Red Dog Mine
Closure and Reclamation Plan

Supporting Document G
Demolition

Red Dog Mine
Closure and Reclamation Plan

Demolition Cost Estimates
(Denison Environmental Services, 2004)

Demolition Cost Estimate:

Red Dog Mine, Alaska

Prepared for

SRK Consulting & SENES Consultants

Report Prepared by

Denison
Environmental
Services
a division of Denison Mines Inc.

October 2004

Demolition Cost Estimate:

In support of Financial Assurance Determination for

Red Dog Mine, Teck Cominco Alaska Incorporated

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October 2004

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1 Introduction

1.1 Introduction

The Red Dog Mine in northwest Alaska is the world's largest zinc producer with significant production of lead and silver as well. Although the mine is expected to operate in excess of another 25 years on identified resources, Teck Cominco Alaska (TCAK) is in the midst of preparing a comprehensive document to plan the eventual closure and rehabilitation of the Red Dog Mine. A part of the work necessary to rehabilitate the site will be the decommissioning of the infrastructure that will not be required in the long term. Denison Environmental Services (DES) specializes in performing mine closure work. The role of DES on this project is to prepare an estimate for the cost to decommission the surplus infrastructure that would exist at mine closure. This exercise is being completed in support of the Closure Plan and relates to the development of a financial assurance valuation. For the purpose of this evaluation, closure is assumed to occur at the end of the current license period in 2010. The wages and other related costs are based on current (2004) values and projections to future years will be noted accordingly.

Ian Ludgate and Rob Fennema of DES visited the mine site from February 25 to 28, 2004 to experience the scope of the operation, inspect the infrastructure, and meet with the technical staff who would be able to assist in providing information relating to the project.

1.2 Scope of Work

The Work described herein is for the demolition and removal to the onsite landfill of surplus surface infrastructure at Red Dog Mine at closure. The final scope of demolition will depend on the post-mining monitoring and maintenance requirement and the specific requests of the owner for assets to remain or be reallocated.

The assumed disposition of specific structures is described in Section 3.2. Other key assumptions are listed below.

- Assets that may be used at closure, such as mobile equipment, were not incorporated into this estimate. Likewise, funds recovered from asset sales are not credited in this exercise. For example, steel is considered a potential asset. but has not been credited to the project. Similarly, recycling is excluded from the cost calculations. It is assumed that only a viable self funding recycling program would be desirable but its implementation would be a corporate decision based on the circumstances present at the time of demolition. Further comments on recycling are included in Section 4.2 of this report is for information purposes only.

- The wage costs are based on GENERAL DECISION: AK20030001 03/05/2004 AK1 which is a table of rates applicable to heavy construction projects undertaken by the Alaskan Government. Use of this rate structure is applicable in the event closure responsibility reverts to the Alaskan government.

- The rates for equipment are typical of the industry. Fuel costs are based on current costs provided by TCAK management.

- The cleanup of fill in the vicinity of the mill has been included, but additional fill removal for remediation of hydrocarbon or metal contamination has not been included.

1.3 Reclamation Strategies

Several factors are considered when optimizing the decommissioning process. The underlying priorities of the program at Red Dog will be to:

- Minimize the environmental impact during the decommissioning activity.
- Assess and manage the hazards to minimize worker health and safety risks related to the decommissioning activities.
- Evaluate and capitalize on all opportunities to use the equipment and assets already on site for the closure work.
- Maximize opportunities to recover asset value from major components.
- Complete the decommissioning efficiently.

1.4 Basis for Costing

The document entitled, *Red Dog Mine Waste Management Permitting Program DRAFT Task L-02: Develop Basis for Costing*, provides the following information related to structure removal and demolition:

> This reclamation activity includes the demolition and removal or disposal of structures such as buildings, crushers, storage bunkers or silos, conveyor systems, foundations, and other facilities at the mine site. In estimating demolition costs, all facilities, unless they will remain under the approved post-mining land use, will be removed or demolished and the debris disposed of properly. The R.S. Means Building, Mechanical, and Heavy Construction Cost Data handbooks are typically used to estimate building demolitions costs.
>
> In order to estimate the demolition costs, data describing the physical characteristics of all structures present at the project site must be obtained. The type of building material, the size of the structure, the type of foundation, primarily affects the cost of demolition, site access and whether or not the debris can be disposed of on-site.
>
> Demolition costs are highly variable depending not only upon the size of the structure but also the type of construction. Simple estimates that are based only upon the size of the building may significantly underestimate the costs for building demolition. Care must be taken to include the "other costs" associated with structure removal, such as: costs for salvaging material or equipment; snow removal; electrical power supply; and the draining, removing, cleaning and disposal of all fluids, lubricants, fuel, chemicals, minerals, and hazardous materials from all equipment, vessels, tanks and piping. It is recommended that operators obtain site-specific quotes for the demolition of structures from a contractor that has construction and demolition experience in the arctic and sub-arctic.

2 Facilities

2.1 Description

The Mill area and supporting infrastructure is divided into sub-areas and a general description of the size and materials contained in each area is provided below.

2.1.1 Red Dog Creek Diversion and Seepage Collection Facilities

The Red Dog Diversion consists of a set of pumps and small pumphouse, a backup generator set and a wooden retaining wall (150'x 30').

2.1.2 Water Treatment Plant #1 Area

The Water Treatment Plant #1 (WTP#1) is the original water treatment facility. The main structure is a 120' diameter clarifier that includes a domed metal cover, steel bottom and 20' high steel walls. There is an access tunnel and an underflow tunnel. The drive support and drive unit are accessed by a walkway from Module 2020 in the mill. There is a concrete foundation around the perimeter of the clarifier.

2.1.3 Water Treatment Plant #2 Area

Water Treatment Plant #2 (WTP#2) consists of 4 steel tanks and a 200' diameter clarifier. The clarifier was originally a mill feed thickener and consists of 17' high insulated steel walls on a concrete ring wall foundation. The bottom is a composite of geotextile and HDPE membrane over compacted fill. Below this is the underflow tunnel and emergency access tunnel, both of corrugated steel pipe. The drive support and drive unit are accessed by a 102' long walkway from the main access utilidor. The tanks (12'Ø, 21'Ø, 45'Ø & 15'Ø) are located outside in a concrete bounded area.

2.1.4 Sand Filter Plant Area

The Sand Filter plant is a 120' x 60' fabric enclosure that contains three 22'Ø sand filters and associated pumps and blowers. This building is expected to be a part of the ongoing monitoring infrastructure.

2.1.5 Support Services

The Potable Water Plant, Sewage Treatment Plant and an Emergency Generator are located in portable buildings to the east of the 200'Ø clarifier. These buildings have a total footprint of 3,260 ft^2 and are steel frame construction and skid mounted on a concrete slab.

2.1.6 Jaw Crusher Area

The Jaw Crusher Plant is adjacent to a concrete retaining wall that is nearly 200' long and rises to 45' high. The Plant building is 60' x 35' by 45' high with an additional pit shelter covering the dump point and rock breaker. The Jaw Crusher is 48"x60" and feeds Conveyor 1 to the Coarse Ore Storage.

2.1.7 Gyratory Crushing Plant Area

The ore from the mine stockpile area is crushed in a 42-65 gyratory crusher. The dump point is sheltered by an 80' x 30' x 40' high. enclosure over the truck dump hopper and rock breaker. The foundation that houses and supports the crusher is 25' x 30' x 70' high. The upper level of the building contains the truck dump and rock breaker, the level below is the crusher, below that the surge capacity of 150 tons and finally the lowest foundation levels are the apron feeder (54' x 32") and Conveyor 1A. Attached to the foundation and extending the full height of the Crusher are the support equipment rooms for air, hydraulics

and access. This part of the building is steel and measures roughly 75' x 25' at the base gradually reducing in size as it steps up the levels. The top level is about 25' x 27' at the interface with the base of the pit shelter. Conveyor 1A is 42" wide inside a 10' diameter insulated gallery that extends 723' to the Coarse Ore Storage. The Crusher is constructed adjacent to the Blending Pile. The working level of the Blending Pile is held by a 500' long retaining wall on the North side which rises from the Coarse Ore Stockpile area to over 45' high on the East side of the Gyratory Crusher Plant.

2.1.8 Coarse Ore Storage Area

The Coarse Ore Storage consists of a shelter which spans 215' by 160' and rises to 85' above the working level. The main steel frames rest on buried concrete footing foundations. The structure and siding are steel. Under the stockpile 2 feeders each discharge ore onto Conveyor 2A (310'), Conveyor 2B (310') and Conveyor 2C (210) to feed the grinding circuits. Conveyor 2C, in turn via the transfer tower, feeds Conveyor 3C (275').

2.1.9 Concentrator

The concentrator consists of 14 primary modules; 9 of which were original construction and 5 that have been added during subsequent expansions. These modules are numbered 2003 thru 2010, 2016, 2020, 2021, 2025 and 2030.

There have been two basic types of construction employed; modular off-site construction and stick build on-site construction. The core modules are constructed of massive lateral beams boxed to form the base of each section. Each module is supported on a series of steel piers which extend to concrete foundations. An air space of approximately 5 feet is provided between the bottom of the modules and the ground. A suspended concrete slab on top of the beams provides a working floor. All modules are steel frame with insulated steel cladding.. The stick built buildings are conventional steel frame construction on concrete slabs on grade. The following is a description of the size and purpose of each module;

- Module 2003 - The original primary grinding circuit consisting of two 22'Ø x 9' long SAG mills is installed in module 2003. The original machine shop was also housed in one end of this module. This 100' x 75 and 65 ft high module is one of the original 9. It is steel construction with insulated steel cladding and is elevated above grade as described above. An extension was built on Module 2003 in 1997 to provide additional shop and office facilities. The shop building is 60' x 45' and is steel construction on a concrete slab on grade. The office and lunchroom section of this building is two stories at 45 x 50' and is elevated 20 ft above grade.
- Module 2004 - The original 10'8" diameter X 15'L ball mill and associated pumps and cyclones are installed in module 2004. This module is 55' x 85' and 65 ft high and is an elevated steel structure with insulated steel cladding.
- Module 2005 - Module 2005 houses the concentrate regrind mills. The regrind mills consist of ten 450 kW Verti-mills and associated pumps, cyclones and maintenance area. Module 2005 is 100' x 75' by 65' high and is elevated steel construction with insulated steel cladding.
- Module 2006 - Module 2006 was installed in 1993 to house two 12'Ø x 12'long ball mills and associated pumps and cyclones. This module, which is 80' x 75' and 65 feet high, was stick built, steel construction on a slab-on-grade.
- Module 2007 - Module 2007 originally contained the lead and zinc rougher flotation cells, the lead thickener and the lead stock tanks. Although most of the same equipment remains, the flotation cells are now the zinc retreat circuit (fifteen $50m^3$ cells) and the lead thickener is now a water tank. This module also houses the flotation blowers and the Joy air compressors. The dimensions of this module are

145' x 70' by 65' high. The roof and the floor are typical module construction with insulated steel roofing and elevated 2' slab floor. Since this module is on the interior of the mill, the walls are simply columns with either non-insulated sheathing or no sheathing.

- Module 2008 - Module 2008 houses the zinc 1st cleaner circuit (eleven 50m^3 flotation cells), the lead cleaner circuit (four 9' diameter flotation columns and six 16m^3 flotation cells) and 2 zinc stock tanks. The dimensions of this module are 145' x 70' by 65' high. The roof and the floor are typical module construction with insulated steel roofing and elevated slab floor. Part of the west wall and the south wall are external walls with insulated steel cladding.
- Module 2009 – This module houses four 12' diameter flotation columns and four Sullair compressors which supply air to the columns. This module was added on in 1997 during the PRI expansion. This module was stick built on site and is 45' x 75' and 75' high built on a slab on grade. A 10' x 10' by 70 ft long enclosed pipe bridge connects to the reagent handling building (Module 2016)
- Module 2010 – This module was installed in 1997 to house the PRI grinding circuit expansion. The equipment in this module includes a 22'Ø x 9' long SAG mill, a 16'Ø x 18' long ball mill and the associated pumps and cyclones. Module 2010 is mounted on grade and is 106' x 77' and 65 ft high.
- Module 2011 – This module was one of the original 9 modules that were brought in pre-fabricated. The module originally housed 4 filter presses; 3 for zinc and one for lead. The building was extended by 20 ft and a 5th press added in 1997 to handle the increased production. The module is 100' x 75' and 65 ft high and is elevated steel construction with insulated steel cladding. A 12' wide conveyor gallery with two 30" wide conveyors exits module 2011 to the concentrate storage building.
- Module 2016 – This is the reagent preparation building and is a free standing building from the rest of the mill complex. This 200' x 65' x 50ft high building is mounted on a concrete slab on grade. The building is steel frame construction with insulated steel cladding. The building contains a number of reagent mixing and holding tanks ranging in size from 9'Ø to 17'Ø.
- Module 2020 – The zinc 2nd cleaner circuit, the tankage for WTP#1 and the lime slaking systems are contained in this module. Module 2020 is elevated steel frame construction and is 63' x 65' x 55' high.
- Module 2021 – This module is only 45' long x 45' wide x 30' high. It is steel frame construction on a concrete slab on grade. This module is mainly the lime laydown area also contains three Sullair compressors.
- Module 2025 - This module houses the preflot circuit and the lead rougher flotation cells. The building was stick built on site in two separate expansions. The module is 120' long x 40' wide x 55' high and contains twelve 50 m3 flotation cells and supporting pumps. Module 2025 is steel frame construction erected on a slab-on-grade. The walls and roof are insulated steel sheeting.
- Module 2030 - This module was constructed during the VIP expansion in 2000 and is similar construction to the original 9 modules. It is 100' long x 70' wide x 85' high and contains fourteen 50 m3 flotation cells and four 12' diameter flotation columns. This module is constructed 10 ft above grade using heavy steel construction and insulated steel cladding. A pipe bridge (utilidor) exits the south end of this module to connect to the zinc thickener and the 6030 powerhouse.

2.1.10 Mill Concentrate Storage Building

The Mill Concentrate Storage Building is constructed of 14 massive steel frames on small concrete pad foundations. The main structure is 325' x 134' x 70' high. Conveyor 10 (30" width) runs the length of the Concentrate Storage Building from inside the mill nearly 400

feet. The perimeter is skirted with a concrete knee wall. The storage building does not include a concrete floor.

A truck loading bay was added along the full length of the east side to provide improved control of airborne emissions that are generated by handling the concentrate. The addition measures 325' x 18' x 20' high.

2.1.11 Lead and Zinc Thickeners

Both the lead and zinc thickeners are installed outside the main concentrator building with walkway/pipe bridge connections to the nearest module.

The lead thickener is 60' diameter with 35' high steel walls and an insulated domed metal roof. The lead thickener is bounded on three sides by modules 2030, 2008 and 2011

The zinc thickener is 140 ft diameter with 15' high steel walls resting on a concrete ring beam. The thickener is covered by an insulated metal dome. The zinc thickener is located south of the main concentrator complex between modules 2030 and 6030.

2.1.12 Airport and Original Construction Camp

The Airport Building and Original Construction Camp are known by 6002. The Airport consists of several small buildings and a 6000' runway. These are likely to remain after closure.

The original construction camp serves as overflow accommodations. The building is about 300' x 50' with two levels. The building appears to be deteriorating. The yard surrounding the camp is filled with shipping container storage, mobile equipment and other stored materials.

Depending on the scope of closure activities, this camp may have purpose prior to removal.

2.1.13 PAC

The Permanent Accommodations Complex (PAC) is a potentially valuable asset. The requirement for perpetual monitoring on site and possible other uses would make the PAC, or portions of it, logical buildings to preserve. The complex is composed of the main building (276' x 111' x 30' high) which contains the cafeteria, gym and residences. Joined to this by elevated corridors are the 5 residential wings (5 Wings x 150'L x 35'W x 35' H).

The PAC is constructed on piers elevated above the ground, to preserve the underlying permafrost. The clearance beneath the camp allows snow and winds at ground level to pass virtually unimpeded. The PAC is constructed of pre-fabricated modules joined on-site.

2.1.14 Freshwater and Overburden Seepage Recovery

The freshwater source for the property comes from Bonns Creek. The small pumphouse would likely remain at closure and continue to supply fresh water to the potable water treatment plant. The associated 6" HDPE piping would necessarily remain as well.

2.1.15 Fuels Distribution

The fuel comes into port via barge and is stored at the port tank farm. The fuel is trucked to the mine site bulk storage tanks. There are two 80' Ø x 32' high steel storage tanks with the regulation berms and associated equipment. These in turn feed via underground piping to the day tanks at the fuel Island and the powerhouse. The fuel Island is used to fill equipment and intermediate fuel haulers. Each of the 2 day tanks is 44' Ø x 30' high.

2.1.16 Process Water Supply

Process water is supplied to the concentrator by treating reclaim water from the tailings pond. The process water supply system consists of two floating barges, three HDPE pipes (28"Ø, 24"Ø and 16"Ø), Water Treatment Plant #1, a process water storage tank and distribution pumps and pipes. The floating barges consist of flat bottom steel hulls with a central pump well with ballast and flotation tanks. Each of the barges is 25' wide by 30' long with a steel frame and insulated clad building over the top. The process water tank is 30' diameter and the reclaim water lines are 4,800' long laid on grade from the reclaim barges to the water treatment plants.

2.1.17 Power Generation

Power is generated on-site by eight 5 MW diesel fired generators. These generators are housed in 2 separate powerhouses; 6 in the original powerhouse and 2 in the new powerhouse.

The original powerhouse (module 6022) is an elevated steel framed building with insulated steel cladding. It is connected on the south-east corner of the central concentrator complex. The original steel framed building was extended when the sixth generator was installed. The powerhouse is 138' long x 74' wide and 45 ft high. The building contains six 5MW generators, fuel and oil conditioning systems and engine cooling and heat recovery systems. The generators provide heated glycol which is used as the primary heating source for most site facilities.

The new powerhouse (module 6030) was installed in 2000 during the VIP expansion. The new powerhouse was brought in as a complete module and sits about 10 feet above grade. Module 6030 measures 75' x 70' x 45' high. There is also a 20' x 45' extension on the back to enclose the recently added SCR equipment. The new powerhouse is remote from the concentrator but is linked by Utilidors D and E.

It is assumed that the original powerhouse would become surplus at closure and that power supply would be handled by the newer generators in the module 6030.

2.1.18 Service Complex

The Service Complex, Module 6025, is comprised of three areas; a large open vaulted heavy equipment shop an open vaulted warehouse and maintenance support facility and the main mine administration complex including offices, laboratory, lunchroom and mine dry. The complex is joined to the concentrator complex by Utilidor B.

The Shop section is 215' x 100' x 45' high. The construction is heavy steel columns and roof beams with insulated panels sheathing the exterior. Internal barriers are a mix of cement, steel and framed. The Support side of the Services Complex measures 290' x 105' x 45' high.

2.1.19 HDPE Pipelines

The HDPE piping is used throughout the site for transporting slurry and water. Much of the pipe is integral to the water management and treatment processes. It is anticipated that most of the pipe will be integrated into the final closure design. The Tailings line and Red Dog Creek Mine line may become redundant.

Below is a table of major lines at the site.

Line	No.	Length (ft.)	Diameter
Reclaim Line 1	1	4,800	24"
Reclaim Line 2	1	4,800	16"
Reclaim Line 3	1	4,800	28"
Freshwater	1		6"
WTP#1 Over Flow	1		
WTP#2 Over Flow	1		
Red Dog Creek Interception	3		10"
Main Dam Seepage Return Line	1		
Seepage Return Line	1		
Tailings Discharge	1	10,000	24"
Red Dog Creek Mine Line	1	5000	12"

2.1.20 Other Buildings

There are a number of other smaller structures at Red Dog that have not been considered in this evaluation. These include cold storage buildings, batch plant, portable crushing plant, incinerators, ANFO plant, construction offices. These structures are expected to have minimal impact on the logistics and costs associated with the overall demolition plan.

2.2 Facilities to Remain at Closure

The scope of demolition work is dependent on the requirement of long term monitoring and the preferences of the Owner. The items expected to remain at closure are as follows:

- Water Treatment Plant #2 (WTP #2)
- Reclaim Barge #1
- Bonns Creek Freshwater Pumphouse and Supply Line
- Process Water Distribution
- Lime Slaking
- Sulphide Mixing (currently in 2016)
- Flocculant Preparation currently in 2025)
- Compressed Air (instrument operation and for the Lime Reactor Tank)
- Power House (6030)
- Fuel island day/tanks
- Potable water
- Sewage treatment
- Emergency power supply
- Red Dog Diversion and Seepage Collection System
- Tailings Dam and Seepage Collection System
- Overburden Dump Seepage Collection System
- Internal Road System to all infrastructure that will require maintenance
- Fuel Storage (1 – 1,000,000 US gal. Bulk Fuel Tank)
- Select Storage Area / Connex
- PAC (portions may be mothballed or removed)
- Airport Building and Runway
- ATCO Trailer Facilities
- Shop for mobile equipment and some mobile equipment

The remaining buildings to be decommissioned are essentially mill production facilities.

3 Demolition Methods

The modular steel frames of the mill modules typify the structural design at Red Dog. These structures were imported intact by specialized transport methods and placed on prepared columns set into the permafrost. The objective at closure would be to demolish the buildings by typical mechanical methods. This would include shears, grapples and hydraulic hammers mounted on track equipment to demolish, reduce and process the steel and concrete found in the structures. Use of 100,000 pound class of excavators with appropriate attachments is recommended to complete the demolition, reduction, sorting, loading and excavating.

As the main structures are removed, subsurface features such as service tunnels would be collapsed or otherwise decommissioned. Other underground services would remain buried with steps taken to plug voids such as large pipe ends. There is a buried service corridor from the Bulk Fuel Tanks to the "Fuel Island" and Power House. This feature will likely be preserved to provide a conduit to feed the generators that will remain at closure.

The electrical and communication system are integral to the mill. At closure, consideration must be given to the removal and rerouting of these services as required. Most likely a feed from the New Power House to the PAC and Water Treatment Building would be required. Reallocation of materials from the current configuration would likely be suitable. These functions would be outside of the scope of demolition.

The ground beneath the mill is contaminated with material containing elevated levels of lead and zinc concentrations which will require specific mitigating measures. For example, the steps to reduce dust contamination would include cleaning, wetting and organizing demolition to take advantage of prevailing winds and building orientation. These steps will help to reduce contamination becoming airborne and reaching the environment. The personal protection equipment that is required when working in and around the mill will include appropriate respiratory filtering equipment. Procedures for decontamination of personnel, equipment and recyclables will be developed.

Procedures will be developed for the disposition of contaminated material. The bulk contaminated material will be relocated to ensure that any runoff reports to the tailings area where the monitoring and treatment will effectively mitigate the potential effects. Any material with elevated pH and zinc concentration will be covered to minimize exposure to wind and steel will be cleaned prior to processing. Material Safety Data Sheets will be available for all products and the approved handling procedures will be followed.

The final cleanup may include transporting recoverable assets and recyclable material to the port. Cleanup of the port and port road would be dependant on the demolition schedule.

A number of contractual arrangements are possible for the demolition work ranging from use of (re-trained) site personnel to bringing in a specialist or general contractor. As required by State policy, the cost estimates developed herein do not allow for use of any of the materials and equipment currently available on site.

4 Salvage Asset Disposal

4.1 Asset Sales

Due to the location and demobilization costs, it will be feasible to recover only the most valuable of the assets or a large package of smaller assets.

The removal, preservation, packaging and shipping costs must be recovered against the value of the asset. The best opportunity is for an internal reallocation of assets to other properties or to mothball specific assets to hedge for this opportunity with the understanding that these assets may be scrapped at a future date.

The mine equipment market can be cyclical, making the task of forecasting the net value of assets at closure difficult.

For the purpose of closure cost estimating, no asset value is being accounted for. However, DES performed a cursory asset evaluation based on the inventory lists provided. The stationary and mobile equipment were reviewed separately. Each major component was given a high, low and medium value that might be expected. Unlike the demolition estimate, asset evaluation was based on the current condition of the equipment. With the expectation that the maintenance and replacement program would function normally until closure. The estimated median value for mobile equipment is $6.3 million (as is where is), while the stationary equipment estimated median value is $12.5 million. Our experience has demonstrated that successful sales programs may recover 30% of the estimated value. Therefore the realized value of the equipment is likely to be less than $6 million total. Demobilization and shipping fees are not included. Appendix B contains the details of the asset evaluation.

4.2 Recycling

The market and regulations will eventually determine the feasibility of recycling. Both recycling and non-recycling options will be explored at the time of closure. Resources, scheduling and cost implications will determine the viability.

Red Dog Mine Camp Solid Waste Landfill Permit #9832-BA005, which expired October 31, 2003, implied that recycling will be carried out. This permit will require clarification or modification at he time of full scale decommissioning.

Current prices for scrap steel are at unprecedented high levels. These values cannot be assumed to apply at the time of closure. The cost of delivering scrap steel to market in the south is estimated at $150 per ton including site preparation, handling costs and barge transport. The barge cost is based on full load return cost pricing. The scrap steel value and shipping costs existing at time of closure will determine the feasibility of recycling steel.

5 Waste Disposal Methods and Options

All Hazardous Material will be handled and disposed of according to regulations. Some chemical solutions and reagents may be safely neutralized on site and disposed of in the tailings area without adversely impacting the pond. Such work would be accompanied with a verified procedure and be authorized by Red Dog Environmental Personnel in

consultation with the State Regulators. Otherwise proper disposal will involve transport off-site.

Some inert wastes, such as plastics and insulation, will be placed in a landfill in lifts similar to the manner the landfill operates now. There is very little wood on site to deal with, however wood treated with a preservative will not be burned.

All waste that is destined for the landfill would be hauled in bulk by an off road unit.

The cleaning of steel may be required. This process would be integrated into the pre-planning to construct or designate a cleaning area that reports to the tailings basin.

Depending on the regulatory requirements, clean bulk steel may have to be separated from the siding and other demolition debris and stockpiled. Co-mingled and light steel would be directed to the landfill along with insulation and co-mingled concrete. All clean concrete could be placed in a specific depression or pit area as directed.

All equipment not required for long-term monitoring or as a recoverable asset will be processed as demolition debris, segregating bulk steel and identifying and removing contaminated materials as appropriate.

Any material separation required will be separated prior to loading the truck.

6 Cost Estimate

The estimated cost to demolish the mill and mine-related structures including estimated costs to remediate 92,000 yd^3 of impacted fill and an estimated 240 yd^3 of hydrocarbon contaminated fill would be in the range of $14 to $18 million (refer to Appendix A for breakdown). The cost to import clean material into the remediation footprint is included. Mine waste rock will be re-graded over the designated landfill. The cost of covering the landfill should be included separately under waste rock re-grading work.

It is understood that many of the structures on site will remain after closure. A listing of the structures expected to remain is provided in Section 3.2.

Owing to seasonal access constraints, equipment will be captured at the site for a period of time that will require its removal the following year. The demolition project costs have been estimated on the basis of a project expected to take one year with the bulk of the work performed in two summer sessions.

Any program to divert demolition steel through recycling should be self funding. The labour component that is integral to the hazardous material removals and general demolition preparation is included. Any additional cleanup, such as hydrocarbon contamination beneath the mill, is not included.

7 Closure

This demolition report is intended to establish the scope and ultimate cost of demolition work. With closure some 25 years in the future, it is clear that the work to be performed at final closure may differ from current expectations. The assumptions are likely to remain applicable for a similarly sized operation being decommissioned in 2031.

The actual physical demolition of the Red Dog Mine will be very similar to other mine demolition projects. Where this project differs is in the supply and access logistics that increase the costs significantly.

8 References (used in demolition cost estimate)

Solid Waste Permit Schedule of Deliverables; Status date: October 3, 2003

1999 Draft Reclamation Plan; Cominco Alaska Inc. Final Draft; October 2002

Draft Task L-02: Develop Basis for Costing "*Financial Assurance Guidelines*"; Memorandum from State of Alaska

Draft Waste Disposal Permit 0132-BA002; prepared by the Alaska Division of Air and Water Quality

TCAK report; "*Red Dog Mine Site Current Conditions*"; prepared for Waste Management Permitting Program; December 5, 2002

Red Dog Mine – Suspension Study May 2003, Waste Management Permitting Program Task L-04, TCAK report

AK20030001 03/05/2004 AK1 Wage Determinations for Alaska, Construction Types: Building and Heavy

Kennecott Greens Mining Company, General Plan of Operations App. 14 Att.A.1 Reclamation Plan Cost Estimate Revision, Revised for the Tailings Expansion Project Oct. 22, 2003

Discussions with staff during February 2004 site visit.

Appendix A – Demolition Cost Table

TCAK, Red Dog Mine
Summary Table for the Demolition Cost Estimate

TCAK Costs for Demolition Administration		
Contract Preparation		$ 25,000
Tendering		$ 25,000
Contract Administration		$ 200,000
Subtotal Demolition Administration		$ 250,000
Demolition Contract		
Performance Bond		$ 50,000
Supervision & Support Staffing		$ 1,750,000
Mobilization		$ 1,750,000
Hazardous Materials Abatement		$ 100,000
Demolition/ Cleanup		$ 6,068,000
Recycling		$ -
Demobilization		$1,5000,000
Subtotal Demolition Contract		$11,218,000
Other Associated Costs		
Demolition Contractor Profit[1]	10%	$ 1,121,800
Contingency (full Project)[2]	15%	$ 1,900,000
Total[3]		$14,489,000

Notes:
1 Profit of 10% is applied to the subtotal for the demolition contract.
2 Contingency of 15% is applied to the demolition administration and the demolition contract, including the demolition contractor profit.
3 The total shown includes the demolition administration, demolition contract and other associated costs .

Red Dog - Demolition Cost Estimate

Status	Section	Area/Item	Sub Component/Building/Section	Descr.	No.	Length (ft.)	Width (ft.)	Avg. Height (ft.)	*Method	Units	Equipment/ Manpower	Hours	Rate	Materials	Subtotal	No. 1 Steel (tons)	Scrap Steel (yds)	Wood (yds)	Concrete (yds)	Other (yds)	Hydrocarbons (litres)
	1001	Red Dog Creek Diversion and Seepage																			
Retain	1001		Retaining Wall			150	1	30	MECH	1	E345B	40	$ 209.80	0	$ 8,391.80			200	4	10	
										1	D9	10	$ 233.88	0	$ 2,338.75						
										2	AC35	20	$ 168.89	0	$ 6,755.40						
Retain	6005		Pumphouse & Gen. Trailer			20	20	15	MECH	1	E345B	5	$ 209.80	0	$ 1,048.98	5	2	33		2	500
										1	AC35	5	$ 168.89	0	$ 844.43						
	2000-1	Water Treatment Plant #1 Area																			
Retain	2000-1		Clarifier (steel bottom/wall)	0.041667			120	21	MECH	1	E345S	30	$ 237.30	0	$ 7,118.85	180	50			100	
										1	E345G	20	$ 227.30	0	$ 4,545.90						
										1	AC35	20	$ 168.89	0	$ 3,377.70						
Retain	2000-1		Clarifier Cover				120	20	MECH	1	E345G	15	$ 227.30	0	$ 3,409.43		50			20	
										1	AC35	10	$ 168.89	0	$ 1,688.85						
Retain	2000-1		Drive Support						MECH	1	E345S	10	$ 237.30	0	$ 2,372.95	5	2				100
			Walkway	Steel		97		10	MECH	1	E345G	10	$ 227.30	0	$ 2,272.95	7	2				
										1	AC35	5	$ 168.89	0	$ 844.43						
Retain	2000-1		WTP#1 MCC's						MECH	1	E345B	30	$ 209.80	0	$ 6,293.85	1	2				
Retain	2000-1		Emergency Exit Tunnel	CSP		92	7		MECH	1	E345G	15	$ 227.30	0	$ 3,409.43		5				
Retain	2000-1		Underflow Tunnel	CSP		102	8		MECH	1	AC35	15	$ 168.89	0	$ 2,533.28		15				
Retain	2000-1		Ring Wall Foundation																50		
		Water Treatment Plant #2 Area																			
Retain	2000-2																				
Retain	2000-2																				
Retain	2000-2		Tank Wall	0.041667			200	17	MECH	1	E345S	50	$ 237.30	0	$ 11,864.75	99	50			75	
										1	E345G	40	$ 227.30	0	$ 9,091.80						
										1	AC35	20	$ 168.89	0	$ 3,377.70						
Retain	2000-2		Clarifier Cover				200	20	MECH	1	E345G	15	$ 227.30	0	$ 3,409.43		20			50	
										1	AC35	10	$ 168.89	0	$ 1,688.85						
Retain	2000-2		Drive Support						MECH	1	E345S	10	$ 237.30	0	$ 2,372.95	8	5		10		
			Walkway	Steel		102		10	MECH	1	E345G	10	$ 227.30	0	$ 2,272.95	10	2				
										1	AC35	5	$ 168.89	0	$ 844.43						
Retain	2000-2		Underflow Pumphouse							1	E345B	30	$ 209.80	0	$ 6,293.85		2		10		
Retain	2000-2		Pipe Trench							1	E345G	15	$ 227.30	0	$ 3,409.43		20				
										1	AC35	15	$ 168.89	0	$ 2,533.28						
		Sand Filter Plant		Does not include pipes																	
Retain	6005		Lime Sludge Tank		1				MECH	1	E345B	20	$ 209.80	0	$ 4,195.90		2				
Retain	6005		Rapid Mix Tank		1				MECH	1	E345G	20	$ 227.30	0	$ 4,545.90		2				
Retain	6005		Lime Reactor		1				MECH	1	AC35	20	$ 168.89	0	$ 3,377.70		2				
Retain	6005		Floc Day Tank		1				MECH	1	D9	4	$ 233.88	0	$ 935.50		2				
Retain	6005		Floc Mix Tank		1				MECH								2				
Retain	6005		Clarifier		1				MECH								2				
Retain	6005		Sand Filters		3				MECH								2				
Retain	6005		Tent Enclosure		1	120	60		MECH											30	
			Potable Water Plant		1				MECH								2				
			Sewage Treatment Plant		1				MECH								2				
			Emergency Generator		1				MECH								2				500
	2001	Jaw Crusher Area	Shell/Building			60	35	43	MECH	1	E345G	30	$ 227.30	0	$ 6,818.85	103	50			20	200
	2001		Pit Cover			15	35	30	MECH	1	E345G	50	$ 227.30	0	$ 11,364.75	18	20				
	2001		Rock Breaker						MECH	1	E345H	50	$ 237.30	0	$ 11,864.75	2					
	2001		Foundation						MECH	1	E345S	30	$ 237.30	0	$ 7,118.85				25		
	2001		Retaining Wall	Concrete		200	2	30	MECH	1	E345B	80	$ 209.80	0	$ 16,783.60				300		
									MECH	2	AC35	130	$ 168.89	0	$ 43,910.10						
									MECH	1	D9	100	$ 233.88	0	$ 23,387.50						
	2002	Course Ore Storage Area																			
	2002		2C to 3C Transfer Tower			42	25	30	MECH	1	E345G	45	$ 227.30	0	$ 10,228.28	36	5		40		
	2002		Existing Conveyor			30			MECH	1	E345G	60	$ 227.30	0	$ 13,637.70		7				
	2002		Conveyor 2A	36"	9'	310	7	7	MECH	1	E345H	50	$ 237.30	0	$ 11,864.75	17	70		10		
	2002		Conveyor 2B	36"	9'	310	7	7	MECH	1	E345S	50	$ 237.30	0	$ 11,864.75	17	70		10		
	2002		Conveyor 2C	36"	9'	210	7	7	MECH	1	E345B	30	$ 209.80	0	$ 6,293.85	12	50		15		
									MECH	2	AC35	90	$ 168.89	0	$ 30,399.30						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						

Status	Section	Area/Item	Sub Component/Building/Section	Descr	No	Length (ft.)	Width (ft.)	Avg. Height (ft.)	*Method	Units	Equipment/ Manpower	Hours	Rate	Materials	Subtotal	No. 1 Steel (tons)	Scrap Steel (yds)	Wood (yds)	Concrete (yds)	Other (yds)	Hydrocarbons (litres)
	2002		Course Ore Storage Building	Part buried		215	160	85	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	1108	150		100		
	2012		Conveyor 1	36"	9'	450	7	7	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	25	50		50		
									MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	250	$ 168.89	0	$ 84,442.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2003	Primary Grinding & Mill Maintenance Facility Module																			
	2003		PG & MM Addition			100	60	75	MECH	1	E345G	150	$ 227.30	0	$ 34,094.25	818	739				
	2003		Mill Module			130	80	75	MECH	2	E345G	150	$ 227.30	0	$ 68,188.50	1418					
			Cyclone Addition			30	20	75	MECH	1	E345H	150	$ 237.30	0	$ 35,594.25	82					
									MECH	2	E345S	150	$ 237.30	0	$ 71,188.50						
									MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
									MECH	2	AC35	250	$ 168.89	0	$ 84,442.50						
									MECH	1	D9	30	$ 233.88	0	$ 7,016.25						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2004	Grinding Area																			
	2004		Grinding Module			100	80	75	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	1091					
			Equipment						MECH	1	E345G	120	$ 227.30	0	$ 27,275.40						
									MECH	1	E345H	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345S	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	200	$ 168.89	0	$ 67,554.00						
									MECH	1	D9	25	$ 233.88	0	$ 5,846.88						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2005	Zinc Regrind Area																			
	2005		Zinc Regrind Module			100	70	75	MECH	1	E345G	200	$ 227.30	0	$ 45,459.00	955					
									MECH	1	E345G	200	$ 227.30	0	$ 45,459.00						
									MECH	1	E345H	150	$ 237.30	0	$ 35,594.25						
									MECH	1	E345S	150	$ 237.30	0	$ 35,594.25						
									MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
									MECH	2	AC35	300	$ 168.89	0	$ 101,331.00						
									MECH	1	D9	20	$ 233.88	0	$ 4,677.50						
									MECH	1	LAB	200	$ 80.00	0	$ 16,000.00						
	2006	Ball Mill Addition Area																			
	2006		Ball Mill Addition			80	75	75	MECH	1	E345G	150	$ 227.30	0	$ 34,094.25	818					
									MECH	1	E345G	170	$ 227.30	0	$ 38,640.15						
									MECH	1	E345H	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345S	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
									MECH	2	AC35	270	$ 168.89	0	$ 91,197.90						
									MECH	1	D9	20	$ 233.88	0	$ 4,677.50						
									MECH	1	LAB	150	$ 80.00	0	$ 12,000.00						
	2007	Lead Flotation Area																			
	2007		Floatation Module			145	70	75	MECH	1	E345G	150	$ 227.30	0	$ 34,094.25	1384					
									MECH	1	E345G	200	$ 227.30	0	$ 45,459.00						
									MECH	1	E345H	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	280	$ 168.89	0	$ 94,575.60						
									MECH	1	D9	40	$ 233.88	0	$ 9,355.00						
									MECH	1	LAB	200	$ 80.00	0	$ 16,000.00						
	2008	Zinc Flotation Module Area																			
	2008		Mill Module			145	70	75	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	1384					
	2008		Lead Thickener			200	3	35	MECH	1	E345G	200	$ 227.30	0	$ 45,459.00	38					
									MECH	1	E345H	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	280	$ 168.89	0	$ 94,575.60						
									MECH	1	D9	40	$ 233.88	0	$ 9,355.00						
									MECH	1	LAB	200	$ 80.00	0	$ 16,000.00						

Status	Section	Area/Item	Sub Component/Building/Section	Descr.	No.	Length (ft.)	Width (ft.)	Avg. Height (ft.)	*Method	Units	Equipment/ Manpower	Hours	Rate	Materials	Subtotal	No. 1 Steel (tons)	Scrap Steel (yds)	Wood (yds)	Concrete (yds)	Other (yds)	Hydrocarbons (litres)
	2009	Compressor Building Area																			
	2009		Compressor Building			40	75	70	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	239					
	2009		Pipe Bridge			70	10	10	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	8					
			Equipment						MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2010	Grinding Building Addition Area																			
	2010		Grinding Building Addition			105	75	60	MECH	1	E345G	50	$ 227.30	0	$ 11,364.75	537					
	2010		Conveyor 3A			40	36"		MECH	1	E345G	100	$ 227.30	0	$ 22,729.50						
	2010		Conveyor 3B			40	36"		MECH	1	E345H	50	$ 237.30	0	$ 11,864.75						
	2010		Conveyor 3C			275	36"	9'	MECH	1	E345S	60	$ 237.30	0	$ 14,237.70						
									MECH	1	E345B	40	$ 209.80	0	$ 8,391.80						
									MECH	2	AC35	60	$ 168.89	0	$ 20,266.20						
									MECH	1	D9	20	$ 233.88	0	$ 4,677.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2011	Dewatering																			
			Pressure Filters			95	75	75	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	972					
			Air Receivers						MECH	1	E345G	120	$ 227.30	0	$ 27,275.40						
									MECH	1	E345H	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345S	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	200	$ 168.89	0	$ 67,554.00						
									MECH	1	D9	25	$ 233.88	0	$ 5,846.88						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2012	Gyratory Crushing Plant Area																			
	2012		Gyratory Crusher Pit Shelter			80	30	40	MECH	1	E345G	80	$ 227.30	0	$ 18,183.60	109					
	2012		Foundation			30	25	70	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40						
			Lower Building			80	30	40	MECH	1	E345H	150	$ 237.30	0	$ 35,594.25						
	2012		Retaining Wall			500		45	MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
	2012		Conveyor 1A	36"	9'	723	10	10	MECH	1	E345B	150	$ 209.80	0	$ 31,469.25	82					
									MECH	2	AC35	80	$ 168.89	0	$ 27,021.60						
									MECH	1	D9	200	$ 233.88	0	$ 46,775.00						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
Retain	2016	Reagent Handling																			
	2016		RH Building			200	65	50	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	739					
									MECH	1	E345G	170	$ 227.30	0	$ 38,640.15						
									MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2018	Mill Concentrate Storage																			
	2018		Mill Concentrate Storage Building			325	134	70	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	1155			300		
	2018		Truck Loading			325	18	20	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	133			200		
	2018		Conveyor 10			395	30"		MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2020	Lime Slaking																			
	2020		Lime Slaking Module			66	63	55	MECH	1	E345G	150	$ 227.30	0	$ 34,094.25	416					
									MECH	1	E345G	170	$ 227.30	0	$ 38,640.15						
									MECH	1	E345H	120	$ 237.30	0	$ 28,475.40						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
									MECH	2	AC35	270	$ 168.89	0	$ 91,197.90						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	150	$ 80.00	0	$ 12,000.00						

Status	Section	Area/Item	Sub Component/Building/Section	Descr.	No	Length (ft.)	Width (ft.)	Avg. Height (ft.)	*Method	Units	Equipment/ Manpower	Hours	Rate	Materials	Subtotal	No. 1 Steel (tons)	Scrap Steel (yds)	Wood (yds)	Concrete (yds)	Other (yds)	Hydrocarbons (litres)
	2025	Lead Flotation																			
	2025		Lead Flotation Addition			62	40	60	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	169					
	2025		Lead Flotation Addition 2			62	40	60	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	169					
									MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	2030	Zinc Rougher/ Cleaner Flotation Area																			
	2030		Zinc Thickener (steel bottom)	0.041667			140	15	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	60					
	2030		Zinc Thickener Cover				140	15	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15						
	2030		Zinc Drive Support			140	10	10	MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
	2030		Zinc Underflow Tunnel			100	8	8	MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
	2030		Building Addition			100	70	85	MECH	1	E345B	80	$ 209.80	0	$ 16,783.60	1200					
									MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
	6002	Airport and Connex																			
			Airport						MECH	1	E345G	0	$ 227.30	0	$ -	4000		400	200	1000	
			Connex Storage						MECH	1	E345G	200	$ 227.30	0	$ 45,459.00						
			Rebar Bending						MECH	1	E345H	40	$ 237.30	0	$ 9,491.80						
			Equipment Repair (tent)						MECH	1	E345S	40	$ 237.30	0	$ 9,491.80						
			Construction Camp						MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
			Bone Yards						MECH	2	AC35	200	$ 168.89	0	$ 67,554.00						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	400	$ 80.00	0	$ 32,000.00						
Retain	6003	PAC																			
Retain	6003		Accomodations	Wing	5	150	35	35	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	1045				400	
Retain	6003		PAC			276	111	25	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	870				400	
Retain	6003		PAC Extension						MECH	1	E345H	80	$ 237.30	0	$ 18,983.60						
Retain	6003		Sewage Treatment Plant						MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
Retain	6003		Potable Water Treatment		1	32	18	22	MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
	6003		Wood Shop						MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
			Emergency Services Building (Addition)						MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
Retain	6005	Freshwater and Overburden Seepage Recovery																			
Retain	6005		Freshwater Tank						MECH	1	E345G	120	$ 227.30	0	$ 27,275.40						
Retain	6005		Freshwater Pumphouse (mill)			40	15	18	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	12					
Retain	6005		Bons Creek Freshwater Pumphouse		1	40	15	18	MECH	1	E345H	80	$ 237.30	0	$ 18,983.60	12					
Retain	6005		Kivalina Overburden Pumps and Pipe						MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	80	$ 209.80	0	$ 16,783.60						
									MECH	2	AC35	50	$ 168.89	0	$ 16,888.50						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
Retain	6007	Fuels Distribution																			
Retain	6007		Fuels Tanks		2		80'	32'	MECH	1	E345G	0	$ 227.30	0	$ -	195					
Retain	6007		Piping to Fuel Island						MECH	1	E345G	60	$ 227.30	0	$ 13,637.70						
Retain	6007		Fuel Island		2		44	30	MECH	1	E345H	0	$ 237.30	0	$ -	70					
									MECH	1	E345S	40	$ 237.30	0	$ 9,491.80						
			2 x 1,000,000 US gals.						MECH	1	E345B	40	$ 209.80	0	$ 8,391.80						
									MECH	2	AC35	100	$ 168.89	0	$ 33,777.00						
									MECH	1	D9	30	$ 233.88	0	$ 7,016.25						
									MECH	1	LAB	120	$ 80.00	0	$ 9,600.00						
			Decontamination of Steel and Pipe removal												$ 100,000.00						

Status	Section	Area/Item	Sub Component/Building/Section	Descr.	No.	Length (ft.)	Width (ft.)	Avg. Height (ft.)	*Methoc	Units	Equipment/ Manpower	Hours	Rate	Materials	Subtotal	No. 1 Steel (tons)	Scrap Steel (yds)	Wood (yds)	Concrete (yds)	Other (yds)	Hydrocarbons (litres)
Retain	6017	Process Water Plant																			
Retain	6017		Process Water Pumphouse						MECH	1	E345G	10	$ 227.30	0	$ 2,272.95						
Retain	6017		Incinerator						MECH	1	E345G	15	$ 227.30	0	$ 3,409.43						
Retain	6017		Reclaim Barge						MECH	1	E345H	10	$ 237.30	0	$ 2,372.95						
Retain									MECH	1	E345S	10	$ 237.30	0	$ 2,372.95						
Retain									MECH	1	E345B	10	$ 209.80	0	$ 2,097.95						
Retain									MECH	2	AC35	20	$ 168.89	0	$ 6,755.40						
Retain									MECH	1	D9	5	$ 233.88	0	$ 1,169.38						
Retain									MECH	1	LAB	40	$ 80.00	0	$ 3,200.00						
	6022	Original Power House Area																			
	6022		Power House			74	113	45	MECH	1	E345G	120	$ 227.30	0	$ 27,275.40	856					
	6022		Power House Addition			74	20	45	MECH	1	E345G	170	$ 227.30	0	$ 38,640.15	152					
									MECH	1	E345H	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345S	100	$ 237.30	0	$ 23,729.50						
									MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
									MECH	2	AC35	270	$ 168.89	0	$ 91,197.90						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	160	$ 80.00	0	$ 12,800.00						
	6025	Service Complex																			
	6025		Vehicle Shop			215	100	45	MECH	1	E345G	100	$ 227.30	0	$ 22,729.50	1099					
	6025		Support Facility			290	105	45	MECH	1	E345G	160	$ 227.30	0	$ 36,367.20	1557					
	6025		Truck Scales						MECH	1	E345H	120	$ 237.30	0	$ 28,475.40						
	6025		Emergency Generators						MECH	1	E345S	120	$ 237.30	0	$ 28,475.40						
	6025		Power House Support						MECH	1	E345B	100	$ 209.80	0	$ 20,979.50						
	6025		Assay Lab						MECH	2	AC35	160	$ 168.89	0	$ 54,043.20						
									MECH	1	D9	60	$ 233.88	0	$ 14,032.50						
									MECH	1	LAB	300	$ 80.00	0	$ 24,000.00						
Retain																					
Retain	6030	New Power House																			
Retain	6030		New Power House			75	70	50	MECH	1	E345G	60	$ 227.30	0	$ 13,637.70	477	150		10		500
Retain	6030		Utilidor E						MECH	1	E345G	80	$ 227.30	0	$ 18,183.60		150				
Retain									MECH	1	E345H	10	$ 237.30	0	$ 2,372.95						
Retain									MECH	1	E345S	60	$ 237.30	0	$ 14,237.70						
Retain									MECH	1	E345B	20	$ 209.80	0	$ 4,195.90						
Retain									MECH	2	AC35	60	$ 168.89	0	$ 20,266.20						
Retain									MECH	1	D9	20	$ 233.88	0	$ 4,677.50						
Retain									MECH	1	LAB	400	$ 80.00	0	$ 32,000.00						
		HDPE Pipelines																			
Retain	HDPE		Reclaim Barge Line 1		1	2400	24"														
Retain	HDPE		Reclaim Barge Line 2		1	2400	16"														
Retain	HDPE		Freshwater		1		6"														
Retain	HDPE		WTP#2 Over Flow		1																
Retain	HDPE		WTP#1 Over Flow		1																
Retain	HDPE		Red Dog Creek Interception		3		10"														
Retain	HDPE		Main Dam Seepage Return Line		1																
Retain	HDPE		Seepage Seepage Return Line		1																
Retain	HDPE		Tailings Discharge		1	5000	16"														
	HDPE		Red Dog Creek Mine Line		1	5000	12"														
		Cleanup of Contaminated Rockfill	Dozer time covered																		
			Estimated Quantity	92000	yd3								$ 7.00		$ 644,000.00						
			Rock Backfill - Haulage	37500	yd3								$ 7.00		$ 262,500.00						
		Hydrocarbon remediation	estimated quantity	240	yd3								$ 42.00		$ 10,080.00						
																No. 1 Steel (tons)	Scrap Steel (yds)	Wood (yds)	Concrete (yds)	Other (yds)	Hydrocarbons (litres)
											Demolition Subtotal				$ 6,068,138.28						
											Mobilization			Barge	$ 1,500,000.00	24946	1758	633	1334	2107	1800
														Other	$ 250,000.00						
											Demobilization			Barge	$ 1,500,000.00						
		Est. Value for Bonding									Administration Total				$ 1,754,000.00						
		$ 20,000,000.00									Totals				$ 11,072,138.28						
											Profit				$ 1,107,213.83						
															$ 12,179,352.10						
											Contingency		15%		$ 1,826,902.82						
											Final Total				$ 14,006,254.92						

Appendix B – Asset Evaluation Table

Year	Unit Description	LOW	MED	HIGH
89	16-G GRADER	$ 50,000.00	$ 65,000.00	$ 85,000.00
89	16-G GRADER	$ 50,000.00	$ 65,000.00	$ 85,000.00
89	16-G GRADER	$ 50,000.00	$ 65,000.00	$ 85,000.00
1	16-H GRADER	$ 60,000.00	$ 70,000.00	$ 90,000.00
90	CRUSHER - JAW 24" X 36" Portable	$ 50,000.00	$ 65,000.00	$ 75,000.00
90	CRUSHER - CONE 54" PORTABLE	$ 50,000.00	$ 65,000.00	$ 75,000.00
0	DM45/DML - HP INGERSOLL RAND BLAST HOLE DRILL	$ 150,000.00	$ 200,000.00	$ 250,000.00
3	DM45/DML - HP INGERSOLL RAND BLAST HOLE DRILL	$ 200,000.00	$ 275,000.00	$ 350,000.00
89	966-D WHEEL LOADER	$ 65,000.00	$ 75,000.00	$ 90,000.00
90	IT-28 LOADER-TOOL CARRIER	$ 35,000.00	$ 40,000.00	$ 50,000.00
96	WA450 WHEEL LOADER-KOMATSU	$ 100,000.00	$ 150,000.00	$ 175,000.00
96	WA450-2 WHEEL LOADER-KOMATSU	$ 75,000.00	$ 80,000.00	$ 100,000.00
96	WA450 WHEEL LOADER-KOMATSU	$ 75,000.00	$ 80,000.00	$ 100,000.00
89	WELDER - FUSION UNIT 6" TO 18"	$ 15,000.00	$ 20,000.00	$ 25,000.00
89	WELDER - FUSION UNIT 12" TO 36"	$ 25,000.00	$ 35,000.00	$ 45,000.00
98	ARGO 8X8 CONQUEST	$ 10,000.00	$ 15,000.00	$ 20,000.00
2	BOBCAT 553 - MILL OPS.	$ 8,500.00	$ 10,000.00	$ 12,000.00
2	BOBCAT 553	$ 8,500.00	$ 10,000.00	$ 12,000.00
2	BOBCAT S250	$ 8,500.00	$ 10,000.00	$ 12,000.00
92	777-B 85-T HAUL TRUCK / WATER	$ 65,000.00	$ 75,000.00	$ 90,000.00
89	777-B 85-T HAUL TRUCK	$ 50,000.00	$ 60,000.00	$ 80,000.00
96	777-B 85-T HAUL TRUCK	$ 95,000.00	$ 125,000.00	$ 150,000.00
0	777-D 100-T HAUL TRUCK	$ 125,000.00	$ 150,000.00	$ 200,000.00
0	777-D 100-T HAUL TRUCK	$ 125,000.00	$ 150,000.00	$ 200,000.00
0	777-D 100-T HAUL TRUCK	$ 125,000.00	$ 150,000.00	$ 200,000.00
1	777-C 85-T HAUL TRUCK	$ 150,000.00	$ 200,000.00	$ 250,000.00
1	777-C 85-T HAUL TRUCK	$ 150,000.00	$ 200,000.00	$ 250,000.00
97	GMC 4X4 SUBURBAN / MANAGEMENT	$ 5,000.00	$ 6,500.00	$ 8,500.00
97	GMC 4X4 SUBURBAN /	$ 5,000.00	$ 6,500.00	$ 8,500.00
97	GMC 4X4 SUBURBAN / SURVEY	$ 5,000.00	$ 6,500.00	$ 8,500.00
97	GMC 1TON 4X4 CREWCAB/MILL	$ 5,000.00	$ 6,500.00	$ 8,500.00
97	1997 GMC 1 TON 4X4 CREWCAB /	$ 5,000.00	$ 6,500.00	$ 8,500.00
99	1999 GMC 1 TON 4X4 CREWCAB /	$ 8,500.00	$ 10,000.00	$ 12,000.00
99	1999 GMC 1 TON 4X4 CREWCAB /	$ 8,500.00	$ 10,000.00	$ 12,000.00
99	1999 GMC 1 1/4 TON 4X4 TOW	$ 8,500.00	$ 10,000.00	$ 12,000.00
99	1999 GMC 1 TON 4X4 / H.E. SHOP	$ 8,500.00	$ 10,000.00	$ 12,000.00
99	1999 GMC 1 TON 4X4 CREWCAB /	$ 8,500.00	$ 10,000.00	$ 12,000.00
99	1999 GMC 1 1/4 TON 4X4 / LOSS	$ 8,500.00	$ 10,000.00	$ 12,000.00
99	1999 GMC SUBURBAN 4X4 LOSS	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	2000 GMC 1 TON 4X4 CREW -	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	2000 GMC 1 TON 4X4 CREWCAB MILL	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	2000 GMC 1 TON 4X4 CREWCAB -	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	2000 GMC 1 TON 4X4 CREWCAB-MILL	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	2000 GMC 1 TON 4X4 CREWCAB-MILL	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	2000 GMC 1 TON 4X4 CREWCAB -	$ 8,500.00	$ 10,000.00	$ 12,000.00
0	GMC 2000 15 PASSAGER VAN	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4 -	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4 /	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 SILVERADO 3/4 TON 4X4	$ 12,000.00	$ 15,000.00	$ 20,000.00
1	2001 FLATDECK 1 TON 4X4 CREWCAB	$ 15,000.00	$ 18,000.00	$ 22,000.00
2	RED FORD CREWCAB 2001 / PARKED	$ 15,000.00	$ 18,000.00	$ 22,000.00
3	2003 3/4-T 4X4 P/U GEOLOGY	$ 20,000.00	$ 25,000.00	$ 28,000.00

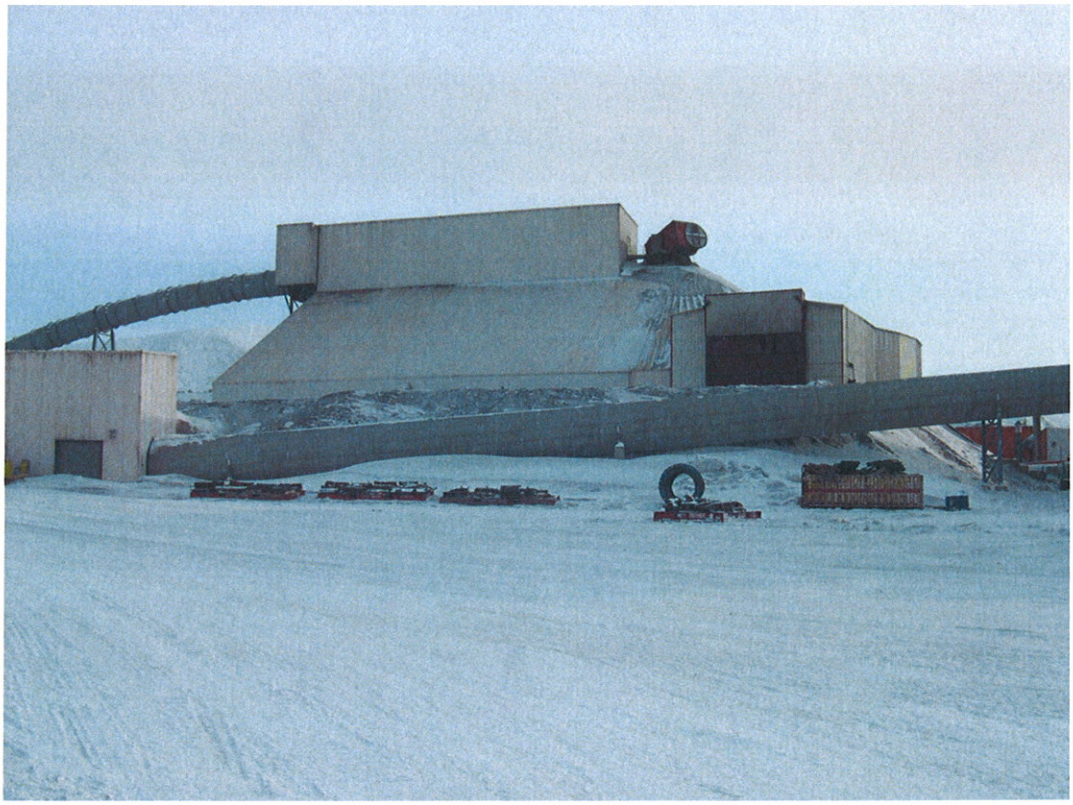
Year	Unit Description	LOW	MED	HIGH
3	2003 3/4-T 4X4 P/U DRILL &	$ 20,000.00	$ 25,000.00	$ 28,000.00
3	2003 3/4-T 4X4 P/U --MILL	$ 20,000.00	$ 25,000.00	$ 28,000.00
97	1996 MACK CH613 TRACTOR	$ 20,000.00	$ 35,000.00	$ 45,000.00
98	1996 MACK CH613 TRACTOR	$ 20,000.00	$ 35,000.00	$ 45,000.00
98	1996 MACK CH613 TRACTOR	$ 20,000.00	$ 35,000.00	$ 50,000.00
96	1996 GMC TOPKICK LOPRO MED DUTY TRUCK	$ 20,000.00	$ 35,000.00	$ 45,000.00
98	1996 FORD LNT 8000 DIESEL BOOM TRUCK	$ 35,000.00	$ 45,000.00	$ 60,000.00
96	1991 BLUEBIRD BUS	$ 30,000.00	$ 40,000.00	$ 60,000.00
99	I/H FIRE ENGINE - ENGINE #2	$ 50,000.00	$ 75,000.00	$ 85,000.00
99	MACK, ANFO AUGER / PUMP TRUCK	$ 50,000.00	$ 75,000.00	$ 85,000.00
1	FREIGHTLINER FLD120S LUBE TRUCK	$ 65,000.00	$ 80,000.00	$ 100,000.00
2	FORD FIRE ENGINE -RESCUE 1	$ 65,000.00	$ 80,000.00	$ 100,000.00
3	10.5 YD CONCRETE TRUCK (OLD #	$ 85,000.00	$ 100,000.00	$ 125,000.00
3	10.5 YD CONCRETE TRUCK (OLD #	$ 85,000.00	$ 100,000.00	$ 125,000.00
88	150-T MANITOWOC CRANE	$ 85,000.00	$ 120,000.00	$ 150,000.00
97	CRANE GROVE 55 TON	$ 90,000.00	$ 125,000.00	$ 145,000.00
89	553 COMPACTOR	$ 25,000.00	$ 35,000.00	$ 40,000.00
95	EXCAVATOR/DRILL RIG EX150 HITACHI	$ 50,000.00	$ 70,000.00	$ 95,000.00
99	HITACHI EX270LC EXCAVATOR	$ 100,000.00	$ 125,000.00	$ 150,000.00
0	KOMATSU D41P DOZER	$ 75,000.00	$ 60.00	$ 75,000.00
1	HITACHI EX450 EXCAVATOR	$ 175,000.00	$ 200,000.00	$ 250,000.00
3	D6R LGPDS TRACK DOZER	$ 175,000.00	$ 200,000.00	$ 250,000.00
98	V900 30-T FORKLIFT	$ 120,000.00	$ 140,000.00	$ 150,000.00
96	15-T FKLT-TIRE HANDLER	$ 10,000.00	$ 12,000.00	$ 15,000.00
1	V925 40 TON FORKLIFT	$ 175,000.00	$ 200,000.00	$ 250,000.00
0	FORKLIFT DP35K DIESEL	$ 15,000.00	$ 20,000.00	$ 25,000.00
0	FORKLIFT DL10H GEHL	$ 50,000.00	$ 60,000.00	$ 75,000.00
0	FORKLIFT DL10H GEHL	$ 50,000.00	$ 60,000.00	$ 75,000.00
1	FORKLIFT DP35K-D DIESEL	$ 15,000.00	$ 20,000.00	$ 25,000.00
1	FORKLIFT DL10H GEHL	$ 50,000.00	$ 60,000.00	$ 75,000.00
1	MANLIFT GENIE 85 FOOT	$ 25,000.00	$ 30,000.00	$ 40,000.00
96	992C WHEEL LOADER	$ 150,000.00	$ 200,000.00	$ 300,000.00
97	992G WHEEL LOADER	$ 200,000.00	$ 275,000.00	$ 350,000.00
97	992G WHEEL LOADER	$ 200,000.00	$ 275,000.00	$ 350,000.00
88	GENERATOR - 650 KW 3508 CAT	$ 25,000.00	$ 30,000.00	$ 40,000.00
88	GENERATOR - 650 KW 3508 CAT	$ 25,000.00	$ 30,000.00	$ 40,000.00
98	GENERATOR - 650 KW 3508 CAT PAC	$ 25,000.00	$ 30,000.00	$ 40,000.00
96	D9R TRACK DOZER	$ 250,000.00	$ 350,000.00	$ 450,000.00
1	D9R TRACK DOZER	$ 70,000.00	$ 85,000.00	100000
	Equipment Total	**$ 5,067,000.00**	**$ 6,385,560.00**	**$ 8,122,500.00**

Qty.	Desription	As Is Where Is Low	As Is Where Is Med	As Is Where Is High	Removal Cost	As Is Where Is Removed	As Is Where Is Removed	As Is Where Is Removed
	2001 Primary Crusher							
1	42" x 60" Jaw Crusher	$ 150,000.00	$ 250,000.00	$ 300,000.00	$ 16,000.00	$ 166,000.00	$ 266,000.00	$ 316,000.00
1	74" x 16' plate feeder	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	Rock breaker	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	10ton Bridgecrane	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2002 Coarse Ore Stockpile							
1	48" x 20ft. Apron Feeder	$ 15,000.00	$ 20,000.00	$ 25,000.00	$ 4,800.00	$ 19,800.00	$ 24,800.00	$ 29,800.00
1	48" x 20ft. Apron Feeder	$ 15,000.00	$ 20,000.00	$ 25,000.00	$ 4,800.00	$ 19,800.00	$ 24,800.00	$ 29,800.00
1	48" x 20ft. Apron Feeder	$ 15,000.00	$ 20,000.00	$ 25,000.00	$ 4,800.00	$ 19,800.00	$ 24,800.00	$ 29,800.00
1	48" x 20ft. Apron Feeder	$ 15,000.00	$ 20,000.00	$ 25,000.00	$ 4,800.00	$ 19,800.00	$ 24,800.00	$ 29,800.00
	2003 Primary & Secondary Grinding							
1	22' x 8' Sag Milll	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 84,000.00	$ 584,000.00	$ 834,000.00	$ 1,084,000.00
	2004 Primary & Secondary Grinding							
1	22' x 8' Sag Milll	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 84,000.00	$ 584,000.00	$ 834,000.00	$ 1,084,000.00
1	10'-08" x 15' Ball Mill	$ 200,000.00	$ 250,000.00	$ 350,000.00	$ 60,000.00	$ 260,000.00	$ 310,000.00	$ 410,000.00
1	20t/5t crane (50'6" span)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	10 x 8 feed pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	14 x 12 feed pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2005 Tertiary Grinding/Regrind Circuit							
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
1	Tower Mill	$ 100,000.00	$ 150,000.00	$ 200,000.00	$ 8,000.00	$ 108,000.00	$ 158,000.00	$ 208,000.00
9	10 x 10 feed pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	14 x 12 zinc pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	8 x 8 lead pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	10t bridge crane	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2006 Ball Mill Addition							
1	12' x 12' Ball Mill	$ 100,000.00	$ 150,000.00	$ 250,000.00	$ 60,000.00	$ 160,000.00	$ 210,000.00	$ 310,000.00
1	12' x 12' Ball Mill	$ 100,000.00	$ 150,000.00	$ 250,000.00	$ 60,000.00	$ 160,000.00	$ 210,000.00	$ 310,000.00

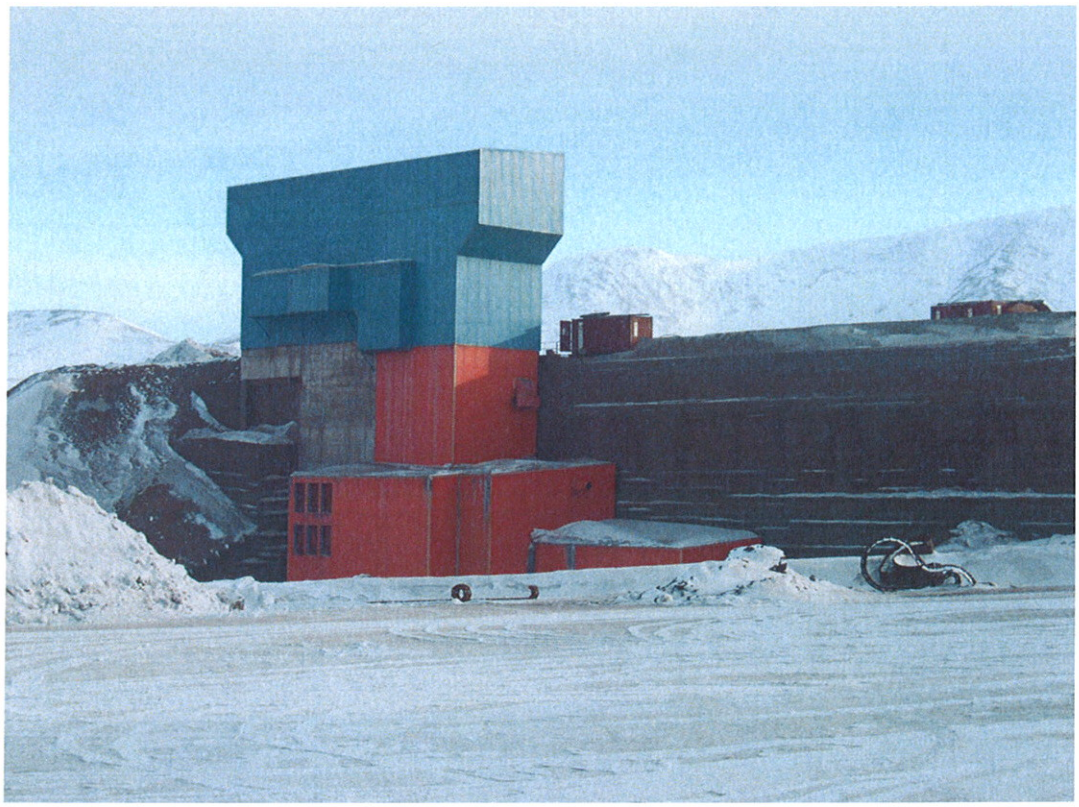
Qty.	Desription	As Is Where Is Low	As Is Where Is Med	As Is Where Is High	Removal Cost	As Is Where Is Removed	As Is Where Is Removed	As Is Where Is Removed
1	Cyclone cluster 12- 10"	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	Cyclone feed pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2007 Lead Floatation							
3	Compressors	$ -	$ -	$ -	$ -	$ -	$ -	$ -
26	Tanks & agitators	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2008 Zinc Floatation							
16	Tanks & Agitators	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2009 Zinc Circuit/ Compressor Room							
2	Sillaire Compressor	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	Glycol Coolers	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2010 Sag Mill/ Ball Mill Addition							
1	22' x 8' Sag Mill	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 84,000.00	$ 584,000.00	$ 834,000.00	$ 1,084,000.00
1	16' x 18' Ball Mill	$ 250,000.00	$ 300,000.00	$ 400,000.00	$ 60,000.00	$ 310,000.00	$ 360,000.00	$ 460,000.00
1	25t/5t crane (73' span)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4	pumps	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2011 Dewatering							
2	Lead Pressure Filters							
2	Zinc Pressure Filters							
	2012 Primary Crusher							
1	42" x 65" Gyratory Crusher	$ 150,000.00	$ 250,000.00	$ 300,000.00	$ 16,000.00	$ 166,000.00	$ 266,000.00	$ 316,000.00
1	54" x 22' Apron Feeder	$ 15,000.00	$ 20,000.00	$ 25,000.00	$ 4,800.00	$ 19,800.00	$ 24,800.00	$ 29,800.00
1	40t/5t Crane (22' span)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	Rock Breaker	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2016 Reagent Handling							
1	5ton Crane (45' span)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1	10ton Crane (45' span)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2018 Concentrate Storage							
1	Conveyor systems only	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	2020 Reagent Mix & Water Treatment							
1	No value	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Qty.	Desription	As Is Where Is Low	As Is Where Is Med	As Is Where Is High	Removal Cost	As Is Where Is Removed	As Is Where Is Removed	As Is Where Is Removed
	2025 Lead Flotation							
1	Tanks & Agitators (no value)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	6003/6005 Potable Water Treatment							
1	No Value	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	6022 Power Plant							
1	Diesel Generator	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 8,000.00	$ 508,000.00	$ 758,000.00	$ 1,008,000.00
1	Diesel Generator	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 8,000.00	$ 508,000.00	$ 758,000.00	$ 1,008,000.00
1	Diesel Generator	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 8,000.00	$ 508,000.00	$ 758,000.00	$ 1,008,000.00
1	Diesel Generator	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 8,000.00	$ 508,000.00	$ 758,000.00	$ 1,008,000.00
1	Diesel Generator	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 8,000.00	$ 508,000.00	$ 758,000.00	$ 1,008,000.00
1	Diesel Generator	$ 500,000.00	$ 750,000.00	$ 1,000,000.00	$ 8,000.00	$ 508,000.00	$ 758,000.00	$ 1,008,000.00
1	25t/5t Crane (35' span)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	6030 Power Plant							
1	Diesel Generator	$ 1,000,000.00	$ 1,500,000.00	$ 2,000,000.00	$ 8,000.00	$ 1,008,000.00	$ 1,508,000.00	$ 2,008,000.00
1	Diesel Generator	$ 1,000,000.00	$ 1,500,000.00	$ 2,000,000.00	$ 8,000.00	$ 1,008,000.00	$ 1,508,000.00	$ 2,008,000.00
	Total	**$ 8,425,000.00**	**$ 12,550,000.00**	**$ 16,775,000.00**	**$ 684,000.00**	**$ 9,109,000.00**	**$ 13,234,000.00**	**$ 17,459,000.00**

Appendix C - Photographs

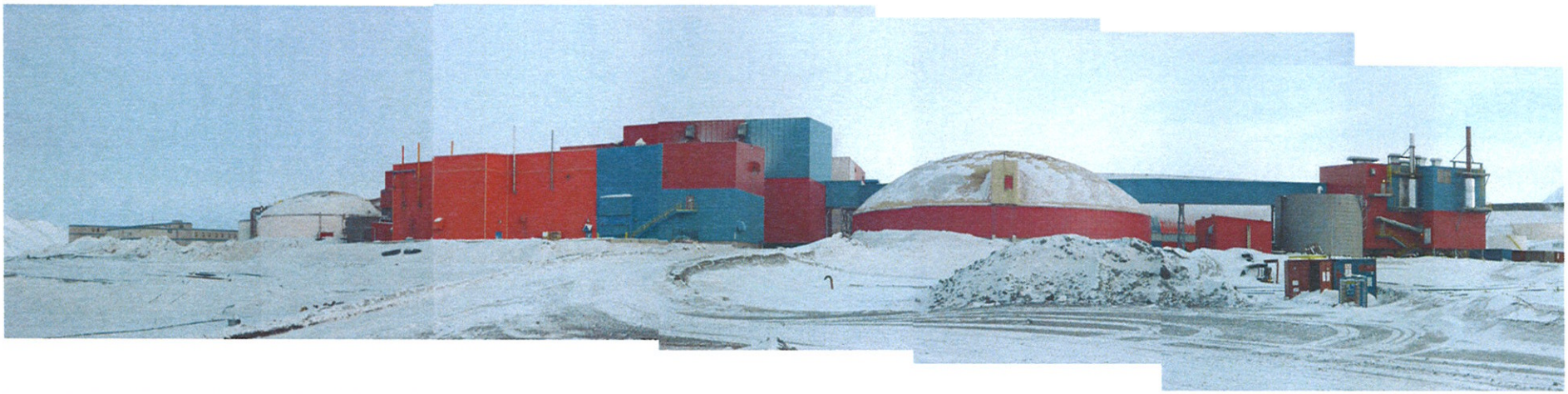


Area 2002 – Coarse Ore Stockpile ⇧

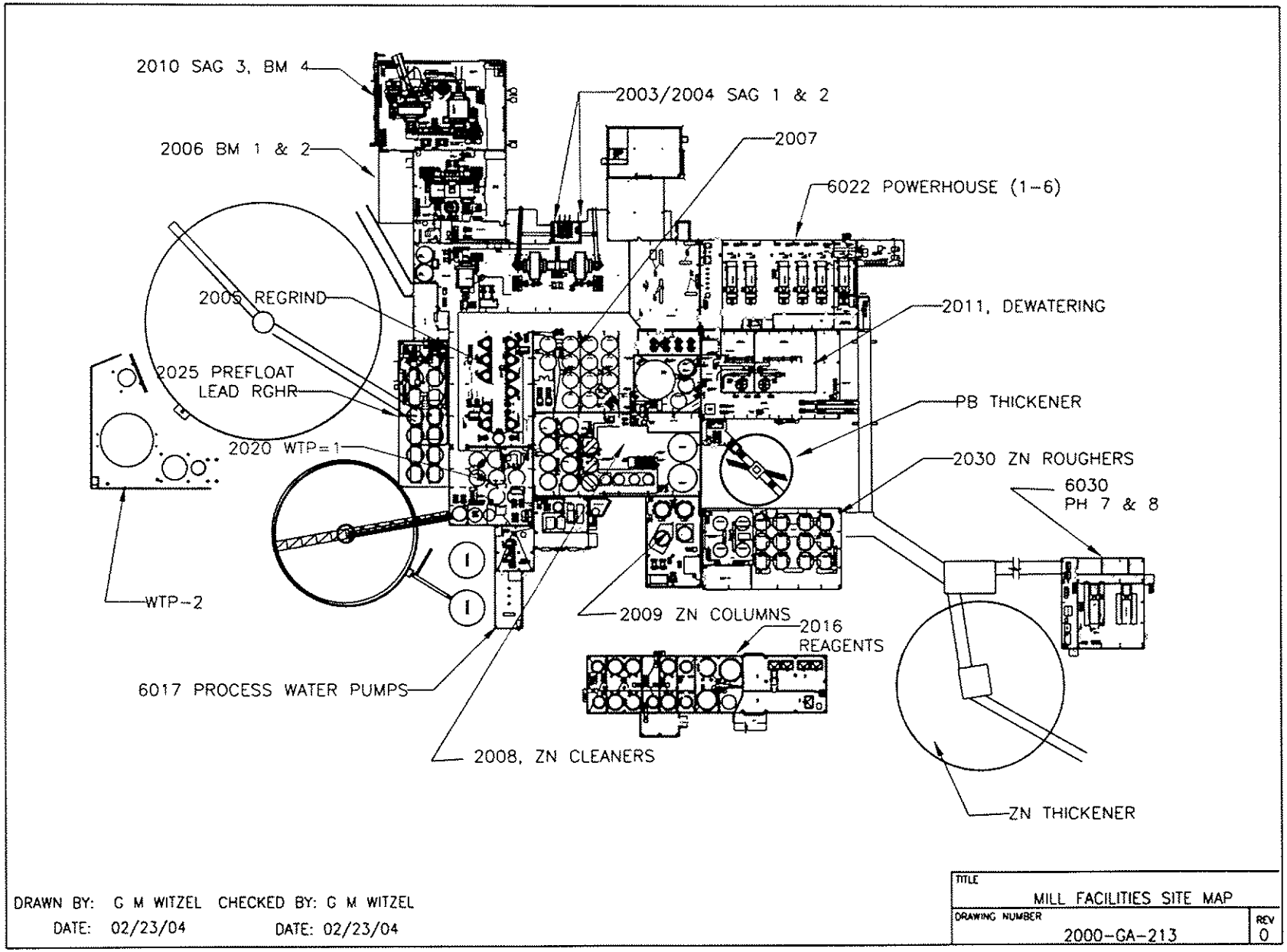


Area 2012 – Gyratory Crusher ⇧

Pan of Red Dog Mill Area – Viewing North ⇧



Pan of Red Dog – Viewing East from Tailings Area ⇧



Mill Facilities Legend