POLARIS MINE CLOSURE

CONTRACT 2071-C.01
Demolition and Site Reclamation

SCOPE OF WORK

INDEX

1.0 GENERAL DESCRIPTION

The Polaris Mine is an underground zinc-lead mining operation located in Canada's High Arctic. The associated Polaris operations are a substantial installation consisting of complete facilities and ancillaries for the production of lead and zinc concentrates for shipment by sea transport.

The Polaris Mine is owned by Cominco Mining Partnership and Teck Cominco Limited, as tenants in common, in their respective capacities as participants in a Venture relating to the Polaris operations, including the Polaris Mine.

The Cominco Mining Partnership is a general partnership created pursuant to a Partnership Agreement dated July 4, 2001. Teck Cominco Metals Ltd. (formerly Cominco Ltd.) holds a 99% undivided interest in the Partnership and an wholly-owned subsidiary of Teck Cominco Metals Ltd., Cominco Nova Scotia Company, holds the remaining 1% undivided interest in the Partnership.

Since July 13, 2001, the Polaris Mine has been operated by the Cominco Mining Partnership (the "Operator"). Prior to that time, Teck Cominco Metals Ltd. (then Cominco Ltd.) was the operator.

The mineable ore bodies at this Site are forecast to be depleted during the 3rd Quarter of 2002, at which time the mine and mill will be shutdown. No alternate uses for the Site have been found to date. The Owner intends to implement closure plans immediately following completion of mining operations.

A plan for closure and site reclamation has been prepared. Approval of this plan by each Authority Having Jurisdiction is being sought and is expected to be obtained early in 2002 and, following said approvals, will be the "Closure Plan".

The basis of the Closure Plan is that all workings, equipment, facilities and installations comprising the operations at the Polaris Mine will be decommissioned, removed, reclaimed, disposed or remediated such that the Site is returned to a condition that public health and safety, and the Environment, are protected and are in an acceptable aesthetic condition. The Work of the Contractor shall be completed in accordance with the Closure Plan.

The Owner is committed to operating and decommissioning its operations, and meeting or exceeding environmental guidelines or regulations applicable to the Site. It is a fundamental condition of this Contract that the Contractor shall meet or exceed these same regulatory standards and requirements.

The Contractor shall comply with all Applicable Law relating to the Environment and including those to Federal Lands and/or the Territory of Nunavut, whichever is most stringent.

1.1 SITE DESCRIPTION AND LOCATION

The Polaris Mine is located on Little Cornwallis Island, Territory of Nunavut in the Canadian High Arctic. Situated at about latitude 75°N and longitude 97°W, it is approximately 100 km northwest of Resolute, the closest settlement. Polaris is an underground zinc-lead mining operation and the world's most northerly base metal mine. The Polaris Mine occupies a total of about 962 hectares of land under surface leases from the Government of Canada.

Mineralization was first discovered at Polaris in 1960 during surface mapping for oil exploration. Further exploration lead to the discovery of the orebody in the early 1970's. Following lengthy engineering, environmental studies and negotiations with the Canadian Government, construction was initiated in 1980. The first concentrate was produced in late 1981. The mine is due to close when mining of the approximately 20 million ton ore body is completed.

The development and construction of the mine was highlighted by the construction of the process plant and related facilities on a barge in southern Canada and its subsequent transportation to Site, towed 4,800 km by tugs. The barge was then beached for use as the Concentrator building at the Site.

The ore body is situated completely in permafrost. The permafrost extends to more than 300m below surface. The waste rock (host rock) is predominantly dolomite with calcite. The ore body is located as close as 60m to surface and extends to 300m below surface. Except for a very small open pit on the North Showing, the ore has been mined by underground methods. The openings from mining have been backfilled to maintain rock stability and to allow increased recovery of the ore.

The mined ore is crushed underground and conveyed to the mill. The Polaris concentrator (mill) is a conventional, grinding and flotation plant processing just over 1,000,000 tonnes of ore per year and producing between 250,000 and 300,000 wet tonnes of zinc and lead concentrates in total, each year. The concentrates are stored in a covered storage building through the winter and are shipped to market in the short summer season. The mill tailings are pumped via a 4 km tailings line to a tailings thickener located above Garrow Lake. Process water is recycled from the thickener back to the mill via a duplicate pipeline. The thickened tailings are deposited in the bottom of Garrow Lake. In 1991 construction of a frozen core dam was completed at the outlet of Garrow Lake. Summer runoff water is now controlled and when necessary the water is siphoned over the dam. Fresh water is obtained for the plant and domestic purposes by pipeline from Frustration Lake about 5 km from the mine.

The Polaris Mine is one of the most compact mining operations in Canada. Most of the service facilities are located on the process barge. These include, power house, maintenance shops, warehouse and offices. The other two main buildings on Site are the concentrate storage building and the accommodation building. The accommodation

building is suitable to house approximately 240+ persons. Diesel fuel oil for power generation and mobile equipment is stored in a tank farm and in the barge bottom tanks.

The mine has a ship docking facility capable of handling ships up to 44,000 tonnes. The concentrates produced by the mine are transported by ship for smelting. Bulk supplies and equipment are also transported to the Site by ship. Due to the Arctic ice, the shipping season is restricted to between July and October of each year. The mine is serviced by aircraft from Resolute using the 1200m airstrip located adjacent to the accommodation building.

1.2 GENERAL SCOPE OF WORK

The Contractor shall be responsible for all demolition, reclamation and remediation work associated with the closure of the Polaris Mine. Specialty subcontractors, subject to approval of the Owner in accordance with the Contract Documents, may be engaged by the Contractor. Other Contractors of the Owner will be on Site during some or all of these activities, including project management and environmental specialists. The Contractor will report to the Owner's Project Manager. For convenience of reference, the Work to be performed and provided by the Contractor for each major activity is summarized in Section 3 below.

1.3 PROJECT SCHEDULE

Scheduling of the decommissioning and reclamation activities to take advantage of the short summer and shipping season are the primary constraints to the Schedule. Currently, the mine is scheduled to complete operations and close during the 3rd Quarter, 2002. Mobilization of the Contractor to Site will be completed early in the 2002 shipping season. Completion of closure activities shall be completed by the end of the 3rd Quarter of 2004, with demobilization complete by mid October 2004, the latest shipping date from Polaris.

2.0 SCOPE OF WORK - SUMMARY

Except as noted in Section 2.2 herein, the Contractor will provide all necessary labour, supervision, material, equipment, supplies, consumables, temporary structures and facilities, small tools, services, and all other items required to complete the Work, all in accordance with the Contract Documents.

The Work generally includes, but is not necessarily limited to the following (each of which is described in more detail in Sections 3.1 to 3.20 below), all in accordance with the Closure Plan including applicable Drawings and Specifications:

- Mobilization and demobilization of the Contractor's labour, supervision, material, equipment, supplies, consumables, temporary structures and facilities, small tools, services and everything else required by the Contractor to perform the Work.

- Dismantling of above ground and underground mine associated appurtenances, backfilling and storage of specified refuse and other waste materials, and closure of mine openings, portals and boreholes.

- Loading, hauling and placing of materials reclaimed from waste rock dumps, stockpiles, soil remediation and designated contaminated locations to specified underground disposal areas.

- Remediation and reclamation of the Garrow Lake tailings disposal system, including removal of appurtenances, as well as modifications to the containment dam and wave break structures.

- Decommissioning, disassembly, demolition and disposal of the concentrator facility and barge, including associated backfill and Site remediation.

- Decommissioning, disassembly, demolition and disposal of the concentrate storage facility and concentrate load out systems, including associated backfill and Site remediation.

- Cemented rockfill screening and batching ("CRF") plant decommissioning, disassembly, demolition and disposal.

- Demolition and disposal of all structures and systems associated with the Accommodation Complex.

- Decommissioning, demolition, disposal and Site remediation of the Tailings Thickener Facility.

- Fuel storage tankage and distribution piping decommissioning, cleaning, disassembly, demolition and Site remediation.

- Demolition and disposal of miscellaneous and various Site buildings and structures.

- Removal of sheet pile dock structure including removal of fill and recontouring of shoreline as required by the Closure Plan.

- Decommissioning, disassembly, demolition, disposal and Site remediation associated with the airfield and airfield appurtenances.

- Decommissioning, decontamination, demolition disposal and remediation associated with tailings pipelines, fresh water pumphouse and pipe lines, sewage piping and disposal, glycol heating piping systems.

- Demolition, removal, salvage and/or disposal of electrical generation, switch-gear and distribution equipment.

- Removal and disposal of all Site electrical power distribution, control and communications cables.

- Draining, collection, packaging, handling and management of hazardous chemicals, wastes, refrigerants, coolants, fuels, vehicle batteries, lubricants, for disposal and or shipment off site.

- Closure and construction of cover caps for the operational landfill and Little Red Dog (LRD) quarry.

- Re-grading and reclamation of the runway and all Site roadways to re-establish natural drainage patterns.

- Site restoration earthwork and re-contouring of all reclaimed facilities, structures, pits, mounds, and quarries as required by the Closure Plan.

- Operation and maintenance of the Site and administration of the demolition and reclamation program during the period of the Contract including, but not limited to:
  - accommodation of all personnel including Owner's personnel and representatives, Other Contractors, and their subcontractors.
  - co-ordination of all personnel transportation to and from Site, as well as on-Site.
  - maintenance of Site life-support facilities and utilities, including construction of necessary modifications or temporary structures or facilities arising from demolition of existing systems.
  - operation of Environmental and Safety Programs for the Site.
  - maintenance of mobile and construction equipment, including equipment provided by the Owner. (Refer to list of Owner-supplied equipment in Appendix SW2).
  - operation and maintenance of Owner's communication systems and equipment for both on and off Site communications.
  - cleaning, disassembly, packaging and preparation for shipment, all materials and equipment designated for salvage by the Owner. (See Appendix SW3).
  - surveying by qualified construction surveyor, whose qualifications and experience are acceptable to the Project Manager.
  - snow removal, as required.
  - provision and maintenance of a detailed project task schedule including bi-weekly updates to demonstrate compliance with Owner's overall schedule
  - preparation of demolition record drawings and documents
  - other duties and tasks assigned by the Owner's Project Manager.

- All work to comply with the Closure Plan.

- Scheduling of all parts of the Work must accommodate Environmental sampling, analysis and any regulatory approvals.

2.1 WORK NOT INCLUDED

- Approval of the Closure Plan by every Authority Having Jurisdiction (is to be obtained by the Owner).
- Environmental or contaminant sampling and laboratory services (by Other Contractors).

2.2 WORK/MATERIALS/SERVICES PROVIDED BY OWNER

On completion of mining operations, the Owner will cause the Operator to leave all process equipment, mining equipment, mobile equipment, shop equipment, office and communications equipment, spare parts and maintenance inventories and residual consumable supplies for use by the Contractor in the demolition and reclamation work (except for those items of equipment specifically noted in Appendix SW6.) It will be the responsibility of the Contractor to catalogue and determine the extent and condition of the Owner-provided supplies and equipment and to augment inventories as required both during the mobilization period and as required during the term of the Contract.

On completion of the demolition and reclamation work, the Contractor will have the option, with the exception of those items designated as Owner's salvage, to either dispose of the equipment or supplies supplied to the Contractor by the Owner, or to claim as salvage and ship off site for resale or disposal, all in accordance with the requirements of SC 29.0

The following list describes the work, materials, services, equipment and other items to be provided by the Owner, based on estimated quantities at time of Tender. Actual items and quantities will be determined and inventoried at the time of mine closure by the Contractor. The Owner's Environmental Consultants will determine actual volumes of contaminated soils.

- Accommodation Complex (to be operated, staffed and maintained by the Contractor).
- Shop maintenance equipment and tools as listed in Appendix SW3.
- Vehicles and equipment as listed in Appendix SW2.
- Environmental sampling, testing and laboratory facilities and personnel.
- Spare parts for vehicles, construction/demolition equipment, tools and facilities (water, sewer, power generator, kitchen, heating) as listed in Appendix SW4.

- Office equipment and communications system equipment as listed in Appendix SW5.
- Food supplies inventory at time of closure.
- Fuel & lubricants inventory.

2.3 RELATED WORK - NOT PART OF THIS CONTRACT

The following is not part of the Work under the Contract:

- Cleanup and reclamation work which may have been performed by the Owner prior to closure.
- Packing and shipping of chemicals and Hazardous Substances prior to closure and at the time of closure (Contractor is responsible, however, for packing and shipping any chemicals and Hazardous Substances remaining at Site after the time of closure).
- Environmental testing, sampling and laboratory services.

3.0 SCOPE OF WORK - DETAIL

This Section 3 describes the Scope of Work for the major activities involved in the demolition and reclamation of the Polaris Mine and related facilities, which descriptions are of a general nature and shall not be construed as an exhaustive list of what is required for each activity. The Closure Plan provides a more comprehensive description of the Work. The Contractor shall comply strictly with all requirements of the Closure Plan, including any amendments made thereto, all as submitted to and approved by each Authority Having Jurisdiction.

Note: The following descriptions of the work scope are intended to demonstrate total demolition requirements. Actual demolition work breakdown and demolition methods will be subject to revision by Owner prior to Contract award to address Contractor's proposed work methods, preferences, and scheduling in its Tender.

3.1 MOBILIZATION AND DEMOBILIZATION (COST CENTRE 194)

3.1.1 Scope of Work

- Mobilization and Demobilization, which includes the following items:
- Supply all tools, supplies, materials and equipment required for the period of the Contract, to augment those provided by the Owner.

- Preparation for shipping of all tools, supplies, materials and equipment.
- Shipping to Site.
- Transportation of personnel to Site.
- Set-up of Site facilities for Contractor offices, personnel accommodation.
- Upon completion of all demolition and reclamation activities, demobilization from the Site including:
  - removal of all Contractor's tools, equipment, temporary accommodations, facilities, materials and disposal by burial or shipping offsite.
  - final cleanup of all Contractor waste and refuse and disposal by burial or offsite shipment,
  - final transport of all personnel from Site.

3.2 MINE AND MINE FACILITIES (COST CENTRES 100 & 101)

3.2.1 Scope of Work

Sealing of mine, and removal and demolition of mine facilities, which includes the following:

- Removal of refrigerant to cylinders from mine cooling plant, packaging for shipment off-site, as instructed in Section 3.17.
- Remove mine equipment to be salvaged.
- Removal of the mine refrigeration system for salvage or disposal as instructed.
- Removal of fuel, oil, lubricants, coolants (glycol) batteries and any other Hazardous Substances from underground and surface equipment that is to be abandoned underground.
- Cleanup and removal of contaminated soils and waste rock from the waste stockpile area and disposal underground.
- Disposal of fuel, fuel oil sludge, glycol and lubricants as instructed in Section 3.10.
- Disposal of batteries as instructed in Section 3.17.
- Disassembly and removal of all mill feed conveyors as required to permit sealing of the portals.

- Seal all mine access portals with concrete plugs and backfill openings, in accordance with the Drawings and Specifications.
- Removal and disposal in LRD quarry of raise bore ventilation fans.
- Backfill and seal all raise boreholes and grade to final contours.

3.2.2 Related Work Specified Elsewhere in this Contract

- Removal and disposal underground of all metal and petroleum hydrocarbon contaminated soils from various Site locations.
- Site grading to final contours.

3.2.3 Related Work Not Part of this Contract

- Environmental sampling testing, laboratory work.

3.2.4 Drawings and Specifications

- GLL Drawing No. 10 - "Mine Portal Plugs" - December 2000, as included in the Closure Plan.

3.3 CONTAMINATED SOIL AND WASTE REMEDIATION (COST CENTRES 182)

3.3.1 Scope of Work

Contaminated soil and waste remediation, which includes the following:

- Excavation, loading and hauling of metal and petroleum/hydrocarbon contaminated soil and/or waste rock from various Site locations.
- Operation, maintenance and management of mine facilities during backfilling of contaminated soils and disposal of equipment underground
- Underground placement and distribution of the contaminated soils and waste rock, by dropping down raise bores or hauling down decline to specified underground disposal areas.
- Coordination and extent of work to satisfy Environmental limits as determined by sampling and laboratory analysis.

3.3.2 Related Work Specified Elsewhere in this Contract

- Underground disposal of equipment and sealing mine portals.
- Grading to final contours.

3.3.3 Related Work Not Part of this Contract

- Environmental sampling, testing and laboratory work.

3.3.4 Drawings and Specifications

- GLL - "Polaris Mine, Decommissioning and Reclamation Plan" dated March 2001.
- GLL drawing No. 19. "Targeted Areas for Remediation Areas containing Elevated Levels of Lead & Zinc."
- GLL drawing No. 20 "Targeted Areas for Remediation Areas Containing Petroleum Hydrocarbon Residuals."
- GLL Polaris Mine, Decommissioning & Reclamation Plan, Section 5.8; Contaminated Soil Management for Areas Containing Metal and Petroleum Hydrocarbon Contamination.

3.4 REMEDIATION AND RECLAMATION OF THE GARROW LAKE TAILINGS POND (COST CENTRE 141)

3.4.1 Scope of Work

Remediation and reclamation of the Garrow Lake Tailings Pond, which includes removal of the central portion of the dam and reconstruction of the cut to establish the original stream bed, including the following:

- Prior to decommissioning of the dam, draw down of lake to remove precipitation collected since the lake was siphoned the previous year. This will be required in 2003 and again in 2004. (Note the schedule of lake draw down in the Closure Plan is out of date by one (1) year. Dam to be removed in 2004.
- Excavation and salvage of the rip-rap material.
- Excavation and salvage of the shell material.
- Excavation and disposal of the insulation and bedding material in the LRD quarry.

- Excavation and disposal in the LRD quarry of the frozen core (granular) material.
- Placement of shell material to construct final cover of the exposed core of the remnants of the dam and appropriate slopes.
- Excavation of a new creek bed and placement of (rip-rap) erosion protection.
- Remediation of erosion gullies around dam site.
- Remediation of creek upstream of dam.
- Removal and remediation of the Garrow Lake wave break structure (if exposed after lake is lowered to its original elevation).
- Discharge water quality control and monitoring during annual lowering of the Garrow Lake level and during dam modifications.
- Remove temporary and permanent siphons.

3.4.2 Related Work Specified Elsewhere in this Contract

- Disposal and backfilling of LRD quarry.
- Grading of Site and access roadways to final contours.

3.4.3 Related Work Not Part of this Contract

- Initial draw-down of the reservoir to appropriate level, by Owner.
- Environmental sampling, testing and laboratory analysis.

3.4.4 Drawings and Specifications

- Drawings:

The following drawings, which are Included in EBA Engineering Consultants Ltd., Project Report, Garrow Lake Dam Decommissioning, Project No. 0101-94-11552.002, March 2001.

Drawing No.	Description	Revision
11552-01	Key Map & General Location Plan	0
11552-02	Plan View of Dam Footprint Existing & Decommissioned	0
11552-03	Longitudinal Profiles & Cross-sections	0

- Specifications:

  The following specifications, which are included in Appendix B, EBA Engineering Consultants Ltd. Project Report, "Garrow Lake Dam Decommissioning, Project No. 0101-94-11552.002, March 2001"

Specifications No.	Description
0101-94-11552.002 Section 1000	General
0101-94-11552.002 Section 1001	Water Quality & Discharge
0101-94-11552.002 Section 1002	Excavation
0101-94-11552.002 Section 1003	Backfill Materials & Placement
0101-94-11552.002 Section 1004	Final Cleanup

3.5 DEMOLITION & DISPOSAL OF THE CONCENTRATOR AND BARGE (COST CENTRES 110 & 111)

3.5.1 Scope of Work

The work includes the following:

- Drain barge fuel oil tanks and pump to fuel oil storage tanks in tank farm area, (or shipment off site, as quantities and schedules dictate.)
- Clean fuel oil residues from barge tanks and piping, for disposal as instructed in Section 3.10.
- Perform final cleanup of dust and process residuals from mill equipment and structure. Dispose underground. (See related work not in Contract.)
- Remove all external attachments to concentrator building and dispose in LRD quarry. These include conveyor galleries, piping connections, electrical connections and structures.
- Remove selected process equipment designated for salvage by Owner in accordance with listing in Appendix SW6. Decontaminate and prepare for shipping.
- Remove balance of the process equipment, decontaminate and transport to LRD quarry for disposal.
- Storage, loading and handling of salvaged process equipment.
- Remove electrical generation, distribution equipment and switch gear for disposal in LRD quarry.

- Salvage electrical distribution and switch gear for use in temporary utilities supply. (See Related Work, 3.5.2 below.)
- Remove all process piping, decontaminate, cut in transportable lengths and dispose in LRD quarry.
- Remove electrical, instrument and communications cabling for disposal in LRD quarry.
- Remove spare parts inventory for temporary storage for demolition period.
- Remove remaining office equipment, furniture furnishings and supplies for disposal in LRD quarry.
- Remove shop equipment, warehouse furnishings, redundant stores and materials for disposal in LRD quarry.
- Remove plumbing fixtures, lighting equipment and architectural features from office, shop and warehouse spaces and dispose in LRD quarry.
- Excavate around barge in preparation for barge steel removal.
- Dewatering of excavations, pumping to Tailings Pond via tailings pipeline.
- Break-up and removal of Concentrator Building and equipment base concrete and transport to disposal in LRD quarry.
- Remove building cladding, partitions and architectural features for disposal in LRD quarry.
- Removal and cut-up of Concentrator Building structural steel, transporting to disposal in LRD quarry.
- Remove and cut-up barge deck and hull steel for disposal in LRD quarry.
- Backfill of barge excavation area (See related work for disposal of contaminated soils).

3.5.2 Related Work Specified Elsewhere in this Contract

- Handling and shipping of Owner's salvage.
- Excavation, cleanup and disposal of metal and petroleum hydrocarbon contaminated soils.

- Construction of temporary systems for electrical power generation, water and sewer, heating, dewatering and communications.

- Grading Site to final contours.

3.5.3 Related Work Not Included in this Contract

- Primary clean-up and mill processing of approximately 100 tons of dust and spills accumulations in concentrator building structures and equipment, (by Owner prior to mill shutdown).

- Environmental sampling, testing and analysis.

3.5.4 Drawings and Specifications

- Bechtel Barge/Concentrator construction drawings. (Refer to Drawing Lists, Appendix SW7.)

3.6 DEMOLITION AND DISPOSAL OF CONCENTRATE STORAGE FACILITY (COST CENTRES 120 & 130)

3.6.1 Scope of Work

- Demolition and disposal of the concentrate storage facility, which includes:

- Following final concentrate load-out and shipment, clean residual concentrate accumulation in building and equipment and dispose underground

- Clean and decontaminate dust from conveyors and ancillary equipment, dispose underground.

- Remove all conveyors and conveyor tubes. Dismantle reclaim hoppers, belt feeders, and ancillary equipment. Dispose in LRD quarry.

- Remove cladding, interior walls, architectural features, doors and dispose in LRD quarry.

- Demolition of load-out conveyors, frames, galleries from storage structure to loading dock and dispose in LRD quarry.

- Demolition of building structural steel, dispose in LRD quarry.

- Demolition of building structural steel, dispose in LRD quarry.

- Demolition and removal of building foundations, grade beams, conveyor foundations, dispose in LRD quarry.

- Demolition and removal of electrical equipment cabling and switch gear, dispose in LRD quarry.

3.6.2 Related Work Specified Elsewhere in this Contract

- Demolition and disposal of ship-loading conveyors.

- Excavation of metal (concentrate) contaminated soils and disposal underground.

- Backfill of concentrate building and storage excavation areas, and grading to final contours.

3.6.3 Related Work Not Included in this Contract

- Primary clean-up and load-out of concentrate product to ships will occur at completion of mine operations.

- Environmental sampling, testing and analysis.

3.6.4 Drawings and Specifications

- Bechtel Concentrate Storage Facility, construction drawings. (Refer to Drawing Lists, Appendix SW7.)

3.7 DEMOLITION & DISPOSAL OF THE CEMENTED ROCK FILL PLANT (COST CENTRE 150)

3.7.1 Scope of Work

Demolition and disposal of CRF plant (the cemented rockfill screening and batching plant), which includes the following:

- Cleanup of CRF plant.

- Dismantle and remove CRF plant process equipment and dispose in LRD quarry.

- Drain and purge CRF fuel tanks, cut-up tanks and dispose in LRD quarry.

- Demolish and remove piping, electrical equipment, switch-gear and cabling. Dispose in LRD quarry.

- Remove building cladding, interior partitions, vinyl covering, architectural features and doors. Dispose in LRD quarry.

- Dismantle structural steel frames and plate work, cut to transport, transport and dispose in LRD quarry.

- Excavate and remove cement contaminated soils to disposal in LRD quarry.

3.7.2 Related Work Specified Elsewhere in this Contract

- Excavation of petroleum hydrocarbon contaminated soil and disposal underground.

- Backfill and grading to final contours.

- Removal and disposal of heating, water and sewage piping, electrical, fuel oil piping and pipeline systems and communications cabling.

3.7.3 Related Work Not Included in this Contract

- Environmental sampling, testing and analysis.

3.7.4 Drawings and Specifications

- 1996 CRF Plant construction drawings. (Refer to Drawing Lists, Appendix SW7.)

3.8 DEMOLITION & DISPOSAL OF ACCOMMODATION COMPLEX (COST CENTRE 160)

3.8.1 Scope of Work

Note: The Accommodation Complex may be utilized for living space for the demolition personnel through the period 2002 to 2003.

The demolition and disposal of the Accommodation Complex, which includes the following:

- Removal of salvageable equipment, and/or furnishings, including preparation for shipping. List of Owner designated salvageable items in Appendix SW6.

- Drain and recover refrigerants and coolants in suitable canisters for shipment and disposal off site.

- Drain and recover fuel oil residues from generator and heating fuel oil tanks. Clean and cut up tanks for disposal in LRD quarry.
- Disconnect and remove fixtures, utilities and installed equipment not salvaged. Dispose in LRD quarry.
- Remove interior partitions, ceilings and finishes and dispose in LRD quarry.
- Remove cladding, demolish structural steel and dispose in LRD quarry.
- Remove concrete foundations to below final grade. Dispose of concrete in LRD quarry.
- Backfill areas excavated during demolition.
- Remove structures, tankage, equipment provided for temporary service and utilities to Accommodation Complex. Salvage equipment for Owner listed in Appendix SW6 and dispose of remainder in LRD quarry.

3.8.2 Related Work Specified Elsewhere in this Contract

- Design and construction of temporary modifications and temporary facilities, as required to supply utilities and services to Accommodation Complex until Accommodation Complex no longer required for Contractor's and Owner's personnel on Site.
- Clean-up and disposal of contaminated soils.
- Grading to final Site contours.

3.8.3 Related Work Not in this Contract

- Environmental, sampling, testing and analysis.

3.8.4 Drawings and Specifications

- Bechtel construction drawings. (Refer to Drawing List, Appendix SW7.)

3.9 DEMOLITION & DISPOSAL OF THE TAILINGS THICKENER FACILITY (COST CENTRE 140)

3.9.1 Scope of Work

Demolition and disposal of the tailings thickener facility, which includes:

- Final cleaning/flushing as required of tailings pipeline, reclaim pipeline, and thickener tank, with disposal to Garrow Lake. Note: The Owner's mine operating personnel will flush lines and thickener vessel at completion of mining operations.
- Removal of emergency generator, tailings equipment, thickener tank, structural steel, cladding and out buildings. Dispose in LRD quarry.
- Removal of concrete foundations to below final grade. Dispose of concrete in LRD quarry.
- Remove electrical controls and cabling and dispose in LRD quarry.
- Remove weights and floats from near surface submerged tailings discharge lines, and remove tailings discharge lines. Dispose in LRD quarry.

  Note: Tailings line from Concentrator area to Garrow Lake, however, to remain and be maintained for purposes of dewatering of Mill/Barge area excavation operations. Upon completion of Mill/Barge area excavation operations, this tailings line also to be removed and disposed of in LRD quarry.
- Excavate any residual tailings contaminated soil in emergency impoundment area and dispose (at the direction of the Project Manager) in Garrow Lake or underground. (Note: Contents of the emergency impoundment area, if any, are to be pumped into Garrow Lake via the thickener by Polaris Operations prior to tailings system shutdown at the end of mining operations.)
- Excavate and rough grade emergency impoundment area berm to prevent ponding. Utilize berm material to backfill areas of the thickener facility excavated for concrete and foundation removal.

3.9.2 Related Work Specified Elsewhere in this Contract

- Removal and disposal of piping and pipelines.
- Removal of additional siphons at Garrow Lake Dam.
- Removal of Garrow Lake wave berm.

- Modifications to Garrow Lake Dam[JLL1].
- Stabilization of Garrow Lake shoreline and creek embankments.
- Grading of thickener site, access roadways and tailings/reclaim pipeline right-of-way to final contours.

3.9.3 Related Work Not Included in this Contract

- Installation of siphons at Garrow Lake Dam.
- Draw down of Garrow Lake to final elevation.
- Initial cleaning and flushing of thickener, thickener equipment, tailings pipeline and reclaim pump line.
- Pump out of residual tailings in emergency impoundment area and excavation of impoundment area bottoms.
- Environmental sampling, testing and analysis.

3.9.4 Drawings and Specifications

Bechtel construction drawings. (Refer to Drawing List, Appendix SW7.)

3.10 DEMOLITION & STORAGE OF FUEL STORAGE TANKS, TANK FARM AND DISTRIBUTION EQUIPMENT & PIPING (COST CENTRE 170)

3.10.1 Scope of Work

The fuel storage system consists of the following tanks, and fuel distribution piping and equipment associated therewith:

Tank	Location
5.5 million liters (2)	Fuel Tank Farm
200,000 liters	Fuel Tank Farm
10.6 million liters	Barge Hull
35,000 liters	CRF Plant
22,700 liters	Barge, vehicle services
8,400 liters	Accommodation Building
15,000 liters	Underground Explosives Plant
2,270 liters	Thickener Generator
34,100 liters	CAT Generator Building
8,400 liters	Fire Hall

2,270 liters	Foldaway Building
22,700 liters	Barge, Day Tank

At mine closure, Polaris Operations will transfer remaining fuel from all tanks to one or more of the two 5.5 million liter tanks in the Fuel Tank Farm. This will serve as the fuel supply for power generation, heating, heavy equipment and vehicles during the demolition period. The transfer pumps are located on the barge. The Contractor shall relocate these on a temporary basis to allow fuel delivery to the truck fill station and Accommodation Complex from the Tank Farm storage tanks, during demolition operations at the barge.

The Work includes demolition and storage of fuel storage tanks, tank farm and distribution equipment and piping, which includes the following:

- Draining residual fuel and removal of sludge from each tank as it becomes available for demolition.
- Dispose of waste oil and sludge by burning in an approved waste oil/sludge burner (acceptable to Owner and any Authority Having Jurisdiction), or shipped off –Site for disposal at an approved facility.
- Construct temporary fuel pumping system at Tank Farm to maintain distribution to Accommodation Complex and truck/equipment fill station during period of demolition operation.
- Purge oil vapours from all fuel tanks.
- Cut fuel tanks to sizes suitable for transport and disposal in LRD quarry, according to current regulations for petroleum tankage disposal.
- Drain and purge all fuel oil distribution piping and equipment (not in temporary service), cut to size for disposal in LRD quarry.
- At termination of demolition operations remaining tanks, piping and equipment shall be dismantled and disposed in the same manner.
- Excavation of Tank Farm berm and removal of membrane material for disposal underground.
- Pigging of all fuel distribution lines (or other approved cleaning method) prior to burial.
- Any hydrocarbon spill or contamination caused by Contractor shall be cleaned up at the Contractor's cost, without reimbursement from Owner, and to the satisfaction of the Owner and every Authority Having Jurisdiction.

3.10.2 Related Work Specified Elsewhere in this Contract

- Removal and disposal of petroleum/hydrocarbon contaminated soils.
- Construction of temporary facilities and utilities for term of demolition work.
- Grading to final contours.

3.10.3 Related Work Not Included in this Contract

- Environmental sampling, testing and analysis.

3.10.4 Drawings & Specifications

- Bechtel construction drawings. (Refer to Drawing List, Appendix SW7).
- All requirements of Applicable Law relating to the removal and disposal of petroleum tanks and containers and protection of the Environment.
- Accommodation drawings.
- Mine plans.
- Temporary modification to fuel oil pumps/piping system. Drawings and specifications to be prepared by Contractor and submitted to the Owner for approval in accordance with SC.12.
- Temporary modifications to heating and power systems. Drawings and specifications to be prepared by Contractor in accordance with SC.12.

3.11 DEMOLITION & DISPOSAL OF MISC. BUILDINGS & STRUCTURES (COST CENTRE 172)

3.11.1 Scope of Work

- The Closure Plan requires that all buildings and structures not specified as included with major Site structures also be dismantled and buried on site in LRD quarry.
- Demolition and disposal of miscellaneous buildings and structures, which includes the following:
- 3 communication disks and 2 associated huts

- 3 exploration Quonset huts
- abandoned ANFO plant
- surface crusher building
- emergency shelter and storage frame (by North Portal)
- airstrip storage hut
- Core shack (ATCO Trailer)
- Carpenter's Shop & storage (ATCO Trailer)
- Surface offices (2 ATCO Trailers by dock)
- Foldaway storage building (by Temporary Dock), Concrete Batch Plant Building
- Fire Hall and miscellaneous structures/components at the fire training area
- Steam/Wash Bay and Tire Shop
- Foldaway storage building (by Temporary Dock), major spare parts storage
- Foldaway winter storage of surface equipment
- CAT Generator Building (following use as Site temporary power generator)
- Mine refrigeration compressor building
- Fresh water pump house and associated pumps, piping and electrical equipment.
- Fresh water tank and lean-to.
- Bent horn conditioning building and equipment.
- Demolition and disposal of approximately 310 sea transport containers, cut to suitable size for burial in the LRD quarry.
- Demolition and removal of concrete foundations, piers, grade beams and slabs (associated with these listed buildings and structures) and disposal in LRD quarry.
- Backfill of excavated areas associated with demolition of these buildings and structures.

NOTE: All Hazardous Substances arising from demolition operations must be removed and shipped to southern Canada for appropriate disposal/re-use

and/or recycling, and in accordance with all Applicable Law and requirements of any Authority Having Jurisdiction.

3.11.2 Related Work Specified Elsewhere in the Contract

- Excavation and U/G disposal of contaminated soils.
- Grading to final contours.
- Handling and disposal of Hazardous Substances (Scope of Work 3.17).

3.11.3 Related Work Not Included in the Contract

- Environmental sampling, testing and analysis.

3.11.4 Drawings & Specifications

- Construction drawings for these facilities do not exist.
- Reference Gartner Lee Closure Plan document and Site plans for building locations.

3.12 REMOVAL & DISPOSAL OF SHEET PILE DOCK STRUCTURE AND SHORELINE REMEDIATION (COST CENTRE 131)

3.12.1 Scope of Work

- Removal and disposal of sheet pile dock structure and shoreline remediation, which includes the following:
- Preparation of detailed plans and schedules for dock removal for Owner review and approval prior to initiating work.
- Approval for dock removal is currently being discussed with Department of Fisheries and Oceans (DFO).
- Final dock decommissioning plans and procedures must be in compliance with final DFO approvals, including all conditions and requirements which may be referred to or included in such approvals.
- Dismantle load out conveyors (between concentrate storage structure and ship loading tower), ship loading tower and ship loading conveyor, cut to transportable sizes and dispose in LRD quarry.

- Excavation of frozen fill material inside sheet pile cells, use excavated material as backfill material where appropriate and disposal of excess in LRD quarry.
- Cut-off sheet piles below water line. Pile disposal in LRD quarry.
- Excavate raised fill areas at dock area and adjacent areas to establish a new shore line.
- Grade new beach area to final profiles.
- Prepare spill-contingency and clean-up plans, and provide clean-up supplies and equipment, for any hydrocarbon spills which may occur near or in the ocean.
- Removal and disposal of potential glycol refrigerant remaining in freezing pipes in dock.
- Plans, supplies and equipment for emergency containment of any glycol spills.

3.12.2 Related Work Specified Elsewhere in the Contract

- Removal and disposal of 0.5m± contaminated soil from dock, barge, and landfill areas, in accordance with the Closure Plan.
- Grading of final contours.

3.12.3 Related Work Not Included in this Contract

- Environmental sampling, testing and analysis.

3.12.4 Drawings & Specifications

This part of the Work is to be completed in accordance with Option #1 of Westmar Consultants Limited March 2001 Report, "Decommissioning of Shoreline and Dock at Polaris Mine," and subsequent detailed plans currently being refined and 'to be submitted' to DFO for approval, including all amendments to such subsequent detailed plans which may be required by DFO as a condition of approval.

3.13 AIRSTRIP RECLAMATION & REMEDIATION (COST CENTRE 179)

3.13.1 Scope of Work

- Airstrip reclamation and remediation, which includes the following:

- Remove runway lighting fixtures and bases to below grade and dispose in LRD quarry.
- Remove exposed electrical cabling and dispose in LRD quarry.
- Remove all signage and all miscellaneous projections (i.e. navigation aids, beacons, poles, markers, etc.) and dispose in LRD quarry.
- Soften contours of airstrip.

3.13.2 Related Work Specified Elsewhere in this Contract

- Removal and disposal of miscellaneous buildings and structures.
- Removal and disposal of contaminated soil (fuel spill at south end of airstrip).
- Grading to final contours.

3.13.3 Related Work Not Included in this Contract

- Environmental testing, sampling and analysis.

3.13.4 Drawings and Specifications

- Bechtel construction drawings and site plans. (Refer to Drawing List, Appendix SW7.)
- Polaris Mine Decommissioning and Reclamation Plan" dated March 2001, by Gartner Lee Limited.

3.14 REMOVAL & DISPOSAL OF EXTERNAL PIPING & PIPELINES (COST CENTRE 179)

3.14.1 Scope of Work

- Removal and disposal of external piping and pipelines, which includes demolition, removal and disposal of the following:
- All external piping and pipeline systems (including flushing and cleaning where required).
  - Tailings pipeline from Concentrator to Tailings Thickener and to Garrow Lake from Thickener (including tails discharge piping).

  - Reclaim water pipeline from Tailings Thickener to Concentrator.
  - Fresh water pipeline from Fresh Water Pump House at Frustration Lake to Concentrator building and Accommodation Complex.[JLL2]

- Fresh water tank.

- Backfill fresh water pump well with crushed rock fill from LRD quarry.

- Fuel oil pipelines from Ship Unloading Station to Barge and from Barge to Fuel Storage Tanks and Accommodation Complex. Buried sewage piping shall be blown out, flushed, cut-off below final grade and left in place. Buried fuel oil piping shall be blown out, flushed, pigged and removed for disposal in LRD quarry.

- Water, sewage and glycol piping between Barge and Accommodation Complex.

- Glycol piping and system to be drained. Glycol packaged for shipping off site and disposal.

- Remove, cut to suitable size and dispose in LRD quarry, all external pipe, tanks, pipelines, supports and support structures.

- Remove, to below final grade, concrete piers associated with external pipe/pipeline supports, markers or sign posts.

- Provide necessary equipment and prepare, for Owner's prior review and approval, plans for collection, treatment and discharging contaminated water.

- Grading of final Site contours to conform with natural contours and drainage patterns.

3.14.2 Related Work Specified Elsewhere in This Contract

- Removal and disposal of:
  - Miscellaneous buildings and structures.
  - Metal & petroleum hydrocarbon contaminated soils.

- Grading to final contours.

3.14.3 Related Work Not Included in this Contract

- Environmental, sampling, testing and analysis.

3.14.4 Drawings & Specifications

- Bechtel construction drawings. (Refer to Drawing List, Appendix SW7.)
- Requirements of the Closure Plan.

3.15 DEMOLITION/SALVAGE, DISPOSAL OF ELECTRICAL GENERATION & ASSOCIATED EQUIPMENT (COST CENTRE 179)

3.15.1 Scope of Work

Note: The power generation on the Polaris Site consists of 4 x 2.3 MN MAK Diesels plus 2 x 1135 KW CAT Diesels providing primary power to the Site at 4160V. In addition, there are 600V emergency back-up power diesel generators located at key locations on the Site. These generators and associated electrical switchgear and transformers are being considered for salvage and re-use at other properties of the Owner. A list of the generators, switchgear and associated power transformers is included in the Master Equipment List, Appendix SW8.

Demolition, salvage, disposal of electrical generation and associated equipment, which includes the following:

- Remove and package for shipment generators, switchgear and transformers designated as Owner's salvage in Appendix SW6.
- Remove generators, equipment and transformers designated for disposal at Site. Drain engine oil, coolant and transformer oil from each equipment item.
- Dispose of oils by burning in waste incinerators (equipment supplied by Contractor) acceptable to the Owner and every Authority Having Jurisdiction, or for shipment off-site and subsequent disposal in accordance with Applicable Law and the requirements of every Authority Having Jurisdiction.
- Prepare drained generators, electrical switchgear and transformers for burial by cutting to transportable size components and burial in the LRD quarry.

3.15.2 Related Work Specified Elsewhere in This Contract

- Removal and disposal of metal and petroleum contaminated soils.
- Removal, packaging and shipping preparations for Hazardous Substances (complying with all Applicable Law relating to protection of the Environment).

3.15.3 Related Work Not Included in This Contract

- Nil

3.15.4 Drawings & Specifications

- Bechtel and Cominco construction drawings. (Refer to Drawing List, Appendix SW7.)

3.16 REMOVAL & DISPOSAL OF EXTERNAL POWER DISTRIBUTION, CONTROL & COMMUNICATIONS CABLING & EQUIPMENT (COST CENTRE 179)

3.16.1 Scope of Work

- Removal and disposal of external power distribution, control and communications cabling and equipment, which includes the following:
- Dismantling and removal of all external power distribution, communications and control cabling, cutting to transportable lengths and disposal in LRD quarry.
- Co-ordination of disassembly and return of utility/provider antennae and receiver equipment. (See App. SW.5 for listed equipment.)
- Removal of poles, cable trays, associated concrete piers and disposal in LRD quarry.
- Backfill of any excavations required during pole and pier removals.
- Removal of surface run Teck cable.
- Cut-off buried and inaccessible cable at below final grade. (Excavation and removal of buried cable is not required.)

3.16.2 Related Work Specified Elsewhere in This Contract

- Demolition/salvage of Electrical Generation distribution equipment and switchgear.
- Demolition of external piping and pipelines.

3.16.3 Related Work Not Included in This Contract

- Nil

3.16.4 Drawings & Specifications

- Bechtel construction drawings. (Refer to Drawing List, Appendix SW7.)
- Requirements of the Closure Plan.

3.17 HANDLING & DISPOSAL OF HAZARDOUS SUBSTANCES (COST CENTRES 191)

3.17.1 Scope of Work

General Note:

Those Hazardous Substances, including chemicals, reagents and environmentally hazardous or toxic substances, used at Polaris during mining/milling operations will be controlled during the last year of mine operation. Many of these Hazardous Substances will be collected by the Owner, packaged, transported off site and disposed of by returning to manufacturer, consumption at another facility of the Owner, or sold to a product user.

While it is the Owner's intent to remove these Hazardous Substances at the end of mine operation, it is inevitable that some inventory will remain, and that there will be some volumes arising from demolition operations. The proper handling, shipping and disposal, in accordance with all Applicable Law and the requirements of any Authority Having Jurisdiction, of these Hazardous Substances will be the responsibility of the Contractor, under the Owner's direction. (The Owner is the registered waste generator licensed to handle/ship these wastes.)

The Contractor will prepare and maintain environmentally acceptable management procedures for the handling of each category of Hazardous Substances, and will be responsible for the classification and labeling of the Hazardous Substances. For transportation off site of Hazardous Substances the Contractor will be responsible for and will complete waste manifests and ensure that the waste is transported by a registered hazardous waste carrier and received by a registered receiver of Hazardous Substances and delivered to an appropriate waste repository. The Contractor will use trained workers for the handling and management of the Hazardous Substances, including Occupational Health & Safety, as well as Emergency Spill Response, and will ensure that all operations will comply with all Applicable Law, including all permits and approvals.

the following:

- Preparation of a comprehensive Waste Management Plan for review and approval by the Owner, approval of which shall be obtained by the Contractor prior to handling

any Hazardous Substances. The Waste Management Plan shall, for each type of Hazardous Substance anticipated to be encountered at Site, describe the methods and equipment, including personal protective equipment for personnel, to be used, and the manner and method of handling, transport and disposal of such Hazardous Substances. Where Hazardous Substances are to be removed to an off site facility for disposal, the Waste Management Plan shall:

- identify both the type and method of storage and containment, as well as the name of the transporter, who shall be registered and/or licensed as a Hazardous Substances transporter as required by Applicable Law and the requirements of any Authority Having Jurisdiction;
- identify both the type and method of storage and containment, as well as the name of the transporter, who shall be registered and/or licensed as a Hazardous Substances transporter as required by Applicable Law and the requirements of any Authority Having Jurisdiction;
- include a Spill Contingency Plan, and include the names, addresses and telephone numbers of the relevant personnel from any Authority Having Jurisdiction who must be contacted in the event of a spill;
- include all information required by trained personnel, acceptable to the Owner, to handle, store, label, transport and dispose of each relevant type of Hazardous Substances; and
- identify the disposal facility, which disposal facility shall be licensed and approved by Applicable Law and meet the requirements of any Authority Having Jurisdiction to receive and dispose of such Hazardous Substances.

Once approved, the Contractor shall comply strictly with all provisions of the approved Waste Management Plan.

- Draining refrigerant to suitable canisters and cylinders, transportation for disposal off site.

- Draining, collecting and drumming of glycol antifreeze solutions for transportation to disposal off site. (Incineration of glycol is acceptable if carried out under conditions in an incinerator acceptable to and approved by the Owner and any Authority Having Jurisdiction.)

- Draining, collecting and on-site disposal of fuel oil, lubricants, hydraulic fluids and combustible solvents by incineration in a waste oil incinerator/burner acceptable to and approved by the Owner and any Authority Having Jurisdiction.

- Collection, packaging and transportation of residue chemicals, reagents arising from clean-up of process equipment, piping systems or warehouse inventory, lead-acid and other batteries, for shipment and disposal off site. (After regulatory approvals and permits are obtained.)

- Transportation by ship of Hazardous Substances collected by Contractor during demolition period.

- Coordinate and document loading/unloading/transportation and approved disposal of all Hazardous Substances.

3.17.2 Related Work Specified Elsewhere in This Contract

- Demolition of Process equipment and piping.

- Removal and disposal of metal and petroleum contaminated soils (reference Scope of Work, section 3.3).

3.17.3 Related Work Not Included in This Contract

- Collection, packaging and shipping of operations inventory of chemical feed stocks, at cessation of mining operations.

3.17.4 Drawings & Specifications

Drawings: Nil

Specifications:

The Contractor's Waste Management Plan shall comply with and conform to all Applicable Law and the requirements of any Authority Having Jurisdiction, including but not limited to:

- Government of Canada - Territorial Lands Act
- -Territorial Lands Regulations
- -Mining Regulations
- -Dept. of Indian & Northern Development
- (Water Resources)
- -Fisheries and Oceans
- -Environment Canada
- Government of Northwest Territories - Resources, Wildlife & Economic Development (RWED).

- Government of Nunavut - Nunavut Water Board

3.18 CONSTRUCTION OF COVER CAPS FOR THE OPERATIONAL LANDFILL & LRD QUARRY (COST CENTRES 181 & 183)

3.18.1 Scope of Work

Construction of cover caps for the operational landfill and LRD quarry, which includes the following:

- Construct an impermeable cap to seal the operational landfill, utilizing native fill material sourced adjacent to the landfill.
- Construct operational landfill cap by excavating, loading, hauling, placing and compacting fill material as indicated in the Drawings and Specifications noted in Section 3.18.4 below.
- Construct an impermeable cap to seal the LRD quarry, as indicated in the Drawings and Specifications in Section 3.18.4 below, utilizing native and waste rock material located adjacent to the LRD quarry.
- Caps are to be sloped to encourage drainage.
- LRD quarry to have cut in pit wall to prevent ponding of water on the cap.
- Installation of thermister strings into cap to monitor permafrost as directed by Owner personnel.
- Protect existing thermister string in operational landfill.
- Contouring to direct surface water around landfill.
- Contouring cap of landfill to resist erosion.

3.18.2 Related Work Specified Elsewhere in This Contract

- Grading to final contours (see landfill design).

3.18.3 Related Work Not Included in This Contract

- Excavation and relocation of construction landfill to the toe of the operational landfill. (By the Owner prior to mine closure.)

3.18.4 Drawings and Specifications

The work is to be completed in accordance with the following Drawings and Specifications:

- Drawing

  No. GLL-NO. 12 & 17
  Polaris Mine Decommissioning & Reclamation, Vol. I, March 2001
  (Gartner Lee Limited)

- Specification

  per Section 5.5, Solid Waste Management Operations
  Polaris Mine Decommissioning & Reclamation, Vol. I, March 2001
  (Gartner Lee Limited)

3.19 GRADING OF SITE FACILITIES TO FINAL CONTOURS (COST CENTRE 180)

3.19.1 Scope of Work

General Note:

Following completion of all major demolition, excavation and backfilling operations on the Site, final grading will be undertaken to restore Site earthworks to near natural, smooth, uninterrupted slopes and profiles. Native fill material is to be utilized as much as possible and natural drainage patterns re-established without the use of culverts or ditching.

Grading of Site facilities to final contour, which includes the following:

Roadways
- Grade shoulders to round off sharp edges, remove all culverts, sign posts, markers and projections.
- Excavate and grade a smooth broad swale at natural stream or runoff crossing points. Grade sharp edges of roadway ditching.
- Restore original drainage patterns according to surrounding landscapes.

Airstrip
- Minimal grading required. Grade sharp edged shoulders of runway and access ways to smooth profiles. Remove markers and other unnatural projections.

Bermed Areas
- (Fuel Tank and Tailings Impoundment Berms), excavate berm to near natural profile, utilize excavated soil for areas on Site requiring fill or

spread to near natural thin layers. Remove and dispose of any buried piping, conduit or posts.

Embankments - Grade smooth any embankments created around building or structures.

Building (Structure) Footprints

- Ensure concrete piers, slabs, footings or pile caps are removed to below final grade elevations. (Concrete to be disposed in LRD quarry.) Grade footprint to near natural profile. Ensure natural drainage courses established. Utilize adjacent native material for grading fill purposes.

Pipeline Right-of-Way Berms

- Remove any support piers, concrete or wooden sleepers and dispose in LRD quarry. Grade shoulders of berms to smooth rounded profiles. Remove culverts, buried conduits or drainage pipe. Establish natural swale at run-off or stream crossings.

Quarries & Landfills (LRD quarry, New Quarry and Operational and Reclamation Landfills)

- Following disposal and burial activities and installation of their respective engineered caps, quarries and landfills shall be graded to prevent ponding of water and/or erosion. Stepped side slopes shall be filled to smooth slopes by pushing adjacent native material to fill steps and benches. Provide swales to natural run-off channels.

Mine and Raise Bore Openings

- Following completion of underground disposal of contaminated soils and installation of concrete plugs, mine openings and raise bore holes are to be covered over with adjacent native fill materials and graded smooth to prevent ponding of water and prevent erosion. Swales are to be graded to natural run-off channels to prevent ponding.

3.19.2 Related Work Specified Elsewhere in This Contract

- Removal and disposal of pipelines.
- Installation of engineered caps for quarry and landfill.
- Excavation and underground disposal of metal and petroleum contaminated soils.
- Excavation and reclamation of dock site and adjacent shoreline.

- Sealing mine portals and raise bore holes.
- Demolition and disposal of concrete foundations, piers and slabs.

3.19.3 Related Work Not Included in This Contract

- Nil

3.19.4 Drawings & Specifications

- None.

3.20 OPERATION AND MAINTENANCE OF THE POLARIS MINESITE (COST CENTRES 194, 195, 196, 197, 198, 199)

3.20.1 Scope of Work

General:

Upon cessation of the Owner's mining operations and mobilization of the Contractor at Site, the Contractor will assume sole responsibility for the administration and operation of the Site through to the completion of the demolition work. The Owner will retain the ultimate responsibility for the Site. In this capacity, the Owner reserves the right to approve and require revisions to all aspects of Site work and operations by the Contractor.

The isolation and remoteness of the Site requires that extraordinary measures must be employed to ensure life support is maintained at all times and in all conditions. To this end the Contractor shall ensure adequate provisions are made for emergency fuel and food reserves, and that all essential heating and utility systems are equipped with reliable backup systems at all times.

The Contractor's responsibilities shall include the following:

- Personnel Accommodation: Operation of the personnel Accommodation Complex for all persons on the Site, including Owner's personnel, Owner's representatives and Other Contractors. Operation of the Complex will include:
  - Food Services & Commissary
  - Janitorial & Housekeeping
  - Laundry
  - Recreational Services & Facilities Operation
  - Utilities and emergency services associated with the Accommodation Complex.

- Provide minimum emergency fuel and food provisions at Site.

- Office Space: Throughout the entire period of the Contract, the Contractor will provide office space, furnishings, office and communications equipment for the Owner's personnel. Estimated number of Owner's personnel on Site to be 10 persons.

- Transportation: The Contractor will set up and administer a transportation system utilizing Commercial Airlines and/or Charter Airlines, for the routine transportation of personnel to and from the Site, on a regular schedule basis. The Contractor shall maintain the airstrip as required for the safe operation of aircraft. The Contractor will administer all aspects of the transportation including provisions for Owner's personnel, representatives and Other Contractors. The Contractor will also be responsible for the transportation of all personnel and materials on Site.

  The Owner will have priority on travel arrangements.

  The Owner will be charged a fixed cost per trip from Site to or from Ottawa or Edmonton, as further specified in Item A2.3.2(b) of the Tender Form.

  The Contractor will provide the following vehicles for the Owner's sole use during the period of the Contract.

  - Four 1/2 ton pickups
  - Two quad drive ATV

- Maintenance: The Contractor will be responsible for all aspects of maintenance for:

  - power generation
  - fuel storage and distribution
  - utilities (water supply and sewage disposal)
  - fire protection
  - office furnishings and equipment
  - communications system (both on and off Site)
  - shop equipment
  - mobile equipment, construction/demolition equipment, transport vehicles, including equipment and vehicles provided by Owner (refer to list included in Appendix SW8 - Combined Equipment List.
  - airstrip, airstrip maintenance, airstrip lighting and beacon.
  - personnel accommodation facilities.

- Utilities Modifications: Systems supplying water, sewer, electrical power and fuel oil to the Accommodation Complex are currently integral with the systems in the Concentrator/Barge. Demolition operations on the Barge will require modifications to these systems or the addition of temporary equipment and facilities such that the services to the Accommodation Complex will be maintained. It is intended that existing equipment be utilized and relocated where possible to meet these

requirements. Systems requiring modifications to maintain essential services to the Accommodation Complex include:

- power generation
- water supply
- heating
- sewage disposal
- fuel oil distribution (and storage)
- fuel oil dispensing (for mobile equipment, vehicles).

The Contractor will be responsible for providing these modifications and any additional equipment and facilities, including engineered design, construction and operation. Design of the required modification will be submitted for approval to the Project Manager. Design submissions will include complete construction drawings and specifications prepared by engineers licensed in Canada, and sealed and signed by appropriately qualified professional engineers.

- Occupational Health & Safety (OH&S): The Contractor shall be responsible for all occupational health and safety on the Site, from and after mobilization to the Site. Without limiting the foregoing, the Contractor shall prepare, implement and maintain an OH&S Program, complying with all Applicable Law and the requirements of any Authority Having Jurisdiction, to ensure a safe working environment on the Site. The OH&S Program will include full time attendance of an Occupational Health Nurse or equivalent and all other appropriately qualified first aid personnel and equipment required by Applicable Law. Prior to mobilization to Site, the Contractor will prepare and submit to the Owner, for review and acceptance by the Owner, the Contractor's proposed OH&S Program. The Contractor shall make such changes to its proposed OH&S Program as the Owner may require. Unless the Owner otherwise agrees, no part of the Work may commence on Site until after the OH&S Program has been accepted by the Owner. The Contractor's OH&S Program will include as a minimum;

(a) an "Emergency Evacuation Plan" to ensure access to emergency medical care for on-site personnel.,

(b) provisions for Site specific orientation and indoctrination for all workers at the Site,

(c) provisions for protection of personnel from dangerous wildlife,

(d) Mine Rescue provisions,

(e) Site indoctrination/orientation plans for all personnel on site, including visitors.

(f) Code of conduct for all employees on Site.

- Waste Control & Environmental Protection: The Contractor will be responsible for all aspects of the proper management and containment of all wastes and Hazardous Substances discharged or produced during the course of the Work, including control and treatment of Site run-off or contaminated ground water. Wastes and Hazardous Substances shall be disposed of only in accordance with Applicable Law and the requirements of every Authority Having Jurisdiction. The Contractor will ensure that its operating practices do not damage the environment. To this end the Contractor will develop and provide to the Owner, a waste control and spill response contingency plan that will demonstrate actions to monitor, prevent and contain waste spills, regulatory authority reporting details, as well as provisions for clean-up and disposal of spilled materials and contamination.

  The Contractor will submit to the Owner its initial waste control and spill response contingency plan prior to mobilization to the Site for the Owner's review and approval. In addition, any changes to the plan arising during the course of the work will be similarly subject to the Owner's review and approval.

- Communications Systems: The Contractor will take over the Owner's communications systems for both on and off site communications and will make modifications as necessary to maintain operation during demolition. As indicated in Scope of Work, Appendix SW5, some antennae and receiver equipment on the Site is owned or leased from the Telephone/T.V. Utility providers. The Contractor will co-ordinate dismantling and return of this equipment to the respective utilities following the Contractor's continuing usage term.

- Salvaged Equipment: The Owner has designated items of equipment which will be salvaged and shipped for reuse or resale by the Owner. These items are listed in Appendix SW6. The Contractor will be responsible for removal, cleaning, disassembly, packaging and preparation and loading to ship. The Owner will be responsible for shipping costs on a cost reimbursable basis, for equipment salvaged by the Owner.

- Construction Surveyor: The Contractor will provide the services of a qualified and experienced construction surveyor, who shall have qualifications and experience acceptable to the Project Manager.

- Snow Removal: The Contractor will be responsible for snow removal throughout the Site, ensuring roadways and runway are accessible. Snow dumps must not be located near or in areas adjacent to or draining to the ocean.

- Project Reporting: The Contractor will maintain detailed work schedules as required to monitor and properly forecast the progress of the Work, in a form and with content acceptable to the Owner, showing all major activities of the Work, including each of the major activities identified in the above Sections 3.1 to 3.20 inclusive, and resource loading for those activities. These schedules shall be updated on a periodic basis at a frequency to be specified by the Project Manager (no less than weekly and no greater

than monthly). Updated schedules shall indicate progress to date and shall indicate any change in resources necessary to maintain the overall Construction Schedule.

The Contractor will maintain an activity log to record daily work activities, estimated tonnages or volumes moved for disposal, decontamination performed, where materials are disposed and significant occurrences. Disposal quantities will be maintained in a spreadsheet format and will show total quantities. An example of Activity Log and disposal quantities spreadsheet is included in Appendix SW1.

The Contractor will maintain a daily photographic record of materials placed in the LRD quarry. The photographs will be in digital format. The Contractor will maintain an equipment decontamination log that will contain a description of the equipment, date decontaminated, disposal method and location.

The Contractor will submit to the Project Manager, a Monthly Report which will include, without limitation, safety statistics, Daily Activity Logs, updated Project Schedule and Quantities spreadsheets.

3.20.2 Related Work Specified Elsewhere in this Contract

- Nil

3.20.3 Related Work Not Included in This Contract

- Nil

3.20.4 Drawings and Specifications

- Nil

END OF SCOPE OF WORK