POLARIS MINE

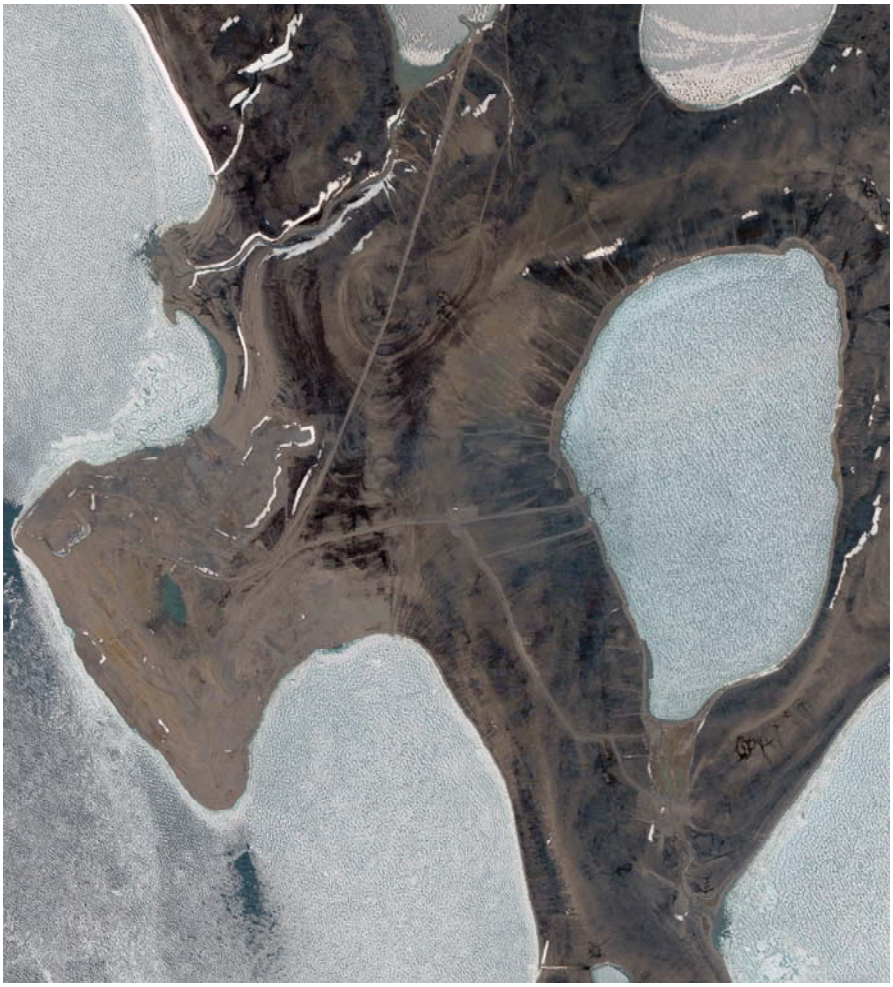
POST-RECLAMATION MONITORING REPORT

3rd QUARTER 2006 FOR THE

NUNAVUT WATER BOARD

&

INDIAN AND NORTHERN AFFAIRS CANADA



Prepared by: Bruce Donald

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January 8, 2007

Nunavut Water Board
Box 119
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Attention: Phyllis Beaulieu, Manager of Licensing

Indian and Northern Affairs Canada
969 Qimugjuk Building, 2nd Floor
Iqaluit, Nunavut
X0A 0H0

Attention: Spencer Dewar, Manager, Lands Administration

Dear Phyllis and Spencer;

Re: Polaris Mine Water Licence NWB1POL0311 – 2006 3rd Quarter Water Licence Report

Please find attached the combined Polaris Mine 2006 3rd Quarter Water Licence Report and the Decommissioning and Reclamation Plan (DRP) Report. I will forward paper copies of this report to your offices as well as a CD containing an electronic version of the report.

During the 3rd Quarter of 2006, the key annual monitoring requirements for the Polaris Mine were undertaken as the site was essentially snow free during July and August. A small staff consisting of our environmental consultant's representative (to conduct water quality monitoring), two equipment operators/mechanics (to complete outstanding earth work) and two local Inuit assistants were on-site for most of July. In addition, near the end of July, a Teck Cominco representative and a geotechnical engineer from Gartner Lee Limited conducted a detailed site inspection including the annual geotechnical inspection. On July 27th, crews demobilized from site for the season. Subsequent to the site being vacated, water quality monitoring was continued by personnel who flew to site for site monitoring events from Resolute Bay, and a Gartner Lee representative returned to site in August to conduct the Garrow Lake sampling event. By mid September the site was snow covered and Garrow Creek was frozen ending the water sampling for the year.

The comprehensive site monitoring was conducted as required by Water Licence and the Decommissioning and Reclamation Plan (DRP) requirements. The attached report includes the following items that were inspected and/or sampled during the 3rd Quarter:

- Water quality samples of effluent discharge from Garrow Lake taken weekly during periods of flow.
- Surveyed the water elevation at Garrow Lake in the spring and in late August when discharge from the lake was low.
- In August (minimum ice conditions), the monitoring of the water column of Garrow Lake was conducted at two locations.
- Monitoring of wind speeds from Resolute during open water periods of Garrow Lake when the site was not occupied.
- Surface water quality samples were taken as required by the Decommissioning and Reclamation Plan approvals of Frustration Lake and of surface water flow observed at Little Red Dog Quarry landfill.
- Annual soil quality sampling of the former Concentrate Storage Building area.
- The annual geotechnical inspection of the site.
- Upgrading of thermistor installations at Little Red Dog Quarry landfill and the Operational landfill including the addition of two data logging systems.
- A detailed topographic survey was completed of the Subsidence Area.
- A detailed topographic survey of the Garrow Lake Wave Break structure.

If there are any questions related to this report, please contact me at any time.

Yours truly,

Bruce J. Donald
Reclamation Manager
Environment and Corporate Affairs
Teck Cominco Limited

Enclosure:
- 2006 3rd Quarter Polaris Mine Site Monitoring Data Report

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1. EXECUTIVE SUMMARY IN INUKTITUT

Refer to Appendix 1 for an executive summary of the contents of this report translated into Inuktitut by Susan Salluviniq of Resolute Bay, Nunavut.

2. INTRODUCTION

During the 3rd Quarter of 2006, the key annual monitoring requirements for the Polaris Mine were undertaken as the site is relatively snow free through July and August. A small crew re-opened the camp at the end of June and remained on site through until July 27th to facilitate the comprehensive Garrow Lake effluent water quality sampling and other work. The staff on site consisted of:

a. A Gartner Lee Limited representative who was responsible for conducting the effluent water quality monitoring and to manage the camp.
b. Two equipment operators (one was also a heavy duty mechanic) contracted to Teck Cominco to maintain the site mechanical equipment.
c. Two Inuit assistants from Resolute Bay were employed by Teck Cominco.

From July 17th to 27th, a Teck Cominco representative was on site for a general site inspection, to supervise remaining work and to conduct the planned site surveys. For a few days during this period a geotechnical engineer from Gartner Lee Limited was on site to conduct the annual geotechnical inspection.

At the end of July, the site crew closed the camp for the season. Subsequent site water quality monitoring was continued by personnel who flew to site from Resolute Bay. The chartered aircraft was held on site during these monitoring events so that staff would not be stranded at site in case weather conditions deteriorated.

The comprehensive site monitoring requirements were with few exceptions completed successfully as required by Water Licence and Decommissioning and Reclamation Plan (DRP). This report presents the results of each element of the monitoring conducted.

3. WATER QUALITY MONITORING

During the 3rd Quarter, water quality monitoring was undertaken within the water column of Garrow Lake and from Garrow Creek at the "Final Discharge Point" (Garrow Lake effluent).

3.1. Garrow Lake Effluent

The Water Licence and the DRP requires sampling of the Final Discharge Point from Garrow Lake during periods of effluent discharge. Appendix 2 presents all of the water quality monitoring data conducted at the Final Discharge Point. The water quality program was overseen by Azimuth Consulting Group Inc. They received all the data and compiled the attached report.

All water quality results were compliant with the parameters specified in the Water Licence. Table 1 summarizes the primary parameters of interest for the Garrow Lake effluent and the associated Water Licence regulatory limits.

TABLE 1
GARROW LAKE EFFLUENT - WATER QUALITY MONITORING
PRIMARY SUBSTANCES OF INTEREST

	Concentration - mg/L		
	LEAD	**ZINC**	**TSS[1]**
Water Licence Limits			
Monthly Mean	0.07	0.50	15.00
Maximum Grab	0.14	1.00	30.00
Sample Results from:			
06-Jul-05	0.00047	0.0173	3.0
15-Jul-06	0.00034	0.0231	3.0
21-Jul-06	0.00087	0.0309	3.0
26-Jul-06	0.00080	0.0308	4.5
11-Aug-08	0.00084	0.0539	3.0
17-Aug-06	0.00044	0.0583	5.8
23-Aug-06	0.00111	0.0730	3.2
01-Sep-01	0.00165	0.0625	8.4
09-Sep-06	0.00098	0.0633	3.0
14-Sep-06	0.00104	0.0655	5.9

Note - Detection Limit for TSS was 3.0

There were three acute lethality tests conducted on Rainbow Trout and three on Daphnia magna. All Daphnia magna test results were compliant. Two of the Rainbow Trout acute lethality tests were compliant and the third test had a control failure (and so there was no reportable result).

3.2. Garrow Lake Water Column

The Water Licence requires that comprehensive sampling of Garrow Lake water column is conducted in two locations (Water Licence Station 262-3 and 262-3a) during the period of maximum melt. Sampling was undertaken on August 21, 2006 and the results are provided in Appendix 3.

In summary the key results from the testing are as expected:

- The structure of Garrow Lake remains stable due to the salinity differences in the water column.
- The concentrations of metals in all layers of the lake (including the surface mixolimnion layer) are as expected and are gradually decreasing since cessation of active tailings disposal.
- The general profile of chemistry through the water column remains consistent with previous sampling events.
- The chemistry, density and temperature results between the two sampling locations (262-3 and 262-3a) are comparable continuing to confirm horizontal uniformity within layers of the lake.

This report presents the data from the August sampling event only without reviewing previous data or data trends (not required under the licence). However, a detailed review of the data and longer term trends has been conducted and discussed with Environment Canada. Teck Cominco will be making a submission regarding water quality sampling requirements in the near future.

3.3. Other Surface Waters

Approvals under the DRP require sampling of surface waters at two other locations each year. These were collected during the 3rd Quarter when summer conditions permitted the sampling to occur.

3.3.1. Little Red Dog Quarry Landfill

The design of the Little Red Dog Quarry landfill (LRDQL) cover was gently sloped so that any water from rainfall or from melting snow would drain from the quarry area through the notch cut in the quarry walls. The DRP approval permitting the placement of metals contaminated soils in LRDQL require that any surface waters are sampled. This is intended to confirm that no metals are being leached from the capped soils.

On July 9th, 2006 a small area with water slowly flowing on surface in the notch of LRD Quarry was sampled. The surface water was observed to only flow a short distance from where a small puddle was observed to where the water re-entered the coarse ground surface materials and disappeared.

The laboratory results are provided in Appendix 4. The metal concentrations were low confirming that there are no concerns with the small amount water flowing from this area. Results were:

- Lead was 0.0033 mg/L,
- Zinc was <0.050 mg/L,
- TSS was less than detection (<3),
- pH was 8.18.

3.3.2. Frustration Lake

The approval under the DRP to decommission the freshwater system at Frustration Lake required that on an annual basis during the ice free period in the summer, a water sample of the lake is taken adjacent to the jetty. The intent of the sample is to monitor TSS as an additional indicator that the jetty is not being eroded at an unacceptable rate. The inspection of the jetty is also included in the annual geotechnical inspection in Appendix 5 of this report. While there was some erosion of the jetty since the last inspection, it was not significant enough to be of concern.

The laboratory report of the sample collected on July 9th, 2006 is included in Appendix 4. The sample had a TSS of 5.1 mg/L.

4. PHYSICAL STABILITY OF THE SITE

The physical stability of the site was monitored through a combination of a geotechnical inspection, a detailed topographic survey of the subsidence area, a detailed topographic survey of the Garrow Lake Wave Break, and through monitoring of Garrow Lake elevations.

4.1. Subsidence Survey

The annual geotechnical inspection report discusses visual observations of the subsidence area and includes a large scale plan and sections of the subsidence area survey (included in Appendix 5-D). The survey was conducted in July 2006. The survey was done by Teck Cominco and drafted by a Teck

Cominco contractor. The resulting drawing was then supplied to Gartner Lee Limited to utilize in compiling the geotechnical report.

During reclamation of the Polaris mine site, the majority of the permanent survey control stations were left intact to facilitate surveying subsequent to the reclamation work being completed. These stations were used for control for the 2006 (and previous) surveys. The survey was conducted with a Trimble 5700/5800 Trimark 3 high accuracy GPS system.

The survey indicates that there is no significant subsidence occurring over the past 4 years.

4.2. Annual Geotechnical Inspection

While there is little detail in either the Water Licence or the DRP as to the requirements of the annual geotechnical inspection, a comprehensive inspection was conducted over several days by a professional geotechnical engineer. The inspection included all of the engineered structures constructed or altered during the reclamation process including:

- The stability of the decommissioned former Garrow Lake dam
- The stability of the covers / seals of the four mine entrances
- The stability of the landfill covers on both the Operational landfill and the Little Red Dog Quarry landfill.
- The stability of the marine foreshore in the area of the decommissioned dock and the adjacent foreshore areas.

In addition, the geotechnical inspection reviewed other areas:

- The stability of the Garrow Lake wave break structure (specifically where the water flows out of Garrow Lake into Garrow Creek) to confirm that the invert of the outlet is stable.
- The subsidence area was visually inspected, and the subsidence survey drawings reviewed to identify if there are any areas that present a potential safety hazards to wildlife or humans.
- The stability of the jetty at Frustration Lake to confirm that unacceptable erosion is not occurring.
- The stability of the shoreline area around Garrow Lake to identify if there is any instability that would result in unacceptable sedimentation in the lake.
- Identify if there is any active erosion occurring in areas where culverts had been removed from roadways.
- The general condition of the former Tank Farm and former Incinerator pad slopes (which were re-sloped in July).
- General inspection of the site for erosion of site water courses that have been altered by site activities.

In summary, the results of the geotechnical inspection were:

- The remnants of the former decommissioned Garrow Lake dam are stable. There is a small area where geotextile is exposed and should be covered with rip-rap in 2007.
- The covers over the mine entrances are all stable with no concerns noted.
- Both landfill covers are in excellent condition and there were no concerns noted. The natural slope above the Operation Landfill has a drainage feature that ongoing monitoring is recommended.

- The marine foreshore appears stable and no concerns were noted. The shoreline at the water's edge is being actively reshaped by ice action as is expected. Photographic monitoring stations were established to provide a long term visual monitoring system.
- The outlet of Garrow Lake has been altered by ice movement and has resulted in a gravel berm being pushed up from the lake. Drainage from the lake is occurring through the berm as it consists of coarse gravels.
- The subsidence area has no observable surface movement. The subsidence survey does not indicate any significant movement. There were no safety concerns identified related to the use of this area by the public or wildlife.
- Some minor erosion at the Frustration Lake jetty appears to have occurred due to either wave or ice action. In general the jetty remains stable.
- There was no observable erosion or foreshore instability concerns identified around the perimeter of Garrow Lake. Measurements of the four erosion pin stations around Garrow Lake were incorrectly done last year, so they were monitored this year. All four pins appear to be moving. There is a similar change in measurements at all four. This is likely due to frost jacking as visual observations do not suggest any erosion activity. This is the last year that the pins will be monitored. In future, monitoring of the perimeter of the lake will be by visual observations.
- There were several areas where erosion across roadways were identified from the spring run off period. Remedial work was completed in July at all of them to stabilize them from future erosion. They will be inspected again in 2007.

The complete geotechnical inspection report is included in Appendix 5.

4.3. Garrow Lake Wave Break Survey

In late July 2006, a detailed topographic survey was conducted of the former Wave Break structure and the associated outlet area of Garrow Lake. This was done to document conditions in the area and to serve as a baseline to be able to document if any changes to this area occur over time. The survey was done by a Teck Cominco representative using a Trimble 5700/5800 Trimark 3 high accuracy GPS system. A plan and sections of this survey are presented in Appendix 6.

4.4. Garrow Lake Elevations

During the site reclamation, a metal rebar pin was surveyed adjacent to the location that Garrow Creek flows out of Garrow Lake to facilitate survey monitoring of the lake elevations. Since August 2005, a coarse gravel berm has formed at the outlet of Garrow Lake due to ice action. As the berm is coarse, water discharges out of the lake through the berm. Refer to the geotechnical inspection report in Appendix 5 for details. Surveys of the lake elevation at the beginning of the summer and late in August and are presented below.

TABLE 2
GARROW LAKE ELEVATIONS (Metres)

DATE	Survey Station 352 Elev. (m)	INSTRUMENT HEIGHT	ROD READING	LAKE ELEVATION	Comments
27-Jun-05	1006.52	0.55	1.96	1005.11	
24-Aug-05	1006.52	0.55	2.00	1005.07	Low flow in creek as getting colder
29-Jun-06	1006.52	0.435	1.46	1005.50	
09-Jul-06	1006.52	0.438	1.53	1005.43	Water flowing through gravel berm
20-Aug-06	1006.52	0.305	1.52	1005.31	Water still flowing at a low rate

Note: Pre-Dam lake elevation at end of discharge season was reported to be 1005.7m
Survey Station #352 location is -878.338, 3679.594 (local grid)
NAD83 UTM 14 561585E, 8367439N

5. OTHER SITE MONITORING

In addition to monitoring the chemical and physical stability of the site, monitoring of wind speeds at Resolute Bay, monitoring of landfill cover cap temperatures, and monitoring of metals concentrations of soils in the former Concentrate Storage Building were undertaken during the 3rd Quarter of 2006.

5.1. Resolute Bay Wind Monitoring

The Water Licence, and the DRP requires that during open water periods of Garrow Lake wind speeds be monitored at Resolute Bay (when there are no personnel stationed on site at Polaris). The purpose is to identify if there were any wind storm events with sufficient energy to potentially cause mixing of the surface layers of Garrow Lake. If this extremely unlikely event were to occur, then Teck Cominco is required to conduct an additional sampling of the water column of Garrow Lake as soon as practical to identify if there had been mixing of the mixolimnion with the halocline.

Ice on Garrow Lake did not fully dissipate until mid August and reformed prior to mid September in 2006. As monitoring personnel were at site only periodically during August and September, wind records for the month of August and September were obtained from Environment Canada's weather station at Resolute Bay (Refer to Appendix 7). The data was reviewed to determine if there were any periods where wind speed could potentially have been sufficient to cause significant mixing of the lake.

The period between the dates of August 1 to September 30 sustained three wind events larger or equal to 50 km/h. The largest event, September 2, 2006, sustained a wind event for 11 hours with the hourly maximum wind speed averaging 57 km/h. Large events also occurred on September 5th and September 6th where wind speeds reached an average maximum of 50 km/hr for 7 hours and 5 hours respectively. These are well below the duration required to cause mixing to the bottom of the top layer of the lake.

It is important to note that the Resolute wind speed records show the maximum wind speed for each hour and not the average wind speed for each hour. If the actual average wind speed for each hour was known, it would be substantially lower the overall average so that the 57 km/hr wind speed stated above is a substantial overstatement of the wind energy.

5.2. Landfill Thermistor Monitoring

Construction of the cap of the LRDQ landfill was one of the last reclamation activities completed in 2004. As a result of this work being completed just before crews demobilized from site, thermistors were not installed until 2005 when personnel were stationed on site during the summer. At the Operational landfill, there were already thermistors that had been installed by mine operations prior to 2004. However, these thermistors were installed in the landfill material and not in the newly installed 1.8m landfill cap. In 2005 attempts to replace these thermistors with new ones were made. Two of the four thermistors could not be replaced as they were stuck in their holes. Some limited thermistor temperature data was collected in 2005 with questionable results. Consequently, plans for 2006 were to complete thermistor installations in the Operational landfill and to review and improve all of the installations in both Little Red Dog Quarry landfill and the Operational landfill. Improvements to the thermistor installations included cutting off borehole pipes that extended above ground (to minimize the potential for surface air temperatures to heat the pipes in summer) and replacing the barrels that were placed over the pipes as a protective cover with wood boxes. The wood boxes were built to bear proof the installations as two of the four installations in LRDQ landfill were damaged by bears during the winter of 2005/2006. In addition, it was recognized that relying on personnel to collect data when on site resulted in too little data being collected. In July 2006 data loggers for both LRDQ landfill and the Operational landfill were installed. All cables were buried between the thermistor installations and the data loggers to protect them from animal damage. The data loggers have the capacity to collect data year round.

5.2.1. Operational Landfill Thermistor Installations

Thermistor #OL1

This was one of the two thermistors that were not replaced in 2005 as it was stuck in its borehole. In July 2006, the thermistor was thawed by circulating hot water within the borehole pipe and it was finally removed. When the 1.8m thick cap was constructed on the landfill, extensions were placed on the original borehole pipes that were installed in the landfill. It was determined that the pipe extensions were not properly connected to the original pipe when installed by contractors in 2003/2004. As a result, the pipe extensions in the cap area were dug out, securely attached to the original borehole pipe and then re-buried (due to potential problems as had been experienced with OL2 and OL4, see below). The new thermistor string was then inserted into the borehole. All thermistor bulbs at this location are at their designed elevation. Oil was added to the pipe extension so that all thermistor bulbs are isolated from contact with air.

Thermistor #OL2

In 2005 the existing thermistor was replaced with a new custom thermistor string that was designed to monitor the cap in detail. Thermistor bulb spacing's in the new string are closer together near surface so that detailed temperature profile can be measured within the new landfill cap. In July 2006, the borehole extension pipe located within the cap

inserted into the borehole pipe so that some of the thermistor bulbs were above ground level. This explains some of the data problems experienced in 2005. An excavator was used to dig out the extension pipe. As the cap was being excavated, ice lenses were observed at 83cm below ground surface confirming that as of July 22, 2006 the freezing level was near surface. As the extension pipe was excavated, it was damaged when the frozen ground around it was being removed. As a result, the thermistor was re-buried within the cap area without a protective pipe.

The re-installed thermistor was fully inserted within its hole so that all thermistor bulbs are located at their correct design depths.

Thermistor #OL3

Similar to OL1, in July 2006, this thermistor was thawed by circulating hot water within the borehole pipe and was finally able to be removed. The pipe extension in the cap area was also dug out, securely attached to the original borehole pipe and re-buried. The new thermistor string is fully inserted into the borehole so that all thermistor bulbs are at their designed elevations. Vegetable oil was added so that all thermistor bulbs are isolated from contact with air. The cable attaching this thermistor to the data logger was not able to be installed in July due to shortage of time but was connected in late August when a Dennis Lu of Gartner Lee was back on site for other monitoring. As a result there is just one reading for this thermistor for the summer.

Thermistor #OL4

In 2005 the existing thermistor was replaced with a new thermistor string. In July 2006, the borehole extension pipe located within the cap area was excavated and more securely attached to the underlying pipe and re-buried. Oil was placed into the top of the extension pipe so that the thermistor bulbs within the cap area were isolated from air circulation. It was also noted that the thermistor installed in 2005 was not completely inserted into the borehole pipe so that some of the thermistor bulbs were above ground level. This explains some of the data problems experienced in 2005.

The thermistor string was frozen into the hole and could not be freed, so the string elevations could not be adjusted. The first six thermistor bulbs remain above ground level so that there are only six functional thermistor bulbs in this hole. Data reported in 2006 for this thermistor reflect the corrected as-built elevations.

As the Operational landfill cap surrounding each of the thermistors has been disturbed in July 2006, the thermal regime in the cap will have been temporarily disrupted. Review of this summer's data for the cap should take this into consideration. However, temperatures deeper within the landfill should not have been influenced by this work.

5.2.2. Operational Landfill Thermistor Data

Appendix 8 contains the graphs and data tables that the following comments relate to.

Thermistor #OL1

This location had a new thermistor installed July 16 and initially showed temperature effects from the removal of the original thermistor. The installation was again disturbed on July 22 when the borehole pipe extension within the cap area was excavated and re-buried. Regardless, of the repeated disturbance of the thermistor, the data shows that:

- The deeper the thermistor bulbs in the landfill, the colder the temperatures
- The thawing of the active layer never exceeded 1.25m depth.

Thermistor #OL2

In July when the surface was excavated to remove the borehole pipe extension, the data logger was disconnected and was not reconnected until August 20th causing a gap in the data. Similar observations to Thermistor #OL1 were apparent:

- The deeper the thermistor bulbs in the landfill, the colder the temperatures
- The thawing of the active layer never exceeded 1.25m depth.

Thermistor #OL3

In July 2006, the old thermistor from mine operation days was removed and the new thermistor string installed. The data logger was not attached until August 20th so there is only one set of data for this thermistor. While there is only one set of data, it is consistent with Thermistors #OL1 and OL2 in that:

- The deeper the thermistor bulbs in the landfill, the colder the temperatures
- The thawing of the active layer was less than 1.25m depth.

Thermistor #OL4

On July 23, 2006 the work to repair and upgrade the thermistor was completed. The data logger was not connected from July 21st through until August 20th. While there are only a few data points in August, the data is similar to the other 3 thermistors in that:

- The deeper the thermistor bulbs in the landfill, the colder the temperatures
- The thawing of the active layer was less than 1.00m depth (although there is no data from the first week of August when maximum thawing would have occurred).

While all of the installations were significantly disturbed during the period, the thawing of the active layer appears to be shallower than 1.25m compared to the cap thickness of 1.8m.

5.2.3. LRDQ Landfill Thermistor Installations

In 2005 all four thermistors in LRD Quarry landfill were installed. Data collected in 2005 indicated that near surface data was suspect. It was known that some of the thermistor protective pipes (4 inch schedule 40 metal pipe) extended above the surface of the cap and potentially were influencing near surface temperatures due to their thermal conductivity. Additionally the installations were protected by 45 gallon metal barrels which also could potentially influence temperatures during the warm summer days.

In July 2006, the installations were inspected and found that two of the barrels had been knocked over by bears and damaged the cables on both thermistors. The cables were partially repaired by splicing them (a few thermistor bulbs could not be made to function).

Similar to the Operational landfill thermistors, wood boxes were constructed in a manner suggested by the local Inuit helper to make them more bear resistant. As with the Operational landfill thermistors, a data logger was installed and all cables leading to it were buried to protect them.

Two of the metal protective pipes were cut off level with the cap. One did not need shortening and the fouth one (Thermistor #LRD3) could not be shortened as the thermistor was frozen in the hole and could not be removed as required to cut the pipe. It was left as is except spray foam insulation was placed around it to minimize the thermal effects of the exposed pipe. Ground adjacent to the thermistor installations were more carefully leveled to match the elevations of the surrounding landfill cap.

Two of the thermistors are not fully inserted into the holes (#LRD3 and #LRD4) resulting in the depths of the thermistor bulbs being slightly shallower than the planned elevations. The protective pipes were installed as the landfill was being constructed and possibly got some rain water in them which would have collected in the bottom of the pipes and frozen. Measurements of thermistor bulb locations relative to the ground surface were taken after this years work so that their actual depths are known and used in the graphs presented in Appendix 8. Work upgrading the thermistor installations was completed on July 21st, 2006 but may have disturbed the near surface temperature conditions of the cap.

5.2.4. LRDQ Landfill Thermistor Data

Appendix 8 contains the graphs and data tables that the following comments relate to.

Thermistor #LRD1

Data presented extends from July 22nd 2006 (just after the repairs to the thermistor installation was completed) through until August 22nd 2006 when a Gartner Lee consultant was on site for monitoring of Garrow Lake and took the final readings for the summer. This was one of the thermistors damaged by a bear and the thermistor bulbs located at both the 1.25m and 2.00m depths are not functioning. The thermistors indicate:

- Temperatures generally decrease with depth and with increasing depth, less seasonal effects are evident. During the month when data was collected, at the 11.0m depth, temperatures varied only 0.1 ^{0}C from -2.6 to -2.7. At depths shallower than 1.0m temperatures rapidly increased during early August but temperature changes near 1.75m were much less. In 2005, the minimum temperature measured during the summer was -2.3 degrees C at this depth.
- Temperatures differences below 3.0m deep are relatively small. The deeper thermistor readings deeper than 3.0m are not necessarily colder. It is assumed that as freeze back progresses, this will change.
- The maximum thaw of the cap occurred during the first week of August and the active layer is just over 1.5m thick.

Thermistor #LRD2

Data presented extends from July 22nd 2006 (just after the repairs to the thermistor installation was completed) through until August 22nd 2006. The thermistors indicate:

- That temperatures decrease with depth in the landfill with the temperatures reaching -4.1 degrees C at 11m depth. In the summer of 2005, the coldest temperature measured at the deepest thermistor bulb was -1.8 degrees C.
- The maximum thaw of the cap occurred during the first week of August and the active layer is just less than 1.75m thick.

Thermistor #LRD3

Data presented extends from July 22nd 2006 (just after the repairs to the thermistor installation was completed) through until August 22nd 2006. This thermistor was not installed to its full depth so that the thermistor bulbs are shallower than LRD1 and LRD2. This is the thermistor where the borehole pipe sticks up a bit above the surface of the cap. The thermistors indicate:

- That temperatures decrease with depth in the landfill with the exception of the 6.2m and the 10.2m depths which are very similar temperature but responded to the seasonal changes at different rates (deeper thermistor shows less seasonal changes as would be expected). At the 10.2m depth, temperatures were a minimum of -7.2 degrees C. In the summer of 2005, the coldest temperature measured at the deepest thermistor bulb was -1.9 degrees C.
- The maximum thaw of the cap occurred during the first week of August and the active layer is just less than 1.45m thick.

Thermistor #LRD4

Data presented extends from July 22nd 2006 just after the repairs to the thermistor installation were completed through until August 22nd 2006. In this installation, some of the surface cap was removed to expose the top of the borehole pipe and then re-buried disturbing the near surface conditions. This thermistor was not installed to its full depth so that the thermistor bulbs are shallower that LRD1 and LRD2. The thermistors indicate:

- That temperatures decrease with depth in the landfill. At the 9.81m depth temperatures ranged between -5.3 to -5.5 degrees C. In the summer of 2005, the coldest temperature measured at the deepest thermistor bulb was -3.3 degrees C, however at shallower depths a minimum temperature of -5.4 was measured.
- The maximum thaw of the cap occurred during the first week of August and the active layer is just less than 1.81m thick.

All of the installations were significantly disturbed during July so that it may take some time for the near surface thermal regimes to stabilize. However, temperature data collected in July and August of 2006 indicated that the active layer in two locations is up to approximately 1.5m thick and at two other locations is up to approximately 1.8m thick. Surveys taken during construction of the cap in LRDQ landfill confirmed that the minimum as-built cap thickness is 2.0m. At all four thermistor locations, the temperatures deeper in the landfill seem to indicate that freeze back is gradually occurring.

5.3. Former Concentrate Storage Building Soil Contamination

Metals contaminated soils within the footprint of the former Concentrate Storage Building were excavated. Considerable effort was expended to recover the maximum quantities of this contamination, but upon completion of remedial efforts a thin veneer of concentrate dusts remained trapped in the underlying fractured bedrock in a portion of the building footprint. Remediation was completed and a minimum 0.5 metre thick cover of local materials was placed over this area as a cover. Questions regarding the potential for this material to migrate to the surface of the cover materials were posed by regulators.

Several soil samples are being taken annually to demonstrate that the metals concentrations in the soil cover are below remedial objectives and that there are no trends of increasing metals concentrations over time. The samples below were taken on July 14, 2006 by a Gartner Lee Limited representative. All soil metals concentrations analyzed are substantially below the approved site remedial targets.

TABLE 3

Gartner Lee		Sample ID	CSHED- NORTH	CSHED- MID	CSHED- SOUTH
		Coordinates	558043 E	558090 E	558131 E
			8367787 N	8367725 N	8367664 N
		Date Sampled	14/07/2006	14/07/2006	14/07/2006
Parameter	**Units**				
pH	pH		8.63	8.3	8.66
Lead	mg/kg		106	161	133
Zinc	mg/kg		177	280	871

APPENDIX 1

Executive Summary of 2006 3rd Quarter Report

Translated into Inuktitut

ᒪᔪᓕᕆᒥ ᐅᓴᖏᔪᐅᖏᕐᐳᖅ

ᖃᓄᐃᑐᓂᕐᓂᖅᓯᒃ ᐅᑎᑎᑕᐅᓇᓱᓂᖅᓯᒃ ᖃᐅᔨᓴᑕᐅᓂᖅᓯᒃ ᐅᓂᒃᑲᖅ

ᑎᕋᒪᐃᓱᓂᐅᑉ ᐱᖓᓱᖓ 2006ᒥ

ᐅᑯᓄᖓᖓᓗᑎᒃ ᐅᓂᒃᓕᐊᑦ

ᓄᓇᕗᑦᒥ ᐃᒪᓕᕆᔨᖏᑦᑐᒃ ᖃᑎᒪᔨᖏᑦᑕ

ᐊᒪᓗ

ᐃᓄᓕᕆᔨᑐᖃᓄᑦ ᖃᓇᑕᒥ

1. ᑭᓯᒧᒪᓐᓕᑦ

ᑕᕐᓂ ᐱᓐᔪᓐᓂ ᑎᕿᒪᐃᓕᓐᖏᓐᔪᓂᑦ 2006ᒥ, ᐊᖏᔪᑕᒪᑦ ᐅᐊᓯᓂᐅᖏᑕᕐᔅᓴᑦ ᑲᔪᓯᓂᓗᓴᕆᐊᖏᑕᓐᓄ ᒪᑭᓕᖅᒥ ᑲᔪᓯᑎᑕᐅᓕᐅᔅᓴᑦ. ᐅᓄᖅᑎᑦ ᒪᑐᐃᓯᑲᓕᓕᐅᔅᓴᑦ ᕿᓚᒻᒥᓂᖅ ᓄᓇᔪᐊᓂ ᔪᓂᐅᑦ ᐊᒪᓗ ᑕᐃᑲᓂᓗᑎᖅ ᔪᓕᐃ 27ᓇᖏᓯᓂᓐᓂ ᑭᐊᑉ ᑯᓐᓇᖅᑐᑎᓂᖅ ᐃᒪᖏᖅ ᐱᕐᓚᓗᑎᖅ ᐊᒪᓗ ᐊᓯᖏᓂ ᐱᓕᕆᓗᑎᖅ. ᐅᑯᓂᓐᓇ ᐃᓄᖅᓚᐅᔅᓴᖅ:

Δ. ᐅᑯᓄᓐᓚᕐᒪ ᑲᑦᓭ ᓴᑦ ᕿᓄᔅᓴ ᑯᑎᑭᒪᓐᓇ ᐱᐅᑎᑭᓂᓂᓕᖅ ᕿᓚᒻᒥᓂᖅᓴᓕᐅᔅᓴᖅ ᐊᒪᓗ ᐊᐅᓚᓯᐅᓕᓄᑦ ᑕᐃᑲᓂ ᑕᕐᒪᐃᓐᓇᕐᓂᖅ.

ᐱ. ᐅᖃᓕᐃᔅᓴᓂᐅᑎᓂᖅ ᐊᖃᑎᖅ ᒪᓕᖅ ᑲᓪᓚᕆᐊᖏᓐᓇᖅᖃᖅᑎᑦ ᑕᐃᑲᓂ ᐊᑐᑕᐅᔾᔨᓕᖏᓐᓇᖅᑎᑦ ᑕᑯᐊ ᐅᖃᓕᐃᔅᓴᓂᐅᑎᑦ.

ᑎ. ᒪᓕᖅ ᐃᓅᖅ ᐃᑲᔪᑎᖅ ᕿᓵᓄᐸᐃᒥᓐᓇᖅᑐᑦ.

ᑕᐃᒪᓐᓂᑦ ᔪᓚᐃ 17ᒥᑦ 27ᒧᑦ, ᑎᑦ ᑲᒥᑯᓂᑦ ᐱᕆᔪᕿᑎᖏᓐ ᑕᐃᑲᓂᕐᓇᓚᐅᔅᓴᖅ ᓄᓇᖏᓂ ᖃᐅᔨᓴᕿᑎᐅᓄᓂ, ᑲᒪᕆᐅᓄᓂᓄ ᑕᐃᑲᓂ ᐱᓇᓚᐊᑕᐅᔾᔨᓇᓚᓂᓐᑦ ᑕᐃᑲᓂᑦ ᓄᓇᐃᑦ ᖃᐅᔨᓴᑕᐅᔾᔨᓇᖏᓐᓇᖅᑐᑦ. ᐅᓄᓂ ᐊᒥᔪᖏᑐᓐᑦ ᑕᐃᑯᓇᓂ ᐅᑦᓄᓂ ᑕᐃᑲᓂᖏᓚᐅᒥᔪᖅ ᐅᐸᓴᓂ ᖃᐅᔨᒪᐅᑕᒪᓇᖅ ᑲᓪᓚᕆᐊᖏᓐᓇᖅᑐᑦ ᐊᖏᔪᑕᒪᑦ ᐅᐸᓴᓂ ᖃᐅᔨᒪᐃᓕᓐᓇᖅᑐᑦ ᑲᑯᐊ ᐅᖃᓕᐃᔅᓴᖏᓐᓇᖅᑐᑦ ᐊᖏᔪᑕᒪᑦ ᐅᐸᓴᓂ ᖃᐅᔨᒪᖃᕐᓂᖅᓴᖅ ᑲᔪᓯᓂᓗᓴᕆᐊᖏᓐᓇᖅᑐᑦ.

ᓄᖅᓴᐊᓂ ᔪᓕᐃᓵ, ᑕᐃᑲᓂᑦ ᒪᑐᓯᓚᐅᑎᑦ ᑕᕐᒪᐃᓐᓇᖅᑐᑦ ᑕᓯᒪᓂ ᐊᖏᔪᒥ ᐱᐅᓇᑲᐃᓇᓚᐅᓗᑎᖅ. ᑭᐊᑉ ᑯᓐᓄ ᖃᐅᔨᒪᓂ ᓯᓚ ᑲᔪᓯᑎᑕᐅᓕᐅᔅᓴᑦ ᐃᖃᒪᐃᐅᔾᔨᑎᒧᑦ ᒪᑭᓕᖅᒥᔪᖅᓴᓕᐅᔅᓴᖅ ᒪᑐᐃᓐᓇᕐᓂᖅᓴᓗ.

2. ᐃᐅᑦ ᐱᐅᓂᖓᑕ ᖃᐅᔨᒪᑕᐅᓂᖓ

ᑎᒥᒪᐃᓚᐅᖃᖓᓕᒃᑐᑦ ᐱᖓᔪᖓᓂ, ᐃᒪᐅᑦ ᐱᐅᓂᖓᑕ ᖃᐅᔨᒪᑕᐅᓂᖓ ᑲᔪᑎᑕᐅᓕᐅᔅᓴᑦ ᐃᒪᖓᓂᖓᔾᔨᑐ ᐱᓪᓗᑎᑦ ᑭᓯᖓᓂᑦ ᐊᒪᓗ ᑭᐊᑉᑦ ᑯᓐᓇᖅᑐᑦ ᐊᒥᓂᖅ.

2.1. ᑭᐊᑉᑦ ᑕᓯᖓᑕ ᐃᓂᖓ

ᐃᒪᒧᑦ ᐱᔪᓇᐅᑎᖅ ᐊᒪᓗ ᒪᑐᓂᖓᑕ ᐊᖏᓯᓯᒪᓂᓕᕐᓂᑦ ᒪᓕᑕᐅᔪᒪᑦᓯᓯᒪᔪᑦ ᐃᒪᖓᓂ ᖃᐅᔨᒪᑎᓯᓯᒪᓕᖏᓐᓇᖅᓯᓯᒪᔪᑦ ᑭᐊᑉ ᐃᓂᖓᖅ ᐃᓂᓂᖓᓂ. ᐃᒪᓕᒪᒃᑦ ᖃᐅᔨᒪᑕᐅᓂᖓᓕᕐᓂᑦ ᐅᖓᑖᓄᓯᒪᓕᕐᓂᑐᑦ ᑭᓕᓯᑕ ᐃᒪᐅᑦ ᐱᔪᓇᐅᑎᖅᓂᖓᓂ.

ᑭᐊᑉ ᑕᓯᖓᑕ ᐃᓂᖓ -ᐱᐅᓂᖓ ᐃᒪᖓᑕ ᖃᐅᔨᒪᑕᐅᓂᖓ

	ᑭᓯᖃᓂᕐᓂᑦ -ᐅᑦᑐᑦ ᐃᖏᓯᒪᒧᑦ		
	ᐊᖏᔪ ᒪᓇᑦᒪᓇᖅ	ᒪᓇᖅᒪᓇᖅ	ᖃᑎᓗᒍ
ᐱᔪᓇᐅᑎᐅᑦ ᐃᒪᒧᑦ ᐃᓯᖏᑦ			
ᑕᖏᓕᒧᒪ ᐱᑕᖃᓕᖅ	0.07	0.50	15.00
ᐱᑕᖃᓕᖏᑦ	0.14	1.00	30.00
ᐅᓗᖏᑦ ᖃᐅᔨᓴᐅᓂᖏᓗᓂ:			
ᔪᓚᐃ/6/2005	0.00047	0.0173	3.0
ᔪᓚᐃ/15/2006	0.00034	0.0231	3.0
ᔪᓚᐃ/21/2006	0.00087	0.0309	3.0
ᔪᓚᐃ/26/2006	0.00080	0.0308	4.5
ᐊᒃᓯ/11/2008	0.00084	0.0539	3.0
ᐊᒃᓯ/17/2006	0.00044	0.0583	5.8
ᐊᒃᓯ/23/2006	0.00111	0.0730	3.2
ᓯᑎᐱᓪ/1/2001	0.00165	0.0625	8.4
ᓯᑎᐱᓪ/9/2006	0.00098	0.0633	3.0
ᓯᑎᐱᓪ/14/2006	0.00104	0.0655	5.9

ᐅᓴᓗᐅᓪ-ᖃᐅᔨᓴᐅᔪᑦ ᐃᓯᓪᑐ ᖃᑎᓗᒍ ᓴᓇᕆᔨᓴ 3.0

ᐱᖅᓯᓂᒃ ᐊᒃᑐᐊᓗᖏᑐᒐᓗᐊᓂ ᓱᕈᓇᑐᓂ ᖃᐅᔨᓴᑕᐅᔪᖃᑕᐅᑐᖅ ᐃᓗᓂ ᐃᖃᓗᓂ ᐊᒻᒪ ᖁᐱᕈᓂᑦ. ᑕᒪᕐᒥᓂᒫᖅ ᑕᐃᑯᐊ ᖁᐱᕈᐃᑦ ᐃᒫᕐᓂᑐᑦ ᖃᐅᔨᓴᑕᐅᔪᑦ ᖃᐅᔨᓴᑕᐅᓂᖓ ᐅᖓᑕᓂᓕᐅᖏᑐᑦ ᖃᓄᐃᖏᑐᕐᒥᑐᑦ. ᒪᕈᔫᒃ ᐃᓗᓂᑦ ᐃᖃᓗᓂᑦ ᖃᐅᔨᓴᑕᐅᓂᖓ ᖃᓄᐃᓕᐅᖏᒥᔪᑦ ᓱᕈᓇᑐᖃᒪᖔᑕ ᖃᐅᔨᓴᑕᐅᔪᑦ ᐊᒻᒪ ᐱᖓᔪᖓ ᖃᐅᔨᓴᕈᑕᐅᔪᑦ ᖃᐅᔨᓴᕕᒥ ᐱᐅᔪᓂᓕᐅᒪᑦ.

2.2. ᒋᐊᕈ ᑕᓯᖓᑕ ᐃᒪᖓ ᖃᐅᔨᓴᑕᐅᓂᖓ

ᐃᒪᒧᑦ ᐱᔪᓇᐅᑎᒃ ᐅᖃᓯᒪᒪᑦ ᖃᐅᔨᓴᑕᐅᑎᐊᖃᑕᕆᐊᓕᒍ ᒋᐊᕈ ᑕᓯᖓᑕ ᐃᒪᖓ ᐊᒻᒪ ᑕᐃᒪᐃᓕᐅᖃᑕᕐᑐᑦ ᒪᕈᐃᓕᖃᖓᔪᓂ ᓯᑯᖃᕈᓂᕋᖓᑦ. ᐃᒪᖓᓂᖓᕐᑐᒥᒃ ᖃᐅᔨᑕᐅᔪᖃᑕᐅᑐᖅ ᐊᕆᓯ 21, 2006ᖑᑎᓗᒍ.

ᓇᐃᓕᒋᐊᕐᓯᒪᔪᑦ ᐅᓂᑳᖅ ᖃᐅᔨᓴᑕᐅᔪᓂ ᐃᒪᐃᓂᐊᕋᓱᒋᔭᐅᔪᑦ:

- ᐊᖅᑯᓯᕐᑕᐅᓯᒪᓂᖓ ᒋᐊᕈ ᑕᓯᕐᒥ ᐊᑕᕐᓇᖏᑐᕐᓱᓕ ᑕᕆᐅᖑᓂᖓᑕ ᐊᔾᔨᒋᖏᓂᖓ ᐊᑎᓂᖓᑕ ᑯᑎᓯᕙᓕᐊᓂᖓᓄᓐ.
- ᓴᕕᕋᔭᒃᓴᖃᓂᖓ ᐊᑎᓖᕐᒥ ᑯᑎᓯᕙᓕᐊᓂᖓᓄ ᑕᓯᕐᒥ (ᐃᓚᐅᓗᓂ ᖃᖓᓂᑐᖅ ᑯᓕᓇᓕᕐᐸᓕᐊᔫᑉ ᐊᓄᓇᒧ ᐃᖑᓕᑕᐅᓂᑯ ᐊᓯᐅᕈᓇᕐᑐᖅ) ᓂᓇᐅᒋᔭᐅᓂᓇᓕᐅᑕᖓ ᑕᐃᒪᐃᑐᔪᖅ ᓴᕕᕋᔭᓴᖓ ᓄᖑᐸᓕᐊᔪᖅ.
- ᐃᒪᕐᓗᖃᓂᖓ ᑯᓕᓇᓕᐊᓕᐊᔪᓂ ᐃᒪᖓᓂ ᓱᓕ ᑕᐃᒪᐃᑐᔪᖅ ᖃᐅᔨᓴᑕᐅᓂᓇᓕᐅᑕᖓᓂᓂᑦ ᐃᒪᖓ ᖃᓄᐃᑐᓕᓂᓇᔭᖓᓂ ᓱᓕ ᑕᐃᒪᐃᑐᔪᖅ.
- ᐃᒪᕐᓗᖓ, ᐃᑎᓂᖓ ᐊᒻᒪ ᓂᒪᓯᓂᖓ/ᐅᓈᕐᓂᖓ ᐊᔾᔨᒋᖏᑐᔫᒃ ᒪᕈᐃᓂ ᐱᕕᐅᓕᐅᑐᓂ ᖃᐅᔨᓴᕈᑎᓴᓂᑦ (262-3 ᐊᒻᒪ 262-3ᐃ) ᐊᔾᔨᒋᖏᑑᒃ ᑯᓕᓇᓕᐸᓕᐊᓂᖏᑦ ᒪᓕᓗᒋᑦ ᑕᓯᐅᑉ.

2.3. ᐊᓯᖏᑦ ᐃᒪᐅ ᖃᖓᓂᑐᑦ

2.3.1. ᐊᐅᐸᕐᑐᖅ ᕿᒥᑯᓘᑉ ᐃᓗᑐᕐᑎᑕᐅᓯᒪᓂᖓᑕ ᓴᐅᔭᐅᓯᒪᕕᐊ

ᐊᖅᑯᓯᓯᒪᓂᖓ ᐊᐅᐸᑐᖅ ᕿᒥᑯᓘᑉ ᐃᓗᑐᕐᑎᑕᐅᓯᒪᓂᖓᑕ ᓴᐅᔭᐅᓯᒪᕕᐊ (ᐊᖅᑯᐃᓴ) ᓯᕕᖓᓈᕐᑕᐅᕋᔪᒪᐅᑐᖅ ᒪᕐᑯᓂᐸᑦ ᐊᐳᓗᓃᑦ ᐊᐅᓕᕐᐸᑦ ᑕᑯᓇᖓ ᓴᐅᔭᐅᓯᒪᔪᓂᑦ ᑰᑲᔭᕐᒪᑕ ᑰᒃᐱᓕᐊᓄᓯᒪᔪᑯᑦ ᑕᑯᓇᓂ ᑐᐊᐸᓂ ᐊᖅᑯᓇᓕᐊᖑᓯᒪᔪᓂᑦ. ᐱᕈᓗᐊᖅᑯᔪᖃᐸᑦ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖔᑕ ᐊᖅᑯᑕᐅᓯᒪᔪᑦ ᐊᖏᑕᐅᓯᒪᔪᑦ ᐱᔪᓇᑎᑕᐅᓗᑎᒃᓗ ᓴᕕᕋᔭᒃᓴᒧᑦ ᓱᕈᐃᔪᑦ ᓄᓇᖓᓂᒃ ᐊᖅᑯᐃᓴᒥ ᐱᔭᓇᐊᖅᑎᓯᕗᑦ ᐃᒥᒃᐸᑦ ᖃᐅᔨᓴᑕᐅᔭᓇᐊᓕᒃ. ᑕᐃᒪᐃᓕᕿᔪᖅ ᓴᕕᕋᔭᐃᑦ ᐊᓂᐊᕙᓕᐊᓕᖏᑲᓗᐊᒪᖔᑕ ᑕᒪᑐᒪᖓ ᓴᐅᔭᐅᓯᒪᔪᕐᒥᑦ ᖃᖓᓄᐊᑐᖃᓕᖏᑲᓗᐊᒪᖔᑦ.

ᔪᓚᐃ 9, 2006ᖑᑎᓗᒍ ᖃᐅᔨᓴᑕᐅᓚᐅᑐᖅ. ᓴᕕᕋᔭᓴᖃᓂᖓ ᐅᒪ ᐊᑕᓂ ᑎᑎᕋᓯᒪᔪᖅ:

- ᓴᕕᕋᔭᒃᓴᖅ 0.0033 ᐅᒃᑐᑎᑯᓗᐊ ᐃᖑᓯᐊᓗᒥ,
- ᐊᕿᑐᖅ ᓴᕕᕋᔭᒃᓴᖅ ᒥᑭᓂᕐᓴᖅ0.050ᒥᑦ ᐅᒃᑐᑎᑯᓗᐊ ᐃᖑᓯᐊᓗᒥ,
- ᑲᑎᓗᒍ ᓴᕕᕋᔭᒃᓴᖓ ᒥᑭᓂᓴᐅᔪᖅ ᓇᓂᔭᐅᔪᕐᒥᑦ (ᒥᑭᓂᕐᓴᖅ3ᒥᑦ),
- ᐋᓯᑦᖃᓂᖓ 8.18.

2.3.2. ᑕᓯᕐᒥᑦ ᓱᑲᑲᖓᔪᓂᕋᑕᐅᔪᕐᒥᑦ

ᓇᒪᒋᔭᐅᓂᖓ ᐅᒪ ᐊᑕᓂᑐᖅ ᐱᖁᓗᐊᕿᔭᖃᐸ ᖃᓄᐃᓕᐅᕆᐊᖃᒪᖔᑕ ᐊᖅᑭᑕᐅᓯᒪᔪᕐᒥ ᑯᕕᑎᑕᐅᔭᓇᐊᖃᓂᖓᓂᒃ ᑕᓯᖅ ᓱᑲᑲᖓᔪᕐᒥᑦ ᐊᕐᒍᑕᒫᑦ ᑕᐃᒪᐃᓕᐅᖃᑕᓇᐊᖃᑐᑦ ᐊᐅᔭᑯᑦ ᓯᑯᖃᕈᓂᕐᐸᑦ, ᐃᒪᒥ ᐱᓗᑎᒃ ᖃᐅᔨᓴᕈᑎᓴᕐᒥᒃ ᑕᕐᓯᒥᑦ ᓯᒥᓕᐊᓄᓯᔫᑉ ᐃᓗᖓᖓᓂᑦ. ᖃᐅᔨᓴᓂᐅᔪᑦ ᐃᒪᕐᒥ ᖃᐅᔨᓴᕐᑯᓗᒋᑦ ᓴᕕᕋᔭᕐᓴᖃᓂᖓᓂᒃ ᓇᓗᓇᐃᓯᖓᔭᕐᒪᑦ ᓯᒥᓕᐊᓄᓯᒪᔪᖅ ᓄᖑᐸᓕᐊᖏᑲᓗᐊᒪᖔᑦ ᓱᑲᓗᐊᑐᕐᒥᒃ. ᖃᐅᔨᓴᑐᕕᓃᑦ ᐅᓂᑳᓕᐊᖓᓂ ᐅᖃᓯᒪᔪᖅ ᖃᐅᔨᓴᑕᕕᓂᖅ ᔪᓚᐃ 9, 2006ᖑᑎᓗᒍ ᓴᕕᕋᔭᒃᓴᑕᖃᓚᐅᑐᖅ 5.1 ᐊᖏᓂᖓ ᐃᖑᓯᕐᒧᑦ.

3. ᖃᓄᐃᑐᓚᓇᓂᖓ ᐊᑕᕐᓇᖏᒪᖔᑦ ᓄᓇᖓᓂ

ᖃᓄᐃᑐᓚᓇᓂᖓ ᐊᑕᕐᓇᖏᒪᖔᑦ ᓄᓇᖓᓂ ᐅᐊᓯᔪᐅᓚᐅᑐᖅ ᑕᒪᐃᓄᑦ ᐅᕙᕋᖏᑕ ᖃᓄᐃᓂᖓᑕ ᖃᐅᔨᓴᑕᐅᓂᖓᒍᑦ ᐊᒻᒪ ᐱᓗᑯᐊᐱᑐᓂ ᖃᐅᔨᓴᑕᐅᓗᑎᒃ.

3.1. ᐱᑕᖃᓂᖓᑕ ᖃᐅᔨᓴᑕᐅᓂᖓ

ᐊᕐᒍᑕᒫᑦ ᐅᕙᕋᖏᑕ ᖃᐅᔨᓴᑕᐅᓂᖓᑕ ᐅᓂᑳᖓ ᐅᖃᐅᓯᖃᑐᖅ ᐃᓵᓄᑦ ᑕᑯᔭᐅᓗᑎᒃ ᖃᐅᔨᓴᑕᐅᔪᑦ ᐱᑕᖃᓂᖓᓂᒃ ᐊᒻᒪ ᐃᓚᐅᓗᓂ ᐊᑕᖏᕐᓗᒍ ᐊᖅᓱᕐᑕᐅᓯᒪᔪᑦ ᐱᓕᕆᐊᖑᔪᒪᔪᑦ ᐊᒻᒪ ᐱᑕᖃᓂᖓᑕ ᖃᐅᔨᓴᑕᐅᓂᕆᔪᒪᓂᖓ

(ᐃᓚᐅᓗᓂ ᐃᓚᒋᐊᕈᑎᒃ 5- ᑎᒥ. ᑕᒪᓇ ᖃᐅᔨᓴᓂᐅᔪᖅ ᑲᔪᓯᑎᑕᐅᓚᐅᑐᖅ ᔪᓚᐃ 2006ᖑᑎᓗᒍ. ᑕᒪᓇ ᖃᐅᔨᓴᓂᐅᔪᖅ ᓇᓗᓇᐃᓯᔪᖅ ᐱᑕᓕᒪᕆᐊᓗᒥᒃ ᐱᑕᖃᖃᑦᑎᒋᑦᑐᖅ ᐊᕐᒍᔪᓂ ᑎᓴᒪᓂ ᐊᓂᒍᕐᑐᓂ.

3.2. ᐊᕐᒍᑕᒫᑦ ᐅᔾᕋᓕᕆᓂᒧᑦ ᖃᐅᔨᓴᓂᐅᔪᖅ

ᐊᑦᑎᕐᑐᕐᒥᒃ ᖃᐅᔨᓴᓂᐅᔪᖅ ᑲᔪᓯᓚᐅᑐᖅ ᑕᐃᓐᓇ ᐅᓪᓗᓂ ᐊᒥᓱᓂ ᖃᐅᔨᒪᔪᓚᕆᒧᑦ ᐅᔾᕋᓂᐊᑎᒧᑦ. ᑕᕝᓂ ᖃᐅᔨᓴᓂᒥ ᐃᓚᐅᖃᑕᐅᓚᐅᑐᖅ ᓴᓇᔾᔪᒪᔪᑦ ᐅᕙᓗᓃᑦ ᐊᕿᑦᑎᐊᕐᑕᐅᓯᒪᔪᑦ ᑕᕝᓂ ᐅᑎᑎᑕᐅᓇᓱᓂᖓᓂ ᖃᓄᐃᑐᓂᐱᓂᖓᓄᑦ ᐅᑯᐊ ᐃᓚᐅᓗᑎᒃ:

- ᐊᑦᑕᓇᑐᕐᒥᖕᒋᓂᖓ ᐃᒍᑎᕐᑕᐅᓂᕆᓚᐅᑕᖓ ᒋᐊᕈᒥᒫᖕᖓᑐᖅ ᑕᓯᕐᒥᑦ ᓯᒥᖓ
- ᐊᑦᑕᓇᑐᕐᒥᖕᒋᓂᖓ ᒪᑐᖕᒋ/ᓯᒥᑕᐅᓯᒪᓂᖕᒋᑦ ᑎᓴᒪᐃᑦ ᐅᔾᕋᑕᐱᐱᓅᑦ ᐃᓯᕐᑕᕐᐱᖕᒋᑦ
- ᐊᑦᑕᓇᑐᕐᒥᖕᒋᓂᖓ ᖄᓕᑕᐅᓯᒪᓂᖕᒋᑦ ᐃᓗᓵᓕᐊᖑᓯᒪᔪᑦ ᑕᒪᐃᓂ ᒪᓇᐅᔪᖅ ᐊᑐᕐᑕᐅᔪᖅ ᐊᒃᑕᕐᐱᒃ ᐊᒪᓗ ᐊᐅᐸᑐᖅ ᕿᒥᒍᓗᒥ ᓴᐅᔭᐅᓯᒪᓂᖓ.
- ᐊᑦᑕᓇᑐᕐᒥᖕᒋᓂᖓ ᑕᕆᐅᕐᒥ ᓯᔭᖓ ᐃᒍᑎᕐᑕᐅᓚᐅᑐᖅ ᑐᓚᑦᑕᕐᐱᐅᔫᑉ ᐊᒪᓗ ᐃᓗᖓᖓᓂᑐᖅ ᓯᔾᕙᓯᖓᑕ ᓄᓇᖓ.

ᐊᒪᓗᑲᓂᖅ, ᓄᓇᖓᑕ ᖃᐅᔨᓴᑕᐅᓂᖓ ᕿᒥᕈᔭᐅᓚᐅᑦ ᐊᓯᖕᒋᓂ ᓄᓇᖓᓂ:

- ᐊᑦᑕᓇᑐᕐᒥᖕᒋᓂᖓᓂᒃ ᒋᐊᕉᑉ ᑕᓯᖓᑕ ᒪᓕᓗᐊᔭᐃᑯᑎᖓᑕ ᓴᓇᒪᓂᖓ ᓄᖑᐸᓕᐊᖕᒋᑲᓗᐊᕐᒪᖖᒑᑦ.
- ᓯᕗᖓᓂᖓ ᑕᑯᓴᐅᓂᖓ ᕿᒥᕈᔭᐅᑎᐊᓚᐅᑐᖅ, ᐊᒪᓗ ᑎᑎᕋᐅᔾᔪᓯᒪᔪᑦ ᕿᒥᕈᔭᐅᒋᓗᑎᒃ ᓇᐅᑯᑦ ᐊᑦᑕᓇᑐᒥ ᐱᑕᖃᓕᒪᖖᒑᑦ ᐊᑕᓇᕈᑕᐅᒐᔾᕐᑐᓄᑦ ᐅᒪᔪᕐᓄᑦ ᐃᓄᓄᓗ.
- ᑐᓚᒃᑕᕐᐱᒃ ᓱᑲᑲᖓᔫᑉ ᑕᓯᖓᓂᑐᖅ ᖃᓄᐃᖕᒋᑲᓗᐊᒪᖖᒑᑦ ᐃᒪᕐᒧᑦ ᓄᖑᑕᐅᕙᓕᐊᖕᒋᑲᓗᐊᒪᖖᒑᑦ ᖃᐅᔨᒋᐊᕐᑕᐅᓚᐅᒥᔪᖅ.
- ᖃᓄᐃᖕᒋᑎᐊᕋᓗᐊᒪᖖᒑᑦ ᓯᔭᕐᐊᓯᐊ ᒋᐊᕈ ᑕᓯᖓᑕ ᓇᓗᓇᐃᑕᐅᖁᓗᒋᑦ ᐱᐅᔪᓂᕐᐸᓕᐊᒪᖖᒑᑦ ᑕᒪᑐᒪᖓ ᐃᒪᖓᓂᖓᕐᑐᕐᒥᒃ ᑕᓯᒨᖓᐅᔪᖃᖕᒋᑲᓗᐊᒪᖖᒑᑦ.
- ᓇᓗᓇᐃᓗᒋᑦ ᐱᑕᖃᐸᑦ ᓄᖑᐸᓕᐊᔪᓂᒃ ᑕᑯᓇᓂ ᑰᒃᐱᐅᓚᐅᑐᓂ ᐲᔭᕐᓯᒪᔪᓂ ᐊᖁᑎᐱᓂᕐᓂᑦ ᐲᔭᐃᐱᐅᓯᒪᓂᖕᒋᓂᑦ.
- ᖃᓄᐃᓕᖓᓂᕆᔭᖓ ᐅᕐᓱᐊᓗᖃᐱᐅᓚᐅᑐᕐᒥᑦ ᐊᒪᓗ ᐃᑭᑎᐱᐅᑉ ᐃᓂᖕᒋᑕ ᓯᕗᖓᓂᖕᒋᑦ (ᑕᐃᒃᑯᐊ ᓯᕗᖓᓂᐱᓂᖕᒋᑦ ᓯᕗᖓᓕᑎᑕᐅᑲᓂᒪᐅᑐᑦ ᔪᒪᐃᖑᑎᓗᒍ).
- ᓄᓇᖓ ᕿᒥᕈᔭᐅᓗᓂ ᓯᑐᕐᐸᓗᐊᔪᓂ ᐱᑕᖃᒪᖖᒑᑦ ᐃᒪᕐᔫᕐᑐᓂᒃ ᐊᓯᐅᕆᐊᓯᒪᔪᓂᑦ ᑕᐃᓐᓇ ᓄᓇᖕᒋᓂ ᖃᓄᐃᓕᕙᓕᐊᓂᖕᒋᓄᑦ.

ᓇᐃᓈᕐᓗᒍ, ᖃᐅᔨᓴᑕᐅᓂᖕᒋᓂᑦ ᐅᑯᐊ ᑕᕙ ᐃᒪᐃᓕᓚᐅᑐᑦ:

- ᐊᒥᐊᑯᖕᒋᑦ ᐃᒍᑎᕐᑕᐅᓚᐅᑐᑦ ᒋᐊᕈ ᑕᓯᖓᑕ ᓯᒥᑕᐅᓯᒪᓂᐱᓂᐊ ᓱᓕ ᖃᓄᐃᖕᒋᑐᖅ. ᐃᓚᖓᓂ ᓴᓇᔭᐅᓚᐅᓯᒪᔪᐱᓂᖅ ᓴᕿᔮᕈᔫᒃᑐᒐᓗᐊ ᐅᓕᑕᐅᑲᓂᓖᕐᓗᓂ ᐅᓕᒃᓴᔾᕐᒧᑦ 2007ᐅᓕᕐᐸᑦ.
- ᐅᔾᕋᒃᑦᑕᕐᐱᐅᓚᐅᑐᑦ ᐃᓯᕐᑕᕐᐱᖕᒋᑕ ᒪᑐᖕᒋ ᑕᒪᕐᒥᓕᒫᖅ ᖃᓄᐃᖕᒋᑐᑦ.
- ᑕᒪᕐᒥᒃ ᑐᐊᐸᓕᓱᓯᒪᔪᑦ ᖃᖓᒍᑦ ᖃᓄᐃᖕᒋᑎᐊᕐᑐᑦ ᐊᒪᓗ ᐃᓱᒫᓗᑎᓴᐅᔪᓂ ᓇᓗᓇᐃᑕᐅᔪᖃᓚᐅᖕᒋᑐᖅ ᑎᑎᕋᑕᐅᔪᓂᒃ.
- ᑕᕆᐅᑉ ᓯᔭᖓ ᑕᐅᑐᐊ ᖃᓄᐃᖕᒋᑐᖅ ᐊᒪᓗ ᐃᓱᒫᓗᑕᐅᔪᓂ ᓇᓗᓇᐃᑕᐅᔪᖃᓚᐅᖕᒋᑐᖅ.
- ᑰᓂᖓ ᒋᐊᕈ ᑕᓯᒥᖖᒑᑐᖅ ᓱᓂᕐᓯᒪᓕᑐᖅ ᓯᑯᒧᑦ ᑕᐃᒪᐃᓕᔭᐅᓗᓂ ᐊᒪᓗ ᑐᐊᐸᖓ ᓱᓂᑕᐅᓯᒪᓗᓂ ᑕᕝᖓ ᑕᓯᕐᒥᑦ. ᐃᒪᐃᕐᐊᓕᐊᔪᖅ ᑕᓯᕐᒥᑦ ᖃᑎᓯᓯᒪᓂᖓᒍᑦ ᑯᐱᔭᐃᑯᑎᖓᒍᑦ ᐊᖕᒋᔪᑎᐊᓗᓂ ᐅᔾᕋᖃᓂᖓᓄᑦ.
- ᓯᕗᖓᓂᖓ ᑕᑯᓴᐅᔪᓂ ᑐᐊᐸᖓ ᐊᐅᓚᓂᖃᖕᒋᑐᖅ.
- ᐃᓚᖓ ᐊᒃᓱᐊᓗᖕᒋᑐᖅ ᓄᖑᐊᓕᐊᔪᖅ ᓱᑲᑲᖓᔫᑉ ᑕᓯᖓᓂᑦ ᑕᐃᒪᐃᓕᑎᑕᐅᓗᓂ ᒪᓕᕐᓄᑦ ᐅᕙᓗᓃᑦ ᓯᑯᒧᑦ. ᑭᓯᐊᓂᓕ ᑐᓚᒃᑕᐱᖓ ᓱᓕ ᖃᓄᐃᖕᒋᑐᖅ.
- ᑕᑯᓴᐅᔪᕐᒥ ᓄᖑᐸᓕᐊᓂᖃᖕᒋᑐᖅ ᐅᕙᓗᓃᑦ ᓯᔭᕐᐸᓯᐊᓂ ᐊᑦᑕᓇᕿᔪᕐᒥᒃ ᐃᓱᒫᓗᓇᕐᑐᒥ ᓇᓗᓇᐃᑕᐅᔪᖃᓚᐅᖕᒋᑐᖅ ᖃᓂᒋᔮᓂ ᒋᐊᕈᑉ ᑕᓯᖓᓂ.
- ᓄᓇᐅᔫᑉ ᐃᓚᖕᒋᓂ ᐱᑕᖃᓚᐅᑐᖅ ᓯᑑᕐᑐᓂᒃ ᐊᕐᑯᑎᓂ ᐅᔩᓇᑐᓂᒃ ᑰᓂᖕᒋᓄᑦ ᐅᐱᖓᓵᒥᖕᖓᕐᑐᐱᓂᕐᓂᑦ. ᐊᕿᓱᕐᑕᐅᑲᓂᓚᐅᑐᑦ ᑕᐃᒃᑯᐊ ᔪᓚᐃᖑᑎᓗᒍ ᐱᔭᕆᑕᐅᓗᑎᒃ.

ᐱᔮᕆᓯᒪᔪᖅ ᐅᔭᕋᕐᕿᑕ ᓴᓇᔭᐅᓂᕐᕿᑕ ᕿᒥᕈᔭᐅᓂᕐᕿᑕ ᐅᓂᒃᑳᕐᕿᑦ ᐃᓚᐅᖃᑕᐅᔪᖅ ᐃᓚᒋᐊᕈᑦ 5ᒥ.

3.3. ᒋᐊᕈ ᑕᓯᐅᑉ ᒪᓂᔭᐃᑯᑕᑕ ᕿᒥᕈᔭᐅᓂᖓ

ᔪᓚᐃ ᓄᕗᐊᓂ 2006ᒥ, ᑕᒪᐃᓄᓗᑯᐊᐱ ᖃᐅᔨᓴᑕᐅᓂᖓ ᑲᔪᓯᑎᑕᐅᓚᐅᕐᖅ ᒪᓂᔭᐃᑯᑎᒋᓚᐅᑕᖓᑕ ᓴᓇᒪᓂᕕᓂᐊ ᐊᒻᒪᓗ ᑰᕕᕕᓂᖓ ᒋᐊᕊ ᑕᓯᖓᑕ. ᑕᒪᓇ ᑕᐃᒪᐃᓂᐅᑕᐅᓚᐅᕐᖅ ᓱᓂᔪᓂ ᑎᑎᕋᓯᒪᔪᖃᑦᑯᓗᑦ ᐊᒻᒪᓗ ᖃᐅᔨᒪᔭᐅᖅᑯᓗᒍ ᖃᓄᐃᓗᓂᕆᓚᐅᑕᖓ ᐊᓯᔨᕐᓂᑉ ᑕᒪᓗᒪ ᓄᓇᖓᓂ ᐊᒋᕐᓗᓂ ᐅᓪᓗᓂ. ᖃᓄᐃᓂᐅᕈᑕᐅᔫᒪᓂᖓ ᐊᑐᓗᓯᒪᓂᕐᒋᓗ ᖃᐅᔨᓴᑕᐅᓂᖓ ᑕᕝᕙᓂ ᐅᓂᑲᓂᐊᕐᕘᓯᒪᒥᔪᖅ ᐃᓚᒋᐊᕈᑦ 6ᒥ.

3.4. ᒋᐊᕈ ᑕᓯᖓᑕ ᓯᕕᖓᓂᕐᕿᑦ

ᖃᐅᔨᓴᓂᐅᔪᑦ ᑕᓯᐅᑉ ᓯᕕᖓᓂᖓᓂᒃ ᐱᒋᐊᓚᐅᕐᑦ ᐊᐅᔭᖓᓂ ᐊᒻᒪᓗ ᓄᕗᐊᓂ ᐊᖓᓯᒥ:

- ᔪᓚᐃ 9, 2006ᒥ - ᑕᓯᐅᑉ ᓯᕕᖓᓂᖓ 1005.43ᒦᑕᐅᓚᐅᕐᖅ (ᑮᕗᓕᕆᓂ ᐅᒃᑐᑕᐅᓗᓂ)
- ᐊᒍᓯ 20, 2006ᒥ – ᑕᓯᐅᑉ ᓯᕕᖓᓂᖓ 1005.31ᒥᑕᐅᓚᐅᕐᖅ (ᑮᕗᓕᕆᓂ ᐅᒃᑐᑕᐅᓗᓂ)

3.5. ᓴᐅᔭᐅᓯᒪᔪᑦ ᐅᓇᓂᖓᑕ ᖃᐅᔨᓴᑕᐅᓂᖓ

ᓴᓇᔭᐅᓂᖓ ᖄᓕᑕᐅᓗᓂ ᐊᐅᐸᕐᖅ ᕿᒥᑰᑉ ᑮᕗᓕᕐᐸᐅᖃᑕᐅᓚᐅᕐᖅ ᖃᓄᐃᓗᓂᕕᓂᖓᓄ ᐅᑎᑎᑕᐅᓇᓱᓂᐅᑉ ᐱᔮᕆᑕᐅᓗᓂ 2004ᕗᑎᓗᒍ ᐊᒻᒪᓗ ᓂᓚᓱᓂᖓᑕ ᐅᓇᓂᖓᑕᓗᓃᑦ ᖃᐅᔨᓴᕈᑎᕐᕿᑦ ᐃᓕᔭᐅᑕᐃᓇᓚᐅᕐᑦ 2005ᒥ. ᐋᑕᕕᖓᓂ ᐃᓕᓯᕕᐅᓯᒪᓕᕆᓚᐅᕐᓚᓗᐊᑦ ᐅᔭᕋᕐᑕᕐᑎᓂᑦ 2004 ᓯᕗᓂᐊᓂ ᐃᓕᔭᐅᓂᑯᐃᑦ. ᑭᓯᐊᓂᓕ, ᑕᑯᐊ ᖃᐅᔨᓴᕈᑎᐅᔪᑦ ᐃᓕᔭᐅᓚᐅᕐᑦ ᓴᐅᔭᐅᕕᒥᑦ ᐊᒻᒪᓗ ᐃᓕᔭᐅᑕᐃᓇᕐᓯᒪᔪᑦ 1.8ᒥᑕᒥ ᖃᐸᕐᐸᓯᐊᓂ. 2005ᕗᑎᓗᒍ ᐅᒃᑐᓚᐅᕐᑦ ᑕᑯᓂᖓ ᐃᓇᕐᕿᓯᓇᓱᒃᓗᑎᒃ ᓄᑖᕐᖁᕐᓂ ᐃᓕᓯᓗᑎᒃ. ᒪᕈᒃ ᑕᑯᓇᖓ ᑎᓴᒪᓂᑦ ᓂᓕᓇᓂᖓᑕ ᐅᒃᑐᕋᐅᑎᕐᕿᓂᑦ ᐊᓯᕚᕐᑕᐅᔪᓇᓚᐅᕐᕿᑐᑦ ᐊᔪᓯᓯᒪᓚᐅᒪᑕ ᐋᒪᔪᕐᕿᓂᑦ. ᐊᕿᓯᓯᒪᒍᑦ 2006ᒥ ᐱᔮᕆᓯᔪᒪᓗᑎᒃ ᓂᒃᓚᓱᓂᖓᑕ ᐅᒃᑐᕋᐅᑎᕐᕿᓂᒃ ᐋᑕᕐᕕᖓᓂ ᐊᒻᒪᓗ ᐱᐅᓯᑎᐸᓕᕐᓗᒋᑦ ᐃᓕᐅᖃᑕᐅᔪᑦ ᑕᒪᐃᓂ ᐊᐅᐸᕐᖅ ᕿᒥᑰᑉ ᓴᐅᔭᐅᓯᒪᕕᐊᓂ ᐊᒻᒪᓗ ᐋᑕᕐᕕᖓᓂ. ᕿᔪᓂ ᒪᑐᖃᑐᓂ ᓂᓕᓇᕐᓂᖓᑕ ᐅᒃᑐᕋᐅᑎᕐᕿᓂᒃ ᓴᓇᔪᖃᓚᐅᕐᖅ ᓇᓄᓇ ᓱᕋᑕᐅᔭᐃᑯᑕᐅᓗᑎᒃ ᐱᒧᑎᒋᓗᒍ ᒪᕈ ᑕᑯᓇᖓ ᑎᓴᒪᓂᑦ ᐊᕿᑕᐅᓯᒪᔪᓂᑦ ᓱᕋᑕᕕᓂᐅᓚᐅᒪᑕ ᓇᓄᓂᑦ ᐅᑭᐅᕗᑎᓗᒍ 2005/2006ᒥ. ᔪᓚᐃ 2006 ᑎᑎᕋᐸᓕᐊᔪᓂ ᐃᓕᓯᕕᐅᓚᐅᕐᑦ. ᑕᑯᐊ ᑎᑎᕋᐸᓕᐊᔪᑦ ᐊᕋᒍᓕᒫᖅ ᑎᑎᕋᐸᓕᐊᔪᓇᕐᑐᑦ.

3.5.1. ᐋᑕᕐᕕᐅ ᓂᓕᓇᓂᖓᑕ ᖃᐅᔨᓴᕈᑕᑕ ᑎᑎᕋᓯᒪᔪᕐᑯᑎᕐᕿᑦ

ᐃᓚᒋᐊᕈᑦ 8 ᑎᑎᕋᓯᒪᔪᑕᓕᒃ ᑎᑎᕋᐸᓕᐊᓂᑰᕐᕿᓂᒃ ᐊᒻᒪᓗ ᑎᑎᕋᓯᒪᔪᓂ ᐅᒪᖓᖓᔪᓂ ᐅᒪ ᑮᕗᓂᐊᓂ. ᑕᑯᐊ ᑕᒪᕐᒥ ᐃᓕᔭᐅᔪᑦ ᓱᓂᕐᓯᒪᓚᐅᕐᑦ, ᑕᒪᓇ ᐊᐅᓚᓂᕆᖃᑕᑕᖓ ᐃᑲᓂᓴᒪᕆᐅᔪᖅ 1.25ᒦᑕᒥᑦ ᐃᓱᒪᒋᓗᒍ ᖄᓕᓯᒪᓂᖓ 1.8ᒦᑕᒥ ᐃᔪᓂᖃᑎᓗᒍ.

3.5.2. ᐊᐅᐸᕐᖅ ᕿᒥᑰᑉ ᓴᐅᔭᐅᓯᒪᒋᖓᑕ ᓂᓚᓱᓂᖓᑕ ᖃᐅᔨᓴᐅᑎᕐᕿᑕ ᐃᓕᔭᐅᓂᕐᕿᑦ

ᑕᒪᕐᒥᓕᒫᖅ ᐃᓕᔭᐅᓚᐅᕐᑦ ᓱᓂᕐᓯᒪᓚᐅᕐᑦ ᔪᒪᐃᒥ ᑕᐃᒪᐃᓂᖓᓄᑦ ᐊᑯᓂᐅᑐᐃᓇᕆᐊᓕᒃ ᑕᒪᓇ ᖃᐸᖓ ᓱᓂᕐᐸᓕᐊᔪᓂᓛᖃᓗᐊᓗᓂ. ᑭᓯᐊᓂᓕ, ᓂᓕᓇᓂᖓ ᐱᔭᐅᓚᐅᕐᖅ ᔪᒪᐃᒥ ᐊᒍᓯᒥᓗ 2006ᕗᑎᓗᒍ ᐊᐅᒪᓂᕆᖃᑕᑕᖓ ᒪᕈᐃᓂ 1.5ᒥᑕᒥ ᐃᔪᓂᖃᑐᖅ ᐊᒻᒪᓗ ᐊᓯᖓᕐᕿ ᒪᕈᐃᓂ ᐃᒪᖃ 1.8ᒦᑕᒥ ᐃᔪᓂᖃᑐᖅ. ᖃᐅᔨᓴᓂᐅᔪᑦ ᐱᔭᐅᔪᑦ ᓴᓇᔭᐅᕙᓕᐊᑎᓗᒍ ᖄᐸᖓ ᐊᐅᐸᕐᖅ ᕿᒥᑯᓗᒥ ᓇᓗᓇᐃᓯᓚᐅᕐᖅ ᖄᐸᖓ 2.0ᒦᑕᒥ ᐃᔪᓂᖃᕆᐊᓕᒃ.

3.6. ᓯᕐᓗᐊᖅᑲᕕᒋᓚᐅᑕᖓ ᓴᕕᕋᔭᓴᑯᕕᐅᓚᐅᑦᑰᑉ ᐃᓂᒋᓚᐅᑕᖓᑕ ᓱᕈᓯᒪᓂᕕᓂᐊ

ᐅᓄᑐᐃ ᓱᕈᓯᒪᓂᕕᓂᓂᑦ ᖃᐅᔨᓴᒐᓴᐅᔪᓂ ᐱᔭᐅᔪᖃᓚᐅᕐᖅ ᐊᕋᒍᑕᒫᕈᑎᖓᓂ ᓇᓗᓇᐃᓯᔪᑕᐅᕐᑯᓗᒋᑦ ᓴᕕᕋᔭᓴᐃ ᓄᓇᖓᓂ ᖃᖓᓂ ᑐᖓᓂᓂᕐᕿᓂ ᑐᕋᒐᕆᔭᐅᔫᑉ ᐊᒻᒪᓗ ᑕᒪᓇ ᖃᓄᐃᑐᓂᖓ ᕐᑯᕙᐸᓕᐊᕐᕿᑐᖅ ᓴᕕᕋᔭᒃᓴᖃᓂᖓᓂᒃ ᐊᓂᒍᐸᓕᐊᔪᕐᓂ ᐅᓪᓗᓂ. ᑕᑯᐊ ᖃᐅᔨᓴᕈᑕᐅᔪᑦ ᑐᖓᓂᓚᐅᕐᑦ ᔪᓚᐃ 14, 2006ᕗᑎᓗᒍ ᒡᕌᓇ ᓖᑯᓂᖓᑐᒍᑦ. ᑕᒪᕐᒥᓕᒫᖅ ᓱᕈᓯᒪᔪᑦ ᓴᕕᕋᔭᒃᓴᖅᑐᕕᓃᑦ ᑐᖓᓂᑐᑦ ᓇᓚᔭᕐᕿᐅᔫᑉ ᖃᓄᐃᑐᓂᕕᓂᐊᓄ ᐅᑎᑎᑕᐅᓇᓱᒃᑑᑉ. ᓴᕕᕋᔭᒃᑐᖅ ᐊᕿᑐᖅ 106ᕗᓚᐅᕐᖅ 161ᓗ ᐊᒪ 133 ᐅᒃᑑ ᐅᒃᑐᑎᕐᔪᐊᒥ ᑭᓚᑯᕐᓛ ᐊᒻᒪᓗ ᓴᕕᕋᔭᒃᓴᐃᑦ ᑎᓯᔪᑦ 177ᕗᓗᓂ, 280 ᐊᒻᒪᓗ 871 ᐅᒃᑑᑦ ᑭᓚᑯᕐᓛ.

APPENDIX 2

2006 3rd Quarter

Garrow Lake Effluent Discharge Monitoring

by

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November 9, 2006

Bruce Donald
Reclamation Manager
Teck Cominco Metals, Ltd.
601 Knighton Road
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Canada

Dear Mr. Donald

Re: Polaris Mine 2006 3rd Quarter Report

Please find attached the Polaris Mine report for the 3rd Quarter of 2006. The report format follows the Environment Canada Metal Mining Effluent Regulation (MMER) reporting protocols.

Mining operations at Polaris ceased in 2002 and since 2005 the mine site has been closed, with no staff on site. During this time Teck Cominco has completed a three-year MMER and Environmental Effects Monitoring (EEM) program. Polaris has now achieved “closed mine status” and there are no further monitoring or reporting requirements for Environment Canada. However, monitoring and reporting requirements to meet the terms and conditions of the Water License at the site are similar to MMER requirements.

In 2006, effluent was collected by small field crews stationed temporarily onsite or by flying local residents (who had been trained to do the sampling) into site on a weekly basis. Flow initiated in Garrow Creek channel on approximately June 30, 2006, prior to Garrow Lake opening up. The first effluent sample was collected from the creek on July 6, 2006. Flow continued throughout July and August, and into mid-September. The last sample was collected on September 14, 2006, at which time Garrow Creek was nearly frozen. Due to deteriorating weather conditions and likelihood that the creek was frozen, no further attempts were made to sample after September 14, 2006.

Effluent was characterized on a weekly basis (except July 30 due to lack of a person familiar with the site and trained to sample), for a total of ten samples. All effluent

samples were analyzed as “quarterly” samples that include a wider suite of parameters than “weekly” samples. A chronology of the 2006 sampling season is presented in Appendix E.

There were no exceedences of MMER Schedule 4 Limits for the 2006 season. This is consistent with the previous three years of monitoring. Note that limnological profiles collected from Garrow Lake in May and August 2006 show a very strong vertical stratification at 10 m depth, with surface waters having low metals concentrations.

Acute bioassay testing was also conducted throughout the quarter. Three sets (i.e., rainbow trout and *Daphnia*) of acute toxicity tests were conducted on July 15, 2006, August 23, 2006, and September 9, 2006. There were laboratory issues that affected testing of the July 15, 2006 sample (rainbow trout test affected), and the September 9, 2006 test (issues with both the rainbow trout and *Daphnia magna* tests). An attempt to resample the rainbow trout test for July was made on July 26, 2006. However, the sample container had a puncture and the sample leaked out during transit and shipment was cancelled. There was no opportunity to resample for the September tests, as Garrow Creek was frozen prior to the laboratory issues being reported to Azimuth. These laboratory issues are explained in letters from Golder Associates, Ltd., provided in Appendix F. Despite these issues, there was no acute toxicity in any of the Rainbow trout and *Daphnia* tests. This is also consistent with all historic data as no acute toxicity of Garrow Creek has been observed.

Sublethal toxicity testing and receiving environment monitoring (i.e., Garrow Bay) was not conducted in 2006 because of safety and logistical issues, and because Garrow Lake and Garrow Creek chemistry did not differ in 2006 from previous years. In addition, Environment Canada requires no further monitoring.

The following information is included in the 2006 3rd Quarter MMER Report:

- Table 1a – Concentrations Of Effluent For MMER Schedule 4 Sampled Weekly
- Table 1b – Monthly Mean Concentrations Of Effluent For MMER Schedule 4
- Table 1c – Mass Loading Of Deleterious Substance For Each Day Sampled
- Table 1d – Mass Loading Per Calendar Month For Each Deleterious Substance
- Table 2 – Results of Acute Lethality Tests and *Daphnia magna* Monitoring Tests
- Table 3 – Effluent Characterization Water Quality Results (studies conducted under Part 1, Section 4) (Effluent Characterization) (Table 3)
- Table 4 – Compilation of QAQC Effluent and Water Quality Data from 2003 to 2006.

Additional Appendices

- Appendix A – Information specified by Section 8.1 of Reference Method EPS 1/Rm/13: 96 hr acute rainbow trout test

- Appendix B – Information specified by Section 8.1 of Reference Method EPS 1/Rm/14: 48 hr acute Daphnia magna test
- Appendix C – Results of Effluent Characterization, as per Paragraph 15(1)(a)
- Appendix D – Acute Toxicity Testing Reports
- Appendix E – Polaris 2006 Sampling Event Chronology
- Appendix F – Letters from Golder Associates, Ltd. explaining laboratory issues for July 15, 2006 and September 9, 2006 samples

Please contact the undersigned if you have any questions regarding the Polaris Mine 2006 3rd Quarter Report.

Sincerely,
Azimuth Consulting Group Inc.

[ORIGINAL SIGNED BY]

Cheryl Mackintosh, M.R.M., R.P.Bio.

Polaris Mine 2006 3rd Quarter MMER Report

Prepared for

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November 9, 2006

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2006 3rd QUARTER MMER REPORT

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

Table 1a. CONCENTRATIONS OF EFFLUENT FOR MMER SCHEDULE 4 SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	DELETERIOUS SUBSTANCE (mg/L)[1] Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226[1]	pH[1]	Collection Method
2-Jul-06	6-Jul-06	*0.00020*	0.00060	*0.0050*	0.00047	0.00116	0.0173	*3.0*	*0.0050*	8.00	Grab
9-Jul-06	15-Jul-06	*0.00020*	0.00064	*0.0050*	0.00034	0.00129	0.0231	*3.0*	*0.0050*	8.00	Grab
16-Jul-06	21-Jul-06	*0.00020*	0.00105	*0.0050*	0.00087	0.00153	0.0309	*3.0*	0.0200	7.43	Grab
23-Jul-06	26-Jul-06	0.00020	0.00125	*0.0050*	0.00080	0.00194	0.0308	*4.5*	*0.0050*	7.88	Grab
30-Jul-06	no sample[2]	-	-	-	-	-	-	-	-	-	-
6-Aug-06	11-Aug-06	*0.00020*	0.00076	*0.0050*	0.00084	0.00361	0.0539	*3.0*	*0.0050*	7.21	Grab
13-Aug-06	17-Aug-06	*0.00020*	0.00088	*0.0050*	0.00044	0.00435	0.0583	5.8	0.0090	7.98	Grab
20-Aug-06	23-Aug-06	0.00039	0.00106	*0.0050*	0.00111	0.00652	0.0730	3.2	0.0200	8.08	Grab
27-Aug-06	1-Sep-06	*0.00020*	0.00127	*0.0050*	0.00165	0.00630	0.0625	8.4	*0.0050*	7.97	Grab
3-Sep-06	9-Sep-06	*0.00020*	0.00118	*0.0050*	0.00098	0.00730	0.0633	*3.0*	*0.0050*	7.88	Grab
10-Sep-06	14-Sep-06	*0.00020*	0.00127	*0.0050*	0.00104	0.00766	0.0655	5.9	0.01	7.97	Grab
17-Sep-06	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]	nd[3]
24-Sep-06	nd[3]	nd[2]	nd[4]	nd[4]	nd[4]	nd[4]	nd[4]	nd[4]	nd[4]	nd[4]	nd[3]
1-Oct-06	nd[3]	nd[2]	nd[5]	nd[5]	nd[5]	nd[5]	nd[5]	nd[5]	nd[5]	nd[5]	nd[3]

Note[1] - All concentrations are in mg/L except Radium 226 which is Bq/L and pH which is in pH units 0.0730

Note [2] - it was not possible to get a trained technician to sample during the week of July 30, 2006, so a sample could not be collected.

Note [2] - "nd" refers to no effluent discharge to sample

Concentrations in italicized font are less than the detection limit shown.

Table 1b. MONTHLY MEAN CONCENTRATIONS OF EFFLUENT FOR MMER SCHEDULE 4

MONTH OF	MONTHLY MEAN CONCENTRATION[1] OF DELETERIOUS SUBSTANCE[2] Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226
July/06	0.0002	0.00089	0.0050	0.00062	0.00148	0.0255	3.4	0.0070
August/06	0.0002	0.00099	0.00500	0.00101	0.00520	0.0619	5.1	0.0098
September/06	0.0002	0.0012	0.0050	0.0010	0.0075	0.0644	4.5	nd[2]

Note[1] - All concentrations are in mg/L except Radium 226 which is Bq/L

Note[2] - Monthly Mean Concentrations - the MEAN value of the concentrations measured in all water samples collected during each month when a deleterious substance is deposited.

Table 1c. MASS LOADING OF DELETERIOUS SUBSTANCE FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	DAILY MASS LOADING OF DELETERIOUS SUBSTANCE (kg/day)[1]								Average Daily Flow Rate (m^3/day)[4]
		Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226[1]	
2-Jul-06	6-Jul-06	0.001	0.004	0.033	0.003	0.008	0.114	20	32,832	6,566
9-Jul-06	15-Jul-06	0.002	0.008	0.060	0.004	0.015	0.277	36	60,048	12,010
16-Jul-06	21-Jul-06	0.002	0.010	0.046	0.008	0.014	0.282	27	182,582	9,129
23-Jul-06	26-Jul-06	0.002	0.014	0.055	0.009	0.021	0.339	50	55,082	11,016
30-Jul-06	no sample[2]	-	-	-	-	-	-	-	-	-
6-Aug-06	11-Aug-06	0.002	0.009	0.059	0.010	0.043	0.640	36	59,376	11,875
13-Aug-06	17-Aug-06	0.002	0.010	0.058	0.005	0.050	0.672	67	103,690	11,521
20-Aug-06	23-Aug-06	0.002	0.007	0.031	0.007	0.041	0.460	20	125,954	6,298
27-Aug-06	1-Sep-06	0.001	0.008	0.030	0.010	0.038	0.378	51	30,259	6,052
3-Sep-06	9-Sep-06	0.001	0.005	0.019	0.004	0.028	0.246	12	19,422	3,884
10-Sep-06	14-Sep-06	0.000	0.001	0.005	0.001	0.007	0.064	6	9,711	971
17-Sep-06	nd[2]	0	0	0	0	0	0	0	0	0
24-Sep-06	nd[2]	0	0	0	0	0	0	0	0	0
1-Oct-06	nd[2]	0	0	0	0	0	0	0	0	0

Note[1] - Mass Loading is in kilograms per day of the deleterious substance deposited except Radium 226 which is in Bq per day

Note[2] - it was not possible to get a trained technician to sample during the week of July 30, 2006, so a sample could not be collected.

Note[3] - "nd" refers to no effluent discharge to sample

Note[4] - Discharge for September 14 was estimated by the technician as flow was too low to measure with a probe.

Table 1d. MASS LOADING PER CALENDAR MONTH FOR EACH DELETERIOUS SUBSTANCE

CALENDAR MONTH OF	MASS LOADING[1] FOR DELETERIOUS SUBSTANCE (kg/month)[2]								Average Weekly Flow Rate[3] (m^3/week)	Total Monthly Volume[4] (m^3/month)
	Arsenic	Copper	Cyanide	Lead	Nickel	Zinc	TSS	Radium 226[2]		
July/06	0.06	0.27	1.50	0.19	0.45	7.85	1,028.34	2,561,715	67,763	300,092
August/06	0.06	0.26	1.39	0.25	1.33	16.66	1,344.12	2,474,409	62,555	277,030
September/06	0.01	0.09	0.36	0.07	0.54	4.64	260.74	436,992	16,994	72,832

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Average Daily Mass Loading for the Month x # days in the month

Note[2] - Mass loading units are in kg per month except Radium 226, which is in Bq per month

Note[3] - Average Weekly Flow Rate calculated by multiplying Average Daily Flow Rate x 7 days per week

Note[4] - Total Monthly Volume calculated by multiplying Average Daily Flow Rate for the month x days in month

Table 2

RESULTS OF ACUTE LETHALITY TESTS AND
DAPHNIA MAGNA MONITORING TESTS

Date Sample Collected	Effluent Acutely Lethal to Rainbow Trout (yes or no)	Effluent Acutely Lethal to *Daphnia magna* (yes or no)
15-Jul-06	No[1]	No
23-Aug-06	No	No
9-Sep-06	n/a[2]	No[3]

[1] July 15, 2006 rainbow trout test was invalid due to a temperature control unit failure (see Appendix F).

[2] September 9, 2006 rainbow trout test had a control failure. No results are available. (See Appendix F).

[3] September 9, 2006 daphnia test was initiated outside holding times due to a laboratory error (see Appendix F).

Non-compliance Information

If effluent was non-compliant with the aurthorized limits set out in Schedule4, indicate the cause(s) of non-compliance and remedial measures planned or implemented. Also indicate remedial meaures planned or implemented in response to the failure of acute lethality tests.

There were no non-compliant concentrations, and no failed acute lethality toxicity tests during 2006 3rd Quarter for Polaris Mine.

Table 3. 2006 3rd Quarter Polaris Mine Effluent Characterization Results (Part 1, Section 4)

Effluent Characterization from Final Discharge Point - Garrow Lake Former Dam / Syphons
Northing: 75°22'32"
Easting: 96°48'37"

Facility Name:				Teck Cominco Metals Limited - Polaris Mine (Little Cornwallis Island)										
FDP Name:				Garrow Lake Syphons										
Sample ID:				G CREEK	G CREEK	G-Creek	G.Creek	G-Creek	G-Creek	G-Creek-	G-Creek 08	G-Creek	G-Creek	
Sampling Date:				6-Jul-06	15-Jul-06	21-Jul-06	26-Jul-06	11-Aug-06	17-Aug-06	23-Aug-06	1-Sep-06	9-Sep-06	14-Sep-06	
Sample Method:		MMER Schedule 4		Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	
Parameter	**Units**	**Column 2 - Monthly mean**	**Column 4 - Max in grab sample**											***Detection Limit***
Hardness	mg/L			272	346	411	429	796	1030	1480	1410	1590	1420	*2.7-5.4*
Alkalinity, Total	mg/L			38.6	46.5	47.8	46.2	67.3	98.5	125	126	129	137	*2.0*
Aluminum, Total	mg/L			<0.10	<0.10	<0.10	<0.10	<0.10	0.0148	<0.10	<0.50	<0.10	<0.10	*0.10*
Cadmium, Total	mg/L			00.0	00.0	0.000157	0.000099	0.000192	0.000236	0.000333	0.000374	0.000374	0.000404	*0.000020*
Iron, Total	mg/L			0.015	0.015	0.020	0.010	0.027	0.044	0.015	0.018	0.016	0.029	*0.010*
Mercury, Total	mg/L			-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	*0.000010*
Molybdenum, Total	mg/L			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	*0.0050*
Ammonia Nitrogen	mg/L			-	0.007	-	-	-	-	0.027	-	0.027	-	*0.005*
Nitrate Nitrogen	mg/L			0.05	0.04	0.048	0.057	0.116	0.115	0.21	0.212	0.229	0.538	*0.025 - 0.050*
Arsenic, Total	mg/L	0.50	1.00	<0.00020	<0.00020	<0.00020	0.00020	<0.00020	<0.00020	0.00039	<0.00020	<0.00020	<0.00020	*0.00020*
Copper, Total	mg/L	0.30	0.60	0.00060	0.00064	0.00105	0.00125	0.000755	0.000878	0.00106	0.00127	0.00118	0.00127	*0.000050*
Cyanide, Total	mg/L	1.00	2.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	*0.0050*
Lead, Total	mg/L	0.20	0.40	0.000468	0.000344	0.000870	0.000803	0.000843	0.000437	0.00111	0.00165	0.000976	0.00104	*0.000050*
Nickel, Total	mg/L	0.50	1.00	0.00116	0.00129	0.00153	0.00194	0.00361	0.00435	0.00652	0.00630	0.00730	0.00766	*0.000050*
Zinc, Total	mg/L	0.50	1.00	0.0173	0.0231	0.0309	0.0308	0.0539	0.0583	0.0730	0.0625	0.0633	0.0655	*0.00050*
Total Suspended Solids	mg/L	15.00	30.00	<3.0	<3.0	<3.0	<4.5	<3.0	5.8	3.2	8.4	<3.0	5.9	*3.0-4.5*
Radium-226 (a)	Bq/L	0.37	1.11	<0.0050	<0.0050	0.0200	<0.0050	<0.0050	0.0090	0.0200	<0.0050	<0.0050	0.0100	*0.0050*
pH	pH units	<6.0 or >9.5		8.00	8.00	7.43	7.88	7.21	7.98	8.08	7.97	7.88	7.97	*0.010*
Field pH	pH units			-	-	8.26	8.33	8.34	8.37	-	-	8.38	-	-
Water Temperature	°C			-	-	6.6	6.3	3.8	2.1	-	-	-0.3	-	-
Salinity	o/oo			<1.0	1.3	1.8	1.9	3.7	4.9	6.7	6.8	7.8	8.1	*1.0*
Calcium, Total	mg/L			30.8	36.9	42.2	43.5	80.2	102	142	127	146	137	*0.25-0.50*
Magnesium, Total	mg/L			47.4	61.6	74.2	77.8	145	187	273	266	296	261	*0.5-1.0*
Manganese, Total	mg/L			-	-	0.00293	-	-	-	-	-	-	0.00957	*0.00005*

Notes:
< = Less than the detection limit indicated.
(a) Results are expressed as Becquerels per litre (Bq/L). This analysis is subcontracted to SRC, Saskatoon.
[1]Original data reports are available upon request
[2]SPR-IDA = Suspended Particulate Resin consisting of immobilized iminodiacetate on a divinyl benzene polymer is used to chelate and preconcentrate metals in seawater (preparation technique).
[3]Instrumental analysis is by ICPMS = Inductively Coupled Mass Spectrometry.
[4]This analysis is carried out using procedures adapted from "StandardMethods for the Examination of Water and Wastewater" 20th Edition 1998, published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the USEPA. The procedures may involve preliminary sample treatment by acid digestion, using either hotplate or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emissionspectrophotometry ICPOES (EPA Method 6010B).
[5]All radium isotopes in the sample solution are separated by coprecipitation with lead sulfate. The precipitate is redissolved and the radium isotopes are separated by coprecipitation with barium sulfate. The precipitate is filtered and mounted on a stainless steel disk. It is then counted on an alpha spectrometer. The radium 226 alpha energy is distinct and the peak can be clearly identified.
[6]Salinity data is derived from a calculation based on the conductivity data. Conductivity is analyzed by electrode, based on APHA Method 2510 "Conductivity"

Table 3. 2006 3rd Quarter Polaris Mine Effluent Characterization Results (Part 1, Section 4)

Effluent Characterization from Final Di
Northing: 75°22'32"
Easting: 96°48'37"

Facility Name:	
FDP Name:	
Sample ID:	
Sampling Date:	
Sample Method:	

Parameter	Units	Methods[1]
Hardness	mg/L	Calculation - EPA Method 3005A, ICPOES (EPA Method 6010B)[4]
Alkalinity, Total	mg/L	Colourimetry - APHA Method 2320 (potentiometric titration)
Aluminum, Total	mg/L	ICPMS[3]
Cadmium, Total	mg/L	SPR-IDA[2], ICPMS[3]
Iron, Total	mg/L	SPR-IDA[2], ICPMS[3]
Mercury, Total	mg/L	Cold Vapour Atomic Florescence Spectrophotometry
Molybdenum, Total	mg/L	ICPMS[3]
Ammonia Nitrogen	mg/L	APHA Method 4500-NH3 (selective ion electrode)
Nitrate Nitrogen	mg/L	APHA Method 4110 (determination of inorganic ions by ion chromatography)
Arsenic, Total	mg/L	Hydride-Vapour Atomic Absorption Spectrophotometry
Copper, Total	mg/L	Chelation SPR-IDA[2], ICPMS[3]
Cyanide, Total	mg/L	Colourimetry - APHA Method 4500-CN (cynate hydrolosis using an ammonia selective electrode
Lead, Total	mg/L	Chelation SPR-IDA[2], ICPMS[3]
Nickel, Total	mg/L	Chelation SPR-IDA[2], ICPMS[3]
Zinc, Total	mg/L	Chelation SPR-IDA[2], ICPMS[3]
Total Suspended Solids	mg/L	Gravimetry - APHA Method 2540 (filtration through glass fibre filter)
Radium-226 (a)	Bq/L	Radio Chemistry[5]
pH	pH units	APHA Method 4500-H (pH electrode meter)
Field pH	pH units	Field - Hanna Instruments 98126 pH meter, or YSI Meter Model 85
Water Temperature	°C	Field - Campbell Scientific Hydrolab Model H20, or YSI Meter Model 85
Salinity	o/oo	[6]Salinity is calculated from Conductivity - APHA method 2510
Calcium, Total	mg/L	ICPMS[3]
Magnesium, Total	mg/L	ICPMS[3]
Manganese, Total	mg/L	ICPMS[3]

Table 4. Compilation of 2003 - 2006 Polaris Mine QAQC Sample Results[1] Including Field Duplicates, Field Blanks, and Transport Blanks.

Year:							2003				
Sample Type:		Original Sample	Field Duplicate		Original Sample	Field Duplicate		Original Sample	Field Duplicate		Field Blank	Field Blank
Sample ID:		T-Bay-072903	Dup-072903		G-Bay-081903	Dup-081903		G-Creek	DUP		F-Blank-081903	F-Blank
Location:		Tigumiavik Harbour Reference			Garrow Bay Exposure			Garrow Lake Syphons			n/a	n/a
Description:		Final Discharge Point		RPD[2]	Mouth of Garrow Creek Confluence		RPD[2]	Final Discharge Point		RPD[2]	Distilled Water[3]	Distilled Water[3]
Sampling Date:		29-Jul-03		(%)	19-Aug-03		(%)	16-Sep-03		(%)	19-Aug-03	16-Sep-03
Parameters	**Parameter Units**											
Hardness	mg/L	989	1020	3.04	1120	1140	1.75	1540	1470	4.76	-	<10
Alkalinity, Total	mg/L	33	33	0.00	104	104	0.00	122	119	2.52	-	-
Aluminum, Total	mg/L	<0.1	<0.1	n/a	<0.1	<0.1	n/a	<0.1	<0.1	n/a	<0.1	<0.1
Cadmium, Total	mg/L	<0.00002	<0.00002	n/a	0.00038	0.00034	11.76	0.00047	0.00047	0.00	<0.00002	<0.00002
Iron, Total	mg/L	0.01	0.01	0.00	0.05	0.05	0.00	0.04	0.03	33.33	0.01	<0.01
Mercury, Total	mg/L	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	<0.00005	<0.00005
Molybdenum, Total	mg/L	<0.002	<0.002	n/a	<0.002	<0.002	n/a	<0.005	<0.005	n/a	<0.002	<0.005
Ammonia Nitrogen	mg/L	0.03	0.04	25.00	0.03	0.03	0.00	0.04	0.02	100.00	-	-
Nitrate Nitrogen	mg/L	<0.005	<0.005	n/a	0.229	0.203	12.81	0.217	0.292	25.68	-	-
Arsenic, Total	mg/L	<0.0004	<0.0004	n/a	<0.001	<0.001	n/a	<0.001	<0.001	n/a	<0.001	<0.001
Copper, Total	mg/L	0.00023	0.0003	23.33	0.00106	0.00103	2.91	0.00099	0.00098	1.02	0.00033	0.00033
Cyanide, Total	mg/L	<0.005	<0.005	n/a	<0.005	<0.005	n/a	-	<0.005	n/a	-	-
Lead, Total	mg/L	0.00032	0.00102	68.63	0.00108	0.00213	49.30	0.00046	0.00071	35.21	0.00102	0.00018
Nickel, Total	mg/L	0.00021	0.00024	12.50	0.00304	0.00266	14.29	0.00365	0.00326	11.96	<0.00005	0.00008
Zinc, Total	mg/L	0.001	0.001	0.00	0.149	0.138	7.97	0.186	0.187	0.53	0.0014	0.0007
Total Suspended Solids	mg/L	<3	5	n/a	8	12	33.33	5	5	n/a	-	-
Radium-226 (a,b)	Bq/L	<0.005	<0.005	n/a	<0.005	<0.005	n/a	<0.005	0.008	n/a	<0.005	<0.005
pH	pH units	7.67	7.63	0.52	8.13	8.02	1.37	7.96	7.94	0.25	-	-
Salinity	o/oo	6	6	0.00	6	9	33.33	7	6	16.67	-	-
Calcium, Total	mg/L	68.4	71.2	3.93	98	101	2.97	133	127	4.72	<0.5	<1
Magnesium, Total	mg/L	199	205	2.93	211	216	2.31	294	279	5.38	<1	<2

Notes

[1]QAQC samples were collected during each EEM monitoring event. At least one field duplicate and/or one blank sample was collected during each event.

[2]RPD = Relative Percent Difference = [Absolute value (DUP-ORIG)/ORIG]*100%

Cells in grey shading have RPD values >50% for co-located field duplicates

[3]Commercial distilled water transported to mine site.

2003 QAQC Results

A total of 3 duplicate samples and 2 blank samples were collected during the 2003 EEM program at Polaris mine. All RPD values were less than 50%, with the exception of one measurement of ammonia on September 16, 2003. This data indicate good reproducibility between co-located field duplicates (i.e., low measurement and analytical variability).

Blank samples were typically less than, or slightly higher than detection limits, revealing no background contamination issues.

Table 4. Compilation of 2003 - 2006 Polaris Mine QAQC Sample Results[1] Including Field Duplicates, Field Blanks, and Transport Blanks.

Year:		2004											
Sample Type:		Field Duplicate	Original Sample		Field Duplicate	Original Sample		Field Duplicate	Original Sample		Field Duplicate	Original Sample	
Sample ID:		Dup	G Creek		DUP	G BAY		FIELD DUP	G CREEK		Dup	G Creek	
Location:		Garrow Lake Syphons			Garrow Bay Exposure			Garrow Lake Syphons			Garrow Lake Syphons		
Description:		Final Discharge Point		RPD[2]	Mouth of Garrow Creek Confluence		RPD[2]	Final Discharge Point		RPD[2]	Final Discharge Point		RPD[2]
Sampling Date:		7-Jul-04		(%)	27-Jul-04		(%)	17-Aug-04		(%)	24-Aug-04		(%)
Parameters	**Parameter Units**												
Hardness	mg/L	1400	1400	0.00	532	482	10.37	997	973	2.47	1380	1380	0.00
Alkalinity, Total	mg/L	132	138	4.35	38.6	37.5	2.93	113	111	1.80	128	128	0.00
Aluminum, Total	mg/L	0.26	0.34	23.53	0.031	0.033	6.06	<0.10	<0.1	n/a	<0.10	<0.1	n/a
Cadmium, Total	mg/L	0.000582	0.000588	1.02	0.000062	0.00007	11.43	0.000224	0.00023	2.61	0.000342	0.000335	2.09
Iron, Total	mg/L	0.441	0.487	9.45	0.035	0.046	23.91	0.039	0.042	7.14	0.015	0.014	7.14
Mercury, Total	mg/L	<0.000010	<0.00001	n/a	<0.000050	<0.00005	n/a	<0.000010	<0.00001	n/a	<0.000010	<0.00001	n/a
Molybdenum, Total	mg/L	<0.0050	<0.005	n/a	0.00129	0.00156	17.31	<0.0050	<0.005	n/a	<0.0050	<0.005	n/a
Ammonia Nitrogen	mg/L	0.069	0.071	2.82	<0.020	<0.02	n/a	0.163	0.146	11.64	0.114	0.133	14.29
Nitrate Nitrogen	mg/L	0.284	0.277	2.53	0.0371	0.0372	0.27	0.54	0.525	2.86	0.529	0.531	0.38
Arsenic, Total	mg/L	<0.0010	<0.001	n/a	<0.0010	<0.001	n/a	<0.00020	<0.0002	n/a	<0.00020	<0.0002	n/a
Copper, Total	mg/L	0.00252	0.00265	4.91	0.000342	0.000405	15.56	0.00121	0.00121	0.00	0.00140	0.00134	4.48
Cyanide, Total	mg/L	<0.0050	<0.005	n/a	<0.0050	<0.005	n/a	<0.0050	<0.005	n/a	<0.0050	<0.005	n/a
Lead, Total	mg/L	0.0024	0.00269	10.78	0.000205	0.00026	21.15	0.00187	0.00177	5.65	0.00116	0.00119	2.52
Nickel, Total	mg/L	0.00438	0.00442	0.90	0.000772	0.000979	21.14	0.00676	0.00644	4.97	0.00971	0.00967	0.41
Zinc, Total	mg/L	0.196	0.198	1.01	0.019	0.0242	21.49	0.0418	0.0418	0.00	0.0514	0.0498	3.21
Total Suspended Solids	mg/L	120	117	2.56	7	3.7	89.19	<3.0	5.3	n/a	3.7	4.4	15.91
Radium-226 (a,b)	Bq/L	0.02	0.02	0.00	<0.0050	<0.005	n/a	<0.0050	0.01	n/a	<0.0050	0.008	n/a
pH	pH units	8.06	8.05	0.12	7.76	7.91	1.90	8.02	7.95	0.88	7.93	7.84	1.15
Salinity	o/oo	-	-	-	-	-	-	-	-	-	-	-	-
Calcium, Total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium, Total	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Notes

[1]QAQC samples were collected during each EEM monitoring event. At least one field duplicate and/or one blank sample was collected during each event.

[2]RPD = Relative Percent Difference = [Absolute value (DUP-ORIG)/ORIG]*100%

Cells in grey shading have RPD values >50% for co-located field duplicates

[3]Distilled water from onsite distiller.

2004 QAQC Results

A total of 4 duplicate samples and 3 blank samples were collected during the 2004 EEM program at Polaris mine. All RPD values were less than 50%, with the exception of one measurement of TSS on July 27, 2004. This data indicate good reproducibility between co-located field duplicates (i.e., low measurement and analytical variability).

Blank samples were typically less than, or slightly higher than detection limits, revealing no background contamination issues.

Table 4. Compilation of 2003 - 2006 Polaris Mine QAQC Sample Results[1] Including Field Duplicates, Field Blanks, and Transport Blanks.

Year:		2004				2005					
Sample Type:		Field Blank	Transport Blank	Field Blank	Field Blank	Field Duplicate	Original Sample		Field Duplicate	Original Sample	
Sample ID:		F Blank	T Blank	F BLANK	FIELD BLANK	Dup	G Creek		DUP	G-Creek	
Location:		n/a	n/a	n/a	n/a	Garrow Lake Syphons			Garrow Lake Syphons		
Description:		Distilled Water[3]	Distilled Water[3]	Distilled Water[3]	Distilled Water[3]	Final Discharge Point		RPD[2]	Final Discharge Point		RPD[2]
Sampling Date:		7-Jul-04	7-Jul-04	27-Jul-04	17-Aug-04	6-Jul-05		(%)	16-Jul-05		(%)
Parameters	**Parameter Units**										
Hardness	mg/L	<0.54	<0.54	-	<0.54	140	149	6.0	187	184	1.6
Alkalinity, Total	mg/L	-	-	-	<1.0	28.0	28.1	0.4	29.0	29.2	0.7
Aluminum, Total	mg/L	<0.10	<0.10	<0.0010	<0.0010	<0.10	<0.20	n/a	0.0087	0.0085	2.4
Cadmium, Total	mg/L	<0.000020	<0.000020	<0.000050	<0.00020	0.000040	0.000034	17.6	0.000049	0.000044	11.4
Iron, Total	mg/L	<0.010	<0.010	<0.030	<0.030	0.013	0.012	8.3	0.043	0.043	0.0
Mercury, Total	mg/L	<0.000010	<0.000010	<0.000050	<0.000010	<0.000010	<0.000010	n/a	<0.000010	<0.000010	n/a
Molybdenum, Total	mg/L	<0.0050	<0.0050	<0.000050	<0.0010	<0.0050	<0.0050	n/a	<0.0050	<0.0050	n/a
Ammonia Nitrogen	mg/L	-	-	-	0.028	0.032	0.036	11.1	0.044	0.037	18.9
Nitrate Nitrogen	mg/L	-	-	-	<0.0050	0.028	0.032	12.5	<0.050	<0.050	n/a
Arsenic, Total	mg/L	<0.0010	<0.0010	<0.0010	<0.00020	0.00021	<0.00020	n/a	<0.00020	<0.00020	n/a
Copper, Total	mg/L	0.00012	0.00012	0.00023	<0.0010	0.000295	0.000240	22.9	0.000376	0.000424	11.3
Cyanide, Total	mg/L	-	-	-	<0.0050	<0.0050	<0.0050	n/a	0.0058	0.0444	86.9
Lead, Total	mg/L	0.00017	0.00021	0.000209	<0.0010	0.000241	0.000166	45.2	0.000409	0.000415	1.4
Nickel, Total	mg/L	<0.00050	<0.00050	<0.00050	<0.0010	0.000673	0.000601	12.0	0.000819	0.000807	1.5
Zinc, Total	mg/L	0.0012	<0.0010	0.0025	<0.0050	0.0136	0.0127	7.1	0.0185	0.0179	3.4
Total Suspended Solids	mg/L	-	-	-	<3.0	<3.0	4.0	n/a	<3.0	<3.0	n/a
Radium-226 (a,b)	Bq/L	<0.0050	0.006	-	<0.0050	<0.0050	0.0050	n/a	<0.0050	0.009	n/a
pH	pH units	-	-	-	5.51	7.62	7.49	1.7	7.58	7.59	0.1
Salinity	o/oo	-	-	-	-	<1.0	<1.0	n/a	<1.0	<1.0	n/a
Calcium, Total	mg/L	-	-	-	-	16.5	19.1	13.6	21.4	21.1	1.4
Magnesium, Total	mg/L	-	-	-	-	24.0	24.6	2.4	32.3	31.9	1.3

Notes

[1]QAQC samples were collected during each EEM monitoring event. At least one field duplicate and/or one blank sample was collected during each event.

[2]RPD = Relative Percent Difference = [Absolute value (DUP-ORIG)/ORIG]*100%

Cells in grey shading have RPD values >50% for co-located field duplicates

[3]Distilled water from onsite distiller, stored for 1 year in jerry cans onsite.

[4]Commercial distilled water transported to mine site.

2005 QAQC Results

A total of 3 duplicate samples and 5 blank samples were collected during the 2005 EEM program at Polaris mine. All RPD values were less than 50%, with the exception of one measurement of cyanide on July 16, 2005. Cyanide is not used in the process and is typically measured at less than the detection limit. With the exception of the aforementioned cyanide measurement, which is questionable, the data generally indicate good reproducibility between co-located field duplicates (i.e., low measurement and analytical variability).

Blank samples from the on-site distilled water that had been stored indicated relatively high levels of zinc, copper, and lead. This contamination was considred to be a result of the storage procedure and metal leaching from the metal jerry cans that the water was stored in for the year. The transport blanks using commmercial distilled water indicated low concentrations of all paramters (i.e., typically less than, or slightly higher than detection limits), which reveals no background contamination issues with the analysis.

Table 4. Compilation of 2003 - 2006 Polaris Mine QAQC Sample Results[1] Including Field Duplicates, Field Blanks, and Transport Blanks.

Year:		2005			2005					2006		
Sample Type:		Field Duplicate	Original Sample		Field Blank	Field Blank	Field Blank	ALS Travel Blank	ALS Travel Blank	Travel Blank 1	Travel Blank 2	GL- BLANK
Sample ID:		Dup	Ref									
Location:		Garrow Bay Reference			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Description:		~1km NE of confluence with Garrow Creek		RPD[2]	Distilled Water[3]	Distilled Water[3]	Distilled Water[3]	Distilled Water[4]	Distilled Water[4]	Distilled Water[3]	Distilled Water[4]	Distilled Water[3]
Sampling Date:		6-Aug-05		(%)	6-Jul-05	16-Jul-05	6-Aug-05	24-Aug-05	24-Aug-05	22-May-06	22-May-06	21-Aug-05
Parameters	**Parameter Units**											
Hardness	mg/L	852	840	1.4	3.07	<0.54	0.85	<0.50	<0.50	<5.4	<5.4	-
Alkalinity, Total	mg/L	53.8	53.5	0.6	3.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-
Aluminum, Total	mg/L	<0.10	<0.10	n/a	<0.0010	<0.0050	<0.10	<0.0010	<0.0010	<0.0010	<0.0010	<0.20
Cadmium, Total	mg/L	<0.000020	<0.000020	n/a	<0.000050	<0.000020	<0.000050	<0.000020	<0.000050	<0.000050	<0.000020	<0.000020
Iron, Total	mg/L	0.011	0.011	0.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030	<0.010	<0.010
Mercury, Total	mg/L	<0.000010	<0.000010	n/a	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum, Total	mg/L	<0.0050	<0.0050	n/a	<0.000050	<0.0050	<0.0050	<0.000050	<0.000050	<0.000050	<0.000050	<0.0050
Ammonia Nitrogen	mg/L	<0.020	<0.020	n/a	<0.020	<0.020	<0.020	-	-	-	-	-
Nitrate Nitrogen	mg/L	0.0348	0.0261	33.3	<0.0050	<0.0050	<0.0050	-	-	-	-	-
Arsenic, Total	mg/L	<0.00020	0.00024	n/a	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Copper, Total	mg/L	0.000321	0.000305	5.2	0.00484	0.00167	0.0244	<0.000050	<0.00010	<0.00010	<0.000050	0.000315
Cyanide, Total	mg/L	<0.0050	<0.0050	n/a	<0.0050	<0.0050	<0.0050	-	-	-	-	-
Lead, Total	mg/L	0.000062	0.000078	20.5	0.00212	0.00607	0.0445	<0.000050	<0.000050	<0.000050	<0.000050	0.000267
Nickel, Total	mg/L	0.000460	0.000412	11.7	<0.00010	<0.000050	<0.00050	<0.000050	<0.00010	<0.00050	<0.000050	0.000111
Zinc, Total	mg/L	0.00165	0.00122	35.2	0.0080	0.00440	0.0040	<0.00050	<0.0010	<0.0010	<0.00050	0.00110
Total Suspended Solids	mg/L	<3.0	<3.0	n/a	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	15.3	-
Radium-226 (a,b)	Bq/L	0.0060	<0.0050	n/a	<0.0050	<0.0050	<0.0050	-	-	-	-	-
pH	pH units	7.80	7.89	1.1	6.27	5.59	6.17	5.51	5.53	5.87	5.84	-
Salinity	o/oo	4.6	4.6	0.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
Calcium, Total	mg/L	58.1	57.6	0.9	1.23	0.084	0.341	<0.050	<0.050	<0.50	<0.50	0.270
Magnesium, Total	mg/L	172	169	1.8	<0.10	<0.10	<0.10	<0.050	<0.050	<1.0	<1.0	0.50

Notes

[1]QAQC samples were collected during each EEM monitoring event. At least one field duplicate and/or one blank sample was collected during each event.

[2]RPD = Relative Percent Difference = [Absolute value (DUP-ORIG)/ORIG]*100%

Cells in grey shading have RPD values >50% for co-located field duplicates

[3]Distilled water from onsite distiller, stored for 1 year in jerry cans onsite.

[4]Commercial distilled water transported to mine site.

2006 QAQC Results

Blank samples were typically less than, or slightly higher than detection limits, revealing no background contamination issues.

POLARIS MINE – 2006 3rd QUARTER MMER REPORT

APPENDIX A

i. Information specified by Section 8.1 of Reference Method EPS 1/Rm/13: 96 hr acute rainbow trout test

APPENDIX B

i. Information specified by Section 8.1 of Reference Method EPS 1/Rm/14: 48 hr acute *Daphnia magna* test

APPENDIX C

i. Results of Effluent Characterization, as per Paragraph 15(1)(a)

APPENDIX D

i. Acute toxicity testing laboratory reports

APPENDIX E

i. Polaris 2006 Sampling Event Chronology

APPENDIX F

i. Letters from Golder Associates, Ltd. explaining laboratory issues for July 15, 2006 and September 9, 2006 toxicity tests

APPENDIX A

96-h Acute Rainbow Trout Toxicity Test

Section 8.1.1 Effluent

i. Name & location of operation generating the effluent
   - Polaris Mine, Little Cornwallis Island, Nunavut
   - Final Discharge Point for Garrow Lake is geo referenced as 75° 22' 32" N, 97° 48' 37" W.

ii. Date & time of sampling
   - Samples for monthly acute toxicity testing were collected
   - Test 1: Saturday July 15, 2006 – 1600h
   - Test 2: Wednesday August 23, 2006 – 1000h
   - Test 3: Saturday September 9, 2006 – 1030h

iii. Type of sample
   - Final discharge point effluent water

iv. Brief description of sampling point
   - 20m downstream of the siphon discharge point at Garrow Lake dam

v. Sampling method
- Water was collected from at least 15cm below the surface using a water pump with silicon tubing
- Water was collected from the upstream direction
- The pump was flushed with site water for at least one minute prior to sample collection
- 2 x 20L sample bottles were filled

vi. Name of person submitting samples
   - Dennis Lu (Gartner Lee) Test 1, Test 2
   - Rick Gaulton (Narwhal Arctic Services) Test 3

vii. Labeling/coding of sample (Sample IDs)
   - Test 1 – G-CREEK_ACUTE_07142006
   - Test 2 – G-CREEK 08232006
   - Test 3 – G-Creek_09

viii. Date & time of sample receipt
   - Samples for sublethal toxicity testing were received:
     Test 1 – Tuesday July 19, 2006 – 1020h
     Test 2 – Monday August 28, 2006 – 1300h
     Test 3 – Wednesday September 13, 2006 – 1130h

ix. Temperature upon sample receipt at laboratory
   - Test 1 – 18.4 °C
   - Test 2 – 17.0 °C
   - Test 2 – 14.7 °C

Section 8.1.2 Test Facilities and Conditions

i. Test type & method
   - 96-hour Rainbow Trout LC_{50}

ii. Indications of deviations from requirements in Sections 2 to 7 of Method EPS 1/RM/13[1]
   - Test 1: Test was invalid due to a temperature control unit failure at the laboratory. Results were not reported. See **Appendix F** for further details.
   - Test 2: No deviations from requirements
   - Test 3: Test was invalid due to a control failure in the test. Results were not reported. See **Appendix F** for further details.

iii. Name and city of testing laboratory
- Golder Associates Ltd., North Vancouver, BC

[1] Results were reported only for Test 2. Both Test 1 and Test 3 had laboratory issues, which rendered them invalid. See **Appendix F** for further details.

iv. Source of test species
- Sun Valley

v. Percent mortality of fish in stock tank(s)
- Test 2: 1.1%

vi. Species of test organism
- Rainbow Trout (*Oncorhynchus mykiss*)

vii. Date and time for start of definitive test
- Test 2: August 28, 2006 – 1440h

viii. Person(s) performing the test and verifying the results
- Test 2: Robert Harrison, Lee Card, Julianna Kalocai

ix. pH, temperature, dissolved oxygen, and conductivity of unadjusted, undiluted effluent
- Test 2: pH – 8.0, T - 15.0 °C, DO - 10.3 mg/L, C – 11550 µS/cm

x. Confirmation that no adjustment of sample or solution pH occurred
- Test 2: No pH adjustment

xi. Indication of aeration of test solutions before introduction of fish
- Test 2: 6.5 ± 1 mL/min/L for 30mins

xii. Concentrations and volumes tested
- Concentrations (% effluent volume / total volume) tested and total volumes used were:
- Control (0%) - 10 L
- 6.25% - 10 L
- 12.5% - 10 L
- 25% - 10 L
- 50% - 10 L
- 100% - 10 L

xiii. Measurements of dissolved oxygen, pH and temperature

Sample Collection Date	Test Concentration (% v/v)	Temperature (0hr) (°C)	Temperture (96hr) (°C)	Dissolved Oxygen (0hr) (mg/L)	Dissolved Oxygen (96hr) (mg/L)	pH (0hr) pH units	pH (96hr) pH units	Conductivity (0hr) uS/cm
Test 2	0 (Control)	15	14	10.3	9.8	7.2	6.7	42
23-Aug-06	6.25	15	14	10.3	9.6	7.4	7.0	1480
	12.5	15	14	10.3	9.8	7.7	7.2	2060
	25	15	14	10.3	9.8	7.9	7.3	3630
	50	15	14	10.3	9.6	8.0	7.5	6510
	100	15	14	10.3	9.6	8.0	7.8	11540

xiv. Number of fish added to each test vessel
- Test 2: 10 fish/ 12 L vessel

xv. Mean and range of fork length of control fish at end of test
- Test 2: 36 mm (32 – 44)

xvi. Mean wet weight of individual control fish at end of the test
- Test 2: 0.40 g (0.28 – 0.61)

xvii. Estimated loading density of fish in test solutions
- Test 2: 0.33 g/L

Section 8.1.3 Results

i. Number of mortalities of fish in each test solution
- Test 2:

- Control (0%) - 0
- 6.25% - 0
- 12.5% - 0
- 25% - 1
- 50% - 2
- 100% - 3

ii. Number of control fish showing atypical/stressed behaviour
- None in Test 2

iii. Mean mortality rate in solutions of effluent and control water
- Test 2:
- Control (0%) - 0%
- 6.25% - 0%
- 12.5% - 0%
- 25% - 10%
- 50% - 20%
- 100% - 30%

iv. Estimate of 96-h LC50 in multi-concentration tests
- Test 1: 96hr LC_{50} concentration > 100% effluent[2]
- Test 2: 96hr LC_{50} concentration > 100% effluent

v. Most recent 96-h LC50 for reference toxicity test(s)
- Reference toxicity tests for Toxicant: SDS
- Test 2: (August 21, 2006) 96-h LC_{50} = 27 mg/L SDS, 95% CL = 23-31 mg/L

vi. Reference toxicant warning limits (mean +/- 2SD)
- Reference toxicity tests for Toxicant: SDS
- Test 2: 96-h LC_{50} = 28 +/- 13 mg/L SDS

[2] Although Test 1 was invalid due to a temperature control unit failure, the 96hr LC50 would be estimated to be >100% v/v. See **Appendix F** for further details.

APPENDIX B

48-h Acute *Daphnia magna* Toxicity Test

Section 8.1.1 Effluent

i. Name & location of operation generating the effluent
   - Polaris Mine, Little Cornwallis Island, Nunavut
   - Final Discharge Point for Garrow Lake is geo referenced as 75° 22' 32" N, 97° 48' 37" W.

ii. Date & time of sampling
   - Samples for monthly acute toxicity testing were collected
   - Test 1: Saturday July 15, 2006 – 1600h
   - Test 2: Wednesday August 23, 2006 – 1000h
   - Test 3: Saturday September 9, 2006 – 1030h

iii. Type of sample
   - Final discharge point effluent water

iv. Brief description of sampling point
   - 20m downstream of the siphon discharge point at Garrow Lake dam

v. Sampling method
   - Water was collected from at least 15cm below the surface using a water pump with silicon tubing
   - Water was collected from the upstream direction
   - The pump was flushed with site water for at least one minute prior to sample collection
   - 2 x 20L sample bottles were filled

vi. Name of person submitting samples
   - Dennis Lu (Gartner Lee) Test 1, Test 2
   - Rick Gaulton (Narwhal Arctic Services) Test 3

vii. Labeling/coding of sample (Sample IDs)
   - Test 1 – G-CREEK_ACUTE_07142006
   - Test 2 – G-CREEK 08232006
   - Test 3 – G-Creek_09

viii. Date & time of sample receipt
   - Samples for sublethal toxicity testing were received:
     Test 1 – Tuesday July 19, 2006 – 1020h
     Test 2 – Monday August 28, 2006 – 1300h
     Test 3 – Wednesday September 13, 2006 – 113

ix. Temperature upon sample receipt at laboratory
   i. Test 1 – 18.4 °C
   ii. Test 2 – 17.0 °C
   iii. Test 2 – 14.7 °C

Section 8.1.2 Test Facilities and Conditions

ii. Test type & method
   - 48-hour *Daphnia magna* LC_{50}

iii. Indications of deviations from requirements in Sections 2 to 7 of Method EPS 1/RM/13
   - Test 1 and Test 2: No deviations from requirements
   - Test 3: Testing was initiated 7 days outside the holding time, due to a laboratory error. Results have been reported. See **Appendix F** for further details.

iv. Name and city of testing laboratory
   - Golder Associates Ltd., North Vancouver, BC

v. Species of test organism
   - *Daphnia magna*

vi. Date and time for start of definitive test
   - Test 1: July 19, 2006 – 1530h
   - Test 2: August 28, 2006 – 1435h

- Test 3: September 21, 2006 – 0920h

vii. Person(s) performing the test and verifying the results
- Test 1: Jacquelyn Paterson, Marriah Grey, Lee Card, Julianna Kalocai
- Test 2: Jacquelyn Paterson, Mike Brassil, Julianna Kalocai
- Test 2: Jacquelyn Paterson, Lee Card, Jacquelyn Shrimer, Julianna Kalocai

viii. pH, temperature, dissolved oxygen, and conductivity of unadjusted, undiluted effluent
- Test 1: pH - 7.7, T – 20.0 °C, DO – 9.1 mg/L, C – 2650 µmhos/cm
- Test 2: pH - 7.9, T – 23.5 °C, DO - 10.5 mg/L, C – 11630 µmhos/cm
- Test 3: pH - 7.9, T – 19.5 °C, DO – 8.5 mg/L, C – 12600 µmhos/cm

ix. Confirmation that no adjustment of sample or solution pH occurred
- Test 1: No pH adjustment
- Test 2: No pH adjustment
- Test 2: No pH adjustment

x. Indication of any adjustment of hardness of effluent sample
- Test 1: No hardness adjustment (initial hardness = 332 mg/L)
- Test 2: No hardness adjustment (initial hardness = 1400 mg/L)
- Test 3: No hardness adjustment (initial hardness = 1588 mg/L)

xi. Indication of any aeration of sample
- Test 1: No aeration
- Test 2: 25-50 mL/min/L for 15mins
- Test 3: No aeration

xii. Concentrations and volumes tested
- Concentrations (% effluent volume / total volume) tested and total volumes used for Test 1, Test 2, and Test 3 were:
- Control (0%) - 200 mL
- 6.25% - 200 mL
- 12.5% - 200 mL
- 25% - 200 mL
- 50% - 200 mL
- 100% - 200 mL

xiii. Measurements of dissolved oxygen, pH and temperature

Sample Collection Date	Test Concentration (% v/v)	Temperature (0hr) (°C)	Temperture (48 hr) (°C)	Dissolved Oxygen (0hr) (mg/L)	Dissolved Oxygen (48hr) (mg/L)	pH (0hr) pH units	pH (48hr) pH units	Conductivity (0hr) umhos/cm	Hardness (0hr) (mg/L)
Test 1	0 (Control)	20	20.5	9.1	8.8	7.8	7.5	322	88
15-Jul-06	6.25	20	20.5	9.1	8.8	7.7	7.5	483	
	12.5	20	20.5	9.1	8.8	7.7	7.5	620	
	25	20	20.5	9.1	8.8	7.7	7.5	933	
	50	20	20.5	9.1	8.8	7.7	7.6	1510	
	100	20	20.5	9.1	8.8	7.7	7.6	2650	332
Test 2	0 (Control)	20	20	9	8.4	7.6	7.3	298	82
23-Aug-06	6.25	20	20	9	8.4	7.6	7.5	1114	
	12.5	20	20.5	9	8.4	7.7	7.6	1886	
	25	20	20.5	9	8.4	7.8	7.6	3370	
	50	20.5	20.5	8.9	8.4	7.8	7.7	6220	
	100	21	20.5	8.9	8.4	7.9	7.9	11630	1400

Sample Collection Date	Test Concentration	Temperature (0hr)	Temperture (48 hr)	Dissolved Oxygen (0hr)	Dissolved Oxygen (48hr)	pH (0hr)	pH (48hr)	Conductivity (0hr)	Hardness (0hr)
Test 3	0 (Control)	20	20	9.1	8.9	7.5	7.4	323	60
9-Sept-06	6.25	20	20	9.1	8.9	7.7	7.6	1093	
	12.5	20	20	9.1	8.9	7.7	7.7	1798	
	25	20	20	9.1	8.9	7.7	7.8	3360	
	50	20	20	9	8.9	7.8	7.9	6190	
	100	19.5	20	8.5	9	7.9	8.0	12600	1588

xiv. Estimates of time to first brood, average number of neonates per brood, and percent mortality during the seven-day period prior to the test

- Test 1: 8 days to brood, >17 neonates/brood, 3% mortality in 7d prior to test
- Test 2: 8 days to brood, >18 neonates/brood, 2.5% mortality in 7d prior to test
- Test 3: 8 days to brood, >26 neonates/brood, 2% mortality in 7d prior to test

xv. Number of neonates per test vessel and milliliters of solution per daphnid

- Methods for all tests and dilution series were the same:
- 10 neonates per vessel
- 200 mL of solution per vessel
- 20 mL of solution per daphnid

Section 8.1.3 Results

i. Number of dead and/or immobile daphnids in each test solution including controls
   - Results were the same for Test 1, Test 2 and Test 3, except where noted
   - Control (0%) - 0 dead / immobile
   - 6.25% - 0 dead / immobile
   - 12.5% - 0 dead / immobile
   - 25% - 0 dead / immobile
   - 50% - 0 dead / immobile
   - 100% - 0 dead / immobile (Test 1); 3 dead / immobile (Test 2); 2 dead / immobile (Test 3)

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.
   - Single concentration test was not conducted, dilution series tests were conducted

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.
   - Test 1: 48-h LC_{50} = > 100% effluent; EC50 >100% (only reported if observed); statistical method not applicable due to lack of toxicity
   - Test 2: 48-h LC_{50} = > 100% effluent EC50 >100% (only reported if observed); statistical method not applicable due to lack of toxicity
   - Test 3: 48-h LC_{50} = > 100% effluent EC50 >100% (only reported if observed); statistical method not applicable due to lack of toxicity

iv. Most recent 48-h LC50 for reference toxicant test(s), reference chemical(s), date test initiated, historic geometric mean LC50 and warning limits.
   - Reference toxicity tests for Toxicant: Zinc
   - Test 1: (Jul-12-06) 48-h LC_{50} = 435 µg/L Zinc, 95% CL = 364 – 521 µg/L
   - Test 2: (Aug-22-06) 48-h LC_{50} = 707 µg/L Zinc, 95% CL = 564 – 887 µg/L
   - Test 3: (Sept-14-06) 48-h LC_{50} = 302 µg/L Zinc, 95% CL = 220 – 414 µg/L

v. Reference toxicant warning limits (mean +/- 2 SD)
   - Reference toxicity tests for Toxicant: Zinc
   - Test 1: 48-h LC_{50} = 782 (+/- 621) µg/L Zinc
   - Test 2: 48-h LC_{50} = 738 (+/- 620) µg/L Zinc
   - Test 3: 48-h LC_{50} = 736 (+/- 599) µg/L Zinc

APPENDIX C

Results of Effluent Characterization as per Paragraph 15(1)(a)

RESULTS OF EFFLUENT CHARACTERIZATION

AS PER PARAGRAPH 15(1)(a)

Ten MMER effluent samples were collected during the 3rd Quarter of 2006 between July 6, 2006 and September 14, 2006. All ten effluent samples were analyzed as "quarterly" and were thus analyzed for a wider suite of elements, as per EEM guidance. Monthly loadings of metals to Garrow Bay were calculated based on average weekly discharge volumes from Garrow Lake to Garrow Bay via the creek outflow.

Due to the high Arctic, remote location of the mine, travel into or out of the mine site can be hazardous due to weather conditions such as fog and snow. As the mine has ceased operations and little infrastructure exists onsite, sampling this season was conducted by small field crews stationed onsite, or by flying technicians in on a weekly basis to collect the MMER samples. No sample was collected the week of July 30, 2006 as it was not possible to transport a trained sampler to site. All other weeks were sampled.

There were no exceedances of any Schedule 4 discharge limits during the quarter.

Water samples for acute and sublethal toxicity testing were collected using a pump system from about 20 m downstream of the historic dam location on Garrow Lake, within the main flow of the creek. Acute lethality toxicity samples (i.e., 96-hr Rainbow Trout and 48-hr *Daphnia magna*) were collected on July 15, 2006, August 23, 2006, and September 9, 2006. Unfortunately there were laboratory issues that affected some of the toxicity tests conducted in the 2006 season. The July 15, 2006 Rainbow Trout test was rendered invalid due to a temperature control unit failure. The test was completed and an LC_{50} of >100% was estimated (**Appendix F**); however, a laboratory report was not produced due to the invalidity of the test. The September 9, 2006 Rainbow Trout test had a control failure, and was also rendered invalid (**Appendix F**). An LC_{50} estimate was not possible for this test, and reporting was not possible. The September 9, 2006 *Daphnia magna* test was initiated 7 days outside the test holding time due to a laboratory oversight (**Appendix F**). Testing and reporting was completed on this sample, and no toxicity was observed. Despite these laboratory issues, there were no adverse effects observed in any of the 96-hr Rainbow Trout toxicity tests, or the 48-hr *Daphnia magna* toxicity tests. LC_{50} values were >100% effluent for both species in all testing events.

Zinc is the primary contaminant of potential concern (COPC) identified in mine effluent. Concentrations of zinc during 2006 averaged 48 µg/L and ranged between 17 and 73 µg/L, which are well below the MMER effluent limit of 500µg/L. These concentrations are also lower than those measured in 2003, 128µg/L (range 48 – 186µg/L), and in 2004, 72 µg/L (range 35 – 198 µg/L), but similar to those measured in 2005, 39 µg/L (range 13 – 91 µg/L). There is an overall decreasing pattern in zinc concentrations between 2003 and 2005, with concentrations apparently leveling off in 2006. Note the CCME guideline for zinc is 30 µg/L and the BC AWQG guidelines are 7.5 and 33 µg/L, for the chronic and acute guidelines, respectively. Concentrations of zinc in Polaris mine effluent were not substantially higher than these guidelines in both 2005 and 2006.

APPENDIX D

Acute Toxicity Testing Laboratory Reports

Golder Associates Ltd.

195 Pemberton Avenue
North Vancouver, British Columbia, Canada V7P 2R4
Telephone 604-986-4331
Fax 604-662-8548

E/06/1023
04-1424-044

August 16, 2006

Azimuth Consulting Group Ltd.
218-2902 West Broadway
Vancouver, BC
V6K 2G8

Attention: Cheryl Mackintosh

RE: TOXICITY TESTING ON THE SAMPLE IDENTIFIED AS G-CREEK-ACUTE-07142006 (COLLECTED JULY 15, 2006) WORK ORDER: 0600324.

Dear Ms. Mackintosh:

We are pleased to provide you with the results of the toxicity tests performed on the effluent sample identified as G-Creek-Acute-07142006 collected July 15, 2006. The sample was tested with the 48-h *Daphnia magna* LC50 toxicity test. Testing was performed according to the Environment Canada protocol for conducting acute toxicity tests using *D. magna* (EPS 1/RM/14, Second Edition, 2000). An independent Golder QA/QC review confirmed that all acceptability criteria specified by the protocol were met. The results are presented in Table 1.

Should you have any questions or comments regarding this report, please do not hesitate to contact the undersigned at 604-986-4331.

Yours very truly,
GOLDER ASSOCIATES LTD.

Jennifer Young, B.Sc.
Bioassay Team Leader – Cladoceran Team

Verified By:

QA/QC Committee:
Julianna Kalocai, M.Sc.
Barri-Lynn Rudolph, B.Sc.

Attachment: Table 1
JRY/pdk
O:\Data\Final\2004\1424\04-1424-044\LET 0816_06 Tox Test WO 0600324.doc

TABLE 1
Toxicity Test Results

Sample Identification	Collection Date	*Daphnia magna*
		48h LC50 (95% CL) [% (v/v)]
G-Creek-Acute-07142006	July 15, 2006	>100

CL – Confidence Limits

Toxicity testing was carried out in accordance with applicable test methodologies and/or standards of practice. Our liability is limited solely to the cost of re-testing in the event of non-compliance with such test specifications or standards of practice. Golder accepts no responsibility or liability for the interpretation or use of these testing results by others, nor for any delay, loss, damage or interruptions of testing, collection, preparation, and delivery of samples or test results resulting from events or circumstances beyond our control.

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
48-h *Daphnia magna* TOXICITY TEST DATA SUMMARY

Client: Azimuth
Lab Project No.: 04-1424-044
Lab Work Order No.: 0600234324
Lab Analysts: JAP, MJB, LOC
Test Type: 48 Hour LC50
Test Initiation Date: July 19, 2006

SAMPLE INFORMATION

Identification: G-Creek - Acute - 07142006
Amount Received: 2 x 20L
Date Collected: July 15, 2006
Date Received: July 19, 2006
Temperature (°C): 20.0
pH: 7.7
Dissolved Oxygen (mg/L): 9.1
Conductivity (µmhos/cm): 2650
Hardness (mg/L as $CaCO_3$): 332
Alkalinity (mg/L as $CaCO_3$): —
Ammonia (mg/L N): —
Chlorine (mg/L Cl): —

pH adjustment details: none
Pre-aeration rate and duration: none

DILUTION/CONTROL WATER (initial water quality)

Water Type: MHW (July 16 A)
Temperature (°C): 20.0
pH: 7.8
Dissolved Oxygen (mg/L): 9.1
Conductivity (µS/cm): 322
Hardness (mg/L as $CaCO_3$): 88
Alkalinity (mg/L as $CaCO_3$): 58
Other: —

TEST SPECIES INFORMATION

Broodstock Culture ID (in-house culture): June 20 A&B
Age (on Day 0): ≤ 24hrs
Days to First Brood: 8
Avg. Young/Brood (after 1st brood): 17
% Mortality in 7 d Before Test: 3
Reference Toxicant: ZINC
Current Reference Toxicant Result
Reference Toxicant Test Date: July 12, 2006
48-h LC50 and 95% CL: 435 (364 - 521) mg/L Zn
Reference Toxicant Warning Limits (mean ± 2SD) and CV: 782 ± 621 mg/L Zn ; CV = 40

TEST CONDITIONS

Temperature Range (°C): 20.0 - 20.5
pH Range: 7.4 - 7.8
Dissolved Oxygen Range (mg/L): 8.8 - 9.1
Conductivity Range (µS/cm): 322 - 2650
Photoperiod (L:D h): 16:8
No. Organisms/Volume: 10/200ml
Other: —

TEST RESULTS: The 48h LC50 of G-Creek - Acute - 07142006 is >100% (V/V).

Data Verified By: [signature]
Date Verified: Aug. 16/06

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
48-h *Daphnia magna* ACUTE TOXICITY TEST DATA

Client Azimuth
Lab Project No. 04-1424-044
Lab Work Order No. 0600~~234~~324
Daphnid Broodstock Batch June 20 A+B

Sample ID G-Creek-Acute-07142006
Date Collected 15-July-06
Test Initiation Date/Time 19-July-06 @ 15:30
No. Organisms/Volume 10/200 mL

Concentration	Number of Survivors (1 to 48 h)					Dissolved Oxygen (mg/L)			Temperature (°C)			pH			Conductivity (µmhos/cm)	
% (v/v)	1	2	4	24	48	0	24	48	0	24	48	0	24	48	0	48
Control				10	10	9.1	9.0	8.8	20.0	20.5	20.5	7.8	7.4	7.5	322	326
6.25				10	10	9.1	9.0	8.8	20.0	20.5	20.5	7.7	7.4	7.5	483	486
12.5				10	10	9.1	8.8	8.8	20.0	20.5	20.5	7.7	7.4	7.5	620	622
25				10	10	9.1	8.8	8.8	20.0	20.5	20.5	7.7	7.4	7.5	933	930
50				10	10	9.1	8.9	8.8	20.0	20.5	20.5	7.7	7.4	7.6	1510	1460
100				10	10	9.1	8.9	8.8	20.0	20.5	20.5	7.7	7.4	7.6	2650	2580
Technician Initials				SM	JC	W	SM	JC	W	SM	JC	W	SM	JC	W	JC

Sample Description Clear, colourless liquid
WQ Instruments Used: Temp. cal Hg thermometer pH #A-026502 DO #A-011201 Cond. #A-990901
Comments

Test Set Up By WC Data Verified By [signature] Date Verified Aug 11/06

CHAIN-OF-CUSTODY/TEST REQUEST FORM

EVS environment consultants
195 Pemberton Avenue
North Vancouver, BC
Canada V7P 2R4
Tel: (604) 986-4331
Fax: (604) 662-8548
www.evsenvironment.com

Client Name: Teck Cominco | Client Contact: Bruce Donald | Ship to: client

Address: Bag 2000 | Phone: 250-427-8405 | email cmackintosh@azimuthgroup.ca
Kimberley | Fax: 250-427-8451 | bruce.donald@teckcominco.com
V1A 3E1 | Sampled by: Dennis Lu | Attn: | Shipping Date: July 15

1 Collection Date (DD/MMM/YYYY)	1 Time (24-h clock)	Sample Identification	2 Type of Each Sample	Material Safety Data Sheet Attached? (√)	Sample Collection Method G = grab; C = composite	Number of Sample Containers x Volume of Sample Container (i.e., 1 x 20 L)	3 Sample Container Type by Code	Test(s) Requested: Acute Toxicity					4 Sample Notes (e.g. preserved, saltwater, freshwater, may contain sewage)
July 15, 2006	1600	G-Creek_Acute_07/4/2006	Fr		G	2x20L	PLC	X					note: 48-h Daphnia LC50
													96h RBT LC50

PO/Reference No.:
Project Title: Polaris
Results Needed By: Routine

Comments/Instructions:

1) Released by: Dennis Lu | Date: July 15
Company: Cartwright Lee | Time:
Courier name: First Air/Fedex

2) Released by: | Date:
Company: | Time:
Courier name:

1) Received: TMS | Date: 19-Jul-06
Company: Golder | Time: 10:20

2) Received by: | Date:
Company: | Time:

Shaded area to be completed by EVS Laboratory upon sample receipt.

EVS Project No.: 04-1424-044
EVS Work Order (WO) No.: 0600323, 0600324
Condition Upon Receipt: good
Receipt Sample Temp. (C): 18.4

1 For composite effluent or water samples, the sample collection date/time is the **end** of the compositing period.
2 Receiving Water (RW); Effluent (E); Elutriate (ELU); Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify)
3 Collapsible Carboy (CC); Glass Jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify)
4 Please note any conditions the lab should be aware of for safety and storage concerns

Distribution of copies:
White, yellow - accompany the shipment
Pink - kept by consignor (e.g., shipper)
Yellow - kept by consignee (e.g., receiver)
White - returned to consignor by consignee

Please see instructions for completion on back of form.

Revision Date: March 6, 2004

Golder Associates Ltd.

195 Pemberton Avenue
North Vancouver, British Columbia, Canada V7P 2R4
Telephone 604-986-4331
Fax 604-662-8548

E/06/1071
04-1424-044

September 12, 2006

Azimuth Consulting Group Ltd.
218-2902 West Broadway
Vancouver, BC V6K 2G8

Attention: Cheryl Mackintosh

RE: TOXICITY TESTING ON THE SAMPLE IDENTIFIED AS G-CREEK 08232006 (COLLECTED AUGUST 23, 2006)
WORK ORDERS: 0600374, 375

Dear Ms. Mackintosh:

We are pleased to provide you with the results of the toxicity tests performed on the effluent sample identified as G-Creek_08232006 collected August 23, 2006. The sample was tested with the 48-h *Daphnia magna* and the 96-h rainbow trout LC50 toxicity tests. Testing was performed according to the Environment Canada protocol for conducting acute toxicity tests using *D. magna* (EPS 1/RM/14, Second Edition, 2000) and rainbow trout (EPS 1/RM/13, Second Edition, 2000). An independent Golder QA/QC review confirmed that all acceptability criteria specified by the protocol were met. The results are presented in Table 1.

Should you have any questions or comments regarding this report, please do not hesitate to contact the undersigned at 604-986-4331.

Yours very truly,
GOLDER ASSOCIATES LTD.

Jennifer Young, B.Sc.
Bioassay Team Leader – Cladoceran Team

Verified By:

QA/QC Committee:
Julianna Kalocai, M.Sc., R.P.Bio.
Barri-Lynn Rudolph, B.Sc.

JRY/JGK/pdk
Attachment: Table 1
O:\Data\Final\2004\1424\04-1424-044\LET 0912_06 Azimuth Tox Test WO 0600374, 375.doc

TABLE 1: Toxicity Test Results

Sample Identification	Collection Date (Time)	*Daphnia magna*	Rainbow trout
		48h LC50 (95% CL) [% (v/v)]	96h LC50 (95% CL) [% (v/v)]
G-Creek_08232006	August 23, 2006 (1000h)	>100	>100

CL – Confidence Limits

Toxicity testing was carried out in accordance with applicable test methodologies and/or standards of practice. Our liability is limited solely to the cost of re-testing in the event of non-compliance with such test specifications or standards of practice. Golder accepts no responsibility or liability for the interpretation or use of these testing results by others, nor for any delay, loss, damage or interruptions of testing, collection, preparation, and delivery of samples or test results resulting from events or circumstances beyond our control.

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
48-h *Daphnia magna* TOXICITY TEST DATA SUMMARY

Client: Azimuth
Lab Project No.: 04-1424-044
Lab Work Order No.: 0600374
Lab Analysts: JAP
Test Type: 48h LC50
Test Initiation Date: August 28, 2006

SAMPLE INFORMATION
Identification: G-Creek_08232006
Amount Received: 2 x 20L
Date Collected: August 23, 2006
Date Received: August 28, 2006
Temperature (°C): 23.5①->21.0
pH: 7.9①->7.9
Dissolved Oxygen (mg/L): 10.5①->8.9
Conductivity (µmhos/cm): 11630
Hardness (mg/L as $CaCO_3$): 1400
Alkalinity (mg/L as $CaCO_3$): —
Ammonia (mg/L N): —
Chlorine (mg/L Cl): —

pH adjustment details: none
Pre-aeration rate and duration: @ 15 min

DILUTION/CONTROL WATER (initial water quality)
Water Type: Moderately Hard Water (Ay26)
Temperature (°C): 20.0
pH: 7.6
Dissolved Oxygen (mg/L): 9.0
Conductivity (µS/cm): 298
Hardness (mg/L as $CaCO_3$): 82
Alkalinity (mg/L as $CaCO_3$): 50
Other: —

TEST SPECIES INFORMATION
Broodstock Culture ID (in-house culture): Ay1(B,C)
Age (on Day 0): ≤ 24hrs
Days to First Brood: 8
Avg. Young/Brood (after 1st brood): ~~17.55~~ 18
% Mortality in 7 d Before Test: 2.5
Reference Toxicant: Zinc
Current Reference Toxicant Result
Reference Toxicant Test Date: August 22, 2006
48-h LC50 and 95% CL: 707 (564-887) mg/L Zn
Reference Toxicant Warning Limits (mean ± 2SD) and CV
738 ± 620 mg/L Zn 1. CV = 42

TEST CONDITIONS
Temperature Range (°C): 20.0-21.0
pH Range: 7.3-7.9
Dissolved Oxygen Range (mg/L): 8.2-9.0
Conductivity Range (µS/cm): 298-11630
Photoperiod (L:D h): 16:8
No. Organisms/Volume: 10/200ml
Other: —

TEST RESULTS: The 48h LC50 of G-Creek_08232006 is >100% (V/V).

Data Verified By: [signature]
Date Verified: Sept. 12/06

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
48-h *Daphnia magna* ACUTE TOXICITY TEST DATA

Client Azimuth
Lab Project No. 04-1424-044
Lab Work Order No. 0600374
Daphnid Broodstock Batch Aug 1 (B, C)

Sample ID G Creek_08232006
Date Collected August 23, 2006
Test Initiation Date/Time August 28, 2006 @ 14:35
No. Organisms/Volume 10/200ml

Concentration % (v/v)	Number of Survivors (1 to 48 h)					Dissolved Oxygen (mg/L)			Temperature (°C)			pH			Conductivity (µmhos/cm)	
	1	2	4	24	48	0	24	48	0	24	48	0	24	48	0	48
Control				10	10	9.0	8.4	8.4	20.0	20.5	20.0	7.6	7.3	7.3	298	309
6.25				10	10	9.0	8.2	8.4	20.0	20.5	20.0	7.6	7.5	7.5	1114	1113
12.5				10	10	9.0	8.4	8.4	20.0	20.5	20.5	7.7	7.6	7.6	1886	1865
25				10	10	9.0	8.2	8.4	20.0	21.0	20.5	7.8	7.7	7.6	3370	3330
50				10	10	8.9	8.3	8.4	20.5	20.5	20.5	7.8	7.8	7.7	6220	6160
100				10	7	8.9	8.3	8.4	21.0	20.5	20.5	7.9	~~7.8~~ MFB 7.9	~~7.8~~ MFB 7.9	11630	11490
Technician Initials				MFB	MFB	JAP	MFB	MFB	JAP	MFB	MFB	JAP	MFB	MFB	JAP	MFB

Sample Description Clear, Colourless
WQ Instruments Used: Temp. Calibrated Hg Thermometer pH II-A-020502 DO II-A-011201 Cond. II-A-990501
Comments

Test Set Up By JAP Data Verified By [signature] Date Verified Sept 11/06

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
RAINBOW TROUT ACUTE TOXICITY TEST DATA SUMMARY

Client: Azimuth
Lab Project No.: 04-1424-044
Lab Work Order No.: 0600375

Lab Analysts: RBA, COC
Test Type: 96-h LC50
Test Initiation Date: Aug 28/06 @ 1440

SAMPLE
Identification: G-Creek
Amount Received: 2 x 20L
Date Collected: Aug 23/06
Date Received: Aug 28/06
Other: —

DILUTION/CONTROL WATER (initial water quality)
Fresh Water (dechlorinated): ✓
Temperature (°C): 15
pH: 7.2
Dissolved Oxygen (mg/L): 10.3
Conductivity (µS/cm): 42
Hardness (mg/L as $CaCO_3$): 16
Alkalinity (mg/L as $CaCO_3$): 14
Other: —

TEST SPECIES INFORMATION
Source: Sun Valley
Collection Date/Batch: 080206
Control Fish Size (mean, SD and range measured at end of test)
Date Measured: Sept 1/06
Fork Length (mm): 36±3 (32 and 42)
Wet Weight (g): 0.40±0.11 (0.28 and 0.61)
Reference Toxicant: SDS
Current Reference Toxicant Result
Reference Toxicant Test Date: Aug 21/06
Duration of Acclimation (days): 19
96-h LC50 (and 95% CL): 27 (23 and 31) mg/L
Reference Toxicant Warning Limits (mean ± 2SD) and CV
28±13 mg/L SDS CV: 22%

TEST CONDITIONS
Dissolved Oxygen Range (mg/L): 9.0 - 10.3
Temperature Range (°C): 14 - 15
pH Range: 6.6 - 8.0
Conductivity Range (µS/cm): 42 - 11560
Aeration Provided? (give rate): 6.5±1 mL/min/L
Photoperiod (L:D h): 16:8
No. Organisms/Volume: 10/12L
Loading Density (g/L): 0.33
Acclimation Before Testing (days): 26
Mortality In Previous Week of Acclimation (%): Nil
Other: —

TEST RESULTS The 96-h LC50 is estimated to be >100% (v/v)

Data Verified By: [signature]
Date Verified: Sept. 12/06

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
RAINBOW TROUT ACUTE TOXICITY TEST DATA

WHOLE SAMPLE WATER QUALITY

	Initial	pH Adjustment[1]	After 30-min Pre-aeration
Temp. (°C)	15		15
pH	8.0		8.0
DO (mg/L)	10.3		10.3
Cond. (µS/cm)	11550		11540

1. Document pH adjustment procedure (if used) under "Comments".

Total Pre-Aeration Time 30 min

Client Azimuth
Lab Project No. 04-1424-044
Lab Work Order No. 0600375
Trout Batch No. and 7-d Acclimation Mortality 080206 / 1.1%
No. Fish/Volume 10 / 12L
Sample ID G-Creek
Date/Time Collected Aug 23/06 @ 1000
Test Initiation Date/Time Aug 28/06 @ 1440

Concentration % (v/v)	Number of Survivors (1 to 96 hours)							Dissolved Oxygen (mg/L)					Temperature (°C)					pH					Conductivity (µS/cm)	
	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
control				10	10	10	10	10.3	9.0	9.6	9.6	9.8	15	14	14	14	14	7.2	6.7	6.6	6.8	6.7	42	47
6.25				10	10	10	10	10.3	9.0	9.6	9.6	9.6	15	14	14	14	14	7.4	6.9	7.0	7.1	7.0	1418	1427
12.5				10	10	10	10	10.3	9.1	9.6	9.5	9.8	15	14	14	14	14	7.7	7.2	7.3	7.3	7.2	2060	2070
25				10	10	10	9	10.3	9.1	9.7	9.5	9.8	15	14	14	14	14	7.9	7.5	7.6	7.5	7.3	3630	3640
50				10	10	10	8	10.3	9.1	9.5	9.4	9.6	15	14	14	14	14	8.0	7.8	7.8	7.7	7.5	6510	6520
100				10	9	8	7	10.3	9.1	9.4	9.4	9.6	15	14	14	14	14	8.0	8.0	7.9	7.7	7.8	11540	11562
Technician Initials				RLA	RLA	RLA	n	RLA	RLA	RLA	RLA	n	RLA	RLA	RLA	RLA	n	RLA	RLA	RLA	RLA	n	RLA	n

WQ Instruments Used: Temperature calibrated Hg thermometer pH ID-A-030302 DO ID-A-20 Conductivity ID-A-030306
Sample Description clear
Comments

Test Set Up By RLA Data Verified By [signature] Date Verified Sept. 12/06

CHAIN-OF-CUSTODY / TEST REQUEST FORM

Golder Associates

195 Pemberton Avenue
North Vancouver, B.C.
Canada V7P 2R4
Tel: 604-986-4331
Fax: 604-662-8548
www.golder.com

No 2374

Client Name: Teck Cominco
Address: Box 2000, Kimberley, BC, V1A 3E1
Client Contact: Bruce Donald
Phone: 250-427-8405
Fax: 250.427.8451
Sampled by: A. Idlout
Ship to: client
email: cmackintosh@azimuthgroup.ca, bruce.donald@teckcominco.com
Attn.: Edmundd Canaria
Shipping Date: Aug 24

1 Collection Date (DD/MMM/YYYY)	1 Time (24-h clock)	Sample Identification	2 Type of Each Sample	Material Safety Data Sheet Attached? (✓)	Sample Collection Method G=grab C=composite	Number of Sample Containers x Volume of Sample Containers (1 x 20L)	3 Sample Container Type by Code	Test(s) Requested: Acute Toxicity					4 Sample Notes (preserved, saltwater, freshwater, may contain sewage...)
~~08/Aug/20~~													
23/Aug/2006	10:00	G-Creek_08232006	E	N	G	2x20	CC	X					

PO/Reference No.:
Project Title: Polaris
Results Needed By:

Comments/Instructions:

1) Released by: DL — Date: — Time:
Company: GLL
Courier Name:

2) Released by: — Date: — Time:
Company:
Courier Name:

1) Received by: JMS — Date: Aug-28/06 — Time: 1:00
Company: Golder

1) Received by: — Date: — Time:
Company:

Shaded area to be completed by Golder Laboratory upon sample receipt.

Golder Project No.: 04-1424-044
Golder Work Order No.: 0600374/0600375
Condition Upon Receipt: good
Receipt Sample Temp. (°C): 17.0

1 For composite effluent or water samples, the sample collection date/time is the **end** of the compositing period.
2 Receiving Water (RW): Effluent (E); Elutriate (ELU); Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify)
3 Collapsible Carboy (CC); glass jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify)
4 Please note any conditions the lab should be aware of for safety and storage concerns

Distribution of copies: White, Yellow — accompany the shipment
Pink — kept by consignor (e.g. shipper)
Yellow — kept by consignee (e.g. receiver)
White — returned to consignor by consignee

Please see instructions for completion on back of form

Revision Date: November 22, 2004

Golder Associates Ltd.

195 Pemberton Avenue
North Vancouver, British Columbia, Canada V7P 2R4
Telephone 604-986-4331
Fax 604-662-8548

E/06/1134
04-1424-044

October 6, 2006

Azimuth Consulting Group Ltd.
218-2902 West Broadway
Vancouver, BC V6K 2G8

Attention: Cheryl Mackintosh

RE: TOXICITY TESTING ON THE SAMPLE IDENTIFIED AS G-Creek_09 (COLLECTED SEPTEMBER 9, 2006) WORK ORDERS: 0600412

Dear Ms. Mackintosh:

We are pleased to provide you with the results of the toxicity tests performed on the effluent sample identified as G-Creek_09 collected September 9, 2006. The sample was tested with the 48-h *Daphnia magna* and the 96-h rainbow trout LC50 toxicity tests. Due to a control failure, no results are available for the 96-h rainbow trout testing. Testing was performed according to the Environment Canada protocol for conducting acute toxicity tests using *D. magna* (EPS 1/RM/14, Second Edition, 2000) with the exception that testing was set up 7 days outside holding time. An independent Golder QA/QC review confirmed that all other acceptability criteria specified by the protocol were met. The results are presented in Table 1.

Should you have any questions or comments regarding this report, please do not hesitate to contact the undersigned at 604-986-4331.

Yours very truly,
GOLDER ASSOCIATES LTD.

Jennifer Young, B.Sc.
Bioassay Team Leader – Cladoceran Team

Verified By:

QA/QC Committee:
Julianna Kalocai, M.Sc., R.P.Bio.
Barri-Lynn Rudolph, B.Sc.

Attachment: Table 1
JRY/JGK/pdk
O:\Data\Final\2004\1424\04-1424-044\LET 1006_06 Azimuth WO0600412.doc

TABLE 1: Toxicity Test Results

Sample Identification	Collection Date	*Daphnia Magna*
		48h LC50 (95% CL) [% (v/v)]
G-Creek_09	September 9, 2006	>100

CL – Confidence Limits; LC – Lethal Concentration.

Toxicity testing was carried out in accordance with applicable test methodologies and/or standards of practice. Our liability is limited solely to the cost of re-testing in the event of non-compliance with such test specifications or standards of practice. Golder accepts no responsibility or liability for the interpretation or use of these testing results by others, nor for any delay, loss, damage or interruptions of testing, collection, preparation, and delivery of samples or test results resulting from events or circumstances beyond our control.

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
48-h *Daphnia magna* TOXICITY TEST DATA SUMMARY

Client: Aztech
Lab Project No.: 04-1424-044
Lab Work Order No.: 0600412

Lab Analysts: JAP, LOC, JMS
Test Type: 48hr LC50
Test Initiation Date: Sept 21/06

SAMPLE INFORMATION

Identification: G-Creek-09
Amount Received: ~1x2L
Date Collected: ~~8 Sept 06~~ Sept 9, 2006
Date Received: 13 Sept 06
Temperature (°C): ~~Arr~~ 19.5
pH: 7.9
Dissolved Oxygen (mg/L): 8.5
Conductivity (µmhos/cm): 12 600
Hardness (mg/L as $CaCO_3$): 1588
Alkalinity (mg/L as $CaCO_3$): —
Ammonia (mg/L N): —
Chlorine (mg/L Cl): —

pH adjustment details: none
Pre-aeration rate and duration: none

DILUTION/CONTROL WATER (initial water quality)

Water Type: MHW (Sept 19)
Temperature (°C): 20.0
pH: 7.5
Dissolved Oxygen (mg/L): 9.1
Conductivity (µS/cm): 323
Hardness (mg/L as $CaCO_3$): 60
Alkalinity (mg/L as $CaCO_3$): 92
Other: —

TEST SPECIES INFORMATION

Broodstock Culture ID (in-house culture): Aug 29 A3C
Age (on Day 0): 72hr
Days to First Brood: 8
Avg. Young/Brood (after 1st brood): 26 ~~or~~
% Mortality in 7 d Before Test: 2 ~~81~~.
Reference Toxicant: ZnC
Current Reference Toxicant Result
Reference Toxicant Test Date: Sept 14, 2006
48-h LC50 and 95% CL: 302 (220 – 414) mg/L Zn
Reference Toxicant Warning Limits (mean ± 2SD) and CV
736 ± 599 mg/L Zn ~~%~~ CV = 41

TEST CONDITIONS

Temperature Range (°C): 19.5 – 20.5
pH Range: 7.3 – ~~7.9~~ 8.0
Dissolved Oxygen Range (mg/L): 8.5 – 9.1
Conductivity Range (µS/cm): 323 – 12600
Photoperiod (L:D h): 16:8
No. Organisms/Volume: 10/200mL
Other: —

TEST RESULTS

The 48h LC50 of G-Creek-09 is >100% (V/V)

Data Verified By: Ralph
Date Verified: Oct. 10/06

GOLDER ASSOCIATES-NORTH VANCOUVER LABORATORY
48-h *Daphnia magna* ACUTE TOXICITY TEST DATA

Client: Azimuth
Lab Project No.: 04-1424-044
Lab Work Order No.: 0600417
Daphnid Broodstock Batch: Aug 29 A/B/C

Sample ID: 6-Creek-09
Date Collected: ~~Sept 06~~ Sept 9, 2006
Test Initiation Date/Time: 21 Sept 06 @ 920
No. Organisms/Volume: 10/200ml

Concentration	Number of Survivors (1 to 48 h)					Dissolved Oxygen (mg/L)			Temperature (°C)			pH			Conductivity (µmhos/cm)	
% (v/v)	1	2	4	24	48	0	24	48	0	24	48	0	24	48	0	48
Control				10	10	9.1	8.8	8.9	20.0	20.5	20.0	7.5	7.3	7.4	323	328
6.25				10	10	9.1	8.9	8.9	20.0	20.5	20.0	7.7	7.4	7.6	1093	1111
12.5				10	10	9.1	8.9	8.9	20.0	20.5	20.0	7.7	7.6	7.7	1798	1783
25				10	10	9.1	8.9	8.9	20.0	20.5	20.0	7.7	7.8	7.8	3360	3410
50				10	10	9.0	9.0	8.9	20.0	20.5	20.0	7.8	7.9	7.9	6190	6060
100				10	8	8.5	~~8.0~~ 9.2	9.0	~~19.5~~ A.5	20.5	20.0	7.9	7.9	8.0	12600	~~12490~~ 12490
Technician Initials				SM	JM	N	SM	JM	N	SM	DMS	N	SM	JM	N	DMS

Sample Description: clear colourless liquid
WQ Instruments Used: Temp. Calibrated Hg Thermometer pH II-A-020502 DO II-A-011201 Cond. II-A-990901
Comments:

Test Set Up By: DC Data Verified By: [signature] Date Verified: Oct 2/06

CHAIN-OF-CUSTODY / TEST REQUEST FORM

Golder Associates

195 Pemberton Avenue
North Vancouver, B.C.
Canada V7P 2R4
Tel: 604-986-4331
Fax: 604-662-8548
www.golder.com

№ 2375

Client Name: Teck Cominco
Address: Bag 2000, Kimberley BC V1A 3E1
Client Contact: Bruce Donald
Phone: 250 427 8405
Fax: 250 427 8451
Sampled by: A Idland
Ship to: client
bruce.donald@teckcominco.com
cmackintosh@azimuthgroup.ca
Attn.:
Shipping Date:

1 Collection Date (DD/MMM/YYYY)	1 Time (24-h clock)	Sample Identification	2 Type of Each Sample	Material Safety Data Sheet Attached? (✓)	Sample Collection Method G=grab C=composite	Number of Sample Containers x Volume of Sample Containers (1 x 20L)	3 Sample Container Type by Code	Test(s) Requested: Acute Toxicity					4 Sample Notes (preserved, saltwater, freshwater, may contain sewage...)
09/SEP/2006 ①	10:30 ①	G-Creek_09	E	N	G	2 x 20L	CC						① Sample date and time obtained from carboy label (filled in by client).

PO/Reference No.:
Project Title:
Results Needed By:

Comments/Instructions:

1) Released by: [signature] Date: Sept 19/06
Company: Time: 10:30 AM
Courier Name:

1) Received by: JRS Date:
Company: Golder Time: 11:20

2) Released by: Date:
Company: Time:
Courier Name:

1) Received by: Date:
Company: Time:

Shaded area to be completed by Golder Laboratory upon sample receipt.

Golder Project No.: 04-1424-044
Golder Work Order No.: 0600411/12
Condition Upon Receipt: Good
Receipt Sample Temp. (°C): 14.7

1 For composite effluent or water samples, the sample collection date/time is the **end** of the compositing period.
2 Receiving Water (RW): Effluent (E); Elutriate (ELU); Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify)
3 Collapsible Carboy (CC); glass jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify)
4 Please note any conditions the lab should be aware of for safety and storage concerns

Distribution of copies: White, Yellow — accompany the shipment
Pink — kept by consignor (e.g. shipper)
Yellow — kept by consignee (e.g. receiver)
White — returned to consignor by consignee

Please see instructions for completion on back of form

Revision Date: November 22, 2004

APPENDIX E

Polaris 2006 Sampling Event Chronology

Appendix E - Polaris 2006 Sample Collection and Testing Chronology

Activities at the Polaris Mine site had ceased during the last season (2005). Thus in 2006, collection of chemistry and toxicity samples from the mine site was conducted by small field crews stationed on-site for limited time periods (early season) and then by flying technicians into the site on a weekly basis in the latter part of the season. Because of the remote location of the high Arctic mine site and the unpredictable weather conditions, sample shipping and transport issues typically arise throughout the season. In the 2006 season, the mine sight was generally accessible by plane, and thus most weeks were sampled successfully. There were however, issues with the laboratory toxicity tests, which are identified below and explained in more detail in **Appendix F**.

Date	Event Type	Observations/Comments
Fri. Jun-30-06	-	Approximate date flow initiated in Garrow Creek
Thu. Jul-06-06	Monthly/Quarterly[1]	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits.
Sat. Jul-15-06	Monthly/Quarterly Acute Toxicity	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits. Sediment chemisty sample collection from Garrow Toxicity samples arrived at the labs on Wednesday July 19, 2006 within holding times for all tests. The *Daphnia magna* test was initiated on Wednesday July 19, 2006 and the Rainbow trout test was initiated on Thursday July 20, 2006 without incident. A temperature control unit failure occurred in the 96-hr rainbow trout test, between 48-hr and 72-hr, rendering the rainbow trout test invalid. See attached letter in **Appendix F** for details. Despite the temperature failure, there was no acute toxicity in the rainbow trout test. Additionally, there was no acute toxicity in *Daphnia magna* test. [Note that the July 15, 2006 samples were dated as July 14, 2006 in the chain-of-custody for the ALS chemistry lab. Samples were originally collected on July 14, but had to be recollected on July 15 due to logistical issues. The chain-of-custody had already been filled out and was not changed to reflect the correct date. Thus, chemistry and toxicity samples were collected at the same time.]
Fri. Jul-21-06	Monthly/Quarterly	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits.
Wed. Jul-26-06	Monthly/Quarterly Failed attempt for Acute Toxicity resample	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits. Toxicity samples were collected from the FDP. However, during transit it was observed that there was a leak in the sample container resulting in the loss of the sample. Sample shipment was aborted.
Mon. Jul-31-06	No sample	No sample was collected this week due to the lack of availability of a trained technician for sampling.
Fri. Aug-11-06	Monthly/Quarterly	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits.
Thu. Aug-17-06	Monthly/Quarterly	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits.
Wed. Aug-23-06	Monthly/Quarterly Acute Toxicity	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits. Toxicity samples arrived at the labs on Monday August 28, 2006 within holding times for all tests and tests were initiated the same day. No acute toxicity was observed in either test.
Fri. Sep-01-06	Monthly/Quarterly	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits.
Sat. Sep-09-06	Monthly/Quarterly Acute Toxicity	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits. Toxicity samples arrived at the labs on Wednesday September 13, 2006 within holding times for all tests. The rainbow trout test was initiated on Wednesday September 13, 2006 without incident. A test control failure occurred in the rainbow trout test, thus, no results are available. Due to a laboratory miscommunication error with the daphnia test, the daphnia test was not initiated until Thursday September 21, 2006 - 7 days outside the holding time, rendering the daphnia test invalid. See attached letter in **Appendix F** for details on both tests. Despite the missed holding times, there was no acute toxicity in the daphnia test. No resample for the September toxicity event was possible due to the onset of winter conditions at the mine site and the freezing of Garrow Creek.
Thu. Sep-14-06	Monthly/Quarterly	Water chemistry sample collection from FDP (Garrow Creek). No exceedances of Schedule 4 limits. Due to the onset of winter conditions there was barely sufficient flow to sample on September 14, 2006 and Garrow Creek was becoming significantly iced over. Therefore, no further sampling was attempted subsequent to September 14, 2006.

[1]"Monthly/Quarterly" sample events include a larger suite of parameters than "Weekly" samples. See Table 3 for details.

APPENDIX F

Letters from Golder Associates, Ltd. explaining laboratory issues for July 15, 2006 and September 9, 2006 samples

Golder Associates Ltd.

195 Pemberton Avenue
North Vancouver, British Columbia Canada V7P 2R4
Telephone 604-986-4331
Fax 604-662-8548

E/06/1108
04-1424-044

October 2, 2006

Azimuth Consulting Group Ltd.
218-2902 West Broadway
Vancouver, BC
V6K 2G8

Attention: Cheryl Mackintosh

RE: TOXICITY TESTING ON SAMPLE "G-CREEK-0714006" (COLLECTED JULY 15, 2006) WORK ORDER: 0600323

Dear Ms. Mackintosh:

We conducted one 96-h LC50 toxicity test using rainbow trout on the above sample, received at Golder Associates Ltd. on July 19, 2006. The test was initiated on July 20, 2006 according to the Environment Canada protocol for conducting acute toxicity tests using rainbow trout (EPS 1/RM/13, Second Edition, 2000). Between the 48-h and 72-h mark of testing, the temperature control unit failed in the controlled environment room where the test was conducted. This resulted in an increase of the room's temperature, and therefore the test solutions' temperature as well, exceeding the acceptable test temperature range and rendering the test invalid.

(Despite the temperature change this did not appear to affect the final LC50 results since there was no change in mortality in the test save for one mortality in the 12.5% [v/v] dilution at 72 h. Were it not for the test being rendered invalid based on temperature, the 96-h LC50 would be estimated to be >100% [v/v]).

Because the juvenile rainbow trout toxicity test performed on this sample was invalid, and it was not possible for a replacement sample to be collected (due to sample container leakage), Golder agreed to cover the shipping costs for transporting the above sample from the Polaris site to Ottawa (by First Air) and from Ottawa to our North Vancouver

laboratory (by Federal Express). This included issuing payment directly to Teck Cominco for First Air invoice 123690 ($648.01) and using Golder's account number to cover the Federal Express charges.

We apologize for the inconvenience that this equipment failure has caused. If you have any questions or comments regarding this matter, please do not hesitate to contact the undersigned at 604-986-4331.

Yours very truly,

GOLDER ASSOCIATES LTD.

Cathy A. McPherson, B.Sc.
Laboratory Manager (interim)

CAM/pdk
O:\Data\Final\2004\1424\04-1424-044\LET 1002_06 Azimuth WO 0600323.doc

Toxicity testing was carried out in accordance with applicable test methodologies and/or standards of practice. Our liability is limited solely to the cost of re-testing in the event of non-compliance with such test specifications or standards of practice. Golder accepts no responsibility or liability for the interpretation or use of these testing results by others, nor for any delay, loss, damage or interruptions of testing, collection, preparation, and delivery of samples or test results resulting from events or circumstances beyond our control.

Golder Associates Ltd.

195 Pemberton Avenue
North Vancouver, British Columbia Canada V7P 2R4
Telephone 604-986-4331
Fax 604-662-8548

E/06/1210
04-1424-044

November 8, 2006

Azimuth Consulting Group Ltd.
218-2902 West Broadway
Vancouver, BC
V6K 2G8

Attention: Cheryl Mackintosh

RE: TOXICITY TESTING ON SAMPLE "G-CREEK_09" (COLLECTED SEPTEMBER 9, 2006) WORK ORDER: 0600411, 412

Dear Cheryl:

On September 13, 2006, the Golder North Vancouver Laboratory received a sample identified as "G-Creek_09", which had been collected September 9, 2006. This sample was submitted for 96-h juvenile rainbow trout and 48-h *Daphnia magna* acute toxicity tests.

The rainbow trout test was initiated on September 14, 2006 according to the Environment Canada protocol for conducting acute toxicity tests using juvenile rainbow trout (EPS 1/RM/13, Second Edition, 2000). During the last 24 h of the test, random mortality ranging from 20 to 50% occurred in all treatments, including the negative control. There was no apparent concentration-response relationship; because control survival was less than 90% the test was considered invalid and results were not reported.

Due to a miscommunication between laboratory staff, the *D. magna* toxicity test was not started within the maximum 5-day sample holding time. When this oversight was discovered (approximately September 20, 2006), Azimuth was notified and the decision was made to conduct the 48-h *D. magna* toxicity test even though the holding time had expired. The test was initiated September 21, 2006, which was 7 days outside the

maximum sample holding time. Results of that test were reported to Azimuth separately, and there was no charge for that test due to our error in not setting it up on time. To reduce the chance of a similar error recurring in future, we have implemented a new system for tracking samples that have been received and are awaiting *D. magna* testing (this is in addition to our existing procedures for notifying laboratory staff of sample arrival).

We understand that due to the onset of freeze-up at Polaris, it was not possible for a replacement sample to be collected and tested. We apologize for the inconvenience this has caused. If you have any questions or comments regarding this matter, please do not hesitate to contact me at 604-986-4331.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED BY

Cathy A. McPherson, B.Sc.
Laboratory Manager (interim)

CAM/pdk
O:\Data\Final\2004\1424\04-1424-044\LET Azimuth Explanatory Letter WO0600411,412.doc

Toxicity testing was carried out in accordance with applicable test methodologies and/or standards of practice. Our liability is limited solely to the cost of re-testing in the event of non-compliance with such test specifications or standards of practice. Golder accepts no responsibility or liability for the interpretation or use of these testing results by others, nor for any delay, loss, damage or interruptions of testing, collection, preparation, and delivery of samples or test results resulting from events or circumstances beyond our control.

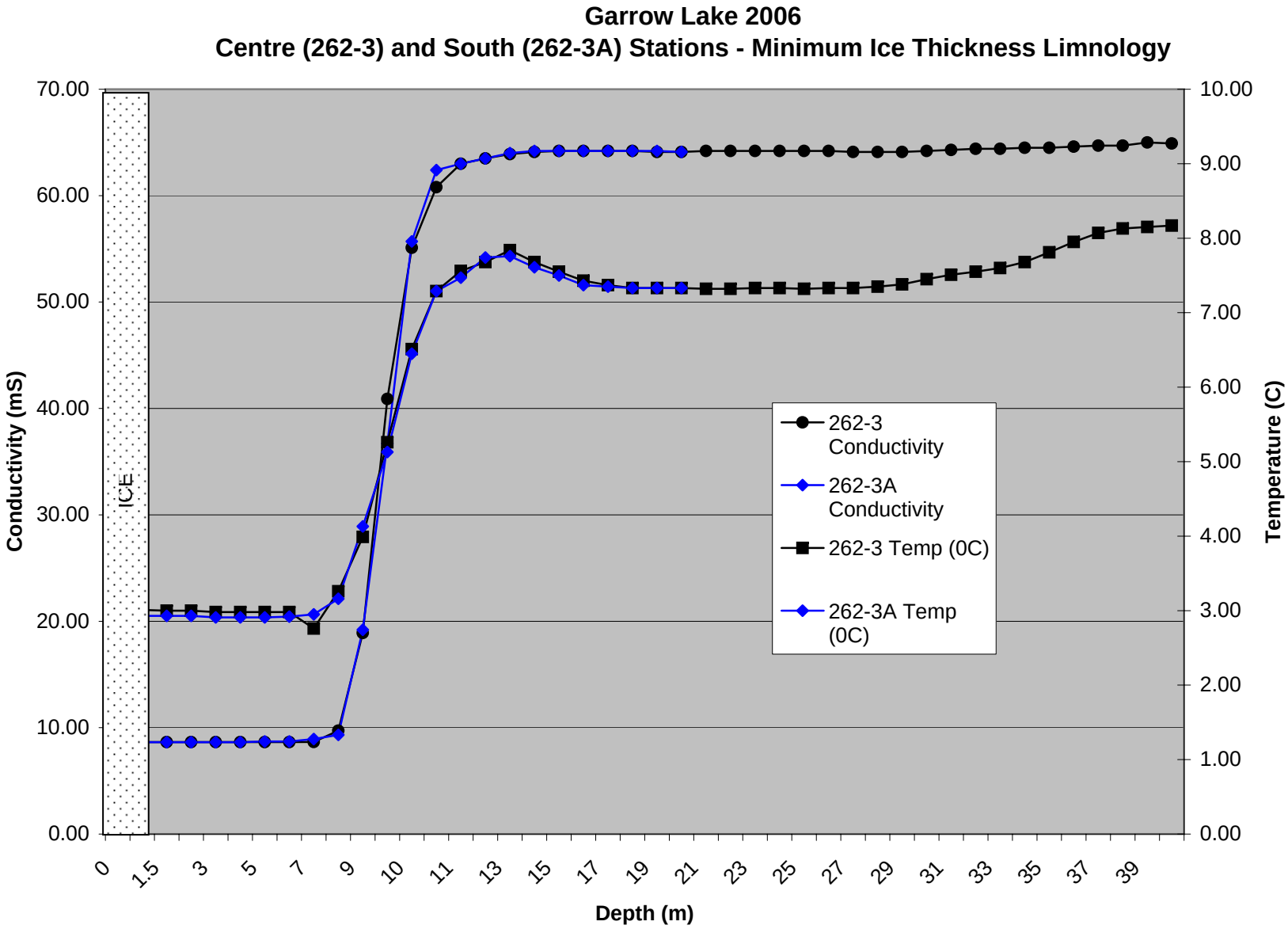
APPENDIX 3

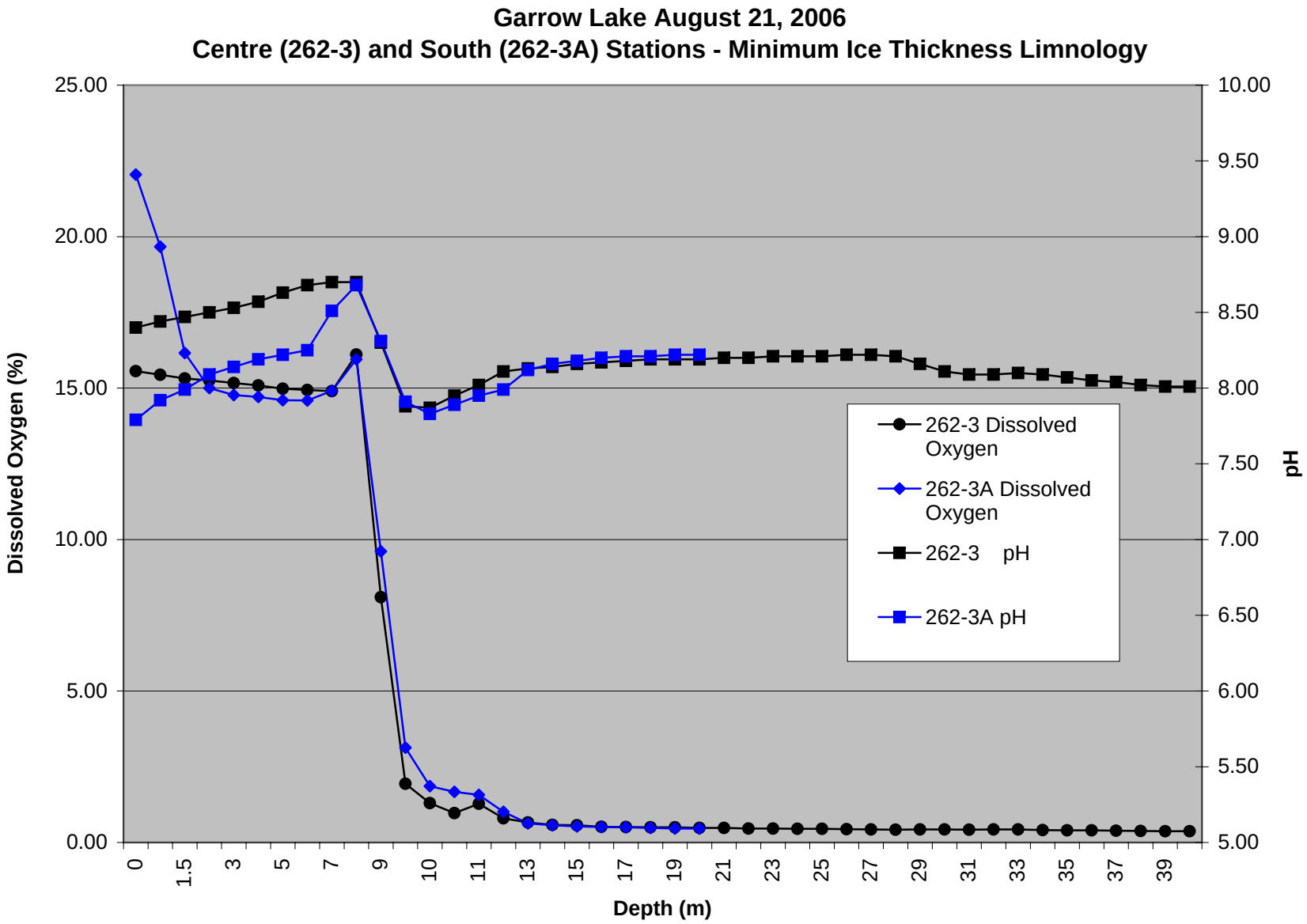
Garrow Lake Water Column

Minimum Ice Conditions

Monitoring Event Data

(August 21, 2006)


Garrow Lake 2006
Centre (262-3) and South (262-3A) Stations - Minimum Ice Thickness Limnology
Conductivity (mS)
Temperature (C)
Depth (m)
ICE
262-3 Conductivity
262-3A Conductivity
262-3 Temp (0C)
262-3A Temp (0C)
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
0
1.5
3
5
7
9
10
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39


Garrow Lake August 21, 2006
Centre (262-3) and South (262-3A) Stations - Minimum Ice Thickness Limnology
Dissolved Oxygen (%)
pH
Depth (m)
25.00
20.00
15.00
10.00
5.00
0.00
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
0
1.5
3
5
7
9
10
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
262-3 Dissolved Oxygen
262-3A Dissolved Oxygen
262-3 pH
262-3A pH

Garrow Lake August Water Sampling Data Sheet - Centre

Station: **262-3** Date: 21-Aug-06

Depth (M)	262-3 Temp (^{0}C)	262-3 Conductivity	262-3 pH	262-3 Dissolved Oxygen	Redox
0	3.01	8.69	8.40	15.56	315
1	3.01	8.64	8.44	15.44	313
1.5	3	8.64	8.47	15.32	312
2	3	8.64	8.5	15.25	311
3	3.0	8.6	8.5	15.2	310
4	3.0	8.6	8.6	15.1	310
5	3.0	8.7	8.6	15.0	309
6	3.0	8.7	8.7	14.9	308
7	2.8	8.7	8.7	14.9	308
8	3.3	9.7	8.7	16.1	310
9	4.0	18.9	8.3	8.1	327
9.5	5.3	40.9	7.9	1.9	340
10	6.5	55.1	7.9	1.3	339
10.5	7.3	60.8	8.0	1.0	336
11	7.6	63.0	8.0	1.3	333
12	7.7	63.5	8.1	0.8	332
13	7.8	63.9	8.1	0.7	325
14	7.7	64.1	8.1	0.6	262
15	7.6	64.2	8.2	0.6	235
16	7.4	64.2	8.2	0.5	219
17	7.4	64.2	8.2	0.5	211
18	7.3	64.2	8.2	0.5	207
19	7.3	64.1	8.2	0.5	204
20	7.3	64.1	8.2	0.5	191
21	7.3	64.2	8.2	0.5	178
22	7.3	64.2	8.2	0.5	167
23	7.3	64.2	8.2	0.5	161
24	7.3	64.2	8.21	0.45	155
25	7.3	64.2	8.21	0.45	147
26	7.3	64.2	8.22	0.44	142
27	7.3	64.1	8.22	0.43	138
28	7.4	64.1	8.21	0.42	97
29	7.4	64.1	8.16	0.43	60
30	7.5	64.2	8.11	0.43	12
31	7.5	64.3	8.09	0.42	-8
32	7.6	64.4	8.09	0.43	-56
33	7.6	64.4	8.1	0.43	-60
34	7.7	64.5	8.09	0.41	-65
35	7.8	64.5	8.07	0.4	-70
36	8.0	64.6	8.05	0.4	-73
37	8.1	64.7	8.04	0.39	-74
38	8.1	64.7	8.02	0.38	-78
39	8.2	65	8.01	0.37	-78
40	8.17	64.9	8.01	0.37	-81

Garrow Lake August Water Sampling Data Sheet - South

Station: **262-3A** Date: 21-Aug-06

Depth (M)	262-3A Temp (^{0}C)	262-3A Conductivity	262-3A pH	262-3A Dissolved Oxygen	Redox
0	2.95	8.62	7.79	22.05	428
1	2.93	8.63	7.92	19.67	424
1.5	2.93	8.63	7.99	16.16	422
2	2.93	8.63	8.09	15	420
3	2.9	8.6	8.1	14.8	418
4	2.9	8.6	8.2	14.7	417
5	2.9	8.7	8.2	14.6	417
6	2.9	8.7	8.3	14.6	417
7	3.0	8.9	8.5	14.9	416
8	3.2	9.3	8.7	16.0	400
9	4.1	19.2	8.3	9.6	409
9.5	5.1	36.7	7.9	3.1	421
10	6.5	55.7	7.8	1.9	420
10.5	7.3	62.4	7.9	1.7	418
11	7.5	63.0	8.0	1.6	417
12	7.7	63.5	8.0	1.0	412
13	7.8	64.0	8.1	0.6	340
14	7.6	64.2	8.2	0.6	290
15	7.5	64.2	8.2	0.5	262
16	7.4	64.2	8.2	0.5	247
17	7.4	64.2	8.2	0.5	236
18	7.3	64.2	8.2	0.5	226
19	7.3	64.2	8.2	0.5	211
20	7.3	64.1	8.2	0.5	203

Project **2006 August Polaris Garrow Lk Seawater Analysis**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

RESULTS OF ANALYSIS

Sample ID	**GLS-0M**	**GLS-1M**	**GLS-1.5M**	**GLS-2M**	**GLS-3M**	**GLS-4M**	**GLS-5M**	**GLS-6M**	**GLS-7M**	**GLS-8M**	**GLS-9M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	1	2	3	4	5	6	7	8	9	10	11
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	11000	11100	11100	11100	11100	11100	11100	11000	11100	11100	16000
Hardness CaCO3	1430	1430	1420	1430	1440	1450	1430	1420	1430	1450	2060
pH	7.85	7.91	7.94	7.95	7.96	7.97	7.98	7.98	7.98	7.98	7.93
Salinity o/oo	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	9.9
Total Suspended Solids	5.5	4.2	5.5	3.5	4.8	6.8	5.5	8.2	8.2	6.2	7.5
Dissolved Anions											
Alkalinity-Total CaCO3	122	121	124	118	120	121	122	119	120	131	141
Cyanides											
Total Cyanide CN	<0.0050	-	<0.0050	-	<0.0050	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<20	<0.20	<0.20
Arsenic T-As	0.00023	<0.00020	0.00035	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Cadmium T-Cd	0.000541	0.000526	0.000533	0.000548	0.000485	0.000507	0.000533	0.000527	0.000537	0.000529	0.000883
Calcium T-Ca	130	130	129	130	132	132	130	129	131	132	175
Copper T-Cu	0.00108	0.00105	0.00104	0.00119	0.00116	0.00106	0.00101	0.000952	0.00112	0.00104	0.00126
Iron T-Fe	0.029	0.025	0.024	0.029	0.028	0.026	0.025	0.026	0.025	0.027	0.021
Lead T-Pb	0.000448	0.000319	0.000316	0.000361	0.000345	0.000356	0.000308	0.000279	0.000362	0.000280	0.000346
Magnesium T-Mg	268	269	267	269	270	271	268	267	268	271	395
Mercury T-Hg	<0.000010	-	<0.000010	-	<0.000010	-	-	-	-	-	-
Molybdenum T-Mo	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nickel T-Ni	0.00422	0.00403	0.00404	0.00428	0.00394	0.00385	0.00399	0.00392	0.00402	0.00394	0.00499
Zinc T-Zn	0.233	0.218	0.222	0.235	0.213	0.215	0.222	0.217	0.220	0.221	0.369
Inorganic Parameters											
Sulphide S	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Footnotes: Results are expressed as milligrams per litre except where noted.
< = Less than the detection limit indicated.

Project	**2006 August Polaris Garrow Lk Sea**
Report to	Azimuth Consulting Group Inc.
ALS File No.	Z1775
Date Received	28/08/2006
Date:	22/09/2006

Conventions:

GLC	Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS	Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

RESULTS OF ANALYSIS

Sample ID	**GLS-10M**	**GLS-11M**	**GLS-12M**	**GLS-13M**	**GLS-14M**	**GLS-15M**	**GLS-16M**	**GLS-17M**	**GLS-18M**	**GLS-19M**	**GLS-20M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	12	13	14	15	16	17	18	19	20	21	22
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	61800	81100	81500	81900	82100	82000	82000	82000	82100	82000	81900
Hardness CaCO3	9790	12100	12200	12200	11800	12600	12000	12300	11900	12100	12200
pH	7.65	7.67	7.68	7.67	7.67	7.66	7.66	7.66	7.66	7.66	7.54
Salinity o/oo	44.4	60.7	61.0	61.4	61.5	61.4	61.4	61.4	61.5	61.4	61.4
Total Suspended Solids	38.2	38.8	23.5	45.5	53.5	40.2	49.5	46.2	51.5	50.2	22.8
Dissolved Anions											
Alkalinity-Total CaCO3	266	411	436	411	431	408	456	413	418	456	414
Cyanides											
Total Cyanide CN	<0.0050	-	-	-	-	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	<20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<20
Arsenic T-As	0.00048	0.00039	0.00043	<0.00020	0.00032	0.00030	0.00035	0.00023	0.00028	0.00038	0.00052
Cadmium T-Cd	0.00242	0.000050	0.000045	0.000035	0.000027	0.000027	0.000027	0.000031	0.000024	0.000027	0.000027
Calcium T-Ca	643	793	829	828	799	855	811	831	803	816	822
Copper T-Cu	0.00316	0.00114	0.00112	0.000677	0.000689	0.000531	0.000495	0.000543	0.000467	0.000511	<0.00050
Iron T-Fe	0.018	0.060	0.101	0.219	0.358	0.336	0.303	0.324	0.317	0.301	0.307
Lead T-Pb	0.00130	0.00165	0.00126	0.00136	0.00119	0.00109	0.00101	0.00117	0.00108	0.00105	0.00108
Magnesium T-Mg	1990	2460	2470	2460	2390	2540	2420	2490	2400	2440	2450
Mercury T-Hg	<0.000010	-	-	-	-	-	-	-	-	-	-
Molybdenum T-Mo	0.0054	0.0082	0.0080	0.0064	0.0055	0.0062	0.0053	0.0064	0.0062	0.0066	<0.0050
Nickel T-Ni	0.00992	0.0105	0.0104	0.00812	0.00739	0.00704	0.00701	0.00777	0.00646	0.00647	0.00642
Zinc T-Zn	1.19	0.108	0.0801	0.0558	0.0371	0.0349	0.0344	0.0383	0.0320	0.0311	0.0310
Inorganic Parameters											
Sulphide S	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Footnotes:

Project **2006 August Polaris Garrow Lk Sea**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

RESULTS OF ANALYSIS

Sample ID	**GLC-0M**	**GLC-1M**	**GLC-1.5M**	**GLC-2M**	**GLC3M**	**GLC-4M**	**GLC-5M**	**GLC-6M**	**GLC-7M**	**GLC-8M**	**GLC-9M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	23	24	25	26	27	28	29	30	31	32	33
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	11100	11100	11100	11100	11100	11100	11100	11100	11100	11100	17800
Hardness CaCO3	1390	1410	1400	1390	1380	1380	1390	1390	1390	1400	1910
pH	7.98	7.98	7.98	7.99	8.00	8.00	8.00	8.01	8.01	8.01	7.93
Salinity o/oo	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	11.2
Total Suspended Solids	<3.0	4.8	3.5	3.5	4.8	5.5	7.5	4.8	7.5	5.5	7.5
Dissolved Anions											
Alkalinity-Total CaCO3	121	132	132	138	133	124	129	121	119	129	155
Cyanides											
Total Cyanide CN	<0.0050	-	<0.0050	-	<0.0050	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic T-As	<0.00020	0.00026	<0.00020	<0.00020	<0.00020	0.00020	<0.00020	<0.00020	<0.00020	0.00020	<0.00020
Cadmium T-Cd	0.000513	0.000523	0.000521	0.000483	0.000491	0.000510	0.000495	0.000486	0.000495	0.000486	0.000801
Calcium T-Ca	126	129	128	126	125	126	126	126	127	128	163
Copper T-Cu	0.000971	0.00108	0.000949	0.000908	0.000913	0.000913	0.000875	0.000930	0.000864	0.000934	0.00105
Iron T-Fe	0.023	0.031	0.024	0.022	0.022	0.025	0.021	0.022	0.020	0.021	0.019
Lead T-Pb	0.000280	0.000313	0.000341	0.000250	0.000288	0.000280	0.000263	0.000286	0.000259	0.000304	0.000277
Magnesium T-Mg	261	264	263	262	258	259	260	261	262	262	366
Mercury T-Hg	<0.000010	-	<0.000010	-	<0.000010	-	-	-	-	-	-
Molybdenum T-Mo	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nickel T-Ni	0.00380	0.00376	0.00379	0.00363	0.00355	0.00357	0.00351	0.00342	0.00339	0.00352	0.00432
Zinc T-Zn	0.193	0.186	0.190	0.199	0.193	0.192	0.187	0.186	0.183	0.186	0.287
Inorganic Parameters											
Sulphide S	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Footnotes:

Project **2006 August Polaris Garrow Lk Sea**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

RESULTS OF ANALYSIS

Sample ID	**GLC-10M**	**GLC-11M**	**GLC-12M**	**GLC-13M**	**GLC-14M**	**GLC-15M**	**GLC-16M**	**GLC-17M**	**GLC-18M**	**GLC-19M**	**GLC-20M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	34	35	36	37	38	39	40	41	42	43	44
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	58000	81000	81500	82400	82400	82200	82000	82100	82400	82300	82200
Hardness CaCO3	9590	12000	12600	12400	12200	12100	12300	12600	12300	12800	12800
pH	7.67	7.69	7.69	7.68	7.69	7.68	7.68	7.58	7.66	7.69	7.68
Salinity o/oo	41.3	60.6	61.0	61.8	61.8	61.6	61.5	61.6	61.8	61.7	61.6
Total Suspended Solids	17.5	60.3	48.8	38.2	29.5	30.8	42.8	43.5	31.5	10.2	21.5
Dissolved Anions											
Alkalinity-Total CaCO3	252	411	420	436	418	418	437	426	442	466	426
Cyanides											
Total Cyanide CN	<0.0050	-	-	-	-	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic T-As	0.00050	0.00047	0.00032	0.00021	0.00036	0.00040	0.00037	0.00035	0.00049	0.00023	0.00021
Cadmium T-Cd	0.00241	0.000051	0.000031	<0.000020	0.000027	0.000027	0.000027	0.000030	0.000027	0.000029	0.000029
Calcium T-Ca	637	808	837	823	812	801	818	837	818	851	850
Copper T-Cu	0.00251	0.000916	0.000587	0.000629	0.000479	0.000442	0.000404	0.000423	0.000443	0.000439	0.000444
Iron T-Fe	0.018	0.063	0.088	0.186	0.334	0.301	0.305	0.290	0.286	0.286	0.285
Lead T-Pb	0.000970	0.00160	0.00116	0.000875	0.00103	0.000982	0.000978	0.000977	0.000998	0.00116	0.00105
Magnesium T-Mg	1940	2420	2540	2510	2470	2460	2490	2550	2490	2590	2600
Mercury T-Hg	<0.000010	-	-	-	-	-	-	-	-	-	-
Molybdenum T-Mo	0.0059	0.0059	0.0058	0.0069	0.0081	0.0058	0.0086	0.0061	0.0093	0.0064	0.0063
Nickel T-Ni	0.00848	0.00901	0.00849	0.00616	0.00627	0.00635	0.00612	0.00617	0.00640	0.00652	0.00681
Zinc T-Zn	0.987	0.0903	0.0578	0.0241	0.0304	0.0297	0.0287	0.0320	0.0336	0.0340	0.0346
Inorganic Parameters											
Sulphide S	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Footnotes:

Project **2006 August Polaris Garrow Lk Sea**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

RESULTS OF ANALYSIS

Sample ID	**GLC-22M**	**GLC-30M**	**GLC-40M**	**GLS-6A M**	**GLS-20A M**	**GLC-0A M**	**GLC-9A M**	**GLC-20A M**	**GL- BLANK**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled									
ALS Sample ID	45	46	47	48	49	50	51	52	53
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests									
Conductivity (uS/cm)	82200	82200	81600	11100	82300	11200	17400	82300	-
Hardness CaCO3	12900	12600	12300	1470	12400	1420	2070	12300	-
pH	7.68	7.67	7.64	8.06	7.67	8.07	7.98	7.68	-
Salinity o/oo	61.6	61.6	61.1	6.7	61.7	61.8	10.9	61.7	-
Total Suspended Solids	21.5	73.0	14.2	<3.0	19.5	<3.0	5.5	8.2	-
Dissolved Anions									
Alkalinity-Total CaCO3	449	412	421	134	434	123	148	436	-
Cyanides									
Total Cyanide CN	-	-	-	<0.0050	0.0208	<0.0050	<0.0050	0.0194	-
Total Metals									
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic T-As	0.00033	0.00031	<0.00020	<0.00020	0.00050	<0.00020	<0.00020	<0.00020	<0.00020
Cadmium T-Cd	0.000029	0.000172	<0.0020	0.000468	0.000030	0.000467	0.000746	0.000028	<0.000020
Calcium T-Ca	852	838	817	134	844	129	174	830	0.270
Copper T-Cu	0.000520	0.00144	0.000287	0.000905	0.000405	0.00103	0.00118	0.000401	0.000315
Iron T-Fe	0.277	0.293	0.251	0.026	0.268	0.025	0.020	0.263	<0.010
Lead T-Pb	0.00104	0.0699	0.00141	0.000281	0.00142	0.000297	0.000282	0.000978	0.000267
Magnesium T-Mg	2610	2560	2480	277	2490	268	397	2480	0.50
Mercury T-Hg	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum T-Mo	0.0105	<0.0050	<0.0050	<0.0050	0.0054	<0.0050	<0.0050	<0.0050	<0.0050
Nickel T-Ni	0.00682	0.00305	0.00100	0.00382	0.00675	0.00376	0.00473	0.00609	0.000111
Zinc T-Zn	0.0351	0.0920	0.0139	0.205	0.0341	0.205	0.341	0.0307	0.00110
Inorganic Parameters									
Sulphide S	<0.020	<0.020	0.056	<0.020	<0.020	<0.020	<0.020	<0.020	-

Footnotes:

Project **2006 August Polaris Garrow Lk Seawater Analysis**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

DETECTION LIMITS

Sample ID	**GLS-0M**	**GLS-1M**	**GLS-1.5M**	**GLS-2M**	**GLS-3M**	**GLS-4M**	**GLS-5M**	**GLS-6M**	**GLS-7M**	**GLS-8M**	**GLS-9M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	1	2	3	4	5	6	7	8	9	10	11
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Hardness CaCO3	5.4	54	5.4	54	5.4	54	54	54	54	54	54
pH	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Salinity o/oo	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Suspended Solids	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Dissolved Anions											
Alkalinity-Total CaCO3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cyanides											
Total Cyanide CN	0.0050	-	0.0050	-	0.0050	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	20	0.20	0.20
Arsenic T-As	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
Cadmium T-Cd	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
Calcium T-Ca	0.50	5.0	0.50	5.0	0.50	5.0	5.0	5.0	5.0	5.0	5.0
Copper T-Cu	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Iron T-Fe	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Lead T-Pb	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Magnesium T-Mg	1.0	10	1.0	10	1.0	10	10	10	10	10	10
Mercury T-Hg	0.000010	-	0.000010	-	0.000010	-	-	-	-	-	-
Molybdenum T-Mo	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Nickel T-Ni	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Zinc T-Zn	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Inorganic Parameters											
Sulphide S	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020

Project **2006 August Polaris Garrow Lk**
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ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

DETECTION LIMITS

Sample ID	**GLS-10M**	**GLS-11M**	**GLS-12M**	**GLS-13M**	**GLS-14M**	**GLS-15M**	**GLS-16M**	**GLS-17M**	**GLS-18M**	**GLS-19M**	**GLS-20M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	12	13	14	15	16	17	18	19	20	21	22
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Hardness CaCO3	11	110	270	270	270	270	270	270	270	270	270
pH	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Salinity o/oo	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Suspended Solids	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Dissolved Anions											
Alkalinity-Total CaCO3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cyanides											
Total Cyanide CN	0.0050	-	-	-	-	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	20
Arsenic T-As	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
Cadmium T-Cd	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
Calcium T-Ca	1.0	10	25	25	25	25	25	25	25	25	25
Copper T-Cu	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.00050
Iron T-Fe	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Lead T-Pb	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Magnesium T-Mg	2.0	20	50	50	50	50	50	50	50	50	50
Mercury T-Hg	0.000010	-	-	-	-	-	-	-	-	-	-
Molybdenum T-Mo	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Nickel T-Ni	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Zinc T-Zn	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Inorganic Parameters											
Sulphide S	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020

Project	**2006 August Polaris Garrow Lk**
Report to	Azimuth Consulting Group Inc.
ALS File No.	Z1775
Date Received	28/08/2006
Date:	22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)

GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

DETECTION LIMITS

Sample ID	**GLC-0M**	**GLC-1M**	**GLC-1.5M**	**GLC-2M**	**GLC3M**	**GLC-4M**	**GLC-5M**	**GLC-6M**	**GLC-7M**	**GLC-8M**	**GLC-9M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	23	24	25	26	27	28	29	30	31	32	33
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Hardness CaCO3	5.4	54	5.4	54	5.4	54	54	54	54	54	54
pH	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Salinity o/oo	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Suspended Solids	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Dissolved Anions											
Alkalinity-Total CaCO3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cyanides											
Total Cyanide CN	0.0050	-	0.0050	-	0.0050	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Arsenic T-As	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
Cadmium T-Cd	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
Calcium T-Ca	0.50	5.0	0.50	5.0	0.50	5.0	5.0	5.0	5.0	5.0	5.0
Copper T-Cu	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Iron T-Fe	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Lead T-Pb	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Magnesium T-Mg	1.0	10	1.0	10	1.0	10	10	10	10	10	10
Mercury T-Hg	0.000010	-	0.000010	-	0.000010	-	-	-	-	-	-
Molybdenum T-Mo	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Nickel T-Ni	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Zinc T-Zn	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Inorganic Parameters											
Sulphide S	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020

Project	**2006 August Polaris Garrow Lk**
Report to	Azimuth Consulting Group Inc.
ALS File No.	Z1775
Date Received	28/08/2006
Date:	22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)

GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

DETECTION LIMITS

Sample ID	**GLC-10M**	**GLC-11M**	**GLC-12M**	**GLC-13M**	**GLC-14M**	**GLC-15M**	**GLC-16M**	**GLC-17M**	**GLC-18M**	**GLC-19M**	**GLC-20M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	34	35	36	37	38	39	40	41	42	43	44
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Hardness CaCO3	110	270	270	270	270	270	270	270	270	270	270
pH	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Salinity o/oo	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Suspended Solids	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Dissolved Anions											
Alkalinity-Total CaCO3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cyanides											
Total Cyanide CN	0.0050	-	-	-	-	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Arsenic T-As	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
Cadmium T-Cd	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
Calcium T-Ca	10	25	25	25	25	25	25	25	25	25	25
Copper T-Cu	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Iron T-Fe	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Lead T-Pb	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Magnesium T-Mg	20	50	50	50	50	50	50	50	50	50	50
Mercury T-Hg	0.000010	-	-	-	-	-	-	-	-	-	-
Molybdenum T-Mo	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Nickel T-Ni	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Zinc T-Zn	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Inorganic Parameters											
Sulphide S	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020

Project	**2006 August Polaris Garrow Lk**
Report to	Azimuth Consulting Group Inc.
ALS File No.	Z1775
Date Received	28/08/2006
Date:	22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)

GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

DETECTION LIMITS

Sample ID	**GLC-22M**	**GLC-30M**	**GLC-40M**	**GLS-6A M**	**GLS-20A M**	**GLC-0A M**	**GLC-9A M**	**GLC-20A M**	**GL- BLANK**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled									
ALS Sample ID	45	46	47	48	49	50	51	52	53
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests									
Conductivity (uS/cm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-
Hardness CaCO3	270	270	270	5.4	27	5.4	5.4	27	-
pH	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	-
Salinity o/oo	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-
Total Suspended Solids	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	-
Dissolved Anions									
Alkalinity-Total CaCO3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-
Cyanides									
Total Cyanide CN	-	-	-	0.0050	0.0050	0.0050	0.0050	0.0050	-
Total Metals									
Aluminum T-Al	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Arsenic T-As	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
Cadmium T-Cd	0.000020	0.000020	0.0020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
Calcium T-Ca	25	25	25	0.50	2.5	0.50	0.50	2.5	0.050
Copper T-Cu	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Iron T-Fe	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Lead T-Pb	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Magnesium T-Mg	50	50	50	1.0	5.0	1.0	1.0	5.0	0.10
Mercury T-Hg	-	-	-	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
Molybdenum T-Mo	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Nickel T-Ni	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
Zinc T-Zn	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Inorganic Parameters									
Sulphide S	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	-

Project **2006 August Polaris Garrow Lk Seawater Analysis**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

UNITS											
Sample ID	**GLS-0M**	**GLS-1M**	**GLS-1.5M**	**GLS-2M**	**GLS-3M**	**GLS-4M**	**GLS-5M**	**GLS-6M**	**GLS-7M**	**GLS-8M**	**GLS-9M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	1	2	3	4	5	6	7	8	9	10	11
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm
Hardness CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Salinity o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo
Total Suspended Solids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Dissolved Anions											
Alkalinity-Total CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cyanides											
Total Cyanide CN	mg/L	-	mg/L	-	mg/L	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Arsenic T-As	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cadmium T-Cd	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium T-Ca	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Copper T-Cu	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Iron T-Fe	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Lead T-Pb	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Magnesium T-Mg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mercury T-Hg	mg/L	-	mg/L	-	mg/L	-	-	-	-	-	-
Molybdenum T-Mo	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nickel T-Ni	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zinc T-Zn	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Inorganic Parameters											
Sulphide S	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Project **2006 August Polaris Garrow Lk**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

UNITS											
Sample ID	**GLS-10M**	**GLS-11M**	**GLS-12M**	**GLS-13M**	**GLS-14M**	**GLS-15M**	**GLS-16M**	**GLS-17M**	**GLS-18M**	**GLS-19M**	**GLS-20M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	12	13	14	15	16	17	18	19	20	21	22
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm
Hardness CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Salinity o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo
Total Suspended Solids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Dissolved Anions											
Alkalinity-Total CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cyanides											
Total Cyanide CN	mg/L	-	-	-	-	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Arsenic T-As	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cadmium T-Cd	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium T-Ca	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Copper T-Cu	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Iron T-Fe	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Lead T-Pb	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Magnesium T-Mg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mercury T-Hg	mg/L	-	-	-	-	-	-	-	-	-	-
Molybdenum T-Mo	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nickel T-Ni	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zinc T-Zn	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Inorganic Parameters											
Sulphide S	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Project **2006 August Polaris Garrow Lk**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

UNITS											
Sample ID	**GLC-0M**	**GLC-1M**	**GLC-1.5M**	**GLC-2M**	**GLC3M**	**GLC-4M**	**GLC-5M**	**GLC-6M**	**GLC-7M**	**GLC-8M**	**GLC-9M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	23	24	25	26	27	28	29	30	31	32	33
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm
Hardness CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Salinity o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo
Total Suspended Solids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Dissolved Anions											
Alkalinity-Total CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cyanides											
Total Cyanide CN	mg/L	-	mg/L	-	mg/L	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Arsenic T-As	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cadmium T-Cd	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium T-Ca	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Copper T-Cu	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Iron T-Fe	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Lead T-Pb	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Magnesium T-Mg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mercury T-Hg	mg/L	-	mg/L	-	mg/L	-	-	-	-	-	-
Molybdenum T-Mo	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nickel T-Ni	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zinc T-Zn	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Inorganic Parameters											
Sulphide S	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Project **2006 August Polaris Garrow Lk**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

UNITS											
Sample ID	**GLC-10M**	**GLC-11M**	**GLC-12M**	**GLC-13M**	**GLC-14M**	**GLC-15M**	**GLC-16M**	**GLC-17M**	**GLC-18M**	**GLC-19M**	**GLC-20M**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled											
ALS Sample ID	34	35	36	37	38	39	40	41	42	43	44
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests											
Conductivity (uS/cm)	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm
Hardness CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH	pH
Salinity o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo
Total Suspended Solids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Dissolved Anions											
Alkalinity-Total CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cyanides											
Total Cyanide CN	mg/L	-	-	-	-	-	-	-	-	-	-
Total Metals											
Aluminum T-Al	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Arsenic T-As	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cadmium T-Cd	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium T-Ca	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Copper T-Cu	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Iron T-Fe	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Lead T-Pb	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Magnesium T-Mg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mercury T-Hg	mg/L	-	-	-	-	-	-	-	-	-	-
Molybdenum T-Mo	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nickel T-Ni	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zinc T-Zn	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Inorganic Parameters											
Sulphide S	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Project **2006 August Polaris Garrow Lk**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

UNITS									
Sample ID	**GLC-22M**	**GLC-30M**	**GLC-40M**	**GLS-6A M**	**GLS-20A M**	**GLC-0A M**	**GLC-9A M**	**GLC-20A M**	**GL- BLANK**
Date Sampled	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005	21/08/2005
Time Sampled									
ALS Sample ID	45	46	47	48	49	50	51	52	53
Nature	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater	Seawater
Physical Tests									
Conductivity (uS/cm)	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	uS/cm	-
Hardness CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
pH	pH	pH	pH	pH	pH	pH	pH	pH	-
Salinity o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	o/oo	-
Total Suspended Solids	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
Dissolved Anions									
Alkalinity-Total CaCO3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
Cyanides									
Total Cyanide CN	-	-	-	mg/L	mg/L	mg/L	mg/L	mg/L	-
Total Metals									
Aluminum T-Al	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Arsenic T-As	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Cadmium T-Cd	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Calcium T-Ca	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Copper T-Cu	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Iron T-Fe	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Lead T-Pb	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Magnesium T-Mg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Mercury T-Hg	-	-	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Molybdenum T-Mo	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nickel T-Ni	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zinc T-Zn	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Inorganic Parameters									
Sulphide S	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-

Project **2006 August Polaris Garrow Lk Seawater Analysis**
Report to Azimuth Consulting Group Inc.
ALS File No. Z1775
Date Received 28/08/2006
Date: 22/09/2006

Conventions:

GLC Represents Water Licence Monitoring Station 262-3 (Garrow Lake Centre)
GLS Represents Water Licence Monitoring Station 262-3A (Garrow Lake South)

Duplicate Results

Sample ID	**GLS-3M**	**GLS-3M**	**RPD %**	**GLC-11M**	**GLC-11M**	**RPD %**	**GLC-30M**	**GLC-30M**	**RPD %**	**GLC-40M**	**GLC-40M**	**RPD %**	**GLS-6A M**	**GLS-6A M**	**RPD %**
Date Sampled	21/08/2005	QC# 519558		21/08/2005	QC# 519559		21/08/2005	QC# 519561		21/08/2005	QC# 519562		21/08/2005	QC# 519560	
Time Sampled															
ALS Sample ID	5			35			46			47			48		
Nature	Seawater			Seawater			Seawater			Seawater			Seawater		
Physical Tests															
Conductivity (uS/cm)	11100	11100	0	81000	81000	0	82200	82100	0.122	81600	81600	0	11100	11100	0
Hardness CaCO3	1440	1410	2.11	12000	12100	0.83	12600	12300	2.41	12300	12300	0	1470	1480	0.678
pH	7.96	7.96	0	7.69	7.70	0.13	7.67	7.67	0	7.64	7.65	0.131	8.06	8.02	0.498
Salinity o/oo	6.7	6.7	0	60.6	60.6	0	61.6	61.6	0	61.1	61.1	0	6.7	6.7	0
Total Suspended Solids	4.8	5.5	13.6	60.3	69.0	13.5	73.0	82.5	12.2	-	-	-	<3.0	3.5	15.4
Dissolved Anions															
Alkalinity-Total CaCO3	120	137	13.2	411	430	4.52	412	420	1.92	421	403	4.37	134	122	9.38
Total Metals															
Aluminum T-Al	<0.20	<0.20	0	<0.20	<0.20	0	<0.20	<0.20	0	<0.20	<0.20	0	<0.20	<0.20	0
Arsenic T-As	<0.00020	<0.00020	0	0.00047	0.00046	2.15	0.00031	0.00027	13.8	<0.00020	0.00021	4.88	<0.00020	<0.00020	0
Cadmium T-Cd	0.000485	0.000476	1.87	0.000051	0.000046	10.3	0.000172	0.000148	15	<0.0020	<0.0020	0	0.000468	0.000447	4.59
Calcium T-Ca	132	128	3.08	808	820	1.47	838	819	2.29	817	819	0.244	134	134	0
Copper T-Cu	0.00116	0.000980	16.8	0.000916	0.000844	8.18	0.00144	0.00147	2.06	0.000287	0.000303	5.42	0.000905	0.000872	3.71
Iron T-Fe	0.028	0.026	7.41	0.063	0.059	6.56	0.293	0.309	5.32	0.251	0.251	0	0.026	0.026	0
Lead T-Pb	0.000345	0.000307	11.7	0.00160	0.00153	4.47	0.0699	0.0639	8.97	0.00141	0.00144	2.11	0.000281	0.000267	5.11
Magnesium T-Mg	270	265	1.87	2420	2440	0.823	2560	2500	2.37	2480	2500	0.803	277	277	0
Mercury T-Hg	<0.000010	<0.000010	0	-	-	-	-	-	-	-	-	-	<0.000010	<0.000010	0
Molybdenum T-Mo	<0.0050	<0.0050	0	0.0059	0.0056	5.22	<0.0050	<0.0050	0	<0.0050	<0.0050	0	<0.0050	<0.0050	0
Nickel T-Ni	0.00394	0.00356	10.1	0.00901	0.00869	3.62	0.00305	0.00298	2.32	0.00100	0.000969	3.15	0.00382	0.00363	5.1
Zinc T-Zn	0.213	0.192	10.4	0.0903	0.0858	5.11	0.0920	0.0815	12.1	0.0139	0.0145	4.23	0.205	0.196	4.49
Inorganic Parameters															
Sulphide S	<0.020	<0.020	0	<0.020	<0.020	0	<0.020	0.021	4.88	0.056	0.064	13.3	<0.020	<0.020	0

APPENDIX 4

Monitoring of Other

Site Surface Waters

&

Soil Samples from Former Concentrate Storage Shed

(July 2006)

ALS Environmental

CERTIFICATE OF ANALYSIS

Date:	August 15, 2006
ALS File No.	X8988
Report On:	Polaris Water/Seawater/Soil Analysis
Report To:	**Azimuth Consulting Group Inc.** 218 - 2902 West Broadway Vancouver, BC V6K 2G8
Attention:	**Ms. Cheryl Mackintosh**
Received:	July 19, 2006

ALS ENVIRONMENTAL
per:

Heather A. Ross-Easton, B.Sc. - Account Manager
Katherine Thomas, B.Sc. - Client Services Manager

ALS CANADA LTD.
1988 Triumph Street, Vancouver, BC Canada V5L 1K5
Phone: 604-253-4188 Fax: 604-253-6700 Website: www.alsenviro.com

File No. X8988

RESULTS OF ANALYSIS - Seawater

Sample ID			G CREEK	G CREEK
Sample Date			06-07-06	06-07-14
ALS ID			*1*	*2*
Physical Tests				
Hardness		CaCO3	272	346
pH			8.00	8.00
Salinity	o/oo		<1.0	1.3
Total Suspended Solids			<3.0	<3.0
Dissolved Anions				
Alkalinity-Total		CaCO3	38.6	46.5
Nutrients				
Ammonia Nitrogen		N	-	0.0073
Nitrate Nitrogen		N	0.050	0.040
Cyanides				
Total Cyanide	CN		<0.0050	<0.0050
Total Metals				
Aluminum	T-Al		<0.10	<0.10
Arsenic	T-As		<0.00020	<0.00020
Cadmium	T-Cd		0.000055	0.000083
Calcium	T-Ca		30.8	36.9
Copper	T-Cu		0.000602	0.000643
Iron	T-Fe		0.015	0.015
Lead	T-Pb		0.000468	0.000344
Magnesium	T-Mg		47.4	61.6
Mercury	T-Hg		-	<0.000010
Molybdenum	T-Mo		<0.0050	<0.0050
Nickel	T-Ni		0.00116	0.00129
Zinc	T-Zn		0.0173	0.0231
Radiological Parameters				
Radium-226			<0.0050	<0.0050

< = Less than the detection limit indicated.
[1]Results are expressed as milligrams per litre except where noted.

File No. X8988

RESULTS OF ANALYSIS - Water[1]

Sample ID			LRD-SW	F-LAKE
Sample Date			06-07-09	06-07-13
ALS ID			*3*	*4*
Physical Tests				
Hardness	CaCO3		188	
pH			8.18	-
Total Suspended Solids			-	5.1
Dissolved Anions				
Alkalinity-Total		CaCO3	76.8	
Nutrients				
Nitrate Nitrogen		N	1.09	
Total Metals				
Calcium	T-Ca		47.6	
Lead	T-Pb		0.0033	
Magnesium	T-Mg		16.9	
Zinc	T-Zn		<0.050	

< = Less than the detection limit indicated.
[1]Results are expressed as milligrams per litre except where noted.

File No. X8988

RESULTS OF ANALYSIS - Sediment/Soil[1]

Sample ID		CSHED-NORTH	CSHED-MID	CSHED-SOUTH
Sample Date		06-07-14	06-07-14	06-07-14
ALS ID		*5*	*6*	*7*
Physical Tests				
pH		8.63	8.30	8.66
Total Metals				
Lead	T-Pb	106	161	133
Zinc	T-Zn	177	280	871

< = Less than the detection limit indicated.
[1]Results are expressed as milligrams per dry kilogram except where noted.

File No. X8988

Appendix 2 - METHODOLOGY

Outlines of the methodologies utilized for the analysis of the samples submitted are as follows

pH in Water

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.

Recommended Holding Time:
Sample: 2 hours
Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Conventional Parameters in Water

These analyses are carried out in accordance with procedures described in "Methods for Chemical Analysis of Water and Wastes" (USEPA), "Manual for the Chemical Analysis of Water, Wastewaters, Sediments and Biological Tissues" (BCMOE), and/or "Standard Methods for the Examination of Water and Wastewater" (APHA). Further details are available on request.

Laboratory Location: ALS Environmental, Vancouver

Solids in Water

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total dissolved solids (TDS) and total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius, TSS is determined by drying the filter at 104 degrees celsius. Total solids are determined by evaporating a sample to dryness at 104 degrees celsius. Fixed and volatile solids are determined by igniting a dried sample residue at 550 degrees celsius.

Recommended Holding Time:
Sample: 7 days
Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Alkalinity in Water by Colourimetry

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

Recommended Holding Time:
Sample: 14 days

Appendix 2 - METHODOLOGY - Continued

Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Dissolved Anions in Water by Ion Chromatography

This analysis is carried out using procedures adapted from APHA Method 4110 "Determination of Anions by Ion Chromatography" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Anions are determined by filtering the sample through a 0.45 micron membrane filter and injecting the filtrate onto a Dionex IonPac AG17 anion exchange column with a hydroxide eluent stream. Anions routinely determined by this method include: bromide, chloride, fluoride, nitrate, nitrite and sulphate.

Recommended Holding Time:
Sample: 28 days (bromide, chloride, fluoride, sulphate)
Sample: 2 days (nitrate, nitrite)
Reference: APHA and EPA

Laboratory Location: ALS Environmental, Vancouver

Cyanide Species in Water

This analysis is carried out using procedures adapted from APHA Method 4500-CN "Cyanide". Total or strong acid dissociable (SAD) cyanide and weak acid dissociable (WAD) cyanide are determined by sample distillation and analysis using the chloramine-T colourimetric method. Cyanate is determined by the cyanate hydrolysis method using an ammonia selective electrode. Thiocyanate is determined by the ferric nitrate colourimetric method.

Recommended Holding Time:
Sample: 14 days
Reference: APHA

Laboratory Location: ALS Environmental, Vancouver

Metals in Seawater

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedures may involve preliminary sample treatment by acid digestion or filtration (EPA Method 3005A). Instrumental analysis of the seawater is by atomic absorption/emission spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Recommended Holding Time:

Sample: 6 months
Reference: Puget

Laboratory Location: ALS Environmental, Vancouver

Trace Metals in Seawater by SPR-IDA Chelation

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995, and with procedures adapted from Cetac Technologies Incorporated. A suspended particulate resin (SPR), consisting of immobilized iminodiacetate (IDA) on a divinylbenzene polymer, is used to chelate and preconcentrate metals in seawater. Instrumental analysis is by inductively coupled plasma mass spectrometry (ICPMS) and/or routine atomic absorption spectrophotometry techniques (EPA 7000 series).

Recommended Holding Time:
Sample/Extract: 6 months
Reference: Puget

Laboratory Location: ALS Environmental, Vancouver

Metals in Water

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" 20th Edition 1998 published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotplate or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by atomic absorption/emission spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Recommended Holding Time:
Sample: 6 months
Reference: EPA

Laboratory Location: ALS Environmental, Vancouver

Ammonia in Water by Colourimetry

This analysis is carried out, on unpreserved samples, using procedures adapted from APHA Method 4500-NH3 "Nitrogen (Ammonia)". Ammonia is determined using the phenate colourimetric method.

Recommended Holding Time:

Sample: 72 hours
Reference: BC WLAP

Laboratory Location: ALS Environmental, Vancouver

Mercury in Seawater

This analysis is carried out using procedures adapted from "Recommended Guidelines for Measuring Metals in Puget Sound Marine Water, Sediment, and Tissue Samples" prepared for the United States Environmental Protection Agency and the Puget Sound Water Quality Authority, 1995. The procedure involves a cold-oxidation of the acidified seawater sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

Recommended Holding Time:
Sample: 28 days
Reference: Puget

Laboratory Location: ALS Environmental, Vancouver

pH in Soil

This analysis is carried out in accordance with procedures described in "Soil Sampling and Methods of Analysis" (CSSS). The procedure involves mixing the air-dried sample with deionized/distilled water. The pH of the solution is then measured using a standard pH probe. A one to two ratio of sediment to water is used for mineral soils and a one to ten ratio is used for highly organic soils.

Laboratory Location: ALS Environmental, Vancouver

Metals in Sediment/Soil

This analysis is carried out using procedures from CSR Analytical Method 8 "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, Lands and Parks, 26 June 2001, and procedures adapted from "Test Methods for Evaluating Solid Waste", SW-846 Method 3050B or Method 3051, United States Environmental Protection Agency (EPA). The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve, and a representative subsample of the dry material is weighed. The sample is then digested at 90 degrees Celsius for 2 hours by either hotplate or block digester using a 1:1 ratio of concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic absorption/fluorescence spectrophotometry (EPA Method 7000 series), inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B), and/or inductively coupled plasma - mass spectrometry (EPA Method 6020).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals

Appendix 2 - METHODOLOGY - Continued

that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Recommended Holding Time:
Sample: 6 months (Hg = 28 days)
Extract: 6 months (Hg = 28 days, Sb & Sn = 7 days)
Reference: BCMELP

Laboratory Location: ALS Environmental, Vancouver

Results contained within this certificate relate only to the samples as submitted.

End of Report

APPENDIX 5

2006

Annual Geotechnical Inspection Report

by

Gartner Lee Limited

Report on Post-closure Geotechnical Inspection for Polaris Mine Site in 2006

Prepared for
TeckCominco Metals Ltd.

Submitted by
Gartner Lee Limited

November 2006

Gartner Lee

Report on Post-closure Geotechnical Inspection for Polaris Mine Site in 2006

Prepared for
Teck Cominco Metals Ltd.

November 2006

Reference: **GLL 50-508**

Distribution:
10 Teck Cominco Limited
2 Gartner Lee Limited

Gartner Lee

Gartner Lee Limited

November 21, 2006

Mr. Bruce Donald. P.Eng.
Reclamation Manager, Polaris Mine
Teck Cominco Limited
Bag 2000
Kimberley, BC V1A 3E1

Dear Mr. Donald:

Re: GLL 50508 – Report on Post-closure Geotechnical Inspection for Polaris Mine Site in 2006

Gartner Lee is pleased to present our report on geotechnical inspections conducted at the Polaris Mine Site in July 2006. This report includes eight sections covering Garrow Lake, Little Red Dog Quarry, the Operational Landfill, the dock site shoreline, Frustration Lake water intake and access road, the North Quarry, various portals, and the subsidence area.

This report presents my observations, conclusions and recommendations. Additional related information on field measurements conducted during the summer 2006 season is reported separately.

If you have any questions please contact the undersigned.

Yours very truly,
GARTNER LEE LIMITED

Alistair Kent

Alistair Kent, P.Eng.
Senior Geotechnical Engineer

AHK:gc

(50508_Geotech_Insp_Report_2006Nov20.doc)

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Table of Contents

Executive Summary

In July 2006, Alistair Kent, P.Eng., of Gartner Lee Limited accompanied Mr. Bruce Donald to the Polaris mine site. The visit was conducted in fair to good weather conditions, affording adequate visibility and coverage of all areas across the mine site.

With few exceptions, the condition of the overall site is good, with no signs of major instability or erosion being observed that pose threats to human safety or wildlife. In several areas, erosion was observed in limited areas, which should continue to be monitored. In the southern part of the New Quarry remediation of two erosion gullies was evaluated and appears to have been carried out satisfactorily. Minor additional remediation of erosion in the New Quarry area, and of rip-rap in the channel at the former Garrow Dam should be considered for the 2007 summer season, but is not considered to be of critical importance.

1. Introduction

Between July 18 and 21, 2006, Alistair Kent, senior geotechnical engineer of Gartner Lee Limited (GLL), visited the Polaris mine site, accompanied by Mr. Bruce Donald, Reclamation Manager, Teck Cominco Limited (TCL). The purpose of the visit was primarily to conduct the required annual geotechnical site inspection.

The detailed results of the inspection are presented in an annotated photographic record, which is contained in the eight appendices to this report. A summary of site conditions and its history are presented in Section 2, followed by key observations, conclusions and recommendations.

The Polaris mine site, which was decommissioned during 2003 and 2004, is located on Little Cornwallis Island, at 75 deg 23'North, 96 deg 57' West, some 120 km northwest of Resolute, Nunavut. The overall layout of the Polaris site, based on surveys conducted during the closure period, is shown on Figures 1 and 2.

The information in the report is compared with the detailed baseline of data established during the previous inspection in 2005.

The site was sub-divided into a number of common areas to facilitate the organized inspection of the site:

- Area 1 – Garrow Lake, Creek and Former Dam;
- Area 2 – Frustration Lake Jetty and Access Road;
- Area 3 – New Quarry Area;
- Area 4 – Subsidence Area;
- Area 5 – Operational Landfill;
- Area 6 – Little Red Dog (LRD) Quarry Landfill;
- Area 7 – Mine Portals; and
- Area 8 – Marine Foreshore Adjacent to Former Dock and the former tank farm area.

This inspection was conducted in accordance with requirements under Section H (6) of the Water Licence and under the requirements of the Decommissioning and Reclamation Plan approvals.

2. Site Conditions and History

The Polaris mine site was operated between 1981 and 2002, and decommissioning activities took place in 2003 and 2004. The site facilities comprised an underground mine, concentrator plant, concentrate shed, dock, airstrip, tailings impoundment, water intake on Frustration Lake, various site access roads, a limestone quarry for mine backfilling, a shale quarry, and various items of infrastructure such as fuel storage, camp, warehousing etc. Upon completion of decommissioning and reclamation activities all structures had been demolished, soils contaminated by metals and hydrocarbons had been excavated and disposed of. At this time only the airstrip and a small portable camp and workshop and container storage remains, located adjacent to Loon Lake. Access roads between Garrow Lake, Frustration Lake and in the immediate vicinity of the previously active mining operations were decommissioned by rounding the shoulders of the road, removing culvers, and re-establishing natural drainage patters. The layout of the site is shown in Figure 1.

The marine shoreline and slope in the vicinity of the main plant and concentrate storage and ship-loading activities, on the west side of the island now comprise relatively gentle uniform slopes, which have been regraded as part of decommissioning. These slopes are interrupted by sloping roads and ramps. The area in the immediate vicinity of the original dock structure is almost flat. The shoreline has now been restored to a consistent gently sloping platform. Portals for the conveyor, the main access, and the original exploration portal, located on the slopes immediately adjacent to this area have been sealed, backfilled and re-graded to match the surrounding slopes.

In 2006, Teck Cominco Limited (TCL) carried out re-sloping of two small pads, each approximately 100 m by 50 m, that were originally used to support the fuel tank farm and an incinerator pad. They were located at the south end of this Area 8 (Marine shoreline).. The side slopes of the pads were previously inclined at the angle of repose (for rockfill), with a vertical height of up to approximately 10 m. The side slopes have been flattened to approximately 2 horizontal : 1 vertical.

Little Red Dog quarry, located at the northwest end of the airstrip was backfilled partially with demolition debris and metals contaminated soils and subsequently capped with rockfill. The remnant quarry walls above the level of the capping layer are benched and serve to catch ravelling material as the slopes gradually weather. Safety berms extend around the pit perimeter, and additional safety measures in the form of a ditch and a high berm exist at the end of the airstrip. Thermistors have been installed through the cap layer and within the underlying landfill material. In 2006, TCL have carried out improvements to the data collection system for these thermistors and to the insulation of the upper parts of the installations.

The Operational Landfill, located at the south end of the former facility area, has been capped and re-sloped. During operations thermistors had been installed in the landfill at four locations. During 2005, attempts to replace the thermistors were made with thermistors designed to monitor the new cap.

Difficulties were encountered removing the existing thermistors so that only two of the four installations were successfully replaced. In 2006, renewed efforts were successful in restoring the function of all four thermistor installations, together with improvements to data collection and insulation at ground surface.

East of the airstrip, the main features of disturbance are the Subsidence Area and the New Quarry. The Subsidence Area is located over top of underground mine workings and experienced significant deformations during mine operations. Subsequently, the area has been regraded and the rate of subsidence has been decreasing since the cessation of mining. Detailed survey measurements across this area are being collected annually, and a brief review of current conditions of this area are included in this report.

The New Quarry area measures some 800 m by 400 m, and was a source of shale for construction purposes. It has been reclaimed by re-grading stripped materials and resloping quarry faces. Much of the floor of the New Quarry remains as exposed shale bedrock. In 2005, several erosion gullies were identified and assessed, and in 2006 two significant gullies were repaired extensively, as is documented in this report. Well graded limestone rockfill was used to form an erosion resistant bed for Loon Lake creek where it crosses the erosion-susceptible soils.

A network of access roads has been decommissioned (but are still functional) across the project area. As part of the decommissioning all culverts have been removed and drainage crossings re-opened. The access roads are important access for ongoing monitoring activities, and are in good condition.

A short causeway, approximately 100 m long and 10 m wide, which supported the project water supply intake, remains at Frustration Lake, some 4.5 km from the main project site.

At Garrow Lake, the former tailings disposal area, the main impoundment dam was decommissioned, and the wave break embankment structure was breached. The central part of the main dam was removed and replaced with a rip-rap lined channel. The perimeter of Garrow Lake, previously flooded during mining operations by approximately two and one half metres, has now been returned to its former location. Measurements and observations of the condition of the perimeter beach have been conducted since the dam was breached. Observations of this area continued during 2006.

3. Approach to Site Inspection

The primary purpose of the geotechnical site inspection is to assess site-wide conditions for evidence of instability or erosion that may be potentially hazardous to either humans or wildlife. The visual inspections documented in this report are supplemented by other information including survey measurements, and thermistor records. As the inspection is primarily visual, this report is largely presented as a series of annotated photographs with their locations established using GPS. These locations are shown on Figures 1 and 2, and it is intended that on-going annual inspections conducted during the post-closure monitoring period will record visual observations from the same locations. Where significant erosional activities have been observed, measurements of depth and width have been recorded at specific locations, facilitating accurate monitoring of the potential rate of progression in subsequent years. This will allow decisions as to whether to intervene or to allow nature to takes its course. Table 1 lists all observation waypoints for use in future annual inspections.

4. Key Observations and Conclusions

4.1 Area 1 – Garrow Lake, Creek and Dam

Garrow Lake

The perimeter beach was inspected, and no evidence of significant instability or change in previously observed minor erosion features has been detected or observed. No significant trend in erosion has been detected through the erosion pin monitoring. As the water levels have been lowered for the past three years, the shorelines have been exposed to normal cycles of summer and winter seasons. Monitoring of erosion pins was conducted in 2003 and 2004, showing little or not trend for loss of soil. Unfortunately, due to a misunderstanding, incorrect measurements were taken in 2005. However, observations and measurements conducted in 2006 indicate that no significant erosion is occurring. The inspection in 2005 and 2006 indicates that the perimeter beach is stable and largely free of erosion.

The results of the erosion pin measurements are presented in the table in Appendix A for 2003, 2004, and 2006. Given the generally gravelly nature of the surface at the base of the erosion pins, it is likely that the accuracy of measurements is plus or minus 0.5 to 1 cm. The data presented in the table indicate that a small change in the length of exposed pin has occurred. The change is consistently positive and varies between 0.5 and 2 cm. Half of this change may be attributable to variation in measurement accuracy. There are two possible reasons for the change. Erosion of the sand and gravel around the pin may indeed be occurring, or the piece of steel may have been jacked up slightly by ice action. The measured changes

are not considered to be indicative, or indeed to correlate with observations, of any serious widespread erosion or change in the beach landform.

The visual observations documented in various photographs in this, and previous inspection reports, continue to indicate that the beach around Garrow Lake is stable and subject to only minor erosion where natural drainages cross. No evidence of mass erosion or instability has been detected. It is apparent that, after three years of the lake level being drawn down and the beach being re-exposed, no major adverse effects are occurring. Detailed monitoring by means of erosion pins therefore no longer seems to be justified nor are they required beyond 2005 under the monitoring plan. Routine monitoring of suspended sediment levels will continue as part of the effluent water quality monitoring program.

Garrow Lake Wave break Structure

The original intent of the wave break structure was to extend an energy-dissipating barrier above the surface of the lake to reduce the fetch of the lake and protect the face of the main dam from wave action. To ensure the lake could drain back down to its original elevation, during the early spring of 2004, a section of the wave break was excavated in the area of the original creek channel. As part of the routine monitoring of the outlet of the lake, the lake elevation is monitored each spring and fall to determine the normal variations in elevation. This is intended to confirm that the outlet channel from the lake is not eroding.

In July of 2006, the condition of the breached outlet of Garrow Lake was inspected. Since the previous inspection in July 2005, a ridge of beach gravel has been deposited across the outlet channel, as shown in the photographs in Appendix A. The mechanism causing this phenomenon appears to be the action of ice. It is assumed that the ice sheet on the lake was pushed by the wind and pushed gravels onto the shoreline in the area of the wave break structure and the outlet of the lake. The relatively coarse nature of the gravel permits a steady flow of water through the gravel ridge from the lake into the creek channel during the summer.

The table shown below identifies the lake elevations as surveyed in 2005 and again in 2006.

Date	Survey Station 352 Elev. (m)	Instrument Height	Rod Reading	Lake Elevation	Comments
27-June-2005	1006.52	0.55	1.96	1005.11	
24-August-2005	1006.52	0.55	2.00	1005.07	Flow in creek ceased within two weeks after this measurement
29-Jun -2006	1006.52	0.435	1.46	1005.5	No surface flow; seepage through gravel berm
9-July-2006	1006.52	0.438	1.53	1005.43	Seepage through gravel berm
21-August-2006	1006.52	0.305	1.52	1005.31	Seepage through gravel berm

Note: Pre-Dam lake elevation at end of discharge season was reported to be 1,005.7 m.

Survey Station #352 location is -878.338, 3679.594 (local grid).;UTM 561,585E,8,367,439.

A detailed survey of the wave break structure was done by Teck Cominco during July 2006 and will be submitted by Teck Cominco as part of the 3rd Quarter monitoring report.

Garrow Dam

The sideslopes of the breach excavated through the main dam structure are in good condition, free of erosion or signs of major instability. Minor localised slumping observed in 2005 appears unchanged in 2006, and should continue to be checked in subsequent annual inspections. A localised section of the invert of the breach channel has a section of exposed filter fabric. This was observed in 2005 and appeared unchanged in 2006. It is recommended however that this area should be covered with rip-rap. While the integrity of the adjacent rip-rap has not so far been affected, remedial measures should be planned and implemented as soon as is practical.

4.2 Area 2 – Frustration Lake Jetty and Access Road

During mining operations, a jetty extending into Frustration Lake supported the mine's freshwater supply pump station. The pump house and associated water lines were removed during reclamation. The site monitoring program includes a requirement to inspect the jetty on an annual basis to ensure that rate of erosion of the jetty progresses at a gradual rate. The July 2006 inspection of the embankment forming the jetty was observed to be in good condition generally. Evidence of minor erosion and settlement at the end and along the sides of the embankment should continue to be observed, but is expected to be the result of localised thaw of buried snow or ice, and of the effects of high water levels and wind action on floating ice.

The access road is generally in good condition, with generally localised erosion at drainage crossings. At one location cross-drainage is resulting in active erosion down slope of the road. Inspection of the surrounding terrain suggests that similar occurrences have occurred previously and have tended to eventually stabilise. During July 2006, following the geotechnical inspection Teck Cominco reported that it had carried out remedial work along the access road in order to disperse drainage and reduce related erosion in several isolated instances. This feature should be monitored during future annual inspections.

4.3 Area 3 – New Quarry Area

The perimeter sideslopes of the New Quarry are interspersed by several drainages and erosion features. Otherwise, the slopes and floor or the quarry area appear to be stable and pose no safety hazards to humans or wildlife. These features are the result of small drainages exploiting the loose nature of stripped overburden soils. The consequences of these active erosion features are generally minor, as a result of the effect of drainage dispersing across the floor of the quarry and allowing sediment to be deposited.

However, at two locations remedial erosion control measures were carried out in July 2006 in order to stabilize them. Although these erosion gullies were locally significant, their consequences overall were not. Transported sediment was being deposited across the floor of the new Quarry. One of these features had been identified in 2005, but since that inspection, a second erosion gully formed, presumably as a result of spring runoff in 2006. Both of these gullies are documented in Appendix B, together with views of the stabilisation work conducted in July 2006. This work included the re-shaping of both the gullies and the placement of well graded limestone rockfill as rip-rap protection. Although the remedial measures are considered to be robust, they should continue to be monitored as part of future inspections. In several other locations minor localised erosion features should continue to be monitored and remediated, likely best implemented by manual labour, to protect surrounding tundra.

4.4 Area 4 – Subsidence Area

This area was inspected in detail during the site visit. A detailed topographic survey was conducted by TCL. As was the case in 2005, inspection of the subsidence area detected several cracks, as shown in previous surveys. The results of surveying across the area in 2006, when compared to survey results in 2004 and 2005, indicate that there have been no significant changes. Reviewing sections of the subsidence area included in Appendix D show that no trends in subsidence are evident and that variations in the section profiles are apparently related to the accuracy of the surveys conducted. There are no features in the Subsidence Area that presents a risk to either humans or wildlife.

4.5 Area 5 – Operational Landfill

The Operational Landfill was inspected and found to be in excellent condition. No signs of instability were observed. The results of monitoring thermistors are reported separately by TCL. Erosion and minor seepage in a localised portion of the slope above the operational landfill, previously observed in 2005, appeared to be unchanged, and is not expected to adversely impact the performance of the landfill. Minor ingress of seepage water may in fact promote formation of a less pervious zone at the base of the cap zone. However, the area should continue to be monitored annually for any signs of frost heave. The temperature profile of the landfill cover cap is being monitored by means of thermistors installed at 4 locations. The purpose of the thermistors is to monitor the establishment of permafrost through the full thickness of the landfill and to verify that the active layer does not extend beneath the base of the cover cap. The results of monitoring are reported separately by TCL. In 2006, TCL carried improvements to the thermistor installations including the additions of a data logger system, and improvements to the housings at each thermistor to reduce the influence of surface temperature. As the thermistor installations were disturbed and modified during July 2006, temperatures monitored by the data loggers will require a period of time to stabilize before they are representative of the landfill conditions. On July 22, 2006, while excavating the top two meters surrounding thermistor TH2 to upgrade the thermistor installation,

ice lenses were identified at 87 cm from the surface indicating that the majority of the 1.8m cover cap was frozen. The results of the inspection are documented in Appendix E.

4.6 Area 6 – Little Red Dog (LRD) Quarry Landfill

The surface capping of the LRD Quarry Landfill was inspected and found to be free of any signs of instability or settlement, as previously observed in 2005, as documented in Appendix F. Seepage exiting the mouth of the quarry comes to surface over a short distance, then re-infiltrates into the surrounding slopes below. The seepage was running clear and water quality was sampled by TCL and will be reported separately. The side slopes of the quarry above the cap do not exhibit signs of instability, and safety berms along the quarry perimeter are in good condition. The temperature profiles of the landfill cover cap are being monitored by means of thermistors installed at four locations. The purpose of the thermistors is to monitor the establishment of permafrost through the full thickness of the landfill and to verify that the active layer does not extend beneath the base of the cover cap. The thermistors were installed during the summer of 2005, and were monitored while personnel were on site. The results of monitoring are reported separately by TCL. In 2006, TCL made improvements to the thermistor installations by installing a data logger system and by making improvements to the housings at each thermistor to reduce the influence of surface temperature on the metal thermistor casings.

4.7 Area 7 – Mine Portals

The Polaris Mine was an underground mining operation. There were four portals used to access the mine and/or to convey ore out of the mine. As part of the mine decommissioning and reclamation activities, the portals were sealed to prevent the public from accessing the underground mine workings.

The objectives of the annual geotechnical inspection were to look for evidence of any settlement, erosion of the mine seals, or instability at the four portal areas, which might present a safety risk to humans or wildlife. As previously observed in 2005, all of the portals are in good condition, free of any signs of instability or erosion, as documented in Appendix G.

4.8 Area 8 – Marine Foreshore Adjacent to Former Dock

The shoreline adjacent to and along the former dock structure was inspected and surveyed. No signs of instability or erosion were observed that would signify loss of overall integrity of the shoreline or slope above, as documented in Appendix H. Some ongoing localised changes of the shoreline are expected to continue (due to ice action), and a system of observations and survey transects from consistent positions is established in 2005. The photographic comparison of conditions at 100 m intervals along the shoreline

between 2005 and 2006 indicate that only minor changes have occurred. The observed changes amount to re-arrangement of shoreline gravels by ice-action. No signs of instability were observed. The results of surveys along three transect lines are included in the appendix, and indicate that the overall profile of the shoreline remains virtually unchanged, except for minor fluctuations in the shape of the gravely beach at the immediate shore line.

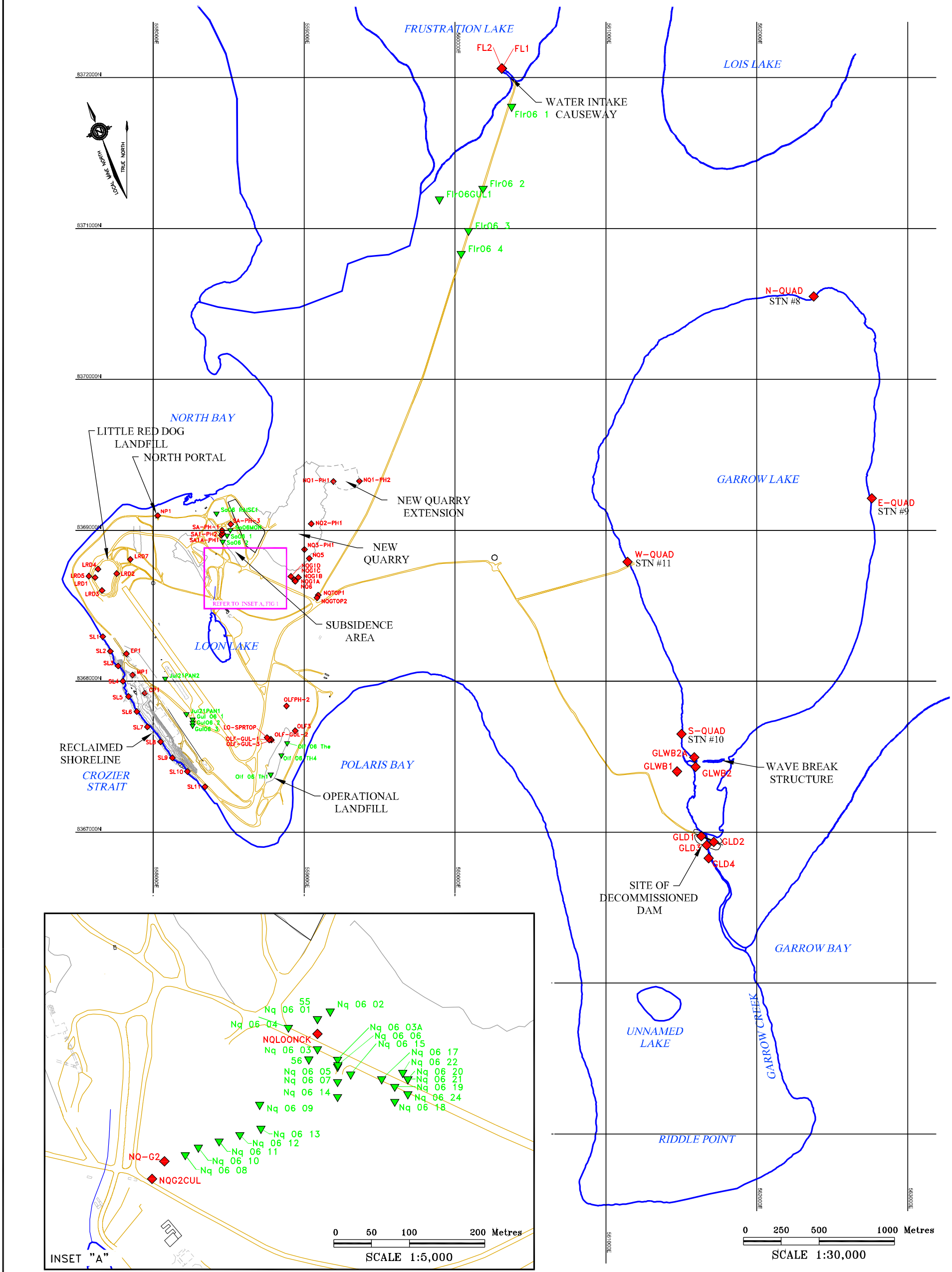
Gartner Lee personnel supervised the re-sloping of pads at the incinerator site and fuel tank farm to slopes of less than 2 horizontal to 1 vertical. These slopes were observed to be free of seepage or any unnatural or deleterious materials, as documented in the appendix.

5. Recommendations

The annual geotechnical inspection conducted in the week of July 17th, 2006 assessed a limited number of relatively minor erosion features, most of which had been previously identified in 2005. In 2006, the most significant erosion features in the New Quarry were stabilised. These features should continue to be monitored during annual geotechnical inspections. Remedial action in the coming summer season of 2007 should be carried out at the decommissioned Garrow Lake dam outlet channel, which requires the addition of a small area of rip-rip at the downstream end. In addition, localised erosion at several drainage crossings along the access road to Frustration Lake should be monitored.

Monitoring should continue to be conducted of all areas of surface disturbance by the geotechnical engineer in the coming year. Monitoring of the erosion pins around the perimeter of Garrow Lake has not shown any significant change between 2003 and 2006 and will be discontinued. It is recommended that annual inspection of the perimeter of the lake, together with water quality measurements, and survey checking of the level of the lake after spring thaw should be continued.

Figures



LEGEND:

- ROADS
- SL11 — WAYPOINT – FIELD INSPECTION POINTS, SUMMER 2005 (GLL)
- Gul06 3 — WAYPOINT – FIELD INSPECTION POINTS, SUMMER 2006 (GLL)

PROJECTION:	UTM 83–14
REVIEWED BY:	DL/AL
PREPARED BY:	NT/CCL
DATE ISSUED:	NOVEMBER, 2006
PROJECT NUMBER:	50–508
FILE NAME:	50508–By3–01r2.dwg
REVISION:	2

Project: Polaris Mine
Location: Nunavut
Client: Teck Cominco Limited

POLARIS MINE
2006 GEOTECHNICAL SITE INSPECTION

teckcominco

Gartner Lee

Figure No. 1

8370000N

8369000N

8368000N

8367000N

558000E

559000E

NORTH BAY

LOCAL MINE NORTH

TRUE NORTH

NEW QUARRY EXTENSION

NEW QUARRY

SUBSIDENCE AREA

NORTH PORTAL

LITTLE RED DOG LANDFILL

NP1

Sa06 RAISE1

SA-PH-3

SA-PH-1

Sa06MON

SA1-PH2

Sa06 1

SA1A-PH1

Sa06 2

NQ1-PH1

NQ1-PH2

NQ2-PH1

NQ3-PH1

NQ5

NQG1D

NQG1C

NQG1B

NQG1A

NQ6

NQTOP1

NQGTOP2

LRD7

LRD4

LRD5

LRD2

LRD1

LRD3

REFER TO INSET A, FIG 1

TEMPORARY CAMP

LOON LAKE

SL1

EAST PORTAL

SL2

EP1

SL3

MAIN PORTAL

MP1

Jul21PAN2

SL4

CONVEYOR PORTAL

CP1

SL5

AIRSTRIP

SL6

Jul21PAN1

Gul 06 1

Gul06 2

Gul06 3

SL7

LO-SPRTOP

OLFPH-2

OLF3

OLF-GUL-2

OLF-GUL-1

OLF-GUL-3

Olf 06 The

Olf 06 TH4

RECLAIMED SHORELINE

SL8

SL9

SL10

SL11

CROZIER STRAIT

POLARIS BAY

Olf 06 Th1

OPERATIONAL LANDFILL

LEGEND:

ROADS

SL11 — WAYPOINT – FIELD INSPECTION POINTS, SUMMER 2005 (GLL)

Gul06 3 — WAYPOINT – FIELD INSPECTION POINTS, SUMMER 2006 (GLL)

0 50 100 200 300 400 500 Metres

SCALE 1:10,000

PROJECTION: UTM 83-14

REVIEWED BY: DL/AL

PREPARED BY: NT/CCL

DATE ISSUED: NOVEMBER, 2006

PROJECT NUMBER: 50-508

FILE NAME: 50508-By3-01r2.dwg

REVISION: 2

teckcominco

Gartner Lee

Project: Polaris Mine
Location: Nunavut
Client: Teck Cominco Ltd.

POLARIS MINE 2006 GEOTECHNICAL INSPECTION - DETAIL OF MINE AREA

Figure No. 2

Tables

Table 1. Polaris Geotechnical Inspection
List of Waypoints

Area	Location	Waypoint	Northing	Easting
1	Station 9	E-QUAD	8,370,547	562,380
1	Dam	GLD1	8,366,973	561,633
1	Dam	GLD2	8,366,935	561,717
1	Dam	GLD3	8,366,914	561,670
1	Dam	GLD4	8,366,827	561,683
1	Wave Break Dam	GLWB1	8,367,402	561,472
1	Wave Break Dam	GLWB2	8,367,433	561,596
1	Wave Break Dam	GLWB2A	8,367,497	561,587
1	Station 8	N-QUAD	8,370,550	562,378
1	Station 10	S-QUAD	8,367,652	561,502
1	Station 11	W-QUAD	8,368,792	561,144
2	Frustration Lk intake	FL1	8,372,061	560,313
2	Frustration Lk intake	FL2	8,372,061	560,312
2	Frustration Lk access road	Flr06 1	8,371,808	560,376
2	Frustration Lk access road	Flr06 2	8,371,265	560,187
2	Frustration Lk access road	Flr06 3	8,370,986	560,091
2	Frustration Lk access road	Flr06 4	8,370,833	560,043
2	Frustration Lk access road	Flr06GUL1	8,371,195	559,899
3	New Quarry	NQG1A	8,368,663	558,943
3	New Quarry	NQG1B	8,368,673	558,937
3	New Quarry	NQG1C	8,368,689	558,964
3	New Quarry	NQG1D	8,368,695	558,913
3	New Quarry	NQ-G2	8,368,561	558,484
3	New Quarry	NQG2CUL	8,368,538	558,467
3	New Quarry	NQGTOP2	8,368,554	559,087
3	New Quarry	NQLOONCK	8,368,730	558,686
3	New Quarry	NQT0P1	8,368,571	559,095
3	New Quarry	NQ1 PH1	8,369,324	559,195
3	New Quarry	NQ1 PH2	8,369,326	559,367
3	New Quarry	NQ2 PH1	8,369,044	559,049
3	New Quarry	NQ3 PH1	8,368,874	559,003
3	New Quarry	NQ5	8,368,814	559,035
3	New Quarry	NQ6	8,368,665	558,940
3	New Quarry	Nq 06 01	8,368,749	558,686
3	New Quarry	Nq 06 02	8,368,759	558,704
3	New Quarry	Nq 06 03	8,368,710	558,686
3	New Quarry	Nq 06 03A	8,368,696	558,713
3	New Quarry	Nq 06 04	8,368,738	558,648
3	New Quarry	Nq 06 05	8,368,686	558,713
3	New Quarry	Nq 06 06	8,368,688	558,713
3	New Quarry	Nq 06 07	8,368,666	558,713
3	New Quarry	Nq 06 08	8,368,569	558,511
3	New Quarry	Nq 06 09	8,368,636	558,610
3	New Quarry	Nq 06 10	8,368,579	558,528
3	New Quarry	Nq 06 11	8,368,588	558,556
3	New Quarry	Nq 06 12	8,368,596	558,584
3	New Quarry	Nq 06 13	8,368,604	558,611
3	New Quarry	Nq 06 14	8,368,646	558,713
3	New Quarry	Nq 06 15	8,368,676	558,730
3	New Quarry	Nq 06 17	8,368,670	558,772

Table 1. Polaris Geotechnical Inspection
List of Waypoints

Area	Location	Waypoint	Northing	Easting
3	New Quarry	Nq 06 18	8,368,640	558,789
3	New Quarry	Nq 06 19	8,368,660	558,789
3	New Quarry	Nq 06 20	8,368,670	558,806
3	New Quarry	Nq 06 21	8,368,670	558,806
3	New Quarry	Nq 06 22	8,368,678	558,799
3	New Quarry	Nq 06 24	8,368,650	558,806
4	Subsidence Area	SA PH 1	8,369,000	558,457
4	Subsidence Area	SA PH 1	8,369,000	558,457
4	Subsidence Area	SA1 PH2	8,368,979	558,459
4	Subsidence Area	SA1 PH3	8,369,257	559,145
4	Subsidence Area	SA1A PH1	8,368,968	558,452
4	Subsidence Area	Sa06 1	8,368,965	558,491
4	Subsidence Area	Sa06 2	8,368,926	558,462
4	Subsidence Area	Sa06 RAISE1	8,369,113	558,420
4	Subsidence Area	Sa06MON	8,369,003	558,513
5	Operational Landfill	LO SPRTOP	8,367,627	558,755
5	Operational Landfill	OLF GUL 1	8,367,611	558,769
5	Operational Landfill	OLF GUL 2	8,367,615	558,780
5	Operational Landfill	OLF GUL 3	8,367,611	558,784
5	Operational Landfill	OLF3	8,367,672	558,942
5	Operational Landfill	OLFPH 2	8,367,836	558,884
5	Operational Landfill	Olf 06 Th1	8,367,382	558,780
5	Operational Landfill	Olf 06 TH4	8,367,510	558,850
5	Operational Landfill	Olf 06 The	8,367,591	558,888
6	Little Red Dog Quarry	LRD1	8,368,688	557,616
6	Little Red Dog Quarry	LRD2	8,368,714	557,759
6	Little Red Dog Quarry	LRD3	8,368,602	557,662
6	Little Red Dog Quarry	LRD4	8,368,744	557,635
6	Little Red Dog Quarry	LRD5	8,368,697	557,575
6	Little Red Dog Quarry	LRD6	8,368,690	557,620
6	Little Red Dog Quarry	LRD7	8,368,808	557,850
7	Conveyor Portal	CP1	8,367,922	557,946
7	Exploration Portal	EP1	8,368,183	557,824
7	Main Portal	MP1	8,368,042	557,864
7	North Portal	NP1	8,369,099	558,031
8	Shoreline	SL1	8,368,297	557,667
8	Shoreline	SL10	8,367,403	558,228
8	Shoreline	SL11	8,367,301	558,344
8	Shoreline	SL2	8,368,199	557,717
8	Shoreline	SL3	8,368,102	557,769
8	Shoreline	SL4	8,368,001	557,800
8	Shoreline	SL5	8,367,900	557,838
8	Shoreline	SL6	8,367,800	557,893
8	Shoreline	SL7	8,367,699	557,962
8	Shoreline	SL8	8,367,600	558,050
8	Shoreline	SL9	8,367,493	558,128
8	Shoreline - upper slopes	Gul 06 1	8,367,746	558,262
8	Shoreline - upper slopes	Gul06 2	8,367,726	558,262
8	Shoreline - upper slopes	Gul06 3	8,367,707	558,262
8	Shoreline - upper slopes	Jul21PAN1	8,367,783	558,221
8	Shoreline - upper slopes	Jul21PAN2	8,368,018	558,080

Appendices

Appendix A

Area 1 - Garrow Lake, Creek and Dam

Appendix A

AREA 1 – GARROW LAKE, CREEK AND DAM

Decommissioning of Garrow Lake and Garrow Creek was accomplished by lowering the surface of the lake approximately two metres back to its original elevation. After the lake was lowered, the central portion of the dam (located approximately 0.5 km downstream from the former outlet of the lake) was removed. This now allows the lake to discharge naturally for approximately a 10 to 12 week period each summer through the original creek channel. The geotechnical inspection objectives are to assess the stability of the foreshore areas around Garrow lake, the outlet channel of Garrow Lake (i.e., in the area of the wavebreak structure), and the stability of the creek channel and creek slopes in the area of the former dam.

Area 1A – Shoreline Area of Garrow Lake

Decommissioning of the Garrow Dam involved lowering the level of Garrow Lake, exposing shoreline features that were previously submerged during operations. During the process of lowering the lake to its original level, erosion monitoring pins were established at four points evenly distributed around the perimeter of the lake, as shown on Figure 1. The monitoring was conducted to assess stability and erosion as drainage occurs and as the permafrost aggrades back into previously submerged shoreline materials. This monitoring was conducted to ensure that no sediments were being introduced into the lake as result of potential instability of shoreline features. Monitoring in 2003 through 2006 did not identify any stability concerns. The following photographs show conditions at each pin.

South Pin (Station 10)

West Pin (Station 11)

North Pin (Station 8)

East Pin (Station 8)

The results of the erosion pin monitoring program are as follows:

Table of Distances in cm from Top of Pin to Ground Surface Measured along side of Pin

	Station 8 North Quadrant	Station 9 East Quadrant	Station 10 South Quadrant	Station 11 West Quadrant
July 2003	56.5	45	61.5	50
Aug 2003	56.5	45	61.5	50
Sept 2003	56.5	44	61	50
June 2004	Snow prevented measurement			
July 2004	57.0	n.a.		50.7
Aug 2004	56.5	45.1	61.5	50.7
Sept 2004	Snow prevented measurement			
June 2005	No measurements available – mostly snow covered			
July 2005	See photographs – no measurements taken due to misunderstanding			
Sept 2005	Snow prevented measurement			
July 8 2006	59	47	63	52
July 19 2006	58	46.5	62	52
Change from 2003 to 2006	**1.5 to 2**	**1.5 to 2**	**0.5 to 1.5**	**2**

It had been proposed to continue the previously established erosion pin monitoring program for 2005, and then to discontinue the monitoring if no issues are identified, and if recommended by the geotechnical engineer conducting the 2005 inspection. Due to a misunderstanding incorrect measurements of the monitoring pins were taken during July and August 2005. Two pin measurements were taken during the summer of 2006, and the results of the erosion pin measurements are presented in the table above for 2003, 2004, and 2006.

Given the generally gravely nature of the surface at the base of the erosion pins, as shown in the photos above, it is likely that the accuracy of measurements is plus or minus 0.5 to 1 cm. The data presented in the table indicate that a small change in the length of exposed pin has occurred. The change is consistently positive and varies between 0.5 and 2 cm. Half of this change may be attributable to variation in measurement accuracy. Two possible reasons for the change are suggested. Erosion of the sand and gravel around the pin may indeed be occurring, or the piece of steel may have been jacked up slightly by ice action. The measured changes are not considered to be indicative of any widespread beach erosion or change of the beach landform, supported by the general observations of beach conditions around Garrow Lake.

The visual observations documented in various photographs in this and previous reports, continue to indicate that the beach around Garrow Lake is stable and subject to only minor erosion where natural drainages cross. No evidence of mass erosion or instability has been detected. It is apparent that after three years of the lake level being drawn down and the beach re-exposed, no adverse effects are

occurring. The monitoring requirements in the Water Licence and Decommissioning and Closure Plan required that the pins to be monitored until 2005. TCL decided to extend this by a year due to the monitoring problems in 2005. It is now proposed that pin measurements be discontinued.

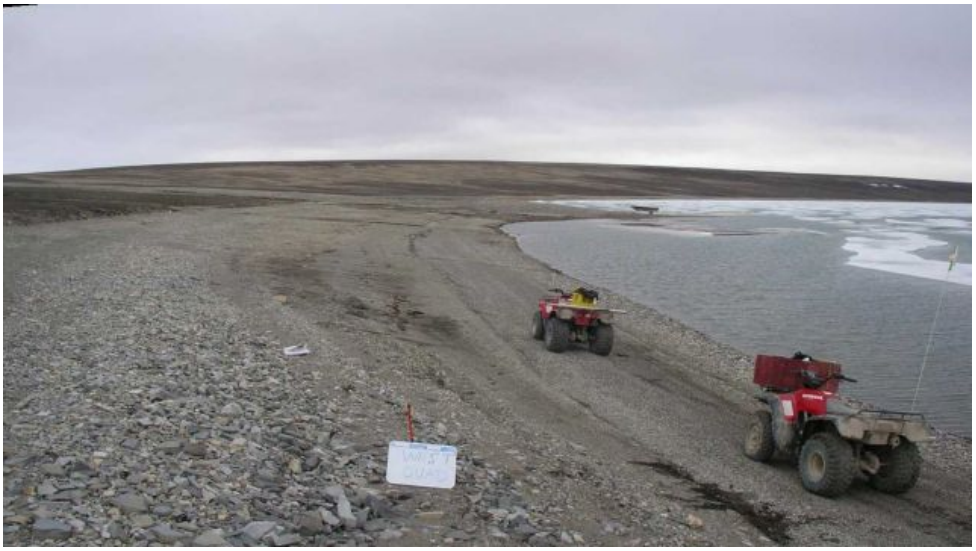
If significant erosion were occurring, this would be likely to increase TSS levels that would be identified in the normal weekly sampling of Garrow Lake. However, TSS levels are relatively low and there is no indication that widespread erosion is occurring. Thus, in addition to annual general site inspection, the routine turbidity sampling of lake discharge constitutes a form of ongoing monitoring of potential erosion of the shoreline.

The following photographs were taken during the July 2006 geotechnical site inspections:

View south from south quadrant pin – Station 10. Note adjacent localised erosion by a small stream which appears to be self armouring. This is an old stream gradually re-establishing itself at a stable gradient through the accumulation of beach materials deposited while the lake was raised during operations. It is very localised and the side slopes are going to take some time to gradually flatten and stabilise.

View north at south quadrant pin at Station 10. The overall nature of the beach terrain appears unchanged since previously inspected in 2005.

Shoreline viewed from erosion pin at West Quadrant Station 11 shows no apparent signs of change since inspected in 2005.



View north at West Quadrant (Station 11) – shoreline appears stable with negligible change since last inspection in 2005.

West Quadrant (Station 11) – view south, showing little change since last inspection in 2005.

View west at North Quadrant Pin at Station 8 – sediments become more coarse and less subject to minor erosion proceeding north and east from the west quadrant. The situation remains unchanged since previous inspection in 2005.

View east at North Quadrant Pin – Station 8. Conditions remain similar to previous observations in 2005. The lake water level is slightly higher.

View south at East Quadrant Pin at Station 9 – sediments exposed are coarser than on west shore. No sign of widespread change since last inspection in 2005.

View north at East Quadrant Pin – Station 9. No evidence of significant change since previous inspection in 2005.

View from point south of East Quadrant (Station 9) where beach has become steeper proceeding southwards along eastern shore, with coarser angular rock fragments. Water level is slightly higher. Conditions are generally the same as observed in 2005.

Area 1B - Wave Break Structure

Garrow Creek is the only flow out of Garrow Lake and therefore controls the elevation of the lake. During operations, a wavebreak structure, consisting of a rockfill embankment approximately 5 m wide and 1 m high, was constructed along the southern edge of Garrow Lake at the entrance to Garrow Creek, as shown on Figure 1. During decommissioning, the wavebreak structure in the channel of Garrow Creek was excavated over a width of approximately 15 m to ensure flow out of the lake was not impeded. The remainder of the wavebreak structure was partially removed for aesthetic purposes.

The annual inspection of the Garrow Creek channel in the area of the wavebreak structure for signs of erosion was conducted. Since the previous inspection in July 2005, a ridge of beach gravel has been deposited across the previously excavated outlet channel, as shown in the following photographs. The gravel ridge is approximately 0.4 m thick and has a crest width of approximately 4 m. The mechanism causing this phenomenon appears to be the action of ice on adjacent beach gravel material. The relatively coarse nature of the gravel infilling the channel permits steady seepage flow through the ridge of water from the lake into the channel. As required in the Water Licence, annual surveying of the lake elevation is being conducted to provide confirmation that the elevation of the invert of the lake outlet channel is remaining constant, and that the invert of the outlet channel is not being eroded.

The results of surveys conducted in June and August 2005 and June through August of 2006 are presented in the following table. The results indicate that the water level in Garrow Lake was between 0.2 and 0.4 m higher in 2006 than 2005. The lake was 0.4 m higher in the spring, and about 0.2m higher in late August. The thickness of the ridge is estimated to be approximately 0.4 m. The ridge of gravel can be expected to throttle the discharge of the lake slightly so that it is more uniform through the summer, attenuating peak flows at the beginning of the season. It evident that outlet channel is not being eroded, and that the invert of the lake, although slightly elevated by the formation of the ridge of gravel, is stabilising. It is possible that in the future rapid thaw and release of freshet might cause overtopping of the gravel ridge. However, since the material forming the ridge is coarse gravel, such an event is unlikely to result in generation of additional sediment or of sudden releases that could adversely affect the waterway downstream.

Garrow Lake Elevations (metres)

Date	Survey Station 352 Elev. (m)	Instrument Height	Rod Reading	Lake Elevation	Comments
27-June-2005	1006.52	0.55	1.96	1005.11	
24-August-2005	1006.52	0.55	2.00	1005.07	Flow in creek ceased within two weeks after this measurement
29-Jun -2006	1006.52	0.435	1.46	1005.5	No surface flow; seepage through gravel berm
9-July-2006	1006.52	0.438	1.53	1005.43	Seepage through gravel berm
21-August-2006	1006.52	0.305	1.52	1005.31	Seepage through gravel berm

Note: Pre-Dam lake elevation at end of discharge season was reported to be 1,005.7 m.

Survey Station #352 location is -878.338, 3679.594 (local grid).;UTM 561,585E,8,367,439.

The following photographs show views of the Garrow Lake wave break structure in the 2005 and 2006, in July of each year.

2005 – Panoramic view of Garrow Lake at left and wave break structure in the centre from waypoint GLWB1 on the access road on the western valley side slope.

2006 – Panoramic view of Garrow Lake at left and wave break structure in the centre from waypoint GLWB1 on the access road on the western valley side slope. Note that outlet channel has filled in with a 0.4 m thick ridge of beach gravel. Otherwise no major changes have occurred since last inspection in 2005.

2006 – Wider panoramic view from waypoint GLWB1 of valley downstream of wave break structure. No changes observed.

2006 – View from Garrow Dam access roadway, with dam at right and wave break structure at left.

2005 – View north and east from waypoint GLWB2 looks upstream at outlet channel with wave break structure extending to the right. Material in channel is gravel sized and flow is only slightly turbid. Water quality sampling indicates that turbidity levels downstream at the main dam were low, evidenced by TSS measurements of 3 mg/l, at or below detection, on July 24 and July 31st 2005.

2006 – View north and east from waypoint GLWB2 looks upstream at outlet channel with wave break structure extending to the right.. Note where gravel berm has formed across channel outlet. Otherwise no changes observed. Water seeping through gravel is clear.

2006 – View from waypoint GLWB2a looks downstream from a point in the middle of the outlet channel. Conditions appear to be largely unchanged since previous inspection in 2005.

2005 – View from waypoint GLWB2a looks eastward across outlet channel illustrating uniform flow.

2006 – View from waypoint GLWB2a looks eastward across outlet channel shows where channel has been infilled by a ridge of beach gravel 3 to 4 m wide and approximately 0.4m thick. Seepage is flowing cleanly through the base of the gravel ridge. Ridge material is medium to coarse gravel.

AREA 3C - Inspection of the Slopes in the area of the former Garrow Dam

Decommissioning of the Garrow Lake dam was accomplished by removing the centre portion of the dam, which allowed Garrow Creek to resume flowing in its original channel. The decommissioned dam was stabilized by construction of a rip-rap lined channel. The annual inspection focused on assessing the stability and integrity of the reclaimed side slopes of the remaining embankment structure on either abutment and of the associated rip-rap channel in between. The following photographs show the Garrow Dam in July 2006.

View of the west side of the dam breach from east abutment from waypoint GLD2, showing inlet at right, and rip-rapped channel which is generally in good condition. Opposite side slope, inclined at approximately 12 degrees, appears stable. Conditions are unchanged from the previous inspection in 2005.

View of the south edge of the west side of the dam breach from east abutment from waypoint GLD 06 1A showing a minor crack and slight slumping that was also observed in 2005 and appears unchanged.

View of north flank of west side of dam from waypoint GLD 06 1B, where an area where material mixed with snow was dumped. This appears to be stable and relatively old and is located well away from the main rip-rapped channel. The area affected is about 20 m wide and occurs over the lower half of the overall slope. It should be observed in future inspections, but is not expected to be problematic.

View of east side of dam breach from west abutment from waypoint GLD1. Both breach side slopes are inclined at approximately 12 degrees and are generally in good condition. There is no discernible change since the previous inspection in 2005.

View northwards at waypoint GLD3, looking upstream along creek channel, showing rip-rap lining, which is in good condition. Flow is moderately uniform across channel, with high clarity. Conditions appear to be unchanged since previously inspected in 2005.

View from 30 m downstream of waypoint GLD3 at a point where channel gradient increases. Filter fabric underlying the rip-rap material was observed in 2005 to be exposed over a width of 3 to 4 m and over a length of about 10m. Conditions appear not to have changed significantly since then. The integrity of surrounding rip-rap does not appear to have been affected. Remedial action to replace rip-rap is recommended as a precaution in 2007.

View looking upstream from waypoint GLD4 of overall breached dam and rip-rapped channel. No significant changes are discernible since the previous inspection in 2005.

View looking downstream from waypoint GLD4 of lower end of outlet channel. Conditions are almost unchanged since the previous inspection in 2005.

Appendix B

Area 2 - Frustration Lake Jetty and Access Road

Appendix B

AREA 2 – FRUSTRATION LAKE JETTY AND ACCESS ROAD

Decommissioning of the freshwater supply system at Frustration Lake included leaving the jetty largely intact, so as not to remove fish habitat. The primary aspect to be monitored is to confirm that during the open water season no excessive erosion of the jetty embankment is occurring and causing significant sediment generation, which could harm fish habitat. At the time of the inspection on July 19 2006 the lake was ice free in the immediate vicinity of the embankment. Additionally, the road accessing the lake area was inspected to ensure that run-off alongside the road and in drainage channels is not resulting in abnormal erosion of the surrounding land.

As illustrated in the following series of photographs of the intake jetty and the access road, there is no evidence of major widespread instability or erosion. During July 2006, following the geotechnical inspection Teck Cominco carried out remedial work along the access road in order to disperse drainage and reduce related erosion in several isolated instances. The settlement and erosion features evident should continue to be observed and reviewed in subsequent annual geotechnical inspections.

Area 2A – Frustration Lake Jetty

A small amount of erosion was observed at the north-western end of the jetty embankment, where in 2005 a small step in the crest was observed. As shown in the following photographs, an area of approximately 2 m by 3 m has been eroded at the corner of the embankment. The remnants of this area consist of submerged coarse material just below lake surface. The overall integrity of the embankment appears to be unchanged, and it is quite likely that during the open water season when water levels are close to the crest that further erosion of fine material in the interstices of coarse rip-rap sized material will occur. This process should continue to be monitored. It is understood that earlier in the season the lake level rose and flooded the jetty, which likely resulted in the observed erosion around the perimeter. It is likely that similar minor erosion of finer material along the edges of the jetty will continue until a stable armoured exterior of coarse material is consistently exposed. No remedial measures are required at this time.

The following photographs show the Frustration Lake jetty and access road in July 2005 and 2006.

2005 – View from waypoint FL1 looking across end of causeway.

2006 – View from waypoint FL1 looking across end of causeway – note slight subsidence in foreground and significant erosion of finer material at far corner.

2005 – View from waypoint FL2 looking northeast across northern end of causeway.

2006 – View from waypoint FL2 looking across northern end of causeway – previously observed subsidence in 2005 near sign remains unchanged, with vertical separation of about 0.3 m over a width of 2 m. As shown in photo from waypoint FL1, corner at lower left has been eroded exposing coarse rockfill. Surrounding fill across crest of causeway appears unaffected and stable.

2006 – View from waypoint FL1 looking east towards shoreline. Conditions appear virtually unchanged since observed in 2005, with some minor loss of finer material exposing coarse rockfill.

2006 – View from waypoint FL2 looking towards shoreline along west side of causeway. No sign of deformation observed along this side. Some loss of fines has occurred at waters edge, but no signs of major instability.

Area 2B – Frustration Lake Access Road

2005 – View of segment of road to Frustration Lake looking southwest towards mine site from the highest point of topography. Roadway and sideslope are in good condition, free of significant erosion features. No photo taken during 2006 inspection, as was misty, and no major changes observed .

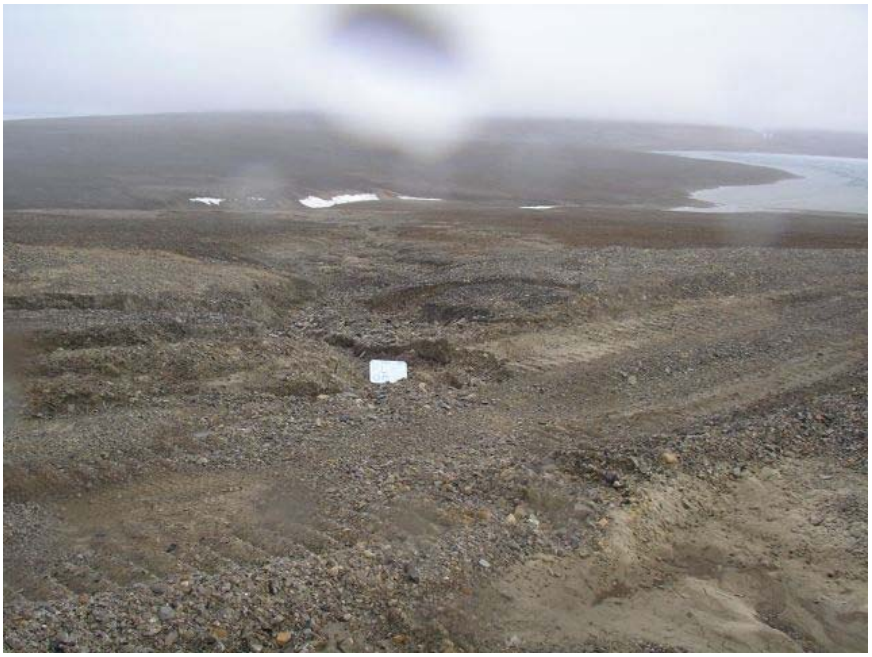
2005 – View to the southwest looking towards topographic high point showing approximately the middle one-third of the access road to Frustration Lake. This section is in good condition. No photo taken during 2006 inspection, as was misty, and no major changes observed .

2006 – View downslope of waypoint FLR06 4, approximately 1.4 km from the intake causeway, which appears to be stable and self-armoring.

2006 – View of an active erosion gully downslope of the road, near to river bed, at waypoint FLR06 3, approximately 1.2 km from the causeway. Observation of the surrounding terrain suggests that other such gullies have formed and have eventually stabilised with the accumulation of coarse materials.

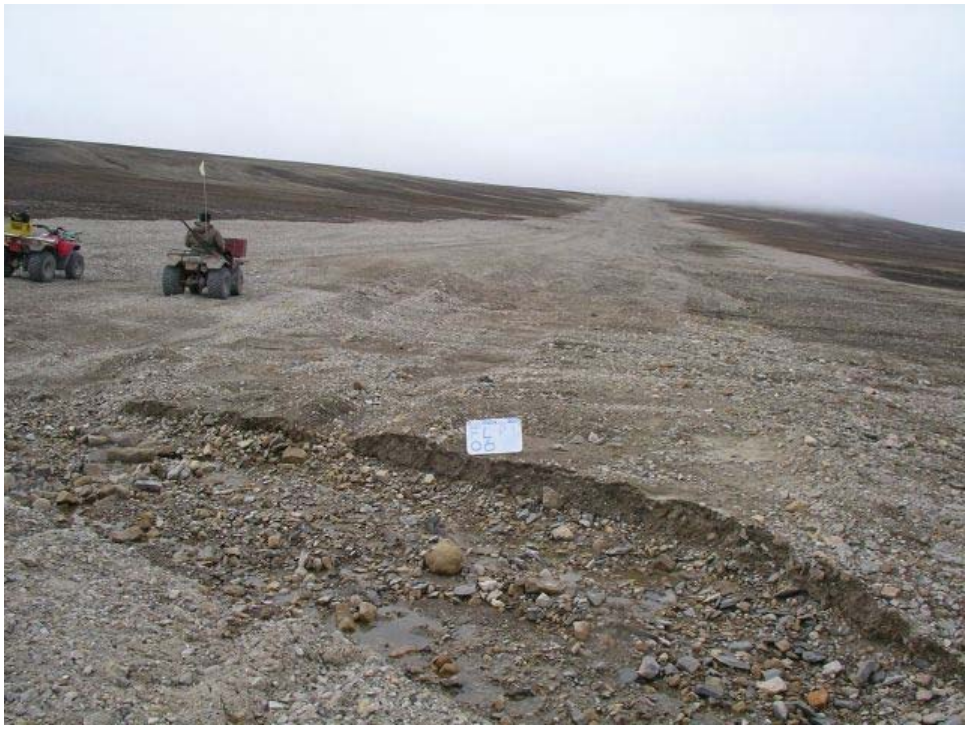
2006 – Erosion gully partway downslope of waypoint FLR06 3 appears to be self armouring.

2006 – Views southwards at FLR06 3 looking up road which is in good condition.



2006 – Closer view of minor erosion gully waypoint FLR06 3 approximately 1.2 km distant from causeway. There appears to be sufficient coarse fraction so that self-armouring is occurring. However, remedial drainage work carried out after this site inspection to dissipate concentration of runoff which is causing accelerated erosion downslope, as shown in preceding photographs.

2006 – A drainage swale at waypoint FLR 06 2, approximately 900 m from the intake embankment. Overall condition of this segment of the access road remains good.



2006 – Access roadway at waypoint FLR 06 1 view to the southwest at about 200 m distance from intake causeway. Erosion is localised, shallow, and appears to be self armouring.

Subsequent to the site inspection, Teck Cominco upgraded the water bars shown above, and added one additional water bar to aid in dissipating flows before they become too concentrated. The erosion at Station FLR064 resulted from water running along the upslope side of the road, bypassing a water bar, and concentrating flow at the next water bar to the north. The first water bar was enlarged to ensure the flow at the side of the road was intercepted. All water bars are located to direct water where natural flow paths existed prior to road construction. The four water bars are shown in the photographs, taken by Teck Cominco on July 23, 2006, below:


23. 7. 2006


23. 7. 2006

Appendix C

Area 3 - New Quarry Area

Appendix C

AREA 3 – NEW QUARRY AREA

The New Quarry area was a surface quarry where shale was excavated for road maintenance and other uses. At closure the pit walls were re-sloped for public safety and to improve the visual aesthetics.

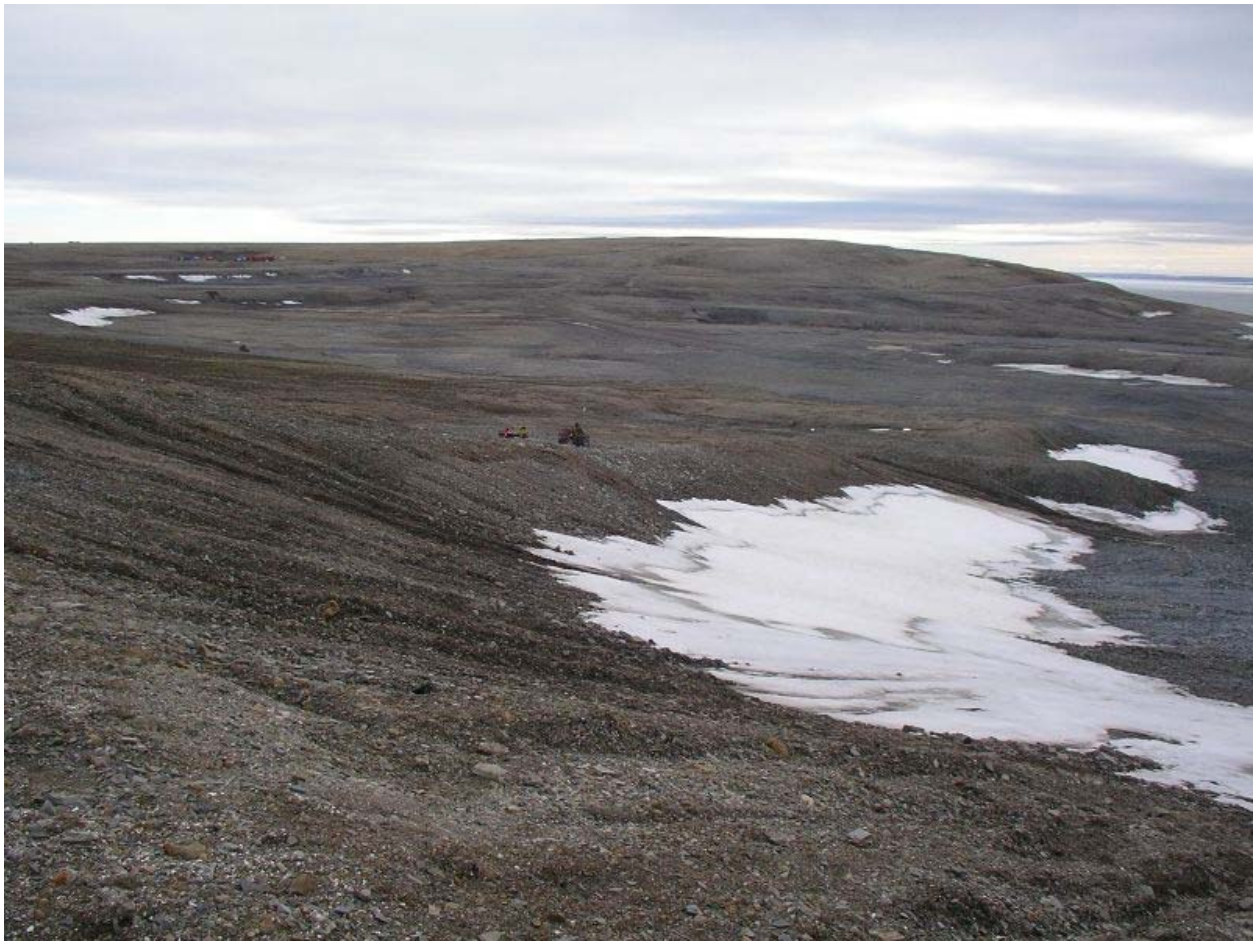
The annual geotechnical inspection was carried out to assess perimeter slopes for instability or erosion, which might have an impact on human or wildlife safety.

The New Quarry is an area of approximately 800 m by 400 m. During reclamation, an area at the eastern corner was extended to provide material for closure. The floor of the quarry slopes gently and exposes bedrock. The perimeter side slopes expose rock with a thin veneer of surficial soils, up to about 1 m thick.

The following photographs show the New Quarry area in July 2005 and 2006.

2006 – View looking east up slope into extension of New Quarry, from waypoint NQ1 PH1, shows stable side slopes with no discernible change from 2005.

2006 – Panoramic view looking west down slope into extension of New Quarry, from waypoint NQ1 PH2, shows area of disturbed soil, which appears to be stable, with no discernible change since inspected in 2005.



2006 – View looking down west sideslope of New Quarry Extension, where stripped organic surficial soil has been spread. Occasional cracks but no signs of mass movement presenting any hazard to humans or wildlife, with no significant change since last inspection in 2005.

The following photographs show the slopes around the perimeter of the older main part of the new Quarry.

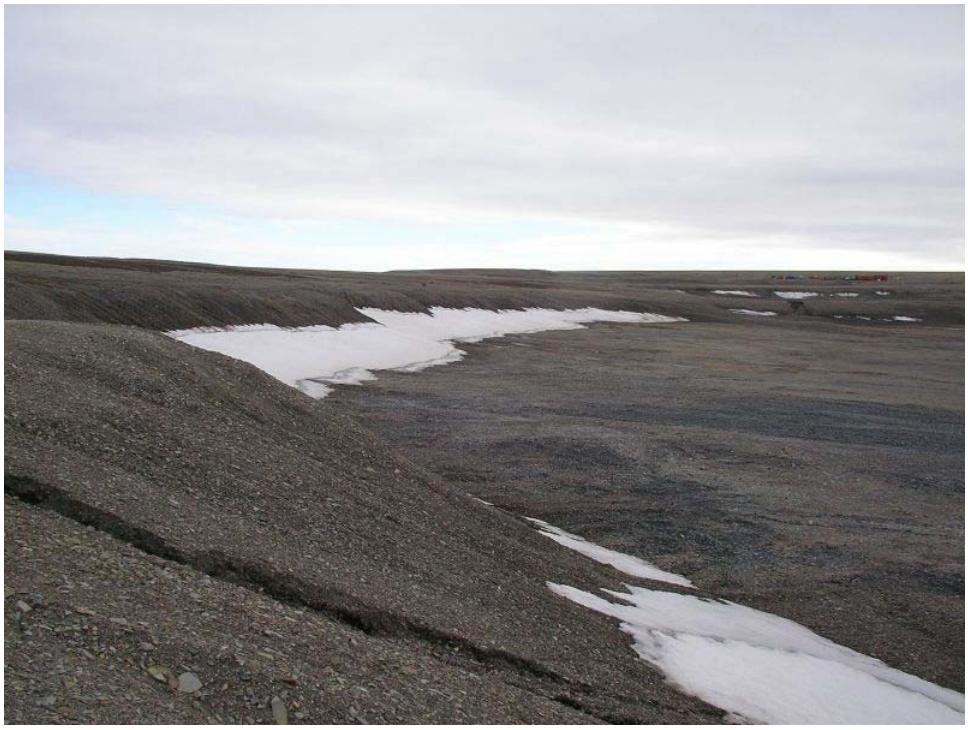
2005 – Isolated erosion gully at waypoint NQ2 PH1.

2006 – Close-up view of erosion gully at waypoint NQ2 PH1, showing relatively small width, and apparent tendency to be self-armouring, with no apparent changes from 2005.

2005 – An isolated erosion gully at waypoint NQ3 PH1.

2006 – An isolated erosion gully at waypoint NQ3 PH1. Conditions appear to be unchanged since last inspected in 2005, with evident tendency to self-armour.

2006 – Area above waypoint NQ5 view looking northeast across area of disturbed surficial soil bordering edge of quarry side slope. Illustrates typical pattern of surficial deformation caused by seasonal thaw of disturbed surficial soils. This poses no threat to humans or wildlife, and no discernible changed observed since last inspected in 2005.



2006 – From waypoint NQ5 view west showing mostly stable erosion free nature of surficial soils draped over the top edge of the New Quarry perimeter, unchanged since last inspection in 2005.

2006 – View to northwest at waypoint NQGTOP1 of a thaw/erosion gully on slope between road to Frustration Lake and the new Quarry area. This feature extends down to the top of the fan shown in photographs taken from waypoint NQ6 (see below). No discernible change since 2005 inspection.

2006 – View to northwest from waypoint NQGTOP2 of second thaw/erosion gully adjacent and parallel to the one shown above at waypoint NQGTOP1. No discernible change since 2005 inspection.

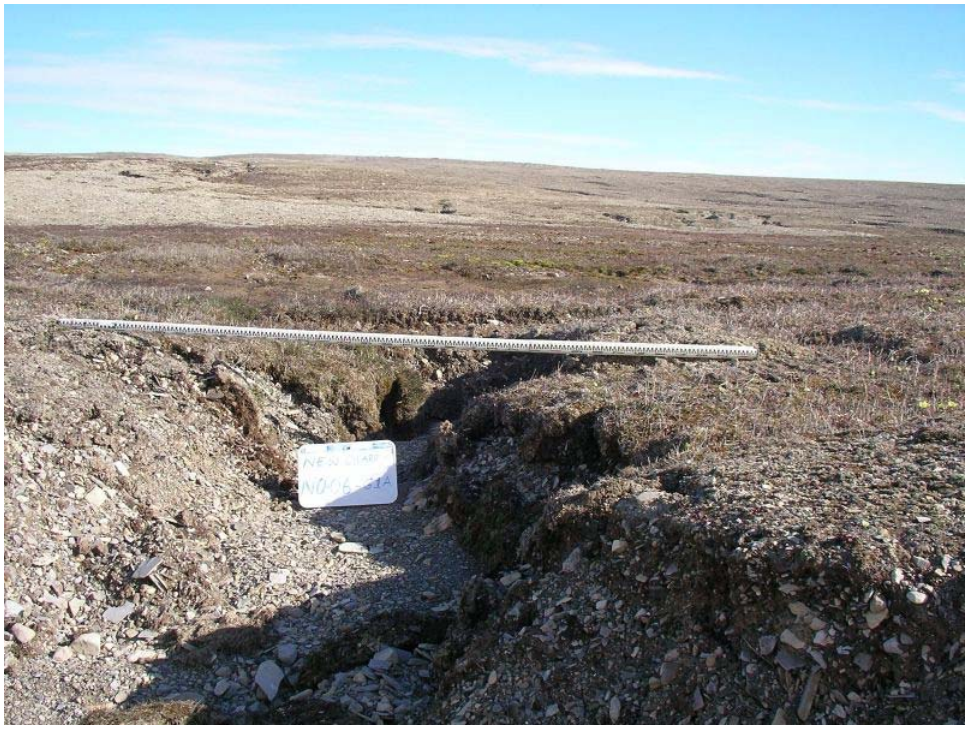
2006 – View at waypoint NQ 6 northeast across natural slopes to west of new Quarry area. Thawing and erosive processes have during the life of the project appear to have resulted in two parallel gullies and erosion of surficial weathered rock which has formed a fan as shown. No discernible change observed since last inspection in 2005.

The following photographs show more details of gully that has been eroded in the loosened disturbed materials deposited around the perimeter of the quarry area.

2006 – View northwest looking down gully at waypoint NQ6. This appears to be a slow erosive process, possibly as a result of intermittent storm runoff transporting coarse material from fan upslope, shown in photograph above. Although there has been no discernible change since inspected in 2005, this area should continue to be monitored. See measurements of gully size noted in following photographs at known GPS locations to facilitate future comparison of rate of erosion. Localised erosion control measures, likely best implemented by manual labour, to protect surrounding tundra, should be planned for implemented as soon as is practical in 2007.

2006 – Photo shows gully through loosened materials around edge of new Quarry, down slope of waypoint NQ6. There is no discernible change since the last inspection in 2005.

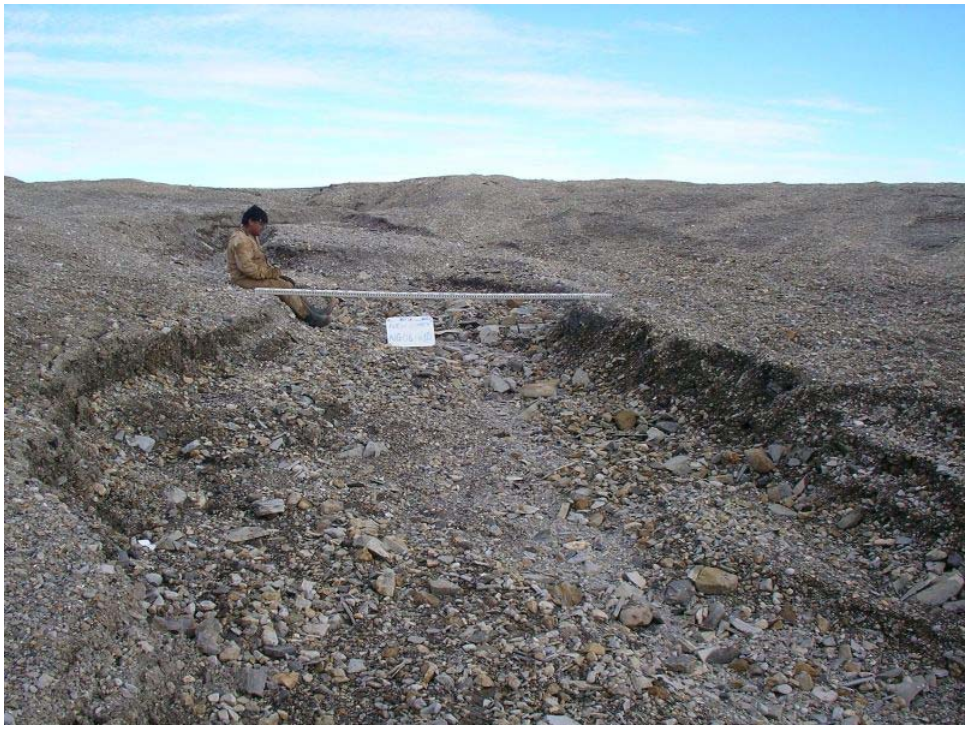
Following show more detailed measurements and photographs in the vicinity of waypoint NQ6, but labelled at NQG1.



2006 – At waypoint NQG1A. No discernible change since observed in 2005.

2006 – At waypoint NQG1B. The measured depth of the gully was 1.3 m, which within limits of accuracy, indicate no significant since inspected in 2005.

2006 – At waypoint NQG1C, the dimensions and physical characteristics of the gully remain the same as observed in 2005.



2006 – At waypoint NQG1D, The dimensions and physical nature of the gully remain unchanged since inspected in 2005.

2006 – Photo looking west to where drainage from Loon Lake crosses through fill material around the perimeter of the New Quarry area. The overall nature of this drainage remains unchanged since last inspected in 2005.

2006 – Photo looking upstream from waypoint NQG2, where there was an existing half-round culvert that was removed, subsequent to the 2006 site visit.

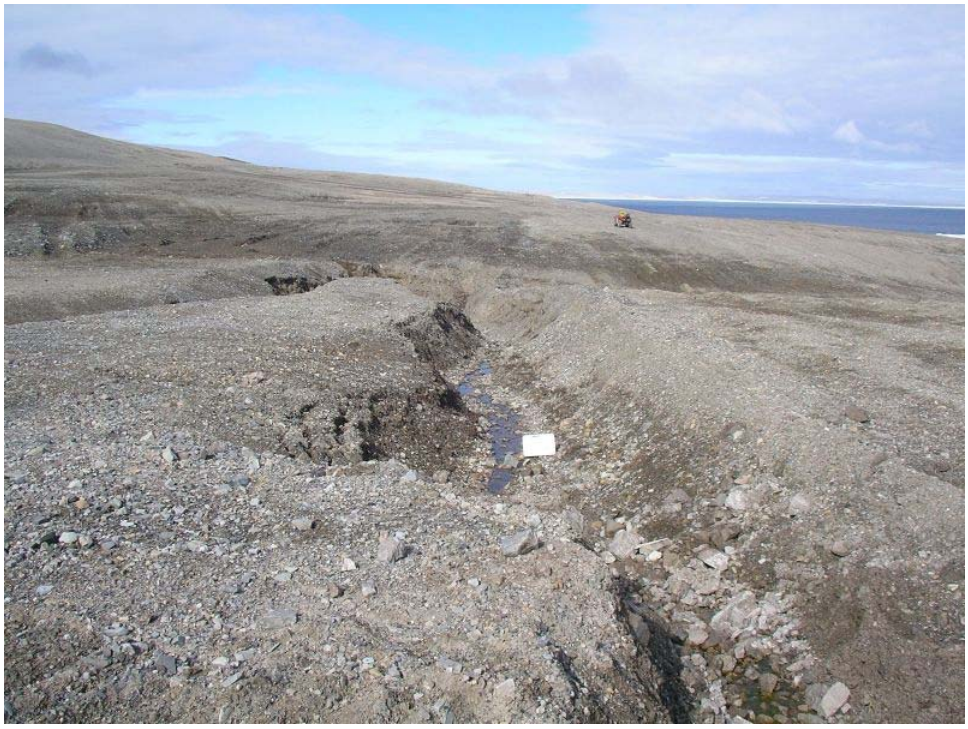
The following photographs show an area of erosion in the floor of the New Quarry in the vicinity of waypoint NQLOONLK, as located on Figure 1. Although this erosion feature is locally significant, its consequences overall are not. Transported sediment is being deposited across the floor of the new Quarry, as is evident in the photograph below. Since inspected in 2005, a second erosion gully formed, presumably as a result of spring runoff in 2006. Both of these gullies are documented in the following photographs, together with views of the stabilisation work conducted in July 2006.

2006 – Debris fanning across floor of New Quarry from erosion gully where Loon Creek drains across a fill embankment. Little change was observed in the overall nature of this feature since inspected in 2005.

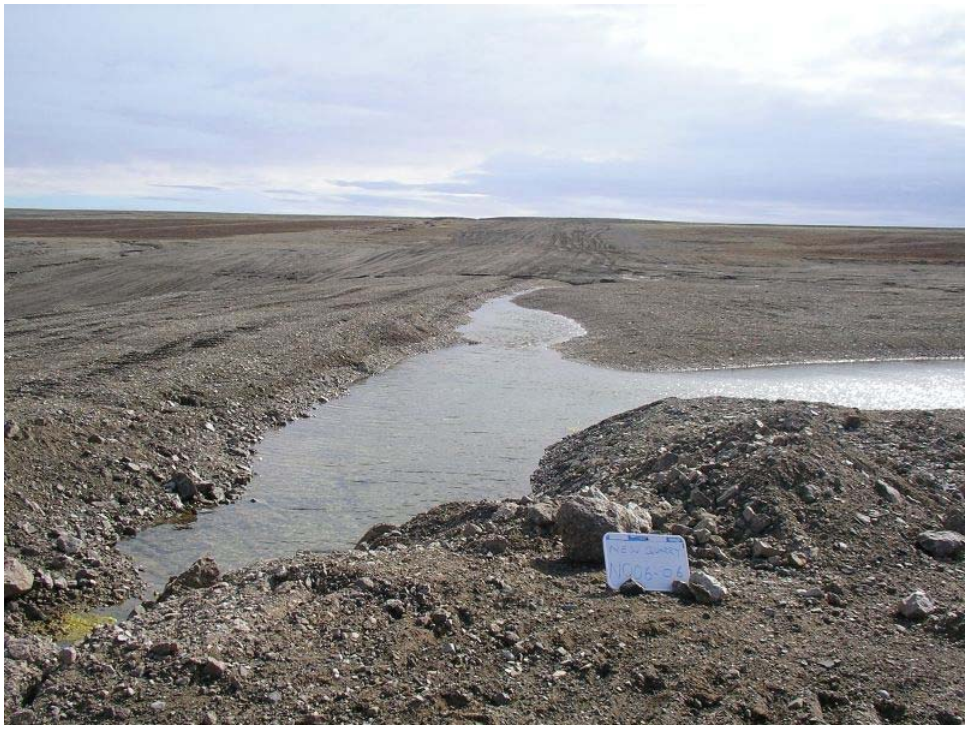
2006 – View adjacent and immediately to west of view shown above showing significant erosional down cutting of what appears to be quarry strippings of silty sand and gravels.

2006 – View upstream from waypoint NQ0603. Erosional down cutting of loose silty sand and gravel was expected, but it appears that obstruction by ice may have caused a second erosion gully to form, reducing flow in this one.

2006 – View further upstream, from waypoint NQ0604. Little change observed since 2005, but remedial measures warranted.



2006 – View upstream from NQ0605 showing little change from 2005.



2006 – View at waypoint NQ0606, where drainage is ponding behind embankment fill slope. Conditions appear similar to those observed in 2005.

2006 – View at waypoint NQ0606 to the west shows drainage which has formed a meandering pond across the upper and western part of the New Quarry area.

The following photographs show repairs conducted in two erosion gullies in the vicinity of NQLOONLK. The first gully is that observed in 2005, near waypoints NQ06 02 to 06.

The above two photos show the moderately well graded mixture of boulder, cobble, gravel, sand and silt sized material placed in a shaped swale formed by cutting down eroded sidewalls of the erosion gully.

View downstream from waypoint NQ0603 showing wide swale of armoured channel.

View upstream of waypoint NQ0602 showing v-shaped armoured swale.

View of westernmost erosion gully after completion of remedial works with coarse material extending beyond toe of embankment fill.

View upstream of waypoint NQ0603 showing broad extent of placement of rockfill armouring.

The following photographs show the second erosion gully located at waypoints NQ06 19 to 24, which has developed in the spring of 2006, before its repair :

View looking southeast from waypoint NQ06 17 towards erosion gully newly formed in the spring of 2006.

View north down second gully at waypoint NQ06 18.

View from waypoint NQ06 20 in middle segment of second erosion gully showing silty sand and gravel, with some cobbles. The water is likely ponded above a frozen horizon.

View from waypoint NQ06 21 looking southwest up into second erosion gully.

The following photographs show repairs to the second gully:

Placement of well graded rockfill in a v-shaped swale after sides-slopes re-shaped.

Limestone rockfill being place in the upper part of the erosion gully.

View west showing area between two erosion gullies where, as part of remediation swale has been cleaned out and material raised and rounded off to deter over-topping of any ponded water in future runoff events.

View of toe area of erosion gully showing coarse material placement.

View southwards of toe of completed erosion gully repairs.

2006 – View eastwards from waypoint NQLOONCK of erosion gully at waypoint NQ6, where conditions remain unchanged since observed in 2005.

Appendix D

Area 4 - Subsidence Area

Appendix D

AREA 4 – SUBSIDENCE AREA

Background

This area overlies a section of underground mine workings that have subsided more aggressively than elsewhere above the mine workings. Concerns related to the physical safety of the public and for wildlife traveling across the land surface in this area are the primary aspect that requires regular monitoring. As part of the annual geotechnical inspection the following tasks were carried out:

- Review of the annual topographic subsidence survey conducted by TCL, comparing the results to the previous surveys in 2004, 2005 and 2006; and
- Visual inspection of the area to identify any features that may be of concern related to public and wildlife safety.

The annual geotechnical inspection presented herein is a pictorial view, interpreted in conjunction with survey data from the past three years. Comments are restricted to a discussion of changes to surface profiles, and whether there are any surface features representing a potential safety hazard to the public or animals.

Annual GPS Survey

A GPS survey of the subsidence area was conducted in 2004, 2005 and 2006 by Teck Cominco. The 2004 survey data is being used as the baseline to monitor future potential movements of the area. It is important to understand that this is a large area and survey points are obtained by very slowly driving over the area with a four wheeled all-terrain vehicle with the survey instrument attached to the basket. The ground surface is rocky and with slight variations in traverse locations, it is natural to expect minor variations in survey results from year to year. The intent of the survey is to identify if there are any widespread trends in movement that will in the future present unsafe slopes or holes in the terrain that could potentially be unsafe to either the public or wildlife.

The survey data is presented as a contour plan of the area and as a series of sections running east-west through the area, spaced at 50-metre intervals north-south. This information is shown on TCL drawing No. PM- 2005-Area 8 – 1 of 1 dated October 23, 2006. A copy of this figure is included at the end of this appendix. The sections provide the profile of the ground as surveyed in 2005 and 2006, compared to the profile of the ground as surveyed in 2004. The vertical scale of the sections has been exaggerated by a factor of two to enhance any vertical movements. It is noted that the actual area of subsidence extends to the west of the central roadway, i.e., to the west of mine grid line E 1600. The following is inferred from inspection of the survey information:

1. Slopes in the general subsidence area are generally gentle and no steeper than 1 vertical in 5 horizontal, and none currently present any safety hazard for either the public or wildlife;
2. The degree of variation between all three profiles (2004, 2005 and 2006) is generally similar across the subsidence area, and provides an indication of the overall level of accuracy of the survey.
3. Areas where the most significant variations in the profiles are visible from the drawing are:
   - Section 2300N at approximately 1480E. The surveys in 2004 and 2005 straddle, i.e., are respectively below and above, the profile indicated for 2006. This is indicative of the level of accuracy of the profile survey as a whole. Teck Cominco's drafter has indicated that in 2005, there were relatively few survey points in this area causing the drafting program to interpolate the surface in this area causing the 2005 section line to be an estimated rather than an accurate measured elevation in this area. From the consistency of each of the surveys in 2004, 2005 and it is clear that there is no active movement in this area. However, the 2007 survey should be reviewed in this area to confirm the observations.
   - Section 2150N between 1490E and 1530 East was identified in last year's review as potentially having movement (approximately 0.25m). Again similar comments to the above are believed to be the reason for the apparent change in ground surface elevations from 2004 to subsequent surveys. Note that both the 2005 and 2006 surveys are very similar to each other suggesting no movement. The 2007 survey should be reviewed in this area to re-confirm that with was a survey data issue and not active subsidence.

   Inspection of the cross-sections indicates apart from the two sections noted above that there are no changes in the surface profiles between the surveys, which indicates that no significant movement of the land surface has occurred during the last past two years.

Surface Cracks and Visual Inspection of the Subsidence Area

There are a number of surface cracks evident across the subsidence area, as observed during the site inspection. These are known to exist from historic surveys of the area and should be surveyed on an annual basis to determine if there are any changes from year to year. During this year's survey, Teck Cominco had survey equipment problems which resulted in delays during the subsidence survey. As a result the cracks were not surveyed in 2006. Notwithstanding this, negligible change in the visual nature of the surface cracks across the subsidence area was detected. The cracks are of a minor and almost imperceptible and discontinuous nature. No differential vertical movement across the cracks was observed. Photographs taken in 2006 as shown below, from known positions will be a baseline for comparison with photographs in subsequent years, together with detailed survey across the area.

In conclusion, no surface features were observed across the subsidence area that pose a safety hazard to either the public or to wildlife.

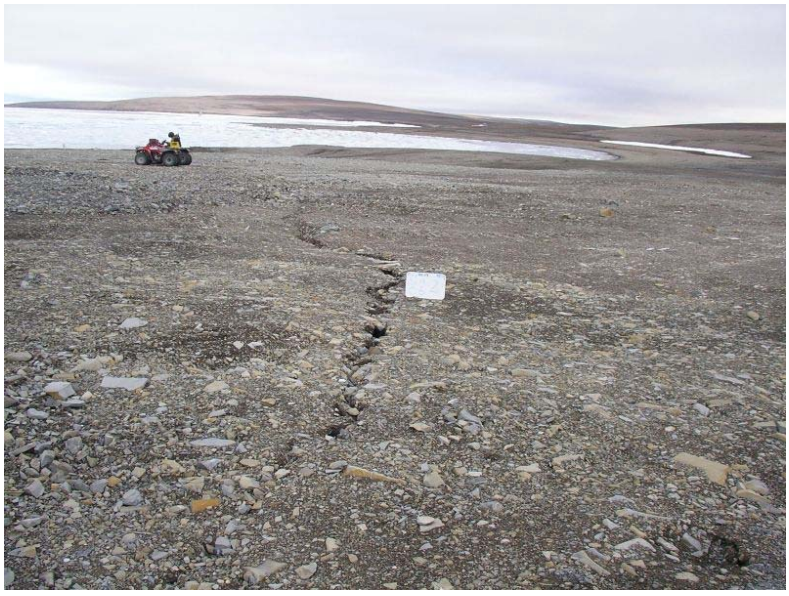
Photo of location SA1 at waypoint SA PH 1, with view looking west, shows no discernible change since inspected in 2005.

Photo of location SA1 from waypoint SA1 PH2, looking northwest, showing a crack, which is some 30 m in length, several cm in width, and no differential displacement. This terrain does not present a hazard to humans or wildlife, and appears unchanged since the 2005 inspection.

Subsidence Area from waypoint SA PH 3, atop a small road embankment on the eastern margin of the subsidence area, appears unchanged since 2005 inspection, apart from slightly more shallow water ponding.

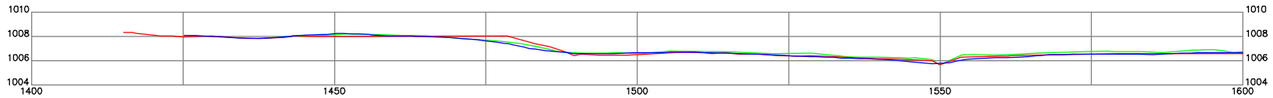
The following photographs show cracks as observed in 2006:

Crack observed at waypoint SA 06 1, and which was documented in previous years' surveys. There is negligible differential displacement across the crack, which is not continuous, has an open width of 2 to 6 cm, and a discernible depth of 5 to 20 cm. This is not considered to be hazardous.

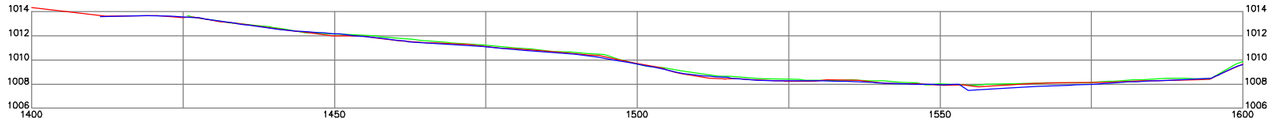


Crack observed at waypoint SA 06 2, and which was documented in previous years' surveys. There is negligible differential displacement across the crack, which is not continuous, has an open width of 2 to 6 cm, and a discernible depth of 5 to 10 cm. This is not considered to be hazardous.

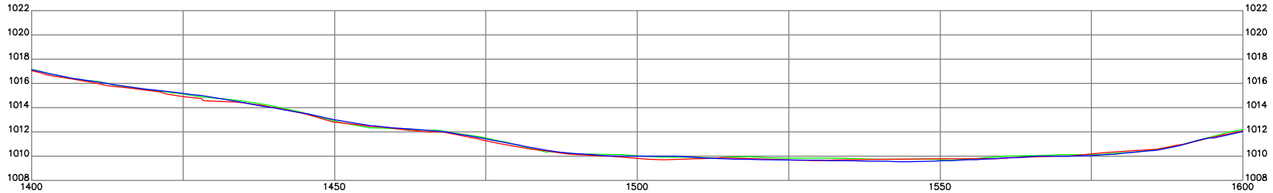
Remnant culvert pipe at the top of a raise bore hole at waypoint SA 06 RAISE 1 is approximately 1m in diameter and 20 cm deep. This is not considered to pose a significant hazard.



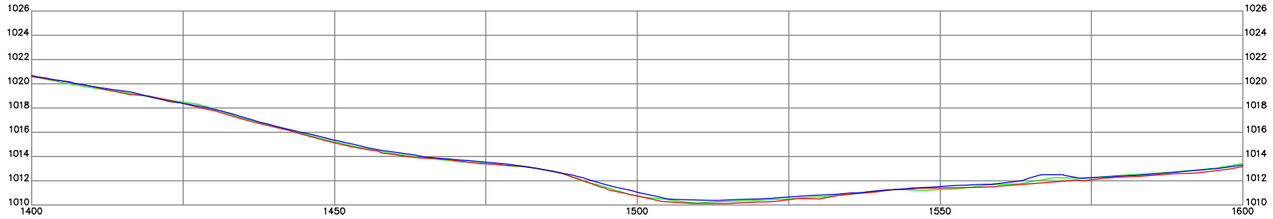
SECTION 2300 N



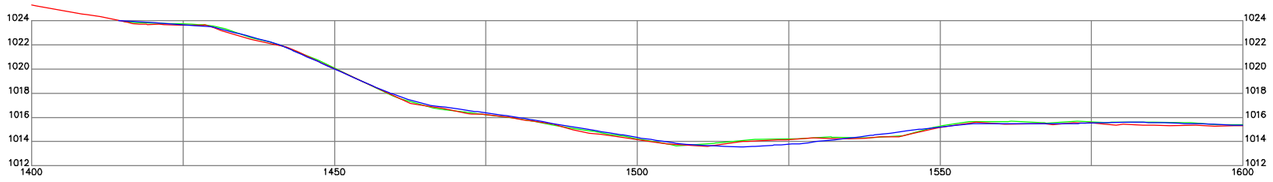
SECTION 2250 N



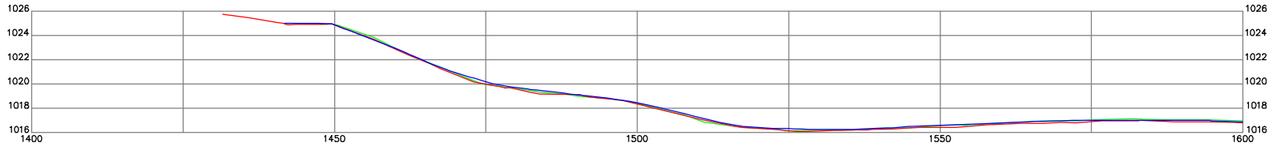
SECTION 2200 N



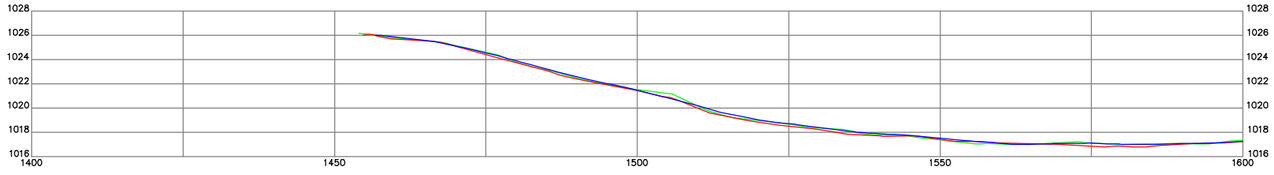
SECTION 2150 N



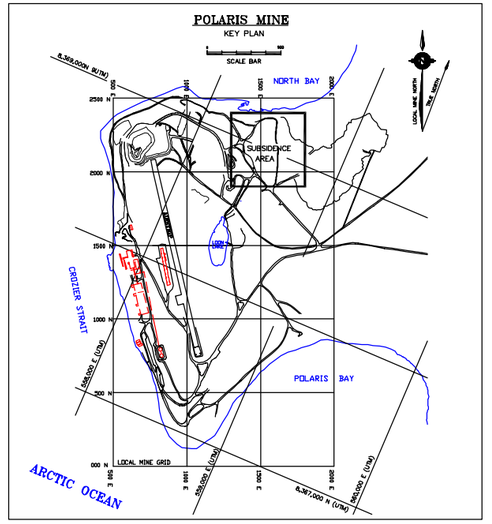
SECTION 2100 N

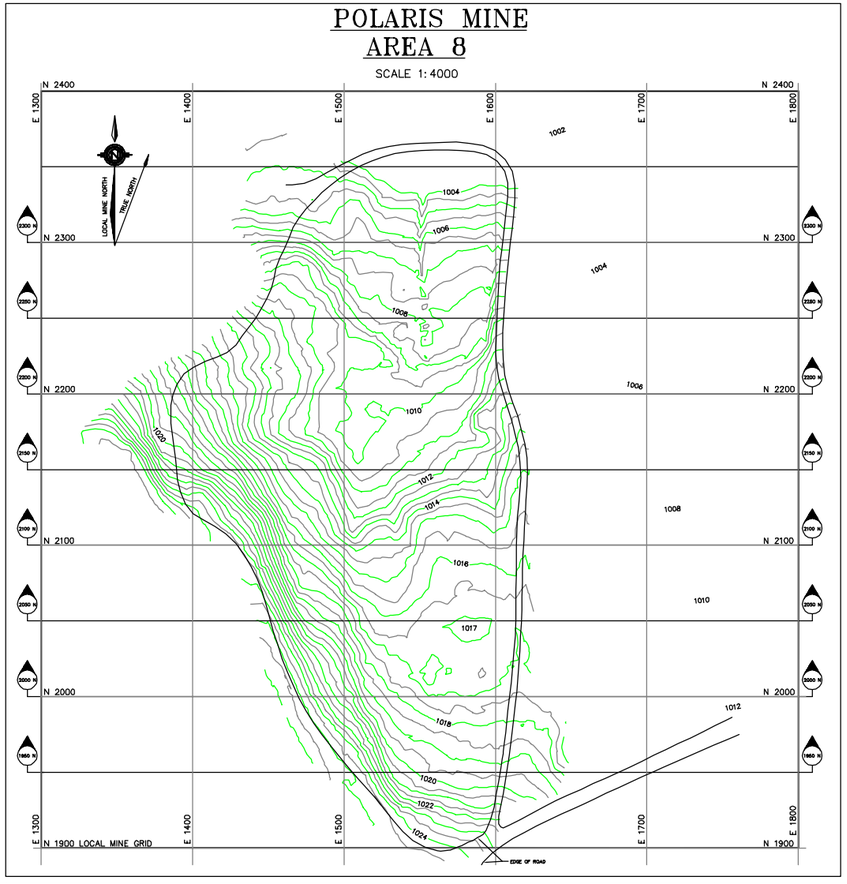


SECTION 2050 N



SECTION 2000 N





NOTES:
1. DATA COLLECTED JULY, 2006 BY TECK COMINCO REPRESENTATIVE.
2. SECTION CO-ORDINATES AND ELEVATIONS REFER TO LOCAL MINE DATUM.
3. CONTOUR INTERVALS = 0.5 m.
4. SECTIONS HAVE A 2:1 VERTICAL EXAGGERATION.

LEGEND:
- DENOTES 2006 SURFACE.
- DENOTES 2005 SURFACE.
- DENOTES 2004 SURFACE. (THAW LAYER TO VIEW)
- DENOTES 2003 SURFACE. (THAW LAYER TO VIEW)

PROJECT:

POLARIS MINE POST CLOSURE
2006 ANNUAL SITE INSPECTION

DRAWING:

PLAN & SECTION VIEWS
SUBSIDENCE – AREA 8

DRAWN BY: T. M. TECH SERVICES
6-373-7
DATE: OCTOBER 23, 2006
CLIENT: teckcominco
SCALE: NOT TO SCALE
FIGURE No.
SHEET:
PM | 2006 | AREA 8 | 1 OF 1

Date Plotted: November 21, 2006 File Location: S:\AutoCad\acad-Prj\2005\50-508 Polaris\B3-Report-Oct06\50508-By3-03_Appendix_SubsidenceSects.dwg

Appendix E

Area 5 - Operational Landfill

Appendix E

AREA 5 – OPERATIONAL LANDFILL

The primary reclamation objective for the Operational Landfill is to ensure that the contents in the landfill remain permanently encapsulated in permafrost. To confirm this the physical integrity of the cap must be monitored and the thermal regime of the landfill cover caps is monitored through the use of thermistors. The physical integrity of the cap is monitored as part of the geotechnical inspection, and the results of the thermal monitoring program are reported separately by TCL.

The physical integrity of the cover caps and the landfill as a whole were inspected, as shown in the following photographs taken in July 2006:

View southwest from waypoint OLFPH2, showing the northeast end slope, which is in good condition.

View southwest along main side slope of the Operational Landfill from waypoint OLF3, again showing slopes in good condition, free of any erosion or deformation, as previously observed in 2005.

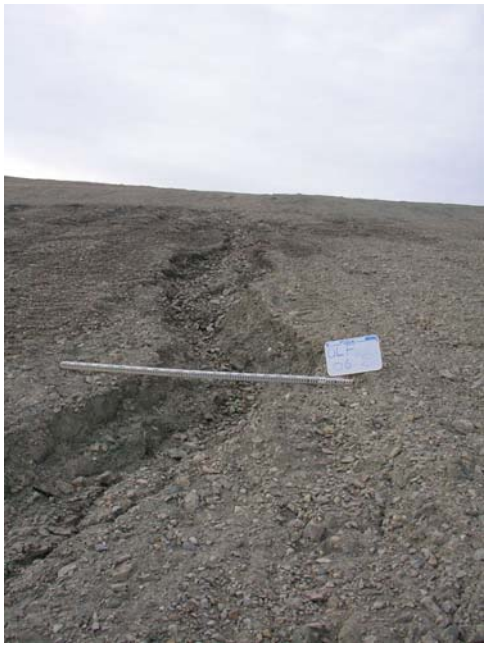
Minor almost imperceptible crack at edge of approach road to northeast end of the Operational Landfill, viewed from waypoint OLFPH 2, appears unchanged since 2005 inspection.. This is not associated with any other signs of settlement of instability in the slope above or below, and poses no hazard to humans or wildlife.

The following photographs show the central part of the slope above the Operational Landfill, which exhibits some moderate erosion activity across a width of some 30 m. This appears to be related to infilling of a natural drainage course, which accumulates shallow groundwater during summer thaw, and which drains towards the slope above the landfill. A small pond has formed as shown in the photograph below at the back, or northern, edge of the landfill. This is a localised feature situated approximately at the mid-point of the northern limit of the landfill. The observed erosion and seepage discharge in the slope above the landfill is not apparently adversely impacting the integrity of the landfill itself. This location is a natural drainage channel and cannot be easily diverted around the landfill. The cap of the

operational landfill in this area appears stable and uniform. Annual monitoring of the slope above the landfill is recommended. The following photographs and measurements will facilitate future tracking of the erosion features and effects of seepage flow, if any, on the landfill.

View down slope from waypoint LO SPR TOP. The degree of erosion is not serious and appears to be gradually self-armouring, and is virtually identical to observed conditions in 2005 .

Erosion gully at waypoint OLF GUL1 has a depth of 20 cm and is identical to 2005 observations.



Erosion gully at waypoint OLF GUL2 is 50 cm deep, view upstream shows unchanged conditions since 2005.

At waypoint OLF GUL2 looking downstream, again showing identical conditions to 2005 inspection.

View downslope at waypoint OLF GUL3 - erosion gully is 32 cm deep, as previously measured in 2005.

Appendix F

Area 6 – Little Red Dog (LRD) Quarry Landfill

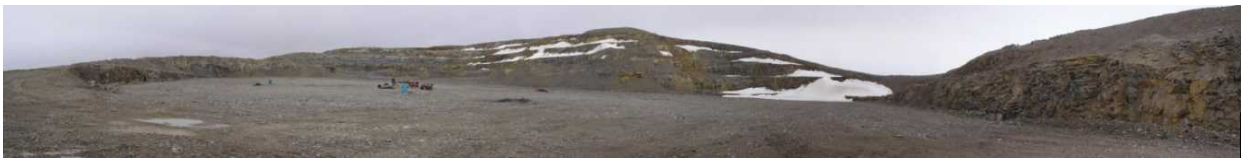
Appendix F

AREA 6 – LITTLE RED DOG (LRD) QUARRY LANDFILL

The primary reclamation objective is to ensure that the contents of the LRD Quarry Landfill remain permanently encapsulated in permafrost. To confirm this, the annual geotechnical inspection will monitor the physical integrity of the landfill cover cap. Additionally, the temperature profile of the landfill cover cap is being monitored by means of thermistors installed at four locations. The purpose of the thermistors is to monitor the establishment of permafrost through the full thickness of the landfill and to verify that the active layer does not extend beneath the base of the cover cap. The thermistors were installed during the summer of 2005 and were monitored while personnel were on site. The results of monitoring were reported separately by TCL. In 2006 TCL installed a thermistor datalogger system, and improved the housings at each thermistor to reduce the influence of surface temperature on the metal pipes housing the thermistors.

The physical integrity of the cover cap was inspected, together with the condition of the quarry walls. As previously observed in 2005 during the site inspection, surface water that was observed flowing from the capping layer at the entrance to the LRD Quarry area was sampled and analyzed for total metals (lead and zinc), as required in the landfill construction approvals, The results of the analyses will be reported by others. No significant metal levels were detected.

The following photographs show panoramic views in July 2006 from several vantage points across the surface of the cap on the LRD landfill. No signs of settlement or instability were observed across the entire area.

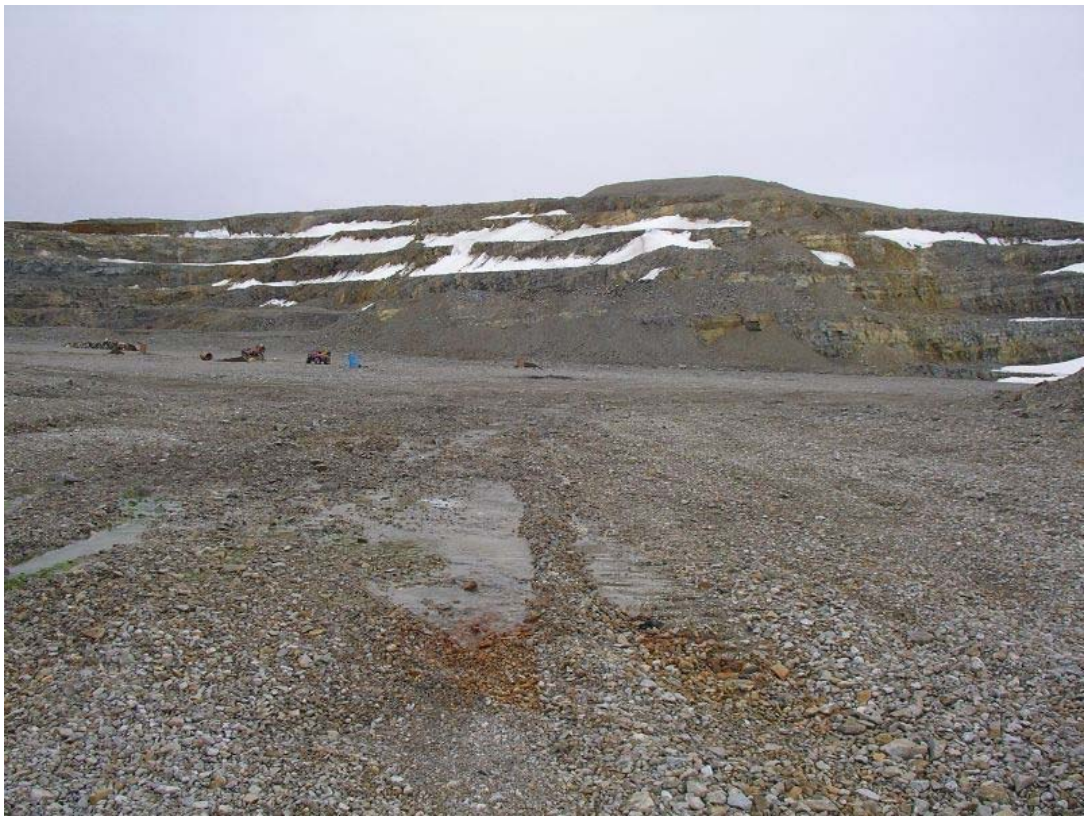


From waypoint LRD1 conditions appear identical to 2005 inspection.

From waypoint LRD2 conditions appear identical to 2005 inspection.

From waypoint LRD3 conditions appear identical to 2005 inspection .

From waypoint LRD4 conditions appear identical to 2005 inspection.



View approximately eastwards through the topographic "notch" in the perimeter of the LRD quarry, from waypoint LRD5, where seepage through surficial gravel and rockfill daylights over a distance of some 10 m before re-infiltrating. This flow was sampled and was estimated at 1 to 2 litres/sec, exhibiting little to no turbidity. No erosion or instability was observed in the slopes below the notch of the LRD quarry. Conditions appear unchanged since the 2005 inspection.

View of LRD quarry from the pit crest. No evidence of instability was observed during a tour along the top of the quarry walls. A safety berm is present and is also in good condition.

View of the terrain adjacent to the north end of the airstrip, and of the safety berm around the upper edge of the LRD quarry slopes. The berms are in good condition.

Appendix G

Area 7 - Mine Portals

Appendix G

AREA 7 – MINE PORTALS

BACKGROUND

The Polaris Mine was an underground mining operation. There were four portals used to access the mine and/or to convey ore out of the mine. As part of the mine decommissioning and reclamation activities, the portals were sealed to prevent the public from accessing the underground mine workings.

The objectives of the annual geotechnical inspection were to look for evidence of any settlement, erosion of the mine seals, or instability at the four portal areas, which might present a risk to human, or wildlife physical safety. As shown in the following photographs, all of the portals are in good condition, free of signs of instability or erosion.

Area 7A – Conveyor Portal

The following photographs document the good condition of the area above and surrounding the Conveyor Portal. No signs of instability or settlement were observed in both 2005 and 2006.

2006 – Conveyor Portal from waypoint CP1.

Area 7B – Exploration Portal

The following photographs document the good condition of the area above and surrounding the Exploration Portal. No signs of instability or settlement were observed in 2005 and 2006.

2006 – View from waypoint EP1, with no drainage or signs of discharge from vent pipe that extends to the back of the sealed drift and is in permafrost. Overall slope is approximately 10 degrees and covered in coarse gravel sized rockfill. No signs of instability or hazard to humans or wildlife.

AREA 7C – Main Portal

The following photographs document the good condition of the area above and surrounding the Main Portal. No signs of instability or settlement were observed in 2005 and 2006.

2006 – Main Portal from waypoint MP1; no signs of instability.

2006 – Slope above Main Portal area is inclined at about 26 degrees, locally steepening to 35 degrees. Minor slumping was observed, but not considered to present hazard to humans or wildlife.

AREA 7D - North Portal

The following photographs document the good condition of the area above and surrounding the North Portal. No signs of instability or settlement were observed in 2005 and 2006.

2006 – North Portal from slope above, which shows no sign of cracks or distress.

2006 – North Portal from waypoint NP1, where conditions appear unchanged where observable above the snow patch. This portal accessed a decline and was frozen prior to being backfilled.

Appendix H

Area 8 - Marine Foreshore Adjacent to Former Dock

Appendix H

AREA 8 – MARINE FORESHORE ADJACENT TO FORMER DOCK

Background

In 2003 and 2004, the former marine dock cells were removed, and the shoreline re-contoured as part of the site's reclamation activities. The marine foreshores, both north and south of the former dock, were also re-contoured as part of the reclamation process. The objective of the annual geotechnical inspection was to monitor the remediated foreshore and adjacent slopes for signs of abnormal erosion or instability.

The shape and contours of the foreshore are dynamic due to being constantly re-worked by the action of sea ice. Minor ongoing changes to the foreshore topographic features caused by the action of the ice are to be expected. A combination of photographs and surveys has been initiated to monitor conditions. In 2005, a comprehensive set of observation points were set up and photographs taken from each to form a baseline of information for future annual inspections. Additionally, three transects were surveyed in detail to establish a baseline, for comparison of topographic measurements from year to year. The report presents a comparison of observations in 2006 with the initial set of observations in 2005.

Photographic Monitoring

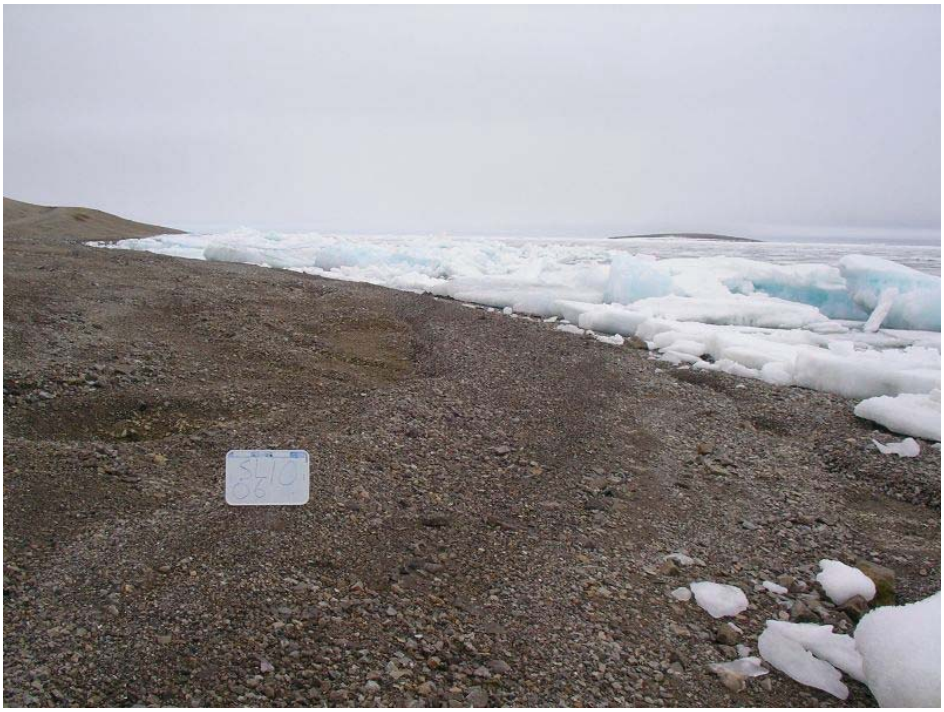
The following photographs show views taken in both 2005 and 2006 along the shoreline and looking east upslope above it from successive points at 100 m intervals. The shoreline and adjacent slopes above it are free of signs of settlement, instability or major erosion.

2005 – SL-11 North 8 367 300 - View to east. Conditions remain unchanged when inspected in 2006.

2006 – View of shoreline from waypoint JUL21PAN1 shows the shoreline in the vicinity of waypoints SL8 through SL10.

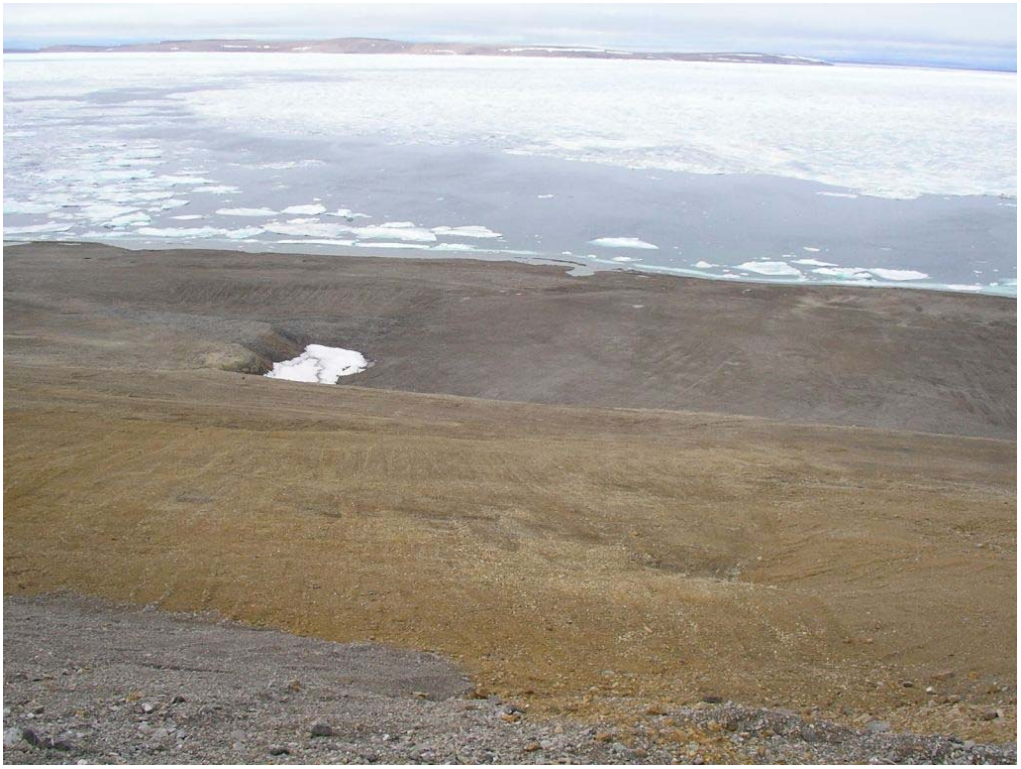
2006 – SL-11 North 8 367 300 view to south. Conditions appear to be unchanged since 2005 inspection.

2006 – SL-10 North 8 367 400 view to east shows re-sloped tank farm embankment.



2006 – SL-10 North 8 367 400 view to south. Conditions appear to be unchanged since 2005 inspection.

2006 – View of shoreline from waypoint JUL21PAN1 shows shoreline in vicinity of waypoints SL7 and SL8.



2006 – View of shoreline from waypoint JUL21PAN2 shows shoreline in vicinity of waypoints SL5 and SL6.

2006 – SL-9 North 8 367 500 view to south. Conditions appear to be largely unchanged.

2006 – SL-9 North 8 367 500 view to east. Conditions appear to be largely unchanged.

2006 – SL-8 North 8 367 600 view to east. Conditions remain unchanged since inspected in 2005. Note that more detailed inspection of gullies at top centre was conducted in 2006, and further photographs and discussion are presented later in this appendix.

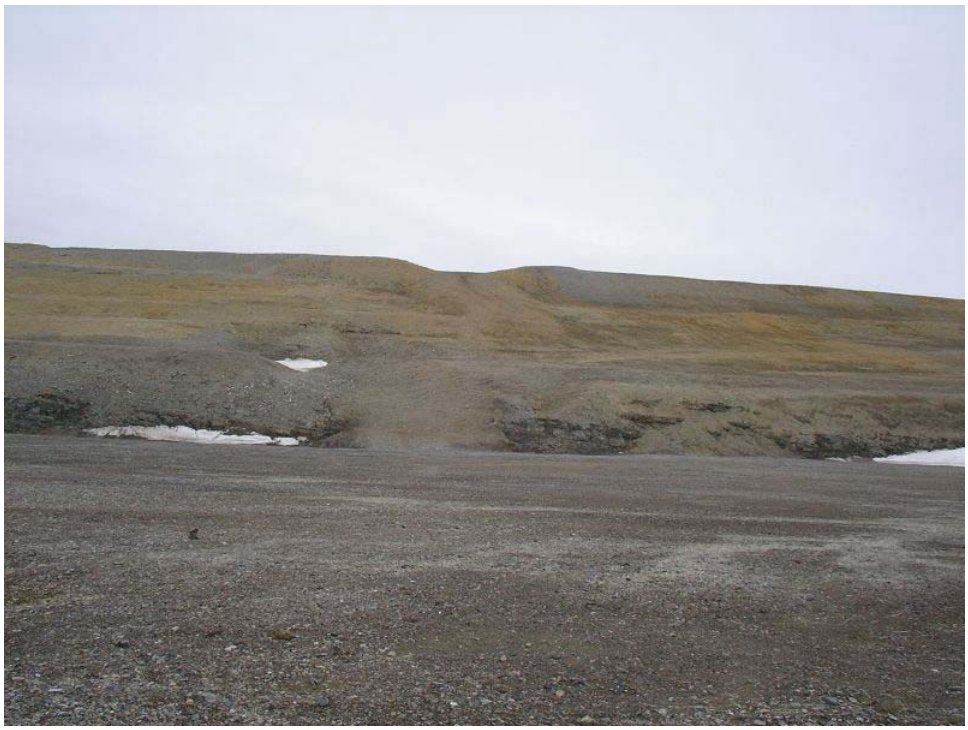
2006 – SL-8 North 8 367 600 view to south. Conditions are broadly unchanged since 2005; Note that beach gravel is accumulating as a low berm at the shore line, likely as a result of ice action.

2006 – SL-7 North 8 367 700 view to east. Conditions are unchanged since the 2005 inspection.

2006 – SL-7 North 8 367 700 view to south. Conditions are broadly unchanged since 2005; Note that beach gravel is accumulating as a low berm at the shore line, likely as a result of ice action.

2006 – SL-6 North 8 367 800 view to east. Conditions appear unchanged since last inspection in 2005.

2006 – SL-6 North 8 367 800 view to south. Conditions appear unchanged since inspected in 2005.



2006 – SL-5 North 8 367 900 view to east. Conditions are unchanged since inspected in 2005.

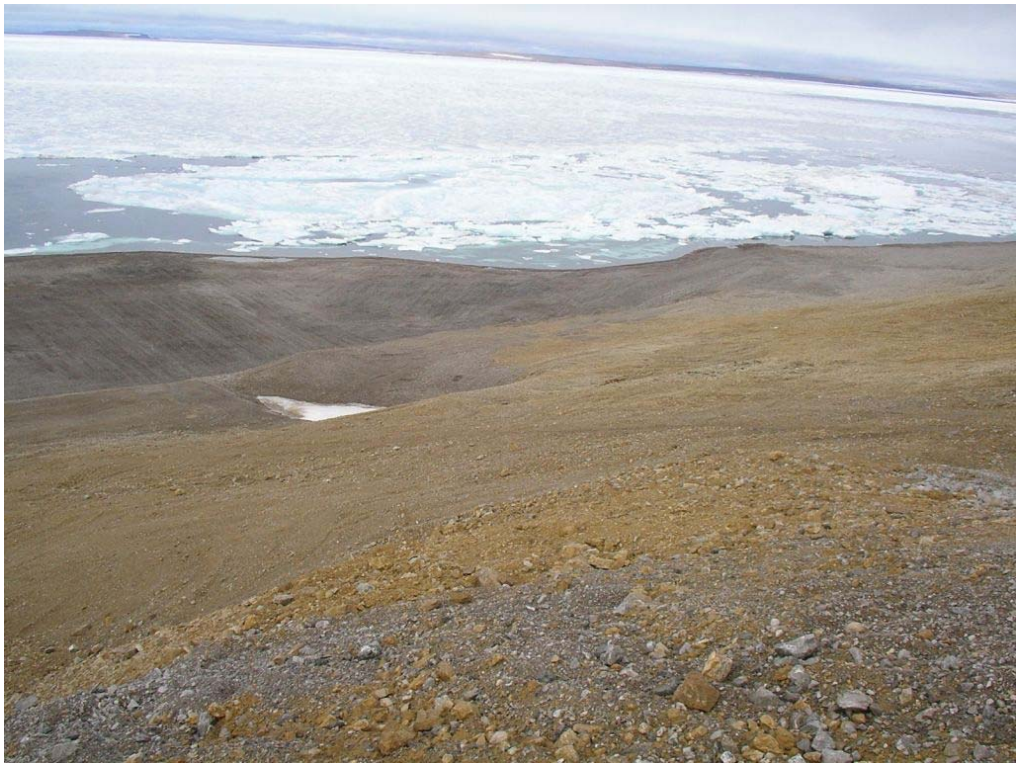
2006 – View of shoreline from waypoint JUL21PAN1 shows shoreline in vicinity of waypoints SL5 through SL7.

2006 – View of shoreline from waypoint JUL21PAN2 shows shoreline in vicinity of waypoints SL6 through SL8.

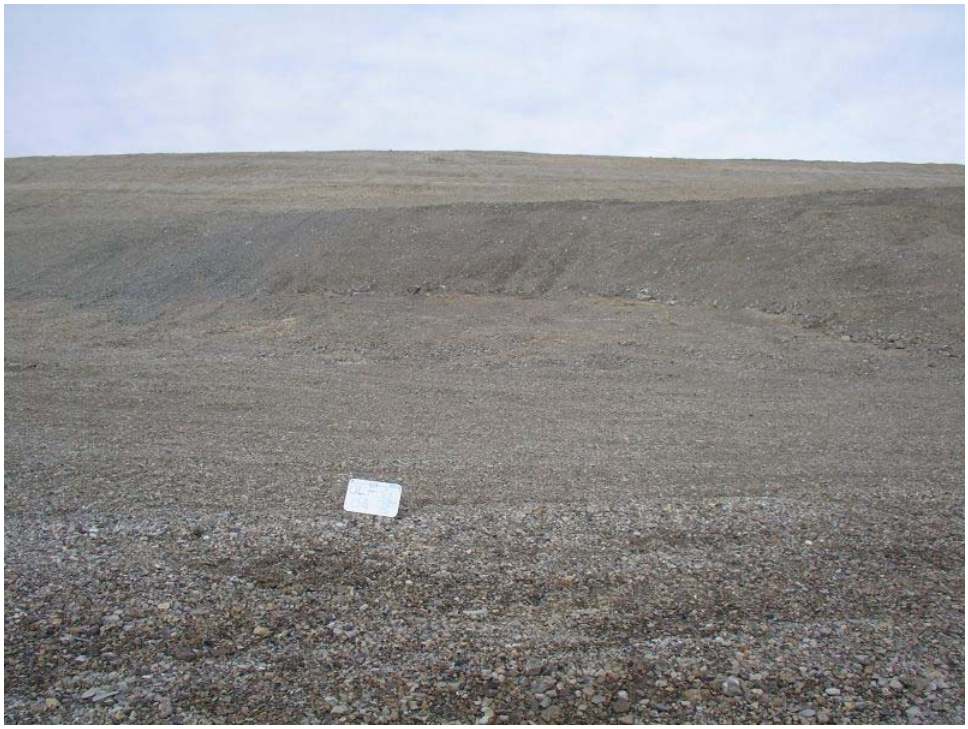
2006 – SL-5 North 8 367 900 view to south. Conditions are unchanged since 2005 inspection.

2006 – SL-4 North 8 368 000 view to east. Conditions are unchanged since 2005.

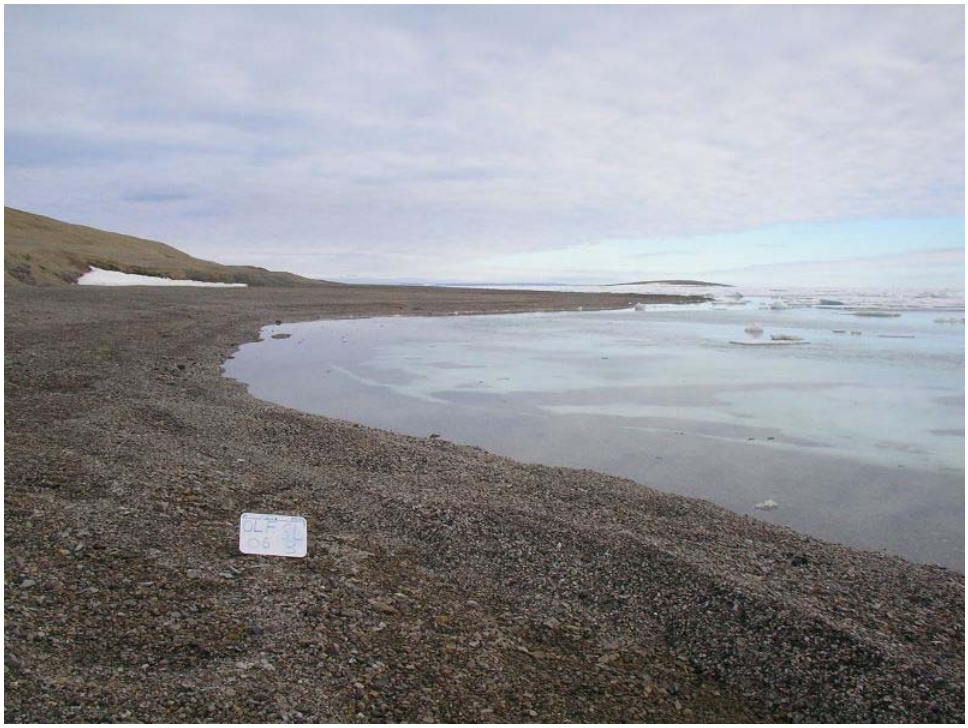
2006 – SL-4 North 8 368 000 view to south. Generally conditions appear unchanged although ice action has apparently re-arranged gravel berms slightly.



2006 – View of shoreline from waypoint JUL21PAN2 shows shoreline in vicinity of waypoints SL3 through SL5.



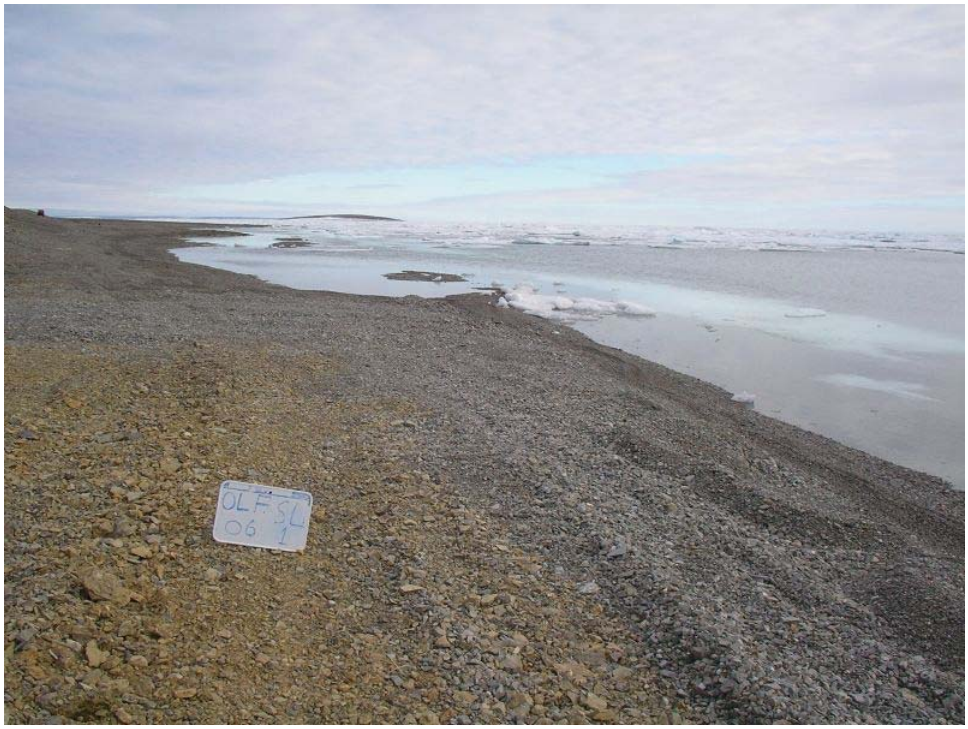
2006 – SL-3 North 8 368 100 view to east. Conditions appear similar to 2005.



2006 – SL-3 North 8 368 100 view to south. Conditions appear unchanged since 2005.

2006 – SL-2 North 8 368 200 view to east. Conditions are similar to observed in 2005.

2006 – SL-2 North 8 368 200 view to south. Conditions appear to be generally similar to those observed in 2005.



2006 – SL-1 North 8 368 300 view to south. Conditions are similar to observations in 2005.

Surveyed Transects

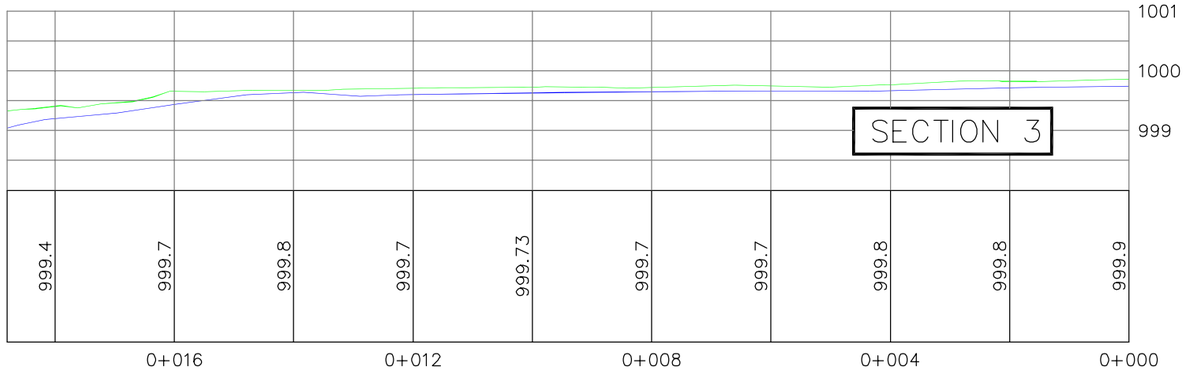
The drawing "2006 Annual Site Inspection Marine Foreshore Sections", dated 30 October 2006 and provided by Teck Cominco (included at the end of this appendix), indicates that the slopes along the shoreline are gentle and generally uniform, and are no steeper than 1 vertical in 10 horizontal. The shoreline immediately adjacent to the ocean undulates and is more variable, as shown in the photographs and surveyed sections. The 2006 survey has an apparent elevation shift from 2005. However, as can be seen in the drawing, the profiles both essentially parallel each other showing no significant change. The 2007 survey will confirm which is the correct elevation. The position of the end of the section at the shoreline will vary from year to year depending on where the tide is at the time of the survey.

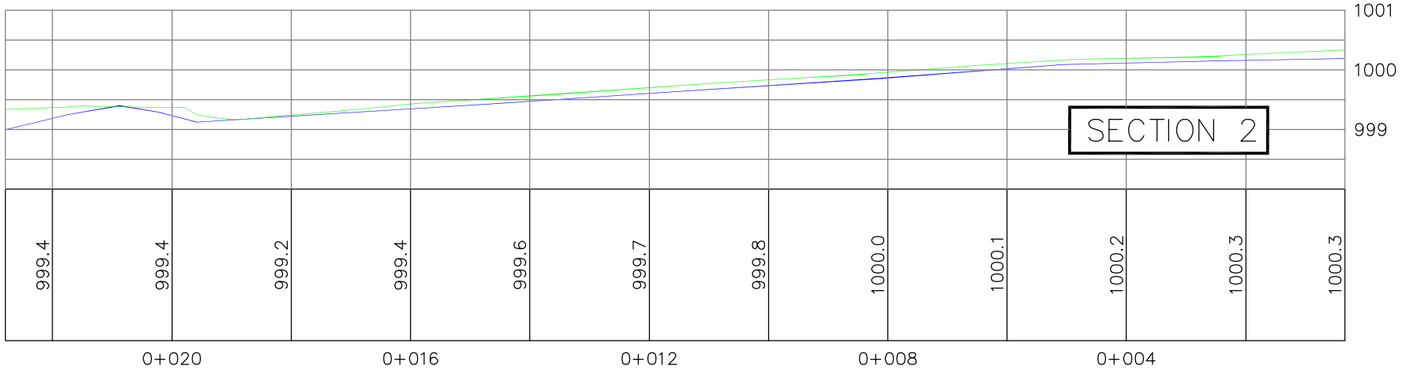
Over a number of years, comparisons of these transects will give an indication of the changes to the foreshore topography. The cross section drawings from the 2006 survey shows an apparent minor (approximately 0.1 m) elevation shift on all three transects suggesting a small survey error. As seen in the 2006 survey drawing, the profiles of all three sections are offset higher, but parallel to the 2005 surveys, indicating that this results from a survey error and not from an actual change in the ground surface.

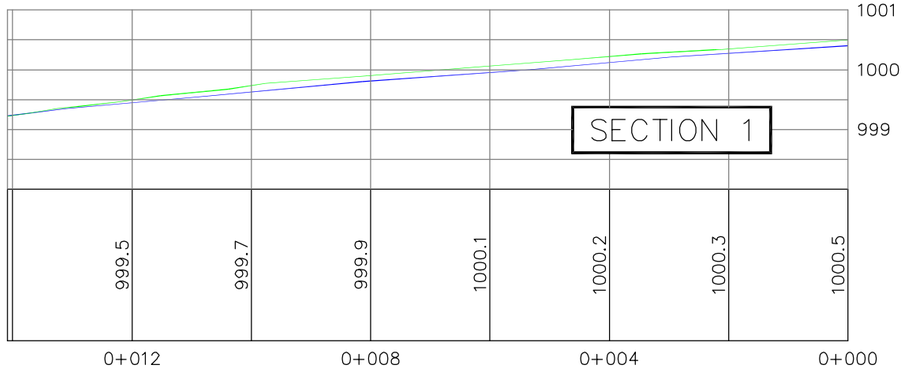
Section 1 is located at the point where the shoreline intersects UTM gridline N 8,367,500 and waypoint SL-9. The overall slope behind the shoreline is gently sloping at approximately 1 Vertical in 11 horizontal.

Section 2 is located at the point where the shoreline intersects UTM gridline N 8,367,750, between waypoints SL-6 and SL-7. The overall slope behind the shoreline is gently sloping at approximately 1 Vertical in 15 horizontal, and the slight undulation at the immediate shoreline is reflected in the photographs.

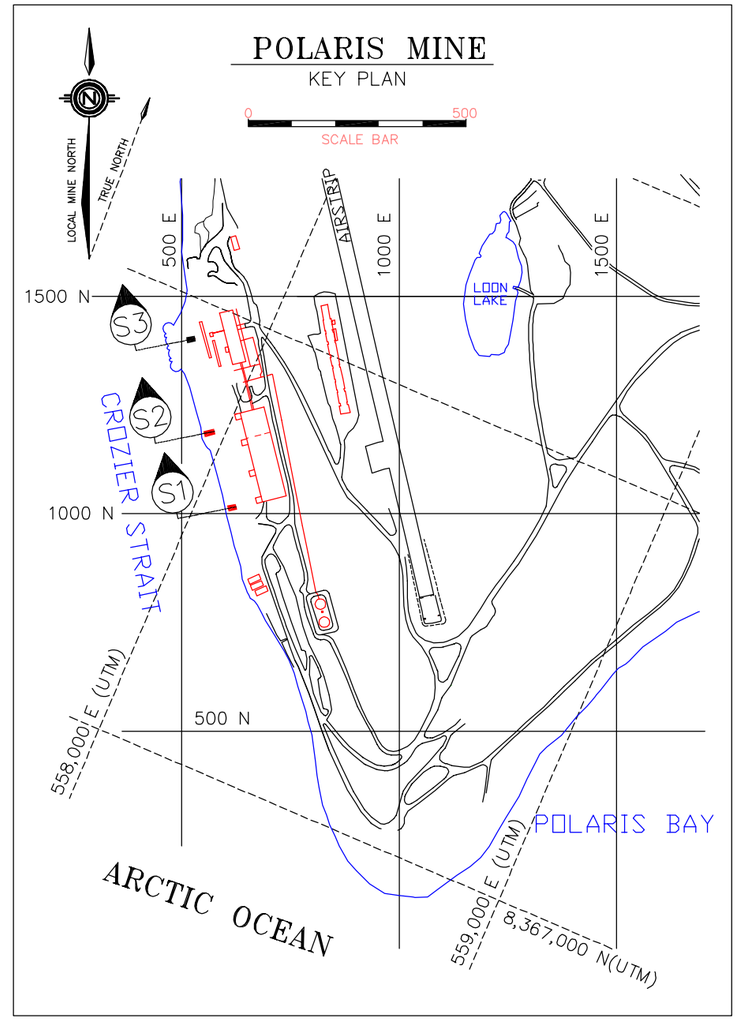
Section 3 is located at the point where the shoreline intersects UTM gridline N 8,367,900 and waypoint SL-5. The overall slope behind the shoreline is almost flat, with a gentle slope at the immediate shoreline, as shown in the photograph.







MWL ELEV. 999.0
HHWL ELEV. 999.8
LLWL 998.1



No.	REVISION	DATE	BY
5			
4			
3			
2			
1			

NOTE:
1. DATA COLLECTED JULY, 2006 BY TECK COMINCO REPRESENTATIVE.
2. SECTION CO-ORDINATES AND ELEVATIONS REFER TO LOCAL MINE DATUM.
3. 2005 SURFACE SHOWN HAS BEEN ADJUSTED TO REFLECT A 5cm DATUM ERROR.

DENOTES 2006 SURFACE
DENOTES 2005 SURFACE

PROJECT:
POLARIS MINE POST CLOSURE
2006 ANNUAL SITE INSPECTION

DRAWING:
MARINE FORESHORE SECTIONS

TM TECH SERVICES
CRANBROOK B.C.
(250)489-1855

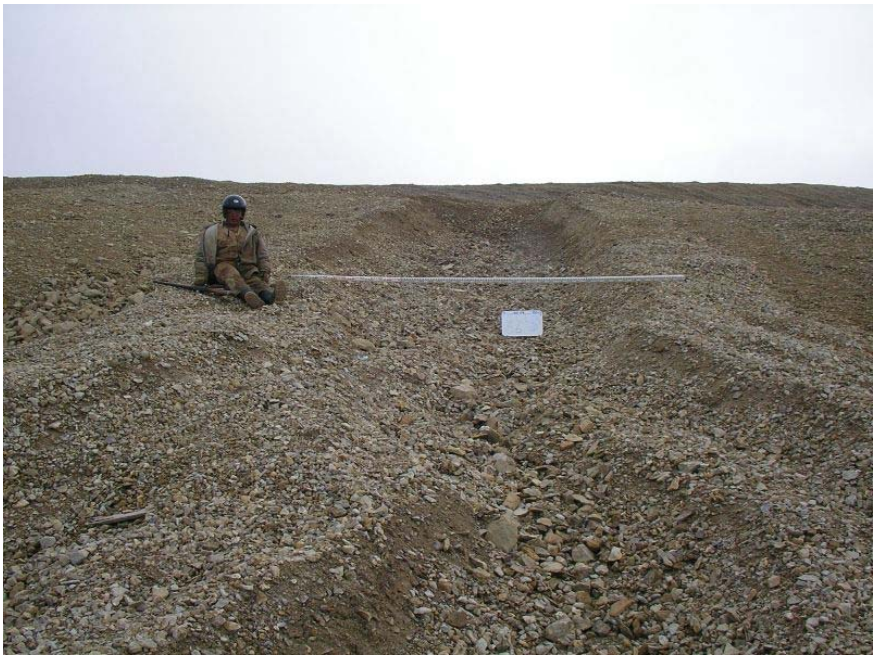
DRAWN BY: T. MELNICK
6-386-2
DATE: OCT. 30/06
CLIENT: teckcominco
SCALE: 1:100 Horz. 1:100 Vert.
FIGURE No.
SHEET:
PM | 2006 | AREA 4 | 1 OF 1

Date Plotted: November 21, 2006 File Location: S:\AutoCad\acad-Prj\2005\50-508 Polaris\B3-Report-Oct06\50508-By3-02_Appendix_MarineSects.dwg

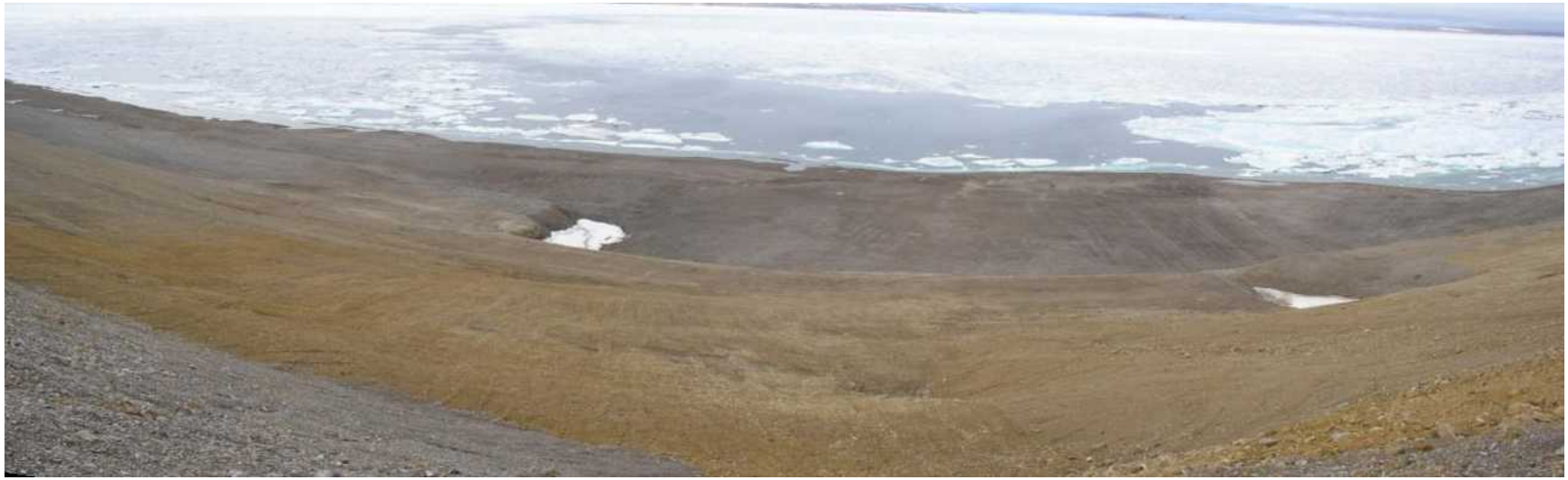
Additional observations of slopes above the western foreshore are included in the following photographs:

At waypoint GUL06 1, several localised erosion gullies were observed on the upper side-slopes above the western shoreline. These features appear unchanged from the 2005 inspection. The depth of the gully shown here is 1 m, and has a base width of 1 m. The gully is not fed by a significant drainage and appears to be a remnant from operations. Material in the gully is relatively coarsely sized and evidently self-armouring.

At waypoint GUL06 2, this shallow and isolated erosion gully appears to be unchanged from the 2005 inspection and is evidently self-armouring. The gully is 0.9 m deep and has a base width of about 2 m. Bedrock is exposed over part of this gully.



At waypoint GUL06 3, conditions in this localised shallow erosion gully appear stable and unchanged from 2005. The gully is blocked off at the top and is evidently self-armoured with coarse material.



Panoramic views of the western shoreline from waypoint JUL21PAN1 taken in 2006.

The following section describes re-sloping carried out at the sites of the fuel tank farm and the incinerator.

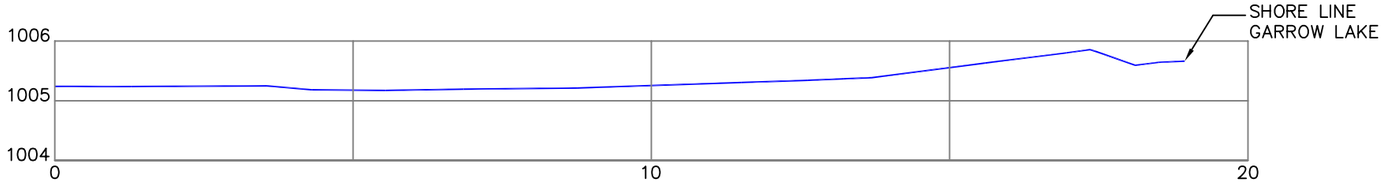
2006 view of the outside sides slope of the former incinerator pad that was re-sloped to address the regulators concern with the initially over steepened slopes. Average slopes of between 21 and 23 degrees were observed. The materials exposed are gravel and cobbles with some silty sand. The slopes appear in a stable condition with no seepage, settlement or cracking observed.

2006 Tank Farm Pad re-sloping – view from the north end looking south across a slope that has been flattened to slopes in the range of 20 to 23 degrees with horizontal. No signs of seepage were observed and the materials exposed are silty sands and gravels, with some cobbles. The slope appears stable with no signs of cracking or settlement.

APPENDIX 6

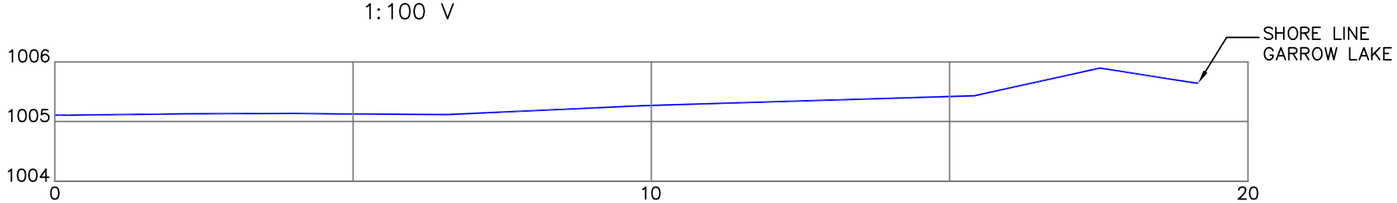
Plan and Sections

Garrow Lake Wave Break Structure

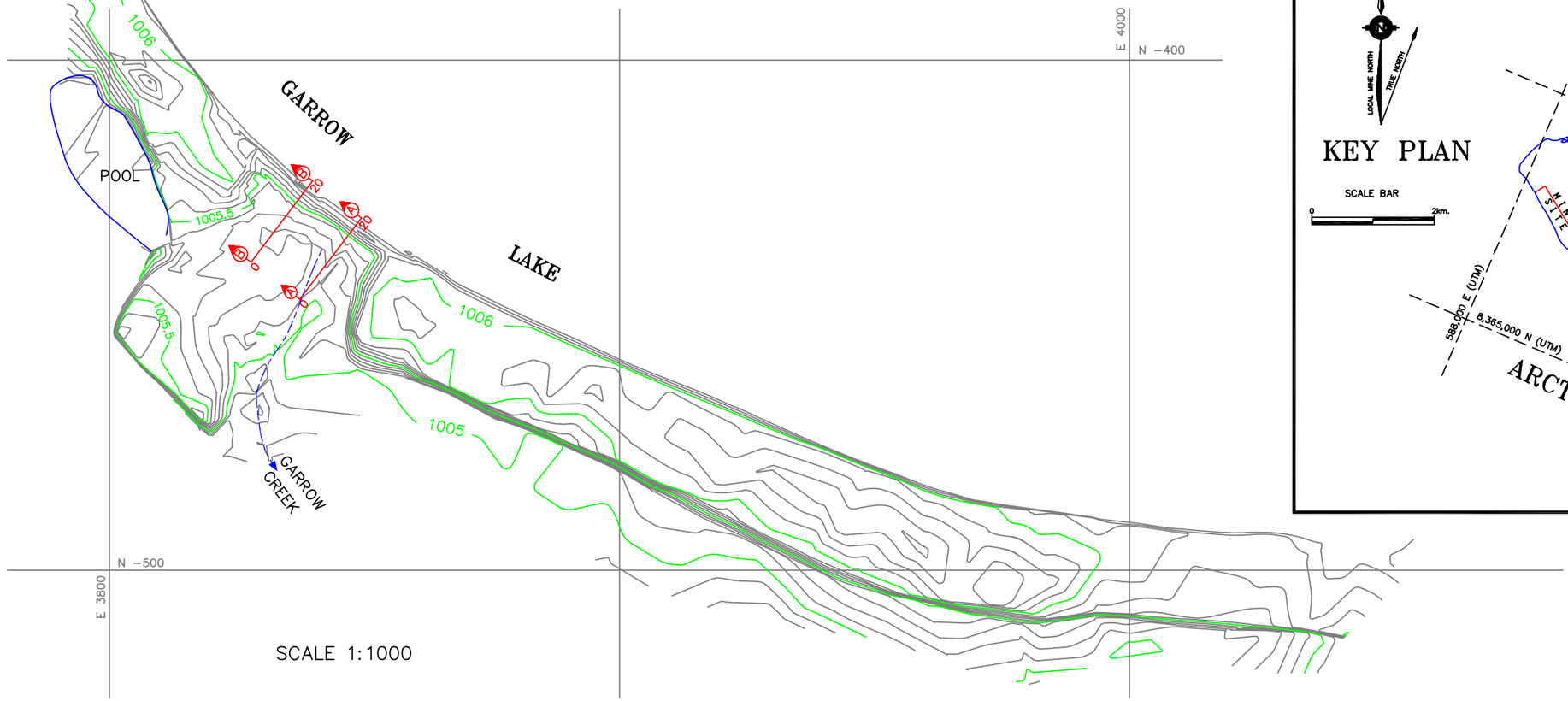


SCALE 1:100 H
1:100 V

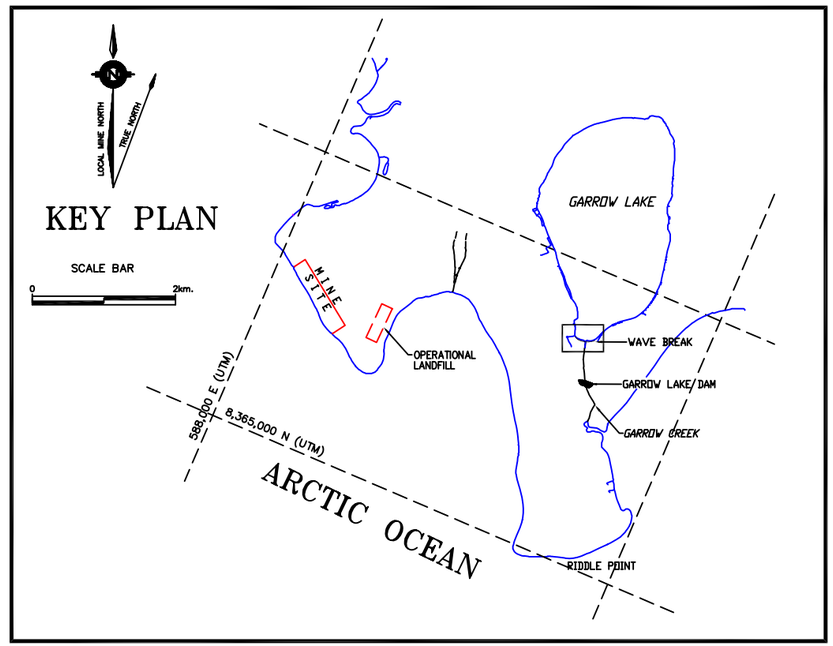
SECTION B–B



SECTION A–A



SCALE 1:1000



No.	REVISION	DATE	BY
5			
4			
3			
2			
1			

NOTE:
1. DATA COLLECTED JULY, 2006 BY TECK COMINCO REPRESENTATIVE.
2. SECTION CO–ORDINATES AND ELEVATIONS REFER TO LOCAL MINE DATUM.
3. CONTOUR INTERVAL 0.1m

PROJECT:
POLARIS MINE POST CLOSURE
2006 ANNUAL SITE INSPECTION

DRAWING:
GARROW LAKE WAVE BREAK
2006

TM TECH SERVICES
CRANBROOK B.C.
(250)489–1855

DRAWN BY: 6–385–1 T. MELNICK			CLIENT: teckcominco
DATE: NOV. 6/06			SCALE: AS SHOWN
FIGURE No.			SHEET:
PM	2006	WB	1 OF 1

APPENDIX 7

Wind Speed Monitoring Data

from

Resolute Bay, Nunavut

Station Name	**RESOLUTE CARS**
Province	NUNAVUT
Latitude	74.72
Longitude	-94.99
Elevation	67.4
Climate Identifier	2403500
WMO Identifier	71924
TC Identifier	YRB

All times are specified in Local Standard Time (LST).
Add 1 hour to adjust for Daylight Saving Time where and when it is observed.

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
01-Aug-06	0:00	12.2	0	0	
01-Aug-06	1:00	11.8	6	15	
01-Aug-06	2:00	9.8	22	6	
01-Aug-06	3:00	9.5	0	0	
01-Aug-06	4:00	10.2	34	7	
01-Aug-06	5:00	10.1	32	9	
01-Aug-06	6:00	9.8	32	7	
01-Aug-06	7:00	11.4	33	6	
01-Aug-06	8:00	9.1	34	9	
01-Aug-06	9:00	9.7	27	7	
01-Aug-06	10:00	11.1	31	6	
01-Aug-06	11:00	11.1	31	9	
01-Aug-06	12:00	11.9	32	15	
01-Aug-06	13:00	10.8	31	7	
01-Aug-06	14:00	11	30	17	
01-Aug-06	15:00	10.6	31	15	
01-Aug-06	16:00	10.3	31	15	
01-Aug-06	17:00	10.2	30	11	
01-Aug-06	18:00	10.3	31	7	
01-Aug-06	19:00	9.4	32	11	
01-Aug-06	20:00	8.7	32	15	
01-Aug-06	21:00	8.1	33	11	
01-Aug-06	22:00	8.5	33	13	
01-Aug-06	23:00	7.5	29	7	
02-Aug-06	0:00	9.2	36	6	
02-Aug-06	1:00	8.9	36	7	
02-Aug-06	2:00	7.3	1	9	
02-Aug-06	3:00	4.9	0	0	
02-Aug-06	4:00	8.4	35	6	
02-Aug-06	5:00	10.5	4	9	
02-Aug-06	6:00	8.8	34	6	
02-Aug-06	7:00	6.6	34	4	
02-Aug-06	8:00	9	34	6	
02-Aug-06	9:00	8.9	33	7	
02-Aug-06	10:00	9.9	33	9	
02-Aug-06	11:00	9.5	32	9	
02-Aug-06	12:00	9.4	32	13	
02-Aug-06	13:00	9.6	31	9	
02-Aug-06	14:00	7.1	31	13	
02-Aug-06	15:00	7.7	31	11	
02-Aug-06	16:00	6.9	30	7	
02-Aug-06	17:00	8.4	32	7	
02-Aug-06	18:00	9.6	32	11	
02-Aug-06	19:00	10.1	32	15	
02-Aug-06	20:00	7.1	30	4	
02-Aug-06	21:00	7.1	33	7	
02-Aug-06	22:00	7.2	33	6	
02-Aug-06	23:00	6.7	32	11	
03-Aug-06	0:00	6.6	33	13	
03-Aug-06	1:00	5.7	33	11	
03-Aug-06	2:00	7.3	33	15	
03-Aug-06	3:00	6.6	34	11	
03-Aug-06	4:00	7.5	33	19	
03-Aug-06	5:00	4.7	33	13	
03-Aug-06	6:00	5.4	30	13	
03-Aug-06	7:00	9.8	36	26	
03-Aug-06	8:00	9.1	1	24	
03-Aug-06	9:00	10.1	2	28	
03-Aug-06	10:00	9.7	2	28	
03-Aug-06	11:00	9.4	34	28	
03-Aug-06	12:00	8.8	35	39	
03-Aug-06	13:00	8.6	2	39	
03-Aug-06	14:00	10	1	19	
03-Aug-06	15:00	11.8	1	28	
03-Aug-06	16:00	12	2	30	
03-Aug-06	17:00	12	2	35	
03-Aug-06	18:00	11.7	1	32	
03-Aug-06	19:00	11.4	36	28	
03-Aug-06	20:00	10.4	34	13	
03-Aug-06	21:00	8.8	35	20	
03-Aug-06	22:00	6.7	1	28	
03-Aug-06	23:00	5.9	36	24	
04-Aug-06	0:00	5.1	36	26	
04-Aug-06	1:00	3.6	36	33	
04-Aug-06	2:00	3.1	35	32	
04-Aug-06	3:00	2.7	35	37	
04-Aug-06	4:00	3	1	39	
04-Aug-06	5:00	2.7	36	43	
04-Aug-06	6:00	3.2	36	33	
04-Aug-06	7:00	3.6	34	28	
04-Aug-06	8:00	3.7	34	35	
04-Aug-06	9:00	4	33	43	
04-Aug-06	10:00	4	32	30	
04-Aug-06	11:00	4.9	31	32	
04-Aug-06	12:00	5.7	34	28	
04-Aug-06	13:00	5	34	28	
04-Aug-06	14:00	4.9	33	24	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
04-Aug-06	15:00	3.9	34	37	
04-Aug-06	16:00	3.6	35	39	
04-Aug-06	17:00	2.8	34	35	
04-Aug-06	18:00	3.2	34	30	
04-Aug-06	19:00	2.8	34	28	
04-Aug-06	20:00	3.5	36	35	
04-Aug-06	21:00	3.3	34	13	
04-Aug-06	22:00	2.6	34	22	
04-Aug-06	23:00	1.8	34	22	
05-Aug-06	0:00	1.1	28	15	
05-Aug-06	1:00	1.5	2	26	
05-Aug-06	2:00	2.4	4	37	
05-Aug-06	3:00	2.4	3	32	
05-Aug-06	4:00	3.4	4	30	
05-Aug-06	5:00	3.9	4	30	
05-Aug-06	6:00	4.9	3	32	
05-Aug-06	7:00	4.7	33	11	
05-Aug-06	8:00	5.1	33	20	
05-Aug-06	9:00	3.7	29	15	
05-Aug-06	10:00	6.1	35	24	
05-Aug-06	11:00	6.3	35	28	
05-Aug-06	12:00	7	34	20	
05-Aug-06	13:00	7.2	33	26	
05-Aug-06	14:00	7.6	34	28	
05-Aug-06	15:00	7.9	34	30	
05-Aug-06	16:00	7.5	34	28	
05-Aug-06	17:00	7.5	34	24	
05-Aug-06	18:00	7.7	34	24	
05-Aug-06	19:00	7.8	34	26	
05-Aug-06	20:00	7	33	20	
05-Aug-06	21:00	6.6	36	17	
05-Aug-06	22:00	5.7	33	13	
05-Aug-06	23:00	5.1	32	11	
06-Aug-06	0:00	4.8	6	13	
06-Aug-06	1:00	3.8	28	6	
06-Aug-06	2:00	2.6	0	0	
06-Aug-06	3:00	5.5	0	0	
06-Aug-06	4:00	3.3	0	0	
06-Aug-06	5:00	5.9	0	0	
06-Aug-06	6:00	6.1	35	6	
06-Aug-06	7:00	6.9	33	4	
06-Aug-06	8:00	8.3	0	0	
06-Aug-06	9:00	7.6	13	9	
06-Aug-06	10:00	7.2	16	4	
06-Aug-06	11:00	8.7	18	7	
06-Aug-06	12:00	10	18	7	
06-Aug-06	13:00	8.6	15	7	
06-Aug-06	14:00	8.9	17	6	
06-Aug-06	15:00	9.5	0	0	
06-Aug-06	16:00	8	32	2	
06-Aug-06	17:00	8.4	29	6	
06-Aug-06	18:00	8.5	29	7	
06-Aug-06	19:00	8.8	31	4	
06-Aug-06	20:00	8.4	34	4	
06-Aug-06	21:00	7.4	29	6	
06-Aug-06	22:00	6.6	0	0	
06-Aug-06	23:00	5.8	17	6	
07-Aug-06	0:00	4.1	14	6	
07-Aug-06	1:00	4.7	14	6	
07-Aug-06	2:00	5.2	0	0	
07-Aug-06	3:00	5.7	14	6	
07-Aug-06	4:00	6	0	0	
07-Aug-06	5:00	6.1	13	6	
07-Aug-06	6:00	6.1	13	4	
07-Aug-06	7:00	6.8	0	0	
07-Aug-06	8:00	7.2	0	0	
07-Aug-06	9:00	8.7	0	0	
07-Aug-06	10:00	9	15	7	
07-Aug-06	11:00	9.5	17	6	
07-Aug-06	12:00	10	18	11	
07-Aug-06	13:00	10.6	18	9	
07-Aug-06	14:00	8	0	0	
07-Aug-06	15:00	8.7	27	4	
07-Aug-06	16:00	9.6	0	0	
07-Aug-06	17:00	10	0	0	
07-Aug-06	18:00	8.4	14	7	
07-Aug-06	19:00	7.9	12	7	
07-Aug-06	20:00	6.7	13	9	
07-Aug-06	21:00	6.9	11	9	
07-Aug-06	22:00	7.2	12	11	
07-Aug-06	23:00	6.7	12	11	
08-Aug-06	0:00	6.1	13	19	
08-Aug-06	1:00	6.4	14	11	
08-Aug-06	2:00	5.5	14	19	
08-Aug-06	3:00	5.8	14	19	
08-Aug-06	4:00	4.5	17	19	
08-Aug-06	5:00	4.1	12	13	
08-Aug-06	6:00	4	12	9	
08-Aug-06	7:00	4.3	12	4	
08-Aug-06	8:00	4.3	10	4	
08-Aug-06	9:00	4.9	15	6	
08-Aug-06	10:00	2.9	28	4	
08-Aug-06	11:00	2.7	30	4	
08-Aug-06	12:00	3.4	0	0	
08-Aug-06	13:00	3.7	0	0	
08-Aug-06	14:00	3.2	30	6	
08-Aug-06	15:00	3.8	31	6	
08-Aug-06	16:00	3.9	31	6	
08-Aug-06	17:00	4.5	27	4	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
08-Aug-06	18:00	4.2	24	4	
08-Aug-06	19:00	3.1	0	0	
08-Aug-06	20:00	3.6	17	4	
08-Aug-06	21:00	4	0	0	
08-Aug-06	22:00	5.2	13	2	
08-Aug-06	23:00	5.7	13	9	
09-Aug-06	0:00	3.8	16	7	
09-Aug-06	1:00	3.7	16	7	
09-Aug-06	2:00	4.3	0	0	
09-Aug-06	3:00	4.1	15	4	
09-Aug-06	4:00	4.8	16	13	
09-Aug-06	5:00	5.1	14	22	
09-Aug-06	6:00	6.3	14	15	
09-Aug-06	7:00	6.4	14	20	
09-Aug-06	8:00	6.2	15	20	
09-Aug-06	9:00	5.6	15	19	
09-Aug-06	10:00	5.4	15	22	
09-Aug-06	11:00	5.5	15	19	
09-Aug-06	12:00	4.8	15	19	
09-Aug-06	13:00	5.4	16	15	
09-Aug-06	14:00	5.3	16	15	
09-Aug-06	15:00	5.4	15	15	
09-Aug-06	16:00	5.6	14	15	
09-Aug-06	17:00	6	15	11	
09-Aug-06	18:00	7.1	14	19	
09-Aug-06	19:00	9.1	13	17	
09-Aug-06	20:00	9.2	14	13	
09-Aug-06	21:00	8.7	14	24	
09-Aug-06	22:00	8.7	13	11	
09-Aug-06	23:00	8.4	14	19	
10-Aug-06	0:00	6.3	15	20	
10-Aug-06	1:00	4.3	14	11	
10-Aug-06	2:00	3.3	12	9	
10-Aug-06	3:00	4.3	0	0	
10-Aug-06	4:00	3	32	7	
10-Aug-06	5:00	2.9	31	7	
10-Aug-06	6:00	3.1	32	7	
10-Aug-06	7:00	4.4	35	9	
10-Aug-06	8:00	5.1	7	15	
10-Aug-06	9:00	7.3	0	0	
10-Aug-06	10:00	4.5	0	0	
10-Aug-06	11:00	5.7	12	9	
10-Aug-06	12:00	7	0	0	
10-Aug-06	13:00	4.7	0	0	
10-Aug-06	14:00	5.9	33	9	
10-Aug-06	15:00	8.6	5	28	
10-Aug-06	16:00	9.2	16	11	
10-Aug-06	17:00	6.7	12	4	
10-Aug-06	18:00	8.5	6	19	
10-Aug-06	19:00	8	6	15	
10-Aug-06	20:00	7.3	4	26	
10-Aug-06	21:00	6.8	5	30	
10-Aug-06	22:00	6.8	5	28	
10-Aug-06	23:00	6.9	6	11	
11-Aug-06	0:00	7.3	6	30	
11-Aug-06	1:00	7.1	10	19	
11-Aug-06	2:00	7.4	6	15	
11-Aug-06	3:00	6.8	18	7	
11-Aug-06	4:00	6.1	18	11	
11-Aug-06	5:00	5.9	31	7	
11-Aug-06	6:00	6.3	3	4	
11-Aug-06	7:00	5.2	12	13	
11-Aug-06	8:00	5.3	0	0	
11-Aug-06	9:00	5.7	0	0	
11-Aug-06	10:00	9.3	8	19	
11-Aug-06	11:00	9.9	9	22	
11-Aug-06	12:00	10.4	8	28	
11-Aug-06	13:00	10.7	8	32	
11-Aug-06	14:00	10	10	41	
11-Aug-06	15:00	9.2	9	33	
11-Aug-06	16:00	9	9	44	
11-Aug-06	17:00	8.4	8	33	
11-Aug-06	18:00	8.2	9	30	
11-Aug-06	19:00	8	8	28	
11-Aug-06	20:00	7.2	8	30	
11-Aug-06	21:00	7.2	9	30	
11-Aug-06	22:00	6.3	9	24	
11-Aug-06	23:00	6.2	7	33	
12-Aug-06	0:00	6.2	7	28	
12-Aug-06	1:00	6.3	9	20	
12-Aug-06	2:00	6.1	8	20	
12-Aug-06	3:00	6.6	8	20	
12-Aug-06	4:00	4.9	9	19	
12-Aug-06	5:00	6.9	14	13	
12-Aug-06	6:00	7.1	15	9	
12-Aug-06	7:00	7.2	0	0	
12-Aug-06	8:00	4.6	30	4	
12-Aug-06	9:00	5	0	0	
12-Aug-06	10:00	4.8	33	7	
12-Aug-06	11:00	5.7	0	0	
12-Aug-06	12:00	5.5	0	0	
12-Aug-06	13:00	6.3	0	0	
12-Aug-06	14:00	5.1	26	9	
12-Aug-06	15:00	5.2	31	4	
12-Aug-06	16:00	5.3	32	7	
12-Aug-06	17:00	4.6	32	11	
12-Aug-06	18:00	4.3	34	11	
12-Aug-06	19:00	4	32	9	
12-Aug-06	20:00	3.7	33	6	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
12-Aug-06	21:00	4.1	30	2	
12-Aug-06	22:00	3.7	31	7	
12-Aug-06	23:00	5.9	35	15	
13-Aug-06	0:00	5.6	34	17	
13-Aug-06	1:00	5.2	36	22	
13-Aug-06	2:00	4.9	34	22	
13-Aug-06	3:00	4.6	34	19	
13-Aug-06	4:00	4.5	35	19	
13-Aug-06	5:00	4.7	2	19	
13-Aug-06	6:00	4.4	36	20	
13-Aug-06	7:00	5	34	15	
13-Aug-06	8:00	5.1	35	15	
13-Aug-06	9:00	4.9	1	17	
13-Aug-06	10:00	6	36	19	
13-Aug-06	11:00	6.8	33	19	
13-Aug-06	12:00	4.9	29	17	
13-Aug-06	13:00	5.4	31	17	
13-Aug-06	14:00	4.6	30	22	
13-Aug-06	15:00	4.4	30	19	
13-Aug-06	16:00	3	29	17	
13-Aug-06	17:00	2.6	29	19	
13-Aug-06	18:00	2.2	29	22	
13-Aug-06	19:00	2.2	29	15	
13-Aug-06	20:00	1.7	30	15	
13-Aug-06	21:00	1.8	31	11	
13-Aug-06	22:00	1.8	30	7	
13-Aug-06	23:00	1.8	30	9	
14-Aug-06	0:00	1.2	30	9	
14-Aug-06	1:00	1.1	30	7	
14-Aug-06	2:00	1.5	34	9	
14-Aug-06	3:00	1.5	34	9	
14-Aug-06	4:00	1.9	34	6	
14-Aug-06	5:00	2	31	7	
14-Aug-06	6:00	2	32	9	
14-Aug-06	7:00	2.7	32	6	
14-Aug-06	8:00	2.8	30	7	
14-Aug-06	9:00	3.3	29	7	
14-Aug-06	10:00	3.7	30	11	
14-Aug-06	11:00	4.1	29	11	
14-Aug-06	12:00	5.1	29	13	
14-Aug-06	13:00	6.2	29	7	
14-Aug-06	14:00	6.2	16	7	
14-Aug-06	15:00	4.4	15	11	
14-Aug-06	16:00	4	14	9	
14-Aug-06	17:00	4.1	15	6	
14-Aug-06	18:00	4.3	16	7	
14-Aug-06	19:00	3.4	16	9	
14-Aug-06	20:00	3.3	17	4	
14-Aug-06	21:00	3.5	17	4	
14-Aug-06	22:00	3.3	0	0	
14-Aug-06	23:00	3.4	32	6	
15-Aug-06	0:00	3.1	32	6	
15-Aug-06	1:00	3.6	12	4	
15-Aug-06	2:00	3.8	0	0	
15-Aug-06	3:00	4.2	0	0	
15-Aug-06	4:00	3	0	0	
15-Aug-06	5:00	4.1	0	0	
15-Aug-06	6:00	4.3	28	6	
15-Aug-06	7:00	4.9	33	7	
15-Aug-06	8:00	5.3	36	15	
15-Aug-06	9:00	5.7	2	11	
15-Aug-06	10:00	6	1	15	
15-Aug-06	11:00	6.2	1	15	
15-Aug-06	12:00	6.4	1	24	
15-Aug-06	13:00	6.5	2	24	
15-Aug-06	14:00	7.2	3	20	
15-Aug-06	15:00	7.5	4	28	
15-Aug-06	16:00	6.9	3	26	
15-Aug-06	17:00	6.6	4	26	
15-Aug-06	18:00	6	3	28	
15-Aug-06	19:00	5.6	4	28	
15-Aug-06	20:00	5.2	3	32	
15-Aug-06	21:00	5.1	4	33	
15-Aug-06	22:00	5	5	28	
15-Aug-06	23:00	4.6	4	33	
16-Aug-06	0:00	4.5	4	33	
16-Aug-06	1:00	4.1	2	6	
16-Aug-06	2:00	3.7	2	32	
16-Aug-06	3:00	4	3	30	
16-Aug-06	4:00	4.1	4	30	
16-Aug-06	5:00	4.4	3	30	
16-Aug-06	6:00	4.5	3	28	
16-Aug-06	7:00	4.2	2	20	
16-Aug-06	8:00	5.1	3	30	
16-Aug-06	9:00	5.8	2	33	
16-Aug-06	10:00	6.4	1	22	
16-Aug-06	11:00	6.3	3	26	
16-Aug-06	12:00	6.7	2	26	
16-Aug-06	13:00	7	2	15	
16-Aug-06	14:00	7.3	36	20	
16-Aug-06	15:00	7.5	2	22	
16-Aug-06	16:00	7.3	4	22	
16-Aug-06	17:00	7.1	2	22	
16-Aug-06	18:00	6.6	3	28	
16-Aug-06	19:00	6.4	3	24	
16-Aug-06	20:00	5.6	4	32	
16-Aug-06	21:00	5.1	4	28	
16-Aug-06	22:00	4.8	4	28	
16-Aug-06	23:00	4.8	4	30	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
17-Aug-06	0:00	4.2	4	19	
17-Aug-06	1:00	4	36	19	
17-Aug-06	2:00	4.1	3	19	
17-Aug-06	3:00	4.2	36	20	
17-Aug-06	4:00	4.4	4	15	
17-Aug-06	5:00	4.2	3	26	
17-Aug-06	6:00	4.8	3	24	
17-Aug-06	7:00	4.9	4	20	
17-Aug-06	8:00	5.3	4	26	
17-Aug-06	9:00	5.9	4	24	
17-Aug-06	10:00	6.6	4	26	
17-Aug-06	11:00	6.7	3	28	
17-Aug-06	12:00	7	1	19	
17-Aug-06	13:00	7.2	1	20	
17-Aug-06	14:00	7.3	1	20	
17-Aug-06	15:00	7.7	2	22	
17-Aug-06	16:00	8	2	22	
17-Aug-06	17:00	7.8	3	20	
17-Aug-06	18:00	7.6	35	22	
17-Aug-06	19:00	6.9	2	26	
17-Aug-06	20:00	6.2	36	19	
17-Aug-06	21:00	5.9	1	28	
17-Aug-06	22:00	5.3	3	35	
17-Aug-06	23:00	4.8	3	39	
18-Aug-06	0:00	4.2	3	37	
18-Aug-06	1:00	3.5	3	37	
18-Aug-06	2:00	2.7	3	33	
18-Aug-06	3:00	2.9	2	30	
18-Aug-06	4:00	1.8	34	39	
18-Aug-06	5:00	1.2	31	28	
18-Aug-06	6:00	1.4	33	24	
18-Aug-06	7:00	1.8	31	22	
18-Aug-06	8:00	1.5	32	20	
18-Aug-06	9:00	1.7	34	24	
18-Aug-06	10:00	2.4	34	30	
18-Aug-06	11:00	2.6	34	26	
18-Aug-06	12:00	3.5	35	22	
18-Aug-06	13:00	4.8	36	26	
18-Aug-06	14:00	4.5	35	19	
18-Aug-06	15:00	5	35	20	
18-Aug-06	16:00	4.8	34	22	
18-Aug-06	17:00	4.3	35	26	
18-Aug-06	18:00	3.5	35	28	
18-Aug-06	19:00	2.8	1	33	
18-Aug-06	20:00	1.9	1	30	
18-Aug-06	21:00	0.8	35	17	
18-Aug-06	22:00	0	35	20	
18-Aug-06	23:00	-0.3	36	17	
19-Aug-06	0:00	-0.6	35	17	
19-Aug-06	1:00	-0.6	35	17	
19-Aug-06	2:00	-0.2	36	26	
19-Aug-06	3:00	0.4	2	33	
19-Aug-06	4:00	0.7	1	46	
19-Aug-06	5:00	0.5	2	37	
19-Aug-06	6:00	0.6	36	37	
19-Aug-06	7:00	0.7	1	35	
19-Aug-06	8:00	0.7	1	32	
19-Aug-06	9:00	0.6	35	33	
19-Aug-06	10:00	1	36	30	
19-Aug-06	11:00	0.8	35	32	
19-Aug-06	12:00	0.9	35	30	
19-Aug-06	13:00	0.8	36	24	
19-Aug-06	14:00	1.5	34	30	
19-Aug-06	15:00	2.3	1	19	
19-Aug-06	16:00	2.1	36	28	
19-Aug-06	17:00	3.2	36	26	
19-Aug-06	18:00	3.7	1	28	
19-Aug-06	19:00	3.9	1	30	
19-Aug-06	20:00	3	2	30	
19-Aug-06	21:00	2.4	3	28	
19-Aug-06	22:00	1.3	2	28	
19-Aug-06	23:00	0.7	1	26	
20-Aug-06	0:00	0.4	36	33	
20-Aug-06	1:00	0.3	35	35	
20-Aug-06	2:00	0.1	36	39	
20-Aug-06	3:00	-0.4	36	37	
20-Aug-06	4:00	-0.4	36	46	
20-Aug-06	5:00	-0.8	35	30	
20-Aug-06	6:00	-1	36	28	
20-Aug-06	7:00	-0.6	34	24	
20-Aug-06	8:00	-0.3	35	41	
20-Aug-06	9:00	0.3	34	32	
20-Aug-06	10:00	0.3	32	33	
20-Aug-06	11:00	0.7	33	33	
20-Aug-06	12:00	0.7	34	44	
20-Aug-06	13:00	1	34	33	
20-Aug-06	14:00	0.8	35	30	
20-Aug-06	15:00	0.9	36	37	
20-Aug-06	16:00	0.9	34	39	
20-Aug-06	17:00	-0.1	34	43	
20-Aug-06	18:00	0.1	36	33	
20-Aug-06	19:00	-0.2	35	32	
20-Aug-06	20:00	-0.3	36	32	
20-Aug-06	21:00	-0.4	36	28	
20-Aug-06	22:00	-0.4	35	35	
20-Aug-06	23:00	-0.3	1	24	
21-Aug-06	0:00	-0.5	36	26	
21-Aug-06	1:00	-0.6	35	26	
21-Aug-06	2:00	-0.5	34	24	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
21-Aug-06	3:00	-0.3	33	26	
21-Aug-06	4:00	-0.4	34	26	
21-Aug-06	5:00	-0.8	33	30	
21-Aug-06	6:00	-1.2	33	26	
21-Aug-06	7:00	-1.4	32	26	
21-Aug-06	8:00	-1.1	32	22	
21-Aug-06	9:00	-0.4	31	13	
21-Aug-06	10:00	0.5	32	15	
21-Aug-06	11:00	0.9	30	22	
21-Aug-06	12:00	0.1	30	26	
21-Aug-06	13:00	-0.1	29	26	
21-Aug-06	14:00	0.8	28	22	
21-Aug-06	15:00	0.1	30	19	
21-Aug-06	16:00	-0.5	30	20	
21-Aug-06	17:00	-0.5	30	19	
21-Aug-06	18:00	-0.7	28	17	
21-Aug-06	19:00	-1.3	30	17	
21-Aug-06	20:00	-1.3	31	19	
21-Aug-06	21:00	-1.4	29	22	
21-Aug-06	22:00	-1.4	33	9	
21-Aug-06	23:00	-1.4	29	15	
22-Aug-06	0:00	-1.5	30	17	
22-Aug-06	1:00	-0.9	29	19	
22-Aug-06	2:00	-0.9	28	24	
22-Aug-06	3:00	-0.7	28	22	
22-Aug-06	4:00	-0.6	28	20	
22-Aug-06	5:00	-0.3	30	17	
22-Aug-06	6:00	0.1	29	17	
22-Aug-06	7:00	0.3	30	11	
22-Aug-06	8:00	0.4	29	17	
22-Aug-06	9:00	0.5	31	15	
22-Aug-06	10:00	1	30	6	
22-Aug-06	11:00	1	29	20	
22-Aug-06	12:00	0.9	27	22	
22-Aug-06	13:00	1.1	32	7	
22-Aug-06	14:00	1	28	7	
22-Aug-06	15:00	1.1	30	9	
22-Aug-06	16:00	1.9	31	9	
22-Aug-06	17:00	2.5	29	6	
22-Aug-06	18:00	2.6	31	4	
22-Aug-06	19:00	2.5	0	0	
22-Aug-06	20:00	2.2	0	0	
22-Aug-06	21:00	2.2	33	7	
22-Aug-06	22:00	1.7	34	4	
22-Aug-06	23:00	2.2	0	0	
23-Aug-06	0:00	2	0	0	
23-Aug-06	1:00	1.6	17	7	
23-Aug-06	2:00	1.4	17	7	
23-Aug-06	3:00	0.9	0	0	
23-Aug-06	4:00	0.9	9	7	
23-Aug-06	5:00	0.8	7	17	
23-Aug-06	6:00	1	7	22	
23-Aug-06	7:00	0.9	7	13	
23-Aug-06	8:00	1.3	7	15	
23-Aug-06	9:00	2.2	7	11	
23-Aug-06	10:00	3.4	13	7	
23-Aug-06	11:00	3.1	18	11	
23-Aug-06	12:00	2.9	15	9	
23-Aug-06	13:00	3	16	15	
23-Aug-06	14:00	3.6	16	20	
23-Aug-06	15:00	3.6	16	20	
23-Aug-06	16:00	3.3	15	22	
23-Aug-06	17:00	3.8	14	17	
23-Aug-06	18:00	3.7	16	17	
23-Aug-06	19:00	4.6	12	24	
23-Aug-06	20:00	4	12	20	
23-Aug-06	21:00	3.9	12	20	
23-Aug-06	22:00	3.5	10	28	
23-Aug-06	23:00	3.8	10	37	
24-Aug-06	0:00	4.8	11	37	
24-Aug-06	1:00	4.3	11	41	
24-Aug-06	2:00	3.9	11	41	
24-Aug-06	3:00	3.7	13	30	
24-Aug-06	4:00	3.7	12	28	
24-Aug-06	5:00	3.8	12	24	
24-Aug-06	6:00	3.7	13	28	
24-Aug-06	7:00	4	12	26	
24-Aug-06	8:00	4.4	12	26	
24-Aug-06	9:00	4.3	12	28	
24-Aug-06	10:00	4.3	12	26	
24-Aug-06	11:00	4.6	12	35	
24-Aug-06	12:00	4.7	11	35	
24-Aug-06	13:00	4.8	11	37	
24-Aug-06	14:00	4.4	11	39	
24-Aug-06	15:00	4.8	12	30	
24-Aug-06	16:00	4.7	12	32	
24-Aug-06	17:00	4.4	12	32	
24-Aug-06	18:00	4.8	11	43	
24-Aug-06	19:00	5.2	11	44	
24-Aug-06	20:00	4.5	11	35	
24-Aug-06	21:00	4	11	35	
24-Aug-06	22:00	3.7	11	43	
24-Aug-06	23:00	3.4	12	43	
25-Aug-06	0:00	3.5	12	33	
25-Aug-06	1:00	3.2	12	33	
25-Aug-06	2:00	3	12	43	
25-Aug-06	3:00	3.6	12	48	
25-Aug-06	4:00	3	10	41	
25-Aug-06	5:00	3	10	43	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
25-Aug-06	6:00	3.1	9	41	
25-Aug-06	7:00	3.3	9	35	
25-Aug-06	8:00	3.9	10	26	
25-Aug-06	9:00	3.9	11	35	
25-Aug-06	10:00	3.7	11	37	
25-Aug-06	11:00	3.9	11	37	
25-Aug-06	12:00	3.8	11	39	
25-Aug-06	13:00	3.7	11	41	
25-Aug-06	14:00	3.7	12	35	
25-Aug-06	15:00	3.7	11	41	
25-Aug-06	16:00	3.6	12	35	
25-Aug-06	17:00	3.7	11	33	
25-Aug-06	18:00	3.6	10	30	
25-Aug-06	19:00	3.3	11	26	
25-Aug-06	20:00	2.8	10	24	
25-Aug-06	21:00	2.5	10	24	
25-Aug-06	22:00	2.4	11	22	
25-Aug-06	23:00	2.3	10	24	
26-Aug-06	0:00	1.9	10	24	
26-Aug-06	1:00	1.8	9	30	
26-Aug-06	2:00	1.5	9	30	
26-Aug-06	3:00	1.4	9	30	
26-Aug-06	4:00	1.2	10	26	
26-Aug-06	5:00	1.3	10	15	
26-Aug-06	6:00	1.5	9	20	
26-Aug-06	7:00	2.1	10	15	
26-Aug-06	8:00	2.3	7	13	
26-Aug-06	9:00	3.1	10	15	
26-Aug-06	10:00	3.3	8	7	
26-Aug-06	11:00	3.5	7	11	
26-Aug-06	12:00	3.9	6	15	
26-Aug-06	13:00	4.3	10	9	
26-Aug-06	14:00	3.3	18	11	
26-Aug-06	15:00	3	17	6	
26-Aug-06	16:00	5	6	17	
26-Aug-06	17:00	5.2	4	19	
26-Aug-06	18:00	4.8	6	28	
26-Aug-06	19:00	4.1	5	28	
26-Aug-06	20:00	3.1	5	30	
26-Aug-06	21:00	1.9	5	32	
26-Aug-06	22:00	1	5	37	
26-Aug-06	23:00	0.7	5	37	
27-Aug-06	0:00	0.4	5	37	
27-Aug-06	1:00	0.4	5	30	
27-Aug-06	2:00	0.3	5	37	
27-Aug-06	3:00	0.3	5	37	
27-Aug-06	4:00	-0.1	4	30	
27-Aug-06	5:00	0.1	4	33	
27-Aug-06	6:00	0.4	6	37	
27-Aug-06	7:00	0.9	6	37	
27-Aug-06	8:00	1.6	5	39	
27-Aug-06	9:00	2	6	37	
27-Aug-06	10:00	2.7	4	44	
27-Aug-06	11:00	2.7	5	46	
27-Aug-06	12:00	3.1	3	39	
27-Aug-06	13:00	3.6	3	48	
27-Aug-06	14:00	4.2	4	52	
27-Aug-06	15:00	3.9	4	46	
27-Aug-06	16:00	4.1	3	37	
27-Aug-06	17:00	4	4	46	
27-Aug-06	18:00	3.8	4	56	Av. Max. Wind Speed for 5 hrs = 47.4 km/hr
27-Aug-06	19:00	3.2	4	41	
27-Aug-06	20:00	2.4	4	35	
27-Aug-06	21:00	1.4	2	37	
27-Aug-06	22:00	0.5	2	33	
27-Aug-06	23:00	0.1	1	30	
28-Aug-06	0:00	0.2	35	26	
28-Aug-06	1:00	0	36	30	
28-Aug-06	2:00	0.4	35	19	
28-Aug-06	3:00	1.1	35	20	
28-Aug-06	4:00	1.4	2	24	
28-Aug-06	5:00	-2.1	2	28	
28-Aug-06	6:00	-1.9	2	30	
28-Aug-06	7:00	-1.1	3	32	
28-Aug-06	8:00	-0.4	1	20	
28-Aug-06	9:00	0.3	36	22	
28-Aug-06	10:00	0.4	33	19	
28-Aug-06	11:00	1	34	24	
28-Aug-06	12:00	1.4	34	24	
28-Aug-06	13:00	2.3	34	19	
28-Aug-06	14:00	2.1	34	19	
28-Aug-06	15:00	2.5	36	19	
28-Aug-06	16:00	2.1	35	20	
28-Aug-06	17:00	1.5	36	26	
28-Aug-06	18:00	1.4	35	26	
28-Aug-06	19:00	1.4	35	22	
28-Aug-06	20:00	0.5	35	22	
28-Aug-06	21:00	-0.4	1	24	
28-Aug-06	22:00	-0.8	34	28	
28-Aug-06	23:00	-0.5	35	28	
29-Aug-06	0:00	-2.1	35	28	
29-Aug-06	1:00	-2.3	35	24	
29-Aug-06	2:00	-2.5	33	20	
29-Aug-06	3:00	-2.3	33	20	
29-Aug-06	4:00	-1.8	33	17	
29-Aug-06	5:00	-2.3	34	13	
29-Aug-06	6:00	-2.5	34	19	
29-Aug-06	7:00	-2.3	32	13	
29-Aug-06	8:00	-1.9	31	13	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
29-Aug-06	9:00	-1.4	33	17	
29-Aug-06	10:00	-1	31	20	
29-Aug-06	11:00	-0.2	33	22	
29-Aug-06	12:00	0.9	33	28	
29-Aug-06	13:00	1.9	34	26	
29-Aug-06	14:00	2.7	35	24	
29-Aug-06	15:00	3.1	36	26	
29-Aug-06	16:00	2.9	35	24	
29-Aug-06	17:00	2	34	22	
29-Aug-06	18:00	1.5	34	22	
29-Aug-06	19:00	0.6	32	22	
29-Aug-06	20:00	-0.3	31	15	
29-Aug-06	21:00	-1	35	17	
29-Aug-06	22:00	-1.5	32	19	
29-Aug-06	23:00	-1.8	32	19	
30-Aug-06	0:00	-2.1	32	13	
30-Aug-06	1:00	-2.4	32	13	
30-Aug-06	2:00	-2.6	35	19	
30-Aug-06	3:00	-2.2	35	19	
30-Aug-06	4:00	-2.3	32	15	
30-Aug-06	5:00	-1.6	34	19	
30-Aug-06	6:00	-1.3	34	19	
30-Aug-06	7:00	-1.2	33	15	
30-Aug-06	8:00	-1.1	33	19	
30-Aug-06	9:00	-0.8	33	13	
30-Aug-06	10:00	0	31	6	
30-Aug-06	11:00	1	28	7	
30-Aug-06	12:00	1.4	29	13	
30-Aug-06	13:00	1.5	29	15	
30-Aug-06	14:00	1.3	29	19	
30-Aug-06	15:00	0.8	30	20	
30-Aug-06	16:00	-0.3	29	17	
30-Aug-06	17:00	-0.6	30	15	
30-Aug-06	18:00	-0.2	29	9	
30-Aug-06	19:00	-0.3	30	15	
30-Aug-06	20:00	-0.3	29	9	
30-Aug-06	21:00	-0.7	30	11	
30-Aug-06	22:00	-0.3	29	13	
30-Aug-06	23:00	-0.6	29	13	
31-Aug-06	0:00	-0.9	30	13	
31-Aug-06	1:00	-0.8	33	11	
31-Aug-06	2:00	-0.8	32	7	
31-Aug-06	3:00	-1.1	32	13	
31-Aug-06	4:00	-1.2	33	11	
31-Aug-06	5:00	-1.2	33	7	
31-Aug-06	6:00	-1.5	30	6	
31-Aug-06	7:00	-1.7	32	6	
31-Aug-06	8:00	-1.5	32	6	
31-Aug-06	9:00	-1.3	30	6	
31-Aug-06	10:00	-1.2	31	7	
31-Aug-06	11:00	-0.9	30	6	
31-Aug-06	12:00	-0.6	31	7	
31-Aug-06	13:00	-0.3	30	7	
31-Aug-06	14:00	0	29	7	
31-Aug-06	15:00	0.2	29	6	
31-Aug-06	16:00	1.3	30	2	
31-Aug-06	17:00	2.3	0	0	
31-Aug-06	18:00	1.2	17	11	
31-Aug-06	19:00	-0.3	15	15	
31-Aug-06	20:00	-0.6	9	17	
31-Aug-06	21:00	-0.7	14	11	
31-Aug-06	22:00	-0.9	0	0	
31-Aug-06	23:00	-1.4	13	13	
01-Sep-06	0:00	-1.4	0	0	
01-Sep-06	1:00	-1.1	0	0	
01-Sep-06	2:00	-0.9	13	7	
01-Sep-06	3:00	-1	13	11	
01-Sep-06	4:00	-1.4	13	20	
01-Sep-06	5:00	-0.8	12	20	
01-Sep-06	6:00	-0.1	12	30	
01-Sep-06	7:00	0.1	11	22	
01-Sep-06	8:00	0.3	9	17	
01-Sep-06	9:00	1.4	9	13	
01-Sep-06	10:00	2.3	9	19	
01-Sep-06	11:00	2.3	9	20	
01-Sep-06	12:00	2.6	8	17	
01-Sep-06	13:00	3.1	9	17	
01-Sep-06	14:00	3.3	7	13	
01-Sep-06	15:00	3.4	9	20	
01-Sep-06	16:00	3.1	8	19	
01-Sep-06	17:00	3.3	6	15	
01-Sep-06	18:00	3.2	5	22	
01-Sep-06	19:00	2.4	5	22	
01-Sep-06	20:00	1.9	4	20	
01-Sep-06	21:00	1.5	4	20	
01-Sep-06	22:00	1	4	24	
01-Sep-06	23:00	0.9	4	17	
02-Sep-06	0:00	1.3	4	19	
02-Sep-06	1:00	1.2	5	28	
02-Sep-06	2:00	0.5	4	26	
02-Sep-06	3:00	0.3	4	32	
02-Sep-06	4:00	0.1	4	35	
02-Sep-06	5:00	-0.2	4	32	
02-Sep-06	6:00	0.3	4	32	
02-Sep-06	7:00	0.5	4	33	
02-Sep-06	8:00	0.7	3	41	
02-Sep-06	9:00	1	3	43	
02-Sep-06	10:00	0.8	4	41	
02-Sep-06	11:00	1.2	5	50	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
02-Sep-06	12:00	1.8	4	50	
02-Sep-06	13:00	2	5	48	
02-Sep-06	14:00	2.1	4	57	
02-Sep-06	15:00	2.4	4	56	
02-Sep-06	16:00	2.5	4	70	
02-Sep-06	17:00	2	3	56	
02-Sep-06	18:00	2.5	4	65	
02-Sep-06	19:00	2.5	4	65	
02-Sep-06	20:00	2.3	4	56	
02-Sep-06	21:00	2.4	3	56	Av. Max. Wind Speed for 11 hrs = 57 km/hr
02-Sep-06	22:00	2.1	2	41	
02-Sep-06	23:00	2.1	2	37	
03-Sep-06	0:00	2.1	2	46	
03-Sep-06	1:00	1.9	1	43	
03-Sep-06	2:00	1	35	43	Av. Max. Wind Speed for 16 hrs = 52 km/hr
03-Sep-06	3:00	0.5	35	28	
03-Sep-06	4:00	0.1	36	37	
03-Sep-06	5:00	-0.2	36	37	
03-Sep-06	6:00	-0.3	36	43	
03-Sep-06	7:00	-0.3	36	33	
03-Sep-06	8:00	-0.4	35	33	
03-Sep-06	9:00	-0.2	35	35	
03-Sep-06	10:00	-0.3	36	37	
03-Sep-06	11:00	-0.1	35	39	
03-Sep-06	12:00	-0.6	35	43	
03-Sep-06	13:00	-0.8	35	48	
03-Sep-06	14:00	-1.3	34	46	
03-Sep-06	15:00	-1.6	35	46	
03-Sep-06	16:00	-1.8	35	50	
03-Sep-06	17:00	-2.1	36	41	
03-Sep-06	18:00	-2.3	34	37	
03-Sep-06	19:00	-2.1	35	37	
03-Sep-06	20:00	-2.1	35	33	
03-Sep-06	21:00	-2.4	34	35	
03-Sep-06	22:00	-2.8	35	37	
03-Sep-06	23:00	-3.2	35	43	
04-Sep-06	0:00	-3.3	34	48	
04-Sep-06	1:00	-3.3	33	41	
04-Sep-06	2:00	-3	33	41	
04-Sep-06	3:00	-3	33	46	
04-Sep-06	4:00	-2.8	34	37	
04-Sep-06	5:00	-3.2	33	41	
04-Sep-06	6:00	-3.8	34	37	
04-Sep-06	7:00	-4.7	32	44	
04-Sep-06	8:00	-4.9	32	43	
04-Sep-06	9:00	-3.9	32	43	
04-Sep-06	10:00	-3.2	32	32	
04-Sep-06	11:00	-2.8	31	24	
04-Sep-06	12:00	-2.5	31	24	
04-Sep-06	13:00	-1.8	29	26	
04-Sep-06	14:00	-1.6	30	30	
04-Sep-06	15:00	-1.5	29	28	
04-Sep-06	16:00	-1.1	28	32	
04-Sep-06	17:00	-1	28	33	
04-Sep-06	18:00	-0.9	27	19	
04-Sep-06	19:00	-0.7	25	26	
04-Sep-06	20:00	-0.3	25	30	
04-Sep-06	21:00	-0.1	23	19	
04-Sep-06	22:00	-0.1	26	26	
04-Sep-06	23:00	-0.1	28	19	
05-Sep-06	0:00	-0.2	30	19	
05-Sep-06	1:00	-0.4	33	24	
05-Sep-06	2:00	-2.4	33	24	
05-Sep-06	3:00	-3.2	33	24	
05-Sep-06	4:00	-3.8	33	28	
05-Sep-06	5:00	-3.8	31	33	
05-Sep-06	6:00	-3.8	31	41	
05-Sep-06	7:00	-3.4	31	41	
05-Sep-06	8:00	-2.8	30	41	
05-Sep-06	9:00	-2.1	32	35	
05-Sep-06	10:00	-1.8	34	28	
05-Sep-06	11:00	-1.2	3	37	
05-Sep-06	12:00	-1.4	1	41	
05-Sep-06	13:00	-1	36	41	
05-Sep-06	14:00	0.1	2	50	
05-Sep-06	15:00	0	1	48	
05-Sep-06	16:00	-0.3	36	46	
05-Sep-06	17:00	-0.4	1	50	
05-Sep-06	18:00	-0.5	1	56	
05-Sep-06	19:00	-0.9	1	46	
05-Sep-06	20:00	-1.8	36	56	Av. Max. Wind Speed for 7 hrs was 50 km/hr
05-Sep-06	21:00	-2.6	36	46	
05-Sep-06	22:00	-2.9	35	35	
05-Sep-06	23:00	-2.9	1	46	
06-Sep-06	0:00	-2.7	1	46	
06-Sep-06	1:00	-3.2	1	46	
06-Sep-06	2:00	-3	1	37	
06-Sep-06	3:00	-2.8	2	46	
06-Sep-06	4:00	-2.7	2	52	
06-Sep-06	5:00	-3.1	2	50	
06-Sep-06	6:00	-3	2	41	
06-Sep-06	7:00	-3.2	1	56	
06-Sep-06	8:00	-2.7	1	50	Av. Max. Wind Speed for 5hrs was 49.8 km/hr
06-Sep-06	9:00	-2.5	34	37	
06-Sep-06	10:00	-2.1	35	35	
06-Sep-06	11:00	-1.4	34	32	
06-Sep-06	12:00	-1.2	34	32	
06-Sep-06	13:00	-0.7	34	22	
06-Sep-06	14:00	-0.7	35	20	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
06-Sep-06	15:00	-0.2	36	41	
06-Sep-06	16:00	-0.1	36	37	
06-Sep-06	17:00	-0.2	1	37	
06-Sep-06	18:00	-0.4	36	37	
06-Sep-06	19:00	-0.8	35	39	
06-Sep-06	20:00	-1.4	36	35	
06-Sep-06	21:00	-1.8	36	37	
06-Sep-06	22:00	-1.9	34	24	
06-Sep-06	23:00	-1.3	34	43	
07-Sep-06	0:00	-0.8	34	17	
07-Sep-06	1:00	-0.7	36	22	
07-Sep-06	2:00	-0.5	32	26	
07-Sep-06	3:00	-0.6	34	22	
07-Sep-06	4:00	-0.4	32	26	
07-Sep-06	5:00	-0.4	1	33	
07-Sep-06	6:00	-0.2	33	28	
07-Sep-06	7:00	-0.4	34	32	
07-Sep-06	8:00	-0.3	31	22	
07-Sep-06	9:00	0.4	34	22	
07-Sep-06	10:00	1.6	35	26	
07-Sep-06	11:00	2.4	35	24	
07-Sep-06	12:00	2.9	31	19	
07-Sep-06	13:00	3.7	32	17	
07-Sep-06	14:00	3.2	32	13	
07-Sep-06	15:00	2.2	29	13	
07-Sep-06	16:00	1.2	32	13	
07-Sep-06	17:00	1	30	7	
07-Sep-06	18:00	0.8	28	9	
07-Sep-06	19:00	0.7	30	6	
07-Sep-06	20:00	0.5	0	0	
07-Sep-06	21:00	0.7	2	4	
07-Sep-06	22:00	1.3	18	9	
07-Sep-06	23:00	0.8	19	13	
08-Sep-06	0:00	1.2	21	17	
08-Sep-06	1:00	1.1	18	9	
08-Sep-06	2:00	1.3	21	11	
08-Sep-06	3:00	0.7	24	20	
08-Sep-06	4:00	0.4	26	24	
08-Sep-06	5:00	0.1	28	24	
08-Sep-06	6:00	-0.1	28	15	
08-Sep-06	7:00	0.2	29	15	
08-Sep-06	8:00	0.3	29	22	
08-Sep-06	9:00	0.2	29	22	
08-Sep-06	10:00	0.5	29	19	
08-Sep-06	11:00	0.7	29	26	
08-Sep-06	12:00	0.3	29	24	
08-Sep-06	13:00	0.3	29	24	
08-Sep-06	14:00	-0.1	31	28	
08-Sep-06	15:00	-0.4	33	24	
08-Sep-06	16:00	-0.7	33	33	
08-Sep-06	17:00	-1.3	34	26	
08-Sep-06	18:00	-1.4	30	22	
08-Sep-06	19:00	-1.6	33	30	
08-Sep-06	20:00	-2.1	32	26	
08-Sep-06	21:00	-2.4	32	28	
08-Sep-06	22:00	-2.4	33	24	
08-Sep-06	23:00	-2.6	32	28	
09-Sep-06	0:00	-2.7	32	28	
09-Sep-06	1:00	-2.6	32	20	
09-Sep-06	2:00	-2.4	32	26	
09-Sep-06	3:00	-2.5	32	26	
09-Sep-06	4:00	-2.3	34	20	
09-Sep-06	5:00	-2.4	34	20	
09-Sep-06	6:00	-2.3	32	17	
09-Sep-06	7:00	-2.2	32	15	
09-Sep-06	8:00	-2.4	30	13	
09-Sep-06	9:00	-2.1	33	11	
09-Sep-06	10:00	-2.3	29	9	
09-Sep-06	11:00	-2	29	13	
09-Sep-06	12:00	-1.8	30	11	
09-Sep-06	13:00	-1.8	29	11	
09-Sep-06	14:00	-2.1	29	11	
09-Sep-06	15:00	-2.3	31	13	
09-Sep-06	16:00	-2.2	28	7	
09-Sep-06	17:00	-2.2	28	7	
09-Sep-06	18:00	-2.1	27	9	
09-Sep-06	19:00	-1.9	31	9	
09-Sep-06	20:00	-2.1	32	9	
09-Sep-06	21:00	-2.3	31	17	
09-Sep-06	22:00	-2.4	34	15	
09-Sep-06	23:00	-2.7	34	11	
10-Sep-06	0:00	-3.5	34	17	
10-Sep-06	1:00	-3.9	34	13	
10-Sep-06	2:00	-4.6	1	9	
10-Sep-06	3:00	-5.3	3	17	
10-Sep-06	4:00	-5.3	0	0	
10-Sep-06	5:00	-5.2	0	0	
10-Sep-06	6:00	-5	3	17	
10-Sep-06	7:00	-4.8	1	11	
10-Sep-06	8:00	-4.8	6	7	
10-Sep-06	9:00	-4.8	35	7	
10-Sep-06	10:00	-3.6	36	13	
10-Sep-06	11:00	-2.9	35	4	
10-Sep-06	12:00	-2.1	34	6	
10-Sep-06	13:00	-1.6	29	6	
10-Sep-06	14:00	-1.5	2	15	
10-Sep-06	15:00	-1.6	1	6	
10-Sep-06	16:00	-1.6	33	11	
10-Sep-06	17:00	-1.9	34	7	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
10-Sep-06	18:00	-2.1	36	20	
10-Sep-06	19:00	-2.4	36	9	
10-Sep-06	20:00	-3	1	17	
10-Sep-06	21:00	-3.7	1	13	
10-Sep-06	22:00	-4.7	1	13	
10-Sep-06	23:00	-5	35	13	
11-Sep-06	0:00	-5.2	36	9	
11-Sep-06	1:00	-4.1	3	11	
11-Sep-06	2:00	-3.6	3	9	
11-Sep-06	3:00	-3.6	36	17	
11-Sep-06	4:00	-3.4	3	11	
11-Sep-06	5:00	-3.5	34	11	
11-Sep-06	6:00	-3.2	34	9	
11-Sep-06	7:00	-2.8	2	13	
11-Sep-06	8:00	-2.9	1	24	
11-Sep-06	9:00	-3.4	2	22	
11-Sep-06	10:00	-2.7	5	24	
11-Sep-06	11:00	-2.6	4	15	
11-Sep-06	12:00	-3.2	3	19	
11-Sep-06	13:00	-3.2	3	15	
11-Sep-06	14:00	-2.5	4	20	
11-Sep-06	15:00	-2.7	5	17	
11-Sep-06	16:00	-2.3	3	24	
11-Sep-06	17:00	-2.4	4	19	
11-Sep-06	18:00	-2.3	3	17	
11-Sep-06	19:00	-2.6	4	13	
11-Sep-06	20:00	-2.7	4	15	
11-Sep-06	21:00	-2.7	3	13	
11-Sep-06	22:00	-2.8	1	19	
11-Sep-06	23:00	-2.9	4	11	
12-Sep-06	0:00	-3	4	11	
12-Sep-06	1:00	-3.2	3	15	
12-Sep-06	2:00	-3.2	3	11	
12-Sep-06	3:00	-3.1	4	19	
12-Sep-06	4:00	-3.3	1	11	
12-Sep-06	5:00	-3.2	1	15	
12-Sep-06	6:00	-3.6	2	11	
12-Sep-06	7:00	-3.9	7	11	
12-Sep-06	8:00	-4.2	4	7	
12-Sep-06	9:00	-4.1	2	11	
12-Sep-06	10:00	-3.1	3	9	
12-Sep-06	11:00	-2.1	3	19	
12-Sep-06	12:00	-1.8	35	22	
12-Sep-06	13:00	-1.6	1	24	
12-Sep-06	14:00	-1.5	36	22	
12-Sep-06	15:00	-2.1	1	28	
12-Sep-06	16:00	-2.5	36	22	
12-Sep-06	17:00	-2.9	36	32	
12-Sep-06	18:00	-3.4	1	26	
12-Sep-06	19:00	-3.7	1	26	
12-Sep-06	20:00	-4.1	3	32	
12-Sep-06	21:00	-4.7	1	22	
12-Sep-06	22:00	-4.8	36	22	
12-Sep-06	23:00	-5.1	36	26	
13-Sep-06	0:00	-4.9	35	26	
13-Sep-06	1:00	-5.1	35	22	
13-Sep-06	2:00	-5.2	34	19	
13-Sep-06	3:00	-5.2	36	17	
13-Sep-06	4:00	-5.8	34	15	
13-Sep-06	5:00	-6	32	13	
13-Sep-06	6:00	-6.1	32	13	
13-Sep-06	7:00	-6	34	15	
13-Sep-06	8:00	-5.5	36	24	
13-Sep-06	9:00	-5.5	34	22	
13-Sep-06	10:00	-5.6	34	20	
13-Sep-06	11:00	-5.2	36	30	
13-Sep-06	12:00	-5.5	33	22	
13-Sep-06	13:00	-5.5	33	24	
13-Sep-06	14:00	-5.6	32	19	
13-Sep-06	15:00	-5.5	31	32	
13-Sep-06	16:00	-5.3	34	24	
13-Sep-06	17:00	-5.6	35	22	
13-Sep-06	18:00	-5.3	34	24	
13-Sep-06	19:00	-5	1	28	
13-Sep-06	20:00	-4.7	36	15	
13-Sep-06	21:00	-4.4	34	9	
13-Sep-06	22:00	-4.6	1	28	
13-Sep-06	23:00	-4	33	13	
14-Sep-06	0:00	-3.5	3	35	
14-Sep-06	1:00	-3.4	36	26	
14-Sep-06	2:00	-3.4	2	28	
14-Sep-06	3:00	-3.7	35	30	
14-Sep-06	4:00	-4.5	36	24	
14-Sep-06	5:00	-4.1	36	30	
14-Sep-06	6:00	-3.6	36	17	
14-Sep-06	7:00	-3.4	35	33	
14-Sep-06	8:00	-3.6	36	28	
14-Sep-06	9:00	-3.4	34	19	
14-Sep-06	10:00	-3.4	35	32	
14-Sep-06	11:00	-3.4	35	35	
14-Sep-06	12:00	-3.1	34	28	
14-Sep-06	13:00	-3	36	24	
14-Sep-06	14:00	-3	35	24	
14-Sep-06	15:00	-3.1	35	19	
14-Sep-06	16:00	-2.9	34	22	
14-Sep-06	17:00	-3	35	24	
14-Sep-06	18:00	-3.3	34	32	
14-Sep-06	19:00	-3.5	33	26	
14-Sep-06	20:00	-3.6	33	24	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
14-Sep-06	21:00	-3.6	33	13	
14-Sep-06	22:00	-3.5	35	15	
14-Sep-06	23:00	-3.4	34	15	
15-Sep-06	0:00	-3.1	34	13	
15-Sep-06	1:00	-2.6	32	6	
15-Sep-06	2:00	-1.8	31	13	
15-Sep-06	3:00	-1.6	29	13	
15-Sep-06	4:00	-1.5	30	15	
15-Sep-06	5:00	-1.6	31	13	
15-Sep-06	6:00	-1.7	30	20	
15-Sep-06	7:00	-1.5	29	15	
15-Sep-06	8:00	-1.5	30	20	
15-Sep-06	9:00	-1.5	31	20	
15-Sep-06	10:00	-1.4	30	15	
15-Sep-06	11:00	-1.3	31	17	
15-Sep-06	12:00	-1	31	20	
15-Sep-06	13:00	-0.8	32	19	
15-Sep-06	14:00	-0.4	33	22	
15-Sep-06	15:00	-0.2	32	20	
15-Sep-06	16:00	0.1	33	24	
15-Sep-06	17:00	0.3	33	20	
15-Sep-06	18:00	0.3	32	19	
15-Sep-06	19:00	0.1	32	17	
15-Sep-06	20:00	-0.2	35	13	
15-Sep-06	21:00	-0.8	31	20	
15-Sep-06	22:00	-1	33	9	
15-Sep-06	23:00	-0.4	32	15	
16-Sep-06	0:00	-0.3	30	19	
16-Sep-06	1:00	-0.1	31	24	
16-Sep-06	2:00	-0.1	31	28	
16-Sep-06	3:00	0.1	32	19	
16-Sep-06	4:00	0.7	33	20	
16-Sep-06	5:00	0.7	31	20	
16-Sep-06	6:00	0.8	33	19	
16-Sep-06	7:00	0.6	32	9	
16-Sep-06	8:00	0.7	30	7	
16-Sep-06	9:00	0.4	29	15	
16-Sep-06	10:00	0.1	32	11	
16-Sep-06	11:00	0	28	15	
16-Sep-06	12:00	0	28	15	
16-Sep-06	13:00	0	29	13	
16-Sep-06	14:00	0.3	29	24	
16-Sep-06	15:00	0.6	29	19	
16-Sep-06	16:00	0.2	29	20	
16-Sep-06	17:00	-0.2	31	19	
16-Sep-06	18:00	-0.4	30	28	
16-Sep-06	19:00	-0.8	31	13	
16-Sep-06	20:00	-0.9	31	13	
16-Sep-06	21:00	-1.1	34	11	
16-Sep-06	22:00	-1.4	33	11	
16-Sep-06	23:00	-2	32	11	
17-Sep-06	0:00	-1	0	0	
17-Sep-06	1:00	-1	34	7	
17-Sep-06	2:00	-1.8	34	7	
17-Sep-06	3:00	-1.6	33	13	
17-Sep-06	4:00	-1.8	32	9	
17-Sep-06	5:00	-1.9	31	4	
17-Sep-06	6:00	-1.9	32	6	
17-Sep-06	7:00	-1.2	24	6	
17-Sep-06	8:00	-1.3	32	9	
17-Sep-06	9:00	-0.7	32	7	
17-Sep-06	10:00	0.1	32	15	
17-Sep-06	11:00	0.7	29	7	
17-Sep-06	12:00	0.8	31	11	
17-Sep-06	13:00	0.5	31	15	
17-Sep-06	14:00	1	30	13	
17-Sep-06	15:00	1	32	6	
17-Sep-06	16:00	1.1	33	9	
17-Sep-06	17:00	0.7	34	15	
17-Sep-06	18:00	0.4	33	9	
17-Sep-06	19:00	-0.6	31	7	
17-Sep-06	20:00	-0.5	33	6	
17-Sep-06	21:00	0	0	0	
17-Sep-06	22:00	-0.1	0	0	
17-Sep-06	23:00	-1	35	4	
18-Sep-06	0:00	-0.9	36	7	
18-Sep-06	1:00	-0.8	34	6	
18-Sep-06	2:00	-0.6	34	6	
18-Sep-06	3:00	-0.3	34	7	
18-Sep-06	4:00	-0.3	0	0	
18-Sep-06	5:00	-1	0	0	
18-Sep-06	6:00	0	0	0	
18-Sep-06	7:00	0.2	14	6	
18-Sep-06	8:00	1.1	13	6	
18-Sep-06	9:00	0.5	13	15	
18-Sep-06	10:00	0.7	14	13	
18-Sep-06	11:00	1.5	17	15	
18-Sep-06	12:00	1.6	14	15	
18-Sep-06	13:00	1.4	14	13	
18-Sep-06	14:00	1.5	14	19	
18-Sep-06	15:00	1.4	13	15	
18-Sep-06	16:00	2.1	17	13	
18-Sep-06	17:00	2.1	15	11	
18-Sep-06	18:00	1.5	18	13	
18-Sep-06	19:00	2.2	0	0	
18-Sep-06	20:00	2.1	21	6	
18-Sep-06	21:00	1	20	11	
18-Sep-06	22:00	0.3	26	7	
18-Sep-06	23:00	0.8	26	7	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
19-Sep-06	0:00	0.3	25	11	
19-Sep-06	1:00	-0.1	25	11	
19-Sep-06	2:00	-0.1	25	11	
19-Sep-06	3:00	-0.2	25	11	
19-Sep-06	4:00	-0.4	27	17	
19-Sep-06	5:00	-0.4	27	13	
19-Sep-06	6:00	-0.4	29	13	
19-Sep-06	7:00	-0.5	27	9	
19-Sep-06	8:00	-0.6	27	17	
19-Sep-06	9:00	-0.6	29	15	
19-Sep-06	10:00	-0.8	28	15	
19-Sep-06	11:00	-0.8	28	15	
19-Sep-06	12:00	-0.8	27	7	
19-Sep-06	13:00	-0.7	27	11	
19-Sep-06	14:00	-0.6	26	11	
19-Sep-06	15:00	-0.7	28	7	
19-Sep-06	16:00	-0.7	28	7	
19-Sep-06	17:00	-0.3	30	7	
19-Sep-06	18:00	-0.5	30	15	
19-Sep-06	19:00	-0.7	31	15	
19-Sep-06	20:00	-0.9	31	15	
19-Sep-06	21:00	-1	31	13	
19-Sep-06	22:00	-1	33	9	
20-Sep-06	0:00	-0.3	31	9	
20-Sep-06	1:00	-0.3	34	19	
20-Sep-06	2:00	-0.9	36	26	
20-Sep-06	3:00	-1	35	24	
20-Sep-06	4:00	-1.3	35	19	
20-Sep-06	5:00	-2.3	35	19	
20-Sep-06	6:00	-2.4	35	22	
20-Sep-06	7:00	-3.1	34	33	
20-Sep-06	8:00	-3.7	1	32	
20-Sep-06	9:00	-3.8	1	28	
20-Sep-06	10:00	-3.5	34	19	
20-Sep-06	11:00	-3.5	32	26	
20-Sep-06	12:00	-3	35	24	
20-Sep-06	13:00	-2.9	36	24	
20-Sep-06	14:00	-2.1	36	28	
20-Sep-06	15:00	-1.7	1	37	
20-Sep-06	16:00	-1.8	36	7	
20-Sep-06	17:00	-2	36	17	
20-Sep-06	18:00	-2.2	30	6	
20-Sep-06	19:00	-2.7	0	0	
20-Sep-06	20:00	-3.2	33	6	
20-Sep-06	21:00	-3.2	32	13	
20-Sep-06	22:00	-4	34	22	
20-Sep-06	23:00	-3.9	2	13	
21-Sep-06	0:00	-4.7	34	11	
21-Sep-06	1:00	-4.6	0	0	
21-Sep-06	2:00	-4.3	8	7	
21-Sep-06	3:00	-3.5	4	20	
21-Sep-06	4:00	-3.4	4	26	
21-Sep-06	5:00	-3.4	4	24	
21-Sep-06	6:00	-2.7	4	17	
21-Sep-06	7:00	-4	26	7	
21-Sep-06	8:00	-3.9	31	7	
21-Sep-06	9:00	-3.3	35	6	
21-Sep-06	10:00	-2.4	1	9	
21-Sep-06	11:00	-2.1	31	6	
21-Sep-06	12:00	-2.1	32	15	
21-Sep-06	13:00	-1	33	11	
21-Sep-06	14:00	-1.4	31	11	
21-Sep-06	15:00	-1	31	11	
21-Sep-06	16:00	-1.2	31	15	
21-Sep-06	17:00	-1.4	32	13	
21-Sep-06	18:00	-1.6	34	9	
21-Sep-06	19:00	-2.1	31	13	
21-Sep-06	20:00	-2.2	36	4	
21-Sep-06	21:00	-2.2	3	4	
21-Sep-06	22:00	-2.4	0	0	
21-Sep-06	23:00	-2.9	0	0	
22-Sep-06	0:00	-2.1	0	0	
22-Sep-06	1:00	-2.6	34	7	
22-Sep-06	2:00	-2.2	0	0	
22-Sep-06	3:00	-2.1	25	4	
22-Sep-06	4:00	-2.2	25	7	
22-Sep-06	5:00	-2.6	31	4	
22-Sep-06	6:00	-2.5	31	13	
22-Sep-06	7:00	-3.1	29	11	
22-Sep-06	8:00	-3.2	32	11	
22-Sep-06	9:00	-3.3	29	7	
22-Sep-06	10:00	-3.4	29	7	
22-Sep-06	11:00	-3.2	31	15	
22-Sep-06	12:00	-3.2	29	6	
22-Sep-06	13:00	-2.9	29	7	
22-Sep-06	14:00	-2.8	32	9	
22-Sep-06	15:00	-2.2	32	9	
22-Sep-06	16:00	-2.9	31	7	
22-Sep-06	17:00	-2.9	31	4	
22-Sep-06	18:00	-3.2	31	6	
22-Sep-06	19:00	-3.3	32	7	
22-Sep-06	20:00	-3.4	0	0	
22-Sep-06	21:00	-3.9	35	6	
22-Sep-06	22:00	-3.8	36	6	
22-Sep-06	23:00	-3.6	33	6	
23-Sep-06	0:00	-4.3	35	6	
23-Sep-06	1:00	-4.4	32	6	
23-Sep-06	2:00	-4.5	0	0	
23-Sep-06	3:00	-4.9	0	0	

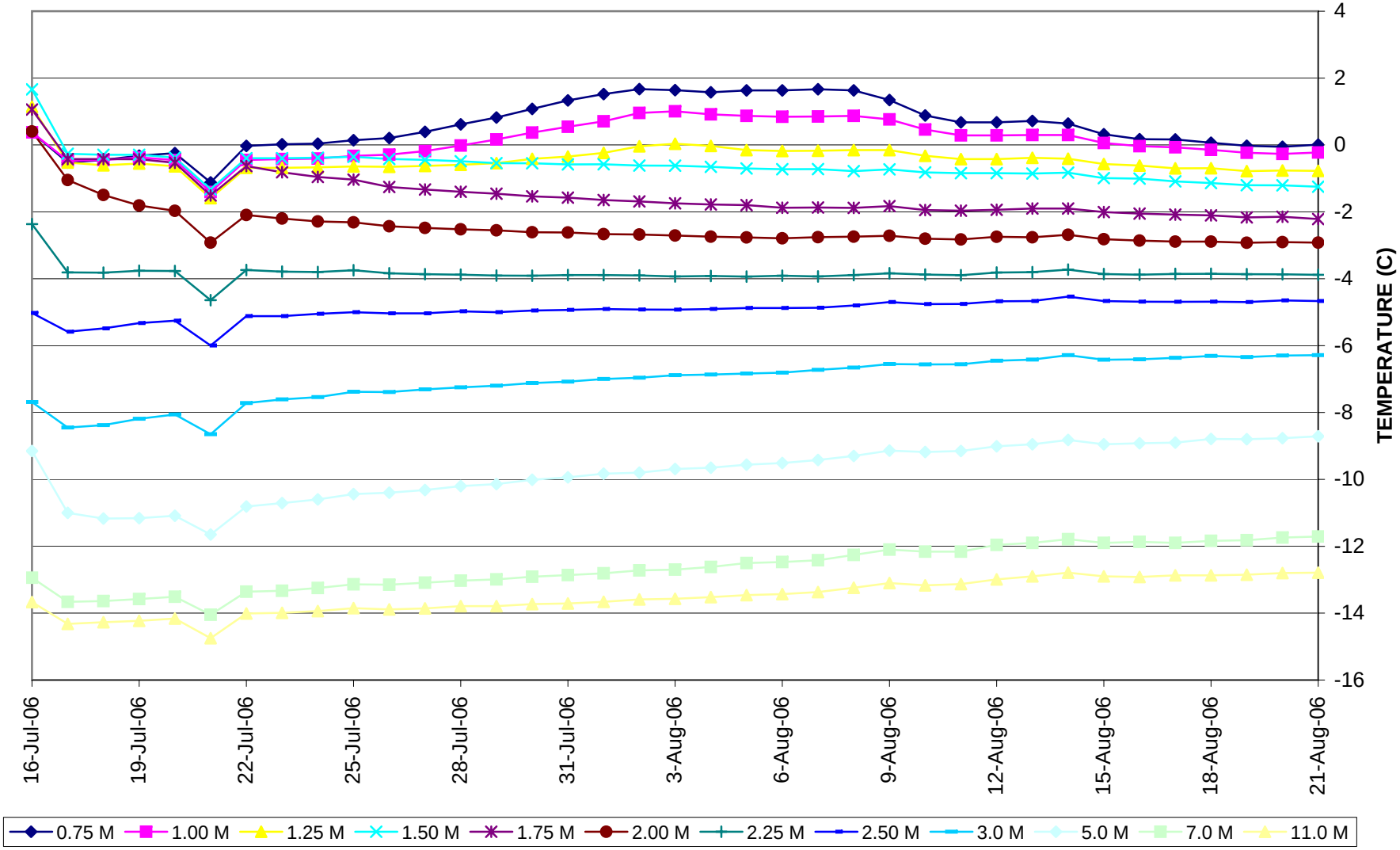
Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
23-Sep-06	4:00	-5.3	32	4	
23-Sep-06	5:00	-5.2	0	0	
23-Sep-06	6:00	-5.3	0	0	
23-Sep-06	7:00	-5.6	33	4	
23-Sep-06	8:00	-4.9	0	0	
23-Sep-06	9:00	-4.7	0	0	
23-Sep-06	10:00	-4.2	32	4	
23-Sep-06	11:00	-3.9	32	4	
23-Sep-06	12:00	-3.3	31	4	
23-Sep-06	13:00	-3	31	4	
23-Sep-06	14:00	-2.5	31	7	
23-Sep-06	15:00	-2.1	33	4	
23-Sep-06	16:00	-2.2	32	4	
23-Sep-06	17:00	-2.2	33	9	
23-Sep-06	18:00	-2.8	32	6	
23-Sep-06	19:00	-3.6	34	13	
23-Sep-06	20:00	-3.9	33	15	
23-Sep-06	21:00	-2.9	35	9	
23-Sep-06	22:00	-2	3	11	
23-Sep-06	23:00	-2.5	36	6	
24-Sep-06	0:00	-2.1	1	7	
24-Sep-06	1:00	-2.2	1	7	
24-Sep-06	2:00	-2.6	2	26	
24-Sep-06	3:00	-2	3	19	
24-Sep-06	4:00	-2.8	0	0	
24-Sep-06	5:00	-3.6	34	4	
24-Sep-06	6:00	-3.5	34	7	
24-Sep-06	7:00	-2.7	36	7	
24-Sep-06	8:00	-2.7	2	13	
24-Sep-06	9:00	-2.6	1	13	
24-Sep-06	10:00	-1.5	4	15	
24-Sep-06	11:00	-1.4	35	4	
24-Sep-06	12:00	-1.3	27	6	
24-Sep-06	13:00	-0.5	31	6	
24-Sep-06	14:00	0.2	34	6	
24-Sep-06	15:00	1.2	6	15	
24-Sep-06	16:00	0.6	5	19	
24-Sep-06	17:00	-0.5	5	32	
24-Sep-06	18:00	-0.8	5	33	
24-Sep-06	19:00	-1.4	5	32	
24-Sep-06	20:00	-2.6	5	33	
24-Sep-06	21:00	-2.3	5	26	
24-Sep-06	22:00	-2.1	5	26	
24-Sep-06	23:00	-3.4	5	30	
25-Sep-06	0:00	-2.7	0	0	
25-Sep-06	1:00	-4.3	35	4	
25-Sep-06	2:00	-4.4	0	0	
25-Sep-06	3:00	-5.4	36	7	
25-Sep-06	4:00	-4.9	32	4	
25-Sep-06	5:00	-5.2	5	9	
25-Sep-06	6:00	-4	4	28	
25-Sep-06	7:00	-4.1	5	24	
25-Sep-06	8:00	-3.7	5	26	
25-Sep-06	9:00	-3.7	5	24	
25-Sep-06	10:00	-3	5	24	
25-Sep-06	11:00	-2.1	5	24	
25-Sep-06	12:00	-1.1	5	24	
25-Sep-06	13:00	-0.3	0	0	
25-Sep-06	14:00	-2	2	26	
25-Sep-06	15:00	-2.6	1	13	
25-Sep-06	16:00	-2.3	2	13	
25-Sep-06	17:00	-2.6	36	15	
25-Sep-06	18:00	-3.1	34	11	
25-Sep-06	19:00	-3.8	2	28	
25-Sep-06	20:00	-4.4	3	9	
25-Sep-06	21:00	-3.4	35	17	
25-Sep-06	22:00	-2.9	2	20	
25-Sep-06	23:00	-2.5	2	33	
26-Sep-06	0:00	-2.7	1	39	
26-Sep-06	1:00	-3	1	26	
26-Sep-06	2:00	-2.9	2	24	
26-Sep-06	3:00	-2.9	2	24	
26-Sep-06	4:00	-2.7	36	26	
26-Sep-06	5:00	-2.7	1	19	
26-Sep-06	6:00	-2.9	36	26	
26-Sep-06	7:00	-3	35	20	
26-Sep-06	8:00	-3.3	35	28	
26-Sep-06	9:00	-3.1	34	22	
26-Sep-06	10:00	-3.2	34	24	
26-Sep-06	11:00	-2.8	1	20	
26-Sep-06	12:00	-2.6	1	24	
26-Sep-06	13:00	-2.5	2	17	
26-Sep-06	14:00	-2.6	2	24	
26-Sep-06	15:00	-2.7	4	19	
26-Sep-06	16:00	-2.5	3	24	
26-Sep-06	17:00	-2.6	1	22	
26-Sep-06	18:00	-2.8	36	24	
26-Sep-06	19:00	-2.8	2	22	
26-Sep-06	20:00	-3.7	35	24	
26-Sep-06	21:00	-3.2	3	19	
26-Sep-06	22:00	-2.6	3	17	
26-Sep-06	23:00	-2.8	2	26	
27-Sep-06	0:00	-2.9	2	28	
27-Sep-06	1:00	-3.2	2	33	
27-Sep-06	2:00	-4.3	2	35	
27-Sep-06	3:00	-4.2	2	33	
27-Sep-06	4:00	-4.1	2	30	
27-Sep-06	5:00	-4.3	2	43	
27-Sep-06	6:00	-4.5	2	39	

Date/Time	Time	Temp (C)	Wind Dir (10's deg)	Wind Spd (km/h)	**Average Maximum** Wind Speeds Over Time
27-Sep-06	7:00	-4.7	1	39	
27-Sep-06	8:00	-5.2	1	41	
27-Sep-06	9:00	-5	2	33	
27-Sep-06	10:00	-5.2	2	33	
27-Sep-06	11:00	-5.1	2	32	
27-Sep-06	12:00	-5.2	2	30	
27-Sep-06	13:00	-4.9	2	26	
27-Sep-06	14:00	-4.7	4	24	
27-Sep-06	15:00	-4.6	4	24	
27-Sep-06	16:00	-4.8	4	22	
27-Sep-06	17:00	-5.2	4	24	
27-Sep-06	18:00	-5.1	4	20	
27-Sep-06	19:00	-5.1	3	19	
27-Sep-06	20:00	-5.2	4	22	
27-Sep-06	21:00	-5.1	4	20	
27-Sep-06	22:00	-4.9	3	15	
27-Sep-06	23:00	-4.9	1	13	
28-Sep-06	0:00	-4.7	2	13	
28-Sep-06	1:00	-4.5	35	7	
28-Sep-06	2:00	-4.6	35	11	
28-Sep-06	3:00	-4.7	35	11	
28-Sep-06	4:00	-5.5	1	7	
28-Sep-06	5:00	-5.8	36	6	
28-Sep-06	6:00	-6.2	1	6	
28-Sep-06	7:00	-6	6	9	
28-Sep-06	8:00	-5.6	6	15	
28-Sep-06	9:00	-4.9	7	6	
28-Sep-06	10:00	-4.5	0	0	
28-Sep-06	11:00	-4.1	0	0	
28-Sep-06	12:00	-3.8	0	0	
28-Sep-06	13:00	-3.6	0	0	
28-Sep-06	14:00	-3.5	32	4	
28-Sep-06	15:00	-3.4	33	4	
28-Sep-06	16:00	-3.1	6	4	
28-Sep-06	17:00	-3	6	11	
28-Sep-06	18:00	-3	6	6	
28-Sep-06	19:00	-2.7	7	7	
28-Sep-06	20:00	-2.2	11	6	
28-Sep-06	21:00	-1.6	10	13	
28-Sep-06	22:00	-2	9	15	
28-Sep-06	23:00	-2.1	6	15	
29-Sep-06	0:00	-2.3	6	19	
29-Sep-06	1:00	-2.2	6	20	
29-Sep-06	2:00	-2.1	6	17	
29-Sep-06	3:00	-2.2	6	22	
29-Sep-06	4:00	-2.1	6	24	
29-Sep-06	5:00	-2.1	6	26	
29-Sep-06	6:00	-2.3	6	22	
29-Sep-06	7:00	-2.3	6	17	
29-Sep-06	8:00	-2.1	5	19	
29-Sep-06	9:00	-2	6	22	
29-Sep-06	10:00	-1.9	5	24	
29-Sep-06	11:00	-2.1	5	24	
29-Sep-06	12:00	-2.4	6	26	
29-Sep-06	13:00	-2.4	7	24	
29-Sep-06	14:00	-2.2	5	24	
29-Sep-06	15:00	-2.4	6	30	
29-Sep-06	16:00	-2.6	5	28	
29-Sep-06	17:00	-2.6	5	24	
29-Sep-06	18:00	-2.8	5	32	
29-Sep-06	19:00	-3.6	5	32	
29-Sep-06	20:00	-3.9	5	44	
29-Sep-06	21:00	-3.6	5	41	
29-Sep-06	22:00	-3.6	5	35	
29-Sep-06	23:00	-3.5	5	28	
30-Sep-06	0:00	-3.5	5	28	
30-Sep-06	1:00	-3.3	5	13	
30-Sep-06	2:00	-3.4	5	30	
30-Sep-06	3:00	-3.2	4	32	
30-Sep-06	4:00	-2.9	4	33	
30-Sep-06	5:00	-2.9	5	33	
30-Sep-06	6:00	-2.5	6	39	
30-Sep-06	7:00	-2.4	6	33	
30-Sep-06	8:00	-2.3	5	32	
30-Sep-06	9:00	-1.8	4	28	
30-Sep-06	10:00	-2.1	4	32	
30-Sep-06	11:00	-1.9	4	32	
30-Sep-06	12:00	-1.8	6	32	
30-Sep-06	13:00	-1.5	5	26	
30-Sep-06	14:00	-1.5	5	26	
30-Sep-06	15:00	-1.5	5	30	
30-Sep-06	16:00	-1.5	4	30	
30-Sep-06	17:00	-1.9	4	30	
30-Sep-06	18:00	-2.1	4	24	
30-Sep-06	19:00	-2.8	36	22	
30-Sep-06	20:00	-2.9	1	26	
30-Sep-06	21:00	-2.9	1	26	
30-Sep-06	22:00	-3	1	26	
30-Sep-06	23:00	-3.3	1	30	

APPENDIX 8

Landfill Thermistor Monitoring Data

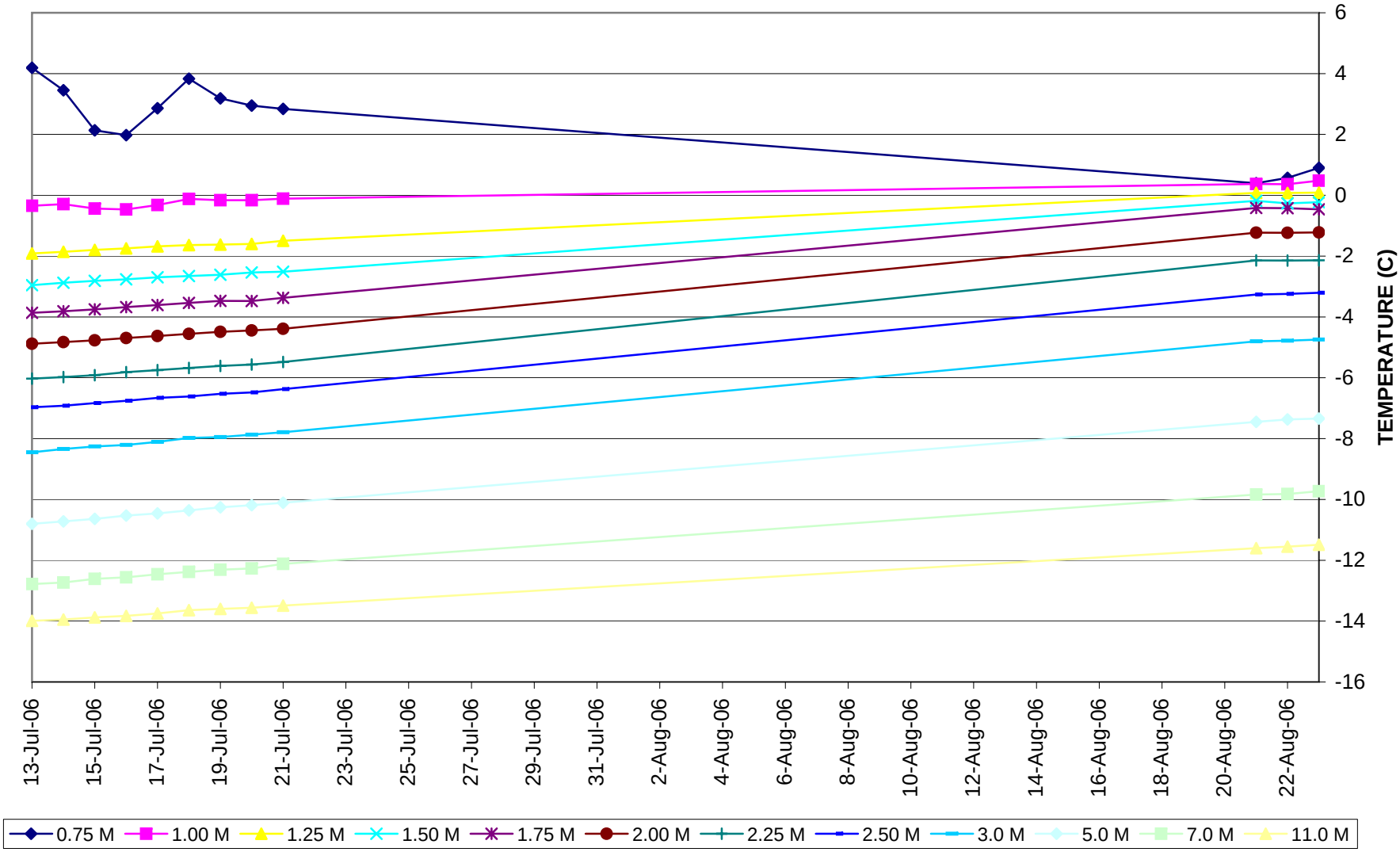
OPERATIONAL LANDFILL THERMISTOR #OL1
Temperature By Depth Below Surface VS Date



OPERATIONAL LANDFILL - THERMISTOR DATA FOR #OL1

Bulb	TH1_1	TH1_2	TH1_3	TH1_4	TH1_5	TH1_6	TH1_7	TH1_8	TH1_9	TH1_10	TH1_11	TH1_12
Depth	0.75 M	1.00 M	1.25 M	1.50 M	1.75 M	2.00 M	2.25 M	2.50 M	3.0 M	5.0 M	7.0 M	11.0 M
16-Jul-06	0.376	0.376	1.137	1.663	1.058	0.402	-2.367	-5.023	-7.69	-9.15	-12.94	-13.67
17-Jul-06	-0.526	-0.474	-0.526	-0.265	-0.422	-1.049	-3.812	-5.585	-8.45	-11	-13.66	-14.32
18-Jul-06	-0.45	-0.45	-0.607	-0.293	-0.424	-1.496	-3.817	-5.486	-8.38	-11.17	-13.64	-14.27
19-Jul-06	-0.32	-0.372	-0.555	-0.294	-0.425	-1.809	-3.763	-5.327	-8.19	-11.16	-13.58	-14.23
20-Jul-06	-0.246	-0.455	-0.638	-0.377	-0.534	-1.971	-3.769	-5.256	-8.06	-11.09	-13.51	-14.16
21-Jul-06	-1.12	-1.408	-1.59	-1.329	-1.512	-2.92	-4.64	-5.997	-8.65	-11.65	-14.05	-14.75
22-Jul-06	-0.03	-0.449	-0.685	-0.397	-0.632	-2.095	-3.738	-5.12	-7.72	-10.81	-13.36	-14.01
23-Jul-06	0.022	-0.423	-0.685	-0.397	-0.816	-2.2	-3.79	-5.12	-7.61	-10.71	-13.33	-13.99
24-Jul-06	0.038	-0.407	-0.669	-0.381	-0.957	-2.288	-3.799	-5.051	-7.54	-10.6	-13.25	-13.94
25-Jul-06	0.142	-0.33	-0.644	-0.356	-1.036	-2.315	-3.748	-5	-7.38	-10.44	-13.14	-13.85
26-Jul-06	0.208	-0.29	-0.656	-0.421	-1.257	-2.431	-3.838	-5.036	-7.39	-10.4	-13.15	-13.89
27-Jul-06	0.393	-0.184	-0.629	-0.446	-1.334	-2.482	-3.863	-5.035	-7.31	-10.32	-13.09	-13.86
28-Jul-06	0.614	-0.016	-0.592	-0.487	-1.402	-2.524	-3.879	-4.974	-7.25	-10.2	-13.03	-13.79
29-Jul-06	0.819	0.163	-0.543	-0.543	-1.457	-2.552	-3.906	-5	-7.2	-10.14	-12.99	-13.79
30-Jul-06	1.077	0.369	-0.417	-0.547	-1.539	-2.608	-3.909	-4.951	-7.12	-10.01	-12.91	-13.73
31-Jul-06	1.331	0.544	-0.347	-0.582	-1.574	-2.616	-3.891	-4.932	-7.08	-9.94	-12.86	-13.71
1-Aug-06	1.521	0.706	-0.238	-0.578	-1.649	-2.666	-3.89	-4.906	-6.998	-9.83	-12.81	-13.66
2-Aug-06	1.668	0.957	-0.04	-0.616	-1.688	-2.679	-3.903	-4.92	-6.96	-9.8	-12.72	-13.59
3-Aug-06	1.637	1.005	0.034	-0.62	-1.744	-2.709	-3.933	-4.924	-6.885	-9.69	-12.7	-13.57
4-Aug-06	1.574	0.916	-0.028	-0.656	-1.779	-2.744	-3.916	-4.906	-6.867	-9.65	-12.62	-13.52
5-Aug-06	1.633	0.87	-0.154	-0.703	-1.8	-2.765	-3.937	-4.875	-6.836	-9.56	-12.5	-13.46
6-Aug-06	1.633	0.844	-0.179	-0.728	-1.878	-2.79	-3.91	-4.875	-6.809	-9.51	-12.47	-13.43
7-Aug-06	1.666	0.85	-0.173	-0.723	-1.872	-2.759	-3.931	-4.87	-6.726	-9.42	-12.42	-13.37
8-Aug-06	1.632	0.868	-0.155	-0.784	-1.881	-2.742	-3.889	-4.802	-6.659	-9.3	-12.26	-13.24
9-Aug-06	1.342	0.764	-0.155	-0.731	-1.829	-2.716	-3.837	-4.697	-6.553	-9.14	-12.1	-13.1
10-Aug-06	0.882	0.462	-0.324	-0.821	-1.945	-2.805	-3.874	-4.76	-6.563	-9.18	-12.16	-13.17
11-Aug-06	0.678	0.285	-0.423	-0.842	-1.965	-2.826	-3.894	-4.755	-6.558	-9.15	-12.16	-13.13
12-Aug-06	0.678	0.285	-0.423	-0.842	-1.939	-2.747	-3.816	-4.676	-6.454	-9.01	-11.96	-12.99
13-Aug-06	0.717	0.297	-0.385	-0.856	-1.901	-2.762	-3.805	-4.666	-6.417	-8.95	-11.9	-12.9
14-Aug-06	0.638	0.297	-0.411	-0.83	-1.901	-2.684	-3.727	-4.535	-6.286	-8.82	-11.79	-12.79
15-Aug-06	0.319	0.057	-0.572	-0.991	-2.009	-2.818	-3.861	-4.669	-6.421	-8.95	-11.9	-12.9
16-Aug-06	0.172	-0.038	-0.615	-1.007	-2.052	-2.861	-3.878	-4.687	-6.413	-8.92	-11.87	-12.92
17-Aug-06	0.166	-0.07	-0.699	-1.091	-2.084	-2.892	-3.857	-4.692	-6.365	-8.9	-11.9	-12.87
18-Aug-06	0.065	-0.145	-0.695	-1.14	-2.106	-2.889	-3.854	-4.688	-6.309	-8.79	-11.84	-12.87
19-Aug-06	-0.024	-0.233	-0.783	-1.202	-2.168	-2.924	-3.863	-4.697	-6.344	-8.8	-11.82	-12.85
20-Aug-06	-0.056	-0.266	-0.763	-1.208	-2.148	-2.904	-3.868	-4.65	-6.296	-8.77	-11.74	-12.8
21-Aug-06	0.008	-0.227	-0.777	-1.248	-2.214	-2.919	-3.883	-4.666	-6.286	-8.71	-11.71	-12.79

OPERATIONAL LANDFILL THERMISTOR #OL2
Temperature By Depth Below Surface VS Date



OPERATIONAL LANDFILL - THERMISTOR DATA FOR #OL2

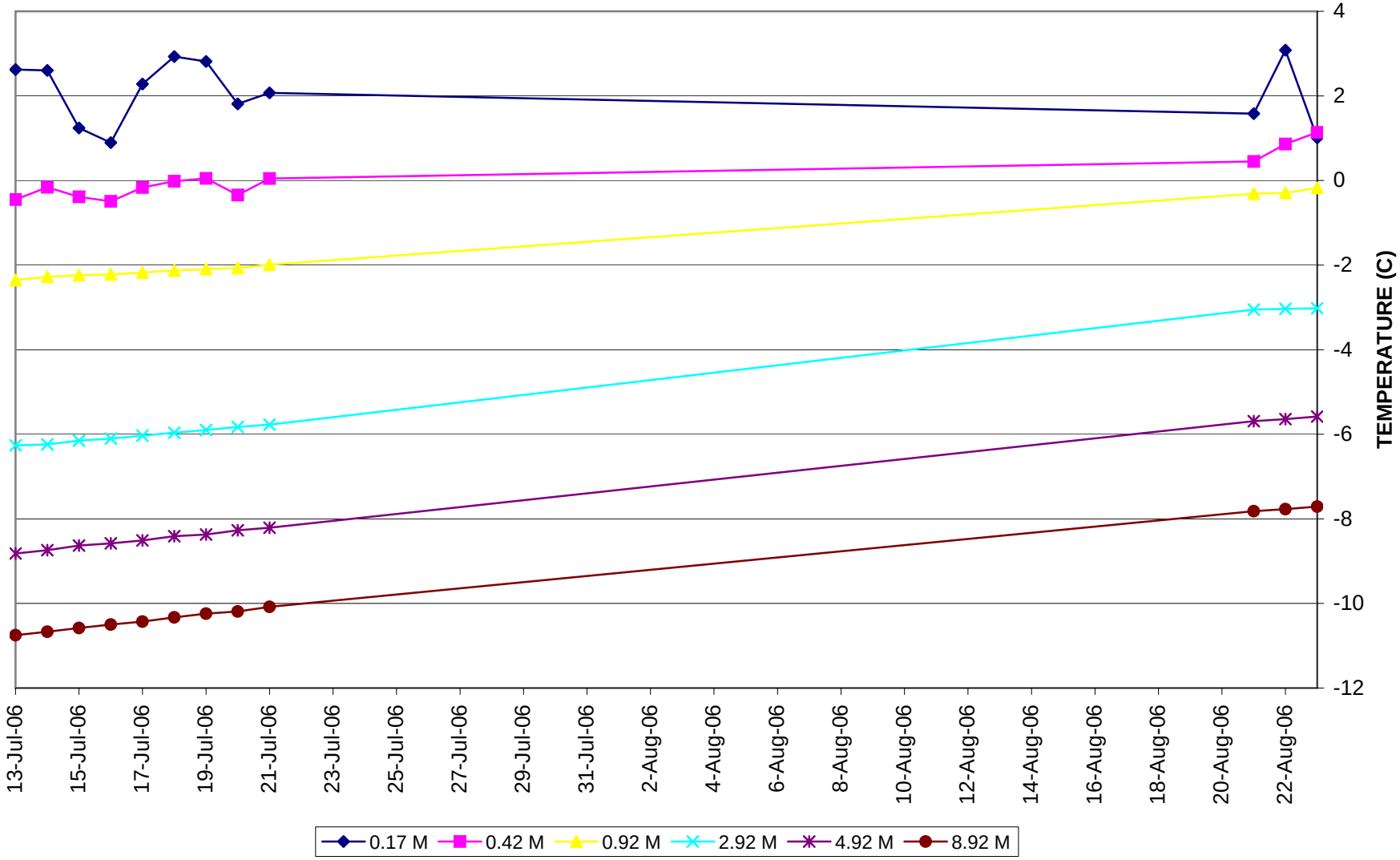
Bulb	TH2_1	TH2_2	TH2_3	TH2_4	TH2_5	TH2_6	TH2_7	TH2_8	TH2_9	TH2_10	TH2_11	TH2_12
Depth	0.75 M	1.00 M	1.25 M	1.50 M	1.75 M	2.00 M	2.25 M	2.50 M	3.0 M	5.0 M	7.0 M	11.0 M
13-Jul-06	4.189	-0.347	-1.913	-2.954	-3.865	-4.88	-6.028	-6.97	-8.45	-10.8	-12.78	-13.99
14-Jul-06	3.451	-0.291	-1.858	-2.875	-3.812	-4.829	-5.977	-6.92	-8.34	-10.72	-12.73	-13.95
15-Jul-06	2.137	-0.439	-1.797	-2.814	-3.752	-4.768	-5.917	-6.834	-8.26	-10.64	-12.61	-13.88
16-Jul-06	1.975	-0.468	-1.748	-2.765	-3.677	-4.693	-5.815	-6.757	-8.21	-10.53	-12.56	-13.83
17-Jul-06	2.862	-0.322	-1.681	-2.697	-3.609	-4.625	-5.747	-6.662	-8.11	-10.46	-12.46	-13.75
18-Jul-06	3.834	-0.122	-1.637	-2.653	-3.539	-4.554	-5.676	-6.617	-7.98	-10.36	-12.38	-13.64
19-Jul-06	3.186	-0.16	-1.623	-2.614	-3.474	-4.49	-5.611	-6.527	-7.95	-10.26	-12.31	-13.6
20-Jul-06	2.947	-0.162	-1.6	-2.54	-3.478	-4.443	-5.565	-6.481	-7.87	-10.19	-12.27	-13.56
21-Jul-06	2.838	-0.111	-1.496	-2.513	-3.372	-4.388	-5.483	-6.372	-7.79	-10.11	-12.12	-13.49
21-Aug-06	0.396	0.37	0.081	-0.181	-0.417	-1.228	-2.142	-3.263	-4.801	-7.45	-9.84	-11.6
22-Aug-06	0.573	0.363	0.075	-0.266	-0.423	-1.234	-2.148	-3.243	-4.781	-7.37	-9.82	-11.55
23-Aug-06	0.901	0.481	0.087	-0.227	-0.463	-1.222	-2.136	-3.205	-4.744	-7.34	-9.73	-11.49

OPERATIONAL LANDFILL THERMISTOR #OL3
Temperature By Depth Below Surface VS Date

OPERATIONAL LANDFILL - THERMISTOR DATA FOR #OL3

Bulb	TH3_1	TH3_2	TH3_3	TH3_4	TH3_5	TH3_6	TH3_7	TH3_8	TH3_9	TH3_10	TH3_11	TH3_12
Depth	0.75 M	1.00 M	1.25 M	1.50 M	1.75 M	2.00 M	2.25 M	2.50 M	3.0 M	5.0 M	7.0 M	11.0 M
21-Aug-06	0.667	0.09	-0.277	-0.539	-1.218	-1.975	-2.705	-3.461	-4.869	-7.62	-10.2	-11.7

OPERATIONAL LANDFILL THERMISTOR #OL4
Temperature By Depth Below Surface VS Date

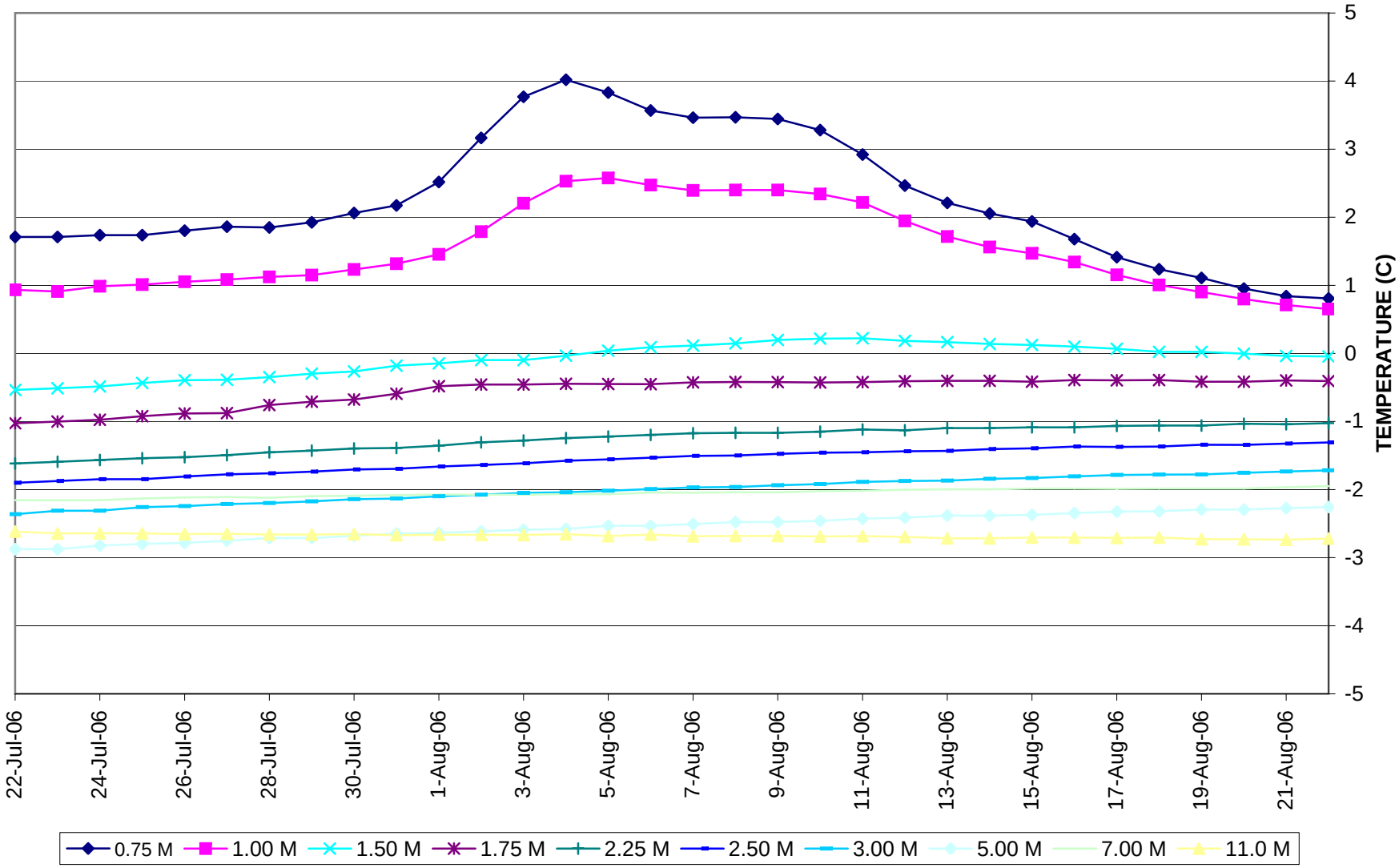


OPERATIONAL LANDFILL - THERMISTOR DATA FOR #OL4

Bulb	TH4_1	TH4_2	TH4_3	TH4_4	TH4_5	TH4_6	TH4_7	TH4_8	TH4_9	TH4_10	TH4_11	TH4_12
Depth	-1.33	-1.08	-0.83	-0.58	-0.33	-0.08	0.17 M	0.42 M	0.92 M	2.92 M	4.92 M	8.92 M
13-Jul-06	9.87	10.23	13.37	14.04	13.28	9.34	2.623	-0.451	-2.355	-6.263	-8.82	-10.75
14-Jul-06	5.751	5.267	6.318	6.643	6.806	5.026	2.603	-0.16	-2.275	-6.239	-8.74	-10.67
15-Jul-06	4.582	3.409	4.368	4.234	3.994	2.666	1.241	-0.386	-2.241	-6.152	-8.63	-10.58
16-Jul-06	4.605	3.99	4.712	4.551	4.524	2.98	0.895	-0.494	-2.218	-6.103	-8.58	-10.5
17-Jul-06	8.41	7.45	7.89	8	7.51	5.315	2.28	-0.165	-2.176	-6.034	-8.51	-10.43
18-Jul-06	10.2	8.32	9.25	9.81	9.25	6.49	2.931	-0.017	-2.132	-5.963	-8.41	-10.33
19-Jul-06	6.887	7.21	7.7	7.62	7.51	5.617	2.815	0.05	-2.093	-5.899	-8.37	-10.24
20-Jul-06	1.968	2.047	2.364	1.942	1.942	2.55	1.81	-0.345	-2.07	-5.826	-8.27	-10.19
21-Jul-06	9.1	6.315	6.694	6.829	6.45	4.594	2.071	0.047	-1.991	-5.771	-8.21	-10.08
21-Aug-06	2.743	2.663	2.584	3.141	4.955	3.833	1.58	0.449	-0.312	-3.054	-5.689	-7.82
22-Aug-06	5.539	4.707	4.466	5.593	9.39	7.63	3.081	0.862	-0.292	-3.034	-5.642	-7.77
23-Aug-06	1.112	1.454	1.296	1.191	1.665	1.165	1.007	1.138	-0.175	-3.023	-5.58	-7.71

THE BULBS WITH NEGATIVE NUMBERS WERE INSTALLED ABOVE GROUND
IN JULY 2006 THE ABOVE GROUND BULBS WERE BURIED NEAR SURFACE TO KEEP THEM SAFE BUT DATA TO BE IGNORED
DO NOT USE DATA FOR BULBS WITH NEGATIVE NUMBERS.
FOR GRAPH USED DATA FROM TH4-7 AND DEEPER

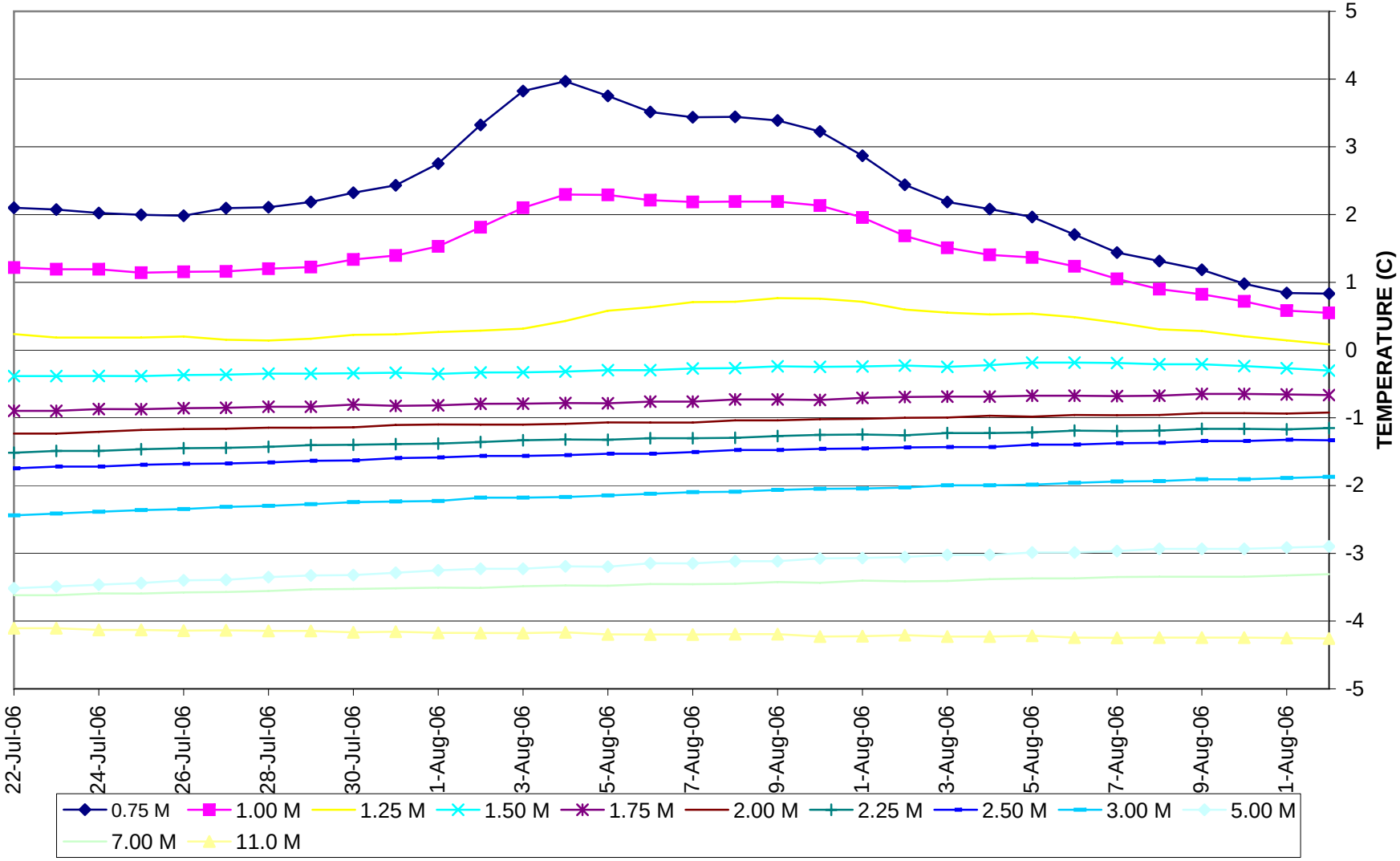
LRD LANDFILL - THERMISTOR #LRD1
Temperature By Depth Below Surface VS Date



LRD LANDFILL THERMISTOR DATA - #LRD1

Bulb	TH1_1	TH1_2	TH1_3	TH1_4	TH1_5	TH1_6	TH1_7	TH1_8	TH1_9	TH1_10	TH1_11	TH1_12
Depth	0.75 M	1.00 M	1.25 M	1.50 M	1.75 M	2.00 M	2.25 M	2.50 M	3.00 M	5.00 M	7.00 M	11.0 M
22-Jul-06	1.711	0.934		-0.537	-1.026		-1.617	-1.9	-2.362	-2.875	-2.157	-2.618
23-Jul-06	1.711	0.908		-0.512	-1.001		-1.592	-1.874	-2.311	-2.875	-2.157	-2.644
24-Jul-06	1.737	0.986		-0.485	-0.974		-1.565	-1.848	-2.31	-2.823	-2.156	-2.643
25-Jul-06	1.737	1.011		-0.434	-0.923		-1.54	-1.848	-2.259	-2.798	-2.131	-2.644
26-Jul-06	1.803	1.051		-0.394	-0.883		-1.525	-1.808	-2.244	-2.783	-2.116	-2.654
27-Jul-06	1.861	1.084		-0.388	-0.877		-1.494	-1.776	-2.213	-2.751	-2.11	-2.649
28-Jul-06	1.849	1.124		-0.348	-0.759		-1.453	-1.761	-2.198	-2.711	-2.121	-2.659
29-Jul-06	1.926	1.149		-0.297	-0.709		-1.428	-1.736	-2.173	-2.711	-2.096	-2.66
30-Jul-06	2.063	1.233		-0.265	-0.677		-1.397	-1.705	-2.141	-2.68	-2.09	-2.654
31-Jul-06	2.173	1.317		-0.18	-0.592		-1.388	-1.696	-2.133	-2.645	-2.081	-2.671
1-Aug-06	2.517	1.454		-0.147	-0.481		-1.355	-1.662	-2.098	-2.636	-2.073	-2.662
2-Aug-06	3.165	1.787		-0.098	-0.458		-1.306	-1.64	-2.076	-2.614	-2.076	-2.665
3-Aug-06	3.77	2.205		-0.097	-0.457		-1.28	-1.614	-2.05	-2.589	-2.076	-2.666
4-Aug-06	4.019	2.53		-0.034	-0.446		-1.243	-1.577	-2.039	-2.578	-2.065	-2.655
5-Aug-06	3.831	2.577		0.039	-0.45		-1.222	-1.556	-2.018	-2.531	-2.069	-2.684
6-Aug-06	3.568	2.472		0.09	-0.451		-1.197	-1.531	-1.993	-2.532	-2.044	-2.66
7-Aug-06	3.462	2.393		0.115	-0.426		-1.172	-1.506	-1.968	-2.507	-2.045	-2.686
8-Aug-06	3.469	2.4		0.146	-0.42		-1.166	-1.5	-1.963	-2.476	-2.04	-2.681
9-Aug-06	3.443	2.399		0.198	-0.421		-1.166	-1.475	-1.937	-2.476	-2.04	-2.681
10-Aug-06	3.28	2.341		0.216	-0.428		-1.149	-1.458	-1.92	-2.459	-2.023	-2.69
11-Aug-06	2.921	2.217		0.222	-0.422		-1.117	-1.452	-1.888	-2.428	-2.017	-2.684
12-Aug-06	2.465	1.945		0.185	-0.408		-1.129	-1.437	-1.874	-2.413	-2.002	-2.695
13-Aug-06	2.211	1.717		0.165	-0.403		-1.098	-1.432	-1.869	-2.382	-1.997	-2.715
14-Aug-06	2.055	1.562		0.139	-0.403		-1.098	-1.406	-1.843	-2.382	-1.997	-2.715
15-Aug-06	1.938	1.47		0.125	-0.416		-1.086	-1.395	-1.831	-2.371	-1.986	-2.704
16-Aug-06	1.678	1.341		0.099	-0.391		-1.086	-1.369	-1.806	-2.345	-1.986	-2.704
17-Aug-06	1.413	1.154		0.068	-0.396		-1.065	-1.374	-1.785	-2.324	-1.99	-2.709
18-Aug-06	1.237	1.004		0.022	-0.391		-1.06	-1.369	-1.78	-2.319	-1.986	-2.704
19-Aug-06	1.108	0.901		0.023	-0.416		-1.06	-1.342	-1.779	-2.293	-1.985	-2.729
20-Aug-06	0.952	0.797		-0.004	-0.416		-1.034	-1.343	-1.754	-2.294	-1.985	-2.73
21-Aug-06	0.842	0.712		-0.037	-0.398		-1.041	-1.324	-1.735	-2.274	-1.966	-2.736
22-Aug-06	0.807	0.652		-0.045	-0.406		-1.024	-1.307	-1.718	-2.257	-1.949	-2.719

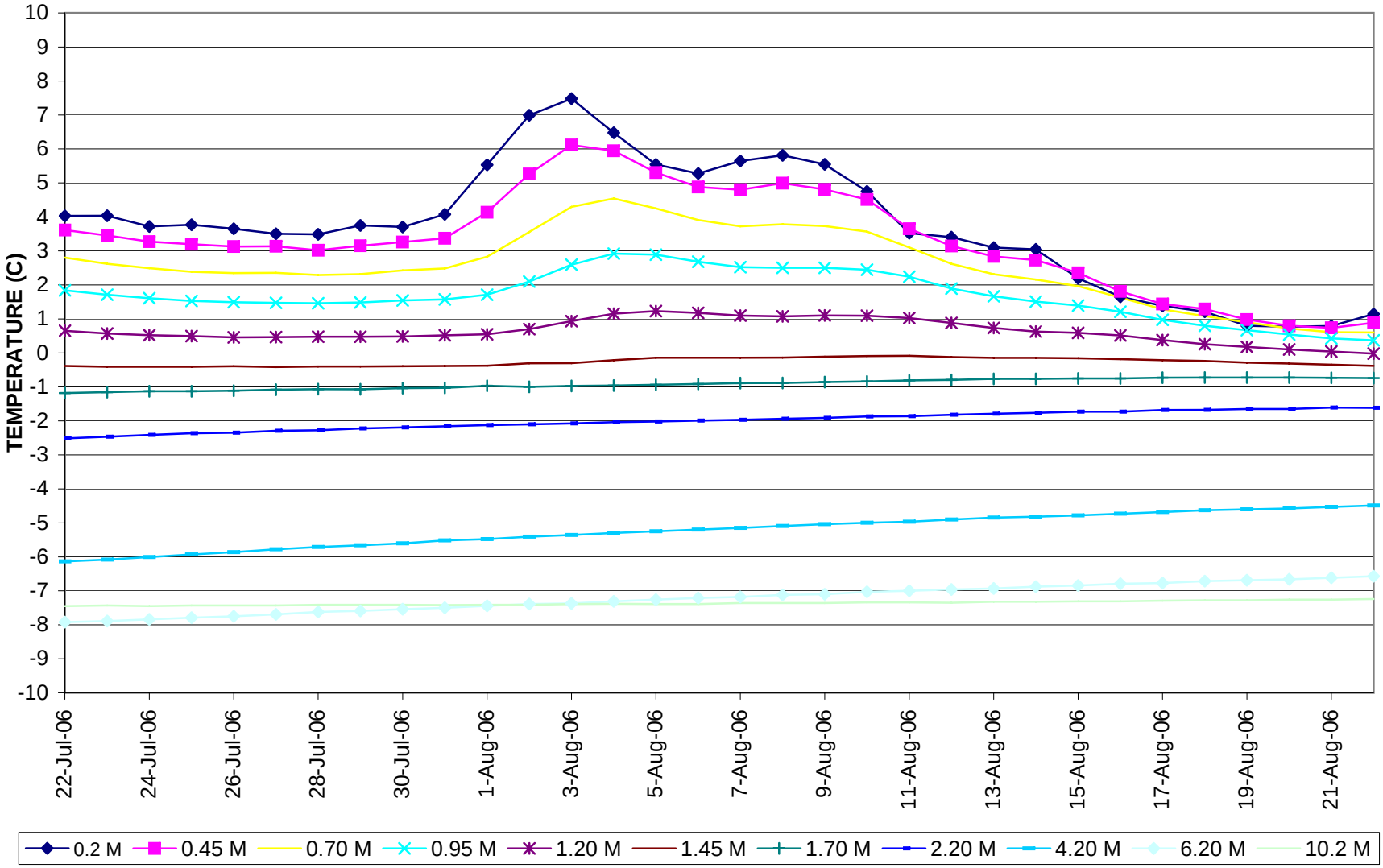
LRD LANDFILL - THERMISTOR #LRD2
Temperature By Depth Below Surface VS Date



LRD LANDFILL THERMISTOR DATA - #LRD2

Bulb	TH2_1	TH2_2	TH2_3	TH2_4	TH2_5	TH2_6	TH2_7	TH2_8	TH2_9	TH2_10	TH2_11	TH2_12
Depth	0.75 M	1.00 M	1.25 M	1.50 M	1.75 M	2.00 M	2.25 M	2.50 M	3.00 M	5.00 M	7.00 M	11.0 M
22-Jul-06	2.1	1.218	0.236	-0.383	-0.898	-1.232	-1.515	-1.746	-2.439	-3.516	-3.618	-4.106
23-Jul-06	2.074	1.192	0.184	-0.383	-0.898	-1.232	-1.489	-1.72	-2.413	-3.49	-3.618	-4.106
24-Jul-06	2.023	1.193	0.185	-0.382	-0.871	-1.206	-1.488	-1.72	-2.387	-3.464	-3.592	-4.131
25-Jul-06	1.997	1.141	0.185	-0.383	-0.872	-1.18	-1.463	-1.694	-2.362	-3.439	-3.593	-4.131
26-Jul-06	1.984	1.155	0.199	-0.368	-0.857	-1.166	-1.448	-1.679	-2.347	-3.398	-3.577	-4.141
27-Jul-06	2.095	1.161	0.153	-0.362	-0.851	-1.16	-1.443	-1.674	-2.315	-3.392	-3.572	-4.136
28-Jul-06	2.109	1.201	0.142	-0.348	-0.837	-1.145	-1.428	-1.659	-2.3	-3.351	-3.556	-4.146
29-Jul-06	2.186	1.226	0.167	-0.348	-0.837	-1.146	-1.403	-1.634	-2.275	-3.326	-3.531	-4.146
30-Jul-06	2.323	1.336	0.225	-0.342	-0.805	-1.14	-1.397	-1.628	-2.244	-3.321	-3.526	-4.167
31-Jul-06	2.433	1.395	0.232	-0.334	-0.823	-1.106	-1.388	-1.594	-2.235	-3.286	-3.516	-4.157
1-Aug-06	2.752	1.531	0.266	-0.352	-0.815	-1.098	-1.38	-1.586	-2.227	-3.251	-3.507	-4.173
2-Aug-06	3.322	1.813	0.288	-0.33	-0.793	-1.101	-1.357	-1.563	-2.178	-3.228	-3.51	-4.176
3-Aug-06	3.823	2.101	0.316	-0.329	-0.792	-1.1	-1.332	-1.563	-2.178	-3.229	-3.486	-4.178
4-Aug-06	3.967	2.296	0.43	-0.317	-0.781	-1.089	-1.32	-1.552	-2.168	-3.193	-3.475	-4.167
5-Aug-06	3.752	2.291	0.581	-0.296	-0.785	-1.067	-1.324	-1.53	-2.146	-3.197	-3.479	-4.197
6-Aug-06	3.515	2.212	0.632	-0.297	-0.76	-1.069	-1.3	-1.531	-2.121	-3.147	-3.454	-4.198
7-Aug-06	3.436	2.185	0.708	-0.272	-0.761	-1.07	-1.301	-1.506	-2.097	-3.148	-3.455	-4.198
8-Aug-06	3.443	2.191	0.714	-0.266	-0.729	-1.038	-1.295	-1.475	-2.091	-3.117	-3.45	-4.193
9-Aug-06	3.39	2.191	0.766	-0.24	-0.729	-1.038	-1.269	-1.475	-2.065	-3.117	-3.424	-4.193
10-Aug-06	3.227	2.133	0.759	-0.248	-0.737	-1.02	-1.252	-1.458	-2.048	-3.075	-3.434	-4.229
11-Aug-06	2.869	1.957	0.713	-0.242	-0.706	-1.015	-1.246	-1.452	-2.043	-3.069	-3.402	-4.223
12-Aug-06	2.439	1.685	0.598	-0.228	-0.692	-1	-1.257	-1.437	-2.028	-3.054	-3.413	-4.208
13-Aug-06	2.185	1.51	0.552	-0.248	-0.686	-0.995	-1.226	-1.432	-1.997	-3.023	-3.408	-4.229
14-Aug-06	2.081	1.406	0.526	-0.222	-0.686	-0.969	-1.226	-1.432	-1.997	-3.023	-3.382	-4.229
15-Aug-06	1.964	1.367	0.538	-0.184	-0.674	-0.983	-1.215	-1.395	-1.986	-2.987	-3.371	-4.218
16-Aug-06	1.704	1.237	0.487	-0.184	-0.674	-0.957	-1.189	-1.395	-1.96	-2.987	-3.371	-4.244
17-Aug-06	1.439	1.05	0.404	-0.19	-0.679	-0.962	-1.194	-1.374	-1.939	-2.966	-3.35	-4.248
18-Aug-06	1.315	0.9	0.306	-0.21	-0.674	-0.957	-1.189	-1.369	-1.934	-2.935	-3.346	-4.244
19-Aug-06	1.186	0.824	0.281	-0.21	-0.648	-0.931	-1.162	-1.342	-1.908	-2.935	-3.345	-4.243
20-Aug-06	0.978	0.72	0.203	-0.236	-0.648	-0.931	-1.163	-1.343	-1.908	-2.935	-3.346	-4.243
21-Aug-06	0.842	0.583	0.144	-0.269	-0.655	-0.938	-1.17	-1.324	-1.889	-2.916	-3.326	-4.25
22-Aug-06	0.833	0.548	0.084	-0.303	-0.664	-0.921	-1.152	-1.332	-1.872	-2.898	-3.308	-4.257

LRD LANDFILL - THERMISTOR #LRD3
Temperature By Depth Below Surface VS Date



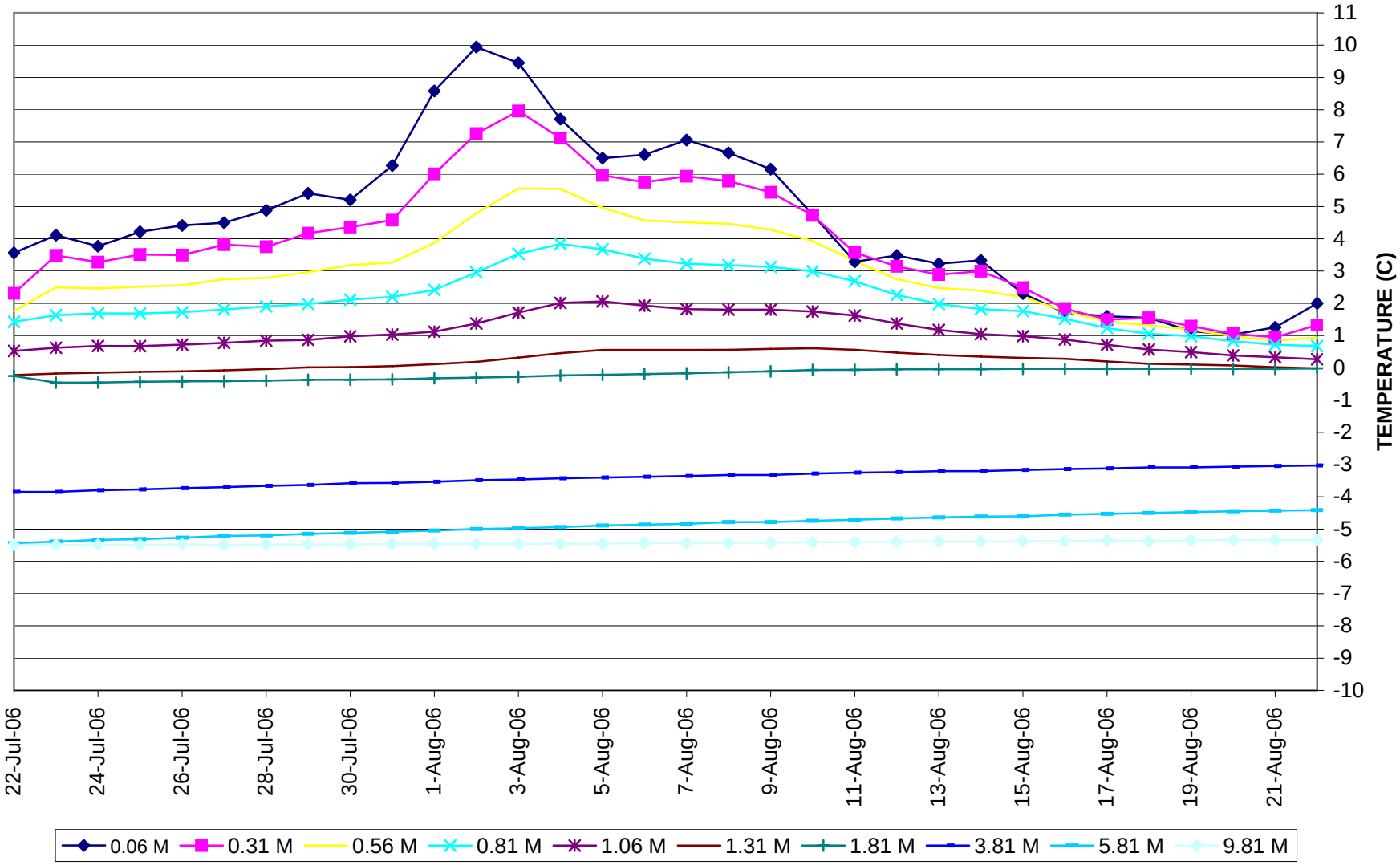
LRD LANDFILL THERMISTOR DATA - #LRD3

Bulb	TH3_2	TH3_3	TH3_4	TH3_5	TH3_6	TH3_7	TH3_8	TH3_9	TH3_10	TH3_11	TH3_12
Depth	0.2 M	0.45 M	0.70 M	0.95 M	1.20 M	1.45 M	1.70 M	2.20 M	4.20 M	6.20 M	10.2 M
22-Jul-06	4.032	3.613	2.803	1.841	0.649	-0.383	-1.181	-2.516	-6.135	-7.92	-7.45
23-Jul-06	4.033	3.456	2.621	1.711	0.572	-0.409	-1.155	-2.464	-6.083	-7.89	-7.43
24-Jul-06	3.719	3.274	2.491	1.608	0.521	-0.408	-1.129	-2.413	-6.005	-7.84	-7.45
25-Jul-06	3.77	3.195	2.387	1.529	0.494	-0.408	-1.129	-2.362	-5.929	-7.79	-7.43
26-Jul-06	3.653	3.13	2.348	1.492	0.457	-0.394	-1.114	-2.347	-5.861	-7.75	-7.43
27-Jul-06	3.503	3.137	2.355	1.472	0.463	-0.414	-1.083	-2.29	-5.779	-7.69	-7.43
28-Jul-06	3.49	3.02	2.291	1.46	0.477	-0.399	-1.068	-2.275	-5.711	-7.62	-7.41
29-Jul-06	3.751	3.15	2.316	1.485	0.477	-0.4	-1.069	-2.224	-5.66	-7.59	-7.41
30-Jul-06	3.706	3.261	2.427	1.544	0.483	-0.394	-1.037	-2.193	-5.604	-7.54	-7.41
31-Jul-06	4.078	3.371	2.485	1.576	0.516	-0.386	-1.029	-2.158	-5.516	-7.5	-7.42
1-Aug-06	5.532	4.136	2.83	1.713	0.549	-0.378	-0.969	-2.124	-5.48	-7.44	-7.41
2-Aug-06	6.99	5.264	3.557	2.099	0.701	-0.304	-0.998	-2.101	-5.406	-7.39	-7.41
3-Aug-06	7.48	6.117	4.295	2.595	0.935	-0.303	-0.972	-2.076	-5.357	-7.37	-7.39
4-Aug-06	6.477	5.945	4.544	2.921	1.154	-0.214	-0.961	-2.039	-5.296	-7.31	-7.38
5-Aug-06	5.542	5.304	4.251	2.89	1.228	-0.141	-0.939	-2.018	-5.248	-7.26	-7.39
6-Aug-06	5.276	4.881	3.908	2.68	1.175	-0.142	-0.914	-1.993	-5.198	-7.21	-7.39
7-Aug-06	5.646	4.801	3.724	2.523	1.096	-0.143	-0.89	-1.968	-5.147	-7.18	-7.36
8-Aug-06	5.812	4.992	3.783	2.504	1.076	-0.137	-0.884	-1.937	-5.091	-7.12	-7.36
9-Aug-06	5.547	4.808	3.731	2.504	1.102	-0.111	-0.858	-1.911	-5.04	-7.1	-7.36
10-Aug-06	4.749	4.512	3.567	2.445	1.095	-0.093	-0.84	-1.869	-4.998	-7.03	-7.34
11-Aug-06	3.522	3.653	3.104	2.243	1.024	-0.087	-0.809	-1.863	-4.968	-7	-7.34
12-Aug-06	3.404	3.143	2.621	1.893	0.882	-0.125	-0.795	-1.823	-4.901	-6.96	-7.35
13-Aug-06	3.097	2.836	2.315	1.665	0.733	-0.145	-0.763	-1.791	-4.844	-6.929	-7.32
14-Aug-06	3.045	2.732	2.159	1.51	0.629	-0.145	-0.763	-1.766	-4.819	-6.878	-7.32
15-Aug-06	2.198	2.354	1.964	1.393	0.59	-0.159	-0.751	-1.729	-4.783	-6.842	-7.31
16-Aug-06	1.652	1.808	1.626	1.211	0.513	-0.184	-0.751	-1.729	-4.731	-6.79	-7.31
17-Aug-06	1.387	1.439	1.283	0.973	0.378	-0.215	-0.731	-1.682	-4.684	-6.769	-7.29
18-Aug-06	1.211	1.289	1.082	0.797	0.254	-0.236	-0.726	-1.677	-4.629	-6.713	-7.28
19-Aug-06	0.798	0.979	0.901	0.668	0.177	-0.287	-0.725	-1.651	-4.602	-6.687	-7.28
20-Aug-06	0.771	0.797	0.72	0.539	0.099	-0.313	-0.725	-1.651	-4.577	-6.661	-7.26
21-Aug-06	0.79	0.738	0.609	0.428	0.041	-0.346	-0.732	-1.607	-4.532	-6.615	-7.26
22-Aug-06	1.143	0.884	0.6	0.368	-0.019	-0.38	-0.741	-1.615	-4.488	-6.571	-7.24

JULY 21, 2006 - ADJUSTED DEPTH TO REFLECT THERMISTOR NOT FULLY INSERTED IN HOLE SO DO NOT USE DATA PRIOR TO THIS DATE

ALSO DO NOT USE DATA FROM THERMISTOR BULB TH3_1 AS IT IS ABOVE GROUND

LRD LANDFILL - THERMISTOR #LRD4
Temperature By Depth Below Surface VS Date



LRD LANDFILL THERMISTOR DATA - #LRD4

Bulb	TH4_3	TH4_4	TH4_5	TH4_6	TH4_7	TH4_8	TH4_9	TH4_10	TH4_11	TH4_12
Depth	0.06 M	0.31 M	0.56 M	0.81 M	1.06 M	1.31 M	1.81 M	3.81 M	5.81 M	9.81 M
22-Jul-06	3.561	2.308	1.763	1.426	0.52	-0.228	-0.254	-3.849	-5.44	-5.492
23-Jul-06	4.111	3.482	2.491	1.633	0.623	-0.177	-0.46	-3.849	-5.389	-5.492
24-Jul-06	3.771	3.274	2.465	1.686	0.676	-0.15	-0.459	-3.797	-5.337	-5.491
25-Jul-06	4.216	3.509	2.517	1.685	0.675	-0.125	-0.434	-3.772	-5.312	-5.492
26-Jul-06	4.414	3.496	2.557	1.725	0.715	-0.111	-0.42	-3.731	-5.27	-5.475
27-Jul-06	4.499	3.817	2.745	1.809	0.773	-0.079	-0.414	-3.7	-5.214	-5.496
28-Jul-06	4.881	3.752	2.785	1.901	0.839	-0.039	-0.399	-3.659	-5.197	-5.48
29-Jul-06	5.409	4.17	2.967	1.978	0.864	0.012	-0.374	-3.634	-5.147	-5.48
30-Jul-06	5.205	4.361	3.183	2.115	0.974	0.019	-0.368	-3.577	-5.116	-5.475
31-Jul-06	6.269	4.577	3.267	2.199	1.033	0.052	-0.36	-3.568	-5.08	-5.465
1-Aug-06	8.58	6.008	3.874	2.413	1.117	0.111	-0.327	-3.533	-5.044	-5.455
2-Aug-06	9.94	7.26	4.789	2.957	1.373	0.185	-0.304	-3.484	-4.996	-5.457
3-Aug-06	9.45	7.96	5.56	3.535	1.712	0.316	-0.277	-3.46	-4.972	-5.46
4-Aug-06	7.71	7.12	5.547	3.836	2.01	0.456	-0.24	-3.424	-4.937	-5.45
5-Aug-06	6.498	5.966	4.961	3.674	2.057	0.555	-0.218	-3.402	-4.889	-5.454
6-Aug-06	6.603	5.753	4.565	3.385	1.926	0.554	-0.194	-3.378	-4.864	-5.429
7-Aug-06	7.06	5.937	4.511	3.227	1.821	0.553	-0.169	-3.353	-4.84	-5.43
8-Aug-06	6.663	5.785	4.465	3.181	1.802	0.559	-0.137	-3.322	-4.783	-5.425
9-Aug-06	6.157	5.441	4.281	3.129	1.802	0.585	-0.111	-3.322	-4.783	-5.425
10-Aug-06	4.749	4.723	3.934	2.992	1.743	0.604	-0.068	-3.28	-4.742	-5.409
11-Aug-06	3.286	3.574	3.313	2.686	1.62	0.558	-0.062	-3.249	-4.711	-5.404
12-Aug-06	3.482	3.143	2.751	2.257	1.374	0.469	-0.048	-3.234	-4.67	-5.389
13-Aug-06	3.227	2.888	2.471	1.977	1.173	0.397	-0.042	-3.203	-4.639	-5.384
14-Aug-06	3.332	2.992	2.393	1.821	1.043	0.345	-0.042	-3.203	-4.613	-5.384
15-Aug-06	2.302	2.484	2.198	1.756	0.978	0.306	-0.03	-3.166	-4.603	-5.374
16-Aug-06	1.704	1.834	1.756	1.522	0.875	0.28	-0.03	-3.14	-4.552	-5.374
17-Aug-06	1.595	1.491	1.439	1.232	0.714	0.197	-0.035	-3.12	-4.53	-5.352
18-Aug-06	1.548	1.548	1.315	1.056	0.564	0.125	-0.03	-3.089	-4.5	-5.374
19-Aug-06	1.134	1.29	1.186	0.979	0.487	0.1	-0.029	-3.089	-4.474	-5.347
20-Aug-06	1.03	1.056	0.978	0.823	0.384	0.074	-0.03	-3.063	-4.449	-5.348
21-Aug-06	1.256	0.945	0.842	0.712	0.325	0.015	-0.037	-3.044	-4.429	-5.328
22-Aug-06	1.999	1.325	0.936	0.678	0.264	-0.019	-0.019	-3.026	-4.411	-5.335

THIS THERMISTOR IS NOT FULLY INSTALLED BELOW GROUND LEVEL SO HAVE DELETED DATA FROM TH4_1 AND TH4_2

TH4-1 IS DAMAGED AND DOES NOT GIVE A READING SO HAVE DELETED THIS THERMISTOR DATA

APPENDIX 9

Electronic Copy of Report on CD