOR MONITORING DATA

WATER LICENCE Part H, Item 43

THERMISTOR TEMPERATURES - Garrow Lake Dam

(a) NORTH

DATE	Core A	Core B	Core C	Core D	Core E	Core F	Core G	Core H	Core J	Bedrock K	Bedrock L
15-Jan-03											
10-Feb-03	-18.9	-15.7	-14.0	-12.9	-12.2	-11.9	-11.7	-11.7	-11.9	-12.0	-12.0
11-Mar-03	-20.8	-17.9	-15.7	-14.3	-13.1	-12.6	-12.2	-12.2	-12.2	-12.2	-12.1

(b) CENTRE

DATE	Core A	Core B	Core C	Core D	Core E	Core F	Core G	Bedrock H	Bedrock J	Bedrock K	Bedrock L
15-Jan-03											
10-Feb-03	-13.7	-12.7	-12.2	-12.0	-11.8	-11.8	-11.8	-11.8	-11.8	-11.9	-12.1
11-Mar-03	-15.3	-14.0	-13.2	-12.6	-12.2	-12.2	-12.1	-12.1	-12.0	-11.8	-12.1

(c) SOUTH

DATE	Core A	Core B	Core C	Core D	Core E	Core F	Core G	Core H	Bedrock J	Bedrock K	Bedrock L
15-Jan-03											
10-Feb-03	-12.8	-12.3	-11.9	-11.8	-11.6	-11.8	-11.5	-11.5	-11.6	-11.6	-11.8
11-Mar-03	-14.1	-13.5	-12.9	-12.6	-12.4	-12.4	-12.0	-12.0	-11.9	-11.8	-12.0

POLARIS MINE - OPERATIONAL LANDFILL TEMPERATURE MONITORING - THERMISTOR STRING #1
TEMPERATURES IN DEGREES C

	Bead # 1	Bead # 2	Bead # 3	Bead # 4	Bead # 5	Bead # 6	Bead # 7	Bead # 8	Bead # 9	Bead # 10	Bead # 11	Bead # 12
Installation Depth Below Collar (M)	-0.5	-1.0	-1.5	-2.0	-3.0	-4.0	-4.5	-5.0	-5.5	-6.0		
20-Mar-99	-22.9	-23.9	-24.0	-23.7	-21.7	-17.0	-15.9	-15.0	-14.2	-13.5		
22-Mar-99	-22.7	-23.3	-23.5	-23.3	-21.6	-17.1	-16.0	-15.2	-14.3	-13.6		
23-Mar-99	-22.5	-23.2	-23.3	-23.1	-21.5	-17.2	-16.0	-15.2	-14.4	-13.6		
24-Mar-99	-22.4	-23.0	-23.2	-22.9	-21.4	-17.2	-16.1	-15.3	-14.4	-13.7		
25-Mar-99	-22.4	-22.9	-23.0	-22.8	-21.4	-17.2	-16.2	-15.4	-14.5	-13.8		
26-Mar-99	-23.1	-22.8	-22.9	-22.6	-21.3	-17.3	-16.2	-15.4	-14.5	-13.8		
27-Mar-99	-23.7	-23.0	-22.8	-22.5	-21.2	-17.3	-16.3	-15.5	-14.6	-13.9		
29-Mar-99	-24.7	-23.4	-22.8	-22.4	-21.0	-17.4	-16.4	-15.6	-14.7	-14.0		
30-Mar-99	-25.9	-23.9	-23.0	-22.3	-21.0	-17.4	-16.4	-15.6	-14.7	-14.0		
6-Apr-99	-24.1	-24.1	-23.5	-22.7	-20.9	-17.5	-16.6	-15.9	-15.0	-14.3		
13-Apr-99	-22.7	-22.8	-22.6	-22.2	-20.8	-17.6	-16.8	-16.0	-15.3	-14.5		
20-Apr-99	-19.9	-20.6	-21.2	-21.3	-20.6	-17.7	-16.9	-16.2	-15.5	-14.7		
26-Apr-99	-18.4	-19.8	-20.5	-20.6	-20.0	-17.7	-17.0	-16.4	-15.6	-14.9		
4-May-99	-16.2	-18.0	-19.0	-19.5	-19.4	-17.6	-17.0	-16.4	-15.7	-15.1		
11-May-99	-14.1	-16.2	-17.4	-18.2	-18.7	-17.4	-16.9	-16.4	-15.8	-15.2		
18-May-99	-9.6	-12.8	-15.0	-16.5	-17.7	-17.2	-16.8	-16.4	-15.8	-15.3		
25-May-99	-6.7	-10.1	-12.6	-14.5	-16.5	-16.8	-16.6	-16.3	-15.8	-15.3		
1-Jun-99	-5.0	-8.4	-10.7	-12.7	-15.1	-16.3	-16.2	-16.0	-15.7	-15.3		
8-Jun-99	-0.5	-2.9	-7.0	-10.2	-13.6	-15.7	-15.8	-15.8	-15.5	-15.2		
15-Jun-99	-0.7	-2.7	-5.6	-8.3	-12.0	-15.0	-15.3	-15.4	-15.3	-15.1		
22-Jun-99	0.2	-1.8	-4.5	-7.1	-10.7	-14.2	-14.7	-14.9	-15.0	-14.9		
29-Jun-99	1.3	-1.3	-3.5	-5.9	-9.4	-13.2	-14.0	-14.3	-14.5	-14.6		
5-Jul-99	4.3	-0.5	-2.3	-4.7	-8.8	-12.8	-13.5	-13.9	-14.2	-14.4		
13-Jul-99	3.9	2.9	-1.6	-4.3	-8.0	-12.2	-13.0	-13.5	-13.8	-14.1		
20-Jul-99	3.3	1.3	-1.3	-3.8	-7.4	-11.6	-12.5	-13.0	-13.4	-13.8		
27-Jul-99	3.9	1.7	-1.1	-3.4	-6.8	-11.1	-12.0	-12.5	-13.1	-13.4		
3-Aug-99	4.8	2.0	-0.8	-3.0	-6.4	-10.6	-11.5	-12.1	-12.7	-13.2		
10-Aug-99	4.8	2.4	-0.8	-2.8	-6.0	-10.3	-11.1	-11.8	-12.3	-12.8		
17-Aug-99	3.9	2.0	-0.7	-2.6	-5.7	-9.9	-10.7	-11.4	-12.0	-12.5		
24-Aug-99	1.4	0.7	-0.7	-2.5	-5.4	-9.6	-10.4	-11.1	-11.7	-12.3		
31-Aug-99	0.0	0.1	-0.7	-2.4	-5.2	-9.3	-10.2	-10.8	-11.4	-12.0		
7-Sep-99	-0.2	-0.1	-0.2	-1.5	-4.3	-8.2	-9.5	-10.2	-10.8	-11.5		
14-Sep-99	-0.4	-0.1	-0.3	-1.6	-4.1	-8.0	-9.3	-10.0	-10.6	-11.2		
22-Sep-99	-1.3	-0.4	-0.4	-1.6	-4.0	-7.8	-9.1	-9.7	-10.4	-11.1		
28-Sep-99	-1.0	-0.5	-0.5	-1.6	-3.9	-7.6	-8.8	-9.5	-10.2	-10.9		
5-Oct-99	-5.9	-3.0	-1.4	-1.8	-3.9	-7.4	-8.6	-9.3	-10.0	-10.7		
12-Oct-99	-8.1	-5.4	-3.7	-2.8	-3.9	-7.3	-8.5	-9.1	-9.8	-10.5		
19-Oct-99	-12.9	-9.4	-6.3	-4.5	-4.3	-7.2	-8.3	-9.0	-9.6	-10.3		
26-Oct-99	-14.3	-11.3	-8.4	-6.4	-5.2	-7.2	-8.2	-8.8	-9.5	-10.1		
2-Nov-99	-15.8	-13.7	-10.8	-8.3	-6.3	-7.3	-8.2	-8.7	-9.3	-10.0		
9-Nov-99	-21.1	-16.7	-12.7	-10.0	-7.6	-7.6	-8.2	-8.7	-9.3	-9.9		
16-Nov-99	-20.7	-17.0	-13.7	-11.5	-9.0	-8.1	-8.4	-8.8	-9.3	-9.8		
23-Nov-99	-18.6	-17.8	-15.7	-13.3	-10.3	-8.7	-8.8	-9.0	-9.4	-9.8		
30-Nov-99	-19.3	-16.7	-15.1	-13.6	-11.4	-9.4	-9.2	-9.3	-9.5	-9.9		
7-Dec-99	-24.9	-21.4	-17.8	-15.2	-12.3	-10.0	-9.6	-9.6	-9.8	-10.0		
13-Dec-99	-26.8	-23.8	-20.3	-17.3	-13.6	-10.6	-10.1	-10.0	-10.0	-10.2		
22-May-00	-12.3	-14.1	-15.7	-16.9	-18.2	-18.1	-17.8	-17.4	-16.9	-16.4		
29-May-00	-10.3	-13.2	-14.7	-15.9	-17.2	-17.6	-17.4	-17.2	-16.8	-16.4		
6-Jun-00	-0.3	-0.1	-1.0	-2.3	-10.8	-12.2	-13.0	-15.6	-16.6	-16.2		
16-Jun-00	1.0	-2.0	-5.7	-9.6	-13.9	-16.2	-16.4	-16.4	-16.2	-16.0		
26-Jun-00	5.3	1.2	-1.8	-5.6	-10.9	-14.8	-15.5	-15.8	-15.8	-15.7		
4-Jul-00	2.1	0.7	-1.3	-4.4	-9.3	-13.7	-14.7	-15.1	-15.3	-15.4		
11-Jul-00	2.8	1.0	-1.2	-3.9	-8.2	-12.8	-14.0	-14.5	-14.8	-15.0		
18-Jul-00	2.5	1.2	-1.1	-3.5	-7.5	-12.1	-13.3	-13.9	-14.3	-14.6		
19-Sep-00	-3.9	-0.4	-1.0	-2.1	-4.6	-8.4	-9.6	-10.3	-11.0	-11.6		
26-Sep-00	-6.3	-3.7	-2.4	-2.6	-4.5	-8.2	-9.4	-10.1	-10.8	-11.4		
10-Oct-00	-9.9	-7.4	-5.6	-4.9	-5.2	-7.9	-9.0	-9.7	-10.3	-10.9		
10-Nov-00	-18.7	-16.8	-14.2	-12.0	-9.5	-8.8	-9.2	-9.5	-9.9	-10.4		
27-Apr-01	-19.8	-21.5	-23.0	-23.7	-23.5	-21.0	-19.8	-19.1	-18.2	-17.3		
22-May-01	-9.9	-12.8	-15.5	-17.6	-19.7	-19.6	-19.1	-18.7	-18.2	-17.5		
18-Jun-01	1.9	-0.7	-3.9	-7.3	-12.1	-16.0	-16.8	-17.0	-17.0	-16.9		
19-Jul-01	8.5	2.4	-1.1	-3.4	-7.3	-12.0	-13.4	-14.1	-14.6	-15.0		
21-Aug-01	0.0	0.0	-0.1	-2.0	-5.3	-9.8	-11.2	-11.9	-12.6	-13.2		
21-Aug-01	0.0	0.0	-0.1	-2.0	-5.3	-9.8	-11.2	-11.9	-12.6	-13.2		
16-Nov-02	-14.3	-13.3	-11.4	-9.7	-8.1	-8.5	-9.1	-9.5	-10.0	-10.6		
18-Dec-02	-18.6	-17.6	-16.8	-15.8	-13.7	-11.0	-10.6	-10.5	-10.5	-10.7		
10-Feb-03	-27.6	-25.3	-23.4	-21.6	-18.6	-14.8	-13.8	-13.3	-12.9	-12.5		
11-Mar-03	-28.3	-26.2	-24.9	-23.8	-21.4	-17.0	-15.7	-15.0	-14.3	-13.8		

POLARIS MINE - OPERATIONAL LANDFILL TEMPERATURE MONITORING - THERMISTOR STRING #2
TEMPERATURES IN DEGREES C

	Bead # 1	Bead # 2	Bead # 3	Bead # 4	Bead # 5	Bead # 6	Bead # 7	Bead # 8	Bead # 9	Bead # 10	Bead # 11	Bead # 12
Installation Depth Below Collar (M)	-0.5	-1.0	-1.5	-2.0	-2.5	-3.0	-3.5	-4.0	-4.5	-5.0		
20-Mar-99	-24.2	-24.8	-24.9	-24.5	-23.8	-22.7	-21.5	-20.0	-18.6	-17.4		
22-Mar-99	-24.0	-24.2	-24.5	-24.2	-23.5	-22.5	-21.5	-20.1	-18.7	-17.5		
23-Mar-99	-23.7	-24.2	-24.3	-24.0	-23.4	-22.5	-21.4	-20.1	-18.8	-17.6		
24-Mar-99	-23.5	-24.0	-24.1	-23.9	-23.3	-22.4	-21.4	-20.1	-18.8	-17.6		
25-Mar-99	-23.5	-23.8	-23.9	-23.7	-23.1	-22.3	-21.3	-20.1	-18.8	-17.6		
26-Mar-99	-24.0	-23.8	-23.8	-23.6	-23.0	-22.2	-21.3	-20.1	-18.9	-17.7		
27-Mar-99	-24.3	-24.0	-23.7	-23.5	-22.9	-22.2	-21.3	-20.1	-18.9	-17.7		
29-Mar-99	-25.2	-24.4	-23.8	-23.3	-22.8	-22.0	-21.2	-20.1	-18.9	-17.8		
30-Mar-99	-26.1	-25.0	-23.9	-23.3	-22.7	-21.9	-21.2	-20.0	-18.9	-17.8		
6-Apr-99	-24.7	-24.8	-24.3	-23.6	-22.8	-21.9	-21.0	-20.0	-19.0	-18.0		
13-Apr-99	-23.5	-23.6	-23.4	-23.0	-22.5	-21.8	-21.0	-20.0	-19.0	-18.1		
20-Apr-99	-20.9	-21.5	-22.0	-22.2	-21.9	-21.4	-20.8	-20.0	-19.1	-18.2		
26-Apr-99	-19.9	-20.7	-21.4	-21.5	-21.3	-20.9	-20.5	-19.8	-19.0	-18.3		
4-May-99	-18.1	-19.3	-20.1	-20.4	-20.5	-20.4	-20.1	-19.6	-18.9	-18.2		
11-May-99	-16.1	-17.6	-18.8	-19.4	-19.7	-19.7	-19.5	-19.2	-18.7	-18.2		
18-May-99	-12.5	-14.6	-16.6	-17.8	-18.5	-18.8	-18.9	-18.8	-18.5	-18.0		
25-May-99	-10.2	-12.3	-14.5	-15.9	-17.0	-17.7	-18.1	-18.2	-18.1	-17.8		
1-Jun-99	-7.6	-10.4	-12.7	-14.3	-15.6	-16.5	-17.1	-17.5	-17.5	-17.4		
8-Jun-99	-3.3	-6.2	-9.6	-11.9	-13.8	-15.2	-16.0	-16.7	-16.9	-17.0		
15-Jun-99	-1.4	-4.1	-7.4	-9.8	-11.9	-13.6	-14.7	-15.7	-16.2	-16.5		
22-Jun-99	-0.4	-2.1	-5.0	-7.7	-10.2	-12.1	-13.4	-14.7	-15.5	-15.9		
29-Jun-99	1.6	-1.0	-3.6	-6.1	-8.4	-10.4	-11.9	-13.3	-14.4	-15.1		
5-Jul-99	4.2	0.0	-2.7	-5.3	-7.6	-9.6	-11.2	-12.7	-13.8	-14.6		
13-Jul-99	3.9	1.1	-1.9	-4.4	-6.7	-8.7	-10.3	-11.9	-13.1	-13.9		
20-Jul-99	3.1	1.0	-1.5	-3.8	-6.0	-7.9	-9.5	-11.1	-12.4	-13.3		
27-Jul-99	4.0	1.2	-1.3	-3.4	-5.4	-7.3	-8.8	-10.4	-11.7	-12.7		
3-Aug-99	4.3	1.6	-1.1	-3.1	-5.0	-6.8	-8.3	-9.9	-11.1	-12.1		
10-Aug-99	4.2	1.7	-1.0	-2.8	-4.7	-6.4	-7.8	-9.4	-10.6	-11.7		
17-Aug-99	3.3	1.7	-0.8	-2.6	-4.4	-6.0	-7.4	-8.9	-10.2	-11.2		
24-Aug-99	1.0	0.5	-0.7	-2.4	-4.2	-5.7	-7.1	-8.6	-9.8	-10.8		
31-Aug-99	0.0	0.0	-0.9	-2.4	-4.0	-5.5	-6.7	-8.2	-9.4	-10.4		
7-Sep-99	-0.1	-0.2	-1.0	-2.4	-3.9	-5.3	-6.5	-7.9	-9.1	-10.1		
14-Sep-99	-0.2	-0.3	-1.2	-2.3	-3.7	-5.1	-6.3	-7.6	-8.8	-9.8		
21-Sep-99	-0.8	-0.5	-1.4	-2.5	-3.7	-5.0	-6.1	-7.4	-8.6	-9.5		
28-Sep-99	-1.1	-1.2	-1.8	-2.6	-3.7	-4.9	-6.0	-7.2	-8.3	-9.3		
5-Oct-99	-4.7	-3.2	-2.7	-3.0	-3.9	-4.9	-5.9	-7.1	-8.1	-9.1		
12-Oct-99	-6.8	-5.2	-4.3	-4.0	-4.3	-5.0	-5.8	-6.9	-7.9	-8.8		
19-Oct-99	-11.7	-9.0	-6.7	-5.6	-5.2	-5.4	-6.1	-7.0	-7.9	-8.7		
26-Oct-99	-13.9	-11.3	-9.0	-7.6	-6.7	-6.4	-6.6	-7.2	-7.9	-8.6		
2-Nov-99	-15.9	-14.0	-11.5	-9.7	-8.3	-7.6	-7.5	-7.7	-8.1	-8.7		
9-Nov-99	-19.7	-16.3	-13.2	-11.3	-9.9	-8.9	-8.5	-8.3	-8.5	-8.9		
16-Nov-99	-20.3	-17.0	-14.3	-12.7	-11.3	-10.2	-9.6	-9.1	-9.0	-9.2		
23-Nov-99	-19.1	-18.1	-16.1	-14.4	-12.7	-11.4	-10.6	-9.9	-9.6	-9.6		
30-Nov-99	-18.7	-17.0	-15.6	-14.6	-13.4	-12.3	-11.5	-10.8	-10.3	-10.1		
7-Dec-99	-24.2	-21.2	-18.1	-16.0	-14.4	-13.1	-12.2	-11.4	-10.8	-9.9		
13-Dec-99	-26.6	-23.8	-20.7	-18.3	-16.1	-14.4	-13.2	-12.1	-11.4	-11.0		
22-May-00	-11.9	-13.3	-15.0	-16.3	-17.3	-18.1	-18.5	-18.8	-18.9	-18.6		
29-May-00	-11.0	-12.7	-14.2	-15.3	-16.3	-17.1	-17.7	-18.1	-18.3	-18.2		
6-Jun-00	-7.2	-10.0	-12.3	-13.9	-15.2	-16.2	-16.8	-17.4	-17.6	-17.7		
16-Jun-00	0.0	-2.3	-6.7	-10.2	-12.6	-14.3	-15.4	-16.3	-16.8	-17.1		
26-Jun-00	2.4	-1.0	-4.3	-7.1	-9.7	-11.9	-13.3	-14.8	-15.7	-16.2		
4-Jul-00	1.4	-0.4	-3.2	-5.8	-8.2	-10.3	-11.9	-13.6	-14.7	-15.4		
11-Jul-00	1.7	-0.2	-2.8	-5.0	-7.3	-9.3	-10.9	-12.6	-13.9	-14.7		
18-Jul-00	1.8	-0.2	-2.4	-4.5	-6.6	-8.6	-10.1	-11.8	-13.0	-14.1		
19-Sep-00	-3.8	-2.4	-2.5	-3.2	-4.3	-5.4	-6.5	-7.9	-9.0	-10.0		
26-Sep-00	-5.7	-4.1	-3.7	-3.9	-4.6	-5.6	-6.5	-7.8	-8.9	-9.8		
10-Oct-00	-9.5	-7.7	-6.6	-6.1	-6.1	-6.4	-7.0	-7.8	-8.7	-9.5		
10-Nov-00	-18.6	-16.8	-14.7	-13.0	-11.6	-10.6	-10.1	-9.8	-9.8	-10.0		
27-Apr-01	-20.5	-22.2	-23.3	-23.9	-23.9	-23.6	-23.1	-22.3	-21.3	-20.4		
22-May-01	-15.1	-17.4	-18.9	-20.0	-20.6	-21.0	-21.0	-20.8	-20.5	-20.0		
18-Jun-01	-0.3	-3.2	-6.6	-9.4	-12.1	-14.2	-15.6	-17.0	-17.7	-18.2		
19-Jul-01	4.3	-0.1	-2.4	-4.7	-7.0	-9.0	-10.5	-12.3	-13.6	-14.7		
21-Aug-01	-0.1	-0.1	-1.3	-3.0	-4.9	-6.5	-8.0	-9.6	-11.0	-12.1		
14-Sep-02	-0.1	-0.4	-1.6	-3.0	-4.5	-5.9	-7.2	-8.6	-9.8	-10.9		
23-Oct-02	-6.9	-6.9	-6.8	-6.8	-6.8	-7.0	-7.5	-8.1	-8.9	-9.6		
16-Nov-02	-14.8	-13.1	-11.7	-10.5	-9.6	-9.2	-9.1	-9.2	-9.5	-9.9		
18-Dec-02	-18.4	-17.7	-17.0	-16.1	-15.1	-14.0	-13.1	-12.3	-11.7	-11.4		
10-Feb-03	-27.0	-25.2	-23.5	-21.9	-20.2	-18.8	-17.7	-16.4	-15.4	-14.6		
11-Mar-03	-28.0	-26.4	-25.3	-24.2	-22.9	-21.6	-20.3	-18.9	-17.6	-16.5		

POLARIS MINE - OPERATIONAL LANDFILL TEMPERATURE MONITORING - THERMISTOR STRING #4

TEMPERATURES IN DEGREES C

	Bead # 1	Bead # 2	Bead # 3	Bead # 4	Bead # 5	Bead # 6	Bead # 7	Bead # 8	Bead # 9	Bead # 10	Bead # 11	Bead # 12
Installation Depth Below Collar (M)	-0.5	-1.0	-1.5	-2.0	-2.5	-3.0	-4.0	-5.0	-5.5	-6.0	-6.5	-7.0
20-Mar-99	-23.1	-23.8	-23.7	-23.3	-22.5	-21.2	-18.1	-15.3	-14.2	-13.3	-12.5	
22-Mar-99	-22.7	-23.2	-23.3	-22.9	-22.2	-21.1	-18.2	-15.4	-14.3	-13.4	-12.6	
23-Mar-99	-22.7	-23.1	-23.1	-22.7	-22.1	-21.0	-18.2	-15.5	-14.3	-13.5	-12.7	
24-Mar-99	-22.4	-22.9	-22.9	-22.6	-22.0	-20.9	-18.2	-15.5	-14.4	-13.5	-12.7	
25-Mar-99	-22.3	-22.7	-22.7	-22.4	-21.8	-20.8	-18.2	-15.6	-14.4	-13.6	-12.8	
26-Mar-99	-22.7	-22.6	-22.5	-22.3	-21.7	-20.7	-18.2	-15.6	-14.5	-13.6	-12.8	
27-Mar-99	-23.2	-22.6	-22.4	-22.2	-21.6	-20.6	-18.2	-15.6	-14.5	-13.7	-12.8	
29-Mar-99	-24.3	-23.0	-22.4	-22.0	-21.4	-20.5	-18.2	-15.7	-14.6	-13.7	-12.9	
30-Mar-99	-25.4	-23.4	-22.6	-21.9	-21.3	-20.4	-18.1	-15.7	-14.6	-13.8	-13.0	
6-Apr-99	-23.9	-23.6	-23.0	-22.3	-21.4	-20.3	-18.1	-15.8	-14.8	-14.0	-13.2	
13-Apr-99	-22.4	-22.3	-22.0	-21.7	-21.1	-20.2	-18.1	-15.9	-15.0	-14.2	-13.4	
20-Apr-99	-20.3	-20.8	-21.0	-20.9	-20.6	-19.8	-18.0	-16.0	-15.1	-14.4	-13.6	
26-Apr-99	-18.8	-20.0	-20.3	-20.2	-19.9	-19.3	-17.8	-16.0	-15.2	-14.5	-13.8	-13.2
4-May-99	-17.6	-18.7	-19.0	-19.2	-19.1	-18.8	-17.6	-16.0	-15.3	-14.6	-13.9	-13.3
11-May-99	-15.3	-17.0	-17.7	-18.1	-18.3	-18.1	-17.3	-15.9	-15.2	-14.6	-14.0	-13.5
18-May-99	-10.5	-13.7	-15.3	-16.4	-17.0	-17.2	-16.9	-15.7	-15.2	-14.6	-14.1	-13.6
25-May-99	-8.0	-11.2	-13.0	-14.4	-15.4	-16.0	-16.2	-15.5	-15.1	-14.6	-14.1	-13.6
1-Jun-99	-6.2	-9.5	-11.2	-12.7	-13.8	-14.7	-15.5	-15.2	-14.8	-14.5	-14.0	-13.6
8-Jun-99	-1.9	-4.7	-7.7	-10.1	-11.9	-13.3	-14.6	-14.7	-14.5	-14.2	-13.9	-13.6
15-Jun-99	-1.3	-3.5	-5.9	-8.1	-9.9	-11.5	-13.6	-14.2	-14.2	-14.0	-13.7	-13.5
22-Jun-99	-0.4	-2.5	-4.7	-6.7	-8.4	-10.1	-12.4	-13.6	-13.7	-13.7	-13.5	-13.3
29-Jun-99	0.3	-1.8	-3.7	-5.5	-7.1	-8.7	-11.1	-12.6	-13.0	-13.1	-13.2	-13.1
5-Jul-99	2.1	-1.4	-3.2	-4.9	-6.5	-8.0	-10.6	-12.2	-12.6	-12.8	-13.0	-12.9
13-Jul-99	3.1	-0.8	-2.6	-4.3	-5.8	-7.3	-9.9	-11.5	-12.1	-12.4	-12.6	-12.7
20-Jul-99	2.4	-0.6	-2.2	-3.7	-5.2	-6.7	-9.2	-11.0	-11.6	-11.9	-12.2	-12.4
27-Jul-99	3.1	-0.4	-1.9	-3.3	-4.7	-6.1	-8.6	-10.4	-11.0	-11.4	-11.8	-12.0
3-Aug-99	3.5	-0.2	-1.7	-3.0	-4.3	-5.7	-8.1	-10.0	-10.6	-11.1	-11.5	-11.7
10-Aug-99	3.6	0.0	-1.5	-2.8	-4.0	-5.3	-7.7	-9.6	-10.2	-10.7	-11.2	-11.5
17-Aug-99	3.2	0.2	-1.3	-2.5	-3.7	-5.0	-7.3	-9.2	-9.9	-10.4	-10.9	-11.1
24-Aug-99	1.1	0.0	-1.2	-2.3	-3.4	-4.7	-7.0	-8.8	-9.5	-10.1	-10.5	-10.9
7-Sep-99	0.0	-0.3	-0.1	-0.6	-1.5	-2.4	-4.6	-6.6	-7.5	-8.4	-9.1	-9.6
14-Sep-99	-0.6	-0.6	-0.2	-0.9	-1.6	-2.4	-4.4	-6.3	-7.3	-8.1	-8.8	-9.3
21-Sep-99	-1.3	-1.8	-1.5	-1.4	-1.9	-2.5	-4.3	-6.1	-7.0	-7.9	-8.6	-9.1
28-Sep-99	-2.4	-1.6	-1.7	-2.0	-2.3	-2.8	-4.3	-5.9	-6.8	-7.6	-8.3	-8.8
5-Oct-99	-10.1	-6.9	-4.3	-3.1	-3.0	-3.1	-4.3	-5.8	-6.7	-7.4	-8.1	-8.7
12-Oct-99	-14.6	-8.7	-6.2	-4.8	-4.2	-4.0	-4.5	-5.8	-6.6	-7.3	-7.9	-8.4
19-Oct-99	-15.7	-14.1	-10.2	-7.0	-5.7	-5.0	-4.9	-5.8	-6.4	-7.1	-7.7	-8.2
26-Oct-99	-16.5	-15.6	-12.1	-9.1	-7.6	-6.6	-5.7	-6.0	-6.6	-7.1	-7.7	-8.1
2-Nov-99	-18.9	-16.9	-14.6	-11.4	-9.5	-8.1	-6.5	-6.4	-6.7	-7.2	-7.7	-8.1
9-Nov-99	-25.9	-22.1	-16.9	-12.7	-10.8	-9.4	-7.5	-6.9	-7.0	-7.4	-7.7	-8.1
16-Nov-99	-24.7	-21.6	-17.0	-13.5	-11.8	-10.6	-8.4	-7.4	-7.4	-7.6	-7.9	-8.2
23-Nov-99	-17.4	-19.1	-17.6	-15.2	-13.4	-11.8	-9.3	-8.1	-7.9	-7.9	-8.1	-8.3
30-Nov-99	-25.6	-19.3	-16.4	-14.7	-13.5	-12.4	-10.2	-8.7	-8.4	-8.2	-8.3	-8.4
7-Dec-99	-28.8	-25.7	-21.0	-17.0	-14.9	-13.3	-10.8	-9.3	-8.9	-8.6	-8.6	-8.6
13-Dec-99	-30.5	-27.3	-23.4	-19.5	-17.1	-15.0	-11.7	-9.9	-9.3	-9.0	-8.9	-8.8
22-May-00	-3.3	-10.4	-11.9	-13.8	-14.9	-15.7	-16.7	-16.7	-16.4	-16.0	-15.5	-15.0
29-May-00	3.3	-9.5	-11.7	-13.2	-14.1	-14.9	-15.9	-16.1	-16.0	-15.7	-15.3	-14.9
6-Jun-00	4.3	-5.8	-9.3	-11.7	-13.0	-13.9	-15.2	-15.5	-15.5	-15.3	-15.1	-14.7
16-Jun-00	16.3	6.8	2.5	-1.8	-5.7	-8.8	-13.1	-14.6	-14.8	-14.9	-14.7	-14.5
26-Jun-00	15.8	5.5	2.0	-1.1	-3.5	-5.8	-10.2	-12.8	-13.6	-14.0	-14.1	-14.1
4-Jul-00	7.5	2.9	1.6	-0.8	-2.9	-4.8	-8.8	-11.5	-12.5	-13.1	-13.5	-13.6
11-Jul-00	7.1	3.2	-1.7	-6.6	-10.9	-13.5	-15.0	-15.3	-15.5	-15.6	-15.3	-15.1
18-Jul-00	4.8	3.0	-1.5	-5.9	-10.0	-12.5	-14.4	-14.8	-15.1	-15.3	-15.1	-15.0
19-Sep-00	-6.1	-3.8	-1.5	-1.4	-1.9	-2.6	-4.6	-6.5	-7.4	-8.3	-9.0	-9.5
26-Sep-00	-10.4	-5.6	-3.5	-2.6	-2.6	-3.0	-4.6	-6.3	-7.2	-8.1	-8.7	-9.3
10-Oct-00	-9.4	-10.0	-7.3	-5.5	-5.0	-4.7	-5.1	-6.3	-7.0	-7.7	-8.4	-8.9
10-Nov-00	-19.4	-19.0	-16.4	-13.1	-11.4	-10.1	-8.2	-7.6	-7.7	-8.0	-8.3	-8.6
27-Apr-01	-17.5	-18.2	-20.1	-21.9	-22.4	-22.4	-21.3	-19.5	-18.5	-17.4	-16.5	-15.8
22-May-01	-0.2	-8.9	-12.0	-15.1	-16.7	-17.8	-18.7	-18.3	-17.8	-17.2	-16.6	-16.1
18-Jun-01	6.4	1.7	-0.8	-3.6	-6.3	-8.6	-12.6	-14.9	-15.4	-15.7	-15.6	-15.5
19-Jul-01	18.4	5.9	0.0	-1.8	-3.5	-5.1	-8.4	-10.8	-11.9	-12.7	-13.2	-13.5
21-Aug-01	2.3	0.0	0.0	-1.0	-2.3	-3.5	-6.3	-8.6	-9.6	-10.5	-11.2	-11.7
14-Sep-02	3.5	-0.1	-0.6	-1.5	-2.5	-3.5	-6.0	-8.1	-9.1	-10.0		
23-Oct-02	-6.8	-6.7	-6.7	-6.6	-6.6	-6.5	-6.8	-7.6	-8.2	-8.9	-9.5	-10.0
16-Nov-02	-19.4	-17.0	-14.8	-13.1	-11.6	-10.3	-8.8	-8.5	-8.8	-9.1	-9.5	-9.8
18-Dec-02	-22.1	-19.3	-18.7	-18.2	-17.5	-16.6	-14.0	-11.9	-11.2	-10.8	-10.5	-10.5
10-Feb-03	-31.7	-29.2	-27.1	-25.4	-23.8	-22.1	-18.8	-16.1	-15.0	-14.1	-13.5	-13.0
11-Mar-03	-25.5	-29.6	-27.6	-26.6	-25.7	-24.7	-21.7	-18.7	-17.3	-16.2	-15.2	-14.5

POLARIS MINE - OPERATIONAL LANDFILL TEMPERATURE MONITORING - THERMISTOR STRING #5

TEMPERATURES IN DEGREES C

	Bead # 1	Bead # 2	Bead # 3	Bead # 4	Bead # 5	Bead # 6	Bead # 7	Bead # 8	Bead # 9	Bead # 10	Bead # 11	Bead # 12
Installation Depth Below Collar (M)	0.2	-0.3	-1.3	-2.3	-3.3	-4.3	-5.3	-5.8	-6.3	-6.8	-7.3	-7.8
20-Mar-99	-19.9	-23.6	-25.1	-23.9	-21.4	-18.5	-15.5	-14.6	-13.9	-13.1	-12.4	
22-Mar-99	-19.0	-23.5	-24.5	-23.6	-21.4	-18.6	-15.7	-14.8	-14.1	-13.2	-12.5	
23-Mar-99	-19.1	-23.3	-24.3	-23.4	-21.3	-18.6	-15.8	-14.9	-14.1	-13.2	-12.6	
24-Mar-99	-20.5	-23.1	-24.1	-23.3	-21.3	-18.7	-15.8	-14.9	-14.2	-13.3	-12.7	
25-Mar-99	-21.6	-23.0	-23.9	-23.1	-21.2	-18.7	-15.9	-15.0	-14.3	-13.3	-12.7	
26-Mar-99	-22.6	-23.5	-23.7	-23.0	-21.2	-18.7	-16.0	-15.1	-14.3	-13.4	-12.7	
27-Mar-99	-24.9	-23.9	-23.6	-22.9	-21.1	-18.7	-16.0	-15.1	-14.3	-13.4	-12.8	
29-Mar-99	-29.1	-25.0	-23.6	-22.7	-21.0	-18.7	-16.1	-15.2	-14.5	-13.5	-12.8	
30-Mar-99	-25.6	-26.2	-23.8	-22.6	-21.0	-18.8	-16.2	-15.3	-14.5	-13.6	-12.9	
6-Apr-99	-18.8	-24.6	-24.4	-22.7	-20.8	-18.8	-16.5	-15.6	-14.9	-14.0	-13.2	
13-Apr-99	-20.1	-23.1	-23.3	-22.3	-20.8	-18.9	-16.7	-15.9	-15.2	-14.3	-13.5	
20-Apr-99	-16.6	-20.7	-21.9	-21.8	-20.6	-18.9	-16.8	-16.1	-15.5	-14.5	-13.7	
26-Apr-99	-16.4	-19.8	-21.2	-21.0	-20.2	-18.8	-17.0	-16.3	-15.6	-14.8	-14.0	-13.3
4-May-99	-14.4	-18.1	-19.9	-20.3	-19.8	-18.7	-17.1	-16.4	-15.8	-15.0	-14.2	-13.6
11-May-99	-8.9	-16.1	-18.6	-19.5	-19.3	-18.5	-17.1	-16.5	-16.0	-15.1	-14.4	-13.8
18-May-99	-6.0	-11.8	-16.1	-18.2	-18.7	-18.2	-17.0	-16.5	-16.0	-15.3	-14.6	-13.9
25-May-99	-5.0	-9.2	-13.6	-16.5	-17.8	-17.7	-16.9	-16.5	-16.1	-15.4	-14.7	-14.1
1-Jun-99	2.4	-6.3	-11.5	-14.9	-16.8	-17.1	-16.7	-16.4	-16.0	-15.4	-14.8	-14.2
8-Jun-99	3.3	-3.3	-9.0	-13.2	-15.6	-16.4	-16.4	-16.2	-15.9	-15.4	-14.8	-14.2
15-Jun-99	7.1	-2.0	-7.2	-11.5	-14.5	-15.7	-16.0	-16.0	-15.7	-15.3	-14.8	-14.3
22-Jun-99	2.4	-0.8	-5.4	-10.1	-13.3	-14.9	-15.6	-15.6	-15.5	-15.2	-14.8	-14.3
29-Jun-99	6.7	1.7	-3.8	-8.3	-11.9	-13.8	-15.0	-15.1	-15.1	-14.9	-14.7	-14.3
5-Jul-99	8.2	4.9	-1.1	-7.3	-11.2	-13.2	-14.6	-14.8	-14.9	-14.8	-14.6	-14.2
13-Jul-99	7.5	5.0	-1.5	-6.4	-10.2	-12.5	-14.0	-12.2	-14.5	-14.5	-14.4	-14.1
20-Jul-99	6.4	3.6	-1.0	-5.6	-9.4	-11.7	-13.5	-13.9	-14.1	-14.2	-14.2	-14.0
27-Jul-99	9.8	4.3	-0.8	-5.0	-8.7	-11.0	-12.9	-13.4	-13.7	-13.9	-14.0	-13.9
3-Aug-99	10.0	5.0	-0.5	-4.6	-8.1	-10.5	-12.4	-12.9	-13.2	-13.6	-13.7	-13.7
10-Aug-99	10.3	4.8	-0.4	-4.2	-7.6	-9.9	-11.9	-12.5	-12.9	-13.3	-13.5	-13.5
17-Aug-99	6.2	4.0	-0.2	-3.9	-7.2	-9.5	-11.5	-12.1	-12.5	-12.9	-13.2	-13.3
24-Aug-99	1.5	1.6	-0.2	-3.6	-6.8	-9.1	-11.1	-11.7	-12.1	-12.6	-12.9	-13.1
31-Aug-99	-0.3	0.2	-0.3	-3.4	-6.5	-8.7	-10.7	-11.4	-11.8	-12.3	-12.7	-12.9
7-Sep-99	0.0	-0.2	-0.4	-3.3	-6.2	-8.4	-10.4	-11.0	-11.5	-12.0	-12.4	-12.7
15-Sep-99	-0.7	-0.3	-0.5	-3.2	-5.9	-8.1	-10.1	-10.7	-11.1	-11.7	-12.2	-12.5
21-Sep-99	-1.3	-0.8	-0.7	-3.1	-5.7	-7.8	-9.8	-10.4	-10.9	-11.5	-12.0	-12.3
28-Sep-99	-1.9	-0.7	-0.9	-3.1	-5.5	-7.6	-9.5	-10.1	-10.6	-11.2	-11.8	-12.1
5-Oct-99	-8.8	-4.1	-1.5	-3.1	-5.4	-7.4	-9.2	-9.9	-10.3	-11.0	-11.5	-11.9
12-Oct-99	-13.0	-6.3	-3.2	-3.5	-5.3	-7.2	-9.0	-9.6	-10.1	-10.8	-11.3	-11.6
19-Oct-99	-15.4	-12.1	-5.8	-4.4	-5.4	-6.9	-8.7	-9.4	-9.9	-10.5	-11.1	-11.5
26-Oct-99	-16.5	-14.2	-8.6	-6.2	-5.8	-7.0	-8.6	-9.2	-9.7	-10.3	-10.9	-11.3
2-Nov-99	-18.4	-16.4	-11.4	-7.8	-6.6	-7.2	-8.5	-9.1	-9.5	-10.2	-10.7	-11.2
9-Nov-99	-25.5	-20.7	-13.2	-9.4	-7.6	-7.5	-8.5	-9.0	-9.4	-10.0	-10.5	-11.0
16-Nov-99	-24.3	-20.6	-14.4	-10.9	-8.7	-8.1	-8.6	-9.4	-9.4	-9.9	-10.5	-10.9
23-Nov-99	-18.2	-19.8	-16.5	-12.3	-9.8	-8.7	-8.8	-9.1	-9.4	-9.9	-10.4	-10.7
30-Nov-99	-24.7	-18.8	-16.0	-13.2	-10.8	-9.4	-9.1	-9.3	-9.5	-9.9	-10.3	-10.7
7-Dec-99	-28.4	-25.4	-18.5	-14.1	-11.5	-10.1	-9.5	-9.5	-9.6	-10.0	-10.3	-10.6
13-Dec-99	-30.3	-27.5	-21.4	-15.9	-12.6	-10.7	-9.9	-9.8	-9.9	-10.1	-10.4	-10.6
22-May-00	-5.2	-11.4	-14.4	-16.8	-18.3	-18.5	-18.0	-17.7	-17.3	-16.5	-15.8	-15.2
29-May-00	1.0	-10.7	-13.6	-15.9	-17.4	-18.0	-17.7	-17.5	-17.1	-16.5	-15.9	-15.2
6-Jun-00	2.7	-7.0	-12.0	-14.9	-16.6	-17.3	-17.4	-17.2	-16.9	-16.4	-15.9	-15.3
16-Jun-00	13.3	-1.0	-7.8	-12.5	-15.3	-16.4	-16.8	-16.8	-16.6	-16.2	-15.8	-15.3
26-Jun-00	13.9	3.3	-3.8	-9.5	-13.4	-15.3	-16.2	-16.3	-16.2	-16.0	-15.7	-15.2
4-Jul-00	7.5	2.3	-2.1	-7.8	-12.0	-14.3	-15.6	-15.9	-15.9	-15.8	-15.5	-15.2
11-Jul-00	7.6	3.5	1.8	-0.9	-2.5	-4.3	-7.8	-10.6	-11.6	-12.3	-13.0	-13.0
18-Jul-00	5.2	3.2	1.6	-0.8	-2.3	-3.9	-7.2	-9.9	-10.9	-11.6	-12.4	-12.5
19-Sep-00	-5.8	-2.2	-1.4	-3.6	-6.2	-8.3	-10.4	-11.0	-11.5	-12.1	-12.6	-12.9
26-Sep-00	-9.7	-4.3	-2.3	-3.8	-6.0	-8.1	-10.1	-10.7	-11.2	-11.9	-12.4	-12.7
10-Oct-00	-9.1	-8.6	-5.4	-5.1	-6.1	-7.8	-9.6	-10.2	-10.7	-11.3	-11.9	-12.3
10-Nov-00	-19.2	-18.2	-13.8	-10.6	-8.9	-8.6	-9.3	-9.7	-10.0	-10.6	-11.1	-11.5
27-Apr-01	-17.9	-20.2	-23.2	-23.8	-22.9	-21.4	-19.3	-18.5	-17.8	-16.8	-15.8	-15.1
22-May-01	-1.9	-11.5	-16.4	-19.3	-20.4	-20.2	-19.2	-18.7	-18.1	-17.3	-16.5	-15.7
18-Jun-01	4.7	-0.5	-6.4	-11.6	-15.3	-17.0	-17.7	-17.7	-17.5	-17.1	-16.6	-16.0
19-Jul-01	17.4	4.8	-1.8	-6.4	-10.3	-12.9	-14.9	-15.4	-15.6	-15.8	-15.8	-15.5
21-Aug-01	2.5	0.0	-0.7	-4.3	-7.7	-10.2	-12.4	-13.0	-13.5	-14.0	-14.4	-14.5
14-Sep-02	2.6	-0.1	-1.2	-4.0	-6.8	-9.1	-11.1	-11.8	-12.3	-13.0	-13.5	-13.8
23-Oct-02	-6.7	-6.6	-6.3	-6.2	-6.7	-8.0	-9.7	-10.3	-10.8	-11.5	-12.1	-12.5
16-Nov-02	-18.7	-16.1	-12.6	-9.8	-8.5	-8.6	-9.6	-10.0	-10.4	-10.9	-11.6	-11.9
18-Dec-02	-21.5	-19.5	-18.6	-16.3	-13.6	-11.7	-10.8	-10.7	-10.8	-10.9	-11.3	-11.6
10-Feb-03	-30.9	-28.8	-25.6	-21.9	-18.5	-16.1	-14.2	-13.6	-13.2	-12.8	-12.5	-12.4
11-Mar-03	-27.7	-29.1	-27.1	-24.7	-21.6	-18.7	-16.2	-15.5	-14.9	-14.1	-13.6	-13.2

APPENDIX F

GARROW LAKE

STRATIGRAPHIC MONITORING

Table III(a) WATER LICENCE Part B, Item 3 (c)
SNP Part B, Item 3.

WATER SAMPLES

STATION 262-3: Garrow Lake at centre.

DEPTH (meters)	MID WINTER 04-Feb-03			MAXIMUM ICE 27-Mar-03		
	PB (mg/L)	ZN (mg/L)	SULPHIDE (ppm)	PB (mg/L)	ZN (mg/L)	SULPHIDE (ppm)
Blank						
Blank	<0.001	<0.02	0.3	<0.001	<0.02	0.0
Blank						
0						
1						
1.5						
2						
3a	0.004	0.25		0.006	0.28	
3b						
3c						
4				0.002	0.28	<1
5				0.004	0.29	<1
6				0.002	0.29	<1
7				0.002	0.29	<1
8				0.002	0.29	<1
9				0.003	0.30	<1
10	0.003	0.60		0.005	0.87	<1
11	0.004	1.4		0.003	0.96	2.6
11.5				0.005	0.55	
12	0.018	0.58	9.9	0.012	0.52	8.3
12.5				0.004	0.43	
13	0.010	0.70	9.6	0.015	0.44	8.9
13.5				0.015	0.43	
14a	0.013	0.52	12.8	0.016	0.42	10.30
14b				0.012	0.39	
14c				0.014	0.41	
15	0.009	0.44	12.2	0.015	0.52	12.20
16	0.003	0.44	12.2	0.016	0.42	12.80
17	0.003	0.44	12.5	0.012	0.42	13.20
18	0.003	0.44	12.2	0.005	0.41	12.20
19	0.018	0.45	12.5	0.006	0.42	11.20
20	0.017	0.46	12.8	0.007	0.40	10.60
22a	<0.001	0.46	12.8	0.004	0.41	11.20
22b				0.006	0.42	10.90
22c				0.007	0.41	10.90
25				0.014	0.42	11.20
30				0.012	0.38	10.90
35				0.005	0.08	9.90
40	<0.001	0.07	13.1	0.007	0.06	7.40
45				1.100	1.60	

Table III(b) WATER LICENCE Part B, Item 3 (c)
SNP Part B, Item 3.

FIELD QUALITY ASSURANCE
STATION 262-3

Analytical results from triplicate samples: Blanks, Surface Layer 3m, Halocline 14m, Bottom Layer 22m.

MID WINTER : 04-Feb-03

Depth (meters)	BC RESEARCH Total Metal (ppm)				POLARIS Sulphide (ppm)	
	Zn	Mean ± std. dev	Pb	Mean ± std. dev	Sulphide	Mean ± std. dev
Blank	<0.02		<0.001			
Blank	<0.02	<0.02 ± 0.000	<0.001	<0.001 ± 0.000		
Blank	<0.02		<0.001			
3	0.24		0.006			
3	0.25	0.25 ± 0.006	0.002	0.004 ± 0.002		
3	0.25		0.004			
14	0.52		0.013			
14	0.52	0.52 ± 0.000	0.005	0.010 ± 0.005		
14	0.52		0.013			
22	0.46		<0.001		12.8	
22	0.46	0.46 ± 0.000	<0.001	<0.001 ± 0.000	13.5	13.1 ± 0.351
22	0.46		<0.001		13.1	
Ref. 3	0.24		<0.001			
Ref. 3	0.23	0.24 ± 0.006	<0.001	<0.001 ± 0.000		
Ref. 3	0.24		<0.001			
Ref. 15	1.9		0.170			
Ref. 15	1.9	1.9 ± 0.000	0.180	0.177 ± 0.006		
Ref. 15	1.9		0.180			

Table III(b) WATER LICENCE Part B, Item 3 (c)
SNP Part B, Item 3.

FIELD QUALITY ASSURANCE
STATION 262-3

Analytical results from triplicate samples: Blanks, Surface Layer 3m, Halocline 14m, Bottom Layer 22m.

MAXIMUM ICE: 27-Mar-03

Depth (meters)	BC RESEARCH Total Metal (ppm)				POLARIS Sulphide (ppm)	
	Zn	Mean ± std. dev	Pb	Mean ± std. dev	Sulphide	Mean ± std. dev
Blank	<0.02		<0.001			
Blank	<0.02	<0.02 ± 0.000	<0.001	<0.001 ± 0.000		
Blank	<0.02		<0.001			
3	0.28		0.006			
3	0.28	0.28 ± 0.00	0.004	0.005 ± 0.001		
3	0.28		0.004			
14	0.42		0.016			
14	0.39	0.41 ± 0.015	0.012	0.014 ± 0.002		
14	0.41		0.014			
22	0.41		0.004		11.2	
22	0.42	0.41 ± 0.01	0.006	0.006 ± 0.002	10.9	11.00 ± 0.173
22	0.41		0.007		10.9	
Ref. 3	0.22		0.005			
Ref. 3	0.22	0.22 ± 0.000	0.005	0.005 ± 0.000		
Ref. 3	0.22		0.005			
Ref. 15	1.9		0.200			
Ref. 15	1.9	1.90 ± 0.000	0.200	0.203 ± 0.006		
Ref. 15	1.9		0.210			

Table III(c) WATER LICENCE Part B, Item 3 (c)
SNP Part B, Item 3.

B.C. RESEARCH QUALITY ASSURANCE

MID WINTER: 04-Feb-03

QUALITY ASSURANCE / QUALITY CONTROL ANALYSIS

SAMPLE		TOTAL METALS (mg/L)							TOT CN
		Pb	Zn	As	Cu	Ni	Sb	Cd	(mg/L)
Environment Canada	True	0.360							
(TMDA 53.2)	Found	0.370							
TMDA 52.2	True	n/a	n/a				0.0157	n/a	
	Found	n/a	n/a				0.016	n/a	
Nass	True	0.005		0.0012					
	Found	0.004		0.0013					
QC 3437	True	0.040	0.052	0.0087	n/a	0.029		0.0038	
	Found	0.039	0.05	0.009	n/a	0.032		0.005	
QC Caeal	True	0.048	0.0400		0.0730				
	Found	0.050	0.03		0.0710				
QC SpecTYCN	True								0.900
	Found								0.840

SPIKE AND RECOVERY ANALYSIS

SAMPLE			TOT MTLS (mg/L)					
			Cu	Pb	Ni	Cd	Sb	As
262-3	3a	As is	0.005	0.006	0.003			
		+ 2 ppb Pb		0.0085				
		+ 2 ppb Cu	0.0067					
		+ 2 ppb Ni			0.0054			
262-3	10m	As is				<0.002	<0.002	<0.001
		+ 4 ppb Sb					0.0044	
		+ 2 ppb Cd				0.0026		
		+ 1 ppb As						0.0016

Table III(c) WATER LICENCE Part B, Item 3 (c)
SNP Part B, Item 3.

B.C. RESEARCH QUALITY ASSURANCE

MAXIMUM ICE: 27-Mar-03

QUALITY ASSURANCE / QUALITY CONTROL ANALYSIS

SAMPLE		TOTAL METALS (mg/L)							TOT CN
		Pb	Zn	As	Cu	Ni	Sb	Cd	(mg/L)
Enviroment Canada	True	0.360	0.37						
(TMDA 52.2)	Found	0.340	0.35						
Environment Canada	True	0.018			0.0159				
(TMDA 53.2)	Found	0.016			0.0140				
Nass	True			0.0012					
	Found			0.0013					
QC3437	True								
	Found								
QC Caeal	True								
	Found								
QC SpecTYCN	True								
	Found								

SPIKE AND RECOVERY ANALYSIS

SAMPLE			TOT MTLS (mg/L)					
			Cu	Pb	Ni	Cd	Sb	As
262-3	3a	As is	0.007	0.006	0.0030			
		+ 2 ppb Pb		0.009				
		+ 2 ppb Cu	0.010					
		+ 2 ppb Ni			0.0056			
262-3	10m	As is				<0.002	<0.002	<0.001
		+ 4 ppb Sb					0.0041	
		+ 2 ppb Cd				0.0027		
		+ 1 ppb As						0.0018
Nass 5		TRUE (ppb)						
		Found (mg/L)						

Table III(c) WATER LICENCE Part B, Item 3(c)
SNP Part B, Item 3

TEMPERATURE, pH, and CONDUCTIVITY PROFILES
STATION 262-3: Garrow Lake

	Mid-Winter 04-Feb-03				Maximum Ice 27-Mar-03			
DEPTH (meters)	Temp. (C)	pH	Cond. (uS/cm)	Dis. O2 (mg/l)	Temp. (C)	pH	Cond. (uS/cm)	Dis. O2 (mg/l)
1.0					-0.5	8.3	14,518	20.7
2.0					-0.5	8.3	14,756	20.2
3.0	-0.2	7.7	12,852	18.6	-0.3	8.4	14,756	19.2
4.0	3.8	7.7	14,280	17.2	2.8	8.4	14,875	18.0
5.0	3.8	7.7	14,280	17.0	3.3	8.3	14,756	17.5
6.0	3.8	7.7	14,280	16.8	3.3	8.3	14,756	17.5
7.0	3.8	7.7	14,280	16.5	3.3	8.3	14,875	17.4
8.0	3.8	7.7	14,399	16.0	3.3	8.3	14,875	16.3
9.0	3.9	7.7	15,113	14.1	4.1	8.3	15,470	12.4
10.0	5.0	7.5	20,706	9.3	5.4	7.9	33,439	6.1
11.0	6.3	7.0	64,260	0.8	6.8	7.6	90,559	0.1
12.0	7.2	6.8	92,344	0.3	7.8	7.5	95,676	0.1
13.0	7.9	6.8	92,582	0.3	8.0	7.5	95,914	0.1
14.0	8.2	6.8	92,701	0.3	8.2	7.5	96,152	0.1
15.0	8.3	6.8	92,820	0.3	8.3	7.5	96,033	0.1
16.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
17.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
18.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
19.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
20.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
21.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
22.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
23.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
24.0	8.4	6.8	92,939	0.3	8.3	7.5	96,152	0.1
25.0	8.4	6.8	92,939	0.3	8.3	7.5	96,271	0.1
26.0	8.4	6.8	92,939	0.3	8.3	7.5	96,271	0.1
27.0	8.4	6.7	92,939	0.3	8.4	7.5	96,271	0.1
28.0	8.4	6.7	92,939	0.3	8.4	7.5	96,271	0.1
29.0	8.4	6.7	92,939	0.3	8.4	7.5	96,152	0.1
30.0	8.4	6.7	93,058	0.3	8.4	7.4	96,271	0.1
31.0	8.4	6.7	92,939	0.3	8.4	7.4	96,271	0.1
32.0	8.4	6.7	92,939	0.3	8.4	7.4	96,271	0.1
33.0	8.4	6.7	93,058	0.3	8.4	7.4	96,271	0.1
34.0	8.4	6.7	93,058	0.3	8.4	7.4	96,271	0.1
35.0	8.4	6.6	93,058	0.3	8.4	7.4	96,152	0.1
36.0	8.4	6.6	92,939	0.3	8.4	7.4	96,271	0.1
37.0	8.4	6.6	93,177	0.3	8.4	7.4	96,271	0.1
38.0	8.4	6.6	93,177	0.3	8.4	7.4	96,271	0.1
39.0	8.4	6.6	93,177	0.3	8.4	7.3	96,271	0.1
40.0	8.4	6.6	93,177	0.3	8.4	7.3	96,390	0.1

APPENDIX G

SUMMARY OF

EFFLUENT MONITORING
AND
EFFLUENT CHARACTERIZATION

Bruce J. Donald
Reclamation Manager

May 2, 2003

Prairie & Northern Region
Environment Canada
Room 200, 4999 98th Ave.
Edmonton, AB T6B 2X3

Attention: Peter Blackall, Regional Director of Environmental Protection

Dear Sir;

Re: Polaris Mine – 2003 1st Quarter Metal Mining Effluent Regulations Report

Despite having a designated discharge location for effluent identified under Section 9 of the MMER, there was no discharge from the Garrow Lake Tailings Impoundment Area during the period January 1st to March 31st of 2003. This will be the situation through most of each year. While there is no data to report other than that there was no effluent discharge, I have completed the monitoring report as required by the regulations and have attached it to this letter.

If you have any questions regarding the quarterly report or aspects of the application of the MMER to the Polaris Mine, please feel free to contact me at any time.

Yours truly,

Bruce Donald

Attachments: Quarterly Monitoring Report

cc:
Walter Kuit (Teck Cominco Ltd.)
John Knapp (Teck Cominco Ltd.)
Randy Baker (Azimuth Consulting Group)

POLARIS MINE – MMER MONITORING REPORT

1st QUARTER 2003

APPENDIX A

i. Information specified by Section 8.1 of Reference Method EPS 1/Rm/13

APPENDIX B

i. Information specified by Section 8.1 of Reference Method EPS 1/Rm/14

APPENDIX C

i. Concentration & monthly mean concentrations of each deleterious substance of Schedule 4
ii. pH of the effluents samples as required by subsection 12(1)
iii. Description of sample collection method
iv. Total volume of effluent deposited during each month of the quarter as per section 19
v. Mass loading of the deleterious substances set out in Schedule 4 and as per section 20

APPENDIX D

i. Results of the effluent characterization as per paragraph 15(1)(a)

APPENDIX A

Reporting Requirements for Reference Method EPS 1/RM/13

Section 8.1.1 Effluent

i. Name & location of operation generating the effluent
   - Polaris Mine, Little Cornwallis Island, Nunavut

ii. Date & time of sampling
   - No sampling conducted as there was no effluent discharge during the quarter.

iii. Type of sample
   - No sampling conducted as there was no effluent discharge during the quarter

iv. Brief description of sampling point
   - Discharge point of siphon at Garrow Lake dam

v. Sampling method
   - No sampling conducted as there was no effluent discharge during the quarter

vi. Name of person submitting samples
   - No sampling conducted as there was no effluent discharge during the quarter

Section 8.1.2 Test Facilities and Conditions

i. Test type & method
   - No testing conducted as there was no effluent discharge during the quarter

ii. Indications of deviations from requirements in Sections 2 to 7 of Method EPS 1/RM/13
   - No deviations to report as there was no testing conducted during the quarter

iii. Name and city of testing laboratory
   - No laboratory used during the quarter

iv. Percent mortality of fish in stock tank(s)
   - None to report. There were no tests conducted during the period

v. Species of test organism
   - None to report as there were no tests conducted during the period

vi. Date and time for start of definitive test
   - None to report as there were no tests conducted during the period

vii. Person(s) performing the test and verifying the results
   - No tests performed during the quarter

viii. pH, temperature, dissolved oxygen, and conductivity of unadjusted, undiluted effluent
   - No data to report as there were no tests conducted during the period

ix. Confirmation that no adjustment of sample or solution pH occurred
   - No adjustment to report as there were no tests conducted during the period

x. Indication of aeration of test solutions before introduction of fish
   - None to report as there were no tests conducted during the period

xi. Concentrations and volumes tested
   - No data to report as there were no tests conducted during the period

xii. Measurements of dissolved oxygen, pH and temperature
   - No data to report as there were no tests conducted during the period

xiii. Number of fish added to each test vessel
   - No fish added as there were no tests conducted during the period

xiv. Mean and range of fork length of control fish at end of test
   - No data to report as there were no tests conducted during the period

xv. Mean wet weight of individual control fish at end of the test
   - No data to report as there were no tests conducted during the period

xvi. Estimated loading density of fish in test solutions
   - No data to report as there were no tests conducted during the period

Reporting Requirements for Reference Method EPS 1/RM/13 - Continued

Section 8.1.3 Results

i. Number of mortalities of fish in each test solution
   - None to report. No tests conducted during the period

ii. Number of control fish showing atypical/stressed behaviour
   - None to report. No tests conducted.

iii. Mean mortality rate in solutions of effluent and control water
   - None to report. No tests conducted

iv. Estimate of 96-h LC50 in multi-concentration tests
   - No data to report. No tests conducted

v. Most recent 96-h LC50 for reference toxicity test(s)
   - No data to report. No tests conducted

APPENDIX B

Reporting Requirements for Reference Method EPS 1/RM/14

Section 8.1.1 Effluent

i. Name & location of operation generating the effluent
   - Polaris Mine, Little Cornwallis Island, Nunavut

ii. Date & time of sampling
   - No sampling conducted as there was no effluent discharge during the quarter.

iii. Type of sample
   - No sampling conducted as there was no effluent discharge during the quarter

iv. Brief description of sampling point
   - Discharge point of siphon at Garrow Lake dam

v. Sampling method
   - No sampling conducted as there was no effluent discharge during the quarter

vi. Name of person submitting samples
   - No sampling conducted as there was no effluent discharge during the quarter

Section 8.1.2 Test Facilities and Conditions

i. Test type & method
   - No testing conducted as there was no effluent discharge during the quarter

ii. Indications of deviations from requirements in Sections 2 to 7 of Method EPS 1/RM/13
   - No deviations to report as there was no testing conducted during the quarter

iii. Name and city of testing laboratory
   - No laboratory used during the quarter

iv. Species of test organism
   - None to report as there were no tests conducted during the period

v. Date and time for start of definitive test
   - None to report as there were no tests conducted during the period

vi. Person(s) performing the test and verifying the results
   - No tests performed during the quarter

vii. pH, temperature, dissolved oxygen, and conductivity of unadjusted, undiluted effluent
   - No data to report as there were no tests conducted during the period

viii. Confirmation that no adjustment of sample or solution pH occurred
   - No adjustment to report as there were no tests conducted during the period

ix. Indication of any adjustment of hardness of effluent sample
   - No adjustment to report as there were no tests conducted during the period

x. Indication of any aeration of sample
   - No indication to report as there were no tests conducted during the period

xi. Concentrations and volumes tested
   - No data to report as there were no tests conducted during the period

xii. Measurements of dissolved oxygen, pH and temperature
   - No data to report as there were no tests conducted during the period

xiii. Estimates of time to first brood, average number of neonates per brood, and percent mortality during the seven-day period prior to the test
   - No data to report as there were no tests conducted during the period

xiv. Number of neonates per test vessel and milliliters of solution per daphnid
   - No data to report as there were no tests conducted during the period

Reporting Requirements for Reference Method EPS 1/RM/14 - Continued

Section 8.1.3 Results

i. Number of dead and/or immobile daphnids in each test solution including controls
   - No data to report. No tests conducted during the period.

ii. For single-concentration test the number of daphnids dead in each of three replicate effluent solutions and in each of three replicate control solutions at end of test. Also report the mean value.
   - No data to report. No tests conducted during the period.

iii. Estimate of 48-h LC50 and 95% confidence limits in multi-concentration tests, 48-h EC50 for immobilization and 95% confidence limits, indication of statistical method on which results are based.
   - No data to report. No tests conducted during the period

iv. Most recent 48-h LC50 for reference toxicant test(s), reference chemical(s), date test initiated, historic geometric mean LC50 and warning limits.
   - No data to report. No tests conducted during the period.

APPENDIX C

2003 1st QUARTER MMER REPORT

LOCATION - FINAL DISCHARGE POINT FROM GARROW LAKE (GARROW LAKE DAM SIPHONS)

CONCENTRATIONS OF EFFLUENT FOR MMER SCHEDULE 4 SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	DELETERIOUS SUBSTANCE									Collection Method[1]
		Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226	pH	
30-Dec-02	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
06-Jan-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
13-Jan-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
20-Jan-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
27-Jan-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
03-Feb-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
10-Feb-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
17-Feb-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
24-Feb-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
03-Mar-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
10-Mar-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
17-Mar-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
24-Mar-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]
31-Mar-03	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]	na[2]

All concentration in mg/L except Radium 226 which is Bq/L

Note [1] - Collection Method is either grap sample or composite sample

Note [2] - No effluent discharge to sample

MONTHLY MEAN CONCENTRATIONS OF EFFLUENT FOR MMER SCHEDULE 4

MONTH OF	MONTHLY MEAN CONCENTRATION OF DELETERIOUS SUBSTANCE[1]							
	Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226
January-03	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]
February-03	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]
March-03	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]	na[1]

All concentration in mg/L except Radium 226 which is Bq/L

Note[1] - Monthly Mean Concentrations - the MEAN value of the concentrations measured in all composite or grab samples collected from each final dishcarge measured during each month when a deleterious substance is deposited.

Note [2] - No effluent discharge to sample

MASS LOADING OF DELETERIOUS SUBSTANCE FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	DAILY MASS LOADING OF DELETERIOUS SUBSTANCE[1]								Flow Rate[2] (m^3/day)
		Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226	
30-Dec-02	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
06-Jan-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
13-Jan-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
20-Jan-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
27-Jan-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
03-Feb-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
10-Feb-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
17-Feb-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
24-Feb-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
03-Mar-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
10-Mar-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
17-Mar-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
24-Mar-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
31-Mar-03	na[3]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0

Note[1] - Mass Loading is in kilograms per day of the deleterious substance deposited

Note[2] - Flow Rate must be taken at the same time as samples are effluent qualtity samples are taken

Note[3] - na refers to no effluent sampled due to no discharge of effluent

MASS LOADING PER CALENDAR MONTH FOR EACH DELETERIOUS SUBSTANCE

CALENDAR MONTH OF	MASS LOADING FOR DELETERIOUS SUBSTANCE (kg/month)[1]								Average Weekly Flow Rate[2]	Total Monthly Volume[3]
	Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226		
January-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
February-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
March-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Total Calendar Month Volume x Average Daily Mass Loading for the Month - Refer to Section 20.(3)

Note[2] - Average Weekly Flow Rate - Average each of the weekly flow rates taken during the calendar month - Refer to Section 20.(3)

Note[3] - Total Monthly Volume calculated by multiplying 7 x Average Daily Flow Rate for the month x days in month

APPENDIX D

RESULTS OF EFFLUENT CHARACTERIZATION

AS PER PARAGRAPH 15(1)(a)

No effluent samples were collected during the 1st Quarter of 2003 as there was no discharge.
No Acute Lethality Testing conducted during the quarter.

APPENDIX H

CD OF 1ST QUARTER REPORT