

Basis of Estimate

Hope Bay Doris-Madrid Project Updated Closure Security Estimate Current
and Life of Mine (LOM) Capital Cost Estimate (CAPEX), Revision 1

Prepared for:

Agnico Eagle Mines Limited

Prepared by:

Nunami Stantec Limited

May 19, 2023

Project No.: 169523533



Limitations and Sign-off

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Abbreviations

1Q2023.....	First Quarter 2023
AACE.....	Association for the Advancement of Cost Engineering
AEM.....	Agnico Eagle Mines Limited
CAD.....	Canadian Dollars
CAPEX	Capital Cost Estimate
CEPCI	Chemical Engineering Plant Cost Index
GNWT	Government of Northwest Territories
H.....	High
i.e.....	That is
INAC.....	Indigenous and Northern Affairs Canada
KIA.....	Kitikmeot Inuit Association
L	Low
LOM.....	Life of Mine
MVLWB	Mackenzie Valley Land and Water Board, Gwich'in Land and Water Board, Sahtu Land and Water Board, Wek'èezhìi Land and Water Board
ROQ	Run of Quarry
SNP / AEMP.....	Surveillance Network Program / Aquatic Effects Monitoring Program
TIA.....	Tailings Impoundment Area

1 Introduction and Project Scope

This Basis of Estimate document for the Agnico Eagle Mines Limited (AEM) Hope Bay Doris-Madrid Project provides a summary of the project reclamation and closure costs and explains the estimate methodology, assumptions, and exclusions.

The AEM Hope Bay Operation is a gold mining and milling operation that is located 705 km northeast of Yellowknife and 153 km southwest of Cambridge Bay Nunavut Territory and is situated east of Bathurst Inlet. AEM is the Owner Operator of the Hope Bay Operation, and the Kitikmeot Inuit Association (KIA) is the landowner and thus, are both major stakeholders in the Reclamation and Closure Plan and associated security estimate. The Hope Bay Mine is comprised of three (3) distinct areas that host mineral resources: Doris, Madrid, and Boston. The focus of this estimate is Doris and Madrid; the Boston related operations are excluded.

The AEM Hope Bay Operation has informed the Nunavut Water Board that the Doris-Madrid mining operation is to be put into care and maintenance and as such AEM is required to update the closure and reclamation estimate to reflect the scope of work that would be required to close and reclaim the site as it exists today. Additionally, AEM has requested that the reclamation and closure costs for the full life of mine (LOM) project (yet to be developed) be updated. The existing reclamation and security estimate is for the site development and mining plan as proposed in September 2018 by the previous mine Owner TMAC Resources Inc. Today, the 2018 full site development scope of work has been advanced but is not fully completed. As such, the purpose of the estimate is to quantify the reclamation and closure costs in first quarter 2023 Canadian Dollars (1Q2023 CAD) for the following two scenarios:

1. Current scope: as the mine site exists today without any further mine operation and development being undertaken.
2. Life of mine (LOM): full 2018 life of mine development is completed.

Appendix C includes the RECLAIM 7.0 model current estimate summary and details. Appendix D includes the RECLAIM 7.0 model life of mine estimate summary and details.

2 Estimate Parameters

Table 2.1 Estimate Parameter Overview

Attribute	Detail
Project Name:	Hope Bay Security Estimate Review
Location	Hope Bay, NU 705 km NE of Yellowknife NT
Scope Overview	CAPEX to close and reclaim the Doris and Madrid Operations based on the existing infrastructure and site conditions and consideration of full LOM project scope development to support AEM's and the KIA's Type A Water License Application to the Nunavut Waterboard
Class of Estimate & Target Accuracy	AACE Class 4 / -15% to -30% on the low end, +20% to +50% on the high end.
Estimate Type / Purpose	CAPEX for closure and reclamation of Doris and Madrid Operations based on present site conditions.
Estimating Software	RECLAIM 7.0
Estimating Deliverables	CAPEX Basis of Estimate
Estimate Data Date	1 st Quarter 2023
Currency	CAD
Units of Measure	Metric

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3 Estimating Team Responsibilities

The Nunami Stantec, AEM, and KIA team members involved in contributing, reviewing, and approving the security team estimate are detailed in Table 3.1

Table 3.1 AEM / KIA / Nunami Stantec Team Members and Responsibilities

Role	Name	Company	Responsibility
Technical Lead	Sara Wilkins, P.Geol.	Nunami Stantec	Closure plan interpretation and coordination of resources, deliverables, and overall study execution
Regulatory Specialist	Reid Smith, M.A.Sc., P. Ag	Nunami Stantec	Reclamation and environmental interpretation and estimating support
Estimating Senior Reviewer	Kris Rautiainen,	Nunami Stantec	Senior review, benchmarking, and unit rate validation
Senior Estimator	Travis Frith, B. Sc	Nunami Stantec	Preparation and coordination of RECLAIM 7.0 CAPEX and Basis of Estimate
Geomatics Lead	Lori Stewart, P. Geo	Nunami Stantec	Spatial data processing and management
Data Management Lead	Mike Mohowald, E.I.T.	Nunami Stantec	Closure Plan data interpretation and management
Project Controls	Forunato Cappola	Nunami Stantec	Client management, reporting, and controls
Senior Reviewer	Scott Trusler	Nunami Stantec	Nunami Stantec senior reviewer
Environmental General Supervisor	Guy Dufour P. Eng	AEM	Lead, coordinate, and review security estimate deliverables and provide final approval from AEM
Senior Hope Bay Project Officer	John Roesch, P. Eng	KIA	Review and approve security estimate scope, estimate methodology and basis

4 Cost Estimate Summary

4.1 Security Estimate by RECLAIM 7.0 Estimate Area and Project Scope of Work

A summary of the CAPEX by RECLAIM 7.0 Estimate Area, Total Cost, Land Liability Cost, and Water Liability Costs as developed today, current scope of work, and for the LOM project scope of work are provided in Table 4.1 and Table 4.2 below.

Table 4.1 Security CAPEX Summary by RECLAIM 7.0 Estimate Area, Total Cost, Land Liability Cost, and Water Liability Cost Current Scope of Work

RECLAIM 7.0 Estimate Area	Total Cost	% Total Cost	Land Liability Cost	Land Liability %	Water Liability Cost	Water Liability %
Open Pit	\$4,190,608	7%	\$4,190,608	100%	\$-	0%
Underground Mine	\$3,344,311	5%	\$3,344,311	100%	\$-	0%
Tailings Facility	\$12,561,086	20%	\$6,280,543	50%	\$6,280,543	50%
Rock Pile	\$1,398,359	2%	\$1,398,359	100%	\$-	0%
Buildings And Equipment	\$10,727,366	17%	\$8,863,056	83%	\$1,864,310	17%
Chemicals And Contaminated Soil Management	\$1,625,661	3%	\$812,830	50%	\$812,830	50%
Surface And Groundwater Management	\$1,126,649	2%	-	0%	\$1,126,649	100%
Interim Care and Maintenance	\$7,111,287	11%	-	0%	\$7,111,287	100%
Subtotal of Direct CAPEX	\$42,085,327	66%	\$24,889,707	59%	\$17,195,620	41%
Mobilization/Demobilization	\$7,955,000	12%	\$4,704,671	59%	\$3,250,329	41%
Post-Closure Monitoring and Maintenance	\$1,225,000	2%	\$724,478	59%	\$500,522	41%
Engineering	\$2,104,266	3%	\$1,244,485	59%	\$859,781	41%
Project Management	\$2,104,266	3%	\$1,244,485	59%	\$859,781	41%
Health And Safety Plans/Monitoring & QA/QC	\$-	0%	\$-	0%	\$-	0%
Bonding/Insurance	\$-	0%	\$-	0%	\$-	0%
Contingency	\$8,417,065	13%	\$4,977,941	59%	\$3,439,124	41%
Market Price Factor Adjustment	\$-	0%	\$-	0%	\$-	0%
Subtotal of Indirect CAPEX	\$21,805,598	34%	\$12,896,061	59%	\$8,909,537	41%
Grand Total	\$63,890,925	100%	\$37,785,768	59%	\$26,105,157	41%

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Table 4.2 Security CAPEX Summary by RECLAIM 7.0 Estimate Area, Total Cost, Land Liability Cost, and Water Liability Cost

RECLAIM 7.0 Estimate Area	Total Cost	% Total Cost	Land Liability Cost	Land Liability %	Water Liability Cost	Water Liability %
Open Pit	\$4,196,223	5%	\$4,196,223	100%	\$-	0%
Underground Mine	\$4,008,925	5%	\$4,008,925	100%	\$-	0%
Tailings Facility	\$12,561,086	15%	\$6,280,543	50%	\$6,280,543	50%
Rock Pile	\$1,470,056	2%	\$1,470,056	100%	\$-	0%
Buildings And Equipment	\$19,994,766	25%	\$16,710,446	84%	\$3,284,320	16%
Chemicals And Contaminated Soil Management	\$3,392,874	4%	\$1,696,437	50%	\$1,696,437	50%
Surface And Groundwater Management	\$1,700,329	2%	-	0%	\$1,700,329	100%
Interim Care and Maintenance	\$7,111,287	9%	-	0%	\$7,111,287	100%
Subtotal of Direct CAPEX	\$54,435,547	67%	\$34,362,630	63%	\$20,072,917	37%
Mobilization/Demobilization	\$9,181,000	11%	\$5,795,539	63%	\$3,385,461	37%
Post-Closure Monitoring and Maintenance	\$1,225,000	2%	\$773,286	63%	\$451,714	37%
Engineering	\$2,721,777	3%	\$1,718,132	63%	\$1,003,646	37%
Project Management	\$2,721,777	3%	\$1,718,132	63%	\$1,003,646	37%
Health And Safety Plans/Monitoring & QA/QC	\$-	0%	\$-	0%	\$-	0%
Bonding/Insurance	\$-	0%	\$-	0%	\$-	0%
Contingency	\$10,887,109	13%	\$6,872,526	63%	\$4,014,583	37%
Market Price Factor Adjustment	\$-	0%	\$-	0%	\$-	0%
Subtotal of Indirect CAPEX	\$26,736,664	33%	\$16,877,613	63%	\$9,859,051	37%
Grand Total	\$81,172,211	100%	\$51,240,244	63%	\$29,931,968	37%

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4.2 Security Estimate by Tranches and Project Scope of Work

The security estimate is broken up into tranches. Once the development work for each tranche is triggered, then AEM is required to provide security to the applicable regulatory holders. Table 4.3 and Table 4.4 provide Security estimate summaries by tranches and scope of work.

Table 4.3 Security CAPEX Summary by Tranches and Current Scope of Work

Timing	Stage of Infrastructure Construction	Reclamation Security to be Added to Security Held Under the License for Each Stage	Reclamation Security to be Confirmed as Added to Security Held by the KIA for Each Stage	Total Reclamation Security for Each Stage (Licence and KIA Instruments Combined)
Upon Licence Issuance	Pre-existing Infrastructure (Phase 1) ^{Note 1}	\$ 11,735,369.11	\$ 52,155,556.15	\$ 63,890,925.26
Sixty (60) days prior to commencement of construction	Roberts Bay & Boston All Weather Roads	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Doris Wind Turbines	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Madrid North Wind Turbines	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Boston Wind Turbines	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Madrid North	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Madrid South	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Doris TIA Phase 2a	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Doris TIA Phase 2b	\$ -	\$ -	\$ -
TOTAL (ALL STAGES CONSTRUCTED)		\$ 11,455,094.59	\$ 52,435,830.67	\$ 63,890,925.26

Note 1: Pre-existing infrastructure includes all facilities as currently exist today including the construction work that has commenced to date at Madrid North and the work to reclaim and close the Doris Tailings Impoundment Area (TIA) as it currently exists.

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Table 4.4 Security CAPEX Summary by Tranches and LOM Scope of Work

Timing	Stage of Infrastructure Construction	Reclamation Security to be Added to Security Held Under the License for Each Stage	Reclamation Security to be Confirmed as Added to Security Held by the KIA for Each Stage	Total Reclamation Security for Each Stage (Licence and KIA Instruments Combined)
Upon Licence Issuance	Pre-existing Infrastructure (Phase 1) ^{Note 1}	\$ 11,735,369.11	\$ 52,155,556.15	\$ 63,890,925.26
Sixty (60) days prior to commencement of construction	Roberts Bay & Boston All Weather Roads	\$ 66,195.59	\$ 3,595,982.88	\$ 3,662,178.47
Sixty (60) days prior to commencement of construction	Doris Wind Turbines	\$ -	\$ 1,990,904.24	\$ 1,990,904.24
Sixty (60) days prior to commencement of construction	Madrid North Wind Turbines	\$ -	\$ 2,004,986.36	\$ 2,004,986.36
Sixty (60) days prior to commencement of construction	Boston Wind Turbines	\$ -	\$ 2,004,986.36	\$ 2,004,986.36
Sixty (60) days prior to commencement of construction	Madrid North	\$ 2,317,314.34	\$ 3,737,911.68	\$ 6,055,226.02
Sixty (60) days prior to commencement of construction	Madrid South	\$ 286,997.08	\$ 1,276,007.67	\$ 1,563,004.75
Sixty (60) days prior to commencement of construction	Doris TIA Phase 2a ^{Note 2}	\$ -	\$ -	\$ -
Sixty (60) days prior to commencement of construction	Doris TIA Phase 2b ^{Note 2}	\$ -	\$ -	\$ -
TOTAL (ALL STAGES CONSTRUCTED)		\$ 14,405,876.12	\$ 66,766,335.33	\$ 81,172,211.46

Note 2: The Doris TIA Phase 2a and 2b Tranches have no estimated additional security costs because the costs to close and reclaim the Doris TIA has been included in the Pre-existing infrastructure Tranche. If Hope Bay resumes production the costs of managing the additional tailings will be incurred as part of the operations and therefore further security will not be required.

5 Estimating Methodology

5.1 Estimating Terminology

The CAPEX consists of two (2) major cost groupings: Direct Costs and Indirect Costs.

5.1.1 Direct Costs

Direct costs include all the construction labour, equipment, bulk materials, construction equipment, supervision, mobilization, demobilization, temporary facilities, permits, etc. required for the reclamation and restoration of all permanent facilities. This includes but is not limited to:

1. Direct Construction (or Deconstruction) Costs – required to complete the construction of all permanent facilities:
 - a. Direct (on the tools) Craft Construction Labour
 - b. Tagged Equipment
 - c. Bulk Materials
 - d. Subcontracts
2. Direct Construction Indirect Field Support Costs:
 - a. Construction Facilities
 - b. Construction Equipment
 - c. Scaffolding
 - d. Third Party Expertise (Testing / Survey / Safety / Engineering)
 - e. Contractor Construction Management and Support Team
 - f. Contractor Distributable Costs

5.1.2 Indirect Costs

Indirect Costs include items that are necessary for the completion of the Project but are not directly related to the direct construction costs and include but are not limited to the following:

1. Mobilization / Demobilization Freight
2. Post-closure Monitoring and Maintenance
3. Engineering and Design
4. Project Managements
5. Procurement and Contract Management
6. Health and Safety Plans / Monitoring & Quality Assurance
7. Bonding / Insurance
8. Contingency

9. Market Price Factor

5.2 RECLAIM 7.0 General Estimating Methodology

RECLAIM 7.0 User Manual Mining Version, November 2017. General RECLAIM 7.0 estimate methodology and baseline assumptions important to understand in conjunction of the review of the estimated closure and reclamation CAPEX are:

1. Security estimates are assumed to cover the government's costs for closure and reclamation should the company become insolvent and abandon the site. Costs are therefore inherently higher than a proponent's operating cost estimate. Typical factors which may affect this type of estimate are:
 - a. Unit costs are based on third-party contractors conducting all the work.
 - b. Mobilization costs are included for every piece of equipment or machine required for the work (i.e., does not assume that existing mine equipment is available in good working condition).
 - c. There is no allowance for salvage or sale of equipment.
 - d. The closure costs are not reduced for progressive reclamation work until after the work has been completed and it is demonstrated that it meets the approved closure objectives.
 - e. A provision is included for interim site care and maintenance to address the period between the ceasing of operations and the commencement of closure work. This period of interim care and maintenance would be a minimum of 2-3 years.
 - f. A contingency is applied that reflects the degree of uncertainty in the Closure and Reclamation Plan (i.e., address key areas of uncertainty in closure options until such time as the preferred option is demonstrated or verified during the life of the project).
2. Considerations for remote northern settings have been incorporated into the unit rates.
3. There are eleven (11) reclamation costing worksheets used to compute the overall closure cost estimate.
 - a. These include direct costs associated with the following mine components:
 - i. Open Pit
 - ii. Underground Mine
 - iii. Tailings Impoundment
 - iv. Rock Pile
 - v. Buildings and Equipment
 - vi. Chemicals, Hazardous Materials, and Contaminated Soils
 - vii. Water Treatment
 - viii. Water Management
 - ix. Interim Care and Maintenance
 - b. As well as worksheets for each of the following indirect costs:
 - i. Post-closure Monitoring and Maintenance

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- ii. Mobilization and Demobilization
 - c. Additional cost factors such as contingency (20% of direct costs), engineering (5% of direct costs), project management (5% of direct costs), health and safety plans/monitoring & QA/QC (excluded from this CAPEX), bonding / insurance (excluded from this CAPEX), and Market price factor adjustments (excluded from this CAPEX) are calculated in the Summary Worksheet.
- 4. Segregation of Costs into Land or Water Related Costs for each activity are assigned by the user. Examples of each are as follows:
 - a. An activity such as a building demolition would be 100% land liability.
 - b. Treating supernatant prior to discharge would be 100% water liability.
 - c. Placing a coil cover over a rock pile could be, for example, 50% land liability in promoting revegetation, and 50% water liability in reducing seepage loading. This could vary based on site-specific factors.
- 5. The RECLAIM 7.0 unit cost table reflects independent third-party contractor costs that, unless specifically noted, are inclusive of equipment, labour, maintenance, fuel, consumables, and contractor profit. Unit costs are based on Canadian dollars and were last updated in March 2014. Escalation has been applied to these prices as per Section 5.5.
- 6. The RECLAIM 7.0-unit cost table is not inclusive of all site-specific activities required and as such specified costs by an experienced estimator were developed and applied.

5.3 Estimate Quantity Basis

The baseline quantities used in the estimate were provided by an external contractor, SRK Consulting (Canada) Inc., as part of the deliverables attached in Appendix A for the current scope of work and Appendix B for the LOM scope of work. Nunami Stantec reviewed the quantities internally and in supporting meetings with the external contractor, the KIA, and AEM.

5.3.1 Quantity Deviations

The following baseline quantities were deviated from as part of the security estimate reviews by Nunami Stantec, AEM, KIA:

- 1. Backfill of underground mine void space was not required.
- 2. Process plant waste was adjusted to 4 m³ / m² of building footprint.
- 3. Water Treatment plant waste was adjusted to 2 m³ / m² of building footprint.
- 4. Pumps and piping for Naartok Crown Recovery Trench was removed and assumed to be dewatered using 15,000L water trucks making at a rate of 127,000 L / day during the Interim care and maintenance phase.
- 5. Nunami Stantec added provisions for:
 - a. Mine Dry Trailer
 - b. Surface Sea-containers
 - c. Helishack and Lift station

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- d. Secondary Road Explosives Facility
- e. Regrading of Madrid North Office Trailer, Madrid Nuna Shop, and Doris Backup Power Generator
- f. Reclamation of Doris Sedimentation Berm
- g. Leveling of Doris Tank Farm Containment Berm

5.4 Unit Rates and Factored Estimates

The breakdown unit rate cost sources that make up the estimated costs for the Current scope and LOM scope are detailed below in Table 5.1 and Table 5.2.

Table 5.1 Total Current Estimated Costs by Unit Cost Source

Unit Cost Source	Total Costs	% Total Cost
RECLAIM 7.0 Unit Cost Data Escalated 35.27% ^{Note1}	\$28,358,619	44%
RECLAIM 7.0 Factors Applied to Direct Costs	\$12,625,598	20%
In-house Unit Cost Data Developed by Nunami Stantec	\$22,906,708	36%
Grand Total	\$63,890,925	100%

Table 5.2 Total LOM Estimated Costs by Unit Cost Source

Unit Cost Source	Total Costs	% Total Cost
RECLAIM 7.0 Unit Cost Data Escalated 35.27% ^{Note1}	\$31,810,646	39%
RECLAIM 7.0 Factors Applied to Direct Costs	\$16,330,664	20%
In-house Unit Cost Data Developed by Nunami Stantec	\$33,030,901	41%
Grand Total	\$81,172,211	100%

Note 1: See Section 5.5 for discussion on escalation.

5.4.1 RECLAIM 7.0 Unit Cost Data

The RECLAIM 7.0 Unit Cost table contains a pre-populated list of many of the common reclamation activities that may be carried out at a particular mine site and the associated Unit Costs for each activity. To the extent achievable, the Unit Costs in the table are independent third-party costs that have been obtained from a review of northern reclamation projects conducted by third party contractors. Unless specifically noted, all Unit Costs are inclusive of equipment, labour, maintenance, fuel, consumables, and contractor profit. For each Unit Cost, a range is provided from low (L) to high (H), which is intended to capture the variability in the level of effort that may be required. The RECLAIM 7.0 Unit Cost table was last updated in March of 2014 and escalation has been applied to the unit rates as detailed in Section 5.5 herein.

The RECLAIM 7.0 Unit Costs have been reviewed and accepted by the governing bodies and third-party professionals and as such Nunami Stantec has accepted that these rates contain appropriate provisions

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for the remote nature and location of the Hope Bay project and has not thoroughly vetted these unit rates further.

5.4.2 RECLAIM 7.0 Factors Applied to Direct Costs

The following factored costs have been included in the estimate as recommended by the RECLAIM 7.0 User Manual:

1. Engineering: 5% of Direct Costs
2. Project Management: 5% of Direct Costs
3. Contingency: 20% of Direct Costs

5.4.3 In-house Unit Cost Data Developed by Nunami Stantec

Nunami Stantec has developed in-house unit costs for each activity that was required but not included in the RECLAIM 7.0 Unit Cost Table. The Unit Costs are inclusive of equipment, labour, maintenance, fuel, consumables, and contractor profit.

5.4.3.1 Equipment Rates

Equipment Rates are based on historical actual project data for similar Northern Canadian Projects.

5.4.3.2 Labour Rates

Labour rates are based on historical actual project data, recent budgetary quotes, and the knowledge and experience of the Project Team.

Given the remote nature of the work provisions for two (2) weeks in and two (2) weeks out (2:2) shift schedule of fourteen (14) twelve (12) hour days has been considered.

5.4.3.3 Labour and Equipment Unit Hours and Productivities

Direct Field labour costs are comprised of skilled labour, unskilled labour, fore-persons, and contractor indirects required to install the permanent equipment and bulk materials at the project site.

Labour and equipment unit hours and productivities are taken from recent actual project performances, commercially available cost data, and the knowledge and experience of the project team. Considerations for site specific conditions and performances has been considered including but not limited to:

1. Location climate and weather dependent activities
2. Type of project
3. Work location
4. Hazard level of the environment
5. Work at heights
6. Work week and shift type
7. Craft skill, availability, and quality of supervision
8. Number of work locations, site congestion / constraints etc.

5.4.3.4 Material Costs

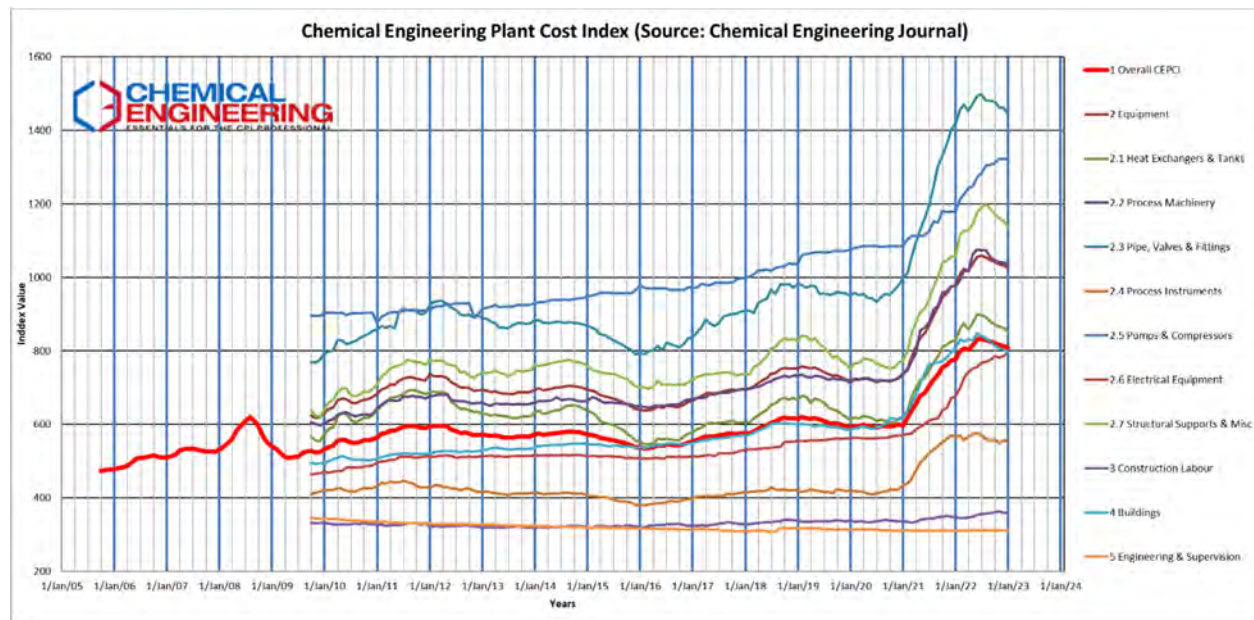
Nunami Stantec has developed material supply costs for the following items:

1. Crushing and screening of locally sourced run of quarry (ROQ) which is based on a contractor supplied material crushing and screening plant being mobilized to site to support the reclamation and closure activities. The costs are based on discussions with third party contractors. Mobilization and Demobilization Costs are handled separately.
2. Supply of silt fencing, which is based on commercially available cost data.

5.5 Escalation

Escalation from 1Q2023 to when the actual reclamation and closure occurs is excluded from the security estimate as the estimate is required to be updated every five (5) years. The RECLAIM 7.0 Unit Cost data was last updated in March of 2014. Costs were therefore escalated based on the Chemical Engineering Plant Cost Index (CEPCI) using the Overall Costs inflation metric of 35.27% from March 2014 to 1Q2023, as shown in Figure 5.1. Nunami Stantec recommends using CEPCI as opposed to government or other inflation indices as it is more specific to the heavy industrial construction sector.

Figure 5.1 Chemical Engineering Plant Cost Index (Source: Chemical Engineering Journal)



5.6 Interim Care and Maintenance

A provision of two (2) years for site care and maintenance to address the period between the ceasing of operations and the commencement of closure work. During the TIA Reclaim Pond will be pumped out and discharged to Roberts Bay. This will consist of pumping water through existing facilities (pumps, pipelines, etc.). The following full-time equivalent personnel have been considered in the estimate:

Basis of Estimate

Section 5: Estimating Methodology
May 19, 2023

1. Supervisor: One (1)
2. Electrician: One (1)
3. Mechanic: One (1)
4. Operator: Two (2)

The following equipment has been considered in the estimate:

1. Pick-up Truck: One (1)
2. Small Dozer: One (1)
3. Small Excavator: One (1)
4. Snow Machine: One (1)

Provisions for annual fuel supply, communications equipment, surveillance network program / aquatic effects monitoring program (SNP / AEMP) water sampling and reporting, and geotechnical assessments have also been considered.

Provisions for additional materials to fix equipment and infrastructure have been excluded from the estimate and are expected to be minimal and therefore considered in the project contingency.

Interim Care and Maintenance Costs are based on escalated RECLAIM 7.0-unit rates and In-house Nunami Stantec unit rates.

5.7 Mobilization and Demobilization

5.7.1 Freight

The mobilization and demobilization of equipment was assumed to originate from Edmonton, AB. Equipment will be hauled by truck to Hay River, NT and shipped by barge to Roberts Bay. The transportation and barging costs are based on the Marine Transport Services 2022 Cargo Rates. Nunami Stantec unit rates were developed from the first principles for loading and unloading of the barge on either side and transporting equipment from Roberts Bay to the laydown area.

Estimated equipment requirements and number of loads are detailed within the estimate.

5.7.2 Camp

It is assumed that the existing camp would be refurbished as required. An allowance of \$125,000 has been considered for this. Camp maintenance, operations, and catering costs are based on actuals based on similar Northern Operations.

5.7.3 Flights and Travel

Flights and travel costs are based on actuals from similar Northern Operations.

5.8 Post Closure Monitoring and Maintenance

The post closure estimate allows for the following of the course of ten (10) years:

- Annual geotechnical inspections for the first three (3) years and then year 7 and 10
- Yearly regulatory costs
- Site water monitoring AEMP and SNP: annual seep sampling for the first five (5) years and then year 7 and 10.
- Cover monitoring every two (2) years for a ten-year period.

Post closure monitoring and maintenance costs are based on in-house Nunami Stantec data.

6 Assumptions and Exclusions

6.1 Assumptions

The following list outlines assumptions included in the cost estimate prepared by Nunami Stantec:

- Quantities and tasks provided in Appendix A and Appendix B are fully inclusive of the project scope unless noted otherwise therein or above in Section 5.3.1
- RECLAIM 7.0-unit costs have been reviewed and accepted by the governing bodies and third-party professionals and as such Nunami Stantec has assumed that these rates contain appropriate provisions for the remote nature and location of the Hope Bay Project
- Work will be completed in a single campaign and multiple mobilization and demobilizations are not required.
- Concrete camps are 4m diameter by 0.5m thick.
- The backfill of underground workings has been restricted to only backfill of openings to surface and open stops. The entire void of underground workings is assumed not to require backfilling as directed by AEM.
- Dewatering of the Naaratok Crown Recovery Trench is assumed to be completed by 15,000 L water trucks at a rate of 127,000 L / day.
- Existing fuel tanks are filled with 10% capacity.
- 50% of existing containment liners are contaminated.
- Existing camp facilities can be refurbished for contractor use.
- Tailings will be treated and discharged in the two (2) year period of care and maintenance.
- Two (2) years of care and maintenance
- Ten (10) years of post-closure monitoring and maintenance

6.2 Exclusions

The following items are excluded from the cost estimate prepared by Nunami Stantec:

- Scope changes and / or project delays
- Additional work that may be required as a result of unknown conditions.
- Considerations for Force Majeure
- Project finance costs
- Legacy costs
- Provincial and Federal sales taxes
- Finance and / or interest charges
- Inflation beyond 1Q2023

Basis of Estimate

Section 6: Assumptions and Exclusions

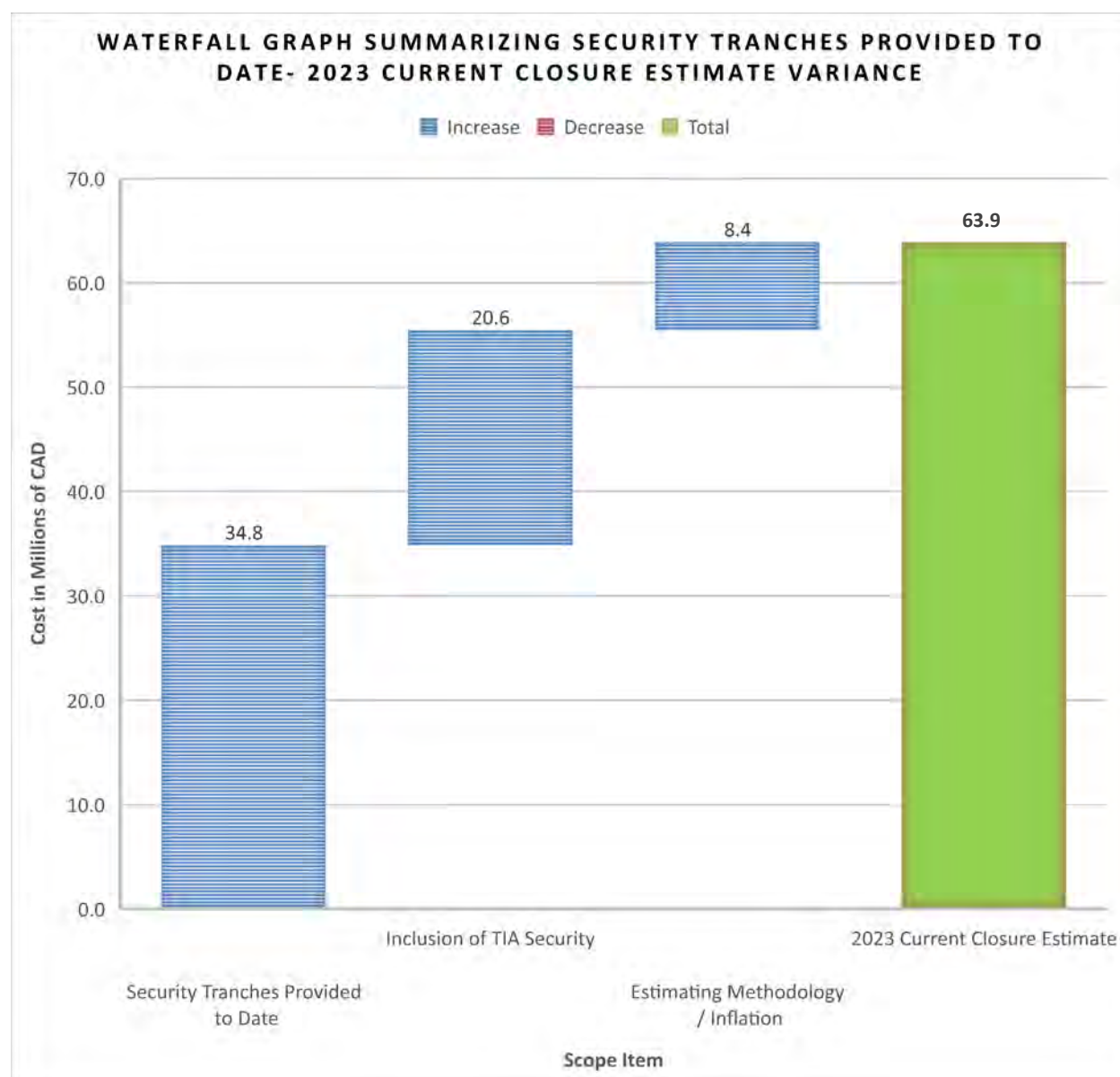
May 19, 2023

- Costs for legal services
- Health and safety plans, monitoring, and quality assurance / quality control beyond industry best practices
- Bonding and insurance costs
- Treatment and specialized disposal of hazardous and toxic materials beyond what has been identified in the estimate

7 Benchmarking

Presently \$34,848,910 of security has been provided to date to the appropriate regulatory holders. Since the Hope Bay Operation has entered into care and maintenance the updated current scope includes the reclamation and closure of all presently developed facilities and the Doris TIA. Figure 7.1 Summarizes the variances between the security tranches provided to date and the 2023 LOM security estimate.

Figure 7.1 Security Tranches Provided to Date – 2023 Current Closure Estimate Variance

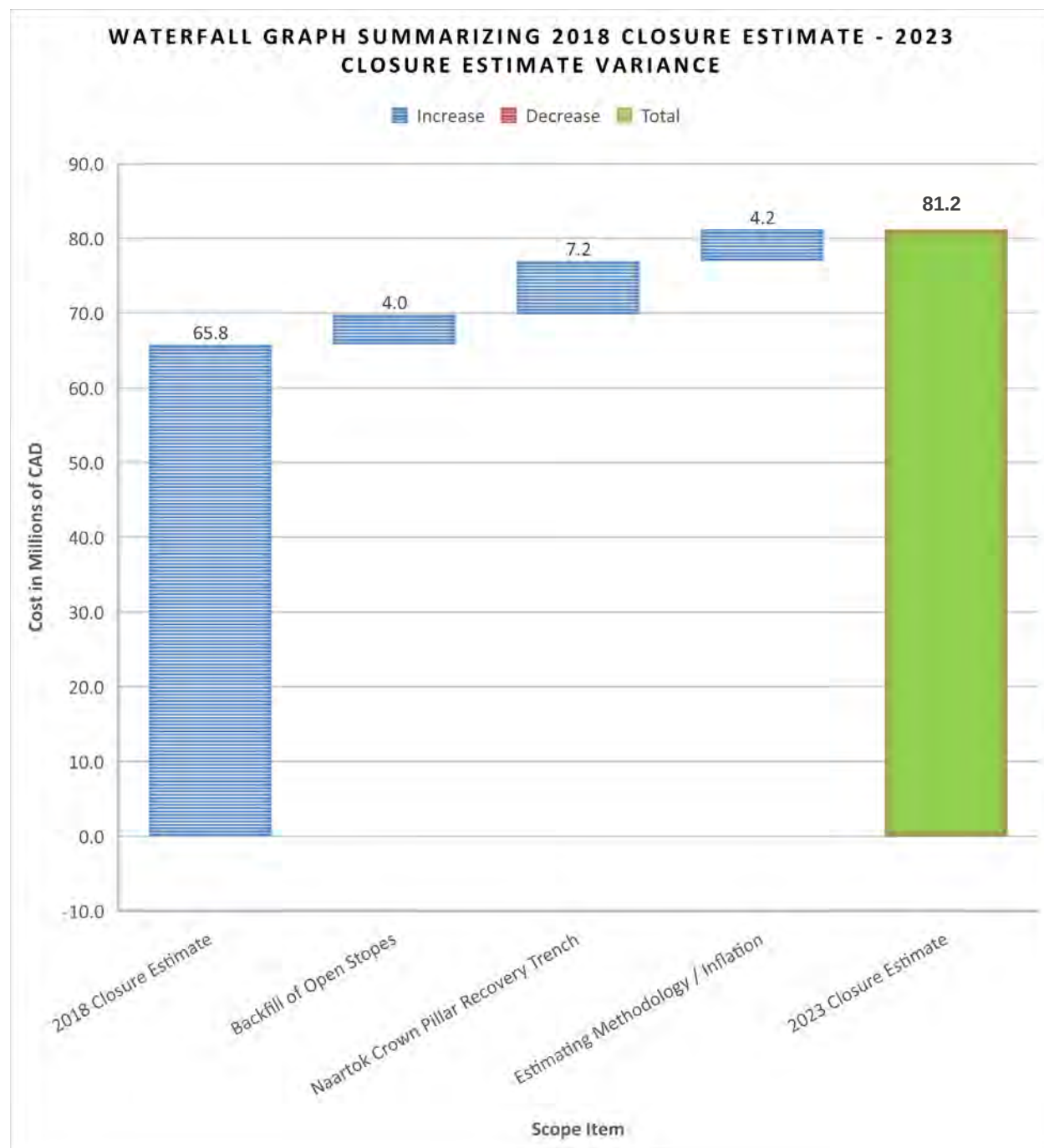


Basis of Estimate

Section 7: Benchmarking
May 19, 2023

The previous water license closure and reclamation security estimate was submitted in September of 2018 for \$65.8 million Canadian Dollars. Figure 7.2 Summarizes the variances between the 2018 security estimate and the 2023 LOM security estimate.

Figure 7.2 Waterfall Graph Summarizing 2018 Closure Estimate – 2023 LOM Closure Estimate Variance



8 References

MVLWB/INAC/GNWT Guidelines for Closure and Reclamation Cost Estimates for Mines, Mackenzie Valley Land and Water Board, Gwich'in Land and Water Board, Sahtu Land and Water Board, Wek'èezhìi Land and Water Board, Government of Northwest Territories, Indigenous and Northern Affairs Canada, November 2017

RECLAIM 7.0 User Manual Mining Version, November 2017

Appendix B Doris-Madrid Interim Closure and Reclamation Plan

Volume 1 Annex V1-7 Type A Water Licence Applications

Package P4-21

Hope Bay Project Doris-Madrid Interim Closure and
Reclamation Plan





Hope Bay Project Doris-Madrid Interim Closure and Reclamation Plan

Prepared for

TMAC Resources Inc.



Prepared by

 **srk** consulting

SRK Consulting (Canada) Inc.
1CT022.013
November 2017

Hope Bay Project Doris-Madrid Interim Closure and Reclamation Plan

November 2017

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Revision History

Revision #	Date	Section	Summary of Changes	Author	Approver
0	October 2005	Entire Document	Initial version of plan submitted in support of Final Environmental Impact Statement Report	Miramar Hope Bay Ltd. (Written by AMEC)	Miramar Hope Bay Ltd.
1	April 2007	Entire Document	Submitted in support of Water Licence Application	Miramar Hope Bay Ltd.	Miramar Hope Bay Ltd.
2	August 2012	Entire Document	Project entered Care and Maintenance phase. Closure and Reclamation of existing advanced exploration facilities (no operating mine was constructed) in accordance with Type A Water Licence 2AM-DOH0713	Newmont, Hope Bay Mining Ltd. (Written by SRK)	Newmont, Hope Bay Mining Ltd.
3	March 2014	Entire Document	Transfer of ownership and re-activation of construction activities. Revised Plan in accordance with Type A Water Licence 2AM-DOH1323	TMAC Resources Inc. (Written by SRK)	TMAC Resources Inc.
4	June 2015	Entire Document	Updated Mine Development Plan and Revised Interim Plan in accordance with Type A Water Licence 2AM-DOH1323 Amendment 1	TMAC Resources Inc. (Written by SRK)	TMAC Resources Inc.
5	September 2016	Addendum	Addendum to Interim Closure and Reclamation Plan related to ponding water along rock fill structures	TMAC Resources Inc. (Written by SRK)	TMAC Resources Inc.
6	November 2017	Entire Document	Updated Mine Development Plan and Revised Interim Plan in accordance with Type A Water Licence 2AM-DOH1323 Amendment 1	TMAC Resources Inc. (Written by SRK)	TMAC Resources Inc.

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1 Introduction

1.1 Overview

The Hope Bay Project (the Project) is a gold mining and milling undertaking of TMAC Resources Inc. The Project is located 705 km northeast of Yellowknife and 153 km southwest of Cambridge Bay in Nunavut Territory, and is situated east of Bathurst Inlet. The Project comprises of three distinct areas of known mineralization plus extensive exploration potential and targets. The three areas that host mineral resources are Doris, Madrid, and Boston.

The Project consists of two phases: Phase 1 (Doris project), which is currently being carried out under an existing Water Licence, and Phase 2 (Madrid-Boston project) which is in the environmental assessment and regulatory stage. Phase 1 includes mining and infrastructure at Doris, while Phase 2 includes mining and infrastructure at Madrid and Boston located approximately 10 and 60 km due south from Doris, respectively.

For the development of Madrid-Boston Project, TMAC requires an amendment to Project Certificate No. 003, an amendment to the Type A Water Licence 2AM-DOH1323, and a new Type A Water Licence for the proposed development and operation at the Boston deposit. The amendment to the Type A Water Licence 2AM-DOH1323 pertains to the infrastructure at the Doris and Madrid sites as well as the Madrid-Boston all weather road (referred to as Doris-Madrid sites).

This Interim Closure and Reclamation Plan (ICRP) pertains to the Doris and Madrid sites and was written in accordance with the applicable guidelines as described in Section 1.5.2.

A separate plan pertaining to closure and reclamation of the Boston Site has been developed (SRK 2017a).

1.2 Background

The project is located on Inuit Owned Land administered by the Kitikmeot Inuit Association (KIA), in the West Kitikmeot Region of Nunavut, approximately 120 km southwest of Cambridge Bay (Figure 1).

At the Doris-Madrid site, the Madrid-Boston Project focuses on mining of the Doris, Madrid North, and Madrid South deposits by utilizing and expanding upon the Doris Project infrastructure for the integrated development of the Hope Bay Belt. Doris-Madrid construction activities will overlap with the operation activities at the Doris Site (Phase 1). The proximity of the Madrid area to the Doris Site, process plant, and TIA means that the Project can utilize existing infrastructure at Doris. This will minimize the footprint, and minimize the time required to develop the Madrid deposits. The permitted infrastructure and facilities at Roberts Bay and the Doris Site have sufficient capacity to support Project construction for Phase 2.

The Doris-Madrid construction will include:

- Expansion of the Doris TIA (raising of South Dam and construction of West Dam);
- Construction of an off-loading fuel and cargo dock and additional fuel storage at Roberts Bay;
- Development of the Madrid North and Madrid South mines to commercial production;
- Incremental expansion of surface infrastructure at Madrid North and Madrid South to accommodate production mining;
- Construction of a 1,200 tpd concentrator, power plant and fuel storage area at Madrid North;
- All-weather road linking the Roberts Bay Jetty to the cargo dock;
- All-weather access road and tailings pipeline from Madrid North to the south end of the TIA;
- All-weather road (AWR) linking Madrid to Boston; and
- Wind turbines near the Doris, Madrid and Boston sites.

A complete listing of facilities, both approved and proposed, is provided in Appendix A.

Since the issuance of the project's initial Type A Water Licence (2AM-DOH0713), in September 2007, the ownership of the Project has changed three times. Construction of the project began in June 2007 by the original owner Miramar Mining Corp. (Miramar) under its subsidiary Miramar Hope Bay Mining Ltd. (MHBL). In March 2008, Newmont Mining Corporation (NMC) purchased the project and continued construction activities under their wholly owned subsidiary Hope Bay Mining Limited (HBML). NMC however ceased construction in January 2012, and placed the project in temporary closure. In January 2013, NMC sold the project to TMAC who subsequently recommenced exploration activities in June 2013, and completed construction with first gold having been poured in February 2017. Further development is currently planned, with the Madrid North and Madrid South areas being included under the amended Type A water licence in preparation for bringing those mines into full production starting in 2019.

1.3 Closure and Reclamation Plan History

This ICRP (the Plan) presents the closure obligations and the plan for closing all facilities, and demonstrates how the closure obligations will be met.

The first Closure and Reclamation Plan for the site was prepared by AMEC (2005) and submitted as a supporting document for the Final Environmental Impact Statement (FEIS). The 2005 Closure Plan described closure of the Doris North Project had it produced and milled ore in accordance with the 2005 Miramar FEIS (MHBL 2005). Subsequent to this original closure plan, a number of amendments and modifications to the original Type A Water Licence 2AM-DOH0713 were submitted to the Nunavut Water Board for review and approval. These amendments and modifications also required revisions to the project's Closure and Reclamation Plan.

In 2012 a new Closure and Reclamation Plan was submitted by the new owners, Hope Bay Mining Ltd., when the site was placed into temporary closure. The 2012 Plan (SRK 2012) was reflective of this status and differed from the 2005 Plan. The 2012 Plan addressed the following key areas:

- The Project never advanced to the production stage and was only an advanced exploration program including underground bulk sampling and a decline that terminated at the ore face;
- The bulk sampling program produced waste rock and ore which were stored on surface on dedicated rock pads; and
- The mill was not constructed and tailings had not been produced.

After ownership change in 2014, the 2012 Plan was revised to reflect operations based on TMAC's intention of advancing the Project through to production. That Plan focused on the closure of the site in accordance with the existing Type A Water Licence 2AM-DOH1323. The 2014 plan was amended in 2015 and an addendum was issued in 2016 to reflect changes to the Project and incorporate the new conditions as per Amendment No.1 to Water Licence 2AM-DOH1323.

The update of the ICRP discussed in this report was necessary because the Madrid North and Madrid South advanced exploration areas originally approved under the 2BB-MAE1727 Water License are part of the proposed Phase 2 Doris-Madrid development and will be captured under Amendment No. 2 to Water Licence 2AM-DOH1323. The differences between the current and the immediately preceding revision of the ICRP are detailed below.

A chronological account of these revisions is provided in Table 1.

Table 1: Closure and Remediation Plan Revision History

Document Title	Author	Release Date	Key Changes
<i>Preliminary Mine Closure and Reclamation Plan Doris North Project - Hope Bay Belt Nunavut, Canada</i>	Miramar Hope Bay Ltd. (Written by AMEC)	October 2005	Initial version of plan submitted in support of Final Environmental Impact Statement Report.
<i>Mine Closure and Reclamation Plan Doris North Project, Nunavut</i>	Miramar Hope Bay Ltd.	April 2007	Submitted in support of Water Licence Application.
<i>Doris North Closure and Reclamation Plan</i>	Newmont, Hope Bay Mining Ltd. (Written by SRK)	August 2012	Project entered Care and Maintenance phase. Closure and Reclamation of existing advanced exploration facilities (no operating mine was constructed) in accordance with Type A Water Licence 2AM-DOH0713.
<i>Doris North Mine Closure and Reclamation Plan</i>	TMAC Resources Inc. (Written by SRK)	March 2014	Transfer of ownership and re-activation of construction activities. Revised Plan in accordance with Type A Water Licence 2AM-DOH1323.
<i>Doris North Mine Interim Closure and Reclamation Plan June 2015</i>	TMAC Resources Inc. (Written by SRK)	June 2015	Updated Mine Development Plan Revised Interim Plan in accordance to Type A Water Licence 2AM-DOH1323 Amendment 1.
<i>Doris-Madrid Interim Closure and Reclamation Plan November 2017</i>	TMAC Resources (written by SRK)	November 2017	Updated to include commercial production at Madrid North and Madrid South mines, and other changes to the Phase 2 project. Submitted as supporting document for the Final Environmental Impact Statement Report.

This ICRP addresses the following project changes from the current approved ICRP:

- Increase in waste rock volumes, but all waste rock is returned underground as backfill prior to closure of the mine;
- Increase in tailings volume. Filtered detoxified cyanide leach tailings continues to be mixed with waste rock and used as backfill and floatation tailings are deposited as a low solids content slurry in the existing Doris TIA;
- Raise of the South Dam and construction of the West Dam to accommodate the increased volume of tailings;
- Construction of a concentrator at Madrid North with the associated tailings pipeline along a new all-weather road;
- Development of the Madrid North and Madrid South Mines to full production;
- Construction of an all-weather road to Boston;
- Construction of up to six wind poser generation towers;
- Construction of a new Cargo Dock in Roberts Bay and construction of a new fuels storage facilities there; and
- Expansion of Doris Camp to accommodate 400 persons.

1.4 Water Licence Requirements

The Project and related facilities are operated in accordance with Water Licence No. 2AM-DOH1323. Table 3 below provides a summary of the requirements for closure, as set forth in the Water Licence, and how this document addresses each of these requirements.

Table 2: Table of Concordance with Type A Water Licence 2AM-DOH1323 Amendment No. 1

Licence Ref.	Licence Conditions (2AM-DOH1323)	Closure Plan Reference	Closure Plan Response/Specification
Part L. 1	Notification in writing will be submitted to the Board at least 60 (sixty) days prior any intent to achieve Recognized Closed Mine status	n/a	Compliance with licence condition will be met.
Part L. 2	Notification to the board as soon as practically possible of any intent to enter a Care and Maintenance Phase	n/a	Compliance with licence condition will be met.
Part L. 3	The Licensee shall, upon providing notice to the Board as per Part L, Item 2, review all operational plans and submit revised Plans to reflect the Care and Maintenance status, to the Board for approval in writing, within three (3) months of providing notice	n/a	Compliance with licence condition will be met.
Part L. 4	The Licensee shall provide to the Board, at least thirty (30) days advanced notification in writing, of the initial start of Operations or change of Project Phase. Notification maybe provided separately or in accordance with monthly monitoring report as per Part J, Item 19	n/a	Compliance with licence condition will be met.
Part L. 5	The Board has approved with the issuance of this Licence the Plan entitled "Doris Mine Interim Closure and Reclamation Plan, Hope Bay, Nunavut", dated June 2015 and the addendum submitted in September 2016.	n/a	n/a
Part L. 6	The Licensee shall submit to the Board for approval in writing, at least two years following approval of the Amended Licence and prior to September 30, 2019, a revision to the closure plan referred to in PART L, Item 5.	n/a	This document will supersede the plan referred to in Part L, Item 5.
Part L. 7	The Licensee shall submit, subject to Part L. Item 8, to the Board for approval in writing, prior to September 30, 2022, a revision to the closure plan referred to in PART L, Item 5.	n/a	Compliance with licence condition will be met.
Part L. 8	The Licensee shall submit to the Board for approval, twelve (12) months prior to planned Closure, a Final Mine Closure and Reclamation Plan prepared in accordance with the Mine Site Reclamation Guidelines for the Northwest Territories, 2007 and consistent with the INAC Mine Site Reclamation Policy for Nunavut, 2002. The Final Plan shall incorporate revisions, which reflect the pending closed status of the mine, and include the following:	n/a	Compliance with licence condition will be met.
Part L. 8.a	Soil Quality Remediation Objectives along with CCME Guidelines and the Government of Nunavut Environmental Guideline for Site Remediation;	n/a	Compliance with licence condition will be met.
Part L. 8.b	A Protocol for the disposal of any contaminated soil into the underground mine at closure;	n/a	Compliance with licence condition will be met.
Part L. 8.c	Environmental Site Assessment plans in accordance with Canadian Standards Association (CSA) criteria; and	n/a	Compliance with licence condition will be met.
Part L. 8.d	An Evaluation of the Human Health and Ecological Risk Assessment.	n/a	Compliance with licence condition will be met.
Part L. 9	The Licensee shall, should the Project remain, or be in Care and Maintenance, submit an updated estimate of total mine closure restoration liability, within twelve (12) months of entering Care and Maintenance and every three (3) years thereafter.	n/a	Compliance with licence condition will be met.
Part L. 10	The Licensee shall include, with the Plan submitted under Part L, Items 6, 7 and 8, an updated estimate of the total mine closure restoration liability using the current version of RECLAIM, its equivalent or other similar method approved by the Board in writing, in accordance with principles of the INAC "Mine Site Reclamation Policy for Nunavut" (2000).	n/a	Compliance with licence condition will be met.
Part L. 11	The Licensee shall, if not approved by the Board, revise the Plan(s) referred to in this Part and resubmit to the Board for approval within thirty (30) days of receiving notification of the Board's decision.	n/a	Compliance with licence condition will be met.
Part L. 12	The Licensee shall submit to the Board for approval, at least twelve (12) months prior to the start of Closure works, engineering drawings and specifications of the tailings final cover system design.	n/a	Compliance with licence condition will be met.
Part L. 13	The Licensee shall complete all reclamation work in accordance with the Plan(s) referred to in this Part, as and when approved by the Board in writing.	n/a	Compliance with licence condition will be met.
Part L. 14	The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.	Section 5	See referenced section.
Part L. 15	All roads and airstrip, if any, shall be re-graded to match natural contour to reduce erosion.	Section 4.5.5	See referenced section.
Part L. 16	The Licensee shall remove any culverts and restore the drainage to match the natural channel. Measures shall be implemented to minimize erosion and sedimentation.	Section 4.5.5	See referenced section.
Part L. 17	In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.	Sections 4.5.2 and 4.5.5	See referenced sections.
Part L. 18	Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, 2010. Materials such as soil and rock that have been contaminated by hydrocarbons may be disposed of in the underground mine to remain frozen with permafrost. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.	Sections 4.5.4 and 4.5.5	See referenced sections.
Part L. 19	The Licensee shall contour and stabilize all disturbed areas to a pre-disturbed state upon completion of work.	Section 4.5.5	See referenced section.
Part L. 20	The Licensee shall consult traditional land users, land owners, and other stakeholders on the proposed post-closure land use criteria. Particularly, the proposal to leave certain facilities in place and confirm the soil quality remediation objectives.	Section 1.6	See referenced section.

1.5 Regulatory Context

1.5.1 Legislation Applicable to Mine Closure

Legislation applicable to mine closure and reclamation planning in Nunavut includes:

- Nunavut Land Claims Agreement (Canada 1993);
- Territorial Lands Act (Canada 1985a);
- Territorial Lands Regulations (Canada undated);
- Nunavut Waters and Nunavut Surface Rights Tribunal Act (Canada 2002);
- Nunavut Waters Regulations (Canada 2013);
- Fisheries Act (Canada 1985b), and applicable regulations;
- Arctic Waters Pollution Prevention Act (Canada 1985c);
- Arctic Waters Pollution Prevention Regulations (Canada undated);
- Transportation of Dangerous Goods Act (Canada 1992);
- Transportation of Dangerous Goods Regulations (Canada 2001);
- Environmental Protection Act (Nunavut 1988a);
- Environmental Rights Act (Nunavut 1988b);
- Mine Health and Safety Act (Nunavut 1994); and
- Mine Health and Safety Regulations (Nunavut 1995).

The primary regulatory instruments applicable to mine closure in Nunavut are however land use authorizations and water licences.

Surface rights for Inuit Owned Land (IOL) are vested in the Kitikmeot Inuit Association (KIA), which administers the access and management of the IOL for the benefit of the Inuit in the region. This is done through land use permits and lease agreements.

Use of water resources and waste disposal in Nunavut is regulated by the Nunavut Water Board, and the Project will require a Type A Water Licence for mine development, pursuant to the Nunavut Waters Act. The closure and reclamation plan, including the associated cost estimate, will require approval under the water licence.

1.5.2 Applicable Guidelines Related to Mine Closure

The following guidelines are applicable to mine closure planning in Nunavut:

- Mine Site Reclamation Policy for Nunavut (INAC 2002); and
- Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (MVLWB and AANDC 2013).

Although the NWT guideline applies outside of the Nunavut jurisdiction, it is considered as current best practice. This ICRP adheres to the content and reporting structure recommended in the NWT guideline, where no contradictions were found with the applicable NU policy.

1.5.3 Environmental Assessment Requirements

This ICRP will accompany the final environmental impact statement (FEIS) prepared for the Madrid-Boston Project and incorporates changes requested during the review process of the draft environmental impact statement (DEIS) submitted to the Nunavut Impact Review Board (NIRB) in December 2016 (SRK 2016).

As Project development advances, the level of detail contained in this ICRP will undergo further revisions to reflect the progress of the Project as well as changes in technology and/or standards or legislation. As required, the ICRP will include thresholds and identified adaptive management responses. Revisions should consider input from consultations with communities and other stakeholders.

1.6 Closure Principles

The site has been designed with closure in mind and throughout operations every effort to apply progressive reclamation will be evaluated and implemented where practical to do so. With this in mind, the overall objectives of this Plan are as follows:

- Establish stable chemical and physical conditions; and
- Ensure the future use and aesthetics of the project site following reclamation activities meets the requirements of Aboriginal, Federal and Territorial governments, landowners, local communities and regulatory authorities.

These closure principles and the subordinate objectives, criteria, and strategies presented in this report have been developed in accordance with the Nunavut Mine Site Reclamation Policy (DIAND 2002) and the Northwest Territories mine site reclamation guidelines (MVLWB / AANDC 2013).

In terms of future land use, some surface infrastructure components at the site may be considered a substantial contribution to the development of Nunavut and could be left in place after closure following consultation with all interested parties. For example, the fuel storage, airstrip, jetty, roads and rock pads can be used as a base for other projects in the area. However, for the purposes of this report it has been assumed these structures and facilities will all be removed and/or reclaimed to acceptable standards. Closure and reclamation of these facilities is also accounted for in the supporting cost estimate.

2 Project Environment

2.1 Climate

The climate in the Hope Bay Project area is one of extremes. There is relatively little precipitation, and temperatures stay below freezing for most of the year, reaching over 20°C for short periods in the summer. Summer is a season of nearly constant light, while darkness, twilight, and extreme cold dominate winter.

Inuit have noted changes in climate trends (as recorded in a Naonaiyaotit Traditional Knowledge Project report), and their observations are supported by historical climate data collected over the last half century. While predicting the effects of climate change is difficult, effects are believed to include higher temperatures and precipitation, which in turn may affect permafrost and snow depth.

Air quality in the Hope Bay Project area and elsewhere in Nunavut is generally of good quality, reflecting the low amount of air pollution from large populations. Outside of the Hope Bay Project area, most air emissions are from the use of diesel generators, heaters, vehicles, snowmobiles, all-terrain vehicles and boats. Noise levels are generally low.

Detailed climate and air descriptions is provided in the main FEIS document (TMAC 2017) .

2.2 Physical Environment

The Project is located on the Canadian Shield. Exposed bedrock outcrops are common, and mostly devoid of vegetation. Surface observations and subsurface investigations of the foundation soils found the proposed project area is characterized mostly by marine deposits of silty-clay with trace sand, with small pockets of glaciofluvial deposits of coarse sand and some gravel. Eskers are common in the southern part of the larger Phase 2 project area, but not within the disturbed footprint of the proposed Doris-Madrid sites.

Project-wide overburden consists of permafrost soils which are mainly marine clays, silty clay, and clayey silt, with pockets of moraine till underlying these deposits. The marine silts and clays contain ground ice ranging from 10 to 30% by volume on average, but occasionally as high as 50%. The till typically contains low to moderate ice contents ranging from 5 to 25%. Overburden soil pore water is typically saline due to past inundation of the land by seawater following deglaciation of the Project area. Salinity measurements (EBA 1996) range from 3 to 48 parts per thousand, which depresses the freezing point and contributes to higher unfrozen water content at below freezing temperatures.

Permafrost at the Project area extends to depths of about 565 m, with an average geothermal gradient of 0.021°C/m. Active layer depth in overburden soil averages 0.9 m, with a range from 0.5 to 1.4 m (SRK 2017b).

General foundation conditions, material properties for geotechnical analysis, and development of the overburden isopach surface are described in more detail in SRK (2017b).

2.3 Biological Environment

Where rock outcrops, water, and cliffs are absent on the landscape, trees and summer flowers are numerous and dense in the tundra of the Project area. Trees are short and stunted forms of dwarf birch, green alder, willow, and white and black spruce can be found in some areas. Sedge meadows and wetlands are common in low-lying moist areas. More than 870 plant species grow in the Project area, including many species of lichens, mosses, and algae.

Terrestrial animals in the region include barren-ground caribou (of the Dolphin/Union, and Beverly herds), muskox, grizzly bear, wolverine, and grey wolves, as well as several species of raptor, waterfowl, and upland breeding birds. Caribou and caribou hunting are central to Inuit culture, identity, recreation, and kinship and are of economic importance to the Inuit and other residents of Nunavut.

Four species of cliff-nesting raptors (peregrine falcon, gyrfalcon, rough-legged hawk, and golden eagle) and three ground-nesting raptor species (snowy owl, short-eared owl, and northern harrier) may live in the area. Waterbird species in the Project area include geese, tundra swan, several species of ducks, gulls, Arctic tern, four species of loons, and sandhill crane.

A total of fourteen fish species are found in lakes, ponds, and streams in the Project area. The most common fish species is the Ninespine Stickleback, followed by Lake Trout, Arctic Char, Arctic Grayling, Slimy Sculpin, Lake Whitefish, Cisco, Least Cisco, Burbot, and Broad Whitefish.

3 Project Overview

3.1 Project Timeline

The Project involves construction, operation, and closure of underground mines at Doris, Madrid North, and Madrid South as well as mineral processing facilities at Doris and Madrid North. In addition, the Project will consist of extended operations, then closure of existing facilities at Doris and Roberts Bay. A graphic representation of the timelines is presented in Figure 2. The stages associated with the Project are as follows:

- Operations, Phase 1: Operations of the Doris Mine, already permitted under an existing water license (2016 to 2021)
- Construction, Bulk Sample
 - Madrid North Mine (2018)
 - Madrid South Mine and access road to Madrid South (2019)
- Construction, Phase 2
 - Madrid North Mine (2019)
 - Madrid South Mine (2029)
 - Boston Mine, and access road to Boston (2019 to 2023)
 - Expansion of the TIA infrastructure at Doris (2019)
 - Expansion of the Doris infrastructure (cargo dock, fuel storage) to support Phase 2 (2019 and 2020).
- Operations, Phase 2
 - Madrid North Mine (2019 to 2031)
 - Madrid South Mine (2029 to 2032)
 - Boston Mine (Years 2022 to 2029)
 - Extended operation of the infrastructure at Doris (2019 to 2032).
- Closure: Closure of all facilities (2032 to 2035).
- Post-closure: Post-closure monitoring (Years 2034 to 2044).

Although the Boston Mine operations are not regulated under the Doris-Madrid Water Licence, they were included in the overall schedule above for completeness.

The Doris-Madrid mine plan consists of underground mining of 16.1 Mt of ore, over an approximately 14-year mine life (TMAC 2017). Ore processing will occur at Doris at a maximum rate of 2,400 t/day and at Madrid North at a maximum rate of 1,200 t/d.

Gold recovery from ore will involve three generic steps, as follows:

- *Step 1 – milling and flotation:* the ore is crushed and ground followed by classic flotation methods (without cyanide) to separate a gold concentrate representing about 6-8% of the original ore. Flotation tailings will be produced at Doris and Madrid North processing facilities, representing about 92-94% of the original mass of ore. The tailings is pumped to the Doris TIA for disposal from either processing facility.
- *Step 2 – cyanide leaching and resin absorption:* the gold concentrate is ground finer and mixed with cyanide solution to leach the gold. The gold from solution is then captured on a special resin resulting in a cyanide leach tailings cake. The residual cyanide in these tailings is destroyed through a detoxification process. The detoxified tailings cake is then used as underground backfill. Flotation concentrate from Madrid North will be hauled to Doris, where the cyanide leaching will be completed.
- *Step 3 – electrowinning and smelting:* the gold bearing resin and the clarified gold-bearing cyanide solution is processed through electrolysis to precipitate the gold which is then smelted to produce gold doré (unrefined gold bars), the final product from the mine.

3.2 Geochemical Characterization

Extensive geochemical testing and characterization have been completed on the Project (SRK 2017c, 2017d, 2017e). This includes characterization of ore, tailings, waste rock and quarry material that will be used in construction.

Waste rock and ore from Doris, Madrid South and Madrid North have a low risk of acid rock drainage (ARD). The primary geochemical concern with respect to waste rock and ore is neutral metal leaching, specifically arsenic. Only quarry or waste rock with low risk of ARD and metal leaching will be used to construct permanent surface infrastructure.

Flotation tailings are classified as non-potentially acid generating (non-PAG), with potential for leaching of arsenic under neutral pH conditions. The detoxified cyanide leach tailings are classified as potentially acid generating (PAG), with dissolved metal concentrations expected to increase under acidic conditions. However, based on humidity cell testing, these tailings are expected to remain neutral for decades, with potential for arsenic leaching under neutral conditions like the flotation tailings.

All material used for reclamation will be sourced from approved quarries or existing stockpiles (Quarry #2 and Quarry #3). Where overburden soils will be used for reclamation, a sampling and testing program will be carried out to ensure no chemical or hydrocarbon contamination exist within the stockpiles. The CCME soil quality guidelines (CCME 2015) and the Nunavut Environmental Guidelines, Industrial Land Use, Coarse-Grained Soils (Government of Nunavut 2009) will provide guidance to the acceptability of these materials.

3.3 Tailings Management

Flotation tailings will be produced at Doris and Madrid North, with cyanide leach tailings only produced at Doris.

Flotation tailings from Doris and Madrid North will be deposited in the Doris TIA, which will be expanded from the 2.5 Mt Phase 1 facility to a storage capacity of 18.0 Mt. To accommodate the additional tailings from Phase 2, the South Dam will be raised and a new West Dam will be constructed. The North Dam will remain unchanged. Flotation tailings will be spigotted from the south and eastern end of the facility forming a beach with a slope angle of approximately 1% with a reclaim pond at the north end of the facility against the North Dam. The Interim Dike, from Phase 1, will be buried by the tailings as deposition progresses.

Filtered detoxified cyanide leach tailings will be mixed with waste rock and used as backfill underground at Doris and Madrid North. At closure, these mines will be flooded which will prevent further development of ARD and the release of acidity and/or metals. Based on the mine schedule and estimated reflooding times, at closure, the detoxified leach tailings backfill at Doris will not become acidic. In the Madrid North mine, some of the detoxified tailings may become acidic prior to flooding.

3.4 Waste Rock and Ore Storage

The current mine plan requires all mine waste rock be used for underground backfill (TMAC 2017). During early operations, a portion of the produced waste rock will be temporarily stored on the surface in waste rock piles located at Doris, Madrid North and Madrid South; the remainder will remain underground. All waste rock stored on the surface will be hauled underground for backfill prior to mine closure. The deficit in backfill material will be supplemented from quarry rock.

In the event localized ARD is produced, it is anticipated that the high carbonate content in the overall waste rock stockpiles would provide sufficient buffering capacity that the overall drainage from the stockpile would remain neutral to alkaline. During operations, all runoff from the waste rock piles and ore stockpiles will be collected in contact water ponds.

3.5 Water Management

Water encountered at the Doris and Madrid is classified into five categories based on the contact surface. Each type of water is managed separately to achieve the water management goals

Table 3: Water Classification, Management and Discharge Approach

Type	Contact Surface	Management Approach	Discharge Approach
Non-Contact Water	Undisturbed runoff, and runoff from access roads and overburden piles.	Manage sediment where required according to Best Management Practice (BMPs)	Discharge to natural catchment downstream of sediment controls (if required)
Mine Water	Water which enters the underground workings	Pumped to Marine Mixing Box at Doris	Discharged to Roberts Bay
Contact Water	Runoff in contact with waste rock, ore stockpiles, and tailings	Contained in diversion channels and storage ponds, transferred via pumped pipelines	Used in processing as make-up water or pumped to the TIA
Freshwater	Freshwater from lake	Pumped from Windy Lake existing or proposed intake systems for potable and industrial use. Pumped from Doris Lake for concentrator make-up water	Not applicable
Treated Sewage water	Domestic sewage	Treated on-site	Discharged to the TIA or the tundra

3.6 Ancillary Facilities

Site layouts, including a work breakdown structure, for all expected facilities are provided in Figure 3 to Figure 11. Ancillary facilities at the Project site will include process plants, power generation, worker accommodations, administration offices etc.

4 Permanent Closure and Reclamation

4.1 Definition of Permanent Closure

According to the MVLWB and AADNC (2013) “*Permanent closure is the final closure of a mine site with no foreseeable intent by the existing proponent to return to either active exploration or mining*”. This indicates that once closure activities on the site are complete, the site is anticipated to have no activity except post-closure monitoring and maintenance. Permanent closure does not preclude future exploration and mining activities.

4.2 Decision to Close

Permanent mine closure will occur when either all mineable and economic mineral reserves have been exhausted, or if for other reasons, over a sustained period of time, the Project is no longer a viable economic proposition. Since permanent closure will affect mine employees, suppliers and the public, careful consideration will be taken in any decision to close.

4.3 Overview and Schedule

Some mine infrastructure may stay in place should the local communities, KIA, government or other bodies choose to take ownership of it. Additionally, as outlined previously, some mining infrastructure could be reclaimed prior to closure. The closure schedule is outlined in Figure 2; however, assumes that all infrastructure associated with the Project will be removed during the final closure stage. Based on this schedule, closure is expected to take less than three years.

4.4 Description of Mine Facilities

Figure 1 shows the geographic location of the Doris-Madrid Project. In this Plan, the Doris-Madrid site is described by facility type. Each facility type may be present at multiple work areas. Each Facility is assigned a work breakdown structure (WBS) code. A complete list of the facilities, work area, associated WBS code and the corresponding section of this plan that describes each facility is provided in Appendix A. Detailed descriptions of each area are provided in the following sections.

4.4.1 Underground Mine Workings

Underground workings will be located at Doris (Figures 3 and 6), Madrid North (Figures 8 and 10), and Madrid South (Figures 9 and 10). Each mine will have a portal with a decline and associated vent raises. Some of the vent raises have various associated facilities like the Mine Air Heating Facility and a fuel tanks, while others have only a plenum and emergency shelter facilities on surface. Access to each of these facilities is through all-weather access roads.

The underground mining methods are similar in all three areas, with sublevel long hole retreat (SLR) method followed by a combination of cemented rock fill (where required) and unconsolidated waste rock backfill. Filtered detoxified cyanide leach tailings will be mixed with the waste rock prior to backfill. Ore is extracted from sublevel panels and hauled to surface by truck. Once a stope block is finished, backfill can be introduced to fill and stabilise the area. This way a large proportion of the waste rock will be used directly as backfill, without the need of hauling it to surface. Crown pillar recovery trenches (CCRT) will be excavated at each of the mines breaking through to the surface, and will be completely backfilled as part of normal operations.

A combined quantity of nearly 24 million tonnes of ore and waste rock will be mined, over the 14 years of the proposed mine life, representing 16.1 million tonnes of ore and about 7.8 million tonnes of waste rock. The quantities of waste rock are in fact insufficient to satisfy the backfill requirements, with an additional 1.8 million tonnes of quarry rock being required TMAC 2017.

The Doris mine will be partially located in permafrost and will intercept the Doris Lake talik (SRK 2015), whereas the Madrid North and Madrid South mines will intercept unfrozen ground, either at the edge of the open taliks formed by Wolverine Lake and Patch Lake or in the subpermafrost (SRK 2017f). Results of the groundwater modelling suggest that the maximum mine inflow at the Doris Mine will be in the order of 2,650 m³/day, gradually decreasing to about 1,630 m³/day. Maximum predicted inflows at Madrid North and Madrid South will be in the order of 1,180 m³/day and 550 m³/day respectively. Water from the lakes will contribute about 70% at Doris, 96% for Madrid North and 90% for Madrid South, with the remainder coming from deep regional groundwater. In all instances, the elevation of the mine openings at surface (portals and vent raises) exceeds the elevation of the nearby lakes, eliminating the possibility of mine water outflow. During operations, the mine water will be pumped to the Marine Mixing Box in the Doris Mill, and onward to the Roberts Bay Discharge System.

4.4.2 Waste Rock Dumps, Ore stockpiles, and Overburden Piles

According to the guidelines (MVLWB/AANDC, 2013) this project component category includes waste rock dumps and ore stockpiles. Overburden storage dumps were included into this category for closure cost estimating purposes.

Waste rock dumps and ore stockpiles will be developed at each of the Doris (Figure 6), Madrid North (Figure 8), and Madrid South (Figure 9) areas. While footprints and shapes vary according to the storage capacity requirements and the local topography, in all instances these facilities will be located on purpose-built rock fill pads. The rock fill will be geochemically suitable ROQ from approved quarries.

According to the Water License (2AM-DOH1323) only non-mineralized waste rock may be left on surface at the end of the mine. However according to the mine plan no waste rock will be left on surface. It is assumed that all ore will have been processed at the end of the mine life. The top layer of the rock fill of the Ore Pads will be removed and disposed of in the TIA or underground. The remaining clean rock will be regraded to prevent permanent ponding.

Overburden dumps were developed at Roberts Bay (Figure 4), Doris, (i.e., Quarry#2 Overburden Dump (Figure 6), and Quarry D, i.e., the drill core laydown (Figure 3)). No such facilities are being planned for Madrid North and Madrid South. These facilities were built directly onto the tundra and do not have a rock fill pad as base. The Roberts Bay Overburden Dump is comprised mainly of oversize rock from the excavation of the Roberts Bay Fuel Tank Farm and pockets of overburden soils. The top of the Overburden Dump was covered with a layer of crushed rock. The 2H:1V side slopes are constructed of oversize rock and are stable. The Quarry #2 Overburden Dump is comprised largely of the soils and snow/ice excavated from the North Dam key trench and the various other excavations around the Doris Camp area. It was built in a wedge shape, with a steeper side-slope of three sides and a more gently sloping top surface. The quarry D overburden pile is relatively small and was shaped with a flat top surface to serve as drill core laydown.

Contact water ponds are located downstream of each of the waste rock dumps and ore stockpiles. The berms containing these ponds will be constructed based on a common design section, with a frozen foundation and a geomembrane incorporated into the fill as the water retaining element. Downstream of the overburden piles sedimentation berms are constructed. These are simple structures that aim to slow down and elevate the head of water and allow the sediments to fall out and do not incorporate impermeable geomembranes.

4.4.3 Tailings Impoundment Area

The Doris TIA area is located approximately 1.5 km east of Doris within the basin of the former Tail Lake. The TIA is comprised of three containment structures (North, South and West dams) which contain subaerial tailings and the reclaim pond (Figure 7). Flotation tailings will be spigotted in the south and western side of the facility, creating a tailings beach against the South and West dams and pushing the water in the Reclaim Pond against the North Dam. No tailings will be deposited placed against the North Dam.

Only flotation tailings will be deposited within the TIA. Detoxified leach tailings will be mixed with waste rock and placed underground as backfill. The flotation tailings are non-PAG, and can therefore, be deposited subaerially and closed using a dry cover.

Water from the Reclaim Pond will be used for make-up process water in the Doris Processing Facility and the Madrid North Concentrator. Excess TIA water will be pumped to the Marine Mixing Box and onward to the Roberts Bay Discharge System.

4.4.4 Buildings and Equipment

A complete itemised list of all buildings and facilities is presented Appendix A. The following general categories of buildings exist or will be constructed at Doris-Madrid:

- 400-person camp facility and associated utilities;
- Ore beneficiation facilities (Doris Process Plant and Madrid North Concentrator);
- Maintenance shops;
- Offices and Mine Dry;
- Warehousing;
- Fuel tank farms;
- Reagent and explosives storage facilities;
- Diesel power generation plants and wind power generators; and
- Air heating facilities for underground ventilation.

Buildings and facilities are constructed in clusters at Roberts Bay, Doris, Madrid North, and Madrid South.

There are few buildings and facilities at Roberts Bay (Figures 3 and 4). This is an area primarily serving as the marine transportation hub for fuel, materials and supplies, with the Cargo Dock and the Jetty located here. The three main fuel tank farms are located here, with a combined storage capacity of 45 million liters.

The Doris Camp is located approximately 5 km south of Roberts Bay and is shown on Figures 3 and 6. This is the centre of operations for the Project. It includes the up a 400-person accommodation complex, an office complex, and a mine dry facility linked by an arctic corridor. A primary and a backup power plant, together with warehousing and mining operations support buildings and facilities are located here. The Process Plant, including crushing and milling facilities are located in a large. A fuel tank farm of 7.5 million liters and a firewater tank are also found at Doris.

The Madrid North area is located about 14 kilometers from Roberts Bay (Figure 3). The facilities include a Concentrator and mine support facilities such as offices, warehousing, and mechanical shop. A diesel power plant and a backup generation unit will be installed at Madrid North, together with a fuel tank farm with storage capacity of 4.5 million liters.

Typical mine support structures are located at the Madrid South area, which is about 19 km south of Roberts Bay (Figure 3).

All buildings and structures are located on bedrock or non-acid generating rock-fill pads. The rock fill pads were constructed to ensure positive drainage and prevent permanent ponding. All areas are accessible by all-weather roads.

Tall structures like the communication towers consist of steel girders. The largest structures like the Doris Process Plant and the Madrid North Concentrator are steel frame buildings with sheet metal siding. Some of the buildings, e.g. the Doris Office and Mine Dry Complex, were assembled from Seacan containers, while other structures like the Doris Coreshack are steel frame tent structures. Each of these buildings were inventoried in the closure cost estimate and the dimensions were obtained from engineering drawings or estimated from site photographs.

Utilities to the buildings are distributed through utility corridors slightly elevated on steel structures. Pipelines, where running water and sewage is provided, are insulated and heat traced.

The wind power generators will be located on bedrock pads along spur roads near the main roads. Two generators will be located just south of Doris (Figure 3), two between Madrid North and Madrid South (Figure 10 and 11), and the last two just north of Boston (Figure 11).

The main Explosives Storage Facility will be built along the Secondary Road near the South Dam, as shown in Figure 7. This facility will be comprised of a series of storage pads for high explosives and ammonium nitrate. The high explosives storage pads will be located west of the road, whereas the two AN/FO pads will be built east of the road.

4.4.5 Mine Infrastructure

A complete listing of all infrastructure is provided in Appendix A. The following general categories are included:

- Rockfill pads;
- All-weather roads (about 70.5 km total) and associated water crossings (bridges and culverts);
- All-weather airstrip and ice airstrip;
- Roberts Bay cargo dock and jetty;
- Quarries (a total of 28); and
- Laydown areas.

Nearly all facilities already built or planned to be built at Doris-Madrid have a rock fill pad foundation (Figures 4, 5, 6, 8, 9, 10), with notable exceptions like the overburden dumps, tailings area, and facilities constructed on bedrock outcrops. The purpose of the rock fill pads is to protect the underlying permafrost and ensure the physical stability of the structures and facilities built upon them. Only geochemically suitable run-of-quarry (ROQ) rockfill can be used to build these pads. ROQ is sourced from approved quarries around the project sites. The top of these pads is in general flat, or slightly sloped towards the edges to promote run-off. The side-slopes are typically 1.5H:1V for fill thicknesses up to 2 m and 2H:1V where fill thickness exceeds 2 m. In some cases, a 0.15 m thick surfacing layer of crushed gravel is placed on top of the pads.

The all-weather roads were built by placing ROQ fill directly on tundra, similarly to the rockfill pads. The road fill thickness was design to ensure protection of permafrost. Turnouts were built in suitable locations to allow two-way traffic. The typical road width is 8 m, with embankment side slopes of 1.5H:1V where road fill is up to 2 m thick, and 2H:1V where road fill exceeds 2 m thickness. A surfacing layer of crushed rock is placed on the roads. All ROQ and crushed rock was sourced from approved quarry sites.

The all-weather airstrip was built by placing Run-of-Quarry (ROQ) directly on tundra, thus they are very like the roads and rock pads. The ice airstrip will be built seasonally on Doris Lake or Windy Lake, when minimum ice thickness is suitable.

The Roberts Bay jetty is a rock fill structure that extends into Roberts Bay at the south end of the bay. The Roberts Bay cargo dock will consist of a series of interlocking extruded sheet piles that are driven to bedrock and tied back with anchor sheet piles into a mechanically stabilized embankment on the western edge of the bay. All-weather access roads link these facilities to the Roberts Bay laydown areas and fuel tank farms.

A lined landfarm was constructed on the northwest corner of Doris Camp as shown in Figure 6. The purpose of this facility is temporary storage of contaminated soils and water. As most other facilities, it was built on a rock fill pad and has three cells separated by lined berms.

4.4.6 Quarry #3 Landfills

The source of all rock fill material for the TIA (the Secondary Road extension, the South Dam and the West Dam) will be Quarry #3 (Figure 7). The quarry, located on a natural rock outcrop, will be developed in a manner that avoids collecting and impounding any water. Once quarry operations are complete, a non-hazardous waste landfill will be constructed in the northeast corner of the developed quarry. The landfill will contain only inert waste and no leachate will be generated.

4.4.7 Water Management Systems

The water management system at Doris-Madrid consists of pipelines, ponds, and collection sumps. A complete listing is provided in Appendix A.

Tailings and reclaim water pipelines will be constructed between the TIA and the Doris Process Plant (Figures 3) and the Madrid North Concentrator (Figure 3) respectively. The Roberts Bay discharge system (Figures 3 through 6) will convey the combined groundwater inflow from the underground mine and excess reclaim water from the TIA Reclaim Pond to the undersea diffuser located at the 40 m bathymetric contour line in Roberts Bay. The pipeline will originate in the process building, and it will consist of a single heat-traced 254 mm HDPE pipe. Various other fresh water and sewage discharge pipelines will also be built (Figure 6).

The pipelines will be routed along roads and on rock fill pads wherever possible or placed on appropriate supports, if needed, where any sections must be routed on the tundra. Insulation and heat tracing is typical for pipelines in cold environments.

All contact water and pollution control ponds (Figures 6, 8, and 9) will be unlined and contained by frozen foundation berms incorporating an impermeable liner. These ponds will be operated as normally empty. The Doris Sedimentation Pond is the only fully lined pond. Other sedimentation ponds are not lined and do not have frozen foundations.

4.5 Permanent Closure and Reclamation Requirements

4.5.1 Underground Mine Workings

The specific closure objectives for the underground mine workings are as follows:

- Prevent access into the workings by humans and animals; and
- Ensure physical stability by stabilizing the workings as necessary to prevent surface expression of underground failures (i.e., surface subsidence).

Chemical stability of the underground workings is not a concern, as the mine openings are in permafrost above the elevation of the surrounding lakes, and thus mine water outflow following closure is not possible.

At closure, all underground utilities and installations will be removed and disposed of as appropriate. As per the mine plan, most workings will be backfilled with waste rock, detoxified leach tailings, or quarry rock to ensure stability. All backfilling will be completed as part of regular mine operations, and will therefore occur before closure. The entrance of the underground portals will be sealed with 15 m thick rock fill plugs. The rock fill used for the plugs will be salvaged from rock fill pads, clean quarry rock or geochemically suitable waste rock.

Ducts, pipes, and cables entering the vent raises will be removed and disposed of or salvaged as appropriate. Vent raises will be capped with appropriately sized structural concrete plugs to prevent access, and appropriate signage will be posted to warn of existence of these sealed openings. A detailed engineering design will be completed prior to closure to determine the risk of subsidence and determine the most suitable cap design.

The areas surrounding the portals and vent raises will be regraded as required to ensure positive drainage away from the openings and blend in with the surrounding terrain as much as possible.

Appurtenant facilities will be demolished or removed and the debris will be collected and disposed of as appropriate. Where present, the fuel tanks will be decommissioned, drained, and hauled to Roberts Bay for shipping off-site. The liner of the secondary containments will be cleaned, removed, cut into pieces, and disposed of as non-hazardous waste. The area will be backfilled and regraded to prevent permanent ponding.

Access roads will be graded to prevent ponding and culverts will be removed to restore the natural flow paths.

Once mining ceases and the mine workings have been prepared for closure, the mine dewatering pumps will be switched off and the mine will reflood. Doris mine will reflood in about 1.7 years (SRK 2015), Madrid North in about 19 years, and at Madrid South Mine in about 9.5 years (SRK 2017f).

4.5.2 Waste Rock Dumps, Ore stockpiles, and Overburden Piles

The closure objectives for each of these facilities are to ensure physical and chemical stability of any residual facilities. Leachate emanating from rock fill pads must be safe for the environment.

While physical stability of side slopes of the rock fill pads is inherent through the design of the pads, the overburden stockpiles will be regraded to a stable landform as required and revegetated where possible. Leachate quality from the rock fill pads is not expected to be a problem as only geochemically suitable rock is used for construction. Similarly, leachate quality from the overburden dumps is not a concern, as only clean overburden and ice/snow free of contaminants was placed in these piles.

Once the waste rock and ore is removed the top surface of the underlying rock fill pads will be regraded to prevent ponding then left in place as described in Section 4.5.5

Overburden dumps will be constructed with closure in mind, and will be closed throughout the operations period when they are no longer necessary. At closure, if not already complete, the side slopes of all overburden dumps will be regraded to no steeper than 3H:1V and the final dump surface will be contoured for drainage control. Erosion protection measures will be installed as appropriate.

Contact water pond berms and any sedimentation berms will be breached to restore the natural drainage path. Pieces of liner removed from the lined berms will be disposed of in the Quarry #3 landfill.

4.5.3 Tailings Containment Area

The specific closure objectives for the TIA can be summarised as follows:

- Ensure long-term physical stability of tailings surface and associated retaining structures;
- Prevent direct contact of tailings with humans and wildlife;
- Ensure chemical stability by minimizing release of neutral metal leaching to the receiving environment; and
- Create a final landform that blends into the natural topography as much as possible.

Although the tailings surface is landscaped to allow free drainage, the tailings are susceptible to hydraulic erosion, which will mobilize tailings towards the remnant Reclaim Pond with a resultant increase in total suspended solids. Therefore, a tailings cover that functions to prevent wind and water erosion will be constructed over the entire tailings surface. This cover will also function as a separation barrier to prevent tailings contact with humans and wildlife. The minimum thickness of cover that can practically be placed over the tailings surface would be about 0.3 m thick, and therefore the cover design has been set at 0.3 m thick ROQ material.

The TIA water and load balance (SRK 2017g) confirms that neutral metal leaching does not pose a limitation in ensuring that the water quality from the closed TIA meet the required closure water quality criteria, and therefore no infiltration reduction cover is required over the tailings surface.

It was demonstrated through stability and creep analyses (SRK 2017h) that the South and West dams will remain stable after closure. The north Dam will be breached, and therefore will not perform any long-term post-closure function.

Part of the tailings will not be trafficable for some years following tailings placement. Therefore, to place the cover over those areas, winter construction over a frozen tailings surface will be required. Although thermal modeling has demonstrated that the bulk of the tailings mass will freeze back in the long term, and remain frozen for the foreseeable future (SRK 2017h), consolidation settlement in the 2-m thick active layer can still be expected (SRK 2017h). In addition, should ice lenses develop within the active layer of the tailings beach, it could further contribute towards long term differential settlement of the tailings surface and subsequently any associated cover system. Such differential settlement will however not negatively affect the cover performance since localized ponding that might result, would not prohibit the cover from ensuring that wind and water erosion is mitigated.

Water quality in TIA will continue to be monitored after completion of the mining and milling activities. According to the water quality model (SRK 2017g) the constituents of concern in the Reclaim Pond originate mainly from the process water. Once active milling operations are concluded, the tailings pore water contribution to the Reclaim Pond is less of a concern with respect to meeting discharge water quality criteria.

As a first step in the reclamation of this facility all of the remaining inventory of water will be discharged to the ocean through the Roberts Bay Discharge System, at the rate as specified in the Water License. The small residual pond area will then be backfilled to prevent ongoing impoundment of water.

Once the isolation cover is completed, the North Dam will be breached and the natural flow path re-established. The breach will be 20 m wide, cut to the original ground elevation (of 28.3 masl) with 4H:1V side slope. The cut slopes will be covered with a 2.5 m thick layer of ROQ material to ensure physical and thermal stability (SRK 2017h). The cut in the dam will be clad in rip-rap for erosion protection. Tail Lake outflow will be re-established along the base of the cut and suitable bedding material will be put in place to ensure channel stability.

All instrumentation will be removed and salvaged or disposed of, as appropriate.

The thermosyphon radiators will be dismantled, and the support superstructure cut at ground level and removed. The buried evaporator pipes of the thermosyphons and the sub-surface sections of the ad-freeze piles will be left in place.

The South Dam and the West Dam will be left in place as the retaining structure of the subaerial tailings. No water is anticipated to be ponding against these dams, thus no additional closure activities are required.

4.5.4 Buildings and Equipment

The overall objective is to restore areas occupied by buildings to a condition compatible with future land use, and to ensure that the buildings and facilities are not, and will not become a source of contamination to the environment or a safety hazard for human activity or wildlife.

The only practical option is to remove all buildings and structures.

Prior to demolition hazardous wastes and chemicals remaining on-site will be collected and placed in sealed containers suitable for storage and shipping. This includes any remaining fuel, hydraulic oil, antifreeze, batteries, and other lubricating fluids and chemicals. All materials will be packaged and manifested at the Waste Management Facility for transport to a licensed facility in accordance with appropriate Federal, Provincial, Territorial, or Municipal hazardous waste regulations, for reuse or disposal.

Reusable equipment and supplies will be salvaged from the camp buildings and facilities prior to demolition and shipped off-site to a third-party destination, or point of sale. No salvage value was credited in the cost estimate. Where salvage is not possible, or not practical, the equipment will be decontaminated, drained of all fluids, and consolidated within the Quarry #3 Landfill for final disposal. An inventory of disposed equipment will be completed, together with a photographic record.

All utilities to structures and facilities will be decommissioned, disconnected, and dismantled while the structures will be emptied prior to demolition. All buildings will be dismantled or demolished and the debris will be placed in the Quarry #3 Landfill. All other facilities will be decommissioned, demolished, levelled, and the debris placed in the landfill.

Concrete floors will be broken up and covered in place. Concrete wall foundations will be demolished flush with the existing ground and the remnants covered in place. All seacan containers will be removed or disposed of in the landfill.

The facilities directly associated with the (Doris Process Plant and Madrid North Concentrator) will be cleaned of all remaining chemicals and process reagents and the resulting hazardous waste disposed of in licensed off-site facilities. The residual ore and ore dust will be removed by flushing the equipment and/or washing with high pressure water. The collected solids will be slurried and pumped to the TIA. The steel frame buildings will be disassembled and disposed of in the Quarry #3 Landfill. The concrete bases will be broken up and covered in place using rock fill. The milling and processing equipment will be decommissioned, cleaned, and prepared for shipping off-site. No salvage value is assumed for this equipment.

Underground equipment will be salvaged or placed in underground workings for final disposal. Equipment placed underground will be decontaminated and stripped of any hazardous components such as batteries, and drained of all fluids and lubricants.

The bulk fuel storage facilities at Roberts Bay, Doris, and Madrid North will be decommissioned and the tanks dismantled. The tanks will be pressure washed and the water resulting from pressure washing will be treated through an oil / water separator. The residual fuels from all Doris-Madrid tank farms and portable fuel storage will be consolidated in one tank at Roberts Bay and then transferred into a fuel barge to be hauled to Cambridge Bay and gifted to the community. The granular protective cover of the tank farms will be tested for the presence of unacceptable levels of hydrocarbons. Remediation options will be determined following the testing, to be appropriate for the type and extent of contamination. If required, this material will be placed in mega-bags and disposed of underground. The geosynthetic liners will be removed and the containment berms breached to prevent ponding of water and reshaped to conform to the original topography as much as possible.

The wind power generation units will be carefully dismantled and hauled to Roberts Bay in preparation for shipping to a third-party location. The foundation blocks and anchors will be left in place and covered with ROQ. For cost estimation purposes, it was assumed that decommissioning and dismantling costs are equal to initial construction costs. No salvage value was credited in the cost estimate.

The explosives facility will be dismantled. The magazines will be emptied and disposed of in the Quarry #3 Landfill. Any residual prepared explosives will be disposed of underground. Remaining blast caps will be destroyed by a qualified person.

4.5.5 Mine Infrastructure

The reclamation objective for the rock fill pads, roads, and airstrip is to ensure long-term physical and chemical stability and to protect the permafrost. Leachate emanating from rock fill pads must be safe for the environment.

Two broad options were considered: removing the pads or reclaiming them in place. The chosen option was to leave the rock fill in place, for the following reasons:

- All pads were constructed of non-acid generating clean quarry rock, thus leachate quality is not a concern, and
- Since construction the underlying vegetation has died and the permafrost will have aggraded into the rock fill, removal of the pads would therefore accelerate permafrost degradation and erosion due to lack of well-established vegetation.

The closure method is to crown the roads and regrade the pads and airstrip to ensure positive drainage and prevent ponding of water resulting in permafrost degradation. As some of the closure activities could be performed in the winter, the areas to be regraded should be staked during the previous summer to be easily identified during the winter reclamation work. Any depressions where positive drainage cannot be achieved by regrading will be backfilled with clean rock, geochemically stable drill cuttings, overburden soils, or a combination of these materials. Suitable soils from the existing overburden piles will be preferentially used.

In areas backfilled with suitable overburden soils, revegetation works may consist of application of seeds collected from the surrounding vegetation. Active revegetation of barren rock fill pads is not practical because the rock fill cannot support vegetation; however, it is expected that lichens will colonise the rock surface in time, likely decades.

Culverts and bridges will be removed from the crossings under the roads and natural drainage paths will be restored. Any area, where prolonged ponding has been observed during the operational period, will be excavated to restore drainage and thereby prevent ongoing ponding.

Where contamination of the rock fill pads has been observed or is suspected, field investigations will be completed prior to closure by qualified personnel to define the nature and extent of contamination. An assessment of remediation options will be conducted once the full extent and nature of the contamination is determined. Localized areas with limited contamination could be bioremediated in-situ if appropriate. If large contiguous areas of contamination are found, excavation and underground disposal will be considered. Excavations will be backfilled with rock, overburden, drill cuttings, wood chips and/or a mixture of these to prevent surface water ponding and ensure permafrost preservation.

The Nunavut Environmental Guidelines, Industrial Land Use, Coarse-Grained Soils (Government of Nunavut, 2009) will be used for determining if soil remediation is required.

The cargo dock and the jetty will be partially removed, to an elevation 0.3 m below the low water level. The rock fill will be placed into the surrounding water. The mooring points and buoys will be removed from site.

The quarries will be decommissioned and reclaimed. All vertical faces in the quarries will be scaled. Safety berms will be left in place. The area of each quarry will be inspected by a qualified inspector, to ensure no loaded holes are remaining on-site.

At the laydown areas all overhead electrical cables, where present, will be decommissioned and the posts removed. All waste and materials will be collected and disposed of as appropriate. The surface will be regraded for positive drainage and to prevent permanent ponding.

The solid waste contained within the Land Farm cells will be tested for contaminants. If levels exceed remediation criteria, the soils will be disposed of in the underground workings. Any water contained within the ponds will be tested, treated as appropriate, and discharged when water quality criteria are met, or transferred to the TIA if criteria cannot be met.

The liner of the Land Farm will be removed, cleaned, cut in pieces and disposed of as non-hazardous waste. The protective cover layer of crushed rock over the liner will be removed, tested, and if it meets the appropriate reclamation criteria will be used as backfill. If the testing program finds that the cover material is contaminated, it will be placed in mega bags and disposed of underground. The containment berms will be levelled and the area regraded to prevent ponding of water.

Areas where vegetation has died and permafrost degraded at the Sewage Treatment Plant discharge point will be backfilled with a suitable fill material to prevent permanent ponding. The sewage discharge pipeline will be flushed, cut up, and removed. The resulting debris will be disposed of in the landfill.

4.5.6 Quarry #3 Landfill

The objective of the closure for this facility is to have a physically stable structure, with all waste isolated from human and wildlife contact and will not become a source of contamination to the environment. Surface water run-off and seepage water quality must be safe to humans and wildlife.

At closure, the only solid waste management structure remaining will be the Quarry #3 landfill. Release of contaminants will be prevented by placement of only non-hazardous waste in the facility, with all other waste being managed by other appropriate means. The landfill will be located entirely on bedrock, and will be covered with a 0.3 m thick isolation cover built of a single layer of ROQ, which is erosion resistant. The cover will be engineered to accommodate any settlement the waste may have in time. Appropriate drainage pathways will be engineered to prevent ponding of water in the facility. The final surface of the landfill will be graded like the foundation base grade, of 1%, to shed water. Permafrost will partially aggrade into the landfill waste over time.

4.5.7 Water Management Systems

The closure objectives for all pipelines are dismantling and removal. All pipelines will be flushed, drained, and the heat tracing system will be decommissioned. Heat tracing controllers and power cables will be removed and landfilled. The pipeline will be cut into manageable sections which will be placed in the landfill. All pipeline supports will be removed and disposed of as appropriate. The Marine Outfall Pipeline will be left in place. The Marine Outfall Berm will be partially removed, to an elevation 0.3 m below the low water level, similarly to the Jetty. The rock fill will be placed into the surrounding water.

The overarching closure objective for the water management ponds is to restore the natural drainage paths where possible and to prevent excessive erosion while ensuring that no long-term active care and maintenance is required. In areas where permanent discharges exist, engineered discharge points (spillways) must be physically and geotechnically stable on the long-term for safety of humans and wildlife.

To achieve these objectives, options for decommissioning, breaching, or removing each of these structures will be evaluated on a case-by-case basis. The chosen option however will only be implemented when post-closure water quality objectives are met. Erosion protection and sediment control measures will be installed where necessary.

Existing water management structures will be maintained at the Project until post-closure water quality objectives are met. Once the runoff water from all areas meets the water quality objectives, the collection sumps and the pipeline to TIA will be decommissioned. The Sedimentation, Pollution Control and Contact Water Ponds will be breached to re-establish the natural drainage path.

The sumps will be decommissioned and backfilled with crushed rock or soil from the Doris Overburden Dump.

4.6 Closure Uncertainties

Closure strategies employed in this Plan are based on a set of assumptions and predictions representing the current understanding of the environment at the Project site and the future behavior of various infrastructure components. The interim nature of this plan indicates that uncertainties still exist with regards to the closure options, which will be clarified once the detailed engineering of closure activities for each area or infrastructure component is completed at the final closure stage.

Throughout operations and into closure the results of the various environmental monitoring programs will be evaluated to confirm the closure assumptions and validate the models used to make those predictions. If monitoring data indicates that certain structures or processes behave in a different manner than anticipated during the closure planning phase, adaptive management will be adhered to and the closure plans will be adjusted to mitigate those unforeseen effects.

At this time, specific uncertainties directly affecting the closure planning were identified regarding the following closure components:

- Discharge water quality from the covered tailings surface carries uncertainty which will only become clear once operational data has been evaluated in the period immediately preceding closure.
- The type and extent of hydrocarbon contamination will not be known until final closure is started.
- Final volume of the landfill is based on a conservative estimate of the volume of demolition debris at closure. While every effort will be made to minimise the voids within the landfill, the final volume is difficult to predict accurately. This translates into uncertainty with regards to the actual footprint of the facility and the volume of rock required for the final cover.

4.7 Post Closure Monitoring and Maintenance

Based on engineering design and analysis, it is expected that post-closure monitoring will be required for ten years. However, post-closure monitoring will take place at the Project site until such time that the objectives of the closure and remediation activities have been met to the satisfaction of the regulatory authorities and all affected parties.

Coupled with the proper implementation of closure and remediation activities as described in this ICRP, the following post-closure monitoring will be required:

- The Project should be visually inspected on an annual basis by a Professional Engineer, for three consecutive years, and then 6 and 10 years following closure to ensure physical stability;
- Post-closure monitoring of all covers will be performed every two years, for a ten-year period, or until it is confirmed the areas are physically stable. These inspections will be completed by a qualified inspector to ensure the physical integrity of the cover is maintained. Maintenance will be performed on areas identified as needing repairs.
- The annual seep sampling program carried out in accordance with Type A Water Licence 2AM-DOH1323 will be continued to detect any changes in the leachate chemistry downstream of the remediated areas for a period of five years and then year 7 and year 10 following closure or until the leachate is confirmed to be chemically stable and consistent with the site-specific closure criteria.
- Contact Water Ponds will be monitored as part of the post-closure SNP monitoring network prior to breaching.
- Water from the Reclaim Pond will be drawn down by pumping to Roberts Bay for approximately two years following closure, following which the water in the residual pond will be backfilled. Once the tailings cover is completed, the North Dam will be breached and the natural flow path restored.

Post-closure air quality, wildlife and vegetation monitoring is not planned, as once the Project site is closed there is not expected to be any activities occurring that would warrant continued monitoring.

In addition, the monitoring requirements may again change as a result of the Performance assessment report which will be prepared and submitted to the NWB for their review following the initial post-closure monitoring period which will be defined in consultation with NWB as part of the final closure and remediation plan.

4.8 Contingencies

Specific contingencies were developed for some of the closure elements that have inherent uncertainties that cannot be quantified at this stage in the project. If any of the proposed closure strategies will be ineffective or no longer apply, new strategies will be developed in consultation with stakeholders. The subsections below provide details of these contingencies.

4.8.1 Water Quality

In the case where water quality standards cannot be met by the end of the post-closure period specified in the water management plan, the monitoring time may be extended as required. Alternatively, water treatment options could be explored once the cause of the delay is known and quantified.

4.8.2 Subaerial Tailings

The current closure plan for the subaerial tailings is a cover constructed of clean rock. In the case that water quality monitoring indicates that tailings will become a source of contaminants exceeding the presently predicted effects, the contingency of a low permeability cover was considered. The final cover configuration will be determined at later stages of closure planning.

4.8.3 Waste Rock and Ore Stockpiles

According to the current mine plan there will be no ore and/or mineralised waste rock left on surface at closure. Several alternatives were considered as contingency for any ore and/or mineralized waste rock left on surface. One option is moving the piles to TIA for placement in the tailings area. Another option is consolidating, contouring and covering the piles with an impermeable liner and a 0.3 m thick protective layer of crushed rock. Additional options may also be considered. All above ground storage options are subject to approval by NWB. A design and/or description of the final waste rock disposal or storage alternative, if required, will be included in the application for approval.

4.8.4 Climate Change Effects

Most closure activities considered climate change to the level it is currently understood. Any changes not anticipated will be dealt with at time of closure and monitored as they develop. Financial security will be updated periodically as mandated by the regulations, to consider any changes to the environment or operations.

5 Progressive Reclamation

5.1 Definition of Progressive Reclamation

Progressive reclamation as outlined by MVLWB and AADNC (2013) is defined as:

“Progressive reclamation takes place prior to permanent closure to reclaim components and/or decommission facilities that no longer serve a purpose. These activities can be completed during operations with the available resources to reduce future reclamation costs, minimize the duration of environmental exposure, and enhance environmental protection. Progressive reclamation may shorten the time for achieving closure objectives and may provide valuable experience on the effectiveness of certain mitigation measures that might be implemented during closure.”

5.2 Candidate Facilities/Areas and Reclamation Activities

Based on the mine plan, reclamation of entire mine areas is not expected prior to the end of operations. Opportunities for progressive reclamation of facilities while the facilities are still in operations will be identified whenever possible. Progressive reclamation opportunities that may arise include:

- Regrading and/or cover placement over any area of the TIA that will not be disturbed by future tailings placement;
- Removal, and reclamation of buildings and infrastructure that become unnecessary over the life of the mine;
- Placement of waste rock underground for backfill and the reclamation of the waste rock pile footprint, if additional on-surface storage is no longer required;
- Immediate cleanup of materials (e.g. soil, snow, ice) that may become contaminated during construction and operations due to fuel or other spills; and
- Periodic shipment of hazardous waste off-site to minimize the amount of waste requiring removal at final closure.

5.3 Reclamation Studies

There are no direct research projects currently undertaken at Hope Bay. However, monitoring data gathered as part of the compliance monitoring program is being continuously collected and periodically reviewed by qualified specialist consultants. The data gathered on site includes the following:

- Weather data;
- Seep surveys;
- Water quality;
- Flow monitoring;
- Permafrost monitoring;
- Visual observations of reclaimed areas;
- Vegetation studies;
- Dust monitoring;
- Noise monitoring;
- Wildlife surveys;
- Fish surveys and benthic fauna;
- Annual geotechnical inspections (for rock fill pad stability / road stability / permafrost stability); and
- Physical and Geochemical characterization of waste rock, ore, and tailings samples.

If any of the data is found to be indicative of problematic trends or unforeseen processes, a more detailed evaluation will be undertaken. Where appropriate, dedicated research programs will be undertaken to reduce uncertainty and evaluate the performance of specific closure methods.

5.4 Progressive Reclamation Schedule

Progressive reclamation activities will take place as opportunities arise.

6 Temporary Mine Closure

6.1 Definition of Temporary Closure

The MVLWB and AADNC (2013) define temporary closure, or Care and Maintenance as:

“When an advanced mineral exploration or mining operations ceases with the intent of resuming activities in the near future”.

The duration of temporary closure is to be proposed by the proponent based on the requirements of their operation, and temporary closure could last weeks or years depending on the factors contributing to the temporary closure. Temporary closure could occur due to economic factors such as severely depressed metal prices, late delivery of critical supplies, major mechanical failures, environmental factors, or social factors such as labour conflicts.

Temporary closure could also lead to permanent closure, without the resumption of mining if the factors contributing to temporary closure cannot be resolved. If the mine were in care and maintenance and the decision was made not to resume operations, then TMAC would need to file the FCRP with the NWB, or notify the NWB that they intend to execute the latest ICRP. Following all required approvals, the final closure and reclamation measures would be executed.

6.2 Temporary Closure Principals and Goals

The temporary closure principals and goals are similar to the overall closure criteria: ensure the site is safe for humans, animals and the environment, by ensuring physical and chemical stability; and protecting the future use of the site by, where practicable, maintaining mine infrastructure in a state that is amenable to recommencement of operations.

6.3 Temporary Closure Management and Accountability Structure

Temporary closure activities will be managed by a core team of TMAC site personnel. The level of site presence will be established based on the stage of the Project, expected duration of temporary closure, and level of effort required to reach the temporary closure goals. The site caretakers would report to TMAC management.

6.4 Temporary Closure Activities

The following temporary closure activities will always occur, and is not dependant on the stage of operations when temporary closure is triggered:

- Secure and restrict access to buildings and structures;
- Lockout and secure mechanical, hydraulic and electrical systems and equipment that are not required to operate during the temporary closure period;
- Park mobile equipment in a no-load condition;
- Guard or block all underground openings and post warning signs;
- Continue all monitoring (physical, chemical, biological) in accordance with the Project licenses and permits;
- Continue all treatments (physical, chemical, biological) in accordance with the Project licenses and permits;
- Record fuel levels in all fuel tanks and regularly monitor for leaks or hazards, or alternatively remove fuel from site;
- Collect and inventory hazardous waste (processing chemicals, reagents, and petroleum products) and properly store or remove from site;
- Collect and inventory explosives, and properly store or remove from site;
- Maintain waste rock and ore piles, and tailings facilities so that they are physically stable;
- Continue surface water management measures throughout temporary closure;
- Maintain infrastructure including plowing of roads and airstrip, repairing culverts and employing sediment and erosion control measures; and
- Secure and isolate unused camp facilities.

Other activities may also be required, depending on the stage of the Project at the time of temporary closure and the expected duration of temporary closure.

6.5 Monitoring and Reporting During Temporary Closure

During temporary closure, programs will be conducted to monitor the physical and chemical stability of mine components and compliance, reclamation and environmental studies would also be continued in accordance with approved license conditions. Monitoring will also occur to maintain site security. Physical inspections will be conducted to ensure that all infrastructure are performing as designed. Monitoring, maintenance, and reporting will include:

- Reclaim Pond water levels;
- Pumping of contact water ponds and TIA Reclaim Pond, and recording of pumping volumes;
- Collection of meteorological and hydrological data;
- Physical inspections of TIA dams, access roads, pipelines, intake structures, and tailings surface;
- Ongoing water quality and environmental effects monitoring (as prescribed in the Water Licence);
- Monthly site inspections by the Environmental Superintendent or designate;
- Annual geotechnical inspections by a qualified geotechnical engineer;
- Ongoing maintenance of access roads;
- Ongoing enforcement of security and access protocols; and
- Detailed site inspections by the Environmental Superintendent or designate following extreme events, including freshet to identify and assess any damage.

All inspections will be formally recorded and provided to TMAC management. Annual monitoring reports will be prepared to present the findings of the inspections in accordance with licence requirements. Recommendations for maintenance and any suggested modifications to the monitoring program will be included in the reports.

This monitoring and the associated maintenance activities will be conducted until the Project changes status by either resuming operation or advancing to final closure.

6.6 Temporary Closure Schedule

The temporary closure activities will be carried out immediately following the stoppage of operations and the decision to prepare the site for an indefinite period of care and maintenance. It is expected that several months would be required to complete all the temporary closure activities.

7 Cost Estimate

The estimated closure cost for the Doris and Madrid mines is \$58.3 million in undiscounted 2017 Canadian dollars (SRK 2017i). These costs were developed using an NWB approved spreadsheet based cost estimating process that is consistent with the principles of RECLAIM version 7.0. The basis of estimate for the closure costs was summarised under a different cover (SRK 2017i).

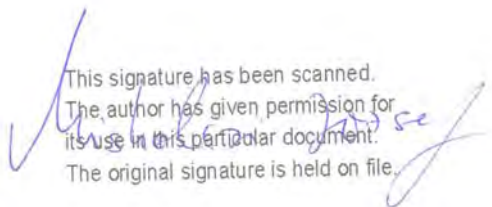
8 Schedule

Closure of the Doris-Madrid site will occur upon completion of mining and milling of ore. It is anticipated that all decommissioning and closure activities can be completed in three years. An interim care and maintenance (ICM) period of 18 months was assumed, following which final closure activities will be initiated.

Water management activities will start during the ICM period and will continue until water quality criteria are met.

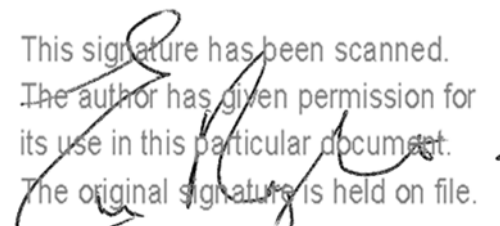
Year 3 of closure will be the initial year of the post closure monitoring and maintenance period and as discussed above will require approximately 10 years.

This report, Doris-Madrid Interim Closure and Reclamation Plan, was prepared by


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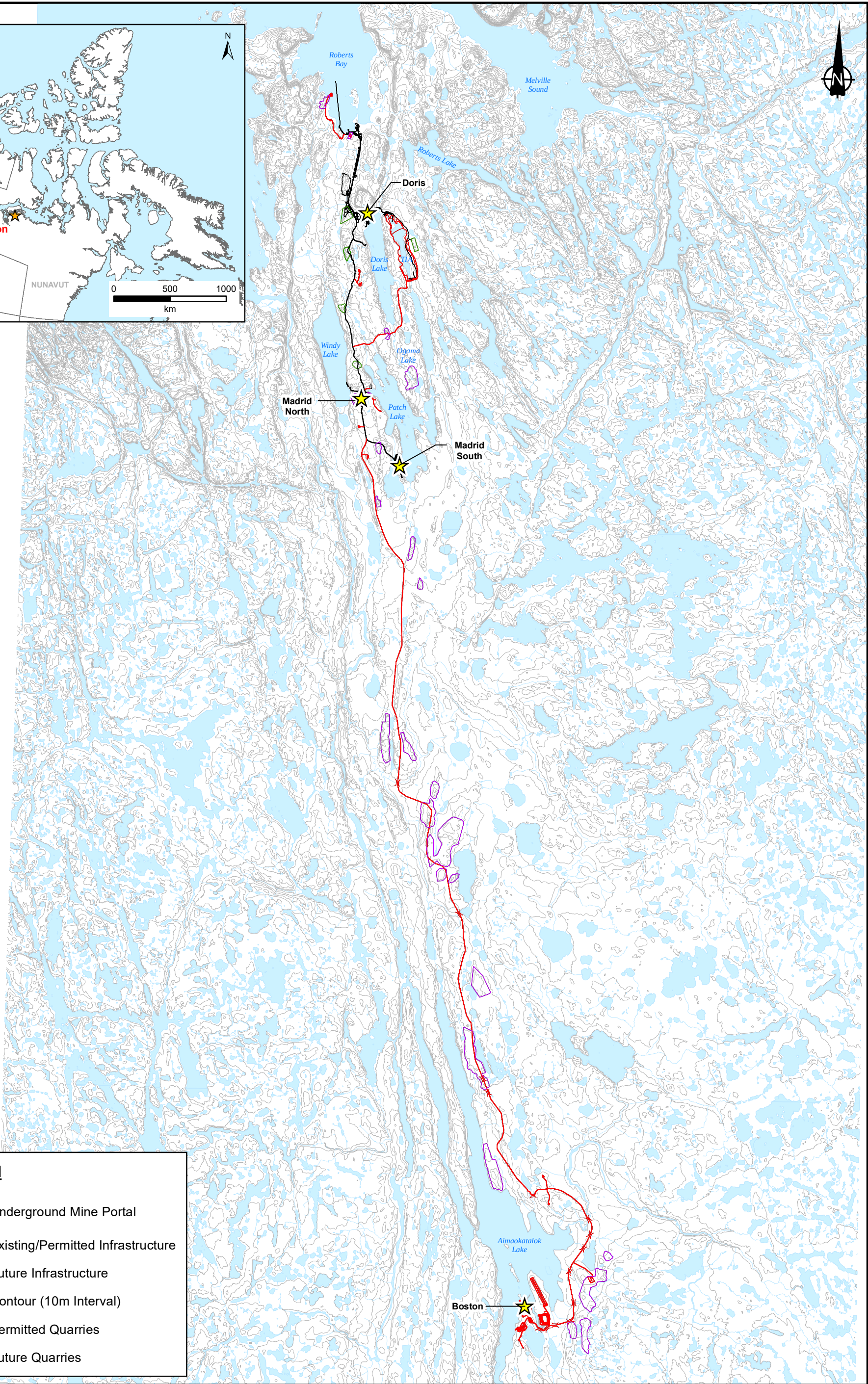
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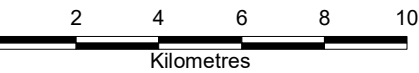
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Figures



Legend

- ★ Underground Mine Portal
- Existing/Permitted Infrastructure
- Future Infrastructure
- Contour (10m Interval)
- Permitted Quarries
- Future Quarries



Notes:
1. Coordinate System: NAD 1983 UTM Zone 13N
2. Base Topo Data: CanVec, Natural Resources Canada

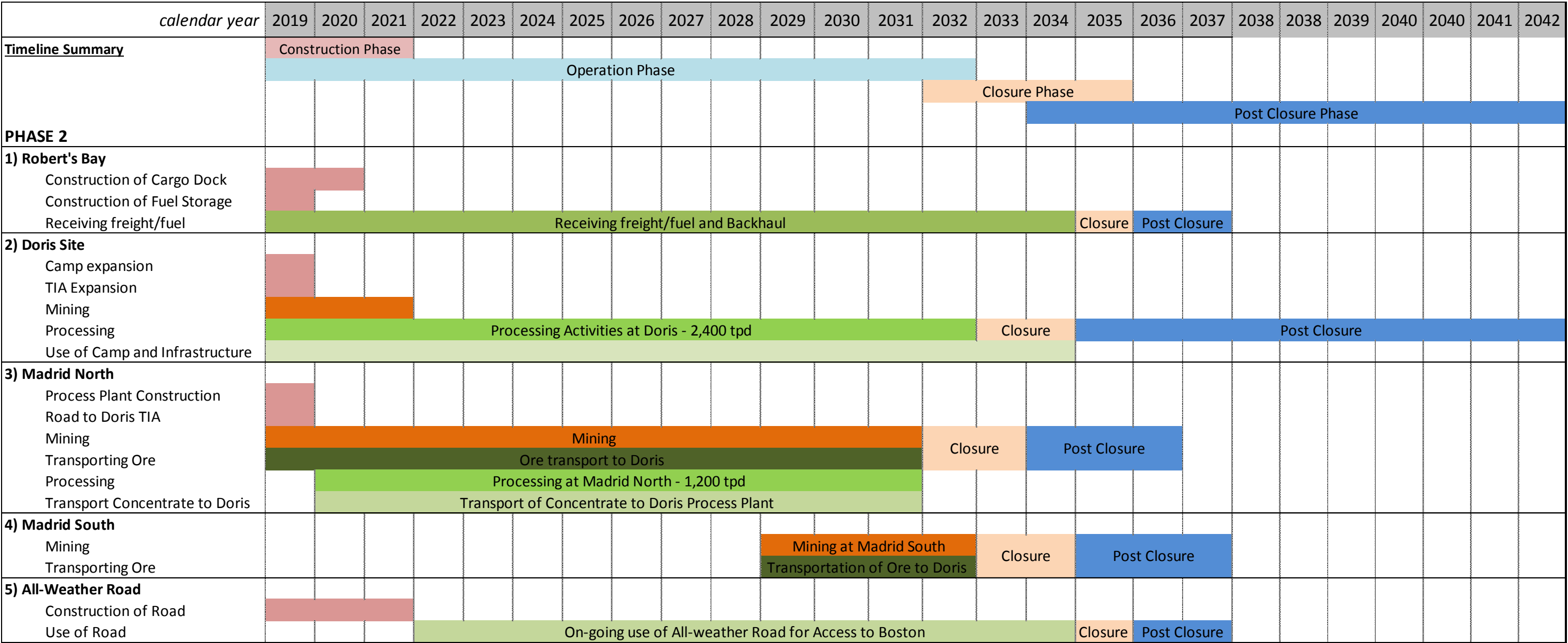


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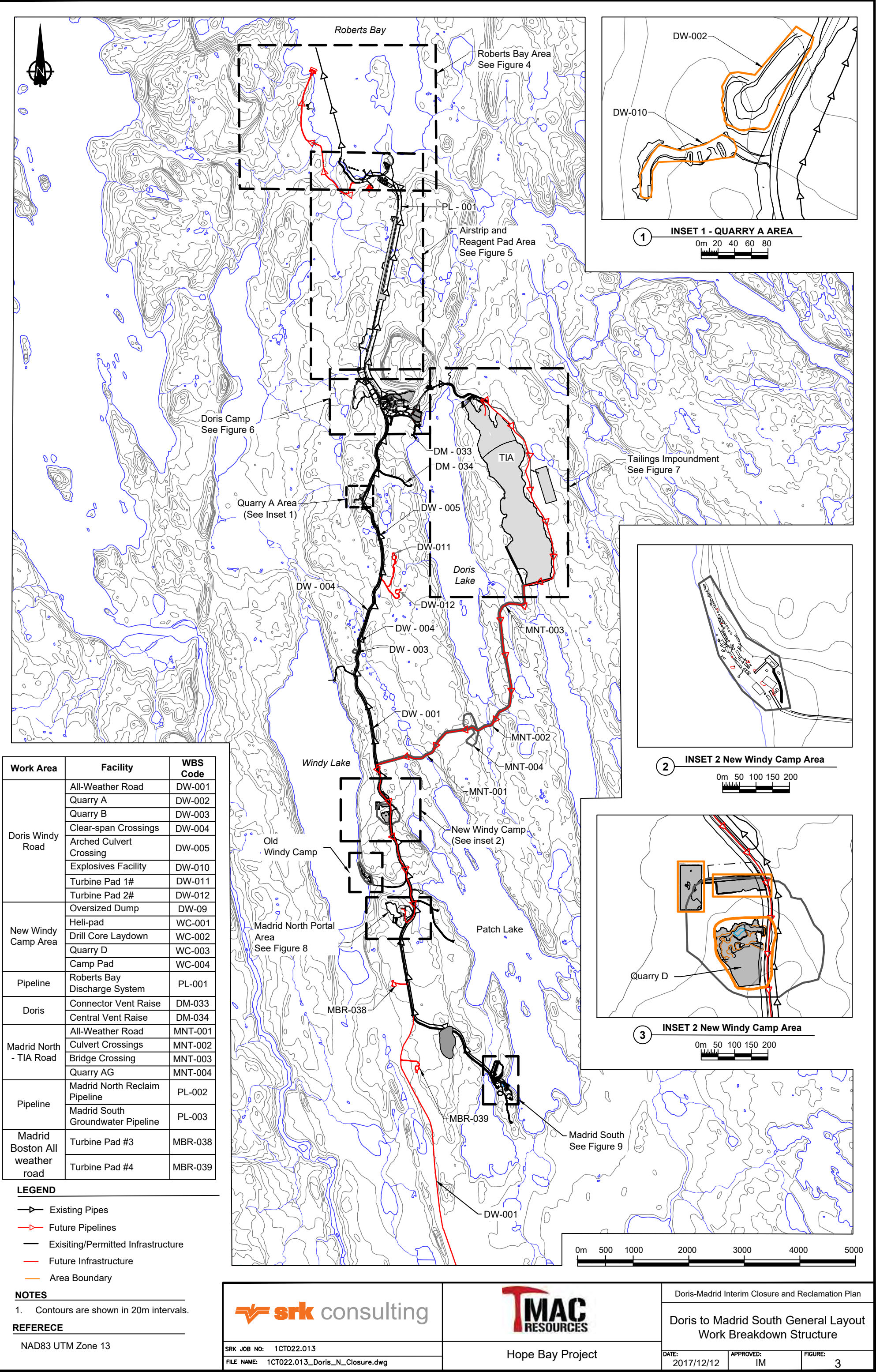


HOPE BAY PROJECT

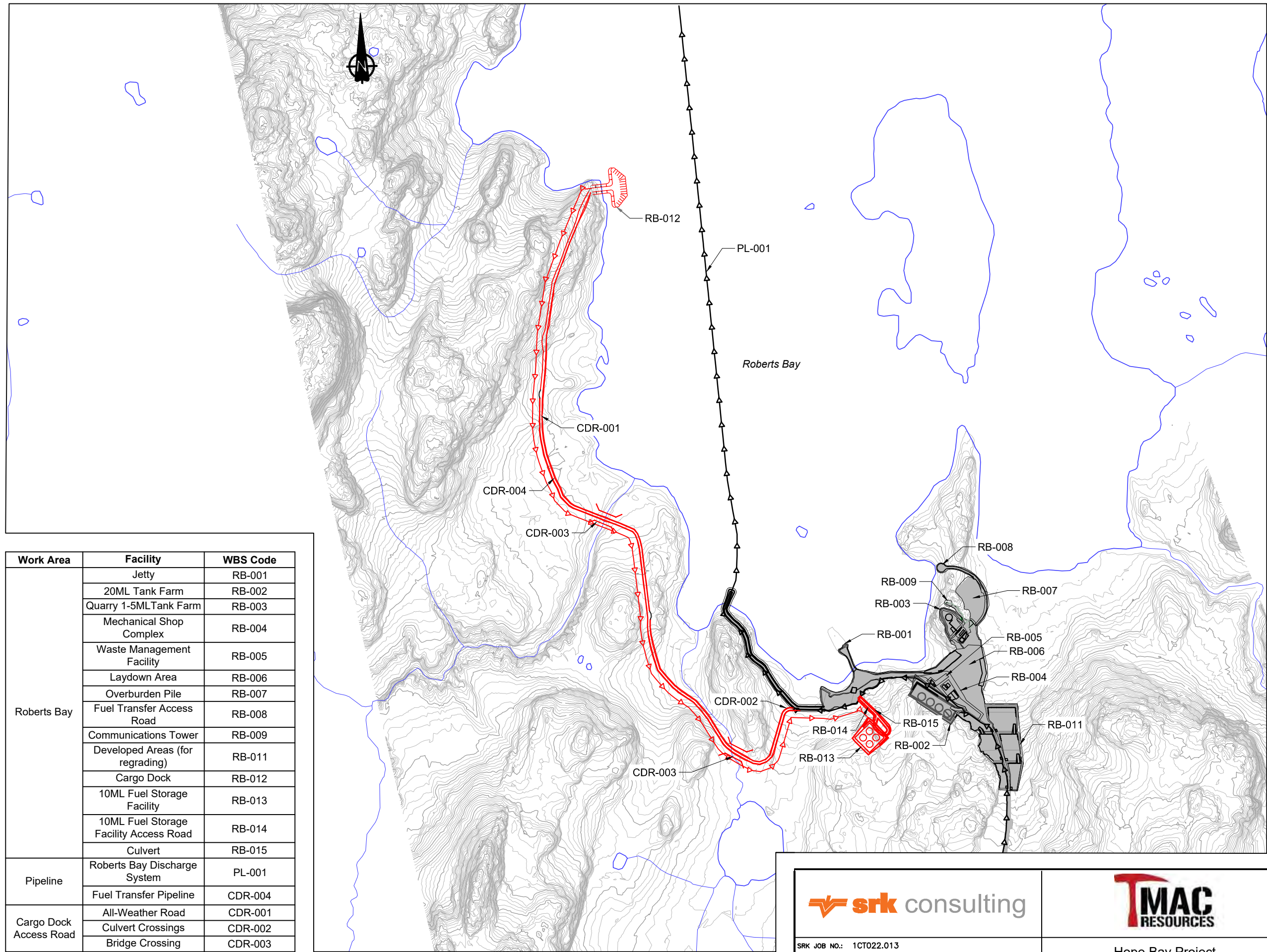
Doris - Madrid Interim Closure and Reclamation Plan		
Site Location Map		
Date: 2017/12/12	Approved: IM	Figure: 1



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LEGEND

Developed Areas (for regrading)

Bridge Crossing

Existing/Permitted Infrastructure

Future Infrastructure

Fuel Transfer Pipe (CDR-004)

Roberts Bay Discharge System (PL-001)

NOTES

1. Contours shown at 1m intervals

REFERECE

NAD83 UTM Zone 13



Work Area	Facility	WBS Code
Roberts Bay	Jetty	RB-001
	20ML Tank Farm	RB-002
	Quarry 1-5ML Tank Farm	RB-003
	Mechanical Shop Complex	RB-004
	Waste Management Facility	RB-005
	Laydown Area	RB-006
	Overburden Pile	RB-007
	Fuel Transfer Access Road	RB-008
	Communications Tower	RB-009
	Developed Areas (for regrading)	RB-011
	Cargo Dock	RB-012
	10ML Fuel Storage Facility	RB-013
	10ML Fuel Storage Facility Access Road	RB-014
	Culvert	RB-015
Pipeline	Roberts Bay Discharge System	PL-001
	Fuel Transfer Pipeline	CDR-004
Cargo Dock Access Road	All-Weather Road	CDR-001
	Culvert Crossings	CDR-002
	Bridge Crossing	CDR-003

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Hope Bay Project

Doris - Madrid Interim Closure and Reclamation Plan

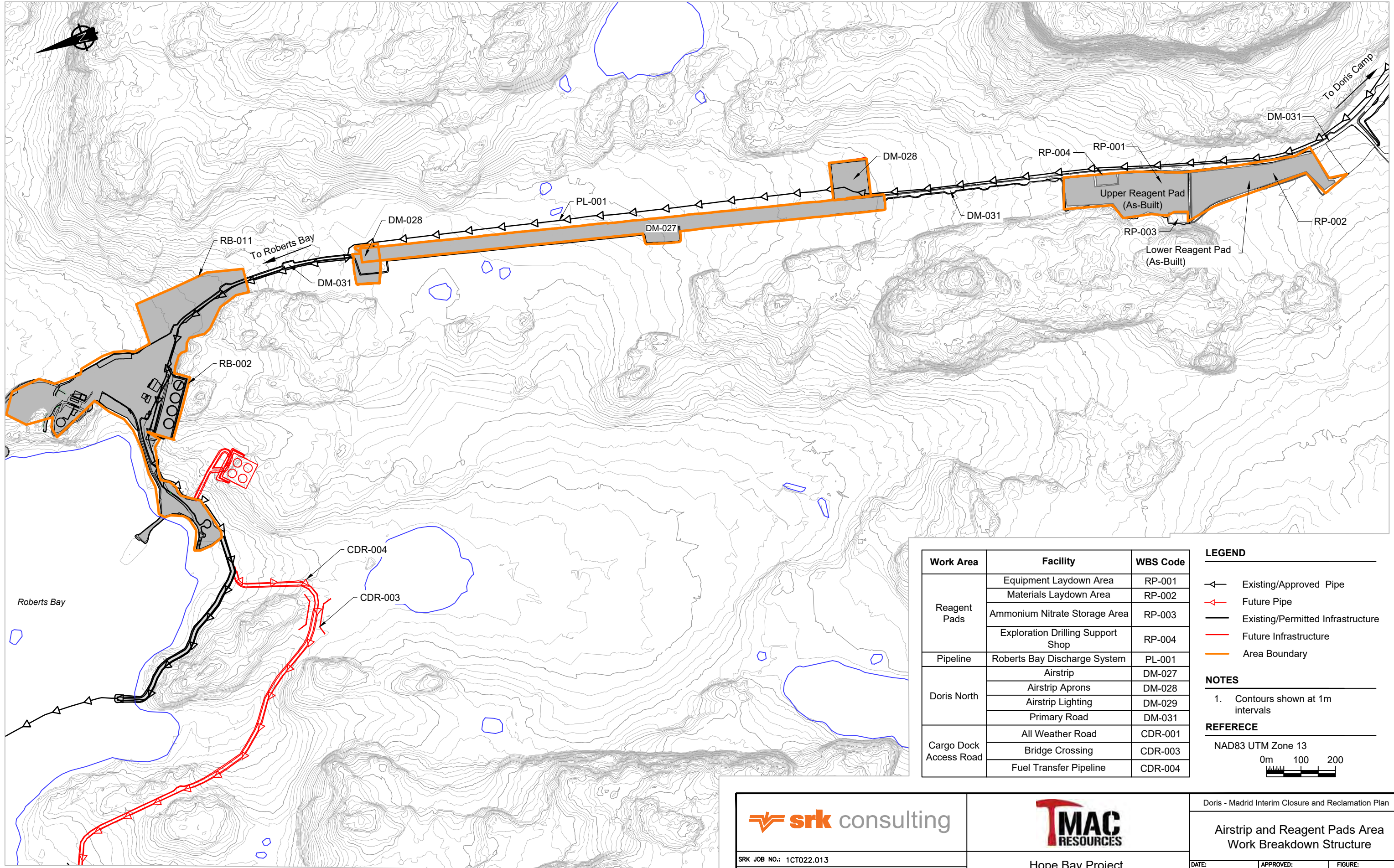
Roberts Bay Work Breakdown Structure

DATE: 2017/12/12

APPROVED: IM

FIGURE: 4

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Work Area	Facility	WBS Code
Reagent Pads	Equipment Laydown Area	RP-001
	Materials Laydown Area	RP-002
	Ammonium Nitrate Storage Area	RP-003
	Exploration Drilling Support Shop	RP-004
Pipeline	Roberts Bay Discharge System	PL-001
Doris North	Airstrip	DM-027
	Airstrip Aprons	DM-028
	Airstrip Lighting	DM-029
	Primary Road	DM-031
Cargo Dock Access Road	All Weather Road	CDR-001
	Bridge Crossing	CDR-003
	Fuel Transfer Pipeline	CDR-004

LEGEND	
	Existing/Approved Pipe
	Future Pipe
	Existing/Permitted Infrastructure
	Future Infrastructure
	Area Boundary

NOTES	
1.	Contours shown at 1m intervals

REFERECE	
NAD83 UTM Zone 13	



SRK JOB NO.: 1CT022.013
FILE NAME: 1CT022.013_Doris Airstrip_Closure.dwg

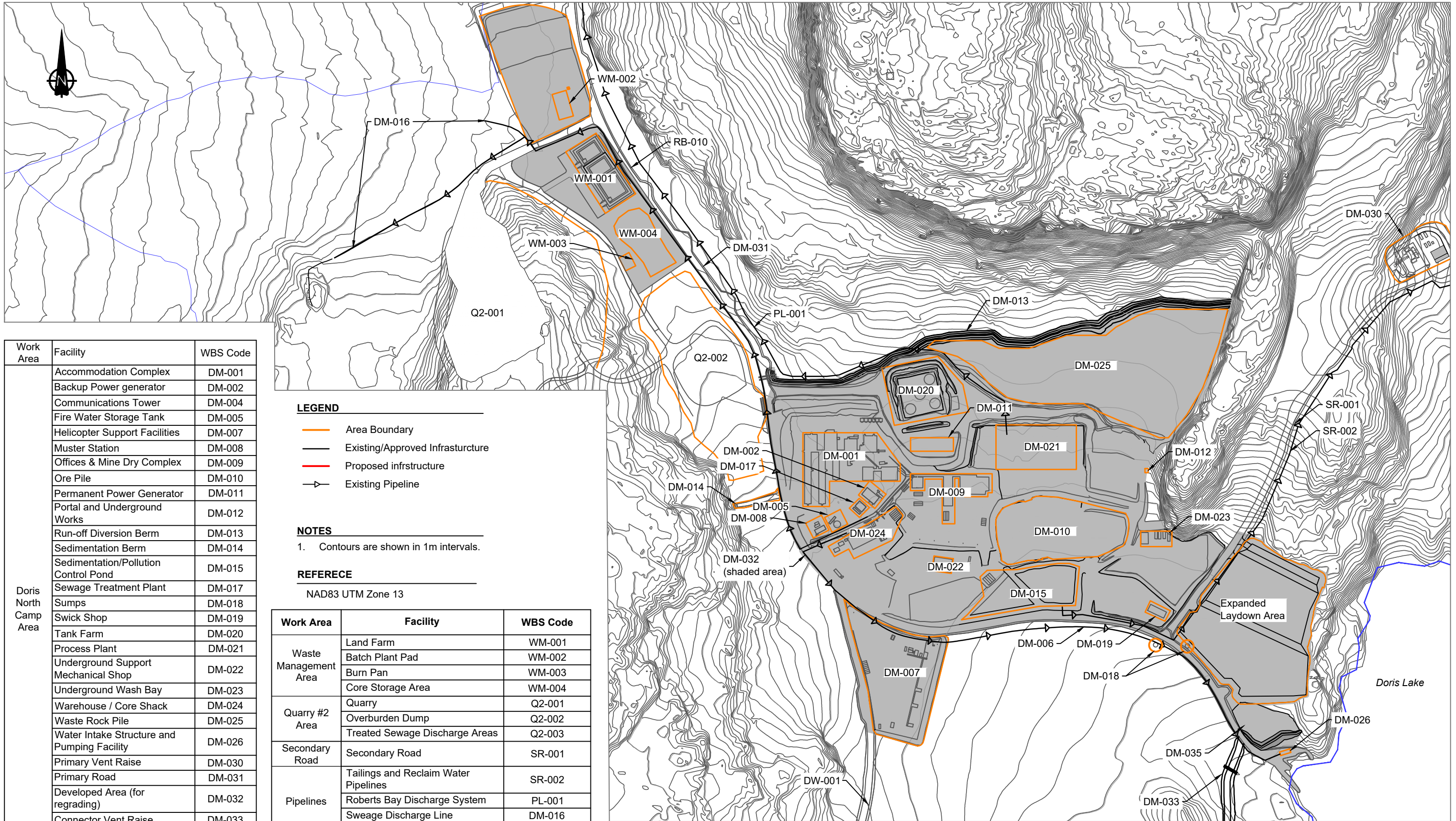
Hope Bay Project

Doris - Madrid Interim Closure and Reclamation Plan

Airstrip and Reagent Pads Area
Work Breakdown Structure

DATE: 2017/12/12	APPROVED: IM	FIGURE: 5
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Work Area	Facility	WBS Code
Doris North Camp Area	Accommodation Complex	DM-001
	Backup Power generator	DM-002
	Communications Tower	DM-004
	Fire Water Storage Tank	DM-005
	Helicopter Support Facilities	DM-007
	Muster Station	DM-008
	Offices & Mine Dry Complex	DM-009
	Ore Pile	DM-010
	Permanent Power Generator	DM-011
	Portal and Underground Works	DM-012
	Run-off Diversion Berm	DM-013
	Sedimentation Berm	DM-014
	Sedimentation/Pollution Control Pond	DM-015
	Sewage Treatment Plant	DM-017
	Sumps	DM-018
	Swick Shop	DM-019
	Tank Farm	DM-020
	Process Plant	DM-021
	Underground Support Mechanical Shop	DM-022
	Underground Wash Bay	DM-023
	Warehouse / Core Shack	DM-024
	Waste Rock Pile	DM-025
	Water Intake Structure and Pumping Facility	DM-026
	Primary Vent Raise	DM-030
	Primary Road	DM-031
	Developed Area (for regrading)	DM-032
	Connector Vent Raise	DM-033
	Pad U Sedimentation/Pollution Control Pond	DM-035
	Land Farm	WM-001
	Batch Plant Pad	WM-002
	Burn Pan	WM-003
	Core Storage Area	WM-004
	Quarry	Q2-001
	Overburden Dump	Q2-002
	Treated Sewage Discharge Areas	Q2-003
	Secondary Road	SR-001
	Tailings and Reclaim Water Pipelines	SR-002
	Roberts Bay Discharge System	PL-001
	Sweage Discharge Line	DM-016
	Fresh Water Pipelines	DM-006

LEGEND

- Area Boundary
- Existing/Approved Infrastructure
- Proposed infrastructure
- Existing Pipeline

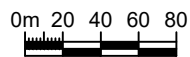
NOTES

- Contours are shown in 1m intervals.

REFERENCE

NAD83 UTM Zone 13

Work Area	Facility	WBS Code
Waste Management Area	Land Farm	WM-001
	Batch Plant Pad	WM-002
	Burn Pan	WM-003
	Core Storage Area	WM-004
Quarry #2 Area	Quarry	Q2-001
	Overburden Dump	Q2-002
	Treated Sewage Discharge Areas	Q2-003
Secondary Road	Secondary Road	SR-001
Pipelines	Tailings and Reclaim Water Pipelines	SR-002
	Roberts Bay Discharge System	PL-001
	Sweage Discharge Line	DM-016
	Fresh Water Pipelines	DM-006



Doris-Madrid Interim Closure and Reclamation Plan

Doris Camp Work Breakdown Structure

DATE: 2017/12/05

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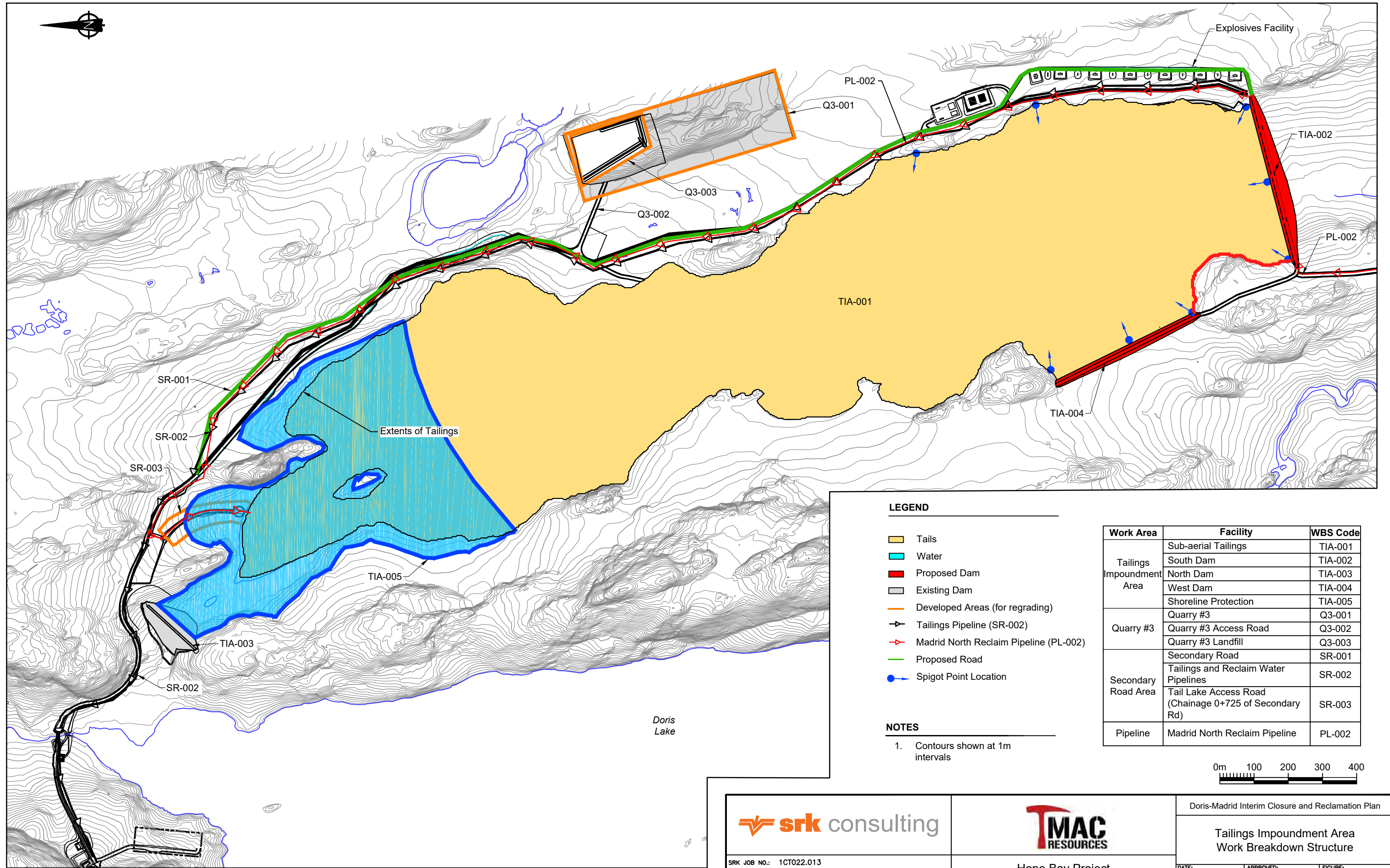
FIGURE: 6

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Hope Bay Project

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LEGEND

- Tails
- Water
- Proposed Dam
- Existing Dam
- Developed Areas (for regrading)
- Tailings Pipeline (SR-002)
- Madrid North Reclaim Pipeline (PL-002)
- Proposed Road
- Spigot Point Location

NOTES

- Contours shown at 1m intervals

Work Area	Facility	WBS Code
Tailings Impoundment Area	Sub-aerial Tailings	TIA-001
	South Dam	TIA-002
	North Dam	TIA-003
	West Dam	TIA-004
	Shoreline Protection	TIA-005
Quarry #3	Quarry #3	Q3-001
	Quarry #3 Access Road	Q3-002
	Quarry #3 Landfill	Q3-003
Secondary Road Area	Secondary Road	SR-001
	Tailings and Reclaim Water Pipelines	SR-002
	Tail Lake Access Road (Chainage 0+725 of Secondary Rd)	SR-003
Pipeline	Madrid North Reclaim Pipeline	PL-002



Doris-Madrid Interim Closure and Reclamation Plan

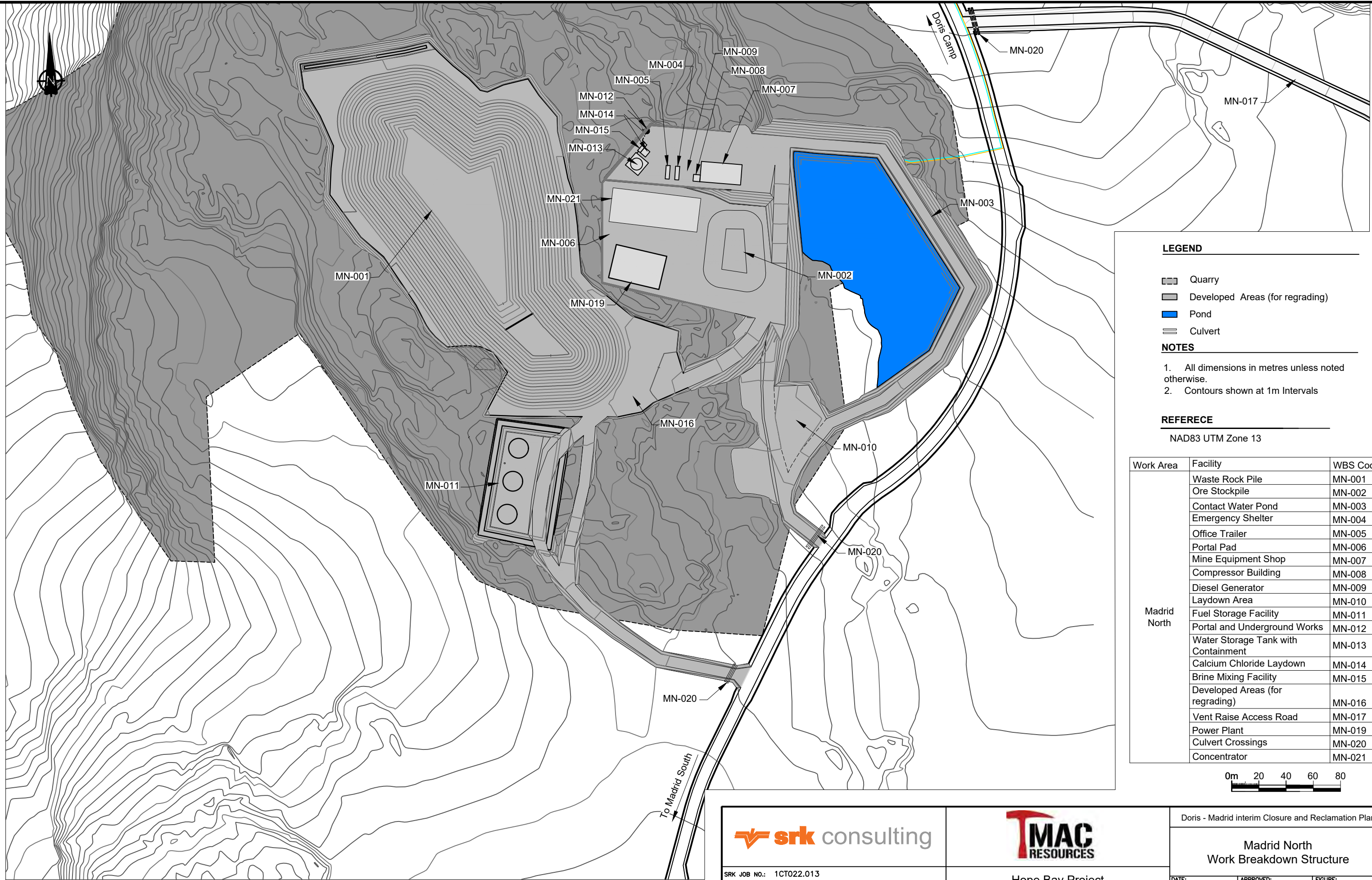
Tailings Impoundment Area
Work Breakdown Structure

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FILE NAME: 1CT022.004_Tail Lake_Closure.dwg

Hope Bay Project

DATE: 2017/12/12
APPROVED: IM
FIGURE: 7

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LEGEND

- Quarry
- Developed Areas (for regrading)
- Pond
- Culvert

NOTES

- All dimensions in metres unless noted otherwise.
- Contours shown at 1m Intervals

REFERENCE

NAD83 UTM Zone 13

Work Area	Facility	WBS Code
Madrid North	Waste Rock Pile	MN-001
	Ore Stockpile	MN-002
	Contact Water Pond	MN-003
	Emergency Shelter	MN-004
	Office Trailer	MN-005
	Portal Pad	MN-006
	Mine Equipment Shop	MN-007
	Compressor Building	MN-008
	Diesel Generator	MN-009
	Laydown Area	MN-010
	Fuel Storage Facility	MN-011
	Portal and Underground Works	MN-012
	Water Storage Tank with Containment	MN-013
	Calcium Chloride Laydown	MN-014
	Brine Mixing Facility	MN-015
	Developed Areas (for regrading)	MN-016
	Vent Raise Access Road	MN-017
	Power Plant	MN-019
	Culvert Crossings	MN-020
	Concentrator	MN-021



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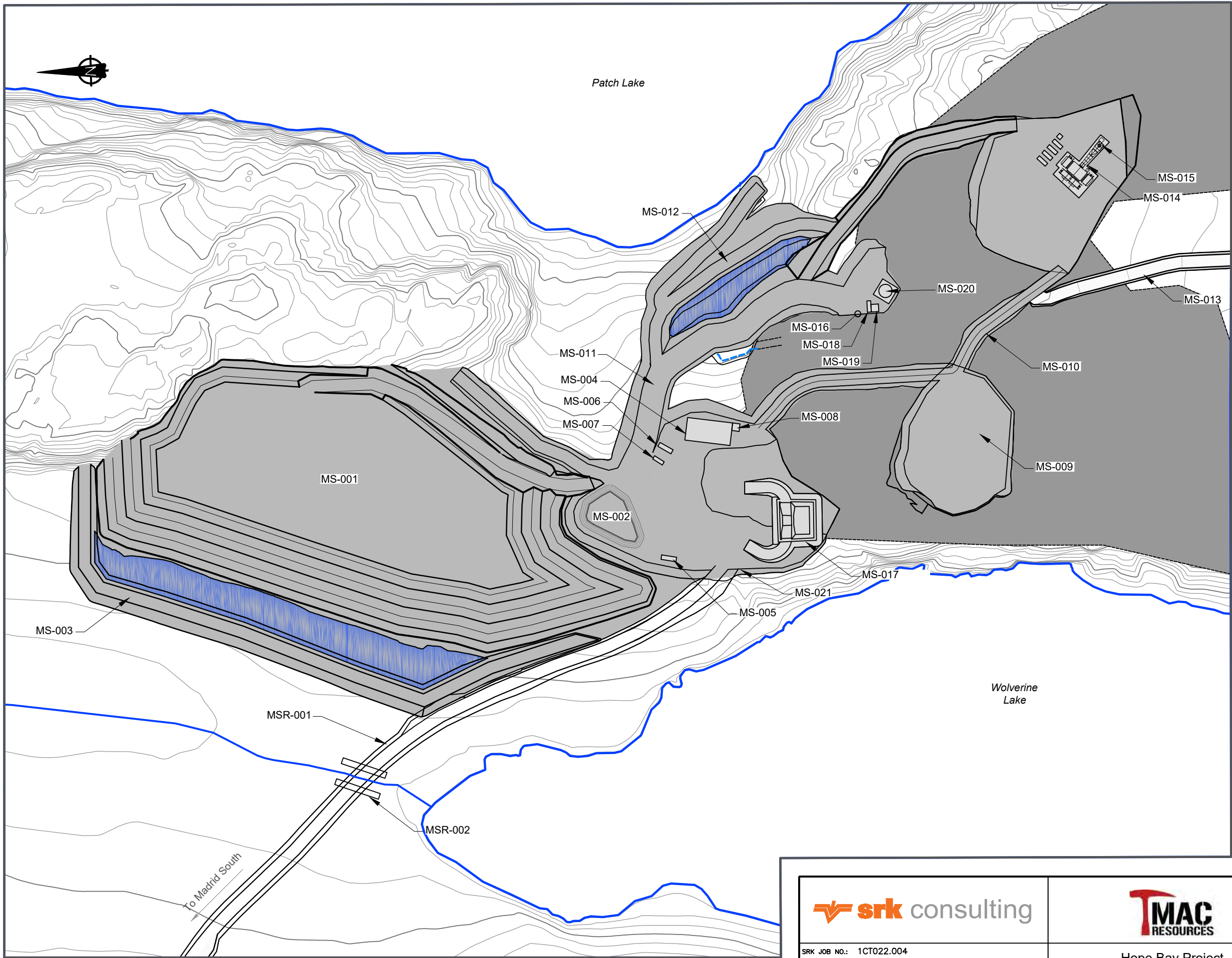
Hope Bay Project

Doris - Madrid interim Closure and Reclamation Plan

Madrid North
Work Breakdown Structure

DATE: 2017/12/12
APPROVED: IM
FIGURE: 8

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LEGEND

- Culvert Crossing
- Developed Areas (for regrading)
- Pond
- Quarry

NOTES

- Contours are shown in 1m intervals.
- All dimensions are in metric units, unless specifically mentioned.

REFERENCE

NAD83 UTM Zone 13

Work Area	Facility	WBS Code
Madrid South Mine Area	Waste Rock Pile	MS-001
	Ore Stockpile	MS-002
	Primary Contact Water Pond Berm	MS-003
	Mining Equipment Shop	MS-004
	Emergency Shelter	MS-005
	Office Trailer	MS-006
	Diesel Generator	MS-007
	Compressor Building	MS-008
	Laydown Pad	MS-009
	Infrastructure Access Road	MS-010
	Portal Haul Road	MS-011
	Haul Road/Secondary Contact Water Pond Berm	MS-012
	Vent Raise Pad Access Road	MS-013
	Air Heating Facility	MS-014
	Vent Raise	MS-015
	Madrid South Portal	MS-016
	Fuel Storage Facility	MS-017
	Calcium Chloride Laydown	MS-018
	Brine Mixing Facility	MS-019
	Water Storage Tank with Containment	MS-020
	Developed Areas (for regrading)	MS-021
Madrid South Road	Madrid South All-Weather Road	MSR-001
	Culvert Crossing	MSR-002



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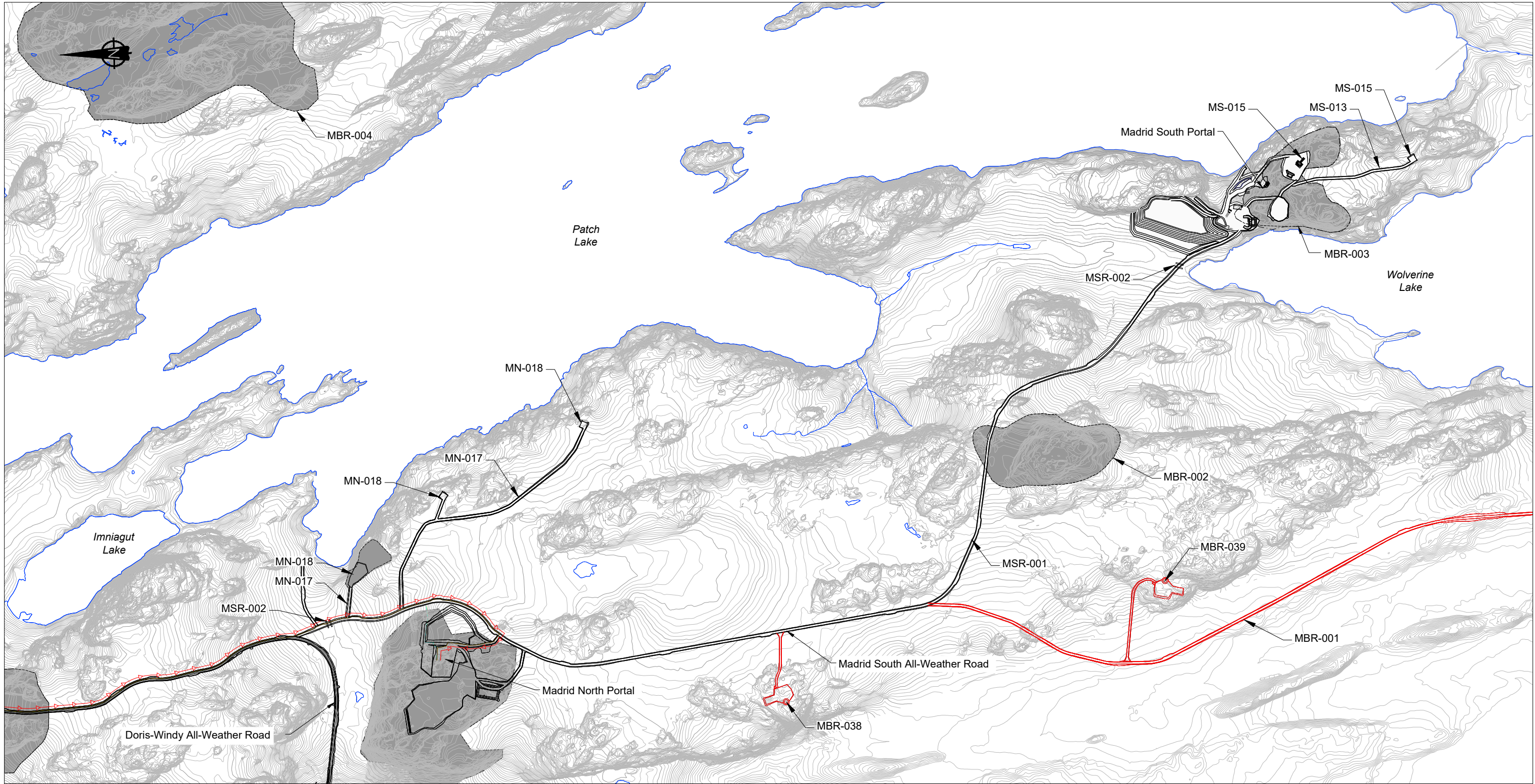
Hope Bay Project

Doris - Madrid Interim Closure and Reclamation Plan

**Madrid South Portal Area
Work Breakdown Structure**

DATE: 2017/12/12 APPROVED: IM FIGURE: 9

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- LEGEND**
- Existing/Approved Infrastructure
 - Future Infrastructure
 - Proposed Pipeline
 - Vent Raise
 - Quarry

- REFERENCE**
- NAD83 UTM Zone 13
- NOTES**
1. Contours are shown in 1m intervals.
 2. All dimensions are in metric units, unless specifically mentioned.

Work Area	Facility	WBS Code
Madrid South Road	All-Weather Road	MSR-001
	Culvert Crossings	MSR-002
Madrid North	Vent Raise Access Road	MN-017
	Vent Raises	MN-018
Madrid South	Vent Raise Access Road	MS-013
	Vent Raise	MS-015
Madrid-Boston All-Weather Road	All-Weather Road	MBR-001
	Quarry G	MBR-002
	Quarry H	MBR-003
	Quarry J	MBR-004

Madrid-Boston All-Weather Road	Turbine Pad # 3	MBR-038
	Turbine Pad # 4	MSBR-039



 SRK JOB NO.: 1CT022.013 FILE NAME: 1CT022.004_Madrid South Road_Closure.dwg	 Hope Bay Project	Doris - Madrid Interim Closure and Reclamation Plan		
		Madrid South Road Area Work Breakdown Structure		
		DATE: 2017/12/12	APPROVED: IM	FIGURE: 10

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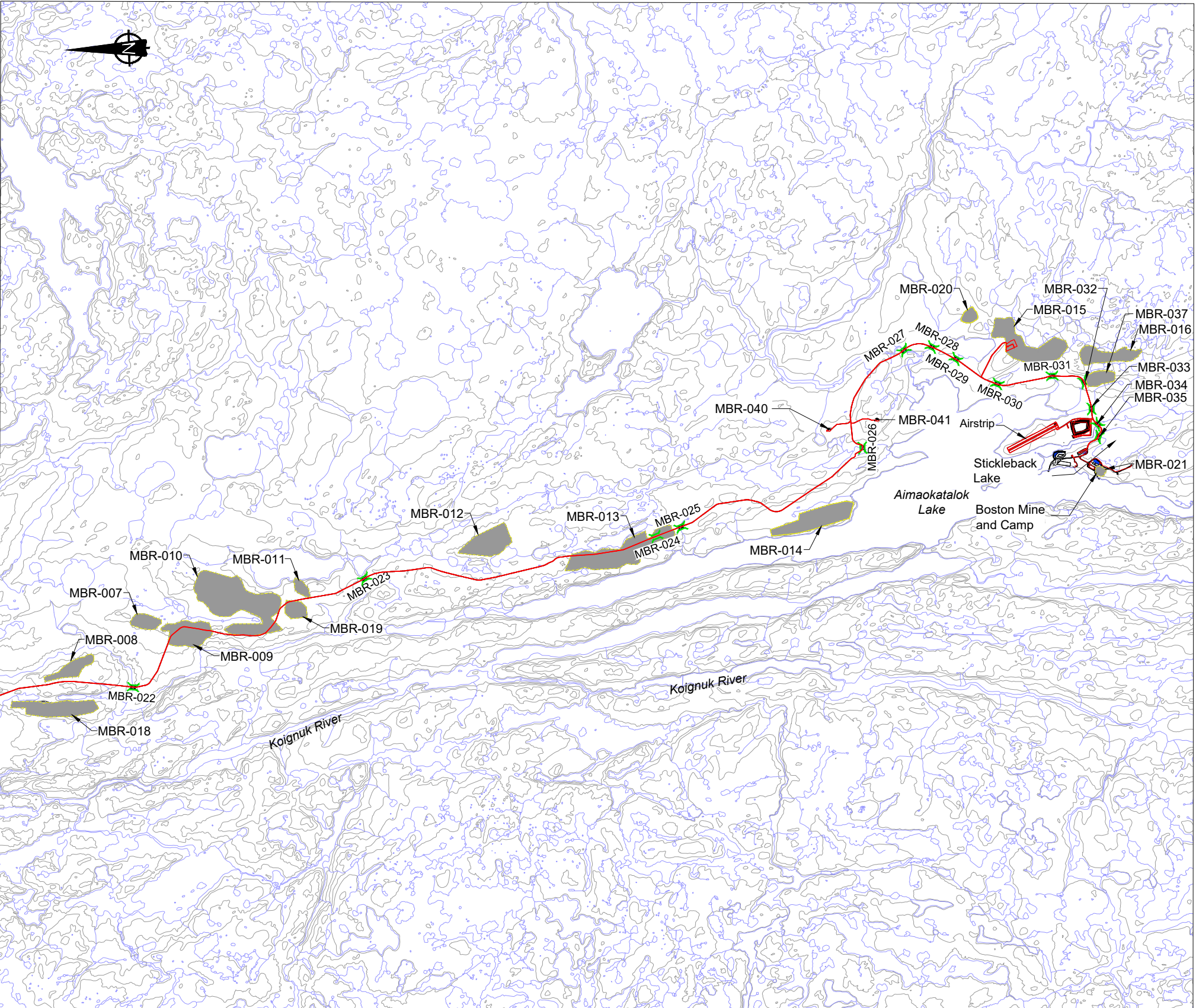
Work Area	Facility	WBS Code
Madrid-Boston All-Weather Road Area	All Weather Road	MBR-001
	Quarry G	MBR-002
	Quarry H	MBR-003
	Quarry J	MBR-004
	Quarry L	MBR-005
	Quarry M	MBR-006
	Quarry N	MBR-007
	Quarry O	MBR-008
	Quarry P	MBR-009
	Quarry Q	MBR-010
	Quarry R	MBR-011
	Quarry S	MBR-012
	Quarry T	MBR-013
	Quarry U	MBR-014

Quarry V	MBR-015
Quarry W	MBR-016
Quarry X	MBR-017
Quarry Z	MBR-018
Quarry AA	MBR-019
Quarry AB	MBR-020
Quarry AD	MBR-021

Work Area	Facility	WBS Code
Madrid-Boston All-Weather Road Area	Crossing C-MBR-7	MBR-022
	Crossing C-MBR-8	MBR-023
	Crossing C-MBR-9	MBR-024
	Crossing C-MBR-10	MBR-025
	Crossing C-MBR-11	MBR-026
	Crossing C-MBR-12	MBR-027
	Crossing C-MBR-13	MBR-028
	Crossing C-MBR-14	MBR-029
	Crossing C-MBR-15	MBR-030
	Crossing C-MBR-16	MBR-031
	Crossing C-MBR-17	MBR-032
	Crossing C-MBR-18	MBR-033
	Crossing C-MBR-19	MBR-034
	Crossing C-MBR-20	MBR-035

Crusher *	MBR-036
Quarry AJ	MBR-037
Turbine Pad # 3	MBR-038
Turbine Pad # 4	MBR-039
Turbine Pad # 5	MBR-040
Turbine Pad # 6	MBR-041

* Crusher location to vary.



LEGEND

- Proposed Rock Quarry
- Proposed Stream Crossing Location
- Existing/ Approved Infrastructure
- Future Infrastructure
- Future Infrastructure

NOTES

- All dimensions are in metric units, unless otherwise specified.
- Topographic contour data shown is from NTS maps, 1:50,000 scale. Contour intervals are 10m.

REFERECE

NAD83 UTM Zone 13



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FILE NAME: 1CT022.004_Madrid-Boston RD_Closure.dwg



Hope Bay Project

Doris - Madrid Interim Closure and Reclamation Plan

Madrid-Boston Road
Work Breakdown Structure

DATE: 2017/12/12
APPROVED: IM
FIGURE: 11

Appendix A: Facilities Listing

Appendix A, Table 1: Facilities Organized Geographycally			
Area	WBS Code	Facility Name	Category
Roberts Bay	RB_001	Jetty	Roads and Transportation
	RB_002	20 ML Tank Farm	Fuel Storage Facilities
	RB_003	Quarry 1 - 5 ML Tank Farm	Fuel Storage Facilities
	RB_004	Mechanical Shop Complex	Buildings and Facilities
	RB_005	Waste Management Facility	Buildings and Facilities
	RB_006	Laydown Area	Rock Fill Pads
	RB_007	Overburden Pile	Stockpiles and Waste Rock Dumps
	RB_008	Fuel Transfer Access Road	Roads and Transportation
	RB_009	Communications Tower	Buildings and Facilities
	RB_011	Developed Areas (for regrading)	Rock Fill Pads
	RB_012	Cargo Dock	Roads and Transportation
	RB_013	10ML Fuel Storage Facility	Fuel Storage Facilities
	RB_014	10ML Fuel Storage Facility Access Road	Roads and Transportation
	RB_015	10ML Fuel Storage Facility Access Road Culvert	Roads and Transportation
Cargo Dock Access Road	CDR_001	All-Weather Road	Roads and Transportation
	CDR_002	Culverts	Roads and Transportation
	CDR_003	Bridge Crossing	Roads and Transportation
	CDR_004	Fuel Transfer Pipeline	Pipelines
Doris Phase 1	DC_001	Waste Rock Pile	Stockpiles and Waste Rock Dumps
	DC_002	Expanded Waste Rock Storage (Pad T)	Stockpiles and Waste Rock Dumps
Doris	DM_001	Accommodation Complex	Buildings and Facilities
	DM_002	Backup Power generator	Buildings and Facilities
	DM_004	Communications Tower	Buildings and Facilities
	DM_005	Fire Water Storage Tank	Buildings and Facilities
	DM_006	Fresh Water Pipelines	Pipelines
	DM_007	Helicopter Support Facilities	Roads and Transportation
	DM_008	Muster Station	Buildings and Facilities
	DM_009	Offices & Mine Dry Complex	Buildings and Facilities
	DM_010	Ore Pile	Stockpiles and Waste Rock Dumps
	DM_011	Permanent Power Generator	Buildings and Facilities
	DM_012	Portal and Underground Works	Underground Workings
	DM_013	Run-off Diversion Berm	Water Management
	DM_014	Sedimentation Berm	Water Management
	DM_015	Sedimentation/Pollution Control Pond	Water Management
	DM_016	Sewage Discharge Line	Pipelines
	DM_017	Sewage Treatment Plant	Buildings and Facilities
	DM_018	Sumps	Water Management
	DM_019	Swick Shop	Buildings and Facilities
	DM_020	Tank Farm	Fuel Storage Facilities
	DM_021	Process Plant	Buildings and Facilities
	DM_022	Underground Support Mechanical Shop	Buildings and Facilities
	DM_023	Underground Wash Bay	Buildings and Facilities
	DM_024	Warehouse / Core Shack	Buildings and Facilities
	DM_025	Waste Rock Pile	Stockpiles and Waste Rock Dumps
	DM_026	Water Intake Structure and Pumping Facility	Water Management
	DM_027	Airstrip	Roads and Transportation
	DM_028	Airstrip Aprons	Roads and Transportation
	DM_029	Airstrip Lighting	Roads and Transportation
	DM_030	Primary Vent Raise	Underground Workings
	DM_031	Primary Road	Roads and Transportation
	DM_032	Developed Areas (for regrading)	Rock Fill Pads
	DM_033	Connector Vent Raise	Underground Workings
	DM_034	Central Vent Raise	Underground Workings
	DM_035	Pad U Sedimentation/Pollution Control Pond	Water Management
Doris-Windy All Weather Road	DW_001	All weather road	Roads and Transportation
	DW_002	Quarry A	Quarry
	DW_003	Quarry B	Quarry
	DW_004	Clear-span crossings	Roads and Transportation
	DW_005	Arched Culvert Crossing	Roads and Transportation
	DW_007	Quarry D	Quarry
	DW_008	Core Storage Area	Rock Fill Pads
	DW_009	Quarry D Overburden Pile	Stockpiles and Waste Rock Dumps
	DW_010	Explosives Storage Facility	Buildings and Facilities
	DW_011	Turbine Pad #1	Buildings and Facilities
	DW_012	Turbine Pad #2	Buildings and Facilities
Madrid North - TIA Road	MNT_001	All-Weather Road	Roads and Transportation
	MNT_002	Culvert crossings	Roads and Transportation
	MNT_003	Bridge crossing	Roads and Transportation
	MNT_004	Quarry AG	Quarry
	MN_001	Waste Rock Pile	Stockpiles and Waste Rock Dumps
	MN_002	Ore Stockpile	Stockpiles and Waste Rock Dumps
	MN_003	Contact Water Pond Berm	Water Management
	MN_004	Emergency Shelter	Buildings and Facilities
	MN_005	Office Trailer	Buildings and Facilities
	MN_006	Portal Pad	Rock Fill Pads

Madrid North	MN_007	Mine Equipment Shop	Buildings and Facilities
	MN_008	Compressor Building	Buildings and Facilities
	MN_009	Diesel Generator	Buildings and Facilities
	MN_010	Laydown Area	Rock Fill Pads
	MN_011	Fuel Storage Facility	Fuel Storage Facilities
	MN_012	Portal and Underground Works	Underground Workings
	MN_013	Water Storage Tank with Containment	Buildings and Facilities
	MN_014	Calcium Chloride Laydown	Rock Fill Pads
	MN_015	Brine Mixing Facility	Buildings and Facilities
	MN_016	Developed Areas (for regrading)	Rock Fill Pads
	MN_017	Vent Raise Access Road	Roads and Transportation
	MN_018	Vent Raises	Underground Workings
	MN_019	Power Plant	Buildings and Facilities
	MN_020	Culverts	Roads and Transportation
	MN_021	Concentrator	Buildings and Facilities
	MN_022	Diversion Berm	Water Management
	MN_023	Sump	Water Management
	MN_024	Fuel Storage Facility Access Road	Roads and Transportation
	MN_025	Fuel Storage Facility Bypass Road	Roads and Transportation
Madrid South All Weather Road	MSR_001	All-Weather Road	Roads and Transportation
	MSR_002	Culvert crossings	Roads and Transportation
Madrid South	MS_001	Waste Rock Pile	Stockpiles and Waste Rock Dumps
	MS_002	Ore Stockpile	Stockpiles and Waste Rock Dumps
	MS_003	Primary Contact Water Pond Berm	Water Management
	MS_004	Mine Equipment Shop	Buildings and Facilities
	MS_005	Emergency Shelter	Buildings and Facilities
	MS_006	Office Trailer	Buildings and Facilities
	MS_007	Diesel Generator	Buildings and Facilities
	MS_008	Compressor Building	Buildings and Facilities
	MS_009	Laydown Pad	Rock Fill Pads
	MS_010	Infrastructure Access Road	Roads and Transportation
	MS_011	Portal Haul Road	Roads and Transportation
	MS_012	Haul Road / Secondary Contact Water Pond Berm	Water Management
	MS_013	Vent Raise Pad Access Road	Roads and Transportation
	MS_015	Vent Raises	Underground Workings
	MS_016	Madrid South Portal and Underground Works	Underground Workings
	MS_017	Fuel Storage Facility	Fuel Storage Facilities
	MS_018	Calcium Chloride Laydown	Rock Fill Pads
	MS_019	Brine Mixing Facility	Buildings and Facilities
	MS_020	Water Storage Tank with Containment	Buildings and Facilities
	MS_021	Developed Areas (for regrading)	Rock Fill Pads
	MS_014	Air Heating Facility	Underground Workings
Madrid-Boston All Weather Road	MBR_001	All-Weather Road	Roads and Transportation
	MBR_002	Quarry G	Quarry
	MBR_003	Quarry H	Quarry
	MBR_004	Quarry J	Quarry
	MBR_005	Quarry L	Quarry
	MBR_006	Quarry M	Quarry
	MBR_007	Quarry N	Quarry
	MBR_008	Quarry O	Quarry
	MBR_009	Quarry P	Quarry
	MBR_010	Quarry Q	Quarry
	MBR_011	Quarry R	Quarry
	MBR_012	Quarry S	Quarry
	MBR_013	Quarry T	Quarry
	MBR_014	Quarry U	Quarry
	MBR_015	Quarry V	Quarry
	MBR_016	Quarry W	Quarry
	MBR_017	Quarry X	Quarry
	MBR_018	Quarry Z	Quarry
	MBR_019	Quarry AA	Quarry
	MBR_020	Quarry AB	Quarry
	MBR_021	Quarry AD	Quarry
	MBR_022	Crossing C-MBR-7	Roads and Transportation
	MBR_023	Crossing C-MBR-8	Roads and Transportation
	MBR_024	Crossing C-MBR-9	Roads and Transportation
	MBR_025	Crossing C-MBR-10	Roads and Transportation
	MBR_026	Crossing C-MBR-11	Roads and Transportation
	MBR_027	Crossing C-MBR-12	Roads and Transportation
	MBR_028	Crossing C-MBR-13	Roads and Transportation
	MBR_029	Crossing C-MBR-14	Roads and Transportation
	MBR_030	Crossing C-MBR-15	Roads and Transportation
	MBR_031	Crossing C-MBR-16	Roads and Transportation
	MBR_032	Crossing C-MBR-17	Roads and Transportation
	MBR_033	Crossing C-MBR-18	Roads and Transportation
	MBR_034	Crossing C-MBR-19	Roads and Transportation
	MBR_035	Crossing C-MBR-20	Roads and Transportation

	MBR_036	Crusher	Quarry
	MBR_037	Quarry AJ	Quarry
	MBR_038	Turbine Pad #3	Buildings and Facilities
	MBR_039	Turbine Pad #4	Buildings and Facilities
	MBR_040	Turbine Pad #5	Buildings and Facilities
	MBR_041	Turbine Pad #6	Buildings and Facilities
TIA	TIA_001	Subaerial Tailings Area	Tailings
	TIA_002	South Dam	Tailings
	TIA_003	North Dam	Tailings
	TIA_004	West Dam	Tailings
	TIA_005	Shoreline Protection	Tailings
	TIA_006	Interim Dyke	Tailings
Pipeline	PL_001	Roberts Bay Discharge System	Marine Environment Reclamation
	PL_002	Madrid North Reclaim Pipeline	Pipelines
	PL_003	Madrid South Groundwater Pipeline	Pipelines
Reagent Pads	RP_001	Equipment Laydown Area	Rock Fill Pads
	RP_002	Materials Laydown Area	Rock Fill Pads
	RP_003	Ammonium Nitrate Storage Area	Rock Fill Pads
	RP_004	Exploration Drilling Support Shop	Buildings and Facilities
Waste Management Area	WM_001	Land Farm	Rock Fill Pads
	WM_002	Batch Plant Pad	Rock Fill Pads
	WM_003	Burn Pan	Rock Fill Pads
	WM_004	Core Storage Area	Rock Fill Pads
Quarry 2	Q2_001	Quarry	Quarry
	Q2_002	Overburden Pile	Stockpiles and Waste Rock Dumps
	Q2_003	Treated Sewage Discharge Areas	Water Management
Secondary Road	SR_001	Secondary Road	Roads and Transportation
	SR_002	Tailings and Reclaim Water Pipelines	Pipelines
	SR_003	Tail Lake Access Road	Roads and Transportation
Quarry 3	Q3_001	Quarry # 3	Quarry
	Q3_002	Access Road	Roads and Transportation
	Q3_003	Landfill	Waste and Landfills
Patch Lake	PLA_001	Tank Farm	Fuel Storage Facilities
	PLA_002	Roads and Trails	Roads and Transportation
	PLA_003	Developed Areas (for regrading)	Rock Fill Pads
	PLA_004	Disposal of demolition waste	Waste and Landfills
Windy	WC_001	Tank Farm	Fuel Storage Facilities
	WC_002	Accomodation Camp Buildings	Buildings and Facilities
	WC_004	Winter Road to Patch	Roads and Transportation
	WC_006	Potable Water Supply System	Buildings and Facilities
	WC_007	Waste Incinerator	Buildings and Facilities
	WC_008	Disposal of demolition waste	Waste and Landfills
	WC_009	Hazardous Waste Disposal Cost	Waste and Landfills
	WC_010	Summer Debris Collection	Rock Fill Pads
	WC_011	Developed Areas (for regrading)	Rock Fill Pads
	WC_012	Reclaim Drill Holes	Rock Fill Pads

Appendix A, Table 2: Facilities Organized by Type			
Category	Facility Name	Area	WBS Code
Underground Workings	Portal and Underground Works	Doris	DM_012
	Primary Vent Raise	Doris	DM_030
	Connector Vent Raise	Doris	DM_033
	Central Vent Raise	Doris	DM_034
	Portal and Underground Works	Madrid North	MN_012
	Vent Raises	Madrid North	MN_018
	Vent Raises	Madrid South	MS_015
	Madrid South Portal and Underground Works	Madrid South	MS_016
	Air Heating Facility	Madrid South	MS_014
Stockpiles and Waste Rock Dumps	Overburden Pile	Roberts Bay	RB_007
	Waste Rock Pile	Doris Phase 1	DC_001
	Expanded Waste Rock Storage (Pad T)	Doris Phase 2	DC_002
	Ore Pile	Doris	DM_010
	Waste Rock Pile	Doris	DM_025
	Quarry D Overburden Pile	Doris-Windy All Weather Road	DW_009
	Waste Rock Pile	Madrid North	MN_001
	Ore Stockpile	Madrid North	MN_002
	Waste Rock Pile	Madrid South	MS_001
	Ore Stockpile	Madrid South	MS_002
	Overburden Pile	Quarry 3	Q2_002
Tailings	Subaerial Tailings Area	TIA	TIA_001
	South Dam	TIA	TIA_002
	North Dam	TIA	TIA_003
	West Dam	TIA	TIA_004
	Shoreline Protection	TIA	TIA_005
	Interim Dyke	TIA	TIA_006
Buildings and Facilities	Mechanical Shop Complex	Roberts Bay	RB_004
	Waste Management Facility	Roberts Bay	RB_005
	Communications Tower	Roberts Bay	RB_009
	Accommodation Complex	Doris	DM_001
	Backup Power generator	Doris	DM_002
	Communications Tower	Doris	DM_004
	Fire Water Storage Tank	Doris	DM_005
	Muster Station	Doris	DM_008
	Offices & Mine Dry Complex	Doris	DM_009
	Permanent Power Generator	Doris	DM_011
	Sewage Treatment Plant	Doris	DM_017
	Swick Shop	Doris	DM_019
	Process Plant	Doris	DM_021
	Underground Support Mechanical Shop	Doris	DM_022
	Underground Wash Bay	Doris	DM_023
	Warehouse / Core Shack	Doris	DM_024
	Explosives Storage Facility	Doris-Windy All Weather Road	DW_010
	Turbine Pad #1	Doris-Windy All Weather Road	DW_011
	Turbine Pad #2	Doris-Windy All Weather Road	DW_012
	Emergency Shelter	Madrid North	MN_004
	Office Trailer	Madrid North	MN_005
	Mine Equipment Shop	Madrid North	MN_007
	Compressor Building	Madrid North	MN_008
	Diesel Generator	Madrid North	MN_009
	Water Storage Tank with Containment	Madrid North	MN_013
	Brine Mixing Facility	Madrid North	MN_015
	Power Plant	Madrid North	MN_019
	Concentrator	Madrid North	MN_021
	Mine Equipment Shop	Madrid South	MS_004
	Emergency Shelter	Madrid South	MS_005
	Office Trailer	Madrid South	MS_006
	Diesel Generator	Madrid South	MS_007
	Compressor Building	Madrid South	MS_008
	Brine Mixing Facility	Madrid South	MS_019
	Water Storage Tank with Containment	Madrid South	MS_020
	Turbine Pad #3	Madrid-Boston All Weather Road	MBR_038
	Turbine Pad #4	Madrid-Boston All Weather Road	MBR_039
	Turbine Pad #5	Madrid-Boston All Weather Road	MBR_040
	Turbine Pad #6	Madrid-Boston All Weather Road	MBR_041
	Exploration Drilling Support Shop	Reagent Pads	RP_004
	Accomodation Camp Buildings	Windy	WC_002
	Potable Water Supply System	Windy	WC_006
	Waste Incinerator	Windy	WC_007
Fuel Storage Facilities	20 ML Tank Farm	Roberts Bay	RB_002
	Quarry 1 - 5 ML Tank Farm	Roberts Bay	RB_003
	10ML Fuel Storage Facility	Roberts Bay	RB_013
	Tank Farm	Doris	DM_020
	Fuel Storage Facility	Madrid North	MN_011
	Fuel Storage Facility	Madrid South	MS_017

		Tank Farm	Patch Lake	PLA_001
		Tank Farm	Windy	WC_001
Quarry		Quarry A	Doris-Windy All Weather Road	DW_002
		Quarry B	Doris-Windy All Weather Road	DW_003
		Quarry D	Doris-Windy All Weather Road	DW_007
		Quarry AG	Madrid North - TIA Road	MNT_004
		Quarry G	Madrid-Boston All Weather Road	MBR_002
		Quarry H	Madrid-Boston All Weather Road	MBR_003
		Quarry J	Madrid-Boston All Weather Road	MBR_004
		Quarry L	Madrid-Boston All Weather Road	MBR_005
		Quarry M	Madrid-Boston All Weather Road	MBR_006
		Quarry N	Madrid-Boston All Weather Road	MBR_007
		Quarry O	Madrid-Boston All Weather Road	MBR_008
		Quarry P	Madrid-Boston All Weather Road	MBR_009
		Quarry Q	Madrid-Boston All Weather Road	MBR_010
		Quarry R	Madrid-Boston All Weather Road	MBR_011
		Quarry S	Madrid-Boston All Weather Road	MBR_012
		Quarry T	Madrid-Boston All Weather Road	MBR_013
		Quarry U	Madrid-Boston All Weather Road	MBR_014
		Quarry V	Madrid-Boston All Weather Road	MBR_015
		Quarry W	Madrid-Boston All Weather Road	MBR_016
		Quarry X	Madrid-Boston All Weather Road	MBR_017
		Quarry Z	Madrid-Boston All Weather Road	MBR_018
		Quarry AA	Madrid-Boston All Weather Road	MBR_019
		Quarry AB	Madrid-Boston All Weather Road	MBR_020
		Quarry AD	Madrid-Boston All Weather Road	MBR_021
		Crusher	Madrid-Boston All Weather Road	MBR_036
		Quarry AJ	Madrid-Boston All Weather Road	MBR_037
		Quarry	Quarry 2	Q2_001
		Quarry # 3	Quarry 3	Q3_001
Roads and Transportation		Jetty	Roberts Bay	RB_001
		Fuel Transfer Access Road	Roberts Bay	RB_008
		Cargo Dock	Roberts Bay	RB_012
		10ML Fuel Storage Facility Access Road	Roberts Bay	RB_014
		10ML Fuel Storage Facility Access Road Culvert	Roberts Bay	RB_015
		All-Weather Road	Cargo Dock Access Road	CDR_001
		Culverts	Cargo Dock Access Road	CDR_002
		Bridge Crossing	Cargo Dock Access Road	CDR_003
		Helicopter Support Facilities	Doris	DM_007
		Airstrip	Doris	DM_027
		Airstrip Aprons	Doris	DM_028
		Airstrip Lighting	Doris	DM_029
		Primary Road	Doris	DM_031
		All weather road	Doris-Windy All Weather Road	DW_001
		Clear-span crossings	Doris-Windy All Weather Road	DW_004
		Arched Culvert Crossing	Doris-Windy All Weather Road	DW_005
		All-Weather Road	Madrid North - TIA Road	MNT_001
		Culvert crossings	Madrid North - TIA Road	MNT_002
		Bridge crossing	Madrid North - TIA Road	MNT_003
		Vent Raise Access Road	Madrid North	MN_017
		Culverts	Madrid North	MN_020
		Fuel Storage Facility Access Road	Madrid North	MN_024
		Fuel Storage Facility Bypass Road	Madrid North	MN_025
		All-Weather Road	Madrid South All Weather Road	MSR_001
		Culvert crossings	Madrid South All Weather Road	MSR_002
		Infrastructure Access Road	Madrid South	MS_010
		Portal Haul Road	Madrid South	MS_011
		Vent Raise Pad Access Road	Madrid South	MS_013
		All-Weather Road	Madrid-Boston All Weather Road	MBR_001
		Crossing C-MBR-7	Madrid-Boston All Weather Road	MBR_022
		Crossing C-MBR-8	Madrid-Boston All Weather Road	MBR_023
		Crossing C-MBR-9	Madrid-Boston All Weather Road	MBR_024
		Crossing C-MBR-10	Madrid-Boston All Weather Road	MBR_025
		Crossing C-MBR-11	Madrid-Boston All Weather Road	MBR_026
		Crossing C-MBR-12	Madrid-Boston All Weather Road	MBR_027
		Crossing C-MBR-13	Madrid-Boston All Weather Road	MBR_028
		Crossing C-MBR-14	Madrid-Boston All Weather Road	MBR_029
		Crossing C-MBR-15	Madrid-Boston All Weather Road	MBR_030
		Crossing C-MBR-16	Madrid-Boston All Weather Road	MBR_031
		Crossing C-MBR-17	Madrid-Boston All Weather Road	MBR_032
		Crossing C-MBR-18	Madrid-Boston All Weather Road	MBR_033
		Crossing C-MBR-19	Madrid-Boston All Weather Road	MBR_034
		Crossing C-MBR-20	Madrid-Boston All Weather Road	MBR_035
		Secondary Road	Secondary Road	SR_001
		Tail Lake Access Road	Secondary Road	SR_003
		Access Road	Quarry 4	Q3_002
		Roads and Trails	Patch Lake	PLA_002

	Winter Road to Patch	Windy	WC_004
Rock Fill Pads	Laydown Area	Roberts Bay	RB_006
	Developed Areas (for regrading)	Roberts Bay	RB_011
	Developed Areas (for regrading)	Doris	DM_032
	Core Storage Area	Doris-Windy All Weather Road	DW_008
	Portal Pad	Madrid North	MN_006
	Laydown Area	Madrid North	MN_010
	Calcium Chloride Laydown	Madrid North	MN_014
	Developed Areas (for regrading)	Madrid North	MN_016
	Laydown Pad	Madrid South	MS_009
	Calcium Chloride Laydown	Madrid South	MS_018
	Developed Areas (for regrading)	Madrid South	MS_021
	Equipment Laydown Area	Reagent Pads	RP_001
	Materials Laydown Area	Reagent Pads	RP_002
	Ammonium Nitrate Storage Area	Reagent Pads	RP_003
	Land Farm	Waste Management Area	WM_001
	Batch Plant Pad	Waste Management Area	WM_002
	Burn Pan	Waste Management Area	WM_003
	Core Storage Area	Waste Management Area	WM_004
	Developed Areas (for regrading)	Patch Lake	PLA_003
	Summer Debris Collection	Windy	WC_010
	Developed Areas (for regrading)	Windy	WC_011
	Reclaim Drill Holes	Windy	WC_012
Waste and Landfills	Landfill	Quarry 5	Q3_003
	Disposal of demolition waste	Patch Lake	PLA_004
	Disposal of demolition waste	Windy	WC_008
	Hazardous Waste Disposal Cost	Windy	WC_009
Marine Environment Reclamation	Roberts Bay Discharge System	Pipeline	PL_001
Pipelines	Fuel Transfer Pipeline	Cargo Dock Access Road	CDR_004
	Fresh Water Pipelines	Doris	DM_006
	Sewage Discharge Line	Doris	DM_016
	Madrid North Reclaim Pipeline	Pipeline	PL_002
	Madrid South Groundwater Pipeline	Pipeline	PL_003
	Tailings and Reclaim Water Pipelines	Secondary Road	SR_002
Water Management	Run-off Diversion Berm	Doris	DM_013
	Sedimentation Berm	Doris	DM_014
	Sedimentation/Pollution Control Pond	Doris	DM_015
	Sumps	Doris	DM_018
	Water Intake Structure and Pumping Facility	Doris	DM_026
	Pad U Sedimentation/Pollution Control Pond	Doris	DM_035
	Contact Water Pond Berm	Madrid North	MN_003
	Diversion Berm	Madrid North	MN_022
	Sump	Madrid North	MN_023
	Primary Contact Water Pond Berm	Madrid South	MS_003
	Haul Road / Secondary Contact Water Pond Berm	Madrid South	MS_012
	Treated Sewage Discharge Areas	Quarry 4	Q2_003

Appendix B: Phase 1-Phase 2 Comparison Table

Roberts Bay Facilities, Infrastructure and Activities				
	Approved under Type A W.L. 2AM-DOH1323 Amendment No.1		Request for Amendment No.2 Type A Water Licence 2AM-DOH1323	Comments
	Existing	Permitted		
Life of Facilities	2022		Year 1 (2019) to Year 14 (2032)	Amendment
Site Development	Site largely developed		Minimal footprint extension for cargo dock and access	N/A
Marine Facilities	Jetty		Cargo dock	Not subject to Water Licensing Application
Fuel storage - Diesel	4 @ 5 ML	1 @ 5ML	Diesel - 2 @ 5 ML Total storage: 35 ML	Amendment Expansion of Roberts Bay Fuel Storage Capacity
Fuel storage – Jet fuel	drums within Sea-Can	500,000 L	No additional storage	No change
Site infrastructure	Access roads, laydown areas, weather havens		Extension of access roads to Boston	Amendment
Outfall	Outfall pipeline and berm		No additional requirements	No change
Waste management	Storage facilities, incinerators, work area		No additional requirements	No change
Expected shipping traffic			Freight – up to 4 per year (40 kt/year) Fuel – up to 3 tankers per year (35 ML total)	Not subject to Water Licensing Application
Shipping season	August 1 to 15 September		August 1 to 15 September	Not subject to Water Licensing Application
Doris Infrastructure, Facilities and Activities				
	Approved under Project Certificate 003 and Type A W.L. 2AM-DOH1323		Request for Amendment No.2 Type A Water Licence 2AM-DOH1323	Comments
Ore processed during Phase 2 Life of Mine Mining method Processing facilities			2,579,000 t Year 1 (2019) to Year 14 (2032) Underground / daylighting Year 1 (2019) to Year 14 (2032)	Amendment
Site Development	Site largely developed		Minimal footprint extension related to TIA expansion	Amendment
Airstrip	All-weather air strip Ice air strip on Windy Lake/Doris		No change	No change
Fuel Storage - Diesel	5 @ 1.5 ML		No change	No change
Power house	8 gen-set @ 1.2 MW Modularized building with day tanks. Back-up power supply.		Two wind turbines Nominal capacity of 4.2 MW each	Not subject to Water Licencing Application
Processing Facility	2,400 tpd		No change	No change

Miscellaneous buildings and infrastructure	Maintenance shops, workshops, core storage areas, batch plant, brine mixing facility, laydown areas, warehouses, water treatment, vent raise (3), air heating units, reagent storage, power station, processing plant, site service roads	No change	No change
Overburden stockpile	Located west of the Doris Camp area	No change	No change
Waste rock stockpile (used for backfill of mine)	In use and located to the east and north of the mill building	No change	No change
Ore stockpile	In use and located to the east and south of the mill building	No change	No change
Quarries	Four active quarries permitted	Two additional quarries	Amendment
Tailing	Tailings Impoundment Area (TIA) Capacity of 2.5 Mt	Expansion of TIA, service roads and quarries Capacity of 18 Mt	Amendment
Waste management	Landfill (permitted), landfarm and handling/temporary storage of hazardous waste, incineration and open burning for combustible waste	No change	No change
Accommodations	280-person accommodations Mine dry, administration buildings, security, emergency	400-person accommodations; extension to mine dry and administration building	Amendment
Potable Water Supply (Windy lake)	22,995 m ³ (with potable treatment plant)	43,800 m ³ (expansion to water treatment plant)	Amendment
Industrial (Doris Lake)	480,000 m ³ (including pump house)	1,930,000 m ³ (inclusive of Madrid Operations)	Amendment
Fire protection tank	500,000 m ³	No change	No change

Water management and treatment	Cyanide destruction at mill and placement of cyanide destruct tailings underground. Mill water pumped to TIA and water recycled to mill. Excess TIA water discharged to Roberts Bay via mixing box. Mine water (saline) discharged to Roberts Bay via mixing box. Site contact water and domestic waste water pumped to TIA.	No change Retain existing water management approach	No change
Contact water ponds	Two contact water ponds, sediment control berm, diversion berm	No change	No Change
Sewage treatment	Accommodate 280-persons Discharge to tundra or TIA	Accommodate 400-persons Discharge to tundra or TIA	Amendment
Heliport	Heli pad and building	No change	No change
Explosives	Explosives storage	Explosives Manufacturing Facility	Subject to NRCan Permitting
Madrid North Facilities, Infrastructure and Activities			
Components	Request for Approval under Advanced Exploration Madrid Bulk Sample	Request for Amendment No.2 Type A Water Licence 2AM-DOH1323	Comments
Ore mined Life of Mine Mining method Processing facilities	Approximately 50,000 t bulk sample from Madrid North	12,501,000 t Year 1 (2019) to Year 13 (2031) Underground / daylighting (crown pillar) Year 2 (2020) to Year 13 (2031)	Amendment
Fuel Storage (Portal, vent raise and power station)	75,000 L/60,000 L	3 @ 1.5 ML	Amendment
Power Generation	2 self-contained units at 750 MW (within Sea-Can)	3.6 MW (3 units @ 1.2 MW each) Two wind turbines Nominal capacity of 4.2 MW each	Not subject to Water Licencing Application
Waste rock stockpile	285,000 t 158,000 m ³	646,000 t 359,000 m ³	Amendment
Ore stockpile	50,000 t 28,000 m ³	50,000 t 28,000 m ³	No change
Explosives use	Not specified	4,700 kg/day	NRCan permits
Miscellaneous buildings and infrastructure	Maintenance shops, compressor building, office trailer, emergency trailer, brine mixing facility, laydown areas, air heating units	Additional infrastructure: Vent raise and access road Process plant buildings	Amendment

Water management	Surface water collected in contact water pond and discharged to tundra	Surface water – contact water ponds and reuse in mine /process plant operation. Mine water (saline) pumped to Doris mixing box and discharged to Roberts Bay.	Amendment
Contact water pond	7,900 m ³ 8,350 m ²	15,100 m ³ 13,900 m ²	Amendment
Concentrator	No plant	Concentrator capacity of 1,200 tpd Mill maintenance shop Warehouse/reagent storage	Amendment
Tailings	No tailings	Tailings pipeline and service road from Madrid North concentrator to Doris TIA	Amendment
Ore haulage to Doris Concentrate haulage Backhaul of cyanide leached tailings	All bulk sample ore trucked to Doris	Year 2 to Year 13 – 50 trucks/day Year 2 to Year 13 – 3 trucks/day Year 2 to 12 – 3 trucks/day	Amendment
Madrid South Facilities, Infrastructure and Activities			
Components	Request for Approval under Advanced Exploration Madrid Bulk Sample	Request for Amendment No.2 Type A Water Licence 2AM-DOH1323	Comments
Ore mined Life of Mine Mining methods	Approximately 50,000 t bulk sample from Madrid South	991,000 t Year 12 (2030) to Year 14 (2032) Underground/Daylighting	Amendment
Waste rock stockpile (used for backfill of mine)	500,000 t 276,000 m ³	826,000 t 459,000 m ³	Amendment
Ore stockpile	55,000 t 31,000 m ³	55,000 t 31,000 m ³	No change
Explosives use		4,500 kg/day	NRCan permits
Contact water pond 1	15,000 m ³ 12,300 m ²	No change	No change
Water management	Surface water collected in contact water pond and discharged to tundra	Surface water – contact water ponds and reuse in mine /process plant operation Mine water (saline) trucked to Doris mixing box and discharged to Roberts Bay	Amendment
Contact water pond 2	900 m ³ 920 m ²	2,300 m ³ 1,720 m ²	Amendment
Fuel Storage - Diesel	60,000 L	75,000 L	Amendment
Power generation	3 self-contained units at 750 KW (within Sea-Can)	No additional units	No change

Miscellaneous buildings and infrastructure	Mine equipment shops, compressor building, office trailer, emergency trailer, brine mixing facility, laydown areas, air heating units	Vent raise and access road	Amendment
Ore haulage to Doris	All bulk sample ore trucked to Doris	Year 12 to Year 14 – 3 trucks/day	Not subject to Water Licencing Application
Proposed All-Weather Road and Winter Roads – Construction and Activities			
Components	Approval	Request for Amendment No.2 Type A Water Licence 2AM-DOH1323	Comments
Road	Winter road	All-weather road construction. Multiple (14) water crossings including 8 bridges and 6 culverts. Continued use of permitted winter road.	Amendment
Quarries	Four quarries along Doris-Windy Road	Nine quarry sites identified along AWR Four quarries expected to be used	Amendment
Transportation	Not specified	Daily haulage of ore, fuel and operating supplies	Amendment
Ore haulage to Doris	N/A	Year 5 to Year 7 – 42 trucks/day Year 7 to Year 14 – 4 trucks/day	N/A
Concentrate haulage	N/A	Year 7 to Year 14 – 4 trucks/day	N/A

Appendix C RECLAIM 7.0 Current Estimate Summary and Details

SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY
OPEN PIT	Quarry ROQ Drill, Blast, and Crush Material	\$4,190,608	\$4,190,608	\$0
UNDERGROUND MINE	Doris Portal and Underground Works	\$3,344,311	\$3,344,311	\$0
TAILINGS FACILITY	TIA Subaerial Tailings Area, North Dam, Shoreline Protection, and Interim Dyke	\$12,561,086	\$6,280,543	\$6,280,543
ROCK PILE	Doris, Madrid, Roberts Bay Rock Piles	\$1,398,359	\$1,398,359	\$0
BUILDINGS AND EQUIPMENT	Site Buildings	\$10,727,366	\$8,863,056	\$1,864,310
CHEMICALS AND CONTAMINATED SOIL MANAGEME	Decontaminate Oil, Fuel, and Containment Liners	\$1,625,661	\$812,830	\$812,830
SURFACE AND GROUNDWATER MANAGEMENT	Remove / Level Berms, Water Management , Water Treatment	\$1,126,649	-	\$1,126,649
INTERIM CARE AND MAINTENANCE	Two (2) Years of Care and Maintenance and Includes Water Treatment	\$7,111,287	-	\$7,111,287
SUBTOTAL: Capital Costs		<u>\$42,085,327</u>	<u>\$24,889,707</u>	<u>\$17,195,620</u>
PERCENT OF SUBTOTAL			59%	41%

INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY
MOBILIZATION/DEMOBILIZATION		\$7,955,000	\$4,704,671	\$3,250,329
POST-CLOSURE MONITORING AND MAINTENANCE		\$1,225,000	\$724,478	\$500,522
ENGINEERING	5%	\$2,104,266	\$1,244,485	\$859,781
PROJECT MANAGEMENT	5%	\$2,104,266	\$1,244,485	\$859,781
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0%	\$0	\$0	\$0
BONDING/INSURANCE	0%	\$0	\$0	\$0
CONTINGENCY	20%	\$8,417,065	\$4,977,941	\$3,439,124
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0
SUBTOTAL: Indirect Costs		<u>\$21,805,598</u>	<u>\$12,896,061</u>	<u>\$8,909,537</u>

TOTAL COSTS		<u>\$63,890,925</u>	<u>\$37,785,768</u>	<u>\$26,105,157</u>
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Open Pit Name: Quarry ROQ Drill, Blast, and Crush Material					Pit #	1			
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
NO REQUIREMENT									
DW_002 Doris-Windy All Weather Road Quarry	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
DW_003 Doris-Windy All Weather Road Quarry	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
DW_007 Doris-Windy All Weather Road Quarry	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
Q2_001 Quarry 2 Quarry	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
Q3_001 Quarry 3 Quarry #3	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
QUARRY ROCK MATERIAL									
TIA_001 TIA Subaerial Tailings Area	Produce ROQ (Quarry, drill &blast)	m3	104,250.00	RB2L	\$16.30	\$1,699,279	100%	\$1,699,279	\$0
TIA_001 TIA Subaerial Tailings Area	Produce additional ROQ for drainage chan	m3	8,240.23	RB2L	\$16.30	\$134,316	100%	\$134,316	\$0
Q3_003 Quarry 3 Landfill	Produce ROQ (Quarry, drill &blast)	m3	8,124.30	RB2L	\$16.30	\$132,426	100%	\$132,426	\$0
MN_026 Naartok Crown Recovery Trench	Produce ROQ (Quarry, drill &blast)	m3	86,089.00	RB2L	\$16.30	\$1,403,254	100%	\$1,403,254	\$0
MN_026 Naartok Crown Recovery Trench	Produce ROQ (Quarry, drill &blast)	m3	4,082.00	RB2L	\$16.30	\$66,537	100%	\$66,537	\$0
MN_026 Naartok Crown Recovery Trench	Produce Crushed Rock (Quarry, drill &blast)	m3	1,548.00	RB2L	\$16.30	\$25,232	100%	\$25,232	\$0
TIA_001 TIA Subaerial Tailings Area	Crush and Screen ROQ Materials	m3	8,240.23	RBS1L	\$6.75	\$55,622	100%	\$55,622	\$0
Q3_003 Quarry 3 Landfill	Crush and Screen ROQ Materials	m3	8,124.30	RBS1L	\$6.75	\$54,839	100%	\$54,839	\$0
MN_026 Naartok Crown Recovery Trench	Crush and Screen ROQ Materials	m3	86,089.00	RBS1L	\$6.75	\$581,101	100%	\$581,101	\$0
MN_026 Naartok Crown Recovery Trench	Crush and Screen ROQ Materials	m3	4,082.00	RBS1L	\$6.75	\$27,554	100%	\$27,554	\$0
MN_026 Naartok Crown Recovery Trench	Crush and Screen Crushed Rock Materials	m3	1,548.00	RBS1L	\$6.75	\$10,449	100%	\$10,449	\$0
CONTROL ACCESS									
Fence		m		#N/A	\$0.00	\$0		\$0	\$0
Signs		each		#N/A	\$0.00	\$0		\$0	\$0
Berm at crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
STABILITY STUDY									
Conduct stability and setback study		allow		#N/A	\$0.00	\$0		\$0	\$0
STABILIZE SLOPES									
Off-load crest, soil A		m3		#N/A	\$0.00	\$0		\$0	\$0
Off-load crest, soil B		m3		#N/A	\$0.00	\$0		\$0	\$0
Doze/trim overburden at crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Drill & blast pit crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Buttress slope		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
COVER/CONTOUR SLOPES									
Place fill, soil A		m3		#N/A	\$0.00	\$0		\$0	\$0
Place fill, soil B		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate slopes		ha		#N/A	\$0.00	\$0		\$0	\$0
Vegetate pit floor		ha		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0		\$0	\$0
CONSTRUCT SPILLWAY									
Excavate channel		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
RECLAIM QUARRIES									
Re-contour									
Contour slopes		m3		#N/A	\$0.00	\$0		\$0	\$0
Place overburden		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		m3		#N/A	\$0.00	\$0		\$0	\$0
FLOOD PIT-Capital									
Remove stationary equipment (sump pumps)		each		#N/A	\$0.00	\$0		\$0	\$0
Remove dewatering pipeline		m		#N/A	\$0.00	\$0		\$0	\$0
Remove power lines		each		#N/A	\$0.00	\$0		\$0	\$0
Construct diversion ditches		m3		#N/A	\$0.00	\$0		\$0	\$0
-Ditch, mat'l A		m3		#N/A	\$0.00	\$0		\$0	\$0
-Ditch, mat'l B		m3		#N/A	\$0.00	\$0		\$0	\$0
Construct embankment/dam		m3		#N/A	\$0.00	\$0		\$0	\$0
Supply/install pump station		each		#N/A	\$0.00	\$0		\$0	\$0
Supply/install piping system		m		#N/A	\$0.00	\$0		\$0	\$0
Remove pump post-closure		each		#N/A	\$0.00	\$0		\$0	\$0
Remove pipeline post-closure		m		#N/A	\$0.00	\$0		\$0	\$0
FLOOD PIT-Annual Cost									
Operate pumps (power)		m3		#N/A	\$0.00	\$0		\$0	\$0
Maintain pump/pipeline		allow		#N/A	\$0.00	\$0		\$0	\$0
Labour: fuel management, commissioning/decom		\$/h		#N/A	\$0.00	\$0		\$0	\$0
Chemical addition, _____ kg/m3 of water		tonne		#N/A	\$0.00	\$0		\$0	\$0
Chemicals, purchase and shipping		tonne		#N/A	\$0.00	\$0		\$0	\$0
Passive/biological additives		\$/ha		#N/A	\$0.00	\$0		\$0	\$0
Passive additives purchase and shipping		tonne		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
Annual pumping						\$0			
Number of years of pump flooding	years			Total pumping c		\$0		\$0	\$0
Total						\$4,190,608		\$4,190,608	\$0
% of Total								100%	0%

Underground Mine Name Doris Portal and Underground Works		UG Mine # 1							
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
CONTROL ACCESS									
Fence		m		#N/A	\$0.00	\$0		\$0	\$0
Signs		each		#N/A	\$0.00	\$0		\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0
Berm		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete wall in portals		m3		#N/A	\$0.00	\$0		\$0	\$0
Backfill portal		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_012 Doris Portal and Underground Works	Construct portal plug	m3	706.80	PORL	\$25.43	\$17,974	100%	\$17,974	\$0
DM_012 Doris Portal and Underground Works	Backfill underground workings with ore and waste rock	m3	360,889.00	RBS2L	\$8.50	\$3,067,557	100%	\$3,067,557	\$0
MN_012 Madrid North Portal and Underground Work	Construct portal plug	m3	1,338.00	PORL	\$25.43	\$34,026	100%	\$34,026	\$0
Backfill portal #2		m3		#N/A	\$0.00	\$0		\$0	\$0
Cap raise		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Construct a concrete cap (0.5 m thick reinforced concr	m3	25.12	CLFS	\$2,881.25	\$72,377	100%	\$72,377	\$0
DM_033 Doris Connector Vent Raise	Construct a concrete cap (0.5 m thick reinforced concr	m3	25.12	CLFS	\$2,881.25	\$72,377	100%	\$72,377	\$0
Cap raise #2		m3		#N/A	\$0.00	\$0		\$0	\$0
Cap shaft #1		m3		#N/A	\$0.00	\$0		\$0	\$0
Cap shaft #2		m3		#N/A	\$0.00	\$0		\$0	\$0
Backfill adits		m3		#N/A	\$0.00	\$0		\$0	\$0
Backfill open stope		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete cap over open stope		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
REMOVE HAZARDOUS MATERIALS									
Remove hazardous materials, U/G labor		mandays		#N/A	\$0.00	\$0		\$0	\$0
Remove/decontaminate stationary & elect. equip		lm		#N/A	\$0.00	\$0		\$0	\$0
DM_012 Doris Portal and Underground Works	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
DM_030 Doris Primary Vent Raise	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
DM_033 Doris Connector Vent Raise	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
MN_012 Madrid North Portal and Underground Work	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
Remove/decontaminate mobile equipment		each		#N/A	\$0.00	\$0		\$0	\$0
Remove misc. haz. mat & explosives		kg		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
INSTALL BULKHEADS									
Bulkheads to control water flow		each		#N/A	\$0.00	\$0		\$0	\$0
Grout bulkhead		m3		#N/A	\$0.00	\$0		\$0	\$0
FLOOD MINE									
Supply/install pump		each		#N/A	\$0.00	\$0		\$0	\$0
Supply/install piping system		each		#N/A	\$0.00	\$0		\$0	\$0
Operate pumps to flood workings		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
INSTALL GROUNDWATER COLLECTION SYSTEM									
Excavate/install sumps		m2		#N/A	\$0.00	\$0		\$0	\$0
Install pumping wells		m3		#N/A	\$0.00	\$0		\$0	\$0
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0		\$0	\$0
SPECIALIZED ITEMS									
Install water quality monitoring pipes		each		#N/A	\$0.00	\$0		\$0	\$0
Install permanent pumping system		each		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
					Total	\$3,344,311		\$3,344,311	\$0
					% of Total			100%	0%

Tailings Impoundment Name:		Subaerial Tailings Area, North Dam, Shoreline Protection, and Interim Dyke				Pond #	1		
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
CONTROL ACCESS									
Fence		m		#N/A	\$0.00	\$0	0%	\$0	\$0
Signs		each		#N/A	\$0.00	\$0	0%	\$0	\$0
Berm		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
STABILIZE EMBANKMENT(S)									
Toe buttress, drainage layer		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Toe buttress, bulk fill		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_005 TIA Shoreline Protection	Haul and place riprap to prevent erosion	m3	204,959.00	RR4L	\$10.28	\$2,107,085	50%	\$1,053,543	\$1,053,543
Install geotextile/geosynthetic		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_005 TIA Shoreline Protection	Install separation geotextile	m2	409,918.00	GSHDPEL	\$10.75	\$4,408,244	50%	\$2,204,122	\$2,204,122
Vegetate		ha		#N/A	\$0.00	\$0	0%	\$0	\$0
Raise crest		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Flatten slopes		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_006 TIA Interim Dyke	Recontour dike crest	m3	1,115.04	DRH	\$3.25	\$3,620	50%	\$1,810	\$1,810
TIA_006 TIA Interim Dyke	Crown Access Road for Positive Drainage	m2	1,520.00	DSH	\$5.14	\$7,813	50%	\$3,907	\$3,907
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
COVER TAILINGS									
Grade/shape tailings surface		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Liner bedding		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Subgrade preparation - compact		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Supply geotextile/geosynthetic		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Install geotextile/geosynthetic		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Soil cover		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Rock cover		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_001 TIA Subaerial Tailings Area	LHDP ROQ to construct 0.3 m cover	m3	104,250.00	RCS1H	\$16.75	\$1,746,188	50%	\$873,094	\$873,094
MN_026 Naartok Crown Recovery Trench	Backfill with Waste Rock	m3	125,911.00	RBS2H	\$15.00	\$1,888,665	50%	\$944,333	\$944,333
MN_026 Naartok Crown Recovery Trench	Backfill with ROQ	m3	86,089.00	RCS1H	\$16.75	\$1,441,991	50%	\$720,995	\$720,995
Vegetate		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
BURY PAG ROCK									
Relocate PAG rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Place cover over PAG rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Raise crest of dam		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
STABILIZE DECANT SYSTEM									
TIA_003 TIA North Dam	Remove thermosyphon radiators and superstructure	each	12.00	ER1SL	\$1,000.00	\$12,000	50%	\$6,000	\$6,000
Excavate and replace		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Plug/backfill with concrete or clay		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
REMOVE TAILINGS DISCHARGE									
Cyclones		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Pipe		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Remove reclaim barge		allow		#N/A	\$0.00	\$0	0%	\$0	\$0
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Excavate rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Construct drainage channel		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_001 TIA Subaerial Tailings Area	LHDP ROQ to construct 0.3 m drainage channel armoring	m3	8,240.23	RCS1H	\$16.75	\$138,024	50%	\$69,012	\$69,012
MN_026 Naartok Crown Recovery Trench	Place ROQ	m3	4,082.00	RCS1H	\$16.75	\$68,374	50%	\$34,187	\$34,187
MN_026 Naartok Crown Recovery Trench	Place Crushed Rock	m3	1,548.00	RCS1H	\$16.75	\$25,929	50%	\$12,965	\$12,965
Rip rap in channel base		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
MN_026 Naartok Crown Recovery Trench	Place Rip Rap	m3	350.00	RR2H	\$27.93	\$9,777	50%	\$4,888	\$4,888
FLOOD TAILINGS									
Doze tailings to final contour		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Raise crest of dam		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
UPGRADE SPILLWAY									
Excavate channel, rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_003 TIA North Dam	Breach the dam by cutting a 20 m slot down to original ground (drill and blast)	m3	7,028.03	RC2H	\$24.89	\$174,925	50%	\$87,463	\$87,463
TIA_003 TIA North Dam	Thermal cover load and haul material	m3	31,021.08	SC4L	\$12.58	\$390,249	50%	\$195,124	\$195,124
TIA_003 TIA North Dam	Clad the cut core faces for thermal protection	m2	614.24	CLD1L	\$225.00	\$138,204	50%	\$69,102	\$69,102
Excavate channel, soil		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Concrete		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
CONSTRUCT SEEPAGE COLLECTION POND									
Excavate seepage collection pond		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0	0%	\$0	\$0
Bedding layer		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
INSTALL GROUNDWATER COLLECTION SYSTEM									
Excavate/install sumps		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Install pumping wells		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
MN_026 Naartok Crown Recovery Trench	Drain Pond and Truck Water for Disposal - Included as Part of ICM	each		#N/A	\$0.00	\$0	0%	\$0	\$0
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0	0%	\$0	\$0
SPECIALIZED ITEMS									
Install permanent instrumentation, supply & technician		each		#N/A	\$0.00	\$0	0%	\$0	\$0
Install permanent instrumentation, drilling		each		#N/A	\$0.00	\$0	0%	\$0	\$0
OTHER									
TIA_002 TIA South Dam	No closure activities are required	m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TREAT SEEPAGE - see "Water Management" and "Water Treatment"									
TREAT SUPERNATANT									
Pump water (to pit, U/G)		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Equipment maintenance and parts		allow		#N/A	\$0.00	\$0	0%	\$0	\$0
Supply reagents		tonne		#N/A	\$0.00	\$0	0%	\$0	\$0
						Annual treatment cos		\$0	
Number of years of treatment			years		Total treatment cost		\$0		\$0
						Total		\$12,561,086	
						% of Total		50%	
								\$6,280,543	
								\$6,280,543	

* for construction of passive treatment system refer to "Water Management"

Rock Pile Name:		Doris, Madrid, Roberts Bay Rock Piles							
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
STABILIZE SLOPES									
Grade Ore Rock Pile				#N/A	\$0.00	\$0	100%	\$0	\$0
DM_010 Doris Ore Pile	Remove all ore and place underground	m3	16,652.00	DRH	\$3.25	\$54,060	100%	\$54,060	\$0
Grade Waste Rock Pile				#N/A	\$0.00	\$0	100%	\$0	\$0
DM_025 Doris Waste Rock Pile	Waste Rock: Remove all waste rock (Place underground or at the TIA)	m3	313,394.00	DRH	\$3.25	\$1,017,427	100%	\$1,017,427	\$0
DM_025 Doris Waste Rock Pile	D Material Waste Rock: Remove all waste rock (Place underground or at the TIA)	m3	16,666.00	DRH	\$3.25	\$54,106	100%	\$54,106	\$0
DM_025 Doris Waste Rock Pile	Madrid Ore Waste Rock: Remove all waste rock (Place underground or at the TIA)	m3	14,177.00	DRH	\$3.25	\$46,025	100%	\$46,025	\$0
MN_001 Madrid North Waste Rock Pile This is Covered Under Another Task (CPRT Backfill MN_026 and / or Underground Backfill MN_011)	Remove all waste rock (place in underground or CPRT)	m3	125,911.00	#N/A	\$0.00	\$0	100%	\$0	\$0
Grade Overburden Pile		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
RB_007 Roberts Bay Overburden Pile	Collect all Debris	m2	14,205.00	DSL	\$1.29	\$18,254	100%	\$18,254	\$0
RB_007 Roberts Bay Overburden Pile	Load Waste into Containers	m3	9.00	LWCS1L	\$85.00	\$765	100%	\$765	\$0
RB_007 Roberts Bay Overburden Pile	Haul Containers to Quarry 3 Landfill	Each	9.00	HCLFSL	\$85.00	\$765	100%	\$765	\$0
RB_007 Roberts Bay Overburden Pile	Grade for positive drainage	m2	14,205.00	DSL	\$1.29	\$18,254	100%	\$18,254	\$0
DW_009 Doris-Windy All Weather Road Quarry D Overburden Pile	Grade for positive drainage	m2	0.00	#N/A	\$0.00	\$0	100%	\$0	\$0
Q2_002 Quarry 2 Overburden Pile	Reslope to 3H:1V	m2	11,019.33	DSH	\$5.14	\$56,642	100%	\$56,642	\$0
Q2_002 Quarry 2 Overburden Pile	Grade top for positive drainage	m2	23,140.60	DSL	\$1.29	\$29,737	100%	\$29,737	\$0
Grade Overburden Pile		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
MN_028 Madrid North Overburden Stockpile	Regrade for Positive Drainage	m2	32,390.00	DSL	\$1.29	\$41,623	100%	\$41,623	\$0
Grade Laydown Areas		m2		#N/A	\$0.00	\$0	100%	\$0	\$0
MN_001 Madrid North Waste Rock Pile	Grade remaining pad for positive drainage	m3	27,225.00	DSL	\$1.29	\$34,986	100%	\$34,986	\$0
Flatten slopes with dozer		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Flatten "bubble dump" areas		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Divert runon, ditch mat'l A		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Divert runon, ditch mat'l B		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Toe buttress, drain mat'l		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Toe buttress, fill mat'l A		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Toe buttress, fill mat'l B		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Other				#N/A	\$0.00	\$0	100%	\$0	\$0
COVER ROCK PILE									
Subgrade preparation - doze surface		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Soil cover - excavate, haul, spread & compact		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Rock cover - excavate, haul & spread		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Excavate downslope drainage channel & chute		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Rip rap drainage channel and chute		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0	100%	\$0	\$0
Other				#N/A	\$0.00	\$0	100%	\$0	\$0
VERY LOW PERMEABILITY COVER (in addition to above)									
Liner subgrade preparation - compact		m2		#N/A	\$0.00	\$0	100%	\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0
Protective cover - excavate, haul, spread & compact		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0	100%	\$0	\$0
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0	100%	\$0	\$0
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
CONSTRUCT SEEPAGE COLLECTION POND									
Excavate seepage collection pond		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0	100%	\$0	\$0
Bedding layer		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Q2_002 Quarry 2 Overburden Pile	Install erosion protection measures (coconut matting)	m3	3,305.80	GSGL	\$7.78	\$25,713	100%	\$25,713	\$0
INSTALL GROUNDWATER COLLECTION SYSTEM									
Excavate/install sumps		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Install pumping wells		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Install pumps/pipelines/power supply		allow		#N/A	\$0.00	\$0	100%	\$0	\$0
RELOCATE DUMPS									
Load, haul, dump or doze		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Add lime		tonne		#N/A	\$0.00	\$0	100%	\$0	\$0
Contour reclaimed area		ha		#N/A	\$0.00	\$0	100%	\$0	\$0
Other				#N/A	\$0.00	\$0	100%	\$0	\$0
SPECIALIZED ITEMS									
Install permanent instrumentation		each		#N/A	\$0.00	\$0	100%	\$0	\$0
Install permanent instrumentation, drilling		each		#N/A	\$0.00	\$0	100%	\$0	\$0
TREAT ROCK PILE SEEPAGE - see "Water Treatment"									
HEAP LEACH SEEPAGE TREATMENT - Cyanide Detox									
Cyanide destruction water treatment pumping		m3		#N/A	\$0.00	\$0	100%	\$0	\$0
Reagents		tonne		#N/A	\$0.00	\$0	100%	\$0	\$0
Electrician/mechanic to maintain treatment plant		allow		#N/A	\$0.00	\$0	100%	\$0	\$0
Equipment maintenance and parts		allow		#N/A	\$0.00	\$0	100%	\$0	\$0
Number of years of treatment					Annual treatment cost				
					Total treatment cost				
Upgrade/modify pumping system - report to WTP					#N/A	\$0.00	\$0	\$0	\$0
					Total		\$1,398,359	\$1,398,359	\$0
					% of Total		100%	100%	0%

* For construction of passive treatment system refer to "Water Management". ARD/ML seepage treatment becomes post-closure water treatment cost

**Heap leach ARD/ML seepage treatment becomes post-closure water treatment cost

Chemicals/Soil Area Name:		Decontaminate Oil, Fuel, and Containment Liners							
Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.									
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
HAZARDOUS MATERIALS AUDIT									
Hazardous materials audit		mandays		#N/A	\$0.00	\$0		\$0	\$0
BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS									
Environmental technician/coordinator		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate: Oil, Fuel		mandays		#N/A	\$0.00	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Drain and decommission Enviro Tank	each	1	ER2SL	\$12,500.00	\$12,500	50%	\$6,250	\$6,250
DM_020 Doris Tank Farm	Drain residual fuel	litre	750,000	ORL	\$0.58	\$436,246	50%	\$218,123	\$218,123
DM_020 Doris Tank Farm	Consolidate fuel in barge at Roberts Bay	litre	750,000	#N/A	\$0.00	\$0	50%	\$0	\$0
DM_020 Doris Tank Farm	Wash tanks	each	5	ER3SL	\$1,500.00	\$7,500	50%	\$3,750	\$3,750
DM_020 Doris Tank Farm	Operate oil/water separator	m3	3,944.58	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Drain residual fuel	litre	200,000	ORL	\$0.58	\$116,332	50%	\$58,166	\$58,166
RB_002 Roberts Bay 20 ML Tank Farm	Consolidate fuel in barge at Roberts Bay	litre	200,000	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Wash tanks	each	5.00	ER3SL	\$1,500.00	\$7,500	50%	\$3,750	\$3,750
RB_002 Roberts Bay 20 ML Tank Farm	Operate oil/water separator	m3	4,493.09	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Drain residual fuel	litre	500,000	ORL	\$0.58	\$290,831	50%	\$145,415	\$145,415
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Consolidate fuel in barge at Roberts Bay	litre	500,000	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Wash tanks	each	1.00	ER3SL	\$1,500.00	\$1,500	50%	\$750	\$750
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Operate oil/water separator	m3	1,123.27	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Drain and wash empty fuel drums	each	0.00	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Crush empty fuel drums	each	0.00	#N/A	\$0.00	\$0	50%	\$0	\$0
DM_026 Doris Water Intake Structure and Pumping Facility	Collect All Debris	m2	2,226.17	DSL	\$1.29	\$2,861	50%	\$1,430	\$1,430
DM_026 Doris Water Intake Structure and Pumping Facility	disconnect and remove generator fuel tank (place in Doris tank farm for cleaning)	each	1.00	ER3SH	\$2,500.00	\$2,500	50%	\$1,250	\$1,250
DM_026 Doris Water Intake Structure and Pumping Facility	clean tidy/tank and prep for shipping	each	1.00	ER3SL	\$1,500.00	\$1,500	50%	\$750	\$750
DM_026 Doris Water Intake Structure and Pumping Facility	run oil-water separator	m3	1.00	#N/A	\$0.00	\$0	50%	\$0	\$0
						\$0			
Decontaminate: liner						\$11,225	50%	\$5,613	\$5,613
RB_002 Roberts Bay 20 ML Tank Farm	Clean liner	m3	13,206	CLS1L	\$0.85	\$11,225	50%	\$5,613	\$5,613
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Clean liner	m3	9,933	CLS1L	\$0.85	\$8,443	50%	\$4,222	\$4,222
DM_020 Doris Tank Farm	Clean liner	m3	5,500	CLS1L	\$0.85	\$4,675	50%	\$2,338	\$2,338
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Clean liner	m3	2,481	CLS1H	\$2.00	\$4,962	50%	\$2,481	\$2,481
WM_001 Waste Management Area Land Farm	Clean liner	m3	4,384	CLS1L	\$0.85	\$3,726	50%	\$1,863	\$1,863
						\$0			
Decontaminate maintenance shop		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate power plant		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate bulk fuel storage		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate ANFO plant		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate offices/warehouse/accom		mandays		#N/A	\$0.00	\$0		\$0	\$0
Removal of asbestos siding on buildings		m2		#N/A	\$0.00	\$0		\$0	\$0
Removal of friable asbestos on equipment		m2		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
HAZARDOUS MATERIALS REMOVAL									
Waste oils		litre		#N/A	\$0.00	\$0		\$0	\$0
Waste fuel		litre		#N/A	\$0.00	\$0		\$0	\$0
Waste batteries		kg		#N/A	\$0.00	\$0		\$0	\$0
Assay & environmental lab reagents		kg		#N/A	\$0.00	\$0		\$0	\$0
Machine shop paints, solvents etc.		litre		#N/A	\$0.00	\$0		\$0	\$0
Glycol		litre		#N/A	\$0.00	\$0		\$0	\$0
Process reagents		kg		#N/A	\$0.00	\$0		\$0	\$0
Nuclear sources		allow		#N/A	\$0.00	\$0		\$0	\$0
Other hazardous materials		allow		#N/A	\$0.00	\$0		\$0	\$0
HAZARDOUS MATERIALS									
Explosives									
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Remove all explosives	m3	2,176.00	REXSL	\$5.00	\$10,880	50%	\$5,440	\$5,440
SR_004 Secondary Road Explosives Facility	Remove all explosives	m3	100.00	REXSH	\$10.00	\$1,000	50%	\$500	\$500
Transportation to disposal facility		allow		#N/A	\$0.00	\$0		\$0	\$0
Disposal fees		allow		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
CONTAMINATED SOILS									
Contam. soil investigation - Phase 1		each		#N/A	\$0.00	\$0		\$0	\$0
Contam. soil investigation - Phase 2		each		#N/A	\$0.00	\$0		\$0	\$0
CONTAMINATED SOIL REMOVAL									
Excavate and transport to onsite facility		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_020 Doris Tank Farm	load contained contaminated soils into megabags for hauling	m3	1,680.00	LWCS1L	\$85.00	\$142,800	50%	\$71,400	\$71,400
DM_020 Doris Tank Farm	haul megabags to Doris underground	m3	1,680.00	HMDUSL	\$12.00	\$20,160	50%	\$10,080	\$10,080
RB_002 Roberts Bay 20 ML Tank Farm	load contained contaminated soils into megabags for hauling	m3	3,961.80	LWCS1L	\$85.00	\$336,753	50%	\$168,377	\$168,377
RB_002 Roberts Bay 20 ML Tank Farm	haul megabags to Doris underground	m3	3,961.80	HMDUSL	\$12.00	\$47,542	50%	\$23,771	\$23,771
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	load contained contaminated soils into megabags for hauling	m3	1,489.95	LWCS1L	\$85.00	\$126,646	50%	\$63,323	\$63,323
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	haul megabags to Doris underground	m3	1,489.95	HMDUSL	\$12.00	\$17,879	50%	\$8,940	\$8,940
WM_001 Waste Management Area Land Farm	Load contained contaminated soils into megabags for hauling	m3	100.00	LWCS1L	\$85.00	\$8,500	50%	\$4,250	\$4,250
WM_001 Waste Management Area Land Farm	Haul megabags to Doris underground	m3	100.00	HMDUSL	\$12.00	\$1,200	50%	\$600	\$600
Manage hydrocarbon remediation at facility		m3		#N/A	\$0.00	\$0		\$0	\$0
Reagents/stabilizing agent		m2		#N/A	\$0.00	\$0		\$0	\$0
Excavate and transport to offsite facility		m3		#N/A	\$0.00	\$0		\$0	\$0
Contour decontaminated area		m3		#N/A	\$0.00	\$0		\$0	\$0
CONTAMINATED SOIL VERY LOW PERMEABILITY COVER									
Supply geomembrane, HDPE, ES3, GCL		m2		#N/A	\$0.00	\$0		\$0	\$0
Upper and lower bedding layers		m3		#N/A	\$0.00	\$0		\$0	\$0
Install geomembrane, HDPE, ES3, GCL		m2		#N/A	\$0.00	\$0		\$0	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		m2		#N/A	\$0.00	\$0		\$0	\$0
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
OTHER									
					#N/A	\$0.00	\$0	\$0	\$0
Total						\$1,625,661		\$812,830	\$812,830
% of Total								50%	50%

\$135,057

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1				
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	
DISPOSE MOBILE EQUIPMENT										
Decontaminate and ship off-site		allow		IN/A	\$0.00	\$0		\$0	\$0	
Decontaminate and dispose on-site		allow		IN/A	\$0.00	\$0		\$0	\$0	
Other				IN/A	\$0.00	\$0		\$0	\$0	
REMOVE BUILDINGS AND INFRASTRUCTURE - see note below										
Accommodation Complex						\$0		\$0	\$0	
DM_001 Doris Accommodation Complex	Decommission electrical, mechanical, heating, plumbing, etc.)	each	127.00	BRUS1L	\$750.00	\$95,250	100%	\$95,250	\$0	
DM_001 Doris Accommodation Complex	Demolish trailers	m2	4,473.92	BRWL	\$37.20	\$166,426	100%	\$166,426	\$0	
DM_001 Doris Accommodation Complex	Demolish cabins	m2	127.00	BRWL	\$37.20	\$4,718	100%	\$4,718	\$0	
DM_001 Doris Accommodation Complex	Demolish Large tents	m2	90.40	BRWL	\$37.20	\$3,375	100%	\$3,375	\$0	
DM_001 Doris Accommodation Complex	Demolish small tents	m2	206.22	BRWL	\$37.20	\$7,671	100%	\$7,671	\$0	
DM_001 Doris Accommodation Complex	Demolish cribbing, stairs, entryways, etc.	each	82.00	BRCS1L	\$65.00	\$5,330	100%	\$5,330	\$0	
DM_001 Doris Accommodation Complex	Demolish arctic condor	m2	53.00	BRWL	\$37.20	\$1,972	100%	\$1,972	\$0	
DM_001 Doris Accommodation Complex	Demolish smoke shack tent	m2	28.05	BRWL	\$37.20	\$1,043	100%	\$1,043	\$0	
DM_001 Doris Accommodation Complex	Demolish building a to b condor	m2	442.68	BRWL	\$37.20	\$16,467	100%	\$16,467	\$0	
DM_001 Doris Accommodation Complex	Sea-can, disconnect containers and prep for shipping	each	1.00	BRTRL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
DM_001 Doris Accommodation Complex	Sea-can 20', disconnect containers and prep for shipping	each	1.00	BRTRL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
Process Facilities						\$0		\$0	\$0	
DM_021 Doris Process Plant	Decommissioning Crusher, Milling, and Processing Plants	each	1.00	DCMPSH	\$175,000.00	\$175,000	100%	\$175,000	\$0	
DM_021 Doris Process Plant	Drain Chemicals and Reagents into Containers for Shipping Off-site	each	1.00	DCRCSH	\$100,000.00	\$100,000	100%	\$100,000	\$0	
DM_021 Doris Process Plant	Disassemble Process Plant Equipment and Prepare for Shipping	each	1.00	ERIOSH	\$350,000.00	\$350,000	100%	\$350,000	\$0	
DM_021 Doris Process Plant	Demolish / Dismantle Mill Building	m2	41,180.00	BRSL	\$60.87	\$2,506,688	100%	\$2,506,688	\$0	
DM_021 Doris Process Plant	Demolish Mill Building Concrete Slab	m2	8,700.00	BRCL	\$54.11	\$470,740	100%	\$470,740	\$0	
SR_005 Water Treatment Plant	Decommissioning (Electrical and Mechanical)	each	6.00	BRUSH	\$2,000.00	\$12,000	100%	\$12,000	\$0	
SR_005 Water Treatment Plant	Demolish Building	m2	2,328.22	BRSLH	\$87.93	\$204,710	100%	\$204,710	\$0	
SR_005 Water Treatment Plant	Demolish and Cover Concrete Slab	m2	776.07	BRCL	\$54.11	\$41,992	100%	\$41,992	\$0	
SR_005 Water Treatment Plant	Demolish and Cover Concrete Foundations	m3	42.83	CDSL	\$275.00	\$11,778	100%	\$11,778	\$0	
Offices, Repair, Lab, Warehouse						\$0		\$0	\$0	
DM_009 Doris Offices & Mine Dry Complex	Decommission (electrical, mechanical, plumbing)	each	3.00	BRUS1L	\$750.00	\$2,250	100%	\$2,250	\$0	
DM_009 Doris Offices & Mine Dry Complex	Disconnect trailers and prep for moving (remove boards, cladding, etc.; wrap in plastic)	each	17.00	BRTH	\$3,500.00	\$59,500	100%	\$59,500	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish admin	m2	514.40	BRWL	\$37.20	\$19,135	100%	\$19,135	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish arctic condor	m2	289.79	BRWL	\$37.20	\$10,780	100%	\$10,780	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish mine dry trailer	m2	956.80	BRWH	\$55.46	\$53,065	100%	\$53,065	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish office	m2	228.24	BRWL	\$37.20	\$8,492	100%	\$8,492	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish cribbing, stairs, entryways, etc.	each	17.00	BRCS1L	\$65.00	\$1,105	100%	\$1,105	\$0	
DM_009 Doris Offices & Mine Dry Complex	Sea-can 20', disconnect containers and prep for shipping	each	11.00	BRTRL	\$2,000.00	\$22,000	100%	\$22,000	\$0	
DM_009 Doris Offices & Mine Dry Complex	Sea-can 40', disconnect containers and prep for shipping	each	2.00	BRTRL	\$2,000.00	\$4,000	100%	\$4,000	\$0	
DM_009 Doris Offices & Mine Dry Complex	Haul trailers to Quarry 3 landfill	each	17.00	HCLFSH	\$85.00	\$1,445	50%	\$1,445	\$0	
MN_005 Madrid North Office Trailer	Decommission (electrical, mechanical, plumbing)	each	3.00	BRUS1H	\$2,000.00	\$6,000	100%	\$6,000	\$0	
MN_005 Madrid North Office Trailer	Demolish trailer	m2	70.00	BRWL	\$37.20	\$2,604	100%	\$2,604	\$0	
MN_005 Madrid North Office Trailer	Demolish cribbing, stairs, entryways, etc.	each	4.00	BRCS1H	\$100.00	\$400	100%	\$400	\$0	
Communications						\$0		\$0	\$0	
RB_009 Roberts Bay Communications Tower	Dismantle and Decommission Tower	each	1.00	DCSH	\$17,500.00	\$17,500	100%	\$17,500	\$0	
RB_009 Roberts Bay Communications Tower	Remove communications equipment	each	4.00	RCMSH	\$1,000.00	\$4,000	100%	\$4,000	\$0	
DM_004 Doris Communications Tower	Dismantle tower and prepare for shipping off-site	each	2.00	DCSH	\$17,500.00	\$35,000	100%	\$35,000	\$0	
DM_004 Doris Communications Tower	Remove communications equipment	each	12.00	RCMSL	\$500.00	\$6,000	100%	\$6,000	\$0	
DM_004 Doris Communications Tower	Demolish equipment housing shack	m2	9.61	BRWH	\$55.46	\$533	100%	\$533	\$0	
DM_004 Doris Communications Tower	Remove Electrical and Fiber Optic Cables	each	12.00	RFDCSL	\$500.00	\$6,000	100%	\$6,000	\$0	
DM_004 Doris Communications Tower	Transport Communications tower equipment seacan to Roberts Bay	each	2.00	HCLFSH	\$150.00	\$300	100%	\$300	\$0	
Storage Facilities						\$0		\$0	\$0	
Water and Wastewater Treatment Facilities						\$0		\$0	\$0	
DM_017 Doris Sewage Treatment Plant	Flush and remove sewage plumbing, collect sewage sludge/waste water in 55 gallon drums	each	9.00	CSEWSL	\$725.00	\$6,525	50%	\$3,263	\$3,263	
DM_017 Doris Sewage Treatment Plant	Decommission (electrical)	each	9.00	DPGSL	\$1,250.00	\$11,250	50%	\$5,625	\$5,625	
DM_017 Doris Sewage Treatment Plant	Disconnect containers and prep for shipping	each	9.00	BRTRL	\$2,000.00	\$18,000	100%	\$9,000	\$9,000	
DM_017 Doris Sewage Treatment Plant	Haul containers to Quarry 3 landfill	each	9.00	HCLFSH	\$95.00	\$855	50%	\$383	\$383	
DM_014 Doris Sewage Discharge Line	Collect electrical cables and controllers and prep for shipping off-site	m	1,462.00	ERCSL	\$7.00	\$10,234	50%	\$5,117	\$5,117	
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	Collect electrical cable (heat tracing)	m	4	BRUSH	\$2,000.00	\$8,000	50%	\$4,000	\$4,000	
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	Collect electrical cables and controllers and prep for shipping off-site	m	4,062.50	RECSL	\$7.50	\$30,469	50%	\$15,234	\$15,234	
DM_015 Doris Sedimentation/Pollution Control Pond	Disconnect piping and electrical wiring, remove sump pumps	each	2.00	ERSL	\$1,250.00	\$2,500	50%	\$1,250	\$1,250	
DM_015 Doris Sedimentation/Pollution Control Pond	remove and cut liner (and geotextile) into manageable pieces	m2	14,110.00	GGSRSL	\$1.75	\$24,693	50%	\$12,346	\$12,346	
DM_015 Doris Sedimentation/Pollution Control Pond	plant sea-can 40'	each	4.00	BRUS1L	\$750.00	\$3,000	50%	\$1,500	\$1,500	
MN_003 Madrid North Contact Water Pond Berm	remove and cut liner (and geotextile) into manageable pieces	m2	100.00	GGSRSH	\$3.00	\$300	50%	\$150	\$150	
MN_003 Madrid North Contact Water Pond Berm	disconnect piping and electrical wiring, remove sump pumps	each	1.00	ERTSL	\$1,250.00	\$1,250	50%	\$625	\$625	
Waste Management Facility						\$0		\$0	\$0	
RB_005 Roberts Bay Waste Management Facility	Demolish wood structures (roof, entryway, etc.)	m2	128.66	BRWL	\$37.20	\$4,786	100%	\$4,786	\$0	
RB_005 Roberts Bay Waste Management Facility	Dismantle (building crew)	each	2.00	ERSL	\$3,000.00	\$6,000	100%	\$6,000	\$0	
RB_005 Roberts Bay Waste Management Facility	Sea-can 20', disconnect containers and prep for shipping	each	11.00	BRTRL	\$2,000.00	\$22,000	100%	\$22,000	\$0	
RB_005 Roberts Bay Waste Management Facility	Collect ashes and place in containers	m3	0.50	CSRSH	\$2,000.00	\$1,000	100%	\$1,000	\$0	
SR_001 Secondary Road	Cut tailings line running alongside the road into manageable pieces	m	5,750.00	PLN	\$29.76	\$170,118	50%	\$85,059	\$85,059	
SR_001 Secondary Road	Strip together or load pipe sections in containers for transport to landfill	Each	150.00	HCLFSH	\$150.00	\$22,500	50%	\$11,250	\$11,250	
WM_002 Waste Management Area Batch Plant	Demolish tent structure	m2	1,233.88	BRWL	\$37.20	\$45,900	100%	\$45,900	\$0	
WM_003 Waste Management Area Burn Pan	Collect ashes and place in containers	m3	0.25	CSRSH	\$2,000.00	\$454	100%	\$454	\$0	
WM_003 Waste Management Area Burn Pan	Dismantle (building crew)	each	1.00	ERSL	\$3,000.00	\$3,000	100%	\$3,000	\$0	
PL_001 Pipeline Roberts Bay Discharge System	Decommission electrical (heat tracing)	each	11.00	BRUS1L	\$750.00	\$8,250	50%	\$4,125	\$4,125	
PL_001 Pipeline Roberts Bay Discharge System	Collect electrical cables and controllers and prep for shipping off-site	lm	7,775.30	RECSL	\$7.50	\$58,315	50%	\$29,157	\$29,157	
DM_006 Doris Fresh Water Pipeline	Decommission electrical (heat tracing)	each	4.00	BRUSH	\$2,000.00	\$8,000	50%	\$4,000	\$4,000	
DM_006 Doris Fresh Water Pipeline	Collect electrical cables and controllers and prep for shipping off-site	lm	1,600.00	RECSL	\$7.50	\$12,000	50%	\$6,000	\$6,000	
DM_026 Doris Water Intake Structure and Pumping Facility	remove water intake line from Doris lake	m	25.00	PLRL	\$29.76	\$744	50%	\$372	\$372	
DM_026 Doris Water Intake Structure and Pumping Facility	decommission pumping facility (remove electrical)	each	2.00	ENSL	\$2,000.00	\$4,000	50%	\$2,000	\$2,000	
DM_026 Doris Water Intake Structure and Pumping Facility	prep containers for shipping off-site	each	1.00	BRTRL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
DM_026 Doris Water Intake Structure and Pumping Facility	prep generator container for shipping	each	1.00	DPGSL	\$500.00	\$500	50%	\$250	\$250	
DM_026 Doris Water Intake Structure and Pumping Facility	haul containers to Roberts bay laydown	each	2.00	HCLFSH	\$150.00	\$300	50%	\$150	\$150	
Power						\$0		\$0	\$0	
DM_002 Doris Backup Power Generator	Decommission electrical	each	4.00	DPGSL	\$1,250.00	\$5,000	100%	\$5,000	\$0	
DM_002 Doris Backup Power Generator	Disconnect generator units and prep for shipping off-site	each	2.00	DPGSL	\$500.00	\$1,000	100%	\$1,000	\$0	
DM_002 Doris Backup Power Generator	Haul units to quarry 3 landfill	m3	5.00	HMDQSL	\$65.25	\$326	100%	\$326	\$0	
DM_002 Doris Backup Power Generator	Demolish tent housing structure	m2	259.32	BRWL	\$37.20	\$9,647	100%	\$9,647	\$0	
DM_002 Doris Backup Power Generator	Demolish Concrete Slab	m2	259.32	BRCL	\$54.11	\$14,031	100%	\$14,031	\$0	
DM_011 Doris Permanent Power Generator	Decommission electrical	each	8.00	DPGSH	\$2,500.00	\$20,000	100%	\$20,000	\$0	
DM_011 Doris Permanent Power Generator	Disconnect generator units and prep for shipping off-site	each	8.00	DPGSH	\$1,000.00	\$8,000	100%	\$8,000	\$0	
DM_011 Doris Permanent Power Generator	Haul units to Roberts Bay Laydown	m3	264.80	HMDQSL	\$6.25	\$1,655	100%	\$1,655	\$0	
DM_011 Doris Permanent Power Generator	Dismantle stacks	each	8.00	DCDSL	\$6,000.00	\$48,000	100%	\$48,000	\$0	
DM_011 Doris Permanent Power Generator	Prep stacks for shipping	each	166.00	LWCS2H	\$8.00	\$1,328	100%	\$1,328	\$0	
DM_011 Doris Permanent Power Generator	Haul stack sections to Quarry 3 landfill	each	166.00	HMDQSL	\$6.25	\$1,038	100%	\$1,038	\$0	
UG Heating Plant						\$0		\$0	\$0	
Emission Plant						\$0		\$0	\$0	
AN Storage Facility						\$0		\$0	\$0	
Warehouse, Shops and Other						\$0		\$0	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Decommission electrical, mechanical, heating (including connections to generator house & transform	each	3.00	BRUSH	\$2,000.00	\$6,000	100%	\$6,000	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Demolish (steel modular structure)	m3	0	IN/A	\$0.00	\$0	100%	\$0	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Demolish wood structures (warehouse roof, crew lounge)	m3	0	IN/A	\$0.00	\$0	100%	\$0	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Demolish tent structure (light vehicle shop)	m2	153.44	BRWL	\$37.20	\$5,708	100%	\$5,708	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Demolish Concrete Slab	m2	92.06	BRCL	\$54.11	\$4,981	100%	\$4,981	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Sea-can 20', disconnect containers and prep for shipping	each	28.00	BRTRL	\$2,000.00	\$56,000	100%	\$56,000	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Sea-can 40', disconnect containers and prep for shipping	each	12.00	BRTRL	\$2,000.00	\$24,000	100%	\$24,000	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Demolish structures (trailers)	m3	29.02	BRWL	\$37.20	\$1,079	100%	\$1,079	\$0	
MN_029 Nuna Shop	Decommission (electrical, mechanical, plumbing)	each	2.00	BRUSH	\$2,000.00	\$4,000	100%	\$4,000	\$0	
MN_029 Nuna Shop	Demolish Building	m2	527.00	BRWL	\$37.20	\$19,604	100%	\$19,604	\$0	
MN_029 Nuna Shop	Demolish Concrete Slab	m2	527.00	BRCL	\$54.11	\$28,515	100%	\$28,515	\$0	
DM_008 Doris Muster Station	Demolish tent structure	m2	90.92	BRWL	\$37.20	\$3,382	100%	\$3,382	\$0	
DM_008 Doris Muster Station	Dismantle wood flooring	m2	90.92	IN/A	\$0.00	\$0	100%	\$0	\$0	
DM_008 Doris Muster Station	Sea-can 20', disconnect containers and prep for shipping	each	2.00	BRTRL	\$2,000.00	\$4,000	100%	\$4,000	\$0	
DM_022 Doris Underground Support Mechanic Shop	Decommission electrical, mechanical (including connections to generator house & transformer)	each	3.00	POCS2L	\$5,000.00	\$15,000	100%	\$15,000	\$0	
DM_022 Doris Underground Support Mechanic Shop	Demolish shop building	m2	760.52	BRWL	\$37.20	\$28,291	100%	\$28,291	\$0	
DM_022 Doris Underground Support Mechanic Shop	Sea-can 20', disconnect containers and prep for shipping	each	10.00	BRTRL	\$2,000.00	\$20,000	100%	\$20,000	\$0	
DM_022 Doris Underground Support Mechanic Shop	Sea-can 40', disconnect containers and prep for shipping	each	6.00	BRTRL	\$2,000.00	\$12,000	100%	\$12,000	\$0	
DM_023 Doris Underground Wash Bay	Demolish shop building/Demolish tent structure	m2	256.96	BRWL	\$37.20	\$9,633	100%	\$9,633	\$0	
DM_023 Doris Underground Wash Bay	Sea-can 20', disconnect containers and prep for shipping	each	24.00	BRTRL	\$2,000.00	\$48,000	100%	\$48,000	\$0	
DM_023 Doris Underground Wash Bay	Sea-can 40', disconnect containers and prep for shipping	each	3.00	BRTRL	\$2,000.00	\$6,000	100%	\$6,000	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish tent structure	m2	310.35	BRWL	\$37.20	\$11,545	100%	\$11,545	\$0	
DM_024 Doris Warehouse/Core Shack	Dismantle wood flooring, shelving, and lots	m2	310.35	BRWL	\$37.20	\$11,545	100%	\$11,545	\$0	
DM_024 Doris Warehouse/Core Shack	Sea-can 20', disconnect containers and prep for shipping	each	12.00	BRTRL	\$2,000.00	\$24,000	100%	\$24,000	\$0	
DM_024 Doris Warehouse/Core Shack	Sea-can 40', disconnect containers and prep for shipping	each	5.00	BRTRL	\$2,00					

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1			
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
DM_005 Doris Fire Water Storage Tank	Decommission and disconnect electrical and plumbing	each	3.00	BRUSL	\$750.00	\$2,250	100%	\$2,250	\$0
DM_005 Doris Fire Water Storage Tank	Disconnect and remove container housing the pumps and controls, and prep for shipping	each	1.00	ERASH	\$2,000.00	\$2,000	100%	\$2,000	\$0
DM_005 Doris Fire Water Storage Tank	Haul pump house seacan container to Quarry 3 landfill	each	1.00	HCLFSH	\$150.00	\$150	100%	\$150	\$0
DM_005 Doris Fire Water Storage Tank	Remove tank insulation	each	1.00	ERSSL	\$7,500.00	\$7,500	100%	\$7,500	\$0
DM_005 Doris Fire Water Storage Tank	Dismantle tanks and cut into manageable pieces	each	1.00	ERESH	\$100,000.00	\$100,000	100%	\$100,000	\$0
DM_005 Doris Fire Water Storage Tank	prepare pieces for transportation	each	1.00	HCLFSH	\$1,500.00	\$1,500	100%	\$1,500	\$0
DM_005 Doris Fire Water Storage Tank	haul containers to Quarry 3 landfill	m3	120.00	HMDQSH	\$10.50	\$1,260	100%	\$1,260	\$0
DM_030 Doris Primary Vent Raise	Decommission and dismantle heating and ventilation system	each	4.00	ERHSL	\$15,625.00	\$62,500	100%	\$62,500	\$0
DM_030 Doris Primary Vent Raise	Prepare heating and ventilation units for shipping	each	4.00	BRTH	\$3,500.00	\$14,000	100%	\$14,000	\$0
DM_030 Doris Connector Vent Raise	Haul heating and ventilation units to Quarry 3 Landfill	each	4.00	HCLFSH	\$150.00	\$600	100%	\$600	\$0
DM_030 Doris Connector Vent Raise	Decommission and dismantle heating and ventilation system	each	2.00	ERESH	\$15,625.00	\$31,250	100%	\$31,250	\$0
DM_030 Doris Connector Vent Raise	Prepare heating and ventilation units for shipping	each	1.00	BRTH	\$3,500.00	\$3,500	100%	\$3,500	\$0
DM_030 Doris Connector Vent Raise	Haul heating and ventilation units to Quarry 3 Landfill	m3	2.00	HCLFSH	\$150.00	\$300	100%	\$300	\$0
Fuel tanks					\$0	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Haul Emviro Tank to Roberts Bay	each	1	HCLFSH	\$150.00	\$150	50%	\$75	\$75
DM_030 Doris Primary Vent Raise	Remove liner and cut into manageable pieces	m2	1,200.00	CGSSRH	\$3.00	\$3,600	50%	\$1,800	\$1,800
DM_020 Doris Tank Farm	Decommission fuel transfer facilities	each	5.00	DTFSL	\$5,000.00	\$25,000	50%	\$12,500	\$12,500
DM_020 Doris Tank Farm	Disconnect piping and controls	each	5.00	ERESH	\$5,000.00	\$25,000	50%	\$12,500	\$12,500
DM_020 Doris Tank Farm	Dismantle tanks and cut into manageable pieces	each	5.00	ERESH	\$100,000.00	\$500,000	50%	\$250,000	\$250,000
DM_020 Doris Tank Farm	Prepare pieces for transportation	Each	50.00	HCLFSH	\$150.00	\$7,500	50%	\$3,750	\$3,750
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	5,000.00	CGSSRL	\$1.75	\$8,625	50%	\$4,313	\$4,313
DM_020 Doris Tank Farm	Decommission fuel transfer facilities	each	1.00	DTFSL	\$5,000.00	\$5,000	50%	\$2,500	\$2,500
DM_020 Doris Tank Farm	Disconnect piping and controls	each	1.00	DTFSL	\$5,000.00	\$5,000	50%	\$2,500	\$2,500
DM_020 Doris Tank Farm	Dismantle tanks and cut into manageable pieces	each	5.00	ERESH	\$100,000.00	\$500,000	50%	\$250,000	\$250,000
DM_020 Doris Tank Farm	Prepare pieces for transportation	Each	50.00	HCLFSH	\$150.00	\$7,500	50%	\$3,750	\$3,750
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	13,200.00	CGSSRL	\$1.11	\$14,652	50%	\$7,326	\$7,326
DM_020 Doris Tank Farm	Decommission fuel transfer facilities	each	2.00	DTFSL	\$5,000.00	\$10,000	50%	\$5,000	\$5,000
DM_020 Doris Tank Farm	Disconnect piping and controls	each	2.00	DTFSL	\$5,000.00	\$10,000	50%	\$5,000	\$5,000
DM_020 Doris Tank Farm	Dismantle tanks and cut into manageable pieces	each	2.00	ERESH	\$100,000.00	\$200,000	50%	\$100,000	\$100,000
DM_020 Doris Tank Farm	Prepare pieces for transportation	Each	20.00	HCLFSH	\$150.00	\$3,000	50%	\$1,500	\$1,500
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	8,933.00	CGSSRL	\$1.75	\$15,633	50%	\$7,817	\$7,817
DM_020 Doris Tank Farm	seam-can 20"; disconnect containers and prep for Quarry 3	each	40.00	BRTHL	\$2,000.00	\$80,000	50%	\$40,000	\$40,000
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	2,481.00	CGSSRH	\$3.00	\$7,443	50%	\$3,722	\$3,722
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	4,384.00	CGSSRL	\$1.75	\$7,672	50%	\$3,836	\$3,836
Freshwater intake					\$0	\$0		\$0	\$0
Reclaim pumps					\$0	\$0		\$0	\$0
Outfall & Outfall					\$0	\$0		\$0	\$0
Airspig lighting, navigation, electrical					\$0	\$0		\$0	\$0
Airspig lighting, navigation, mechanical					\$0	\$0		\$0	\$0
Break foundation slabs					\$0	\$0		\$0	\$0
DM_004 Roberts Bay Mechanical Shop Complex	Shop relocated to Madrid North area, concrete slab remains	m3	144.15	CDSL	\$275.00	\$39,640	100%	\$39,640	\$0
Consolidate & dump boneyard debris				n/A	\$0.00	\$0		\$0	\$0
Other				n/A	\$0.00	\$0		\$0	\$0
COLLECT DEBRIS TO LANDFILL									
Accommodation Complex					\$0	\$0		\$0	\$0
DM_001 Doris Accommodation Complex	Collect debris	m2	21,050.00	DSL	\$1.29	\$27,051	100%	\$27,051	\$0
DM_001 Doris Accommodation Complex	Load waste into containers	m3	7,762.42	LWCS2L	\$5.00	\$38,812	100%	\$38,812	\$0
DM_001 Doris Accommodation Complex	Haul containers to Quarry 3 landfill	m3	7,762.42	HMDQSL	\$6.25	\$48,515	100%	\$48,515	\$0
Fuel tanks					\$0	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Load waste for transport to landfill	m3	11.07	LWCS2L	\$5.00	\$55	100%	\$55	\$0
DM_030 Doris Primary Vent Raise	Haul waste to landfill	m3	961.17	HMDQSL	\$5.00	\$4,806	100%	\$4,806	\$0
DM_020 Doris Tank Farm	Haul cut metal to quarry 3 landfill	Each	50.00	HCLFSH	\$150.00	\$7,500	100%	\$7,500	\$0
DM_020 Doris Tank Farm	Load waste into containers	m3	82.50	LWCS2L	\$5.00	\$413	100%	\$413	\$0
DM_020 Doris Tank Farm	Haul containers to Quarry 3 landfill	m3	82.50	HMDQSL	\$6.25	\$516	100%	\$516	\$0
DM_020 Doris Tank Farm	Haul cut metal to quarry 3 landfill	Each	50.00	HCLFSH	\$150.00	\$7,500	100%	\$7,500	\$0
DM_020 Doris Tank Farm	Load waste into containers	m3	118.85	LWCS2L	\$5.00	\$594	100%	\$594	\$0
DM_020 Doris Tank Farm	Haul containers to Quarry 3 landfill	m3	118.85	HMDQSL	\$6.25	\$743	100%	\$743	\$0
DM_020 Doris Tank Farm	Haul cut metal to quarry 3 landfill	Each	20.00	HCLFSH	\$150.00	\$3,000	100%	\$3,000	\$0
DM_020 Doris Tank Farm	Load waste into containers	m3	149.00	LWCS2L	\$5.00	\$745	100%	\$745	\$0
DM_020 Doris Tank Farm	Haul containers to Quarry 3 landfill	m3	149.00	HMDQSL	\$6.25	\$931	100%	\$931	\$0
Offices, Repair, Lab, Warehouse					\$0	\$0		\$0	\$0
DM_009 Doris Offices & Mine Dry Complex	Collect debris	m2	2,034.92	DSL	\$1.29	\$2,625	100%	\$2,625	\$0
DM_009 Doris Offices & Mine Dry Complex	Load waste into containers	m3	2,971.79	LWCS2H	\$5.00	\$14,859	100%	\$14,859	\$0
DM_009 Doris Offices & Mine Dry Complex	Haul containers to Quarry 3 landfill	m3	2,971.79	HMDQSL	\$6.25	\$18,574	100%	\$18,574	\$0
MN_005 Madrid North Office Trailer	Collect debris	m2	70.00	DSL	\$1.29	\$90	100%	\$90	\$0
MN_005 Madrid North Office Trailer	Load waste into containers	m3	100.74	LWCS2H	\$5.00	\$504	100%	\$504	\$0
MN_005 Madrid North Office Trailer	Haul containers to Quarry 3 landfill	m3	100.74	HMDQSL	\$6.25	\$630	100%	\$630	\$0
MN_029 Nuna Shop	Collect debris	m2	4,489.00	DSL	\$1.29	\$5,799	100%	\$5,799	\$0
MN_029 Nuna Shop	Load waste into containers	m3	1,581.00	LWCS2L	\$5.00	\$7,905	100%	\$7,905	\$0
MN_029 Nuna Shop	Haul containers to Quarry 3 landfill	m3	1,581.00	HMDQSL	\$6.25	\$9,881	100%	\$9,881	\$0
Process Plant					\$0	\$0		\$0	\$0
DM_021 Doris Process Plant	Collect debris	m2	8,700.00	DSH	\$5.14	\$44,720	100%	\$44,720	\$0
DM_021 Doris Process Plant	Load waste into containers	m3	34,800.00	LWCS2H	\$8.00	\$278,400	100%	\$278,400	\$0
DM_021 Doris Process Plant	Haul containers to Quarry 3 landfill	m3	34,800.00	HMDQSH	\$10.50	\$365,400	100%	\$365,400	\$0
SR_005 Water Treatment Plant	Collect debris	m2	776.07	DSH	\$5.14	\$3,989	100%	\$3,989	\$0
SR_005 Water Treatment Plant	Load waste into containers	m3	1,852.15	LWCS2H	\$8.00	\$14,817	100%	\$14,817	\$0
SR_005 Water Treatment Plant	Haul containers to Quarry 3 landfill	m3	1,852.15	HMDQSH	\$10.50	\$19,398	100%	\$19,398	\$0
Rack Pile					\$0	\$0		\$0	\$0
DM_007 Roberts Bay Overburden Pile	Collect debris	m2	14,205.00	DSL	\$1.29	\$18,254	100%	\$18,254	\$0
DM_007 Roberts Bay Overburden Pile	Load waste into containers	m3	8.52	LWCS2H	\$8.00	\$68	100%	\$68	\$0
DM_007 Roberts Bay Overburden Pile	Haul containers to Quarry 3 landfill	m3	8.52	HMDQSL	\$6.25	\$53	100%	\$53	\$0
Communications					\$0	\$0		\$0	\$0
DM_006 Roberts Bay Communications Tower	Collect debris	m2	2.89	DSH	\$5.14	\$15	100%	\$15	\$0
DM_006 Roberts Bay Communications Tower	Load waste into containers	m3	4.06	LWCS2H	\$8.00	\$32	100%	\$32	\$0
DM_006 Roberts Bay Communications Tower	Haul containers to Quarry 3 landfill	m3	4.06	HMDQSH	\$10.50	\$43	100%	\$43	\$0
DM_004 Doris Communications Tower	Collect debris	m2	14.98	DSL	\$1.29	\$19	100%	\$19	\$0
DM_004 Doris Communications Tower	Load waste into containers	m3	14.41	LWCS2H	\$8.00	\$115	100%	\$115	\$0
DM_004 Doris Communications Tower	Haul containers to Quarry 3 landfill	m3	14.41	HMDQSH	\$10.50	\$151	100%	\$151	\$0
Water and Wastewater Treatment Facilities					\$0	\$0		\$0	\$0
DM_017 Doris Sewage Treatment Plant	Collect debris	m2	268.57	DSL	\$1.29	\$345	100%	\$345	\$0
DM_017 Doris Sewage Treatment Plant	Load waste into containers	m3	150.00	LWCS2L	\$5.00	\$750	100%	\$750	\$0
DM_017 Doris Sewage Treatment Plant	Haul containers to Quarry 3 landfill	m3	150.00	HMDQSL	\$6.25	\$938	100%	\$938	\$0
SR_001 Secondary Road	Haul waste to the landfill	Each	150.00	HCLFSH	\$150.00	\$22,500	100%	\$22,500	\$0
Power					\$0	\$0		\$0	\$0
DM_002 Doris Backup Power Generator	Collect debris	m2	259.32	DSL	\$1.29	\$333	100%	\$333	\$0
DM_002 Doris Backup Power Generator	Load waste into containers	m3	398.98	LWCS2L	\$5.00	\$1,995	100%	\$1,995	\$0
DM_002 Doris Backup Power Generator	Haul containers to Quarry 3 landfill	m3	398.98	HMDQSL	\$6.25	\$2,491	100%	\$2,491	\$0
DM_011 Doris Permanent Power Generator	Collect debris	m2	2,103.61	DSL	\$1.29	\$2,703	100%	\$2,703	\$0
DM_011 Doris Permanent Power Generator	Load waste into containers	m3	250.00	LWCS2L	\$5.00	\$1,250	100%	\$1,250	\$0
DM_011 Doris Permanent Power Generator	Haul containers to Quarry 3 landfill	m3	250.00	HMDQSL	\$6.25	\$1,563	100%	\$1,563	\$0
Warehouse, Shop and Other					\$0	\$0		\$0	\$0
DM_004 Roberts Bay Mechanical Shop Complex	Collect debris	m2	480.49	DSL	\$1.29	\$617	100%	\$617	\$0
DM_004 Roberts Bay Mechanical Shop Complex	Load waste into containers	m3	238.67	LWCS2L	\$5.00	\$1,193	100%	\$1,193	\$0
DM_004 Roberts Bay Mechanical Shop Complex	Haul containers to Quarry 3 landfill	m3	238.67	HMDQSL	\$6.25	\$1,492	100%	\$1,492	\$0
DM_005 Roberts Bay Waste Management Facility	Collect debris	m2	128.66	DSL	\$1.29	\$165	100%	\$165	\$0
DM_005 Roberts Bay Waste Management Facility	Load waste into containers	m3	152.49	LWCS2L	\$5.00	\$762	100%	\$762	\$0
DM_005 Roberts Bay Waste Management Facility	Haul containers to Quarry 3 landfill	m3	152.49	HMDQSL	\$6.25	\$953	100%	\$953	\$0
DM_005 Doris Fire Water Storage Tank	Collect debris	m2	73.14	DSL	\$1.29	\$94	100%	\$94	\$0
DM_005 Doris Fire Water Storage Tank	Load waste into containers	m3	2.31	LWCS2H	\$8.00	\$19	100%	\$19	\$0
DM_005 Doris Fire Water Storage Tank	Haul containers to Quarry 3 landfill	m3	2.31	HMDQSH	\$10.50	\$24	100%	\$24	\$0
DM_008 Doris Muster Station	Collect debris	m2	92.92	DSL	\$1.29	\$117	100%	\$117	\$0
DM_008 Doris Muster Station	Load waste into containers	m3	48.24	LWCS2L	\$5.00	\$241	100%	\$241	\$0
DM_008 Doris Muster Station	Haul containers to Quarry 3 landfill	m3	48.24	HMDQSL	\$6.25	\$301	100%	\$301	\$0
DM_022 Doris Underground Support Mechanic Shop	Collect debris	m2	456.31	DSH	\$5.14	\$2,346	100%	\$2,346	\$0
DM_022 Doris Underground Support Mechanic Shop	Load waste into containers	m3	549.44	LWCS2H	\$8.00	\$4,396	100%	\$4,396	\$0
DM_022 Doris Underground Support Mechanic Shop	Haul containers to Quarry 3 landfill	m3	549.44	HMDQSH	\$10.50	\$5,769	100%	\$5,769	\$0
DM_023 Doris Underground Wash Bay	Collect debris	m2	155.38	DSL	\$1.29	\$200	100%	\$200	\$0
DM_023 Doris Underground Wash Bay	Load waste into containers	m3	13.42	LWCS2L	\$5.00	\$67	100%	\$67	\$0
DM_023 Doris Underground Wash Bay	Haul containers to Quarry 3 landfill	m3	13.42	HMDQSL	\$6.25	\$84	100%	\$84	\$0
DM_024 Doris Warehouse/Core Shack	Collect debris	m2	720.06	DSL	\$1.29	\$925	100%	\$925	\$0
DM_024 Doris Warehouse/Core Shack	Load waste into containers	m3	350.75	LWCS2H	\$8.00	\$2,806	100%	\$2,806	\$0
DM_024 Doris Warehouse/Core Shack	Haul containers to Quarry 3 landfill	m3	350.75	HMDQSH	\$10.50	\$3,683	100%	\$3,683	\$0
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Collect debris	m2	2,805.83	DSL	\$1.29	\$3,606	100%	\$3,606	\$0
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Load waste into containers	m3	50.00	LWCS2L	\$5.00	\$250	100%	\$250	\$0
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Haul containers to Quarry 3 landfill	m3	50.00	HMDQSL	\$6.25	\$313	100%	\$313	\$0
SR_004 Secondary Road Explosives Facility	Collect debris	m2	4,392.00	DSL	\$1.29	\$5,669	100%	\$5,669	\$0
SR_004 Secondary Road Explosives Facility	Load waste into containers	m3	550.42	LWCS2L	\$5.00	\$2,752	100%	\$2,752	\$0
SR_004 Secondary Road Explosives Facility	Haul containers to Quarry 3 landfill	m3	550.42	HMDQSL	\$6.25	\$3,440	100%	\$3,440	\$0
RP_004 Reagent Pads Explosion Drilling Support Shop	Collect debris	m2	1,449.00	DSL	\$1.29	\$1,86			

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1			
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	haul debris to quarry 3 landfill	m3	2,386.31	HMDQSL	\$6.25	\$14,914	100%	\$14,914	\$0
W_001 Waste Ship Off-Site	Hazardous Waste	m3	118.34	LWCS5H	\$125.00	\$14,792	100%	\$14,792	\$0
W_001 Waste Ship Off-Site	Hazardous Solid Waste	m3	38.45	LWCS5H	\$125.00	\$4,806	100%	\$4,806	\$0
W_002 Waste Disposal Off-Site	Hazardous Waste	m3	118.34	CSRH	\$197.49	\$23,371	100%	\$23,371	\$0
W_002 Waste Disposal Off-Site	Hazardous Solid Waste	m3	38.45	CSRH	\$197.49	\$7,593	100%	\$7,593	\$0
W_003 Waste Contaminated Materials	Hydrocarbon Contamination Survey	LS	1.00	SHCSL	\$25,000.00	\$25,000	100%	\$25,000	\$0
W_003 Waste Contaminated Materials	Metal Contamination Survey	LS	1.00	SHCSL	\$25,000.00	\$25,000	100%	\$25,000	\$0
WM_001 Waste Management Area Land Farm	Load waste into containers	m3	118.37	LWCS2L	\$5.00	\$592	100%	\$592	\$0
WM_001 Waste Management Area Land Farm	Haul containers to Quarry 3 landfill	m3	118.37	HMDQSL	\$6.25	\$740	100%	\$740	\$0
WM_002 Waste Management Area Batch Plant Pad	Collect debris	m2	740.33	DSH	\$5.14	\$3,805	100%	\$3,805	\$0
WM_002 Waste Management Area Batch Plant Pad	Load waste into containers	m3	55.88	LWCS2L	\$5.00	\$279	100%	\$279	\$0
WM_002 Waste Management Area Batch Plant Pad	Haul containers to Quarry 3 landfill	m3	55.882115	HMDQSL	\$6.25	\$349	100%	\$349	\$0
WM_003 Waste Management Area Burn Pan	load waste into containers	m3	0.25	LWCS2H	\$8.00	\$2	100%	\$2	\$0
WM_003 Waste Management Area Burn Pan	haul containers to Boston landfill	each	0.24686925	HMDQSH	\$10.50	\$3	100%	\$3	\$0
WM_004 Waste Management Area Core Storage	Collect debris	m2	10,000.00	DSL	\$1.29	\$12,851	100%	\$12,851	\$0
WM_004 Waste Management Area Core Storage	Load waste into containers	m3	6.00	LWCS2H	\$8.00	\$48	100%	\$48	\$0
WM_004 Waste Management Area Core Storage	Haul containers to Quarry 3 landfill/Haul containers to Boston landfill	m3	6	HMDQSL	\$6.25	\$38	100%	\$38	\$0
Q3_003 Quarry 3 Landfill	Empty seacan of debris, place and track pack	each	621.00	BESCSL	\$100.00	\$62,100	100%	\$62,100	\$0
PL_001 Pipeline Roberts Bay Discharge System	Load debris for transport to landfill	m3	1,648.81	LWCS2L	\$5.00	\$8,244	100%	\$8,244	\$0
DM_006 Doris Fresh Water Pipeline	haul debris to landfill	m3	1,648.81	HMDQSL	\$6.25	\$10,305	100%	\$10,305	\$0
DM_006 Doris Fresh Water Pipeline	Load debris for transport to landfill	m3	28.16	LWCS2L	\$5.00	\$141	100%	\$141	\$0
DM_016 Doris Sewage Discharge Line	haul debris to landfill	m3	28.16	HMDQSH	\$10.50	\$296	100%	\$296	\$0
DM_016 Doris Sewage Discharge Line	Load debris for transport to landfill	m3	111.61	LWCS2L	\$5.00	\$558	100%	\$558	\$0
DM_016 Doris Sewage Discharge Line	haul debris to landfill	m3	111.61	HMDQSL	\$6.25	\$698	100%	\$698	\$0
DM_013 Doris Run-off Diversion Berm	remove cut liners and place in containers for shipping off-site and disposal	m2	8.40	GSGRSH	\$3.00	\$25	100%	\$25	\$0
DM_013 Doris Run-off Diversion Berm	haul containers to Quarry 3 landfill	m3	0.30	HMDQSH	\$10.50	\$3	100%	\$3	\$0
DM_015 Doris Sedimentation/Pollution Control Pond	load waste into containers for hauling to landfill	m3	70.17	LWCS2L	\$5.00	\$351	100%	\$351	\$0
DM_015 Doris Sedimentation/Pollution Control Pond	haul containers to Quarry 3 landfill	m3	70.17	HMDQSL	\$6.25	\$439	100%	\$439	\$0
DM_026 Doris Water Intake Structure and Pumping Facility	collect debris	m2	2,226.17	DSL	\$1.29	\$2,861	100%	\$2,861	\$0
DM_026 Doris Water Intake Structure and Pumping Facility	load debris into containers for transport	m3	50.00	LWCS2L	\$5.00	\$250	100%	\$250	\$0
DM_026 Doris Water Intake Structure and Pumping Facility	haul debris to quarry 3 landfill	m3	50.00	HMDQSL	\$6.25	\$313	100%	\$313	\$0
MN_003 Madrid North Contact Water Pond Berm	load waste into containers	m3	10.00	LWCS2H	\$8.00	\$80	100%	\$80	\$0
MN_003 Madrid North Contact Water Pond Berm	haul containers to Quarry 3 landfill	m3	10.00	HMDQSH	\$10.50	\$105	100%	\$105	\$0
MN_022 Madrid North Diversion Berm	remove cut liners and place in containers for disposal	m2	100.00	GSGRSH	\$3.00	\$300	100%	\$300	\$0
MN_022 Madrid North Diversion Berm	haul containers to Quarry 3 landfill	m3	0.90	HMDQSH	\$10.50	\$9	100%	\$9	\$0
LANDFILL FOR DEMOLITION WASTE									
Place rock cover	Blast rock fill	m3		#N/A	\$0.25	\$0		\$0	\$0
Q3_003 Quarry 3 Landfill	Place 0.3 m thick liner protection layer of crushed rock	m3	8,124.30	RC3SL	\$9.25	\$75,150	100%	\$75,150	\$0
Place soil cover	Soil Cap - Landfill and Septic Field	m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
GRADE AND CONTOUR PADS									
Accommodation Complex		ha		#N/A	\$0.00	\$0		\$0	\$0
Process Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0
RB_001 Roberts Bay Jetty	remove rock fill to 0.3 m below LLWL	m3	1,216.61	RRRL	\$10.28	\$12,507	50%	\$6,254	\$6,254
RB_001 Roberts Bay Jetty	remove on-shore mooring points	LS	1	RMPSL	\$2,500.00	\$2,500	50%	\$1,250	\$1,250
RB_001 Roberts Bay Jetty	remove mooring buoy	LS	1	RMBLSL	\$3,500.00	\$3,500	50%	\$1,750	\$1,750
RB_006 Roberts Bay Laydown Area	Regrade area for positive drainage	m2	19,442.00	DSL	\$1.29	\$24,984	50%	\$12,492	\$12,492
DW_008 Doris-Windy All Weather Road Core Storage Area	Regrade area for positive drainage	m2	10,000	DSL	\$1.29	\$12,851	50%	\$6,425	\$6,425
RP_001 Reagent Pads Equipment Laydown Area	Regrade area for positive drainage	m2	35,244.00	DSL	\$1.29	\$45,291	50%	\$22,645	\$22,645
RP_002 Reagent Pads Materials Laydown Area	Regrade area for positive drainage	m2	25,421.00	DSL	\$1.29	\$32,668	50%	\$16,334	\$16,334
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Regrade area for positive drainage	m2	2,481.00	DSH	\$5.14	\$12,753	50%	\$6,376	\$6,376
WM_001 Waste Management Area Land Farm	Regrade area for positive drainage	m2	4,384.00	DSH	\$5.14	\$22,554	50%	\$11,277	\$11,277
WM_002 Waste Management Area Batch Plant Pad	Regrade area for positive drainage	m2	740.33	DSH	\$5.14	\$3,805	50%	\$1,903	\$1,903
WM_003 Waste Management Area Burn Pan	Regrade area for positive drainage	m2	400.00	DSH	\$5.14	\$2,056	50%	\$1,028	\$1,028
Q3_003 Quarry 3 Landfill	Regrade top surface for positive drainage	m3	27,061.00	DSL	\$1.29	\$34,801	50%	\$17,400	\$17,400
Q3_004 Quarry #2 Laydown Area	Regrade top surface for positive drainage	m3	5,559.00	DSL	\$1.29	\$7,164	50%	\$3,582	\$3,582
Offices, Repair, Lab, Warehouse		ha		#N/A	\$0.00	\$0		\$0	\$0
MN_005 Madrid North Office Trailer	Regrade area for positive drainage	m2	70.00	DSH	\$5.14	\$360	50%	\$180	\$180
MN_029 Nuna Shop	Regrade area for positive drainage	m2	4,489.00	DSH	\$1.29	\$5,799	50%	\$2,899	\$2,899
Developed Areas		ha		#N/A	\$0.00	\$0		\$0	\$0
RB_011 Roberts Bay Developed Areas	Regrade area for positive drainage	m2	108,499.00	DSL	\$1.29	\$139,428	50%	\$69,714	\$69,714
MN_016 Madrid North Developed Areas	Regrade area for positive drainage, includes: MN_001, MN_002	m2	9,420.00	DSL	\$1.29	\$12,105	50%	\$6,053	\$6,053
DM_032 Doris Developed Areas	Regrade area for positive drainage, includes: DM_010, DM_025	m2	46,000	DSL	\$1.29	\$59,130	50%	\$29,565	\$29,565
Water and Wastewater Treatment Facilities		ha		#N/A	\$0.00	\$0		\$0	\$0
UG Heating Plant		ha		#N/A	\$0.00	\$0		\$0	\$0
Power		m2				\$0		\$0	\$0
DM_002 Doris Backup Power Generator	Regrade area	m2	259.32	DSH	\$5.14	\$1,333	50%	\$666	\$666
Emulsion Plant		ha		#N/A	\$0.00	\$0		\$0	\$0
Warehouse, Shops and Other		ha		#N/A	\$0.00	\$0		\$0	\$0
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Regrade area for positive drainage	m2	2,805.83	DSH	\$5.14	\$14,423	50%	\$7,211	\$7,211
SR_004 Secondary Road Explosives Facility	Regrade area for positive drainage	m2	4,762.00	DSL	\$1.29	\$6,119	50%	\$3,060	\$3,060
DM_007 Doris Helicopter Support Facilities	Dismantle helicopter pads and walkway	m3	15.01	CDSL	\$275.00	\$4,128	50%	\$2,064	\$2,064
DM_007 Doris Airstrip	Crown airstrip and airstrip expansion for positive drainage	m2	92,384.00	DSL	\$1.29	\$118,719	50%	\$59,360	\$59,360
DM_028 Doris Airstrip Aprons	Crown for positive drainage	m2	16,764.00	DSL	\$1.29	\$21,541	50%	\$10,771	\$10,771
Vent Raises		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Regrade pads for positive drainage	m2	4150	DSL	\$1.29	\$5,353	50%	\$2,677	\$2,677
DM_030 Doris Primary Vent Raise	Backfill area to prevent permanent ponding	m3	4150	SBAH	\$14.88	\$61,751	50%	\$30,875	\$30,875
Task Farms		m3		#N/A	\$0.00	\$0		\$0	\$0
Place rock cover		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other		ha		#N/A	\$0.00	\$0		\$0	\$0
PUNCTURE LINED SLUMPS									
Puncture liner and place soil cover		m3		#N/A	\$0.00	\$0		\$0	\$0
RECLAIM ROADS									
Remove culverts		each		#N/A	\$0.00	\$0		\$0	\$0
DM_003 Doris Connector Vent Raise	Remove culvert	each	1.00	RCULSL	\$1,500.00	\$1,500	50%	\$750	\$750
Q2_002 Quarry 2 Overburden Pile	Remove culvert	m	15.00	RCULMSH	\$100.00	\$1,500	50%	\$750	\$750
DW_005 Doris-Windy All Weather Road Arched Culvert Crossing	Remove arched culvert	each	1.00	RCULCRSL	\$115,000.00	\$115,000	50%	\$57,500	\$57,500
SR_001 Secondary Road	Remove pipe culvert east of the bridge	m	18.8	RCULMSH	\$100.00	\$1,880	50%	\$940	\$940
MOF_003 Marine Outfall Culvert Crossing	remove culvert and create swale	m	19.00	RCULMSH	\$100.00	\$1,900	50%	\$950	\$950
Remove bridges		each		#N/A	\$0.00	\$0		\$0	\$0
DW_004 Doris-Windy All Weather Road Clear-span Crossings	Remove bridge (timber deck and steel girders)	each	3.00	RDCBSL	\$65,000.00	\$195,000	50%	\$97,500	\$97,500
SR_001 Secondary Road	Remove Doris Creek bridge	each	1.00	RDCBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500
SR_003 Secondary Road Tail Lake Access Road	Remove Barge Access Bridge	each	0.00	RBARSL	\$5,000.00	\$0	50%	\$0	\$0
Scarify and install water breaks		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify airstrip		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify laydown areas		ha		#N/A	\$0.00	\$0		\$0	\$0
Scarify Roads		m2				\$0		\$0	\$0
Crown Roads		m2				\$0		\$0	\$0
DM_003 Doris Connector Vent Raise	Crown access road for positive drainage	m2	2,090.00	DSH	\$5.14	\$10,743	50%	\$5,372	\$5,372
TA_006 TIA Interim Dike	Crown access road for positive drainage	m2	1,520.00	DSH	\$5.14	\$7,813	50%	\$3,907	\$3,907
RB_001 Roberts Bay Jetty	Crown jetty for positive drainage	m2	1045.2	DSH	\$5.14	\$5,373	50%	\$2,686	\$2,686
DM_031 Doris Primary Road	Crown road for positive drainage	m2	26,840.00	DSL	\$1.29	\$34,491	50%	\$17,246	\$17,246
DM_037 Doris Crown Pillar Recovery Trench Access Roads	Crown road for positive drainage	m2	22,850.00	DSL	\$1.29	\$29,364	50%	\$14,682	\$14,682
DW_001 Doris-Windy All Weather Road	Crown road for positive drainage	m2	73,178.00	DSL	\$1.29	\$94,038	50%	\$47,019	\$47,019
SR_001 Secondary Road	Crown road for positive drainage	m2	53,800.00	DSL	\$1.29	\$69,136	50%	\$34,568	\$34,568
SR_003 Secondary Road Tail Lake Access Road	Crown road for positive drainage	m2	2,800.00	DSH	\$5.14	\$14,393	50%	\$7,196	\$7,196
Q3_002 Quarry 3 Access Road	Crown road for positive drainage	m2	2,300.00	DSH	\$5.14	\$11,823	50%	\$5,911	\$5,911
MOF_003 Marine Outfall Access Road	crown road for positive drainage	m2	5,740.00	DSL	\$1.29	\$7,376	50%	\$3,688	\$3,688
Vegetate		ha		#N/A	\$0.00	\$0		\$0	\$0
Other		ha		#N/A	\$0.00	\$0		\$0	\$0
SPECIALIZED ITEMS									
Dispose of misc. debris and laydown area refuse				#N/A	\$0.00	\$0		\$0	\$0
					Total	\$10,727,366		\$8,863,056	\$1,864,310
					% of Total			83%	17%

Note: Unit costs are based on 3m high, single storey building. Scale larger building areas accordingly. E.g. 10m high building multiply area by 3.3 (10/3)

\$1,215,496.46 \$4,290,948

Capital Expenditures and Short Term Water Treatment identified in 'Instructions' worksheet

Remove / Level Berms, Water Management , Water Treatment

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
BREACH WATER PONDS & CONTAINMENT BERMS						
Remove/Level Berms						
DM_020 Doris Tank Farm	Level Containment Berm	m3	90.00	SC1H	\$12.58	\$1,132
DM_020 Doris Tank Farm	Excavate and stockpile liner protection cover	m3	3,360.00	SC1L	\$9.20	\$30,906
RB_002 Roberts Bay 20 ML Tank Farm	Breach containment berm	m3	153.99	SC1H	\$12.58	\$1,937
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Breach containment berm	m3	77.76	SC1H	\$12.58	\$978
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Excavate and stockpile liner protection cover	m3	2,979.90	SC1H	\$12.58	\$37,487
RB_002 Roberts Bay 20 ML Tank Farm	Excavate and stockpile liner protection cover	m3	7,923.60	SC1L	\$9.20	\$72,884
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Excavate and stockpile liner protection cover	m3	893.16	SC1H	\$12.58	\$11,236
WM_001 Waste Management Area Land Farm	Breach containment berm	m3	90.00	SC1H	\$12.58	\$1,132
WM_001 Waste Management Area Land Farm	Excavate and stockpile liner protection cover	m3	2,591.00	SC1H	\$12.58	\$32,595
DM_013 Doris Run-off Diversion Berm	Original ground in several locations (4 locations) to restore natural flow path	m3	453.60	SC1H	\$12.58	\$5,706
DM_014 Doris Sedimentation Berm	Breach the berm to restore a free drainage path	m3	28.80	SC1H	\$12.58	\$362
DM_015 Doris Sedimentation/Pollution Control Pond	Breach contact water containment berm	m3	3,129.84	SC1L	\$9.20	\$28,789
MN_003 Madrid North Contact Water Pond Berm	breach contact water containment berm	m3	100.00	SC1H	\$12.58	\$1,258
MN_022 Madrid North Diversion Berm	breach berm to original ground (one location) to restore natural flow paths	m3	100.00	SC1H	\$12.58	\$1,258
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Level containment berm	m3	31.70	SC1H	\$12.58	\$399
BREACH DYKE EMBANKMENT						
Remove fill		m3		#N/A	\$0.00	\$0
Contour water intake area		m3		#N/A	\$0.00	\$0
STABILIZE SEDIMENT PONDS/WATER MANAGEMENT PONDS						
Place soil cover		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0
Rip rap in channel base		each		#N/A	\$0.00	\$0
DM_014 Doris Sedimentation Berm	place erosion control (rip rap)	m3	8.64	RR2L	\$19.21	\$166
DM_015 Doris Sedimentation/Pollution Control Pond	place rip rap on sed breach	m3	298.08	RR2L	\$19.21	\$5,726
Backfill						
DM_015 Doris Sedimentation/Pollution Control Pond	sedimentation pond backfill	m3	1,293.00	RC4H	\$25.97	\$33,582
DM_018 Sumps	backfill sump excavation	m3	50.89	RC4H	\$25.97	\$1,322
MN_023 Madrid North Sump	backfill sump excavation	m3	67.86	RC4H	\$25.97	\$1,762
REDIRECT RUNOFF/CONSTRUCT DIVERSION DITCHES						
Excavate ditches -soil		m3		#N/A	\$0.00	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0
Stabilize side slopes		m3		#N/A	\$0.00	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0
BREACH DITCHES						
Excavate breaches		m3		#N/A	\$0.00	\$0
Backfill/recontour		m3		#N/A	\$0.00	\$0
Install flow dissipation		m3		#N/A	\$0.00	\$0
Vegetate remainder of ditch		m2		#N/A	\$0.00	\$0
DECOMMISSION FRESH WATER SUPPLY						
Breach embankment		m		#N/A	\$0.00	\$0
Remove pump		LS		#N/A	\$0.00	\$0
Remove pipeline		m		#N/A	\$0.00	\$0
WATER CONTROL IN RECLAMATION QUARRY						
Install pumping system		LS		#N/A	\$0.00	\$0
Remove pumping system		LS		#N/A	\$0.00	\$0
REMOVE PIPELINES						
Remove pipes		m		#N/A	\$0.00	\$0
PL_001 Pipeline Roberts Bay Discharge System	Cut pipelines into manageable pieces	m	7,775.30	PLRPLL	\$12.75	\$99,135
MOF_001 Pipeline Roberts Bay Discharge System	Remove rock fill to 0.3 m below LLWL	m3	776.00	SB2H	\$9.87	\$7,663
DM_006 Doris Fresh Water Pipeline	Cut pipelines into manageable pieces	m	830.00	PSRL	\$1.35	\$1,123
DM_016 Doris Sewage Discharge Line	Cut pipelines into manageable pieces	m	1,462.00	PSRL	\$1.35	\$1,978
DM_016 Doris Sewage Discharge Line	Flush pipeline prior to decommissioning	each	1.00	CSEVSH	\$900.00	\$900
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	Cut pipelines into manageable pieces	m	8,069.50	PLRPLL	\$12.75	\$102,886
Concrete plug deep pipes		m3		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
PL_001 Pipeline Roberts Bay Discharge System	Conduct survey of submerged section of pipeline	each	1.00	CSSPLL	\$10,000.00	\$10,000
GROUNDWATER COLLECTION SYSTEM						
Excavate/install sumps		m3		#N/A	\$0.00	\$0
DM_018 Sumps	decommission sumps	each	3.00	ERTSL	\$1,250.00	\$3,750
DM_018 Sumps	remove pumps, pipes, cables, culverts	each	3.00	ERTSH	\$2,500.00	\$7,500
MN_023 Madrid North Sump	decommission sumps	each	4.00	ERTSL	\$1,250.00	\$5,000
MN_023 Madrid North Sump	remove pumps, pipes, cables, culverts	each	4.00	ERTSH	\$2,500.00	\$10,000
Install pumping wells		m3		#N/A	\$0.00	\$0
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0
CONSTRUCT CONTAMINATED WATER STORAGE POND						
Excavate pond		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Q2_003 Quarry 2 Treated Sewage Discharge Area	Fill in low-lying areas (assumed sourced within 0.5km)	m3	552.00	RC4H	\$25.97	\$14,336
Vegetate spread material		ha		#N/A	\$0.00	\$0
Bedding layer		m3		#N/A	\$0.00	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0
Q2_003 Quarry 2 Treated Sewage Discharge Area	erosion protection: Supply and place coconut matting	m2	230.00	GSGL	\$7.78	\$1,789
CONSTRUCT PASSIVE TREATMENT SYSTEM (e.g. Constructed Wetland)						
Construct access roads		km		#N/A	\$0.00	\$0
Install HDPE piping system from collection pond		m		#N/A	\$0.00	\$0
Inter-cell flow structures		allow		#N/A	\$0.00	\$0
Install liners		m2		#N/A	\$0.00	\$0
Install growth media		m3		#N/A	\$0.00	\$0
Wetland vegetation		ha		#N/A	\$0.00	\$0
CONSTRUCT WATER TREATMENT PLANT						
TIA_008 Treat (if Required) and Discharge Water Via Roberts Bay Marine Discharge System	Build treatment plant - Not Required	LS	0	TPSH	\$20,290,500.00	\$0
Build sludge containment facility		LS		#N/A	\$0.00	\$0
SHORT TERM WATER TREATMENT*						
Annual water treatment cost, from "Water Treatment"						\$0
TIA_008 Treat (if Required) and Discharge Water Via Roberts Bay Marine Discharge System	MDMER Compliance for 2 Years			PCSMPL	\$75,000.00	\$0
Water Treatment			0			\$0
MN_026 Naartok Crown Pillar Recovery Trench	Treat contained water and discharge	m3	0	TPOL	\$0.47	\$0
TIA_008 Treat (if Required) and Discharge Water Via Roberts Bay Marine Discharge System	Treat contained water and discharge	m3	1225000	TPOL	\$0.47	\$579,970
WM_001 Waste Management Area Land Farm	Treat contained water and discharge	LS	1.00	TCWDSL	\$10,000.00	\$10,000

*Note: include water treatment cost from "Water Treatment" worksheet if treatment is considered short term and is not included in a particular component worksheet.

Total \$1,126,649

Water Treatment		Remove / Level Berms, Water Management , Water Treatment				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
ADDITION OF REAGENTS						
H2O2		kg		#N/A	\$0.00	\$0
lime		kg		#N/A	\$0.00	\$0
ferric sulphate		kg		#N/A	\$0.00	\$0
ferrous sulphate		kg		#N/A	\$0.00	\$0
flocculants		kg		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
LABOUR AND SUPPLIES						
Annual fuel		litres		#N/A	\$0.00	\$0
Annual power		kW-h		#N/A	\$0.00	\$0
Electrician/mechanic to maintain treatment plant		allow		#N/A	\$0.00	\$0
Equipment maintenance and parts		allow		#N/A	\$0.00	\$0
Misc. supplies, hoses, tools		allow		#N/A	\$0.00	\$0
Communications		allow		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
WATER SAMPLING AND ANALYSES						
Sampling equipment		allow		#N/A	\$0.00	\$0
Analyses		allow		#N/A	\$0.00	\$0
Shipping to laboratory		allow		#N/A	\$0.00	\$0
Reporting		allow		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
SITE ACCESS						
Road maintenance (incl. snow removal)		allow		#N/A	\$0.00	\$0
Winter road tariff		allow		#N/A	\$0.00	\$0
Truck rental		allow		#N/A	\$0.00	\$0
Air support		allow		#N/A	\$0.00	\$0
Annual water treatment costs						\$0
Number of years of water treatment		years			Total	\$0

Note: Short term water treatment is intended to be included in "Water Management", whereas long term, or post-closure, water treatment is included in "Post-Closure Monitoring and Maintenance"

Interim Care and Maintenance		Care and Maintenance and Includes Water Treatment				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
INTERIM CARE & MAINTENANCE						
Tailings Pond Water Management		m3	2000000	TPOL	\$0.47	\$946,890
MN_026 Naartok Crown Pillar Recovery Tre Haul Water from Naartok Crown Pillar Recovery Trench		m3	9499.85	HTLSL	\$40.00	\$379,994
extra personnel		Hr	0	#N/A	\$0.00	\$0
-on-site caretaker		Hr	3640	LAB-USL	\$41.93	\$152,639
extra personnel		Hr	0	#N/A	\$0.00	\$0
-Supervisor		Hr	3640	SUPERH	\$124.23	\$452,204
-electrician		Hr	3640	ELECL	\$100.10	\$364,363
-mechanic		Hr	3640	JOURNEYH	\$97.11	\$353,482
-operator		Hr	7280	OPERL	\$55.46	\$403,754
annual fuel		litre	73000	FCDH	\$1.88	\$137,258
misc. supplies		allow		#N/A	\$0.00	\$0
pick-up truck		Month	12	PTRUCKL	\$1,500.00	\$18,000
small dozer		Month	12	DOZERSL	\$6,655.28	\$79,863
small excavator		Month	12	EXC-SL	\$6,168.31	\$74,020
snow machine		Month	12	LOAD-SL	\$5,681.34	\$68,176
communications		allow	1	ALCML	\$5,000.00	\$5,000
SNP/AEMP water sampling & reporting		each	1	SMPLL	\$75,000.00	\$75,000
geotechnical assessment		each	1	GASSL	\$45,000.00	\$45,000
interim water treatment		each		#N/A	\$0.00	\$0
other		each		#N/A	\$0.00	\$0
					Annual Interim C&M Cost	\$3,555,644
Number of years of ICM		years	2	Total		\$7,111,287

Post-Closure Monitoring & Maintenance:

			Quantit				
ACTIVITY/MATERIAL	Notes	Units	y	Cost Code	Unit Cost	Cost	
MONITORING & INSPECTIONS							
Annual geotechnical inspection	Annual for first 3 years, then year 7 and 10	each	5	PCGASSL	\$45,000.00	\$225,000	
Survey inspection		each		#N/A	\$0.00	\$0	
Regulatory costs*	Yearly for 10 Years	each	10	PCRGLL	\$25,000.00	\$250,000	
Site water monitoring (AEMP and SNP)		each		#N/A	\$0.00	\$0	
- Type A Water Licence 2AM-DOH1323	annual seep sampling first 5 years, then year 7 and 10	each	7	PCSMPLL	\$75,000.00	\$525,000	
- Active closure and flooding		each		#N/A	\$0.00	\$0	
- Post pit flooding		each		#N/A	\$0.00	\$0	
Air Quality Monitoring Program (AQMP)		each		#N/A	\$0.00	\$0	
Wildlife Effects Monitoring Program (WEMP)		each		#N/A	\$0.00	\$0	
Vegetation Monitoring		each		#N/A	\$0.00	\$0	
Other				#N/A	\$0.00	\$0	
COVER MAINTENANCE							
Cover Monitoring	Every 2 years for a 10 year period	each	5	PCCVRL	\$45,000.00	\$225,000	
Repair erosion - infill gullies		allow		#N/A	\$0.00	\$0	
Repair erosion - upgrade diversion ditches		allow		#N/A	\$0.00	\$0	
Remove problem vegetation		allow		#N/A	\$0.00	\$0	
Repair animal damage		allow		#N/A	\$0.00	\$0	
Repair/upgrade access controls		allow		#N/A	\$0.00	\$0	
Other				#N/A	\$0.00	\$0	
SPILLWAY MAINTENANCE							
Repair erosion		m3		#N/A	\$0.00	\$0	
Clear spillway		each		#N/A	\$0.00	\$0	
CWTS MAINTENANCE							
Maintain flow, restore vegetation		allow		#N/A	\$0.00	\$0	
POST-CLOSURE WATER TREATMENT**							
Annual water treatment cost, from "Water Treatment"							\$0
Subtotal, Annual post-closure costs							\$122,500
Discount rate for calculation of net present value of post-closure cost, %				0.00%			
Number of years of post-closure activity				10	years		
Present Value of payment stream							\$1,225,000

*Regulatory costs - annual reporting, management plans, progress reports etc.

Include water treatment cost from "Water Treatment" worksheet if treatment is considered long term, such as ARD/ML.

Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
MOBILIZE HEAVY EQUIPMENT						
Helicopter		each	1			
Dozers	CAT D8	each	3	LEQMBL	16000	\$48,000
Excavators	CAT 330	each	1	LEQMBL	16000	\$16,000
Loader	CAT 980	each	3	LEQMBL	16000	\$48,000
Motor grader	CAT 14H	each	2	LEQMBL	16000	\$32,000
Skidder	CAT 242	each	2	LEQMBL	16000	\$32,000
Truck	CAT 720	each	3	LTRKMBL	8000	\$24,000
Tractor Trailer		each	4	LTRKMBL	8000	\$32,000
Flatbed truck	5 tonne	each	4	LTRKMBL	8000	\$32,000
Drill		each	6	LEQMBL	16000	\$96,000
Drum crusher		each	1	LEQMBL	16000	\$16,000
Crane		each	2	CRNMBL	20000	\$40,000
Light duty vehicles	F150	each	2	LTRKMBL	8000	\$16,000
Highway Trailers		each	41	HTRMBL	10000	\$410,000
Rock Trucks		each	2	LTRKMBL	8000	\$16,000
End Dump		each	10	LTRKMBL	8000	\$80,000
Demolition shears		each	3	LTRKMBL	8000	\$24,000
Aggregate Crushing and Screening Plant		each	1	LTRKMBL	8000	\$8,000
Dozers - Load, Unload, Barge on either side	CAT D8	each	3	LEQMBLL	4000	\$12,000
Excavators - Load, Unload, Barge on either side	CAT 330	each	1	LEQMBLL	4000	\$4,000
Loader - Load, Unload, Barge on either side	CAT 980	each	3	LEQMBLL	4000	\$12,000
Motor grader - Load, Unload, Barge on either side	CAT 14H	each	2	LEQMBLL	4000	\$8,000
Skidder - Load, Unload, Barge on either side	CAT 242	each	2	LEQMBLL	4000	\$8,000
Truck - Load, Unload, Barge on either side	CAT 720	each	3	LTRKMBLL	2000	\$6,000
Tractor Trailer - Load, Unload, Barge on either side		each	4	LTRKMBLL	2000	\$8,000
Flatbed truck - Load, Unload, Barge on either side	5 tonne	each	4	LTRKMBLL	2000	\$8,000
Drill - Load, Unload, Barge on either side		each	6	LEQMBLL	4000	\$24,000
Drum crusher - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Crane - Load, Unload, Barge on either side		each	2	CRNMBLL	10000	\$20,000
Light duty vehicles - Load, Unload, Barge on either side	F150	each	2	LTRKMBLL	2000	\$4,000
Highway Trailers - Load, Unload, Barge on either side		each	41	HTRMBLL	4000	\$164,000
Rock Trucks - Load, Unload, Barge on either side		each	2	LTRKMBLL	2000	\$4,000
End Dump - Load, Unload, Barge on either side		each	10	LTRKMBLL	2000	\$20,000
Demolition shears - Load, Unload, Barge on either side		each	3	LTRKMBLL	2000	\$6,000
Aggregate Crushing and Screening Plant - Load, Unload, Barge on either side		each	1	LTRKMBLL	2000	\$2,000
Compactor		each		#N/A	0	\$0
MOBILIZE MISC. EQUIPMENT						
Equipment	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	15000	\$420,000
Welding Equipment		each	2	MDEQMBL	6500	\$13,000
Power washer		each	1	LEQMBL	16000	\$16,000
Equipment - Load, Unload, Barge on either side	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	2500	\$70,000
Welding Equipment - Load, Unload, Barge on either side		each	2	MDEQMBLL	8500	\$17,000
Power washer - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Truck tires		allow		#N/A	0	\$0
Other				#N/A	0	\$0
MOBILIZE CAMP						
Refurbish Existing Camp		allow	1	MCRH	125000	\$125,000
Reclamation activities		allow		#N/A	0	\$0
Long term reclamation activities (e.g. pump flooding)		allow		#N/A	0	\$0
MOBILIZE WORKERS						
Reclamation activities - transport		each	516.00	FLTRVL	1250	\$645,000
Reclamation activities - travel time		manhours		#N/A	0	\$0
Long term reclamation activities (e.g. pump flooding) - transport		each		#N/A	0	\$0
Long term reclamation activities (e.g. pump flooding) - travel time		each		#N/A	0	\$0
Monitoring Airfare		each		#N/A	0	\$0
WORKER ACCOMODATIONS						
Reclamation activities		manmonths	482.00	WACCOML	6000	\$2,892,000
Long term reclamation activities (e.g. pump flooding)		manmonths		#N/A	0	\$0
MOBILIZE FUEL						
Fuel freight - reclamation activities		litre		#N/A	0	\$0
Fuel freight - long term reclamation activities		litre		#N/A	0	\$0
Fuel freight accommodations		litre		#N/A	0	\$0
WINTER ROAD						
Construction and operation		km		#N/A	0	\$0
Limited winter use		km		#N/A	0	\$0
Winter road tariff		km		#N/A	0	\$0

Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
DEMOBILIZE HEAVY EQUIPMENT						
Helicopter		each	1			\$0
Dozers	CAT D8	each	3	LEQMBL	16000	\$48,000
Excavators	CAT 330	each	1	LEQMBL	16000	\$16,000
Loader	CAT 980	each	3	LEQMBL	16000	\$48,000
Motor grader	CAT 14H	each	2	LEQMBL	16000	\$32,000
Skidder	CAT 242	each	2	LEQMBL	16000	\$32,000
Truck	CAT 720	each	3	LTRKMBL	8000	\$24,000
Tractor Trailer		each	4	LTRKMBL	8000	\$32,000
Flatbed truck	5 tonne	each	4	LTRKMBL	8000	\$32,000
Drill		each	6	LEQMBL	16000	\$96,000
Drum crusher		each	1	LEQMBL	16000	\$16,000
Crane		each	2	CRNMBL	20000	\$40,000
Light duty vehicles	F150	each	2	LTRKMBL	8000	\$16,000
Highway Trailers		each	41	HTRMBL	10000	\$410,000
Rock Trucks		each	2	LTRKMBL	8000	\$16,000
End Dump		each	10	LTRKMBL	8000	\$80,000
Demolition shears		each	3	LTRKMBL	8000	\$24,000
Aggregate Crushing and Screening Plant		each	1	LTRKMBL	8000	\$8,000
Dozers - Load, Unload, Barge on either side	CAT D8	each	3	LEQMBLL	4000	\$12,000
Excavators - Load, Unload, Barge on either side	CAT 330	each	1	LEQMBLL	4000	\$4,000
Loader - Load, Unload, Barge on either side	CAT 980	each	3	LEQMBLL	4000	\$12,000
Motor grader - Load, Unload, Barge on either side	CAT 14H	each	2	LEQMBLL	4000	\$8,000
Skidder - Load, Unload, Barge on either side	CAT 242	each	2	LEQMBLL	4000	\$8,000
Truck - Load, Unload, Barge on either side	CAT 720	each	3	LTRKMBLL	2000	\$6,000
Tractor Trailer - Load, Unload, Barge on either side		each	4	LTRKMBLL	2000	\$8,000
Flatbed truck - Load, Unload, Barge on either side	5 tonne	each	4	LTRKMBLL	2000	\$8,000
Drill - Load, Unload, Barge on either side		each	6	LEQMBLL	4000	\$24,000
Drum crusher - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Crane - Load, Unload, Barge on either side		each	2	CRNMBLL	10000	\$20,000
Light duty vehicles - Load, Unload, Barge on either side	F150	each	2	LTRKMBLL	2000	\$4,000
Highway Trailers - Load, Unload, Barge on either side		each	41	HTRMBLL	4000	\$164,000
Rock Trucks - Load, Unload, Barge on either side		each	2	LTRKMBLL	2000	\$4,000
End Dump - Load, Unload, Barge on either side		each	10	LTRKMBLL	2000	\$20,000
Demolition shears - Load, Unload, Barge on either side		each	3	LTRKMBLL	2000	\$6,000
Aggregate Crushing and Screening Plant - Load, Unload, Barge on either side		each	1	LTRKMBLL	2000	\$2,000
Compactor		each		#N/A	0	\$0
DEMOBILIZE MISC. EQUIPMENT						
Equipment	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	15000	\$420,000
Welding Equipment		each	2	MDEQMBL	6500	\$13,000
Power washer		each	1	LEQMBL	16000	\$16,000
Equipment - Load, Unload, Barge on either side	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	2500	\$70,000
Welding Equipment - Load, Unload, Barge on either side		each	2	MDEQMBLL	8500	\$17,000
Power washer - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Truck tires		allow		#N/A	0	\$0
Other				#N/A	0	\$0
DEMOBILIZE CAMP						
		allow		#N/A	0	\$0
DEMOBILIZE WORKERS						
crew travel time		mandays	516.00	FLTRVL	1250	\$645,000
crew transportation		each		#N/A	0	\$0
WINTER ROAD						
Construction and operation		km		#N/A	0	\$0
Limited winter use		km		#N/A	0	\$0
Winter road tariff		km		#N/A	0	\$0
					Total	\$7,955,000

Filter by unit

1 of 2

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

		Filter by unit		Inf Rate:	35.27%		Inf Rate:	n/a			
144	fuel truck	truck	\$/hr	202.91			150.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
145	water truck	truck	\$/hr	78.46 202.91			58.00 150.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
146	pickup truck	truck	\$/month	1500.00 2000.00			58.00 150.00			IH	In-house Data By Stantec
147	Load and Haul										
148	Load Waste into Hazardous Material Containers	LWCS1	m3	85.00	125.00					IH	In-house Data By Stantec
149	Load Waste into Hazardous Generic Disposal Containers	LWCS2	m3	5.00	8.00					IH	In-house Data By Stantec
150	Haul Containers to Quarry 3 Landfill	HCLFS	each	85.00	150.00					IH	In-house Data By Stantec
151	Haul Megapags to Doris Underground	HMDUS	m3	12.00	15.00					IH	In-house Data By Stantec
152	Haul Generic Waste Containers to Quarry 3 Landfill	HMDQS	m3	6.25	10.00					IH	In-house Data By Stantec
153	Haul Tailings Water in 15,000L Trucks	HTLS	m3	40.00	50.00					IH	In-house Data By Stantec
154	Transport Wind Turbine Parts to Roberts Bay	TWTRB	Each	10000.00	15000.00					IH	In-house Data By Stantec
155	Mobilize Heavy Equipment										
156	Road access	MHER	km/tonne	4.60	13.87			3.40 10.25		REC 7.0	Reclaim 7.0 Escalated 35.27%
157	Air access	MHEA	km/tonne	16.23				12.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
158	Large Equipment Mobilization	LEQMB	Each	16000.00						IH	In-house Data By Stantec
159	Large Truck	LTRMB	Each	8000.00						IH	In-house Data By Stantec
160	Crane	CRNMB	Each	20000.00						IH	In-house Data By Stantec
161	Medium Construction Equipment	MDEQMB	Each	6500.00						IH	In-house Data By Stantec
162	Seacans	SEAMMB	Each	15000.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
163	Highway Trailers	HTRMB	Each	10000.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
164	Large Equipment Mobilization Load / Unload Barge	LEQMBL	Each	4000.00						IH	In-house Data By Stantec
165	Large Truck Load / Unload Barge	LTRMBL	Each	2000.00						IH	In-house Data By Stantec
166	Crane Load / Unload Barge	CRNMBL	Each	10000.00						IH	In-house Data By Stantec
167	Medium Construction Equipment Load / Unload Barge	MDEQMBL	Each	8500.00						IH	In-house Data By Stantec
168	Seacans Load / Unload Barge	SEAMBL	Each	2500.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
169	Highway Trailers Load / Unload Barge	HTRMBL	Each	400.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
170	Mobilize Camp and Workers										
171	Refurbish Existing Camp	MCR	each	67635.00	125000			50000.00		IH	In-house Data By Stantec
172	Worker Accommodations	WACCOM	man/months	6000.00						IH	In-house Data By Stantec
173	Flights and Travel Time	FLTRV	Each	1250.00						IH	In-house Data By Stantec
174	Mobilize Workers										
175	flight	MW	each	6087.15	12309.57			4500.00 9100.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
176	Annual Monitoring										
177	SHIP/AMW water sampling & reporting	SMPL	each	7500.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
178	geotechnical assessment	GASS	each	45000.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
179	interim water treatment	WTRT	each							REC 7.0	Reclaim 7.0 Escalated 35.27%
180	Oil Removal										
181	oil removal	OR	litre	0.58	1.62			0.43 1.20		REC 7.0	Reclaim 7.0 Escalated 35.27%
182	PCB Removal										
183	Remove from site	PCBR	litre	54.38	63.44			40.20 46.90		REC 7.0	Reclaim 7.0 Escalated 35.27%
184	Pipes, small (<6in dia.)										
185	remove/dispose on site	PSR	m	1.35	32.46			1.00 24.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
186	supply	PSS	m	8.25	15.01			6.10 11.10		REC 7.0	Reclaim 7.0 Escalated 35.27%
187	install	PSI	m	33.82				25.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
188	Cut Top of Drill Pipes and Cap	PCTC	Each	17.50						IH	In-house Data By Stantec
189	Pipes, large (>6in dia.)										
190	remove/dispose on site	PLR	m	29.76	97.39			22.00 72.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
191	supply	PLS	m	114.50	193.44			129.00 143.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
192	install	PLI	m	67.64				50.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
193	Disconnect Piping and Controls	DPCS	each	5000.00	10000.00					IH	In-house Data By Stantec
194	Conduct Survey of Submerged Section of Pipeline	CSSPL	each	10000.00						IH	In-house Data By Stantec
195	Cut Large Pipeline and Dispose on site	PLRPL	m	12.75	20.00					IH	In-house Data By Stantec
196	Post-Closure Monitoring & Maintenance										
197	Annual Geotechnical Inspections	PGASS		45000.00				\$35,000.00		IH	In-house Data By Stantec
198	Regulatory Costs	PGRCR		25000.00						IH	In-house Data By Stantec
199	Site Water Monitoring (AEMP and SNP)	PCSMPL		75000.00				\$60,000.00		IH	In-house Data By Stantec
200	Cover Monitoring	PCCVR		45000.00				\$35,000.00		IH	In-house Data By Stantec
201	Power Lines										
202	remove/dispose on site	POWR	m	34.49				25.50			
203	Process Chemicals										
204	Remove from site	PCR	kg	0.61	3.38			0.45 2.50		REC 7.0	Reclaim 7.0 Escalated 35.27%
205	Pumps										
206	Pump capital cost	PC	each	26376.50				195000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
207	Pump shipping	PS	each	3381.75				2500.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
208	Pump operating cost	POC		0.16				0.12		REC 7.0	Reclaim 7.0 Escalated 35.27%
209	Pump maintenance	PM	allow	33817.50				25000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
210	Supply and Install Pumps for Pond Draining	PCS	allow	40000.00				25000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
211	Pump sand Backfill										
212		PBF	m3	114.98	405.81			85.00 300.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
213	Remove Bridge										
214	Remove Bridge	RDCBS	Lump sum	65000.00	100000.00					IH	In-house Data By Stantec
215	Remove Barge Access Bridge	RBABS	Lump Sum	5000.00	5000.00					IH	In-house Data By Stantec
216	Clear Piles in Ground Surface	RBCPL	each	50.00	200.00					IH	In-house Data By Stantec
217	Remove Culvert										
218	Remove Culvert	RCULS	each	1500.00	5000.00					IH	In-house Data By Stantec
219	Remove Culvert	RCULMS	m	25.00	100.00					IH	In-house Data By Stantec
220	Remove Div. Old Doris-Windy All Weather Road Arched Culvert Crossing	RCULCRS	each	115000.00	150000.00					IH	In-house Data By Stantec
221	Remove Explosives										
222	Remove Explosives	REXS	m3	5.00	10.00					IH	In-house Data By Stantec
223	Remove Ducts, Pipes, and Cables										
224	Remove Ducts, Pipes, and Cables and Dispose of On site	POCS1	m	200.00	250.00			1.00 24.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
225	Decommission Electrical, Mechanical (including Connections to Generator House & Transformer)	POCS2	each	5000.00	10000.00			1.00 24.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
226	Remove Roberts Bay Jetty										
227	Remove on-Shore Mooring Points	RMP5	LS	2500.00	5000.00					IH	In-house Data By Stantec
228	Remove Mooring Buoy	RMBS	LS	3500.00	5000.00					IH	In-house Data By Stantec
229	Remove Sheet Piles to 0.3m below LLWL	RMSP	Each	50000.00						IH	In-house Data By Stantec
230	Remove Traffic Barriers										
231	Remove Traffic Barriers (Boulders)	RMTRFC	LS	250.00	500.00					IH	In-house Data By Stantec
232	Scarify - road/mine site										
233		SCFY	ha	5816.61	8156.781	2908.305		4300 6030 2150		REC 7.0	Reclaim 7.0 Escalated 35.27%
234	Septic System										
235	Flush and Remove Sewage Plumbing, Collect Sewage Sludge/Waste Water in 55 Gallon Drums	CSEWS	each	725.00	900.00					IH	In-house Data By Stantec
236	Shaft, Raise & Portal Closures										
237	Shaft & Raises	SR	m2	872.49	2883.96			645.00 2132.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
238	Portal	POR	m3	25.43	338.18	1623.24		18.80 250.00 1200.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
239	Site Inspection Report										
240		RPT	each	13527.00	27054.00			10000.00 20000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
241	Spillway - Clear										
242		SW	each	4058.10	9468.90			3000.00 7000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
243	Survey/Hazardous Materials										
244	Hydrocarbon Contamination Survey	SHCS	each	25000.00	50000.00					IH	In-house Data By Stantec
245	Metal Contamination Survey	SMCS	each	25000.00	50000.00					IH	In-house Data By Stantec
246	Survey/Instrumentation										
247		SI	each	2434.86	4869.72			1800.00 3600.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
248	Treatment Plant - Construct										
249	Small (< 1000 m3/d)	TPL	lump sum	12114300	20290500			9000000 15000000		REC 7.0	Reclaim 7.0 Escalated 35.27%
250	Large (> 1000 m3/d)	TPL	lump sum	20290500	62224300			15000000 46000000		REC 7.0	Reclaim 7.0 Escalated 35.27%
251	Constructed Wetland	CWTS	ha	270540	405810			200000 300000		REC 7.0	Reclaim 7.0 Escalated 35.27%
252	Treatment Plant - Operate										
253	Treatment Plant - Operate	TPO	m3	0.473445	2.71			0.35 2.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
254	Treat Contained Water and Discharge	TCWDS	lump sum	10000						IH	In-house Data By Stantec
255	Treatment Chemicals										
256	ferric sulphate	ferric	kg	1.61				1.19		REC 7.0	Reclaim 7.0 Escalated 35.27%
257	ferrous sulphate	ferrous	kg	1.79				1.32		REC 7.0	Reclaim 7.0 Escalated 35.27%
258	lime	lime	kg	0.76				0.56		REC 7.0	Reclaim 7.0 Escalated 35.27%
259	hydrogen peroxide, 35%	hperox	kg	2.03				1.50		REC 7.0	Reclaim 7.0 Escalated 35.27%
260	Sodium Metabisulfate	Na metab	kg	1.60				1.18		REC 7.0	Reclaim 7.0 Escalated 35.27%
261	Caustic soda, 50%	caustic	kg	1.00				0.74		REC 7.0	Reclaim 7.0 Escalated 35.27%
262	Sulfuric acid, 93%	sulfuric	kg	0.42				0.31		REC 7.0	Reclaim 7.0 Escalated 35.27%</

Appendix D RECLAIM 7.0 Life of Mine Estimate Summary and Details

SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY
OPEN PIT	Quarry ROQ Drill, Blast, and Crush Material	\$4,196,223	\$4,196,223	\$0
UNDERGROUND MINE	Doris Portal and Underground Works	\$4,008,925	\$4,008,925	\$0
TAILINGS FACILITY	TIA Subaerial Tailings Area, North Dam, Shoreline Protection, and Interim Dyke	\$12,561,086	\$6,280,543	\$6,280,543
ROCK PILE	Doris, Madrid, Roberts Bay Rock Piles	\$1,470,056	\$1,470,056	\$0
BUILDINGS AND EQUIPMENT	Site Buildings	\$19,994,766	\$16,710,446	\$3,284,320
CHEMICALS AND CONTAMINATED SOIL MANAGEME	Decontaminate Oil, Fuel, and Containment Liners	\$3,392,874	\$1,696,437	\$1,696,437
SURFACE AND GROUNDWATER MANAGEMENT	Remove / Level Berms, Water Management , Water Treatment	\$1,700,329	-	\$1,700,329
INTERIM CARE AND MAINTENANCE	Two (2) Years of Care and Maintenance and Includes Water Treatment	\$7,111,287	-	\$7,111,287
SUBTOTAL: Capital Costs		<u>\$54,435,547</u>	<u>\$34,362,630</u>	<u>\$20,072,917</u>
PERCENT OF SUBTOTAL			63%	37%

INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY
MOBILIZATION/DEMOBILIZATION		\$9,181,000	\$5,795,539	\$3,385,461
POST-CLOSURE MONITORING AND MAINTENANCE		\$1,225,000	\$773,286	\$451,714
ENGINEERING	5%	\$2,721,777	\$1,718,132	\$1,003,646
PROJECT MANAGEMENT	5%	\$2,721,777	\$1,718,132	\$1,003,646
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0%	\$0	\$0	\$0
BONDING/INSURANCE	0%	\$0	\$0	\$0
CONTINGENCY	20%	\$10,887,109	\$6,872,526	\$4,014,583
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0
SUBTOTAL: Indirect Costs		<u>\$26,736,664</u>	<u>\$16,877,613</u>	<u>\$9,859,051</u>

TOTAL COSTS		<u>\$81,172,211</u>	<u>\$51,240,244</u>	<u>\$29,931,968</u>
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Open Pit Name: Quarry ROQ Drill, Blast, and Crush Material				Pit #	1				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
NO REQUIREMENT									
DW_002 Doris-Windy All Weather Road Quarry A	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
DW_003 Doris-Windy All Weather Road Quarry E	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
DW_007 Doris-Windy All Weather Road Quarry F	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
Q2_001 Quarry 2 Quarry	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
Q3_001 Quarry 3 Quarry #3	No closure activities are required	each		#N/A	\$0.00	\$0		\$0	\$0
QUARRY ROCK MATERIAL									
TIA_001 TIA Subaerial Tailings Area	Produce ROQ (Quarry, drill &blast)	m3	104,250.00	RB2L	\$16.30	\$1,699,279	100%	\$1,699,279	\$0
TIA_001 TIA Subaerial Tailings Area	Produce additional ROQ for drainage channel	m3	8,240.23	RB2L	\$16.30	\$134,316	100%	\$134,316	\$0
Q3_003 Quarry 3 Landfill	Produce ROQ (Quarry, drill &blast)	m3	8,124.30	RB2L	\$16.30	\$132,426	100%	\$132,426	\$0
MN_026 Naartok Crown Recovery Trench	Produce ROQ (Quarry, drill &blast)	m3	86,089.00	RB2L	\$16.30	\$1,403,254	100%	\$1,403,254	\$0
MN_026 Naartok Crown Recovery Trench	Produce ROQ (Quarry, drill &blast)	m3	4,082.00	RB2L	\$16.30	\$66,537	100%	\$66,537	\$0
MN_026 Naartok Crown Recovery Trench	Produce Crushed Rock (Quarry, drill &blast)	m3	1,548.00	RB2L	\$16.30	\$25,232	100%	\$25,232	\$0
PLA_003 Patch Lake Developed Areas (for Re-gravel)	Produce Crushed Rock (Quarry, drill &blast)	m3	243.60	RB2L	\$16.30	\$3,971	100%	\$3,971	\$0
TIA_001 TIA Subaerial Tailings Area	Crush and Screen ROQ Materials	m3	8,240.23	RBS1L	\$6.75	\$55,622	100%	\$55,622	\$0
Q3_003 Quarry 3 Landfill	Crush and Screen ROQ Materials	m3	8,124.30	RBS1L	\$6.75	\$54,839	100%	\$54,839	\$0
MN_026 Naartok Crown Recovery Trench	Crush and Screen ROQ Materials	m3	86,089.00	RBS1L	\$6.75	\$581,101	100%	\$581,101	\$0
MN_026 Naartok Crown Recovery Trench	Crush and Screen ROQ Materials	m3	4,082.00	RBS1L	\$6.75	\$27,554	100%	\$27,554	\$0
MN_026 Naartok Crown Recovery Trench	Crush and Screen Crushed Rock Materials	m3	1,548.00	RBS1L	\$6.75	\$10,449	100%	\$10,449	\$0
PLA_003 Patch Lake Developed Areas (for Re-gravel)	Crush and Screen Crushed Rock Materials	m3	243.60	RBS1L	\$6.75	\$1,644	100%	\$1,644	\$0
CONTROL ACCESS									
Fence		m		#N/A	\$0.00	\$0		\$0	\$0
Signs		each		#N/A	\$0.00	\$0		\$0	\$0
Berm at crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
STABILITY STUDY									
Conduct stability and setback study		allow		#N/A	\$0.00	\$0		\$0	\$0
STABILIZE SLOPES									
Off-load crest, soil A		m3		#N/A	\$0.00	\$0		\$0	\$0
Off-load crest, soil B		m3		#N/A	\$0.00	\$0		\$0	\$0
Doze/trim overburden at crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Drill & blast pit crest		m3		#N/A	\$0.00	\$0		\$0	\$0
Buttress slope		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
COVER/CONTOUR SLOPES									
Place fill, soil A		m3		#N/A	\$0.00	\$0		\$0	\$0
Place fill, soil B		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate slopes		ha		#N/A	\$0.00	\$0		\$0	\$0
Vegetate pit floor		ha		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0		\$0	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0		\$0	\$0
CONSTRUCT SPILLWAY									
Excavate channel		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete		m3		#N/A	\$0.00	\$0		\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
RECLAIM QUARRIES									
Re-contour									
Contour slopes		m3		#N/A	\$0.00	\$0		\$0	\$0
Place overburden		m3		#N/A	\$0.00	\$0		\$0	\$0
Vegetate		m3		#N/A	\$0.00	\$0		\$0	\$0
FLOOD PIT-Capital									
Remove stationary equipment (sump pumps)		each		#N/A	\$0.00	\$0		\$0	\$0
Remove dewatering pipeline		m		#N/A	\$0.00	\$0		\$0	\$0
Remove power lines		each		#N/A	\$0.00	\$0		\$0	\$0
Construct diversion ditches		m3		#N/A	\$0.00	\$0		\$0	\$0
-Ditch, mat'l A		m3		#N/A	\$0.00	\$0		\$0	\$0
-Ditch, mat'l B		m3		#N/A	\$0.00	\$0		\$0	\$0
Construct embankment/dam		m3		#N/A	\$0.00	\$0		\$0	\$0
Supply/install pump station		each		#N/A	\$0.00	\$0		\$0	\$0
Supply/install piping system		m		#N/A	\$0.00	\$0		\$0	\$0
Remove pump post-closure		each		#N/A	\$0.00	\$0		\$0	\$0
Remove pipeline post-closure		m		#N/A	\$0.00	\$0		\$0	\$0
FLOOD PIT-Annual Cost									
Operate pumps (power)		m3		#N/A	\$0.00	\$0		\$0	\$0
Maintain pump/pipeline		allow		#N/A	\$0.00	\$0		\$0	\$0
Labour: fuel management, commissioning/decommissioning		\$/h		#N/A	\$0.00	\$0		\$0	\$0
Chemical addition, _____ kg/m3 of water		tonne		#N/A	\$0.00	\$0		\$0	\$0
Chemicals, purchase and shipping		tonne		#N/A	\$0.00	\$0		\$0	\$0
Passive/biological additives		\$/ha		#N/A	\$0.00	\$0		\$0	\$0
Passive additives purchase and shipping		tonne		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
						Annual pumping cost	\$0		
Number of years of pump flooding		years				Total pumping cost	\$0	\$0	\$0
						Total	\$4,196,223	\$4,196,223	\$0
						% of Total		100%	0%

Underground Mine Name Doris Portal and Underground Works		UG Mine # 1							
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
CONTROL ACCESS									
Fence		m		#N/A	\$0.00	\$0		\$0	\$0
Signs		each		#N/A	\$0.00	\$0		\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0		\$0	\$0
Berm		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete wall in portals		m3		#N/A	\$0.00	\$0		\$0	\$0
Backfill portal		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_012 Doris Portal and Underground Works	Construct portal plug	m3	706.80	PORL	\$25.43	\$17,974	100%	\$17,974	\$0
DM_012 Doris Portal and Underground Works	Backfill underground workings with ore and waste rock	m3	360,889.00	RBS2L	\$8.50	\$3,067,557	100%	\$3,067,557	\$0
MN_012 Madrid North Portal and Underground Work	Construct portal plug	m3	1,338.00	PORL	\$25.43	\$34,026	100%	\$34,026	\$0
MS_016 Madrid South Madrid South Portal and Unde	Construct portal plug	m3	706.80	PORL	\$25.43	\$17,974	100%	\$17,974	\$0
Backfill portal #2		m3		#N/A	\$0.00	\$0		\$0	\$0
Cap raise		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Construct a concrete cap (0.5 m thick reinforced concr	m3	25.12	CLFS	\$2,881.25	\$72,377	100%	\$72,377	\$0
DM_033 Doris Connector Vent Raise	Construct a concrete cap (0.5 m thick reinforced concr	m3	25.12	CLFS	\$2,881.25	\$72,377	100%	\$72,377	\$0
DM_034 Doris Central Vent Raise	Construct a concrete cap (0.5 m thick reinforced concr	m3	25.12	CLFS	\$2,881.25	\$72,377	100%	\$72,377	\$0
DM_034 Doris Central Vent Raise	Construct a concrete cap (0.5 m thick reinforced concr	m3	25.12	CLFS	\$2,881.25	\$72,377	100%	\$72,377	\$0
MN_018 Madrid North Vent Raises	Construct a concrete cap (0.5 m thick reinforced concr	m3	75.36	CLFS	\$2,881.25	\$217,131	100%	\$217,131	\$0
MS_015 Madrid South Vent Raises	Construct a concrete cap (0.5 m thick reinforced concr	m3	50.24	CLFS	\$2,881.25	\$144,754	100%	\$144,754	\$0
Cap raise #2		m3		#N/A	\$0.00	\$0		\$0	\$0
Cap shaft #1		m3		#N/A	\$0.00	\$0		\$0	\$0
Cap shaft #2		m3		#N/A	\$0.00	\$0		\$0	\$0
Backfill adits		m3		#N/A	\$0.00	\$0		\$0	\$0
Backfill open stope		m3		#N/A	\$0.00	\$0		\$0	\$0
Concrete cap over open stope		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
REMOVE HAZARDOUS MATERIALS									
Remove hazardous materials, U/G labor		mandays		#N/A	\$0.00	\$0		\$0	\$0
Remove/decontaminate stationary & elect. equip		lm		#N/A	\$0.00	\$0		\$0	\$0
DM_012 Doris Portal and Underground Works	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
DM_030 Doris Primary Vent Raise	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
DM_033 Doris Connector Vent Raise	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
MN_012 Madrid North Portal and Underground Work	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
DM_034 Doris Central Vent Raise	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
MN_018 Madrid North Vent Raises	Remove ducts, pipes, cables	lm	300.00	PDCS1L	\$200.00	\$60,000	100%	\$60,000	\$0
MN_015 Madrid South Vent Raises'	Remove ducts, pipes, cables	lm	200.00	PDCS1L	\$200.00	\$40,000	100%	\$40,000	\$0
MS_016 Madrid South Madrid South Portal and Unde	Remove ducts, pipes, cables	lm	100.00	PDCS1L	\$200.00	\$20,000	100%	\$20,000	\$0
Remove/decontaminate mobile equipment		each		#N/A	\$0.00	\$0		\$0	\$0
Remove misc. haz. mat & explosives		kg		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
INSTALL BULKHEADS									
Bulkheads to control water flow		each		#N/A	\$0.00	\$0		\$0	\$0
Grout bulkhead		m3		#N/A	\$0.00	\$0		\$0	\$0
FLOOD MINE									
Supply/install pump		each		#N/A	\$0.00	\$0		\$0	\$0
Supply/install piping system		each		#N/A	\$0.00	\$0		\$0	\$0
Operate pumps to flood workings		m3		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
INSTALL GROUNDWATER COLLECTION SYSTEM									
Excavate/install sumps		m2		#N/A	\$0.00	\$0		\$0	\$0
Install pumping wells		m3		#N/A	\$0.00	\$0		\$0	\$0
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0		\$0	\$0
SPECIALIZED ITEMS									
Install water quality monitoring pipes		each		#N/A	\$0.00	\$0		\$0	\$0
Install permanent pumping system		each		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
					Total	\$4,008,925		\$4,008,925	\$0
					% of Total			100%	0%

Tailings Impoundment Name:		Subaerial Tailings Area, North Dam, Shoreline Protection, and Interim Dyke				Pond #		1	
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
CONTROL ACCESS									
Fence		m		#N/A	\$0.00	\$0	0%	\$0	\$0
Signs		each		#N/A	\$0.00	\$0	0%	\$0	\$0
Berm		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Block roads		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
STABILIZE EMBANKMENT(S)									
Toe buttress, drainage layer		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Toe buttress, bulk fill		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_005 TIA Shoreline Protection	Haul and place riprap to prevent erosion	m3	204,959.00	RR4L	\$10.28	\$2,107,085	50%	\$1,053,543	\$1,053,543
Install geotextile/geosynthetic		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_005 TIA Shoreline Protection	Install separation geotextile	m2	409,918.00	GSHDPEL	\$10.75	\$4,408,244	50%	\$2,204,122	\$2,204,122
Vegetate		ha		#N/A	\$0.00	\$0	0%	\$0	\$0
Raise crest		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Flatten slopes		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_006 TIA Interim Dyke	Recontour dike crest	m3	1,115.04	DRH	\$3.25	\$3,620	50%	\$1,810	\$1,810
TIA_006 TIA Interim Dyke	Crown Access Road for Positive Drainage	m2	1,520.00	DSH	\$5.14	\$7,813	50%	\$3,907	\$3,907
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
COVER TAILINGS									
Grade/shape tailings surface		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Liner bedding		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Subgrade preparation - compact		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Supply geotextile/geosynthetic		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Install geotextile/geosynthetic		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Soil cover		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Rock cover		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_001 TIA Subaerial Tailings Area	LHDP ROQ to construct 0.3 m cover	m3	104,250.00	RCS1H	\$16.75	\$1,746,188	50%	\$873,094	\$873,094
MN_026 Naartok Crown Recovery Trench	Backfill with Waste Rock	m3	125,911.00	RBS2H	\$15.00	\$1,888,665	50%	\$944,333	\$944,333
MN_026 Naartok Crown Recovery Trench	Backfill with ROQ	m3	86,089.00	RCS2H	\$16.75	\$1,441,991	50%	\$720,995	\$720,995
Vegetate		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
BURY PAG ROCK									
Relocate PAG rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Place cover over PAG rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Raise crest of dam		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
STABILIZE DECANT SYSTEM									
TIA_003 TIA North Dam	Remove thermosyphon radiators and superstructure	each	12.00	ER1SL	\$1,000.00	\$12,000	50%	\$6,000	\$6,000
Excavate and replace		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Plug/backfill with concrete or clay		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
REMOVE TAILINGS DISCHARGE									
Cyclones		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Pipe		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Remove reclaim barge		allow		#N/A	\$0.00	\$0	0%	\$0	\$0
CONSTRUCT DIVERSION DITCHES									
Excavate ditches -soil		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Excavate rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Construct drainage channel		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_001 TIA Subaerial Tailings Area	LHDP ROQ to construct 0.3 m drainage channel armoring	m3	8,240.23	RCS1H	\$16.75	\$138,024	50%	\$69,012	\$69,012
MN_026 Naartok Crown Recovery Trench	Place ROQ	m3	4,082.00	RCS1H	\$16.75	\$68,374	50%	\$34,187	\$34,187
MN_026 Naartok Crown Recovery Trench	Place Crushed Rock	m3	1,548.00	RCS1H	\$16.75	\$25,929	50%	\$12,965	\$12,965
Rip rap in channel base		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
MN_026 Naartok Crown Recovery Trench	Place Rip Rap	m3	350.00	RR2H	\$27.93	\$9,777	50%	\$4,888	\$4,888
FLOOD TAILINGS									
Doze tailings to final contour		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Raise crest of dam		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
UPGRADE SPILLWAY									
Excavate channel, rock		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TIA_003 TIA North Dam	Breach the dam by cutting a 20 m slot down to original ground (drill and blast)	m3	7,028.03	RC2H	\$24.89	\$174,925	50%	\$87,463	\$87,463
TIA_003 TIA North Dam	Thermal cover load and haul material	m3	31,021.08	SC4L	\$12.58	\$390,249	50%	\$195,124	\$195,124
TIA_003 TIA North Dam	Clad the cut core faces for thermal protection	m2	614.24	CLD1L	\$225.00	\$138,204	50%	\$69,102	\$69,102
Excavate channel, soil		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Concrete		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Rip rap		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Other				#N/A	\$0.00	\$0	0%	\$0	\$0
CONSTRUCT SEEPAGE COLLECTION POND									
Excavate seepage collection pond		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0	0%	\$0	\$0
Bedding layer		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0	0%	\$0	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
INSTALL GROUNDWATER COLLECTION SYSTEM									
Excavate/install sumps		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Install pumping wells		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
MN_026 Naartok Crown Recovery Trench	Drain Pond and Truck Water for Disposal - Included as Part of ICM	each		#N/A	\$0.00	\$0	0%	\$0	\$0
Install pumps/pipelines/power supply		LS		#N/A	\$0.00	\$0	0%	\$0	\$0
SPECIALIZED ITEMS									
Install permanent instrumentation, supply & technician		each		#N/A	\$0.00	\$0	0%	\$0	\$0
Install permanent instrumentation, drilling		each		#N/A	\$0.00	\$0	0%	\$0	\$0
OTHER									
TIA_002 TIA South Dam	No closure activities are required	m3		#N/A	\$0.00	\$0	0%	\$0	\$0
TREAT SEEPAGE - see "Water Management" and "Water Treatment"									
TREAT SUPERNATANT									
Pump water (to pit, U/G)		m3		#N/A	\$0.00	\$0	0%	\$0	\$0
Equipment maintenance and parts		allow		#N/A	\$0.00	\$0	0%	\$0	\$0
Supply reagents		tonne		#N/A	\$0.00	\$0	0%	\$0	\$0
						Annual treatment cos		\$0	
Number of years of treatment			years		Total treatment cost		\$0		\$0
						Total		\$12,561,086	
						% of Total		50%	
								\$6,280,543	
								\$6,280,543	

* for construction of passive treatment system refer to "Water Management"

Rock Pile Name:		Doris, Madrid, Roberts Bay Rock Piles								
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	
STABILIZE SLOPES										
Grade Ore Rock Pile				#N/A	\$0.00	\$0	100%	\$0	\$0	
DM_010 Doris Ore Pile	Remove all ore and place underground	m3	16,652.00	DRH	\$3.25	\$54,060	100%	\$54,060	\$0	
MN_002 Madrid North Ore Stockpile	No closure activities are required, area remediated in 2021	m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Grade Waste Rock Pile				#N/A	\$0.00	\$0	100%	\$0	\$0	
DM_025 Doris Waste Rock Pile	Waste Rock: Remove all waste rock (Place underground or at the TIA)	m3	313,394.00	DRH	\$3.25	\$1,017,427	100%	\$1,017,427	\$0	
DM_025 Doris Waste Rock Pile	D Material Waste Rock: Remove all waste rock (Place underground or at the TIA)	m3	16,666.00	DRH	\$3.25	\$54,106	100%	\$54,106	\$0	
DM_025 Doris Waste Rock Pile	Madrid Ore Waste Rock: Remove all waste rock (Place underground or at the TIA)	m3	14,177.00	DRH	\$3.25	\$46,025	100%	\$46,025	\$0	
MN_001 Madrid North Waste Rock Pile This is Covered Under Another Task (CPRT Backfill MN_026 and / or Underground Backfill MN_011)	Remove all waste rock (place in underground or CPRT)	m3	125,911.00	#N/A	\$0.00	\$0	100%	\$0	\$0	
Grade Overburden Pile		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
RB_007 Roberts Bay Overburden Pile	Collect all Debris	m2	14,205.00	DSL	\$1.29	\$18,254	100%	\$18,254	\$0	
RB_007 Roberts Bay Overburden Pile	Load Waste into Containers	m3	9.00	LWCS1L	\$85.00	\$765	100%	\$765	\$0	
RB_007 Roberts Bay Overburden Pile	Haul Containers to Quarry 3 Landfill	Each	9.00	HCLFSL	\$85.00	\$765	100%	\$765	\$0	
RB_007 Roberts Bay Overburden Pile	Grade for positive drainage	m2	14,205.00	DSL	\$1.29	\$18,254	100%	\$18,254	\$0	
DW_009 Doris-Windy All Weather Road Quarry D Overburden Pile	Grade for positive drainage	m2	0.00	#N/A	\$0.00	\$0	100%	\$0	\$0	
Q2_002 Quarry 2 Overburden Pile	Reslope to 3H:1V	m2	11,019.33	DSH	\$5.14	\$56,642	100%	\$56,642	\$0	
Q2_002 Quarry 2 Overburden Pile	Grade top for positive drainage	m2	23,140.60	DSL	\$1.29	\$29,737	100%	\$29,737	\$0	
Grade Overburden Pile		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
MN_028 Madrid North Overburden Stockpile	Regrade for Positive Drainage	m2	32,390.00	DSL	\$1.29	\$41,623	100%	\$41,623	\$0	
Grade Laydown Areas		m2		#N/A	\$0.00	\$0	100%	\$0	\$0	
MN_001 Madrid North Waste Rock Pile	Grade remaining pad for positive drainage	m3	27,225.00	DSL	\$1.29	\$34,986	100%	\$34,986	\$0	
WC_001 Windy Summer Debris Collection	Collect Misc. Debris Scattered Around Site and Stock Pile	m3	40,000.00	DSL	\$1.29	\$51,403	100%	\$51,403	\$0	
WC_001 Windy Summer Debris Collection	Load Waste into Containers	m3	30.00	LWCS1L	\$85.00	\$2,550	100%	\$2,550	\$0	
PLA_003 Patch Lake Developed Areas (for Regrading)	Backfill with ROQ	m3	243.60	RCS1H	\$16.75	\$4,080	100%	\$4,080	\$0	
PLA_003 Patch Lake Developed Areas (for Regrading)	Regrade for Positive Drainage	m3	291.00	DSL	\$1.29	\$374	100%	\$374	\$0	
PLA_003 Patch Lake Developed Areas (for Regrading)	Install Silt Fencing	Each	1.00	FNCSLTL	\$2,500.00	\$2,500	100%	\$2,500	\$0	
Flatten slopes with dozer		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Flatten "bubble dump" areas		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Divert runon, ditch mat'l A		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Divert runon, ditch mat'l B		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Toe buttress, drain mat'l		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Toe buttress, fill mat'l A		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Toe buttress, fill mat'l B		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Other				#N/A	\$0.00	\$0	100%	\$0	\$0	
COVER ROCK PILE										
Subgrade preparation - doze surface		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Soil cover - excavate, haul, spread & compact		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Rock cover - excavate, haul & spread		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
WC_011 Windy Developed Areas (for Regrading)	Load, Haul, Dump, Place from Quarry D (less than 1 km)	m3	662.00	RB3L	\$16.30	\$10,791	100%	\$10,791	\$0	
Excavate downslope drainage channel & chute		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Rip rap drainage channel and chute		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Vegetate		ha		#N/A	\$0.00	\$0	100%	\$0	\$0	
Other				#N/A	\$0.00	\$0	100%	\$0	\$0	
VERY LOW PERMEABILITY COVER (in addition to above)										
Liner subgrade preparation - compact		m2		#N/A	\$0.00	\$0	100%	\$0	\$0	
Supply geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0	
Install geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0	
Protective cover - excavate, haul, spread & compact		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Vegetate		ha		#N/A	\$0.00	\$0	100%	\$0	\$0	
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0	100%	\$0	\$0	
CONSTRUCT DIVERSION DITCHES										
Excavate ditches -soil		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Excavate ditches -rock		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Rip rap in channel base		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
CONSTRUCT SEEPAGE COLLECTION POND										
Excavate seepage collection pond		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Doze & spread excavated material		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Vegetate spread material		ha		#N/A	\$0.00	\$0	100%	\$0	\$0	
Bedding layer		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Supply geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0	
Install geomembrane		m2		#N/A	\$0.00	\$0	100%	\$0	\$0	
Erosion protection layer		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Q2_002 Quarry 2 Overburden Pile	Install erosion protection measures (coconut matting)	m3	3,305.80	GSGL	\$7.78	\$25,713	100%	\$25,713	\$0	
INSTALL GROUNDWATER COLLECTION SYSTEM										
Excavate/install sumps		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Install pumping wells		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Install pumps/pipelines/power supply		allow		#N/A	\$0.00	\$0	100%	\$0	\$0	
RELOCATE DUMPS										
Load, haul, dump or doze		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Add lime		tonne		#N/A	\$0.00	\$0	100%	\$0	\$0	
Contour reclaimed area		ha		#N/A	\$0.00	\$0	100%	\$0	\$0	
Other				#N/A	\$0.00	\$0	100%	\$0	\$0	
SPECIALIZED ITEMS										
Install permanent instrumentation		each		#N/A	\$0.00	\$0	100%	\$0	\$0	
Install permanent instrumentation, drilling		each		#N/A	\$0.00	\$0	100%	\$0	\$0	
TREAT ROCK PILE SEEPAGE - see "Water Treatment"										
HEAP LEACH SEEPAGE TREATMENT - Cyanide Detox										
Cyanide destruction water treatment pumping		m3		#N/A	\$0.00	\$0	100%	\$0	\$0	
Reagents		tonne		#N/A	\$0.00	\$0	100%	\$0	\$0	
Electrician/mechanic to maintain treatment plant		allow		#N/A	\$0.00	\$0	100%	\$0	\$0	
Equipment maintenance and parts		allow		#N/A	\$0.00	\$0	100%	\$0	\$0	
					Annual treatment cc		\$0			
Number of years of treatment			years		Total treatment cost		\$0			
HEAP LEACH SEEPAGE TREATMENT - ARD/ML**										
Upgrade/modify pumping system - report to WTP			allow	#N/A	\$0.00	\$0	\$0			
						Total	\$1,470,056	\$1,470,056	\$0	
						% of Total	100%		0%	

* For construction of passive treatment system refer to "Water Management". ARD/ML seepage treatment becomes post-closure water treatment cost

**Heap leach ARD/ML seepage treatment becomes post-closure water treatment cost

Chemicals/Soil Area Name:		Decontaminate Oil, Fuel, and Containment Liners							
Notes: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.									
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
HAZARDOUS MATERIALS AUDIT									
Hazardous materials audit		mandays		#N/A	\$0.00	\$0		\$0	\$0
BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS									
Environmental technician/coordinator		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate: Oil, Fuel		mandays		#N/A	\$0.00	\$0		\$0	\$0
DM_030 Doris Primary Vent Raise	Drain and decommission Enviro Tank	each	1	ER2SL	\$12,500.00	\$12,500	50%	\$6,250	\$6,250
DM_020 Doris Tank Farm	Drain residual fuel	litre	750,000	ORL	\$0.58	\$436,246	50%	\$218,123	\$218,123
DM_020 Doris Tank Farm	Consolidate fuel in barge at Roberts Bay	litre	750,000	#N/A	\$0.00	\$0	50%	\$0	\$0
DM_020 Doris Tank Farm	Wash tanks	each	5	ER3SL	\$1,500.00	\$7,500	50%	\$3,750	\$3,750
DM_020 Doris Tank Farm	Operate oil/water separator	m3	3,944.58	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Drain residual fuel	litre	200,000	ORL	\$0.58	\$116,332	50%	\$58,166	\$58,166
RB_002 Roberts Bay 20 ML Tank Farm	Consolidate fuel in barge at Roberts Bay	litre	200,000	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Wash tanks	each	5.00	ER3SL	\$1,500.00	\$7,500	50%	\$3,750	\$3,750
RB_002 Roberts Bay 20 ML Tank Farm	Operate oil/water separator	m3	4,493.09	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Drain residual fuel	litre	500,000	ORL	\$0.58	\$290,831	50%	\$145,415	\$145,415
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Consolidate fuel in barge at Roberts Bay	litre	500,000	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Wash tanks	each	1.00	ER3SL	\$1,500.00	\$1,500	50%	\$750	\$750
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Operate oil/water separator	m3	1,123.27	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Drain and wash empty fuel drums	each	0.00	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Crush empty fuel drums	each	0.00	#N/A	\$0.00	\$0	50%	\$0	\$0
DM_026 Doris Water Intake Structure and Pumping Facility	Collect All Debris	m2	2,226.17	DSL	\$1.29	\$2,861	50%	\$1,430	\$1,430
DM_026 Doris Water Intake Structure and Pumping Facility	disconnect and remove generator fuel tank (place in Doris tank farm for cleaning)	each	1.00	ER3SH	\$2,500.00	\$2,500	50%	\$1,250	\$1,250
DM_026 Doris Water Intake Structure and Pumping Facility	clean idytank and prep for shipping	each	1.00	ER3SL	\$1,500.00	\$1,500	50%	\$750	\$750
DM_026 Doris Water Intake Structure and Pumping Facility	run oil-water separator	m3	1.00	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_013 Roberts Bay 10ML Fuel Storage Facility	Drain Residual Fuel	litre	160,000.00	ORL	\$0.58	\$93,066	50%	\$46,533	\$46,533
RB_013 Roberts Bay 10ML Fuel Storage Facility	Consolidate Fuel in Barge at Roberts Bay	litre	160,000.00	#N/A	\$0.00	\$0	50%	\$0	\$0
RB_013 Roberts Bay 10ML Fuel Storage Facility	Wash Tanks	each	4.00	ER3SL	\$1,500.00	\$6,000	50%	\$3,000	\$3,000
RB_013 Roberts Bay 10ML Fuel Storage Facility	Operate Oil/Water Separator	m3	4.50	#N/A	\$0.00	\$0	50%	\$0	\$0
MN_011 Madrid North Fuel Storage Facility	Drain Residual Fuel	litre	45,000.00	ORL	\$0.58	\$26,175	50%	\$13,087	\$13,087
MN_011 Madrid North Fuel Storage Facility	Consolidate Fuel in Barge at Roberts Bay	litre	45,000.00	#N/A	\$0.00	\$0	50%	\$0	\$0
MN_011 Madrid North Fuel Storage Facility	Wash Tanks	each	3.00	ER3SL	\$1,500.00	\$4,500	50%	\$2,250	\$2,250
MN_011 Madrid North Fuel Storage Facility	Operate Oil/Water Separator	m3	2.60	#N/A	\$0.00	\$0	50%	\$0	\$0
MN_017 Madrid South Fuel Storage Facility	Drain Residual Fuel	litre	2,000.00	ORL	\$0.58	\$1,163	50%	\$582	\$582
MN_017 Madrid South Fuel Storage Facility	Consolidate Fuel in Barge at Roberts Bay	litre	2,000.00	#N/A	\$0.00	\$0	50%	\$0	\$0
MN_017 Madrid South Fuel Storage Facility	Wash Tanks	each	1.00	ER3SL	\$1,500.00	\$1,500	50%	\$750	\$750
MN_017 Madrid South Fuel Storage Facility	Operate Oil/Water Separator	m3	0.20	#N/A	\$0.00	\$0	50%	\$0	\$0
MN_013 Madrid North Water Storage Tank with Containment	Drain tanks into portable storage (enviro tanks)	litre	5,000.00	ORL	\$0.58	\$2,908	50%	\$1,454	\$1,454
MN_013 Madrid North Water Storage Tank with Containment	Wash Tanks	each	1.00	ER3SL	\$1,500.00	\$1,500	50%	\$750	\$750
Decontaminate: liner						\$0			
RB_002 Roberts Bay 20 ML Tank Farm	Clean liner	m3	13,206	CLSIL	\$0.85	\$11,225	50%	\$5,613	\$5,613
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Clean liner	m3	9,933	CLSIL	\$0.85	\$8,443	50%	\$4,222	\$4,222
DM_020 Doris Tank Farm	Clean liner	m3	5,500	CLSIL	\$0.85	\$4,675	50%	\$2,338	\$2,338
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Clean liner	m3	2,481	CLSIL	\$2.00	\$4,962	50%	\$2,481	\$2,481
WM_001 Waste Management Area Land Farm	Clean liner	m3	4,384	CLSIL	\$0.85	\$3,726	50%	\$1,863	\$1,863
RB_013 Roberts Bay 10ML Fuel Storage Facility	Clean Liner	m2	8,596	CLSIL	\$0.85	\$7,307	50%	\$3,653	\$3,653
MN_011 Madrid North Fuel Storage Facility	Clean Liner	m2	18	CLSIL	\$2.00	\$37	50%	\$18	\$18
MN_017 Madrid South Fuel Storage Facility	Clean Liner	m2	375	CLSIL	\$2.00	\$750	50%	\$375	\$375
MN_013 Madrid North Water Storage Tank with Containment	Clean Liner	m2	144	CLSIL	\$2.00	\$288	50%	\$144	\$144
MN_015 Madrid North Brine Mixing Facility	Clean Liner	m2	19	CLSIL	\$2.00	\$38	50%	\$19	\$19
MS_019 Madrid South Brine Mixing Facility	Clean Liner	m2	25	CLSIL	\$2.00	\$50	50%	\$25	\$25
MS_020 Madrid South Water Storage Tank with Containment	Clean Liner	m2	144	CLSIL	\$2.00	\$288	50%	\$144	\$144
MN_014 Madrid North Calcium Chloride	Clean Liner	m2	25	CLSIL	\$2.00	\$50	50%	\$25	\$25
MS_018 Madrid South Calcium Chloride Laydown	Clean Liner	m2	19	CLSIL	\$2.00	\$38	50%	\$19	\$19
Decontaminate maintenance shop		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate power plant		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate bulk fuel storage		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate ANFO plant		mandays		#N/A	\$0.00	\$0		\$0	\$0
Decontaminate offices/warehouse/accom		mandays		#N/A	\$0.00	\$0		\$0	\$0
Removal of asbestos siding on buildings		m2		#N/A	\$0.00	\$0		\$0	\$0
Removal of friable asbestos on equipment		m2		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
HAZARDOUS MATERIALS REMOVAL									
Waste oils		litre		#N/A	\$0.00	\$0		\$0	\$0
Waste fuel		litre		#N/A	\$0.00	\$0		\$0	\$0
Waste batteries		kg		#N/A	\$0.00	\$0		\$0	\$0
Assay & environmental lab reagents		kg		#N/A	\$0.00	\$0		\$0	\$0
Machine shop paints, solvents etc.		litre		#N/A	\$0.00	\$0		\$0	\$0
Glycol		litre		#N/A	\$0.00	\$0		\$0	\$0
Process reagents		kg		#N/A	\$0.00	\$0		\$0	\$0
Nuclear sources		allow		#N/A	\$0.00	\$0		\$0	\$0
Other hazardous materials		allow		#N/A	\$0.00	\$0		\$0	\$0
HAZARDOUS MATERIALS									
Explosives									
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Remove all explosives	m3	2,176.00	REXSL	\$5.00	\$10,880	50%	\$5,440	\$5,440
SR_004 Secondary Road Explosives Facility	Remove all explosives	m3	100.00	REXSH	\$10.00	\$1,000	50%	\$500	\$500
Transportation to disposal facility		allow		#N/A	\$0.00	\$0		\$0	\$0
Disposal fees		allow		#N/A	\$0.00	\$0		\$0	\$0
Other				#N/A	\$0.00	\$0		\$0	\$0
CONTAMINATED SOILS									
Contam. soil investigation - Phase 1		each		#N/A	\$0.00	\$0		\$0	\$0
Contam. soil investigation - Phase 2		each		#N/A	\$0.00	\$0		\$0	\$0
CONTAMINATED SOIL REMOVAL									
Excavate and transport to onsite facility		m3		#N/A	\$0.00	\$0		\$0	\$0
DM_020 Doris Tank Farm	load contained contaminated soils into megabags for hauling	m3	1,680.00	LWCSIL	\$85.00	\$142,800	50%	\$71,400	\$71,400
DM_020 Doris Tank Farm	haul megabags to Doris underground	m3	1,680.00	HMDUSL	\$12.00	\$20,160	50%	\$10,080	\$10,080
RB_002 Roberts Bay 20 ML Tank Farm	load contained contaminated soils into megabags for hauling	m3	3,961.80	LWCSIL	\$85.00	\$336,753	50%	\$168,377	\$168,377
RB_002 Roberts Bay 20 ML Tank Farm	haul megabags to Doris underground	m3	3,961.80	HMDUSL	\$12.00	\$47,542	50%	\$23,771	\$23,771
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	load contained contaminated soils into megabags for hauling	m3	1,489.95	LWCSIL	\$85.00	\$126,646	50%	\$63,323	\$63,323
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	haul megabags to Doris underground	m3	1,489.95	HMDUSL	\$12.00	\$17,879	50%	\$8,940	\$8,940
WM_001 Waste Management Area Land Farm	Load contained contaminated soils into megabags for hauling	m3	100.00	LWCSIL	\$85.00	\$8,500	50%	\$4,250	\$4,250
WM_001 Waste Management Area Land Farm	Haul megabags to Doris underground	m3	100.00	HMDUSL	\$12.00	\$1,200	50%	\$600	\$600
RB_013 Roberts Bay 10ML Fuel Storage Facility	load contained contaminated soils into megabags for hauling	m3	5,157.60	LWCSIL	\$85.00	\$438,396	50%	\$219,198	\$219,198
RB_013 Roberts Bay 10ML Fuel Storage Facility	Haul megabags to Doris	m3	5,157.60	HMDUSL	\$12.00	\$61,891	50%	\$30,946	\$30,946
RB_013 Roberts Bay 10ML Fuel Storage Facility	Haul Megabags to Doris Underground	m3	5,157.60	HMDUSL	\$12.00	\$61,891	50%	\$30,946	\$30,946
MN_011 Madrid North Fuel Storage Facility	load contained contaminated soils into megabags for hauling	m3	1,218.00	LWCSIL	\$85.00	\$103,530	50%	\$51,765	\$51,765
MN_011 Madrid North Fuel Storage Facility	Haul Megabags to Doris Underground	m3	1,218.00	HMDUSL	\$12.00	\$14,616	50%	\$7,308	\$7,308
MN_017 Madrid South Fuel Storage Facility	load contained contaminated soils into megabags for hauling	m3	225.00	LWCSIL	\$85.00	\$19,125	50%	\$9,563	\$9,563
MN_017 Madrid South Fuel Storage Facility	Haul Megabags to Doris Underground	m3	225.00	HMDUSL	\$12.00	\$2,700	50%	\$1,350	\$1,350
MN_015 Madrid North Brine Mixing Facility	load contained contaminated soils into megabags for hauling	m3	5.60	LWCSIL	\$85.00	\$476	50%	\$238	\$238
MN_015 Madrid North Brine Mixing Facility	Haul Megabags to Doris Underground	m3	5.60	HMDUSL	\$12.00	\$67	50%	\$34	\$34
MS_019 Madrid South Brine Mixing Facility	load contained contaminated soils into megabags for hauling	m3	7.50	LWCSIL	\$85.00	\$638	50%	\$319	\$319
MS_019 Madrid South Brine Mixing Facility	Haul Megabags to Doris Underground	m3	7.50	HMDUSL	\$12.00	\$90	50%	\$45	\$45
PLA_004 Patch Lake Disposal of Demolition Waste	Hydrocarbon Contaminated Soils to Madrid Underground	m3	243.60	HMDUSL	\$12.00	\$2,923	50%	\$1,462	\$1,462
WC_008 Windy Disposal of Demolition Waste	Hydrocarbon Contaminated Soils to Madrid Underground	m3	4,263.00	HMDUSL	\$12.00	\$51,156	50%	\$25,578	\$25,578
WC_009 Windy Hazardous Waste Disposal Cost	Haul Hazardous Waste to Roberts Bay	m3	2.80	HMDUSH	\$15.00	\$42	50%	\$21	\$21
WC_011 Windy Developed Areas (for Regrading)	Excavate hydrocarbon contaminated soil and place in megabags	m3	717.20	LWCSIL	\$85.00	\$60,962	50%	\$30,481	\$30,481
WC_011 Windy Developed Areas (for Regrading)	place megabags into containers	m3	717.20	HMDUSH	\$15.00	\$10,758	50%	\$5,379	\$5,379
WC_011 Windy Developed Areas (for Regrading)	Excavate and place soil in megabags (for transport to Doris OVB dump)	m3	60.00	LWCSIL	\$85.00	\$5,100	50%	\$2,550	\$2,550
WC_011 Windy Developed Areas (for Regrading)	place megabags into containers	m3	60.00	HMDUSH	\$15.00	\$900	50%	\$450	\$450
WC_011 Windy Developed Areas (for Regrading)	empty megabags	m3	60.00	HMDUSH	\$15.00	\$900	50%	\$450	\$450
PLA_003 Patch Lake Developed Areas (for Regrading)	Excavate impacted soil and place in megabags	m3	243.60	LWCSIL	\$85.00	\$20,706	50%	\$10,353	\$10,353
MN_006 Madrid North Portal Pad	Load contained contaminated soils into megabags for hauling	m3	7,635.00	LWCSIL	\$85.00	\$648,975	50%	\$324,488	\$324,488
MN_006 Madrid North Portal Pad	haul megabags to Roberts bay laydown	m3	7,635.00	HMDUSH	\$15.00	\$114,525	50%	\$57,263	\$57,263
MN_014 Madrid North Calcium Chloride	load contained contaminated soils into megabags for hauling	m3	6.30	LWCSIL	\$85.00	\$536	50%	\$268	\$268
MN_014 Madrid North Calcium Chloride	haul megabags to Madrid North Underground	m3	6.30	HMDUSH	\$15.00	\$95	50%	\$47	\$47

Chemicals/Soil Area Name:		Decontaminate Oil, Fuel, and Containment Liners								
Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.										
MS_018 Madrid South Calcium Chloride Laydown	load contained contaminated soils into megabags for hauling	m3	5.60	LWCS1L	\$85.00	\$476	50%	\$238	\$238	
MS_018 Madrid South Calcium Chloride Laydown	haul megabags to Madrid South Underground	m3	5.60	HMDUSH	\$15.00	\$84	50%	\$42	\$42	
Manage hydrocarbon remediation at facility		m3		#N/A	\$0.00	\$0		\$0	\$0	
Reagents/stabilizing agent		m2		#N/A	\$0.00	\$0		\$0	\$0	
Excavate and transport to offsite facility		m3		#N/A	\$0.00	\$0		\$0	\$0	
Contour decontaminated area		m3		#N/A	\$0.00	\$0		\$0	\$0	
CONTAMINATED SOIL VERY LOW PERMEABILITY COVER										
Supply geomembrane, HDPE, ES3, GCL		m2		#N/A	\$0.00	\$0		\$0	\$0	
Upper and lower bedding layers		m3		#N/A	\$0.00	\$0		\$0	\$0	
Install geomembrane, HDPE, ES3, GCL		m2		#N/A	\$0.00	\$0		\$0	\$0	
Erosion protection layer		m3		#N/A	\$0.00	\$0		\$0	\$0	
Vegetate		m2		#N/A	\$0.00	\$0		\$0	\$0	
Install infiltration/seepage instrumentation		allow		#N/A	\$0.00	\$0		\$0	\$0	
Other				#N/A	\$0.00	\$0		\$0	\$0	
OTHER										
				#N/A	\$0.00	\$0		\$0	\$0	
					Total	\$3,392,874		\$1,696,437	\$1,696,437	
					% of Total			50%	50%	

\$135,057

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1				
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	
DISPOSE MOBILE EQUIPMENT										
Decontaminate and ship off-site		allow		IN/A	\$0.00	\$0		\$0	\$0	
Decontaminate and dispose on-site		allow		IN/A	\$0.00	\$0		\$0	\$0	
Other				IN/A	\$0.00	\$0		\$0	\$0	
REMOVE BUILDINGS AND INFRASTRUCTURE - see note below										
Accommodation Complex										
DM_001 Doris Accommodation Complex	Decommission electrical, mechanical, heating, plumbing, etc.)	each	127.00	BRUS1L	\$750.00	\$95,250	100%	\$95,250	\$0	
DM_001 Doris Accommodation Complex	Demolish trailers	m2	4,473.92	BRWL	\$37.20	\$166,426	100%	\$166,426	\$0	
DM_001 Doris Accommodation Complex	Demolish cabins	m2	127.00	BRWL	\$37.20	\$4,748	100%	\$4,748	\$0	
DM_001 Doris Accommodation Complex	Demolish Large tents	m2	50.40	BRWL	\$37.20	\$1,875	100%	\$1,875	\$0	
DM_001 Doris Accommodation Complex	Demolish small tents	m2	206.22	BRWL	\$37.20	\$7,671	100%	\$7,671	\$0	
DM_001 Doris Accommodation Complex	Demolish cribbing, stairs, entryways, etc.	each	82.00	BRCS1L	\$65.00	\$5,330	100%	\$5,330	\$0	
DM_001 Doris Accommodation Complex	Demolish acrylic corridor	m2	53.00	BRWL	\$37.20	\$1,972	100%	\$1,972	\$0	
DM_001 Doris Accommodation Complex	Demolish smoke shack tent	m2	28.05	BRWL	\$37.20	\$1,043	100%	\$1,043	\$0	
DM_001 Doris Accommodation Complex	Demolish building a to b corridor	m2	442.68	BRWL	\$37.20	\$16,467	100%	\$16,467	\$0	
DM_001 Doris Accommodation Complex	Sea-can; disconnect containers and prep for shipping	each	1.00	BR1TL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
DM_001 Doris Accommodation Complex	Sea-can 20'; disconnect containers and prep for shipping	each	1.00	BR1TL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
Process Facilities										
DM_021 Doris Process Plant	Decommissioning Crusher, Milling, and Processing Plants	each	1.00	DCMPSH	\$175,000.00	\$175,000	100%	\$175,000	\$0	
DM_021 Doris Process Plant	Drain Chemicals and Reagents into Containers for Shipping Off-site	each	1.00	DCRCSH	\$100,000.00	\$100,000	100%	\$100,000	\$0	
DM_021 Doris Process Plant	Disassemble Process Plant Equipment and Prepare for Shipping	each	1.00	ER1OSH	\$350,000.00	\$350,000	100%	\$350,000	\$0	
DM_021 Doris Process Plant	Demolish / Dismantle Mill Building	m2	41,180.00	BRSL1L	\$60.87	\$2,506,688	100%	\$2,506,688	\$0	
DM_021 Doris Process Plant	Demolish Mill Building Concrete Slab	m2	8,700.00	BRCL	\$54.11	\$470,740	100%	\$470,740	\$0	
SR_005 Water Treatment Plant	Decommissioning (Electrical and Mechanical)	each	6.00	BRUS1H	\$2,000.00	\$12,000	100%	\$12,000	\$0	
SR_005 Water Treatment Plant	Demolish Building	m2	2,328.22	BRSL1H	\$87.93	\$204,710	100%	\$204,710	\$0	
SR_005 Water Treatment Plant	Demolish and Cover Concrete Slab	m2	776.07	BRCL	\$54.11	\$41,992	100%	\$41,992	\$0	
SR_005 Water Treatment Plant	Demolish and Cover Concrete Foundations	m3	42.83	CDSL	\$275.00	\$11,778	100%	\$11,778	\$0	
MN_021 Madrid North Concentrator	Decommissioning Crusher, Milling, and Processing Plants	each	1.00	DCMPSL	\$100,000.00	\$100,000	100%	\$100,000	\$0	
MN_021 Madrid North Concentrator	Drain Chemicals and Reagents into Containers for Shipping Off-site	each	1.00	DCRCSL	\$50,000.00	\$50,000	100%	\$50,000	\$0	
MN_021 Madrid North Concentrator	Disassemble Process Plant Equipment and Prepare for Shipping	each	1.00	ER1OSL	\$250,000.00	\$250,000	100%	\$250,000	\$0	
MN_021 Madrid North Concentrator	Demolish / Dismantle Mill Building	m2	8,000.00	BRSL1L	\$60.87	\$486,972	100%	\$486,972	\$0	
MN_021 Madrid North Concentrator	Demolish Mill Building Concrete Slab	m2	1,600.00	BRCL	\$54.11	\$86,573	100%	\$86,573	\$0	
Offices, Repair, Lab, Warehouse										
DM_009 Doris Offices & Mine Dry Complex	Decommission (electrical, mechanical, plumbing)	each	3.00	BRUS1L	\$750.00	\$2,250	100%	\$2,250	\$0	
DM_009 Doris Offices & Mine Dry Complex	Disconnect trailers and prep for moving (remove boards, cladding, etc.; wrap in plastic)	each	17.00	BRTHH	\$3,500.00	\$59,500	100%	\$59,500	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish admin	m2	514.40	BRWL	\$37.20	\$19,135	100%	\$19,135	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish acrylic corridor	m2	289.79	BRWL	\$37.20	\$10,780	100%	\$10,780	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish mine dry trailer	m2	990.00	BRWH	\$55.46	\$53,065	100%	\$53,065	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish office	m2	220.21	BRWL	\$37.20	\$8,192	100%	\$8,192	\$0	
DM_009 Doris Offices & Mine Dry Complex	Demolish cribbing, stairs, entryways, etc.	each	17.00	BRCS1L	\$65.00	\$1,105	100%	\$1,105	\$0	
DM_009 Doris Offices & Mine Dry Complex	Sea-can 20'; disconnect containers and prep for shipping	each	11.00	BR1TL	\$2,000.00	\$22,000	100%	\$22,000	\$0	
DM_009 Doris Offices & Mine Dry Complex	Sea-can 40'; disconnect containers and prep for shipping	each	2.00	BR1TL	\$2,000.00	\$4,000	100%	\$4,000	\$0	
DM_009 Doris Offices & Mine Dry Complex	Haul trailers to Quarry 3 landfill	each	17.00	HCLFSL	\$85.00	\$1,445	100%	\$1,445	\$0	
MN_005 Madrid North Office Trailer	Decommission (electrical, mechanical, plumbing)	each	3.00	BRUS1H	\$2,000.00	\$6,000	100%	\$6,000	\$0	
MN_005 Madrid North Office Trailer	Demolish trailer	m2	70.00	BRWL	\$37.20	\$2,604	100%	\$2,604	\$0	
MN_005 Madrid North Office Trailer	Demolish cribbing, stairs, entryways, etc.	each	4.00	BRCS1H	\$100.00	\$400	100%	\$400	\$0	
WC_002 Windy Accommodation Camp Buildings	Decommission (electrical, mechanical, plumbing)	each	1.00	BRUS1L	\$2,000.00	\$2,000	100%	\$2,000	\$0	
WC_002 Windy Accommodation Camp Buildings	Dismantle and package communication equipment	each	1.00	RCMSL	\$500.00	\$500	100%	\$500	\$0	
WC_002 Windy Accommodation Camp Buildings	Manual demolition beyond rock pads	m2	886.20	BRSHH	\$135.27	\$119,878	100%	\$119,878	\$0	
WC_002 Windy Accommodation Camp Buildings	Mechanical demolition on rock pads	m3	3,479.10	RB1L	\$15.42	\$53,650	100%	\$53,650	\$0	
WC_002 Windy Accommodation Camp Buildings	load waste into containers	m3	1,891.30	LWCSSL	\$5.00	\$9,457	100%	\$9,457	\$0	
WC_002 Windy Accommodation Camp Buildings	Haul containers to Quarry 3 Landfill	m3	1,891.30	HMQDSL	\$6.25	\$11,821	100%	\$11,821	\$0	
Communications										
RB_009 Roberts Bay Communications Tower	Dismantle and Decommission Tower	each	1.00	DC1SH	\$17,500.00	\$17,500	100%	\$17,500	\$0	
RB_009 Roberts Bay Communications Tower	Remove communications equipment	each	4.00	RCMSH	\$1,000.00	\$4,000	100%	\$4,000	\$0	
DM_004 Doris Communications Tower	Dismantle tower and prepare for shipping off-site	each	2.00	DC1SH	\$17,500.00	\$35,000	100%	\$35,000	\$0	
DM_004 Doris Communications Tower	Remove communications equipment	each	12.00	RCMSL	\$500.00	\$6,000	100%	\$6,000	\$0	
DM_004 Doris Communications Tower	Demolish equipment housing shack	m2	9.61	BRWH	\$55.46	\$533	100%	\$533	\$0	
DM_004 Doris Communications Tower	Remove Electrical and Fiber Optics Cables	each	12.00	RFCSSL	\$500.00	\$6,000	100%	\$6,000	\$0	
DM_004 Doris Communications Tower	Transport Communications tower equipment sea-can to Roberts Bay	each	2.00	HCLFSH	\$150.00	\$300	100%	\$300	\$0	
Storage Facilities										
Water and Wastewater Treatment Facilities										
DM_017 Doris Sewage Treatment Plant	Flush and remove sewage plumbing, collect sewage sludge/waste water in 55 gallon drums	each	9.00	CSEWSL	\$725.00	\$6,525	50%	\$3,263	\$3,263	
DM_017 Doris Sewage Treatment Plant	Decommission (electrical)	each	9.00	DGSSL	\$1,250.00	\$11,250	50%	\$5,625	\$5,625	
DM_017 Doris Sewage Treatment Plant	Disconnect containers and prep for shipping	each	9.00	BR1TL	\$2,000.00	\$18,000	50%	\$9,000	\$9,000	
DM_017 Doris Sewage Treatment Plant	Haul containers to Quarry 3 landfill	each	9.00	HCLFSL	\$95.00	\$855	50%	\$383	\$383	
DM_016 Doris Sewage Discharge Line	Collect electrical cables and controllers and prep for shipping off-site	m	1,462.00	RECSL	\$7.50	\$10,965	50%	\$5,483	\$5,483	
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	Decommission electrical (heat tracing)	each	4	BRUS1H	\$2,000.00	\$8,000	50%	\$4,000	\$4,000	
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	Collect electrical cables and controllers and prep for shipping off-site	m	4,062.50	RECSL	\$7.50	\$30,469	50%	\$15,234	\$15,234	
DM_015 Doris Sedimentation/Pollution Control Pond	disconnect piping and electrical wiring, remove sump pumps	each	2.00	ERTSL	\$1,250.00	\$2,500	50%	\$1,250	\$1,250	
DM_015 Doris Sedimentation/Pollution Control Pond	remove and cut liner (and geotextile) into manageable pieces	m2	14,110.00	GGSRSH	\$1.75	\$24,693	50%	\$12,346	\$12,346	
DM_015 Doris Sedimentation/Pollution Control Pond	plan sea-can 40'	each	4.00	BRUS1H	\$750.00	\$3,000	50%	\$1,500	\$1,500	
MN_003 Madrid North Contact Water Pond Berm	remove and cut liner (and geotextile) into manageable pieces	m2	100.00	GGSRSH	\$3.00	\$300	50%	\$150	\$150	
MN_003 Madrid North Contact Water Pond Berm	disconnect piping and electrical wiring, remove sump pumps	each	1.00	ERTSL	\$1,250.00	\$1,250	50%	\$625	\$625	
DM_005 Doris Pad (U Sedimentation) / Pollution Control Pond	disconnect piping and electrical wiring, remove sump pumps	each	1.00	ERTSL	\$1,250.00	\$1,250	50%	\$625	\$625	
MS_003 Madrid South Primary Contact Water Pond Berm	disconnect piping and electrical wiring, remove sump pumps	each	4.00	ERTSL	\$1,250.00	\$5,000	50%	\$2,500	\$2,500	
MS_012 Madrid South Haul Road / Secondary Contact Water	disconnect piping and electrical wiring, remove sump pumps	each	4.00	ERTSL	\$1,250.00	\$5,000	50%	\$2,500	\$2,500	
Waste Management Facility										
RB_005 Roberts Bay Waste Management Facility	Demolish wood structures (roof, entryway, etc.)	m2	128.66	BRWL	\$37.20	\$4,786	100%	\$4,786	\$0	
RB_005 Roberts Bay Waste Management Facility	Dismantle (welding crew)	each	2.00	ERSL	\$3,000.00	\$6,000	100%	\$6,000	\$0	
RB_005 Roberts Bay Waste Management Facility	sea-can 20'; disconnect containers and prep for shipping	each	11.00	BR1TL	\$2,000.00	\$22,000	100%	\$22,000	\$0	
RB_005 Roberts Bay Waste Management Facility	Collect ashes and place in containers	m3	0.50	CRSSH	\$2,000.00	\$1,000	100%	\$1,000	\$0	
SR_001 Secondary Road	Cut tailings line running alongside the road into manageable pieces	m	5,750.00	PLRL	\$29.76	\$171,117	50%	\$85,558	\$85,558	
SR_001 Secondary Road	Strip together or load pipe sections in containers for transport to landfill	each	150.00	HCLFSL	\$150.00	\$22,500	50%	\$11,250	\$11,250	
WM_002 Waste Management Area Batch Plant Pad	Demolish tent structure	m2	1,233.88	BRWL	\$37.20	\$45,900	100%	\$45,900	\$0	
WM_003 Waste Management Area Burn Pan	Collect ashes and place in containers	m3	0.25	CRSSH	\$2,000.00	\$494	100%	\$494	\$0	
WM_003 Waste Management Area Burn Pan	Dismantle (welding crew)	each	1.00	ERSL	\$1,000.00	\$1,000	100%	\$1,000	\$0	
PL_001 Pipeline Roberts Bay Discharge System	Decommission electrical (heat tracing)	each	11.00	BRUS1L	\$750.00	\$8,250	50%	\$4,125	\$4,125	
PL_001 Pipeline Madrid Bay Discharge System	Collect electrical cables and controllers and prep for shipping off-site	lm	7,775.30	RECSL	\$7.50	\$58,315	50%	\$29,157	\$29,157	
PL_003 Pipeline Madrid South Groundwater Pipeline	Decommission electrical (heat tracing)	each	25.00	BRUS1L	\$750.00	\$18,750	50%	\$9,375	\$9,375	
PL_003 Pipeline Madrid South Groundwater Pipeline	Collect electrical cables and controllers and prep for shipping off-site	m2	2,861.00	DSL	\$1.29	\$3,679	50%	\$1,839	\$1,839	
PL_002 Pipeline Madrid North Reclaim Pipeline	Decommission electrical (heat tracing)	each	25.00	BRUS1L	\$750.00	\$18,750	50%	\$9,375	\$9,375	
PL_002 Pipeline Madrid North Reclaim Pipeline	Collect electrical cables and controllers and prep for shipping off-site	m2	2,678.40	DSL	\$1.29	\$3,442	50%	\$1,721	\$1,721	
CDR_004 Crisp Dock Access Road / Fuel Transfer Pipeline	Remove Electrical Cables and Controllers and Prep for Shipping	m2	2.00	BRUS1L	\$750.00	\$1,500	50%	\$750	\$750	
DM_006 Doris Fresh Water Pipeline	Decommission electrical (heat tracing)	each	4.00	BRUS1H	\$2,000.00	\$8,000	50%	\$4,000	\$4,000	
DM_006 Doris Fresh Water Pipeline	Collect electrical cables and controllers and prep for shipping off-site	lm	1,600.00	RECSL	\$7.50	\$12,000	50%	\$6,000	\$6,000	
DM_026 Doris Water Intake Structure and Pumping Facility	remove water intake line from Doris lake	m	25.00	PLRL	\$29.76	\$744	50%	\$372	\$372	
DM_026 Doris Water Intake Structure and Pumping Facility	decommission pumping facility (remove electrical)	each	2.00	ERASH	\$2,000.00	\$4,000	50%	\$2,000	\$2,000	
DM_026 Doris Water Intake Structure and Pumping Facility	prep containers for shipping off-site	each	2.00	BR1TL	\$2,000.00	\$4,000	50%	\$2,000	\$2,000	
DM_026 Doris Water Intake Structure and Pumping Facility	prep generator container for shipping	each	1.00	DGPSL	\$500.00	\$500	50%	\$250	\$250	
DM_026 Doris Water Intake Structure and Pumping Facility	haul containers to Roberts Bay laydown	each	2.00	HCLFSH	\$150.00	\$300	50%	\$150	\$150	
WC_007 Windy Waste Incinerator	Decommission Waste Incinerator (Mechanical)	each	1.00	BRUS1H	\$2,000.00	\$2,000	100%	\$2,000	\$0	
WC_007 Windy Waste Incinerator	Collect Ashes and Place in Containers	m3	1.00	CRSSH	\$2,000.00	\$2,000	100%	\$2,000	\$0	
WC_007 Windy Waste Incinerator	Dismantle (welding crew)	each	1.00	ERSL	\$3,000.00	\$3,000	100%	\$3,000	\$0	
WC_006 Windy Waste Incinerator	Decommission Waste Incinerator (Mechanical)	each	1.00	BRUS1H	\$2,000.00	\$2,000	100%	\$2,000	\$0	
WC_006 Windy Waste Incinerator	Collect Ashes and Place in Containers	m3	1.00	CRSSH	\$2,000.00	\$2,000	100%	\$2,000	\$0	
Power										
DM_002 Doris Backup Power Generator	Decommission electrical	each	4.00	DGPSL	\$1,250.00	\$5,000	100%	\$5,000	\$0	
DM_002 Doris Backup Power Generator	Disconnect generator units and prep for shipping off-site	each	2.00	DGPSL	\$500.00	\$1,000	100%	\$1,000	\$0	
DM_002 Doris Backup Power Generator	Haul units to quarry 3 landfill	m3	67.60	HMQDSL	\$6.25	\$423	100%	\$423	\$0	
DM_002 Doris Backup Power Generator	Demolish tent housing structure	m2	299.32	BRWL	\$37.20	\$11,037	100%	\$11,037	\$0	
DM_002 Doris Backup Power Generator	Demolish Concrete Slab	m2	299.32	BRCL	\$54.11	\$16,101	100%	\$16,101	\$0	
DM_011 Doris Permanent Power Generator	Decommission electrical	each	8.0							

Building / Equip Name:		Site Buildings		Bldg / Equip #: 1						
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	
RB_004 Roberts Bay Mechanical Shop Complex	sea-can 40', disconnect containers and prep for shipping	each	12.00	BRTLL	\$2,000.00	\$24,000	100%	\$24,000	\$0	
RB_004 Roberts Bay Mechanical Shop Complex	Demolish structures (trailers)	m3	24.00	BRWL	\$37.20	\$893	100%	\$893	\$0	
RB_012 Roberts Bay Cargo Dock	Remove Rock Fill to 0.3 m Below LLLW	RS	24,867.60	RRAL	\$10.26	\$255,652	100%	\$255,652	\$0	
RB_012 Roberts Bay Cargo Dock	Remove on-shore mooring points	LS	2.00	RMPSL	\$2,500.00	\$5,000	100%	\$5,000	\$0	
RB_012 Roberts Bay Cargo Dock	Cut Sheet Piles to 0.3m below lwl	each	1.00	RMSPL	\$50,000.00	\$50,000	100%	\$50,000	\$0	
MN_004 Madrid North Emergency Shelter	Decommission (electrical, mechanical, plumbing)	each	1.00	BRUSLL	\$750.00	\$1,500	100%	\$1,500	\$0	
MN_004 Madrid North Emergency Shelter	Demolish Trailers	each	75.00	BRWL	\$37.20	\$2,790	100%	\$2,790	\$0	
MN_007 Madrid North Mine Equipment Shop	Demolish Cribbing, Stairs, Entrways, Etc.	each	4.00	BRCS3H	\$100.00	\$400	100%	\$400	\$0	
MN_007 Madrid North Mine Equipment Shop	Decommission (electrical, mechanical, plumbing)	each	1.00	BRUSLL	\$750.00	\$1,500	100%	\$1,500	\$0	
MN_007 Madrid North Mine Equipment Shop	Demolish Trailers	m2	375.00	BRWL	\$37.20	\$13,950	100%	\$13,950	\$0	
MN_008 Madrid North Compressor Building	Decommission (electrical)	each	2.00	DGSL	\$1,250.00	\$2,500	100%	\$2,500	\$0	
MN_008 Madrid North Compressor Building	Disconnect compressor units and prep for shipping off-site	each	2.00	ERL2SL	\$1,000.00	\$2,000	100%	\$2,000	\$0	
MN_009 Madrid North Diesel Generator	Demolish Tent Housing Structure	m3	20.92	BRWL	\$37.20	\$775	100%	\$775	\$0	
MN_009 Madrid North Diesel Generator	Decommission (electrical)	each	2.00	DGSL	\$1,250.00	\$2,500	100%	\$2,500	\$0	
MN_009 Madrid North Diesel Generator	Disconnect Containers and prep for shipping off-site	each	2.00	ERL2SH	\$1,500.00	\$3,000	100%	\$3,000	\$0	
MN_009 Madrid North Diesel Generator	Demolish Tent Housing Structure	m3	15.63	BRWL	\$37.20	\$582	100%	\$582	\$0	
MS_004 Madrid South Mine Equipment Shop	Decommission Electrical, Mechanical, Heating	each	4.00	BRUSLL	\$750.00	\$3,000	100%	\$3,000	\$0	
MS_004 Madrid South Mine Equipment Shop	Demolish Tent Housing Structure	each	750.00	BRWL	\$37.20	\$27,899	100%	\$27,899	\$0	
MS_005 Madrid South Emergency Shelter	Decommission Electrical, Mechanical, Plumbing	each	3.00	BRUSLL	\$750.00	\$2,250	100%	\$2,250	\$0	
MS_005 Madrid South Emergency Shelter	Demolish Structure	m2	25.00	BRWL	\$37.20	\$930	100%	\$930	\$0	
MS_005 Madrid South Emergency Shelter	Demolish Cribbing, Stairs, Entrways, Etc.	each	4.00	BRCS3H	\$100.00	\$400	100%	\$400	\$0	
MS_006 Madrid South Office Trailer	Decommission Electrical, Mechanical, Plumbing	each	4.00	BRUSLL	\$750.00	\$3,000	100%	\$3,000	\$0	
MS_006 Madrid South Office Trailer	Demolish Structure	m2	25.00	BRWL	\$37.20	\$930	100%	\$930	\$0	
MS_006 Madrid South Office Trailer	Demolish Structure	each	4.00	BRCS3H	\$100.00	\$400	100%	\$400	\$0	
MS_007 Madrid South Diesel Generator	Decommission Electrical	each	1.00	BRUSLL	\$750.00	\$750	100%	\$750	\$0	
MS_007 Madrid South Diesel Generator	Demolish Tent Housing Structure	m2	15.63	BRWL	\$37.20	\$582	100%	\$582	\$0	
MS_018 Madrid South Calcium Chloride Laydown	Demolish tent structure	m2	15.63	BRWL	\$37.20	\$582	100%	\$582	\$0	
MN_029 Nuna Shop	Decommission (electrical, mechanical, plumbing)	each	2.00	BRUS3H	\$2,000.00	\$4,000	100%	\$4,000	\$0	
MN_029 Nuna Shop	Demolish Concrete Slab	m2	527.00	BRWL	\$37.20	\$19,604	100%	\$19,604	\$0	
DM_008 Doris Muster Station	Demolish tent structure	m2	527.00	BRCL	\$54.11	\$28,515	100%	\$28,515	\$0	
DM_008 Doris Muster Station	Demolish tent structure	m2	90.92	BRWL	\$37.20	\$3,382	100%	\$3,382	\$0	
DM_008 Doris Muster Station	Demolish wood flooring	each	2.00	#N/A	\$0.00	\$0	100%	\$0	\$0	
DM_019 Doris Suck Shop	sea-can 20', disconnect containers and prep for shipping	each	2.00	BRTLL	\$2,000.00	\$4,000	100%	\$4,000	\$0	
DM_022 Doris Underground Support Mechanic Shop	Demolish tent structure	m2	899.29	BRWL	\$37.20	\$33,469	100%	\$33,469	\$0	
DM_022 Doris Underground Support Mechanic Shop	Decommission electrical, mechanical (including connections to generator house & transformer)	each	3.00	PDSC2L	\$5,000.00	\$15,000	100%	\$15,000	\$0	
DM_022 Doris Underground Support Mechanic Shop	Demolish shop building	m2	760.52	BRWL	\$37.20	\$28,291	100%	\$28,291	\$0	
DM_022 Doris Underground Support Mechanic Shop	sea-can 20', disconnect containers and prep for shipping	each	10.00	BRTLL	\$2,000.00	\$20,000	100%	\$20,000	\$0	
DM_022 Doris Underground Support Mechanic Shop	sea-can 40', disconnect containers and prep for shipping	each	10.00	BRTLL	\$2,000.00	\$20,000	100%	\$20,000	\$0	
DM_023 Doris Underground Wash Bay	Demolish shop building/Demolish tent structure	m2	258.96	BRWL	\$37.20	\$9,633	100%	\$9,633	\$0	
DM_023 Doris Underground Wash Bay	sea-can 20', disconnect containers and prep for shipping	each	24.00	BRTLL	\$2,000.00	\$48,000	100%	\$48,000	\$0	
DM_024 Doris Warehouse/Core Shack	sea-can 40', disconnect containers and prep for shipping	each	10.00	BRTLL	\$2,000.00	\$20,000	100%	\$20,000	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish tent structure	m2	310.35	BRWL	\$37.20	\$11,545	100%	\$11,545	\$0	
DM_024 Doris Warehouse/Core Shack	Dismantle wood flooring, sheking, and lots	m2	310.35	BRWL	\$37.20	\$11,545	100%	\$11,545	\$0	
DM_024 Doris Warehouse/Core Shack	sea-can 20', disconnect containers and prep for shipping	each	12.00	BRTLL	\$2,000.00	\$24,000	100%	\$24,000	\$0	
DM_024 Doris Warehouse/Core Shack	sea-can 40', disconnect containers and prep for shipping	each	5.00	BRTLL	\$2,000.00	\$10,000	100%	\$10,000	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish orbit trailer	m2	45.36	BRWL	\$37.20	\$1,687	100%	\$1,687	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish geotext trailer	m2	45.36	BRWL	\$37.20	\$1,687	100%	\$1,687	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish core log trailer	m2	25.62	BRWL	\$37.20	\$954	100%	\$954	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish contractor tents	m2	28.13	BRWL	\$37.20	\$1,046	100%	\$1,046	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish bent shack tent	m2	36.62	BRWL	\$37.20	\$1,325	100%	\$1,325	\$0	
DM_024 Doris Warehouse/Core Shack	Demolish Concrete Slab	m2	156.69	BRCL	\$54.11	\$8,485	100%	\$8,485	\$0	
DW_010 Doris Windy All Weather Road Explosives Storage Facility	Demolish entry gates	each	1.00	DEGSL	\$75.00	\$75	100%	\$75	\$0	
SR_004 Secondary Road Explosives Facility	Demolish entry gates	each	1.00	DEGSL	\$75.00	\$75	100%	\$75	\$0	
RP_004 Reagent Pads Exploration Drilling Support Shop	Decommission electrical, mechanical, heating	each	2.00	BRUS3H	\$2,000.00	\$4,000	100%	\$4,000	\$0	
RP_004 Reagent Pads Exploration Drilling Support Shop	Demolish tent structure	m3	208.22	BRWL	\$37.20	\$7,747	100%	\$7,747	\$0	
RP_004 Reagent Pads Exploration Drilling Support Shop	Sea-can 40', disconnect containers and prep for shipping	each	13.00	BRTLL	\$2,000.00	\$26,000	100%	\$26,000	\$0	
RP_004 Reagent Pads Exploration Drilling Support Shop	Haul Sea-cans to Quarry 3 Landfill	each	13.00	HCLFSH	\$150.00	\$1,950	100%	\$1,950	\$0	
DM_007 Doris Helicopter Support Facilities	Demolish heliack 1	m2	40.88	BRWL	\$37.20	\$1,521	100%	\$1,521	\$0	
DM_007 Doris Helicopter Support Facilities	Demolish heliack 2	m2	14.40	BRWL	\$37.20	\$534	100%	\$534	\$0	
DM_007 Doris Helicopter Support Facilities	Demolish heliack 3	m2	14.43	BRWL	\$37.20	\$537	100%	\$537	\$0	
DM_007 Doris Helicopter Support Facilities	Demolish heliack 4	m2	33.82	BRWL	\$37.20	\$1,258	100%	\$1,258	\$0	
DM_007 Doris Helicopter Support Facilities	sea-can 20', disconnect containers and prep for Quarry 3	each	12.00	BRTLL	\$2,000.00	\$24,000	100%	\$24,000	\$0	
DM_007 Doris Helicopter Support Facilities	Decommission washcar and other facilities	each	1.00	BRTLL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
DM_027 Doris Airstrip	Decommission airstrip	each	2.00	DCASL	\$1,250.00	\$2,500	100%	\$2,500	\$0	
DM_028 Doris Airstrip Aprons	Decommission electrical, and heating from traffic control tower	each	1.00	DCISL	\$6,000.00	\$6,000	100%	\$6,000	\$0	
DM_028 Doris Airstrip Aprons	Demolish control tower structure (wood shack)	each	1.00	BRWL	\$37.20	\$94	100%	\$94	\$0	
DM_028 Doris Airstrip Aprons	Disconnect containers and prep for shipping	each	5.00	BRTLL	\$2,000.00	\$10,000	100%	\$10,000	\$0	
DM_028 Doris Airstrip Aprons	Haul trailers to Quarry 3 landfill	each	5.00	HCLFSL	\$85.00	\$425	100%	\$425	\$0	
DM_028 Doris Airstrip Aprons	Remove lighting fixtures (airstrip lighting, approach lights)	each	75.00	RAUSL	\$15.00	\$1,125	100%	\$1,125	\$0	
RB_006 Roberts Bay Laydown Area	Decommission vehicle plug system	each	1.00	DVPSL	\$3,000.00	\$3,000	100%	\$3,000	\$0	
RB_006 Roberts Bay Laydown Area	Remove cables and posts	each	8.00	RCPSL	\$2,000.00	\$16,000	100%	\$16,000	\$0	
MN_010 Madrid North Laydown Area	Decommission vehicle plug system	each	2.00	DVPSL	\$3,000.00	\$6,000	100%	\$6,000	\$0	
MN_010 Madrid North Laydown Area	Remove cables and posts	each	1.00	RCPSL	\$4,000.00	\$4,000	100%	\$4,000	\$0	
MS_009 Madrid South Laydown Pad	Decommission vehicle plug system	each	2.00	DVPSL	\$3,000.00	\$6,000	100%	\$6,000	\$0	
MS_009 Madrid South Laydown Pad	Remove cables and posts	each	2.00	RCPSL	\$2,000.00	\$4,000	100%	\$4,000	\$0	
DW_008 Doris Windy All Weather Road Core Storage Area	Load core boxes into containers for shipping	m3	1,666.00	LWCS2H	\$6.00	\$10,000	100%	\$10,000	\$0	
DW_008 Doris Windy All Weather Road Core Storage Area	Haul containers to Quarry 3 landfill	m3	1,666.00	HMDQSL	\$6.25	\$10,406	100%	\$10,406	\$0	
WM_004 Waste Management Area Core Storage	Load core boxes into containers for shipping	m3	500.00	LWCS2H	\$8.00	\$4,000	100%	\$4,000	\$0	
WC_012 Windy Reclaim Drill Holes	Cut off drill pipes and cap	each	889.00	PCCTL	\$17.50	\$15,558	100%	\$15,558	\$0	
Storage Facility at Laydown/Airstrip					\$0	\$0		\$0	\$0	
DM_005 Doris Fire Water Storage Tank	Disconnect and disconnect electrical and plumbing	each	3.00	BRUSLL	\$750.00	\$2,250	100%	\$2,250	\$0	
DM_005 Doris Fire Water Storage Tank	Disconnect and remove container housing the pumps and controls, and prep for shipping	each	1.00	ERASL	\$2,000.00	\$2,000	100%	\$2,000	\$0	
DM_005 Doris Fire Water Storage Tank	Haul pump house sea-can container to Quarry 3 landfill	each	1.00	HCLFSH	\$150.00	\$150	100%	\$150	\$0	
DM_005 Doris Fire Water Storage Tank	Remove tank insulation	each	1.00	ERISL	\$7,500.00	\$7,500	100%	\$7,500	\$0	
DM_005 Doris Fire Water Storage Tank	Demolish tanks and cut into manageable pieces	each	1.00	ERESH	\$100,000.00	\$100,000	100%	\$100,000	\$0	
DM_005 Doris Fire Water Storage Tank	Prepare pieces for transportation	each	10.00	HCLFSH	\$150.00	\$1,500	100%	\$1,500	\$0	
DM_005 Doris Fire Water Storage Tank	Haul containers to Quarry 3 landfill	m3	120.00	HMDQSH	\$10.50	\$1,260	100%	\$1,260	\$0	
DM_005 Doris Fire Water Storage Tank					\$0	\$0		\$0	\$0	
DM_020 Doris Primary Vent Raise	Decommission and dismantle heating and ventilation system	each	4.00	ERISL	\$15,625.00	\$62,500	100%	\$62,500	\$0	
DM_020 Doris Primary Vent Raise	Prepare heating and ventilation units for shipping	each	6.00	BRTH	\$14,500.00	\$87,000	100%	\$87,000	\$0	
DM_020 Doris Primary Vent Raise	Haul heating and ventilation units to Quarry 3 Landfill	each	4.00	HCLFSH	\$150.00	\$600	100%	\$600	\$0	
DM_020 Doris Connector Vent Raise	Decommission and dismantle heating and ventilation system	each	2.00	ERISL	\$15,625.00	\$31,250	100%	\$31,250	\$0	
DM_020 Doris Connector Vent Raise	Prepare heating and ventilation units for shipping	each	1.00	BRTH	\$3,500.00	\$3,500	100%	\$3,500	\$0	
DM_020 Doris Connector Vent Raise	Haul heating and ventilation units to Quarry 3 Landfill	m3	2.00	HCLFSH	\$150.00	\$300	100%	\$300	\$0	
DM_020 Doris Central Vent Raise	Decommission and Dismantle All Ventilation Fans	each	1.00	ERISL	\$15,625.00	\$15,625	100%	\$15,625	\$0	
DM_024 Doris Central Vent Raise	Prepare heating and ventilation units for shipping	each	1.00	BRTH	\$3,500.00	\$3,500	100%	\$3,500	\$0	
MN_014 Madrid North Vent Raises	Decommission and Dismantle All Ventilation Fans	each	4.00	ERISL	\$15,625.00	\$62,500	100%	\$62,500	\$0	
MS_014 Madrid North Air Heating Facility	Prepare heating and ventilation units for shipping	each	1.00	BRTH	\$3,500.00	\$3,500	100%	\$3,500	\$0	
MS_014 Madrid South Air Heating Facility	Decommission and Dismantle All Ventilation Fans	each	4.00	ERISL	\$15,625.00	\$62,500	100%	\$62,500	\$0	
MS_015 Madrid South Vent Raises	Prepare heating and ventilation units for shipping	each	4.00	BRTH	\$3,500.00	\$14,000	100%	\$14,000	\$0	
MS_015 Madrid South Vent Raises	Prepare heating and ventilation units for shipping	each	2.00	BRTH	\$3,500.00	\$7,000	100%	\$7,000	\$0	
Fuel tanks					\$0	\$0		\$0	\$0	
DM_020 Doris Primary Vent Raise	Haul Emilio Tank to Roberts Bay	each	1	HCLFSH	\$150.00	\$150	50%	\$75	\$75	
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	1,239.00	SGSRH	\$3.00	\$3,717	50%	\$1,859	\$1,858	
DM_020 Doris Tank Farm	Decommission fuel transfer facilities	each	5.00	DTFTSL	\$5,000.00	\$25,000	50%	\$12,500	\$12,500	
DM_020 Doris Tank Farm	Disconnect piping and controls	each	5.00	DCPSL	\$5,000.00	\$25,000	50%	\$12,500	\$12,500	
DM_020 Doris Tank Farm	Dismantle tanks and cut into manageable pieces	m2	50.00	HCLFSH	\$150.00	\$7,500	50%	\$3,750	\$3,750	
DM_020 Doris Tank Farm	Prepare pieces for transportation	m2	50.00	HCLFSH	\$150.00	\$7,500	50%	\$3,750	\$3,750	
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	9,933.00	SGSRSL	\$1.75	\$17,383	50%	\$8,691	\$8,691	
DM_020 Doris Tank Farm	Decommission fuel transfer facilities	each	1.00	DTFTSL	\$5,000.00	\$5,000	50%	\$2,500	\$2,500	
DM_020 Doris Tank Farm	Disconnect piping and controls	each	5.00	DCPSL	\$5,000.00	\$25,000	50%	\$12,500	\$12,500	
DM_020 Doris Tank Farm	Dismantle tanks and cut into manageable pieces	m2	1.00	ERESH	\$100,000.00	\$100,000	50%	\$50,000	\$50,000	
DM_020 Doris Tank Farm	Prepare pieces for transportation	each	50.00	HCLFSH	\$150.00	\$7,500	50%	\$3,750	\$3,750	
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces	m2	13,296.00	SGSRSL	\$1.75	\$23,268	50%	\$11,634	\$11,634	
DM_020 Doris Tank Farm	Decommission fuel transfer facilities	each	2.00	DTFTSL	\$5,000.00	\$10,000	50%	\$5,000	\$5,000	
DM_020 Doris Tank Farm	Disconnect piping and controls	each	2.00	DCPSL	\$5,000.00	\$10,000	50%	\$5,000	\$5,000	
DM_020 Doris Tank Farm	Dismantle tanks and cut into manageable pieces	m2	1.00	ERESH	\$100,000.00	\$100,000	50%	\$50,000	\$50,000	
DM_020 Doris Tank Farm	Prepare pieces for transportation	each	20.00	HCLFSH	\$150.00	\$3,000	50%	\$1,500	\$1,500	
DM_020 Doris Tank Farm	Remove liner and cut into manageable pieces									

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1			
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
Airstrip lighting, navigation, electrician					\$0	\$0		\$0	\$0
Airstrip lighting, navigation, mechanical					\$0	\$0		\$0	\$0
Break foundation slabs	total of all buildings				\$0	\$0		\$0	\$0
RB_004 Roberts Bay Mechanical Shop Complex	Shop relocated to Madrid North area, concrete slab remains	m3	144.15	CDSL	\$275.00	\$39,640	100%	\$39,640	\$0
Consolidate & dump boneyard debris		m3		IN/A	\$0.00	\$0		\$0	\$0
Other		m3		IN/A	\$0.00	\$0		\$0	\$0
COLLECT DEBRIS TO LANDFILL									
Accommodation Complex									
MS_006 Madrid South Office Trailer	Collect debris	m2	30.00	DSH	\$5.14	\$154	100%	\$154	\$0
DM_001 Doris Accommodation Complex	Collect debris	m2	21,050.00	DSL	\$1.29	\$27,051	100%	\$27,051	\$0
DM_001 Doris Accommodation Complex	Load waste into containers	m3	7,762.42	LWCS2L	\$5.00	\$38,812	100%	\$38,812	\$0
DM_001 Doris Accommodation Complex	Haul containers to Quarry 3 landfill	m3	7,762.42	HMDQSL	\$6.25	\$48,515	100%	\$48,515	\$0
Fuel tanks									
DM_030 Doris Primary Vent Raise	Load waste for transport to landfill	m3	11.07	LWCS2L	\$5.00	\$55	100%	\$55	\$0
DM_030 Doris Primary Vent Raise	Haul waste to landfill	m3	11.07	HMDQSL	\$6.25	\$69	100%	\$69	\$0
DM_020 Doris Tank Farm	Haul cut metal to quarry 3 landfill	Each	50.00	HCLFSH	\$150.00	\$7,500	100%	\$7,500	\$0
DM_020 Doris Tank Farm	Load waste into containers	m3	82.50	LWCS2L	\$5.00	\$413	100%	\$413	\$0
DM_020 Doris Tank Farm	Haul containers to Quarry 3 landfill	m3	82.50	HMDQSL	\$6.25	\$516	100%	\$516	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Haul cut metal to quarry 3 landfill	Each	50.00	HCLFSH	\$150.00	\$7,500	100%	\$7,500	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Load waste into containers	m3	118.85	LWCS2L	\$5.00	\$594	100%	\$594	\$0
RB_002 Roberts Bay 20 ML Tank Farm	Haul containers to Quarry 3 landfill	m3	118.85	HMDQSL	\$6.25	\$743	100%	\$743	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Haul cut metal to quarry 3 landfill	Each	50.00	HCLFSH	\$150.00	\$7,500	100%	\$7,500	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Load waste into containers	m3	149.00	LWCS2L	\$5.00	\$745	100%	\$745	\$0
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Haul containers to Quarry 3 landfill	m3	149.00	HMDQSL	\$6.25	\$931	100%	\$931	\$0
WC_001 Windy Tank Farm	Haul containers to Quarry 3 landfill	m3	12.00	HMDQSH	\$10.50	\$126	100%	\$126	\$0
RB_013 Roberts Bay 10ML Fuel Storage Facility	Haul cut material to Quarry 3 Landfill	Each	40.00	HCLFSH	\$150.00	\$6,000	100%	\$6,000	\$0
RB_013 Roberts Bay 10ML Fuel Storage Facility	Load waste into containers	m3	128.90	LWCS2L	\$5.00	\$645	100%	\$645	\$0
RB_013 Roberts Bay 10ML Fuel Storage Facility	Haul containers to Quarry 3 landfill	m3	128.90	HMDQSL	\$6.25	\$806	100%	\$806	\$0
MN_011 Madrid North Fuel Storage Facility	Haul cut material to Quarry 3 Landfill	Each	30.00	HCLFSH	\$150.00	\$4,500	100%	\$4,500	\$0
MN_011 Madrid North Fuel Storage Facility	Load waste into containers	m3	32.30	LWCS2L	\$5.00	\$162	100%	\$162	\$0
MN_011 Madrid North Fuel Storage Facility	Haul containers to Quarry 3 landfill	m3	32.30	HMDQSL	\$6.25	\$202	100%	\$202	\$0
MN_017 Madrid South Fuel Storage Facility	Remove and cut liner into manageable pieces	Each	128.50	HCLFSH	\$150.00	\$19,275	100%	\$19,275	\$0
MN_017 Madrid South Fuel Storage Facility	Load waste into containers	m3	3.40	LWCS2H	\$8.00	\$27	100%	\$27	\$0
MN_017 Madrid South Fuel Storage Facility	Haul containers to Quarry 3 landfill	m3	3.40	HMDQSH	\$10.50	\$36	100%	\$36	\$0
MN_013 Madrid North Water Storage Tank with Containment	Haul cut material to Quarry 3 Landfill	Each	10.00	HCLFSH	\$150.00	\$1,500	100%	\$1,500	\$0
MN_013 Madrid North Water Storage Tank with Containment	Load waste into containers	m3	1.30	LWCS2H	\$8.00	\$10	100%	\$10	\$0
MN_013 Madrid North Water Storage Tank with Containment	Haul containers to Quarry 3 landfill	m3	1.30	HMDQSH	\$10.50	\$14	100%	\$14	\$0
Offices, Repair, Lab, Warehouse									
DM_009 Doris Offices & Mine Dry Complex	Collect debris	m2	2,034.92	DSL	\$1.29	\$2,615	100%	\$2,615	\$0
DM_009 Doris Offices & Mine Dry Complex	Load waste into containers	m3	2,971.79	LWCS2L	\$5.00	\$14,859	100%	\$14,859	\$0
DM_009 Doris Offices & Mine Dry Complex	Haul containers to Quarry 3 landfill	m3	2,971.79	HMDQSL	\$6.25	\$18,574	100%	\$18,574	\$0
MN_005 Madrid North Office Trailer	Collect debris	m2	70.00	DSL	\$1.29	\$90	100%	\$90	\$0
MN_005 Madrid North Office Trailer	Load waste into containers	m3	100.74	LWCS2L	\$5.00	\$504	100%	\$504	\$0
MN_005 Madrid North Office Trailer	Haul containers to Quarry 3 landfill	m3	100.74	HMDQSL	\$6.25	\$630	100%	\$630	\$0
MN_029 Nuna Shop	Collect debris	m2	4,489.00	DSL	\$1.29	\$5,789	100%	\$5,789	\$0
MN_029 Nuna Shop	Load waste into containers	m3	1,581.00	LWCS2L	\$5.00	\$7,905	100%	\$7,905	\$0
MN_029 Nuna Shop	Haul containers to Quarry 3 landfill	m3	1,581.00	HMDQSL	\$6.25	\$9,881	100%	\$9,881	\$0
WC_002 Windy Accommodation Camp Buildings	Load reusable components into containers for transport to Doris Camp	m3	29.00	LWCS2L	\$5.00	\$145	100%	\$145	\$0
WC_002 Windy Accommodation Camp Buildings	Haul all reusable materials to Doris Camp	m3	31.60	HMDQSH	\$10.50	\$332	100%	\$332	\$0
Process Plant									
DM_021 Doris Process Plant	Collect debris	m2	8,700.00	DSH	\$5.14	\$44,720	100%	\$44,720	\$0
DM_021 Doris Process Plant	Load waste into containers	m3	34,800.00	LWCS2H	\$8.00	\$278,400	100%	\$278,400	\$0
DM_021 Doris Process Plant	Haul containers to Quarry 3 landfill	m3	34,800.00	HMDQSH	\$10.50	\$365,400	100%	\$365,400	\$0
MN_021 Madrid North Concentrator	Transport Drums to Roberts Bay	m3	4.20	HMDQSH	\$10.50	\$44	100%	\$44	\$0
SR_005 Water Treatment Plant	Collect debris	m2	778.07	DSH	\$5.14	\$3,989	100%	\$3,989	\$0
SR_005 Water Treatment Plant	Load waste into containers	m3	1,552.15	LWCS2H	\$8.00	\$12,417	100%	\$12,417	\$0
SR_005 Water Treatment Plant	Haul containers to Quarry 3 landfill	m3	1,552.15	HMDQSH	\$10.50	\$16,298	100%	\$16,298	\$0
MN_015 Madrid North Brine Mixing Facility	Collect debris	m2	18.80	DSH	\$5.14	\$97	100%	\$97	\$0
MN_015 Madrid North Brine Mixing Facility	Load waste into containers	m3	0.20	LWCS2H	\$8.00	\$2	100%	\$2	\$0
MN_015 Madrid North Brine Mixing Facility	Haul containers to Quarry 3 Landfill	m3	0.20	HMDQSH	\$10.50	\$2	100%	\$2	\$0
MS_019 Madrid South Brine Mixing Facility	Collect debris	m2	25.00	DSH	\$5.14	\$129	100%	\$129	\$0
MN_014 Madrid North Calcium Chloride	load waste into containers	m3	0.20	LWCS2H	\$8.00	\$2	100%	\$2	\$0
MN_014 Madrid North Calcium Chloride	Haul Containers to Quarry 3 Landfill	m3	0.20	HMDQSH	\$10.50	\$2	100%	\$2	\$0
MS_019 Madrid South Brine Mixing Facility	Load Waste Into Containers	m3	0.20	LWCS2H	\$8.00	\$2	100%	\$2	\$0
MS_019 Madrid South Brine Mixing Facility	Haul containers to Quarry 3 Landfill	m3	0.20	HMDQSL	\$6.25	\$1	100%	\$1	\$0
Rock Pile						\$0		\$0	\$0
RB_007 Roberts Bay Overburden Pile	Collect debris	m2	14,205.00	DSL	\$1.29	\$18,254	100%	\$18,254	\$0
RB_007 Roberts Bay Overburden Pile	Load waste into containers	m3	8.52	LWCS2H	\$8.00	\$68	100%	\$68	\$0
RB_007 Roberts Bay Overburden Pile	Haul containers to Quarry 3 landfill	m3	8.52	HMDQSL	\$6.25	\$53	100%	\$53	\$0
MN_014 Madrid North Calcium Chloride	Collect debris	m2	25.00	DSH	\$5.14	\$129	100%	\$129	\$0
MS_018 Madrid South Calcium Chloride Laydown	Collect debris	m2	18.80	DSH	\$5.14	\$97	100%	\$97	\$0
Communications									
RB_009 Roberts Bay Communications Tower	Collect debris	m2	2.89	DSH	\$5.14	\$15	100%	\$15	\$0
RB_009 Roberts Bay Communications Tower	Load waste into containers	m3	4.06	LWCS2H	\$8.00	\$32	100%	\$32	\$0
RB_009 Roberts Bay Communications Tower	Haul containers to Quarry 3 landfill	m3	4.06	HMDQSH	\$10.50	\$43	100%	\$43	\$0
DM_004 Doris Communications Tower	Collect debris	m2	14.88	DSL	\$1.29	\$19	100%	\$19	\$0
DM_004 Doris Communications Tower	Load waste into containers	m3	14.41	LWCS2H	\$8.00	\$115	100%	\$115	\$0
DM_004 Doris Communications Tower	Haul containers to Quarry 3 landfill	m3	14.41	HMDQSH	\$10.50	\$151	100%	\$151	\$0
Water and Wastewater Treatment Facilities						\$0		\$0	\$0
DM_017 Doris Sewage Treatment Plant	Collect debris	m2	268.57	IN/A	\$0.00	\$0		\$0	\$0
DM_017 Doris Sewage Treatment Plant	Load waste into containers	m2	DSL	\$1.29	\$345	100%	\$345	\$0	\$0
DM_017 Doris Sewage Treatment Plant	Haul containers to Quarry 3 landfill	m3	150.00	LWCS2L	\$5.00	\$750	100%	\$750	\$0
SR_001 Secondary Road	Haul waste to the landfill	Each	150.00	HCLFSH	\$150.00	\$22,500	100%	\$22,500	\$0
Power									
DM_002 Doris Backup Power Generator	Collect debris	m2	259.32	DSL	\$1.29	\$333	100%	\$333	\$0
DM_002 Doris Backup Power Generator	Load waste into containers	m3	388.98	LWCS2L	\$5.00	\$1,945	100%	\$1,945	\$0
DM_002 Doris Backup Power Generator	Haul containers to Quarry 3 landfill	m3	388.98	HMDQSL	\$6.25	\$2,411	100%	\$2,411	\$0
DM_011 Doris Permanent Power Generator	Collect debris	m2	2,103.61	DSL	\$1.29	\$2,703	100%	\$2,703	\$0
DM_011 Doris Permanent Power Generator	Load waste into containers	m3	250.00	LWCS2L	\$5.00	\$1,250	100%	\$1,250	\$0
DM_011 Doris Permanent Power Generator	Haul containers to Quarry 3 landfill	m3	250.00	HMDQSL	\$6.25	\$1,563	100%	\$1,563	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Collect Debris	m3	5,080.00	DSL	\$1.29	\$6,528	100%	\$6,528	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Load Waste Into Trucks for Transport to Landfill	m3	5,080.00	LWCS2L	\$5.00	\$25,400	100%	\$25,400	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Transport Waste to Landfill	m3	5,080.00	LWCS2H	\$8.00	\$40,640	100%	\$40,640	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Transport Wind Turbine Parts to Roberts Bay	Each	1.00	TWTRBH	\$15,000.00	\$15,000	100%	\$15,000	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Collect Debris	m3	5,080.00	DSL	\$1.29	\$6,528	100%	\$6,528	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Load Waste Into Trucks for Transport to Landfill	m3	5,080.00	LWCS2L	\$5.00	\$25,400	100%	\$25,400	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Transport Waste to Landfill	m3	5,080.00	LWCS2H	\$8.00	\$40,640	100%	\$40,640	\$0
MBR_041 Madrid-Boston All Weather Road Turbine Pad #6	Transport Wind Turbine Parts to Roberts Bay	Each	1.00	TWTRBH	\$15,000.00	\$15,000	100%	\$15,000	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Collect Debris	m3	5,080.00	DSL	\$1.29	\$6,528	100%	\$6,528	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Load Waste Into Trucks for Transport to Landfill	m3	5,080.00	LWCS2L	\$5.00	\$25,400	100%	\$25,400	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Waste to Landfill	m3	5,080.00	LWCS2H	\$8.00	\$40,640	100%	\$40,640	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Wind Turbine Parts to Roberts Bay	Each	1.00	TWTRBH	\$15,000.00	\$15,000	100%	\$15,000	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Collect Debris	m3	5,080.00	DSL	\$1.29	\$6,528	100%	\$6,528	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Load Waste Into Trucks for Transport to Landfill	m3	5,080.00	LWCS2L	\$5.00	\$25,400	100%	\$25,400	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Waste to Landfill	m3	5,080.00	LWCS2H	\$8.00	\$40,640	100%	\$40,640	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Wind Turbine Parts to Roberts Bay	Each	1.00	TWTRBH	\$15,000.00	\$15,000	100%	\$15,000	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Collect Debris	m3	5,080.00	DSL	\$1.29	\$6,528	100%	\$6,528	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Load Waste Into Trucks for Transport to Landfill	m3	5,080.00	LWCS2L	\$5.00	\$25,400	100%	\$25,400	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Waste to Landfill	m3	5,080.00	LWCS2H	\$8.00	\$40,640	100%	\$40,640	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Wind Turbine Parts to Roberts Bay	Each	1.00	TWTRBH	\$15,000.00	\$15,000	100%	\$15,000	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Collect Debris	m3	5,080.00	DSL	\$1.29	\$6,528	100%	\$6,528	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Load Waste Into Trucks for Transport to Landfill	m3	5,080.00	LWCS2L	\$5.00	\$25,400	100%	\$25,400	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Waste to Landfill	m3	5,080.00	LWCS2H	\$8.00	\$40,640	100%	\$40,640	\$0
MBR_039 Madrid-Boston All Weather Road Turbine Pad #4	Transport Wind Turbine Parts								

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1			
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
MS_006 Madrid South Office Trailer	Haul containers to Quarry 3 Landfill	m3	53.20	HMDQSL	\$6.25	\$330	100%	\$320	\$0
MS_020 Madrid South Water Storage Tank with Containment	Haul out metal to quarry 3 landfill	m3	2.40	HMDQSL	\$6.25	\$15	100%	\$15	\$0
MS_020 Madrid South Water Storage Tank with Containment	Haul Waste into Containers	m3	0.10	LWCS2H	\$8.00	\$1	100%	\$1	\$0
MS_020 Madrid South Water Storage Tank with Containment	Haul containers to Quarry 3 Landfill	m3	0.10	HMDQSL	\$6.25	\$1	100%	\$1	\$0
DM_035 Doris Pad U Sedimentation / Pollution Control Pond	load waste into containers	m3	1.90	LWCS2H	\$8.00	\$15	100%	\$15	\$0
DM_035 Doris Pad U Sedimentation / Pollution Control Pond	Haul containers to Quarry 3 Landfill	m3	1.90	HMDQSL	\$6.25	\$12	100%	\$12	\$0
MS_003 Madrid South Primary Contact Water Pond Berm	Haul Waste into Containers	m3	1.90	LWCS2H	\$8.00	\$15	100%	\$15	\$0
MS_003 Madrid South Primary Contact Water Pond Berm	Haul Containers to Quarry 3 Landfill	m3	1.90	HMDQSL	\$6.25	\$12	100%	\$12	\$0
MS_012 Madrid South Haul Road / Secondary Contact Water	Haul Waste into Containers	m3	1.90	LWCS2H	\$8.00	\$15	100%	\$15	\$0
MS_012 Madrid South Haul Road / Secondary Contact Water	Haul Containers to Quarry 3 Landfill	m3	1.90	HMDQSL	\$6.25	\$12	100%	\$12	\$0
WC_010 Windy Summer Debris Collection	Haul Materials to Landfill	m3	30.00	HMDQSL	\$6.25	\$188	100%	\$188	\$0
WC_011 Windy Developed Areas (for Regrading)	Haul containers to Madrid North Underground	m3	717.20	HMDQSL	\$6.25	\$4,483	100%	\$4,483	\$0
WC_011 Windy Developed Areas (for Regrading)	Haul containers to Doris OVR Dump	m3	60.00	HMDQSL	\$10.50	\$630	100%	\$630	\$0
PLA_003 Patch Lake Developed Areas (for regrading)	haul containers to Madrid North Underground	m3	243.60	HMDQSH	\$10.50	\$2,558	100%	\$2,558	\$0
MN_010 Madrid North Laydown Area	load waste into containers	m3	0.90	LWCS2H	\$8.00	\$7	100%	\$7	\$0
MN_010 Madrid North Laydown Area	haul debris to Quarry 3 Landfill	m3	0.90	HMDQSH	\$10.50	\$9	100%	\$9	\$0
MS_009 Madrid South Laydown Area	load waste into containers off-site	m3	3.60	LWCS2H	\$8.00	\$29	100%	\$29	\$0
MS_009 Madrid South Laydown Pad	Haul Debris to Quarry 3 Landfill	m3	3.60	HMDQSH	\$10.50	\$38	100%	\$38	\$0
MS_018 Madrid South Calcium Chloride Laydown	load waste into containers	m3	2.00	LWCS2H	\$8.00	\$16	100%	\$16	\$0
MS_018 Madrid South Calcium Chloride Laydown	Haul Containers to Quarry 3 Landfill	m3	2.00	HMDQSH	\$10.50	\$21	100%	\$21	\$0
MNT_003 Madrid North - TIA Road Bridge Crossing	Load Waste materials into containers for shipping	m3	92.00	LWCS2H	\$8.00	\$736	100%	\$736	\$0
MNT_003 Madrid North - TIA Road Bridge Crossing	haul container to Boston Landfill	m3	92.00	HMDQSH	\$10.50	\$966	100%	\$966	\$0
CDR_002 Cargo Dock Access Road Bridge Crossing	Load Waste materials into containers for shipping	m3	110.00	LWCS2H	\$8.00	\$880	100%	\$880	\$0
CDR_002 Cargo Dock Access Road Bridge Crossing	haul container to Boston Landfill	m3	110.00	HMDQSH	\$10.50	\$1,155	100%	\$1,155	\$0
MBR_022 Madrid-Boston All Weather Road Crossing C-MBR-7	Load Waste Materials into Containers	m3	135.00	LWCS2H	\$8.00	\$1,080	100%	\$1,080	\$0
MBR_022 Madrid-Boston All Weather Road Crossing C-MBR-7	Haul Container to Quarry 3 Landfill	m3	135.00	HMDQSH	\$10.50	\$1,418	100%	\$1,418	\$0
MBR_023 Madrid-Boston All Weather Road Crossing C-MBR-8	Load Waste Materials into Containers	m3	126.00	LWCS2H	\$8.00	\$1,008	100%	\$1,008	\$0
MBR_023 Madrid-Boston All Weather Road Crossing C-MBR-8	Haul Container to Quarry 3 Landfill	m3	126.00	HMDQSH	\$10.50	\$1,323	100%	\$1,323	\$0
MBR_024 Madrid-Boston All Weather Road Crossing C-MBR-9	Load Waste Materials into Containers	m3	180.00	LWCS2H	\$8.00	\$1,440	100%	\$1,440	\$0
MBR_024 Madrid-Boston All Weather Road Crossing C-MBR-9	Haul Container to Quarry 3 Landfill	m3	180.00	HMDQSH	\$10.50	\$1,890	100%	\$1,890	\$0
MBR_027 Madrid-Boston All Weather Road Crossing C-MBR-12	Load Waste Materials into Containers	m3	180.00	LWCS2H	\$8.00	\$1,440	100%	\$1,440	\$0
MBR_027 Madrid-Boston All Weather Road Crossing C-MBR-12	Haul Container to Quarry 3 Landfill	m3	180.00	HMDQSH	\$10.50	\$1,890	100%	\$1,890	\$0
MBR_030 Madrid-Boston All Weather Road Crossing C-MBR-15	Load Waste Materials into Containers	m3	108.00	LWCS2H	\$8.00	\$864	100%	\$864	\$0
MBR_030 Madrid-Boston All Weather Road Crossing C-MBR-15	Haul Container to Quarry 3 Landfill	m3	108.00	HMDQSH	\$10.50	\$1,134	100%	\$1,134	\$0
MBR_031 Madrid-Boston All Weather Road Crossing C-MBR-16	Load Waste Materials into Containers	m3	90.00	LWCS2H	\$8.00	\$720	100%	\$720	\$0
MBR_031 Madrid-Boston All Weather Road Crossing C-MBR-16	Haul Container to Quarry 3 Landfill	m3	90.00	HMDQSH	\$10.50	\$945	100%	\$945	\$0
MBR_034 Madrid-Boston All Weather Road Crossing C-MBR-19	Load Waste Materials into Containers	m3	108.00	LWCS2H	\$8.00	\$864	100%	\$864	\$0
MBR_034 Madrid-Boston All Weather Road Crossing C-MBR-19	Haul Container to Quarry 3 Landfill	m3	108.00	HMDQSH	\$10.50	\$1,134	100%	\$1,134	\$0
WC_008 Windy Disposal of Demolition Waste	Load debris for transport to landfill	m3	2,579.40	LWCS2L	\$5.00	\$12,897	100%	\$12,897	\$0
WC_008 Windy Disposal of Demolition Waste	haul debris to landfill	m3	2,579.40	HMDQSL	\$6.25	\$16,120	100%	\$16,120	\$0
PL_003 Pipeline Madrid South Groundwater Pipeline	Load debris for transport to landfill	m3	3,349.10	LWCS2L	\$5.00	\$16,746	100%	\$16,746	\$0
PL_003 Pipeline Madrid South Groundwater Pipeline	haul debris to landfill	m3	3,349.10	HMDQSL	\$6.25	\$20,932	100%	\$20,932	\$0
PL_002 Pipeline Madrid North Reclaim Pipeline	Load debris for transport to landfill	m3	3,134.50	LWCS2L	\$5.00	\$15,673	100%	\$15,673	\$0
PL_002 Pipeline Madrid North Reclaim Pipeline	haul debris to landfill	m3	3,134.50	HMDQSL	\$6.25	\$19,591	100%	\$19,591	\$0
CDR_004 Cargo Dock Access Road Fuel Transfer Pipeline	Load debris for transport to landfill	m3	159.50	LWCS2H	\$8.00	\$1,276	100%	\$1,276	\$0
CDR_004 Cargo Dock Access Road Fuel Transfer Pipeline	haul debris to landfill to Quarry 3 Landfill	m3	159.50	HMDQSH	\$10.50	\$1,675	100%	\$1,675	\$0
DM_005 Doris Fire Water Storage Tank	Collect debris	m2	73.14	DSL	\$1.29	\$94	100%	\$94	\$0
DM_005 Doris Fire Water Storage Tank	Load waste into containers	m3	2.31	LWCS2H	\$8.00	\$19	100%	\$19	\$0
DM_005 Doris Fire Water Storage Tank	Haul containers to Quarry 3 landfill	m3	2.31	HMDQSH	\$10.50	\$24	100%	\$24	\$0
DM_008 Doris Muster Station	Collect debris	m2	90.92	DSL	\$1.29	\$117	100%	\$117	\$0
DM_008 Doris Muster Station	Load waste into containers	m3	48.24	LWCS2L	\$5.00	\$241	100%	\$241	\$0
DM_008 Doris Muster Station	Haul containers to Quarry 3 landfill	m3	48.24	HMDQSH	\$6.25	\$301	100%	\$301	\$0
DM_022 Doris Underground Support Mechanic Shop	Collect debris	m2	456.31	DSH	\$5.14	\$2,346	100%	\$2,346	\$0
DM_022 Doris Underground Support Mechanic Shop	Load waste into containers	m3	549.44	LWCS2H	\$8.00	\$4,395	100%	\$4,395	\$0
DM_022 Doris Underground Support Mechanic Shop	Haul containers to Quarry 3 landfill	m3	549.44	HMDQSH	\$10.50	\$5,769	100%	\$5,769	\$0
DM_023 Doris Underground Wash Bay	Collect debris	m2	356.38	DSL	\$1.29	\$320	100%	\$320	\$0
DM_023 Doris Underground Wash Bay	Load waste into containers	m3	13.42	LWCS2L	\$5.00	\$67	100%	\$67	\$0
DM_023 Doris Underground Wash Bay	Haul containers to Quarry 3 landfill	m3	13.42	HMDQSL	\$6.25	\$84	100%	\$84	\$0
DM_024 Doris Warehouse/Store Shack	Collect debris	m2	720.06	DSL	\$1.29	\$925	100%	\$925	\$0
DM_024 Doris Warehouse/Store Shack	Load waste into containers	m3	350.75	LWCS2H	\$8.00	\$2,806	100%	\$2,806	\$0
DM_024 Doris Warehouse/Store Shack	Haul containers to Quarry 3 landfill	m3	350.75	HMDQSH	\$10.50	\$3,683	100%	\$3,683	\$0
DM_030 Doris-Windy All Weather Road Explosives Storage Facility	Collect debris	m2	2,805.83	DSL	\$1.29	\$3,606	100%	\$3,606	\$0
DM_030 Doris-Windy All Weather Road Explosives Storage Facility	Load waste into containers	m3	50.00	LWCS2L	\$5.00	\$250	100%	\$250	\$0
DM_030 Doris-Windy All Weather Road Explosives Storage Facility	Haul containers to Quarry 3 landfill	m3	50.00	HMDQSL	\$6.25	\$313	100%	\$313	\$0
SR_004 Secondary Road Explosives Facility	Collect debris	m2	4,762.00	DSL	\$1.29	\$6,119	100%	\$6,119	\$0
SR_004 Secondary Road Explosives Facility	Load waste into containers	m3	550.42	LWCS2L	\$5.00	\$2,752	100%	\$2,752	\$0
SR_004 Secondary Road Explosives Facility	Haul containers to Quarry 3 landfill	m3	550.42	HMDQSH	\$6.25	\$3,440	100%	\$3,440	\$0
RP_004 Reagent Pads Exploration Drilling Support Shop	Collect debris	m2	1,449.00	DSL	\$1.29	\$1,862	100%	\$1,862	\$0
RP_004 Reagent Pads Exploration Drilling Support Shop	Load waste into containers	m3	354.33	LWCS2L	\$5.00	\$1,772	100%	\$1,772	\$0
RP_004 Reagent Pads Exploration Drilling Support Shop	Haul containers to Quarry 3 landfill	m3	354.33	HMDQSH	\$6.25	\$2,215	100%	\$2,215	\$0
DM_007 Doris Helicopter Support Facilities	Collect debris	m2	180.15	DSL	\$1.29	\$232	100%	\$232	\$0
DM_007 Doris Helicopter Support Facilities	Load waste into containers	m3	213.30	LWCS2L	\$5.00	\$1,067	100%	\$1,067	\$0
DM_007 Doris Helicopter Support Facilities	Haul containers to Quarry 3 landfill	m3	213.30	HMDQSL	\$6.25	\$1,333	100%	\$1,333	\$0
DM_027 Doris Airstrip	Collect debris	m2	55.43	DSL	\$1.29	\$71	100%	\$71	\$0
DM_027 Doris Airstrip	Load waste into containers	m3	55.43	LWCS2L	\$5.00	\$277	100%	\$277	\$0
DM_027 Doris Airstrip	Haul containers to Quarry 3 landfill	m3	55.43	HMDQSL	\$6.25	\$346	100%	\$346	\$0
DM_028 Doris Airstrip Aprons	Collect debris	m2	18,764.00	DSL	\$1.29	\$24,214	100%	\$24,214	\$0
DM_028 Doris Airstrip Aprons	Load waste into containers	m3	156.75	LWCS2L	\$5.00	\$784	100%	\$784	\$0
DM_028 Doris Airstrip Aprons	Haul containers to Quarry 3 landfill	m3	156.75	HMDQSL	\$6.25	\$980	100%	\$980	\$0
DM_034 Doris Central Vent Raise	Haul Units to Quarry 3 Landfill	m3	33.20	HMDQSL	\$6.25	\$208	100%	\$208	\$0
MN_014 Madrid North Vent Raises	Haul Units to Quarry 3 Landfill	m3	33.20	HMDQSL	\$6.25	\$208	100%	\$208	\$0
MS_014 Madrid South Air Heating Facility	Haul Units to Quarry 3 Landfill	m3	33.20	HMDQSL	\$6.25	\$208	100%	\$208	\$0
MS_015 Madrid South Vent Raises	Haul Units to Quarry 3 Landfill	m3	37.20	HMDQSL	\$6.25	\$233	100%	\$233	\$0
DW_004 Doris-Windy All Weather Road Clear-span Crossings	Load waste to containers	m3	137.95	LWCS2L	\$5.00	\$690	100%	\$690	\$0
DW_004 Doris-Windy All Weather Road Clear-span Crossings	Haul containers to Quarry 3 landfill	m3	137.95	HMDQSL	\$6.25	\$862	100%	\$862	\$0
DW_005 Doris-Windy All Weather Road Arched Culvert Crossing	Load waste into containers	m3	180.00	LWCS2L	\$5.00	\$900	100%	\$900	\$0
DW_005 Doris-Windy All Weather Road Arched Culvert Crossing	Haul containers to Quarry 3 landfill	m3	180.00	HMDQSL	\$6.25	\$1,125	100%	\$1,125	\$0
RB_006 Roberts Bay Laydown Area	Collect debris	m2	19,442.00	DSL	\$1.29	\$25,084	100%	\$25,084	\$0
RB_006 Roberts Bay Laydown Area	Load waste into containers	m3	11.67	LWCS2L	\$5.00	\$58	100%	\$58	\$0
RB_006 Roberts Bay Laydown Area	Haul containers to Quarry 3 landfill	m3	11.67	HMDQSL	\$6.25	\$73	100%	\$73	\$0
DW_008 Doris-Windy All Weather Road Core Storage Area	Collect debris	m2	10,000.00	DSL	\$1.29	\$12,851	100%	\$12,851	\$0
DW_008 Doris-Windy All Weather Road Core Storage Area	Load waste into containers	m3	6.00	LWCS2H	\$8.00	\$48	100%	\$48	\$0
DW_008 Doris-Windy All Weather Road Core Storage Area	Haul containers to Quarry 3 landfill	m3	6.00	HMDQSL	\$6.25	\$38	100%	\$38	\$0
RP_001 Reagent Pads Equipment Laydown Area	Collect debris	m2	35,244.00	DSL	\$1.29	\$45,291	100%	\$45,291	\$0
RP_001 Reagent Pads Equipment Laydown Area	Load waste into containers	m3	20.00	LWCS2L	\$5.00	\$100	100%	\$100	\$0
RP_001 Reagent Pads Equipment Laydown Area	Haul containers to Quarry 3 landfill	m3	20.00	HMDQSL	\$6.25	\$125	100%	\$125	\$0
RP_002 Reagent Pads Materials Laydown Area	Collect debris	m2	25,421.00	DSL	\$1.29	\$32,668	100%	\$32,668	\$0
RP_002 Reagent Pads Materials Laydown Area	Load waste into containers	m3	20.00	LWCS2L	\$5.00	\$100	100%	\$100	\$0
RP_002 Reagent Pads Materials Laydown Area	Haul containers to Quarry 3 landfill	m3	20.00	HMDQSL	\$6.25	\$125	100%	\$125	\$0
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Load waste into containers	m3	22.33	LWCS2L	\$5.00	\$112	100%	\$112	\$0
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Haul containers to Quarry 3 landfill	m3	22.33	HMDQSL	\$6.25	\$140	100%	\$140	\$0
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	load debris into containers for hauling to landfill	m3	2,386.31	LWCS2L	\$5.00	\$11,932	100%	\$11,932	\$0
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	haul debris to Quarry 3 landfill	m3	2,386.31	HMDQSL	\$6.25	\$14,914	100%	\$14,914	\$0
MN_010 Madrid North Laydown Area	Collect debris	m2	1,473.00	DSL	\$1.29	\$1,893	100%	\$1,893	\$0
MS_009 Madrid South Laydown Pad	Collect debris	m2	5,967.00	DSL	\$1.29	\$7,668	100%	\$7,668	\$0
W_001 Waste Ship Off-Site	Hazardous Waste	m3	118.34	LWCS1H	\$125.00	\$14,792	100%	\$14,792	\$0
W_001 Waste Ship Off-Site	Hazardous Solid Waste	m3	38.45	LWCS1H	\$125.00	\$4,806	100%	\$4,806	\$0
W_002 Waste Disposal Off-Site	Hazardous Waste	m3	118.34	CSRH	\$197.49	\$23,371	100%	\$23,371	\$0
W_002 Waste Disposal Off-Site	Hazardous Solid Waste	m3	38.45	CSRH	\$197.49	\$7,603	100%	\$7,603	\$0
W_003 Waste Contaminated Materials	Hydrocarbon Contamination Survey	LS	1.00	SHCSL	\$25,000.00	\$25,000	100%	\$25,000	\$0
W_003 Waste Contaminated Materials	Metal Contamination Survey	LS	1.00	SHCSL	\$25,000.00	\$25,000	100%	\$25,000	\$0
WM_001 Waste Management Area Land Farm	Load waste into containers	m3	118.37	LWCS2L	\$5.00	\$592	100%	\$592	\$0
WM_001 Waste Management Area Land Farm	Haul containers to Quarry 3 landfill	m3	118.37	HMDQSL	\$6.25	\$740	100%	\$740	\$0
WM_002 Waste Management Area Batch Plant Pad	Collect debris	m2	740.33	DSH	\$5.14	\$3,805	100%	\$3,805	\$0
WM_002 Waste Management Area Batch Plant Pad	Load waste into containers	m3	55.88	LWCS2L	\$5.00	\$279	100%	\$279	\$0
WM_002 Waste Management Area Batch Plant Pad	Haul containers to Quarry 3 landfill	m3	55,882.15	HMDQSL	\$6.25	\$349	100%	\$349	\$0
WM_003 Waste Management Area Burn Pan	Load waste into containers	m3	92.25	LWCS2H	\$8.00	\$74	100%	\$74	\$0
WM_003 Waste Management Area Burn Pan	haul containers to Boston Landfill	each	0.24686925	HMDQSH	\$10.50	\$3	100%	\$3	\$0
WM_004 Waste Management Area Core Storage	Collect debris	m2	10,000.00	DSL	\$1.29	\$12,851	100%	\$12,851	\$0
WM_004 Waste Management Area Core Storage	Load waste into containers	m3	6.00	LWCS2H	\$8.00	\$48	100%	\$48	\$0
WM_004 Waste Management Area Core Storage	Haul containers to Quarry 3 landfill/Haul containers to Boston landfill	m3	6.00	HMDQSL	\$6.25	\$38	100%	\$38	\$0
Q3_003 Quarry 3 Land									

Building / Equip Name:		Site Buildings		Bldg / Equip #:		1				
ACTIVITY/MATERIAL	Notes	Unit	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	
Process Facilities										
RB_001 Roberts Bay Jetty	remove rock fill to 0.3 m below LLWL	ha		IN/A	\$0.00	\$0		\$0	\$0	
RB_001 Roberts Bay Jetty		m3	1,216.61	RH/L	\$10.28	\$12,507	50%	\$6,254	\$6,254	
RB_001 Roberts Bay Jetty	remove on-shore mooring points	LS	1	RMPSL	\$2,500.00	\$2,500	50%	\$1,250	\$1,250	
RB_001 Roberts Bay Jetty	remove mooring buoy	LS	1	RMBLSL	\$3,500.00	\$3,500	50%	\$1,750	\$1,750	
RB_002 Roberts Bay Laydown Area	Regrade area for positive drainage	m2	19,442.00	DSL	\$1.29	\$24,884	50%	\$12,492	\$12,492	
DW_003 Doris-Windy All Weather Road Core Storage Area	Regrade area for positive drainage	ha	10,000	DSL	\$1.29	\$12,851	50%	\$6,425	\$6,425	
RP_001 Reagent Pads Equipment Laydown Area	Regrade area for positive drainage	m2	35,244.00	DSL	\$1.29	\$45,291	50%	\$22,645	\$22,645	
RP_002 Reagent Pads Materials Laydown Area	Regrade area for positive drainage	m2	25,421.00	DSL	\$1.29	\$32,668	50%	\$16,334	\$16,334	
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Regrade area for positive drainage	m2	2,481.00	DSL	\$5.14	\$12,753	50%	\$6,376	\$6,376	
WM_001 Waste Management Area Land Farm	Regrade area for positive drainage	m2	4,384.00	DSL	\$1.29	\$5,654	50%	\$2,817	\$2,817	
WM_002 Waste Management Area Batch Plant Pad	Regrade area for positive drainage	m2	740.33	DSH	\$5.14	\$3,805	50%	\$1,903	\$1,903	
WM_003 Waste Management Area Burn Pan	Regrade area for positive drainage	m2	400.00	DSH	\$5.14	\$2,056	50%	\$1,028	\$1,028	
Q1_003 Quarry 3 Landfill	Regrade top surface for positive drainage	m3	27,061.00	DSL	\$1.29	\$34,893	50%	\$17,400	\$17,400	
Q2_004 Quarry #2 Laydown Area	Regrade top surface for positive drainage	m3	5,559.00	DSL	\$1.29	\$12,284	50%	\$6,142	\$6,142	
Offices, Repair, Lab, Warehouse		ha		IN/A	\$0.00	\$0		\$0	\$0	
MN_005 Madrid North Office Trailer	Regrade area for positive drainage	m2	70.00	DSH	\$5.14	\$360	50%	\$180	\$180	
MN_005 Nura Shop	Regrade area for positive drainage	m2	4,489.00	DSL	\$1.29	\$5,789	50%	\$2,894	\$2,894	
WC_002 Windy Accommodation Camp Buildings	Regrade area for positive drainage	m2	1,248.00	DSH	\$5.14	\$6,415	50%	\$3,208	\$3,208	
WC_002 Windy Accommodation Camp Buildings	Fill Low-Lying Areas with soil to prevent ponding	m3	150.00	SB4H	\$14.88	\$2,232	50%	\$1,116	\$1,116	
Developed Areas										
RB_011 Roberts Bay Developed Areas	Regrade area for positive drainage	m2	108,499.00	DSL	\$1.29	\$139,428	50%	\$69,714	\$69,714	
MN_016 Madrid North Developed Areas	Regrade area for positive drainage, includes: MN_001, MN_002	m2	9,420.00	DSL	\$1.29	\$12,105	50%	\$6,053	\$6,053	
MS_021 Madrid South Developed Area (for Regrading)	Regrade area for positive drainage	m2	108,340.00	DSL	\$1.29	\$139,224	50%	\$69,612	\$69,612	
DM_002 Doris Developed Areas	Regrade area for positive drainage, includes: DM_010, DM_025	m2	46000	DSL	\$1.29	\$59513.00	50%	\$29556.50	\$29556.50	
Water and Wastewater Treatment Facilities		ha		IN/A	\$0.00	\$0		\$0	\$0	
UG Heating Plant		ha		IN/A	\$0.00	\$0		\$0	\$0	
Power										
DM_002 Doris Backup Power Generator	Regrade area	m2	259.32	DSH	\$5.14	\$1,333	50%	\$666	\$666	
Emulsion Plant		ha		IN/A	\$0.00	\$0		\$0	\$0	
Warehouse, Shops and Other		ha		IN/A	\$0.00	\$0		\$0	\$0	
DW_010 Doris-Windy All Weather Road Explosives Storage Facility	Regrade area for positive drainage	m2	2,805.83	DSL	\$5.14	\$14,423	50%	\$7,211	\$7,211	
SR_004 Secondary Road Explosives Facility	Regrade area for positive drainage	m2	4,782.00	DSL	\$1.29	\$6,119	50%	\$3,060	\$3,060	
DM_007 Doris Helicopter Support Facilities	Dismantle helicopter pads and walkway	m3	15.01	COBSL	\$275.00	\$4,128	50%	\$2,064	\$2,064	
DM_007 Doris Airstrip	Down airstrip and airstrip expansion for positive drainage	m2	10,394.00	DSL	\$1.29	\$13,319	50%	\$6,659	\$6,659	
DM_008 Doris Airstrip Aprons	Crown for positive drainage	m2	16,764.00	DSL	\$1.29	\$21,543	50%	\$10,771	\$10,771	
WC_011 Windy Developed Areas (for Regrading)	Stake Out Low-Lying Areas in Summer to Place Fill	Ha	20.00	ENGH	\$297.59	\$5,952	50%	\$2,976	\$2,976	
Vent Raises										
DM_030 Doris Primary Vent Raise	Regrade pads for positive drainage	m2	4150	DSL	\$1.29	\$5,333	50%	\$2,667	\$2,667	
DM_030 Doris Primary Vent Raise	Backfill area to prevent permanent ponding	m3	4150	SB4H	\$14.88	\$61,751	50%	\$30,875	\$30,875	
Tank Farms		ha		IN/A	\$0.00	\$0		\$0	\$0	
PLA_001 Patch Lake Tank Farm	Stake Out Low-Lying Areas in Summer to Place Fill	Ha	20.00	ENGH	\$297.59	\$5,952	50%	\$2,976	\$2,976	
PLA_001 Patch Lake Tank Farm	Regrade Spoil Piles to Ensure Positive Drainage (with Excavator)	m2	200.00	DSH	\$5.14	\$1,028	50%	\$514	\$514	
PLA_001 Patch Lake Tank Farm	Regrade Spoil Piles to Ensure Positive Drainage (with Excavator)	m3	3,630.00	DSH	\$5.14	\$18,669	50%	\$9,330	\$9,330	
Place rock cover										
WC_003 Windy Tank Farm	Place Rockfill Buttress on Slope Near Tank Farm	m3	600.00	RB3L	\$16.30	\$9,780	50%	\$4,890	\$4,890	
PLA_001 Patch Lake Tank Farm	Cover Area with 1m Thermal Rock Cover	m3	3,000.00	RB3H	\$24.08	\$72,234	50%	\$36,117	\$36,117	
Vegetate		ha		IN/A	\$0.00	\$0		\$0	\$0	
WC_001 Windy Tank Farm	Revegetate Area	m2	1,400.00	VTMH	\$0.81	\$1,136	50%	\$568	\$568	
WC_002 Windy Accommodation Camp Buildings	Revegetate Area	m2	1,248.00	VTMH	\$0.81	\$1,013	50%	\$506	\$506	
WC_012 Windy Reclaim Drill Holes	Revegetate Area	m2	100.00	VTMH	\$0.81	\$81	50%	\$41	\$41	
WC_011 Windy Developed Areas (for Regrading)	Apply nutrients for soil bioremediation	m3	113.50	VNUTL	\$280.00	\$31,790	50%	\$15,895	\$15,895	
Other										
PUNCTURE LINED SUMPS										
Puncture liner and place soil cover		m3		IN/A	\$0.00	\$0		\$0	\$0	
RECLAIM ROADS										
Remove culverts		each		IN/A	\$0.00	\$0		\$0	\$0	
DM_033 Doris Connector Vent Raise	Remove culvert	each	1.00	RCULSL	\$1,500.00	\$1,500	50%	\$750	\$750	
Q2_002 Quarry 2 Overburden Pile	Remove culvert	m	15.00	RCULMSH	\$100.00	\$1,500	50%	\$750	\$750	
DM_034 Doris Central Vent Raise	Remove culvert	m	15.00	RCULMSH	\$100.00	\$1,500	50%	\$750	\$750	
DW_005 Doris-Windy All Weather Road Arched Culvert Crossing	Remove arched culvert	each	1.00	RCULCRSL	\$115,000.00	\$115,000	50%	\$57,500	\$57,500	
MN_025 Madrid North Culverts	Remove culvert and create swale	m	48.00	RCULMSH	\$100.00	\$4,800	50%	\$2,400	\$2,400	
RB_005 Roberts Bay 10ML Fuel Storage Facility Access Road	Remove culvert and create swale	m	30.00	RCULMSH	\$100.00	\$3,000	50%	\$1,500	\$1,500	
CR_002 Cargo Dock Access Road Culverts	Remove culvert and create swale	m	30.00	RCULMSH	\$100.00	\$3,000	50%	\$1,500	\$1,500	
MNT_002 Madrid North - TIA Road Bridge Crossing	Remove culvert and create swale	m	60.00	RCULMSH	\$100.00	\$6,000	50%	\$3,000	\$3,000	
MSR_002 Madrid South All Weather Road Culvert Crossings	Remove culvert and create swale	m	2.00	RCULMSH	\$100.00	\$200	50%	\$100	\$100	
MBR_025 Madrid-Boston All Weather Road Crossing C-MBR-10	Remove culvert and create swale	m	34.00	RCULMSH	\$100.00	\$3,400	50%	\$1,700	\$1,700	
MBR_026 Madrid-Boston All Weather Road Crossing C-MBR-11	Remove culvert and create swale	m	34.00	RCULMSH	\$100.00	\$3,400	50%	\$1,700	\$1,700	
MBR_028 Madrid-Boston All Weather Road Crossing C-MBR-13	Remove culvert and create swale	m	50.00	RCULMSH	\$100.00	\$5,000	50%	\$2,500	\$2,500	
MBR_029 Madrid-Boston All Weather Road Crossing C-MBR-14	Remove culvert and create swale	m	34.00	RCULMSH	\$100.00	\$3,400	50%	\$1,700	\$1,700	
MBR_032 Madrid-Boston All Weather Road Crossing C-MBR-17	Remove culvert and create swale	m	50.00	RCULMSH	\$100.00	\$5,000	50%	\$2,500	\$2,500	
MBR_033 Madrid-Boston All Weather Road Crossing C-MBR-18	Remove culvert and create swale	m	34.00	RCULMSH	\$100.00	\$3,400	50%	\$1,700	\$1,700	
MBR_035 Madrid-Boston All Weather Road Crossing C-MBR-20	Remove culvert and create swale	m	40.00	RCULMSH	\$100.00	\$4,000	50%	\$2,000	\$2,000	
MS_017 Madrid North Vent Raise Access Road	Remove culvert and create swale	m	10.00	RCULMSH	\$100.00	\$1,000	50%	\$500	\$500	
SR_001 Secondary Road	Remove pipe culvert east of the bridge	m	18.8	RCULMSH	\$100.00	\$1,880	50%	\$940	\$940	
MOF_003 Marine Outfall Culvert Crossing	Remove culvert and create swale	m	19.00	RCULMSH	\$100.00	\$1,900	50%	\$950	\$950	
Remove bridges		each		IN/A	\$0.00	\$0		\$0	\$0	
DW_004 Doris-Windy All Weather Road Clear-span Crossings	Remove bridge (timber deck and steel girders)	each	3.00	RCOBSL	\$65,000.00	\$195,000	50%	\$97,500	\$97,500	
SR_001 Secondary Road	Remove Doris Creek bridge	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
SR_003 Secondary Road Tail Lake Access Road	Remove Barge Access Bridge	each	0.00	RCBASLS	\$5,000.00	\$0	50%	\$0	\$0	
MNT_003 Madrid North - TIA Road Bridge Crossing	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MNT_003 Madrid North - TIA Road Bridge Crossing	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MNT_003 Madrid North - TIA Road Bridge Crossing	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MNT_003 Madrid North - TIA Road Bridge Crossing	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
CDR_002 Cargo Dock Access Road Bridge Crossing	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
CDR_002 Cargo Dock Access Road Bridge Crossing	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
CDR_002 Cargo Dock Access Road Bridge Crossing	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
CDR_002 Cargo Dock Access Road Bridge Crossing	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_022 Madrid-Boston All Weather Road Crossing C-MBR-7	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_022 Madrid-Boston All Weather Road Crossing C-MBR-7	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_022 Madrid-Boston All Weather Road Crossing C-MBR-7	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_022 Madrid-Boston All Weather Road Crossing C-MBR-7	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_023 Madrid-Boston All Weather Road Crossing C-MBR-8	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_023 Madrid-Boston All Weather Road Crossing C-MBR-8	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_023 Madrid-Boston All Weather Road Crossing C-MBR-8	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_023 Madrid-Boston All Weather Road Crossing C-MBR-8	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_024 Madrid-Boston All Weather Road Crossing C-MBR-9	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_024 Madrid-Boston All Weather Road Crossing C-MBR-9	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_024 Madrid-Boston All Weather Road Crossing C-MBR-9	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_024 Madrid-Boston All Weather Road Crossing C-MBR-9	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_027 Madrid-Boston All Weather Road Crossing C-MBR-12	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_027 Madrid-Boston All Weather Road Crossing C-MBR-12	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_027 Madrid-Boston All Weather Road Crossing C-MBR-12	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_027 Madrid-Boston All Weather Road Crossing C-MBR-12	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_030 Madrid-Boston All Weather Road Crossing C-MBR-15	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_030 Madrid-Boston All Weather Road Crossing C-MBR-15	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_030 Madrid-Boston All Weather Road Crossing C-MBR-15	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_030 Madrid-Boston All Weather Road Crossing C-MBR-15	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_031 Madrid-Boston All Weather Road Crossing C-MBR-16	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_031 Madrid-Boston All Weather Road Crossing C-MBR-16	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_031 Madrid-Boston All Weather Road Crossing C-MBR-16	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_031 Madrid-Boston All Weather Road Crossing C-MBR-16	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
MBR_034 Madrid-Boston All Weather Road Crossing C-MBR-19	Remove bridge (timber deck and steel girders)	each	1.00	RCOBSL	\$65,000.00	\$65,000	50%	\$32,500	\$32,500	
MBR_034 Madrid-Boston All Weather Road Crossing C-MBR-19	Cut Piles to Ground Surface	each	8.00	RCBPFLH	\$200.00	\$1,600	50%	\$800	\$800	
MBR_034 Madrid-Boston All Weather Road Crossing C-MBR-19	Remove traffic barriers (boulders)	each	15.00	RCMTFCL	\$250.00	\$3,750	50%	\$1,875	\$1,875	
MBR_034 Madrid-Boston All Weather Road Crossing C-MBR-19	reslope abutments	m2	225.00	DSH	\$5.14	\$1,157	50%	\$578	\$578	
Scarily and install water breaks		ha		IN/A	\$0.00	\$0		\$0	\$0	
Scarily laydown areas		ha		IN/A	\$0.00	\$0		\$0	\$0	
Scarily Roads		m2		IN/A	\$0.00	\$0		\$0	\$0	
Crown Roads		m2								
DM_033 Doris Connector Vent Raise	Crown access road for positive drainage	m2	2,090.00	DSH	\$5.14	\$10,743	50%	\$5,372	\$5,372	
TIA_004 TIA Invern Dyle	Crown access road for positive drainage	m2	1,520.00	DSH	\$5.14	\$7,813	50%	\$3,907	\$3,907	
RB_001 Roberts Bay Jetty	Crown jetty for positive drainage	m2	10,45.2	DSH	\$5.14	\$5,373	50%	\$2,686	\$2,686	
RB_004 Roberts Bay 10ML Fuel Storage Facility Access Road	Crown road for positive drainage	m2	2,000.00	DSL	\$5.14	\$10,				

Capital Expenditures and Short Term Water Treatment Identified in 'Instructions' worksheet		Remove / Level Berms, Water Management , Water Treatment				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
BREACH WATER PONDS & CONTAINMENT BERMS						
Remove/Level Berms						
DM_020 Doris Tank Farm	Level Containment Berm	m3	90.00	SC1H	\$12.58	\$1,132
DM_020 Doris Tank Farm	Excavate and stockpile liner protection cover	m3	3,360.00	SC1L	\$9.20	\$30,906
RB_002 Roberts Bay 20 ML Tank Farm	Breach containment berm	m3	153.99	SC1H	\$12.58	\$1,937
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Breach containment berm	m3	77.76	SC1H	\$12.58	\$978
RB_003 Roberts Bay Quarry 1 - 5 ML Tank Facility	Excavate and stockpile liner protection cover	m3	2,979.90	SC1H	\$12.58	\$37,487
RB_002 Roberts Bay 20 ML Tank Farm	Excavate and stockpile liner protection cover	m3	7,923.60	SC1L	\$9.20	\$72,884
RB_013 Roberts Bay 10ML Fuel Storage Facility	Excavate and Stockpile liner protection cover	m3	10,315.20	SC1L	\$9.20	\$94,883
RB_013 Roberts Bay 10ML Fuel Storage Facility	Breach containment berm	m3	45.00	SC1H	\$12.58	\$566
MN_011 Madrid North Fuel Storage Facility	Excavate and Stockpile liner protection cover	m3	2,436.00	SC1L	\$9.20	\$22,407
MN_011 Madrid North Fuel Storage Facility	Breach containment berm	m3	90.00	SC1H	\$12.58	\$1,132
MN_017 Madrid South Fuel Storage Facility	Excavate and stockpile liner protection cover	m3	450.00	SC1L	\$9.20	\$4,139
MN_017 Madrid South Fuel Storage Facility	Breach containment berm	m3	90.00	SC1H	\$12.58	\$1,132
MN_013 Madrid North Water Storage Tank with Containment	Excavate and Stockpile liner protection cover	m3	259.20	SC1H	\$12.58	\$3,261
MS_020 Madrid South Water Storage Tank with Containment	Excavate and Stockpile liner protection cover	m3	259.20	SC1H	\$12.58	\$3,261
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Excavate and stockpile liner protection cover	m3	893.16	SC1H	\$12.58	\$11,236
WM_001 Waste Management Area Land Farm	Breach containment berm	m3	90.00	SC1H	\$12.58	\$1,132
WM_001 Waste Management Area Land Farm	Excavate and stockpile liner protection cover	m3	2,591.00	SC1H	\$12.58	\$32,595
DM_013 Doris Run-off Diversion Berm	Original ground in several locations (4 locations) to restore natural flow path	m3	453.60	SC1H	\$12.58	\$5,706
DM_014 Doris Sedimentation Berm	Breach the berm to restore a free drainage path	m3	28.80	SC1H	\$12.58	\$362
DM_015 Doris Sedimentation/Pollution Control Pond	Breach contact water containment berm	m3	3,129.84	SC1L	\$9.20	\$28,789
MN_003 Madrid North Contact Water Pond Berm	breach contact water containment berm	m3	100.00	SC1H	\$12.58	\$1,258
DM_035 Doris Pad U Sedimentation / Pollution Control Pond	breach contact water containment berm	m3	1,008.00	SC1H	\$12.58	\$12,681
MS_003 Madrid South Primary Contact Water Pond Berm	breach contact water containment berm	m3	1,008.00	SC1H	\$12.58	\$12,681
MS_012 Madrid South Heul Road / Secondary Contact Water	breach contact water containment berm	m3	1,008.00	SC1H	\$12.58	\$12,681
MN_022 Madrid North Diversion Berm	breach berm to original ground (one location) to restore natural flow paths	m3	100.00	SC1H	\$12.58	\$1,258
RP_003 Reagent Pads Ammonium Nitrate Storage Area	Level containment berm	m3	31.70	SC1H	\$12.58	\$399
BREACH DYKE EMBANKMENT						
Remove fill		m3		#N/A	\$0.00	\$0
Contour water intake area		m3		#N/A	\$0.00	\$0
STABILIZE SEDIMENT PONDS/WATER MANAGEMENT PONDS						
Place soil cover		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Vegetate spread material		ha		#N/A	\$0.00	\$0
Rip rap in channel base		each		#N/A	\$0.00	\$0
DM_014 Doris Sedimentation Berm	place erosion control (rip rap)	m3	8.64	RR2L	\$19.21	\$166
DM_015 Doris Sedimentation/Pollution Control Pond	place rip rap on sed beach	m3	298.08	RR2L	\$19.21	\$5,726
Backfill						
DM_015 Doris Sedimentation/Pollution Control Pond	sedimentation pond backfill	m3	1,293.00	RC4H	\$25.97	\$33,582
MN_018 Sumps	backfill sump excavation	m3	50.89	RC4H	\$25.97	\$1,322
MN_023 Madrid North Sump	backfill sump excavation	m3	67.86	RC4H	\$25.97	\$1,762
REDIRECT RUNOFF/CONSTRUCT DIVERSION DITCHES						
Excavate ditches -soil		m3		#N/A	\$0.00	\$0
Excavate ditches -rock		m3		#N/A	\$0.00	\$0
Stabilize side slopes		m3		#N/A	\$0.00	\$0
Rip rap in channel base		m3		#N/A	\$0.00	\$0
BREACH DITCHES						
Excavate breaches		m3		#N/A	\$0.00	\$0
Backfill/recontour		m3		#N/A	\$0.00	\$0
Install flow dissipation		m3		#N/A	\$0.00	\$0
Vegetate remainder of ditch		m2		#N/A	\$0.00	\$0
DECOMMISSION FRESH WATER SUPPLY						
Breach embankment		m		#N/A	\$0.00	\$0
Remove pump		LS		#N/A	\$0.00	\$0
Remove pipeline		m		#N/A	\$0.00	\$0
WATER CONTROL IN RECLAMATION QUARRY						
Install pumping system		LS		#N/A	\$0.00	\$0
Remove pumping system		LS		#N/A	\$0.00	\$0
REMOVE PIPELINES						
Remove pipes		m		#N/A	\$0.00	\$0
PL_001 Pipeline Roberts Bay Discharge System	Cut pipelines into manageable pieces	m	7,775.30	PLRPLL	\$12.75	\$99,135
MOF_001 Pipeline Roberts Bay Discharge System	Remove rock fill to 0.3 m below LLWL	m3	776.00	SB2H	\$9.87	\$7,663
DM_006 Doris Fresh Water Pipeline	Cut pipelines into manageable pieces	m	830.00	PSRL	\$1.35	\$1,123
DM_016 Doris Sewage Discharge Line	Cut pipelines into manageable pieces	m	1,462.00	PSRL	\$1.35	\$1,978
DM_016 Doris Sewage Discharge Line	Flush pipeline prior to decommissioning	each	1.00	CSEWSH	\$900.00	\$900
SR_002 Secondary Road Tailings and Reclaim Water Pipelines	Cut pipelines into manageable pieces	m	8,069.50	PLRPLL	\$12.75	\$102,886
PL_003 Pipeline Madrid South Groundwater Pipeline	Flush and Cut Pipelines Into Manageable Pieces	m	14,309.00	PLRPLL	\$12.75	\$182,449
PL_002 Pipeline Madrid North Reclaim Pipeline	Flush and Cut Pipelines Into Manageable Pieces	m	13,392.00	PLRPLL	\$12.75	\$170,748
CDR_004 Cargo Dock Access Road Fuel Transfer Pipeline	Flush and Cut Pipelines Into Manageable Pieces	m	3,250.00	PLRPLL	\$12.75	\$41,438
Concrete plug deep pipes		m3		#N/A	\$0.00	\$0
Other		m3		#N/A	\$0.00	\$0
PL_001 Pipeline Roberts Bay Discharge System	Conduct survey of submerged section of pipeline	each	1.00	CSSPLL	\$10,000.00	\$10,000
GROUNDWATER COLLECTION SYSTEM						
Excavate/install sumps		m3		#N/A	\$0.00	\$0
DM_018 Sumps	decommission sumps	each	3.00	ERTSL	\$1,250.00	\$3,750
DM_018 Sumps	remove pumps, pipes, cables, culverts	each	3.00	ERTSH	\$2,500.00	\$7,500
MN_023 Madrid North Sump	decommission sumps	each	4.00	ERTSL	\$1,250.00	\$5,000
MN_023 Madrid North Sump	remove pumps, pipes, cables, culverts	each	4.00	ERTSH	\$2,500.00	\$10,000
Install pumping wells		m3		#N/A	\$0.00	\$0
Install pumps/pipeline/power supply		LS		#N/A	\$0.00	\$0
CONSTRUCT CONTAMINATED WATER STORAGE POND						
Excavate pond		m3		#N/A	\$0.00	\$0
Doze & spread excavated material		m3		#N/A	\$0.00	\$0
Q2_003 Quarry 2 Treated Sewage Discharge Area	Fill in low-lying areas (assumed sourced within 0.5km)	m3	552.00	RC4H	\$25.97	\$14,336
WC_012 Windy Reclaim Drill Holes	Fill in low-lying areas (assumed sourced within 0.5km)	m3	100.00	RC4H	\$25.97	\$2,597
Vegetate spread material		ha		#N/A	\$0.00	\$0
Bedding layer		m3		#N/A	\$0.00	\$0
Supply geomembrane		m2		#N/A	\$0.00	\$0
Install geomembrane		m2		#N/A	\$0.00	\$0
Erosion protection layer		m3		#N/A	\$0.00	\$0
Q2_003 Quarry 2 Treated Sewage Discharge Area	erosion protection: Supply and place coconut matting	m2	230.00	GSGL	\$7.78	\$1,789
PLA_001 Patch Lake Tank Farm	Install Erosion Protection Measures (Coconut Matting)	m2	381.50	GSGL	\$7.78	\$2,967
WC_002 Windy Accommodation Camp Buildings	Install Erosion Protection Measures (Coconut Matting)	m2	500.00	GSGL	\$7.78	\$3,889
WC_012 Windy Reclaim Drill Holes	Install Erosion Protection Measures (Coconut Matting)	m2	100.00	GSGL	\$7.78	\$778
CONSTRUCT PASSIVE TREATMENT SYSTEM (e.g. Constructed Wetland)						
Construct access roads		km		#N/A	\$0.00	\$0
Install HDPE piping system from collection pond		m		#N/A	\$0.00	\$0
Inter-cell flow structures		allow		#N/A	\$0.00	\$0
Install liners		m2		#N/A	\$0.00	\$0
Install growth media		m3		#N/A	\$0.00	\$0
Wetland vegetation		ha		#N/A	\$0.00	\$0
CONSTRUCT WATER TREATMENT PLANT						
TIA_008 Treat (If Required) and Discharge Water Via Roberts Bay Marine Discharge System	Build treatment plant - Not Required	LS	0	TPSH	\$20,290,500.00	\$0
Build sludge containment facility		LS		#N/A	\$0.00	\$0
SHORT TERM WATER TREATMENT*						
Annual water treatment cost, from "Water Treatment"						\$0
TIA_008 Treat (If Required) and Discharge Water Via Roberts Bay Marine Discharge System	MDMER Compliance for 2 Years			PCSMPLL	\$75,000.00	\$0
Water Treatment			0			\$0
MN_026 Naartok Crown Pillar Recovery Trench	Treat contained water and discharge	m3	0	TPOL	\$0.47	\$0
TIA_008 Treat (If Required) and Discharge Water Via Roberts Bay Marine Discharge System	Treat contained water and discharge	m3	1225000	TPOL	\$0.47	\$579,970
WM_001 Waste Management Area Land Farm	Treat contained water and discharge	LS	1.00	TCWDSL	\$10,000.00	\$10,000
Total						\$1,700,329

*Note: include water treatment cost from "Water Treatment" worksheet if treatment is considered short term and is not included in a particular component worksheet.

Water Treatment		Remove / Level Berms, Water Management , Water Treatment				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
ADDITION OF REAGENTS						
H2O2		kg		#N/A	\$0.00	\$0
lime		kg		#N/A	\$0.00	\$0
ferric sulphate		kg		#N/A	\$0.00	\$0
ferrous sulphate		kg		#N/A	\$0.00	\$0
flocculants		kg		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
LABOUR AND SUPPLIES						
Annual fuel		litres		#N/A	\$0.00	\$0
Annual power		kW-h		#N/A	\$0.00	\$0
Electrician/mechanic to maintain treatment plant		allow		#N/A	\$0.00	\$0
Equipment maintenance and parts		allow		#N/A	\$0.00	\$0
Misc. supplies, hoses, tools		allow		#N/A	\$0.00	\$0
Communications		allow		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
WATER SAMPLING AND ANALYSES						
Sampling equipment		allow		#N/A	\$0.00	\$0
Analyses		allow		#N/A	\$0.00	\$0
Shipping to laboratory		allow		#N/A	\$0.00	\$0
Reporting		allow		#N/A	\$0.00	\$0
Other				#N/A	\$0.00	\$0
SITE ACCESS						
Road maintenance (incl. snow removal)		allow		#N/A	\$0.00	\$0
Winter road tariff		allow		#N/A	\$0.00	\$0
Truck rental		allow		#N/A	\$0.00	\$0
Air support		allow		#N/A	\$0.00	\$0
Annual water treatment costs						\$0
Number of years of water treatment		years				
Total						\$0

Note: Short term water treatment is intended to be included in "Water Management", whereas long term, or post-closure, water treatment is included in "Post-Closure Monitoring and Maintenance"

Interim Care and Maintenance		Care and Maintenance and Includes Water Treatment				
ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
INTERIM CARE & MAINTENANCE						
Tailings Pond Water Management		m3	2000000	TPOL	\$0.47	\$946,890
MN_026 Naartok Crown Pillar Recovery Tre Haul Water from Naartok Crown Pillar Recovery Trench		m3	9499.85	HTLSL	\$40.00	\$379,994
extra personnel		Hr	0	#N/A	\$0.00	\$0
-on-site caretaker		Hr	3640	LAB-USL	\$41.93	\$152,639
extra personnel		Hr	0	#N/A	\$0.00	\$0
-Supervisor		Hr	3640	SUPERH	\$124.23	\$452,204
-electrician		Hr	3640	ELECL	\$100.10	\$364,363
-mechanic		Hr	3640	JOURNEYH	\$97.11	\$353,482
-operator		Hr	7280	OPERL	\$55.46	\$403,754
annual fuel		litre	73000	FCDH	\$1.88	\$137,258
misc. supplies		allow		#N/A	\$0.00	\$0
pick-up truck		Month	12	PTRUCKL	\$1,500.00	\$18,000
small dozer		Month	12	DOZERSL	\$6,655.28	\$79,863
small excavator		Month	12	EXC-SL	\$6,168.31	\$74,020
snow machine		Month	12	LOAD-SL	\$5,681.34	\$68,176
communications		allow	1	ALCML	\$5,000.00	\$5,000
SNP/AEMP water sampling & reporting		each	1	SMPLL	\$75,000.00	\$75,000
geotechnical assessment		each	1	GASSL	\$45,000.00	\$45,000
interim water treatment		each		#N/A	\$0.00	\$0
other		each		#N/A	\$0.00	\$0
					Annual Interim C&M Cost	\$3,555,644
Number of years of ICM		years	2	Total		\$7,111,287

Post-Closure Monitoring & Maintenance:

ACTIVITY/MATERIAL	Notes	Units	Quantit	Cost Code	Unit Cost	Cost	
			y				
MONITORING & INSPECTIONS							
Annual geotechnical inspection	Annual for first 3 years, then year 7 and 10	each	5	PCGASSL	\$45,000.00	\$225,000	
Survey inspection		each		#N/A	\$0.00	\$0	
Regulatory costs*	Yearly for 10 Years	each	10	PCRGLL	\$25,000.00	\$250,000	
Site water monitoring (AEMP and SNP)		each		#N/A	\$0.00	\$0	
- Type A Water Licence 2AM-DOH1323 annual seep sampling first 5 years, then year 7 and 10		each	7	PCSMPLL	\$75,000.00	\$525,000	
- Active closure and flooding		each		#N/A	\$0.00	\$0	
- Post pit flooding		each		#N/A	\$0.00	\$0	
Air Quality Monitoring Program (AQMP)		each		#N/A	\$0.00	\$0	
Wildlife Effects Monitoring Program (WEMP)		each		#N/A	\$0.00	\$0	
Vegetation Monitoring		each		#N/A	\$0.00	\$0	
Other				#N/A	\$0.00	\$0	
COVER MAINTENANCE							
Cover Monitoring	Every 2 years for a 10 year period	each	5	PCCVRL	\$45,000.00	\$225,000	
Repair erosion - infill gullies		allow		#N/A	\$0.00	\$0	
Repair erosion - upgrade diversion ditches		allow		#N/A	\$0.00	\$0	
Remove problem vegetation		allow		#N/A	\$0.00	\$0	
Repair animal damage		allow		#N/A	\$0.00	\$0	
Repair/upgrade access controls		allow		#N/A	\$0.00	\$0	
Other				#N/A	\$0.00	\$0	
SPILLWAY MAINTENANCE							
Repair erosion		m3		#N/A	\$0.00	\$0	
Clear spillway		each		#N/A	\$0.00	\$0	
CWTS MAINTENANCE							
Maintain flow, restore vegetation		allow		#N/A	\$0.00	\$0	
POST-CLOSURE WATER TREATMENT**							
Annual water treatment cost, from "Water Treatment"						\$0	
Subtotal, Annual post-closure costs							\$122,500
Discount rate for calculation of net present value of post-closure cost, %				0.00%			
Number of years of post-closure activity				10	years		
Present Value of payment stream						\$1,225,000	

*Regulatory costs - annual reporting, management plans, progress reports etc.

Include water treatment cost from "Water Treatment" worksheet if treatment is considered long term, such as ARD/ML.

Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
MOBILIZE HEAVY EQUIPMENT						
Helicopter		each	1			
Dozers	CAT D8	each	3	LEQMBL	16000	\$48,000
Excavators	CAT 330	each	1	LEQMBL	16000	\$16,000
Loader	CAT 980	each	3	LEQMBL	16000	\$48,000
Motor grader	CAT 14H	each	2	LEQMBL	16000	\$32,000
Skidder	CAT 242	each	2	LEQMBL	16000	\$32,000
Truck	CAT 720	each	3	LTRKMBL	8000	\$24,000
Tractor Trailer		each	4	LTRKMBL	8000	\$32,000
Flatbed truck	5 tonne	each	4	LTRKMBL	8000	\$32,000
Drill		each	6	LEQMBL	16000	\$96,000
Drum crusher		each	1	LEQMBL	16000	\$16,000
Crane		each	2	CRNMBL	20000	\$40,000
Light duty vehicles	F150	each	2	LTRKMBL	8000	\$16,000
Highway Trailers		each	41	HTRMBL	10000	\$410,000
Rock Trucks		each	2	LTRKMBL	8000	\$16,000
End Dump		each	10	LTRKMBL	8000	\$80,000
Demolition shears		each	3	LTRKMBL	8000	\$24,000
Aggregate Crushing and Screening Plant		each	1	LTRKMBL	8000	\$8,000
Dozers - Load, Unload, Barge on either side	CAT D8	each	3	LEQMBLL	4000	\$12,000
Excavators - Load, Unload, Barge on either side	CAT 330	each	1	LEQMBLL	4000	\$4,000
Loader - Load, Unload, Barge on either side	CAT 980	each	3	LEQMBLL	4000	\$12,000
Motor grader - Load, Unload, Barge on either side	CAT 14H	each	2	LEQMBLL	4000	\$8,000
Skidder - Load, Unload, Barge on either side	CAT 242	each	2	LEQMBLL	4000	\$8,000
Truck - Load, Unload, Barge on either side	CAT 720	each	3	LTRKMBLL	2000	\$6,000
Tractor Trailer - Load, Unload, Barge on either side		each	4	LTRKMBLL	2000	\$8,000
Flatbed truck - Load, Unload, Barge on either side	5 tonne	each	4	LTRKMBLL	2000	\$8,000
Drill - Load, Unload, Barge on either side		each	6	LEQMBLL	4000	\$24,000
Drum crusher - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Crane - Load, Unload, Barge on either side		each	2	CRNMBLL	10000	\$20,000
Light duty vehicles - Load, Unload, Barge on either side	F150	each	2	LTRKMBLL	2000	\$4,000
Highway Trailers - Load, Unload, Barge on either side		each	41	HTRMBLL	4000	\$164,000
Rock Trucks - Load, Unload, Barge on either side		each	2	LTRKMBLL	2000	\$4,000
End Dump - Load, Unload, Barge on either side		each	10	LTRKMBLL	2000	\$20,000
Demolition shears - Load, Unload, Barge on either side		each	3	LTRKMBLL	2000	\$6,000
Aggregate Crushing and Screening Plant - Load, Unload, Barge on either side		each	1	LTRKMBLL	2000	\$2,000
Compactor		each		#N/A	0	\$0
MOBILIZE MISC. EQUIPMENT						
Equipment	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	15000	\$420,000
Welding Equipment		each	2	MDEQMBL	6500	\$13,000
Power washer		each	1	LEQMBL	16000	\$16,000
Equipment - Load, Unload, Barge on either side	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	2500	\$70,000
Welding Equipment - Load, Unload, Barge on either side		each	2	MDEQMBLL	8500	\$17,000
Power washer - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Truck tires		allow		#N/A	0	\$0
Other				#N/A	0	\$0
MOBILIZE CAMP						
Refurbish Existing Camp		allow	1	MCRH	125000	\$125,000
Reclamation activities		allow		#N/A	0	\$0
Long term reclamation activities (e.g. pump flooding)		allow		#N/A	0	\$0
MOBILIZE WORKERS						
Reclamation activities - transport		each	668.00	FLTRVL	1250	\$835,000
Reclamation activities - travel time		manhours		#N/A	0	\$0
Long term reclamation activities (e.g. pump flooding) - transport		each		#N/A	0	\$0
Long term reclamation activities (e.g. pump flooding) - travel time		each		#N/A	0	\$0
Monitoring Airfare		each		#N/A	0	\$0
WORKER ACCOMODATIONS						
Reclamation activities		manmonths	623.00	WACCOML	6000	\$3,738,000
Long term reclamation activities (e.g. pump flooding)		manmonths		#N/A	0	\$0
MOBILIZE FUEL						
Fuel freight - reclamation activities		litre		#N/A	0	\$0
Fuel freight - long term reclamation activities		litre		#N/A	0	\$0
Fuel freight accommodations		litre		#N/A	0	\$0
WINTER ROAD						
Construction and operation		km		#N/A	0	\$0
Limited winter use		km		#N/A	0	\$0
Winter road tariff		km		#N/A	0	\$0

Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
DEMOBILIZE HEAVY EQUIPMENT						
Helicopter		each	1			\$0
Dozers	CAT D8	each	3	LEQMBL	16000	\$48,000
Excavators	CAT 330	each	1	LEQMBL	16000	\$16,000
Loader	CAT 980	each	3	LEQMBL	16000	\$48,000
Motor grader	CAT 14H	each	2	LEQMBL	16000	\$32,000
Skidder	CAT 242	each	2	LEQMBL	16000	\$32,000
Truck	CAT 720	each	3	LTRKMBL	8000	\$24,000
Tractor Trailer		each	4	LTRKMBL	8000	\$32,000
Flatbed truck	5 tonne	each	4	LTRKMBL	8000	\$32,000
Drill		each	6	LEQMBL	16000	\$96,000
Drum crusher		each	1	LEQMBL	16000	\$16,000
Crane		each	2	CRNMBL	20000	\$40,000
Light duty vehicles	F150	each	2	LTRKMBL	8000	\$16,000
Highway Trailers		each	41	HTRMBL	10000	\$410,000
Rock Trucks		each	2	LTRKMBL	8000	\$16,000
End Dump		each	10	LTRKMBL	8000	\$80,000
Demolition shears		each	3	LTRKMBL	8000	\$24,000
Aggregate Crushing and Screening Plant		each	1	LTRKMBL	8000	\$8,000
Dozers - Load, Unload, Barge on either side	CAT D8	each	3	LEQMBLL	4000	\$12,000
Excavators - Load, Unload, Barge on either side	CAT 330	each	1	LEQMBLL	4000	\$4,000
Loader - Load, Unload, Barge on either side	CAT 980	each	3	LEQMBLL	4000	\$12,000
Motor grader - Load, Unload, Barge on either side	CAT 14H	each	2	LEQMBLL	4000	\$8,000
Skidder - Load, Unload, Barge on either side	CAT 242	each	2	LEQMBLL	4000	\$8,000
Truck - Load, Unload, Barge on either side	CAT 720	each	3	LTRKMBLL	2000	\$6,000
Tractor Trailer - Load, Unload, Barge on either side		each	4	LTRKMBLL	2000	\$8,000
Flatbed truck - Load, Unload, Barge on either side	5 tonne	each	4	LTRKMBLL	2000	\$8,000
Drill - Load, Unload, Barge on either side		each	6	LEQMBLL	4000	\$24,000
Drum crusher - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Crane - Load, Unload, Barge on either side		each	2	CRNMBLL	10000	\$20,000
Light duty vehicles - Load, Unload, Barge on either side	F150	each	2	LTRKMBLL	2000	\$4,000
Highway Trailers - Load, Unload, Barge on either side		each	41	HTRMBLL	4000	\$164,000
Rock Trucks - Load, Unload, Barge on either side		each	2	LTRKMBLL	2000	\$4,000
End Dump - Load, Unload, Barge on either side		each	10	LTRKMBLL	2000	\$20,000
Demolition shears - Load, Unload, Barge on either side		each	3	LTRKMBLL	2000	\$6,000
Aggregate Crushing and Screening Plant - Load, Unload, Barge on either side		each	1	LTRKMBLL	2000	\$2,000
Compactor		each		#N/A	0	\$0
DEMOBILIZE MISC. EQUIPMENT						
Equipment	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	15000	\$420,000
Welding Equipment		each	2	MDEQMBL	6500	\$13,000
Power washer		each	1	LEQMBL	16000	\$16,000
Equipment - Load, Unload, Barge on either side	tires, spare parts, lubricants, and Demolition Tools	each	28	SEAMBL	2500	\$70,000
Welding Equipment - Load, Unload, Barge on either side		each	2	MDEQMBLL	8500	\$17,000
Power washer - Load, Unload, Barge on either side		each	1	LEQMBLL	4000	\$4,000
Pump shipping		each		#N/A	0	\$0
Pipe shipping		m		#N/A	0	\$0
Minor tools and equipment		allow		#N/A	0	\$0
Truck tires		allow		#N/A	0	\$0
Other				#N/A	0	\$0
DEMOBILIZE CAMP						
		allow		#N/A	0	\$0
DEMOBILIZE WORKERS						
crew travel time		mandays	668.00	FLTRVL	1250	\$835,000
crew transportation		each		#N/A	0	\$0
WINTER ROAD						
Construction and operation		km		#N/A	0	\$0
Limited winter use		km		#N/A	0	\$0
Winter road tariff		km		#N/A	0	\$0
Total						\$9,181,000

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

		Filter by unit		Inf Rate: 35.27%		Inf Rate: n/a					
				March 2014 -							
ITEM ID	ITEM Detail	COST CODE	UNITS	Inf Note:	100223	SPECIFIED \$	COMMENTS	LOW \$	HIGH \$	SPECIFIED \$	Source
1	Accommodation										
2											
3	Buildings - Decontaminate	ACCM	manday	135.27	236.72			100.00	175.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
4	Asbestos	BDA	m2	34.63	69.26		Low: removal of asbestos siding & flooring; High: removal of ins	25.00	51.20		REC 7.0 Reclaim 7.0 Escalated 35.27%
5	Buildings - Remove						Unit costs are based on 3m high, single storey building. Scale a				
6	Wood	BRW	m2	37.20	55.46			27.50	41.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
7	Concrete	BRC	m2	54.11	87.93	8.12	Specified: puncture concrete foundation slabs	40.00	65.00	6.00	REC 7.0 Reclaim 7.0 Escalated 35.27%
8	Steel - tear/don	BRSL	m2	60.87	87.93			45.00	65.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
9	Steel - for salvage	BRSD	m2	90.63	125.27			67.00	100.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
10	Decommissioning Electrical, Mechanical, Heating, Plumbing, Etc.	BRUS1	each	750.00	2000.00						IH In-house Data By Staniec
11	Demolish Cribbing	BRCS1	each	65.00	100.00						IH In-house Data By Staniec
12	Disconnect Trailers and prepare for Moving (Remove Boards, Cladding, etc. Wrap in Plastic)	BRT1	each	2000.00	3500.00						IH In-house Data By Staniec
13	Empty Seacan of Debris, Place , and Track Pack	BESCS	each	100.00	250.00						IH In-house Data By Staniec
14	Cladding										
15	Clad Cut Core Faces	CLD1	m2	225.00	500.00			13.55	203.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
16	Communications										
17	Allowance for Communications	ALCM	each	5000.00							IH In-house Data By Staniec
18	Concrete work										
19	Small pour	CSF	m3	576.93	865.39		Low: YK; High=1.5xLow	426.50	639.75		REC 7.0 Reclaim 7.0 Escalated 35.27%
20	Large pour	CLF	m3	476.18	717.27	2,881.25	Specified: concrete crown pillar	353.50	530.25	2,130.00	REC 7.0 Reclaim 7.0 Escalated 35.27%
21	Demolish Concrete	CDS	m3	275.00	750.00						IH In-house Data By Staniec
22	Contaminated Soils										
23	ESA Phase 1	CS1	each	10,445.25			Low: small, "clean" site	7500.00			REC 7.0 Reclaim 7.0 Escalated 35.27%
24	ESA Phase 1	CS2	each	67635.00			Low: small, "clean" site	50000.00			REC 7.0 Reclaim 7.0 Escalated 35.27%
25	Remediate on site	CSR	m3	63.58	197.49			47.00	146.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
26	Collect Ashes and Place in Containers	CSRS	m3	1000.00	2000.00			47.00	146.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
27	Clean Liner	CLS1	m2	0.85	2.00						IH In-house Data By Staniec
28	Decommission Airstrip										
29	Decommission Airstrip	DCAS	each	1250.00	2500.00						IH In-house Data By Staniec
30	Demolish Entry Gates	DEGS	each	75.00	250.00						IH In-house Data By Staniec
31	Decommission Process Plant										
32	Decommissioning Crusher, Milling, and Processing Plants	DCMPS	each	100000.00	175000.00						IH In-house Data By Staniec
33	Drian Chemicals and Reagents into Containers for Shipping Off-site	DCRCS	each	50000.00	100000.00						IH In-house Data By Staniec
34	Dismantle Steel										
35	Dismantle Communications Towers and Prepare for Shipping Off-site	DCTS	each	6000.00	17500.00						IH In-house Data By Staniec
36	Dozing										
37	doze rock piles	DR	m3	1.42	3.25		Low cost: doze crest off dump	1.05	2.40		REC 7.0 Reclaim 7.0 Escalated 35.27%
38	doze overburden/soil piles	DS	m3	1.29	5.14		High cost: push up to 300 m	0.95	3.80		REC 7.0 Reclaim 7.0 Escalated 35.27%
39	Electrical Decommissioning and Demolition										
40	Decommission Power Generator	DPGS	each	1250.00	2500.00						IH In-house Data By Staniec
41	Disconnect Generator Units and prep for Shipping Off-Site	DGPS	each	500.00	1000.00						IH In-house Data By Staniec
42	Remove Communications Equipment	RCMS	each	500.00	1000.00						IH In-house Data By Staniec
43	Remove Fiber Optic Cables	RFOCS	each	500.00	1000.00						IH In-house Data By Staniec
44	Collect Electrical Cables and Conduits and Prep for Shipping Off-site	RECS	lm	7.50	15.00						IH In-house Data By Staniec
45	Decommission Fuel Transfer Facilities	DFTFS	each	5000.00	10000.00						IH In-house Data By Staniec
46	Remove Airstrip Lights	RALS	each	50.00	100.00						IH In-house Data By Staniec
47	Decommission Vehicle Plug System	DVPS	each	3000.00	5000.00						IH In-house Data By Staniec
48	Remove Cabling and Posts	RCPS	each	2000.00	10000.00						IH In-house Data By Staniec
49	Equipment Removal										
50	Remove Thermophosph Radiators and Superstructure	ER1S	each	1000.00	2000.00						IH In-house Data By Staniec
51	Drian and Decommission Enviro Tank	ER2S	each	12500.00	25000.00						IH In-house Data By Staniec
52	Wash Tanks	ER3S	each	1500.00	2500.00						IH In-house Data By Staniec
53	Disconnect and Remove Container Housing the Pumps and Controls, and Prep for Shipping	ER4S	each	2000.00	4000.00						IH In-house Data By Staniec
54	Remove Tank Insulation	ER5S	each	7500.00	15000.00						IH In-house Data By Staniec
55	Dismantle Tanks and Cut into Management Pieces	ER6S	each	50000.00	100000.00						IH In-house Data By Staniec
56	Disconnect Piping and Electrical Wiring, Remove Pump Pumps	ER7S	each	1250.00	2500.00						IH In-house Data By Staniec
57	Decommissioning and Dismantle Heating and Ventilation System	ER8S	each	15625.00	25000.00						IH In-house Data By Staniec
58	Dismantle Roberts Bay Waste Management Facility (Welding Crew)	ER9S	each	3000.00	5000.00						IH In-house Data By Staniec
59	Dismantle Process Plant Equipment and Prepare for Shipping	ER10S	each	25000.00	35000.00						IH In-house Data By Staniec
60	Dismantle Wind Turbine and Prepare for Shipping Off-site	ER11S	each	50000.00							IH In-house Data By Staniec
61	Disconnect Compressor Units and Prep for Shipping Off-site	ER12S	each	1000.00	1500.00						IH In-house Data By Staniec
62	Excavate Rock Low Spec's and QA/QC										
63	drill/blast/soilhaul	R81	m3	15.42	23.06		Low: quarry operations for bulk fill	11.40	17.05		REC 7.0 Reclaim 7.0 Escalated 35.27%
64	drill/blast/soilhaul	R82	m3	16.30	24.08			12.05	17.80		REC 7.0 Reclaim 7.0 Escalated 35.27%
65	R81 + spread and compact	R83	m3	16.30	24.08			12.05	17.80		REC 7.0 Reclaim 7.0 Escalated 35.27%
66	R82 + spread and compact	R84	m3	16.30	24.08			12.05	17.80		REC 7.0 Reclaim 7.0 Escalated 35.27%
67	Crush and Screen ROQ Materials	R8S1	m3	6.75	13.25						IH In-house Data By Staniec
68	Load, Haul, Backfill with Ore and Waste Rock	RBS2	m3	8.50	15.00						IH In-house Data By Staniec
69	Specified activity	RBS3	m3				(e.g. ditch/highway excavation)				REC 7.0 Reclaim 7.0 Escalated 35.27%
70	Excavate Rock High Spec's and QA/QC										
71	drill/blast/soilhaul	RC1	m3	16.30	24.08		Low: foundation excavation; High: spillway excavation	12.05	17.80		REC 7.0 Reclaim 7.0 Escalated 35.27%
72	drill/blast/soilhaul	RC2	m3	17.18	24.89			12.70	18.40		REC 7.0 Reclaim 7.0 Escalated 35.27%
73	RC1 + spread and compact	RC3	m3	17.18	24.89		e.g., cover construction	12.70	18.40		REC 7.0 Reclaim 7.0 Escalated 35.27%
74	RC2 + spread and compact	RC4	m3	18.26	25.97		e.g., cover construction	13.50	19.20		REC 7.0 Reclaim 7.0 Escalated 35.27%
75	Load, Haul, Backfill with ROQ	RCS1	m3	9.25	16.75						IH In-house Data By Staniec
76	Specified activity	RCS	m3			236.72	Specified-drift excavation			175.00	REC 7.0 Reclaim 7.0 Escalated 35.27%
77	Excavate Rip Rap										
78	drill/blast/soilhaul place	R81	m3	18.26	24.01		High: quarry & place rip rap in channel	13.50	17.75		REC 7.0 Reclaim 7.0 Escalated 35.27%
79	drill/blast/soilhaul place	R82	m3	19.21	27.93			14.20	20.65		REC 7.0 Reclaim 7.0 Escalated 35.27%
80	source is waste dumping/haul	R83	m3	9.47	14.88		cost includes sorting	7.00			REC 7.0 Reclaim 7.0 Escalated 35.27%
81	source is waste dumping/haul	R84	m3	10.28	32.38			7.00			REC 7.0 Reclaim 7.0 Escalated 35.27%
82	Specified activity	R8S	m3								REC 7.0 Reclaim 7.0 Escalated 35.27%
83	Excavate Soil Low Spec's and QA/QC										
84	clear & grub	SBC	m2	4.60	6.76			3.40	5.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
85	excavate/soilhaul	S81	m3	5.82	7.98			4.30	5.90		REC 7.0 Reclaim 7.0 Escalated 35.27%
86	excavate/soilhaul	S82	m3	6.22	9.87			4.60	7.30		REC 7.0 Reclaim 7.0 Escalated 35.27%
87	S81 + spread and compact	S83	m3	6.90	12.04		Low: non-engineered; High: engineered	5.10	8.90		REC 7.0 Reclaim 7.0 Escalated 35.27%
88	S82 + spread and compact	S84	m3	7.44	14.88		Low: non-engineered; High: engineered	5.50	11.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
89	Specified activity	S8S	m3	4.33	8.52		Low: rehandle waste rock dump by dozing; High: rehandle waste	3.20	6.30		REC 7.0 Reclaim 7.0 Escalated 35.27%
90	Tailings	SBT	m3	1.83	5.00	20.97	High: contour surface - wet or frozen; Specified: haulplace wet i	1.35	3.70	15.50	REC 7.0 Reclaim 7.0 Escalated 35.27%
91	Excavate Soil High Spec's and QA/QC										
92	excavate/soilhaul	SC1	m3	9.20	12.58			6.80	9.30		REC 7.0 Reclaim 7.0 Escalated 35.27%
93	excavate/soilhaul	SC2	m3	9.60	15.89			7.10	11.75		REC 7.0 Reclaim 7.0 Escalated 35.27%
94	SC1 + spread and compact	SC3	m3	12.04	19.21		Low: non-engineered; High: engineered	8.90	14.20		REC 7.0 Reclaim 7.0 Escalated 35.27%
95	SC2 + spread and compact	SC4	m3	12.58	32.38	25.43	Low: non-engineered; High: engineered (e.g. complex covers, lo	9.30	23.20	18.80	REC 7.0 Reclaim 7.0 Escalated 35.27%
96	Specified activity	SCS	m3				Backfill add with waste rock				REC 7.0 Reclaim 7.0 Escalated 35.27%
97	Fence										
98	Install Silt Fencing	FNC	m	18.33	274.60			13.55	203.00		REC 7.0 Reclaim 7.0 Escalated 35.27%
99		FNC.SLT	each	2500.00							IH In-house Data By Staniec
100	Fuel and Electricity										
101	Fuel cost - gas	FCG	lire	1.42	1.89			1.05	1.40		REC 7.0 Reclaim 7.0 Escalated 35.27%
102	Fuel cost - diesel	PCD	lire	1.24	1.88			0.99	1.29		REC 7.0 Reclaim 7.0 Escalated 35.27%
103	Fuel mobilization	FCM	lire	0.30	0.57		High: winter road usage	0.22	0.42		REC 7.0 Reclaim 7.0 Escalated 35

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

Filter by unit				Inf Rate:	35.27%		Inf Rate:	n/a			
144	fuel truck	truck	\$/hr	202.91			150.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
145	water truck	truck	\$/hr	78.46 202.91			58.00 150.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
146	pickup truck	truck	\$/month	1500.00 2000.00			58.00 150.00			IH	In-house Data By Stantec
147											
148	Load Waste into Hazardous Material Containers	LWCS1	m3	85.00	125.00	Assume 1 CM Super Sacs Required				IH	In-house Data By Stantec
149	Load Waste into Hazardous Generic Disposal Containers	LWCS2	m3	5.00	8.00					IH	In-house Data By Stantec
150	Haul Containers to Quarry 3 Landfill	HCLFS	each	85.00	150.00					IH	In-house Data By Stantec
151	Haul Megapags to Doris Underground	HMDUS	m3	12.00	15.00					IH	In-house Data By Stantec
152	Haul Generic Waste Containers to Quarry 3 Landfill	HMDQS	m3	6.25	10.50					IH	In-house Data By Stantec
153	Haul Tailings Water in 15,000L Trucks	HTLS	m3	40.00	50.00					IH	In-house Data By Stantec
154	Transport Wind Turbine Parts to Roberts Bay	TWTRB	Each	10000.00	15000.00					IH	In-house Data By Stantec
155											
156	Road access	MHER	km/tonne	4.60	13.87		3.40	10.25		REC 7.0	Reclaim 7.0 Escalated 35.27%
157	Air access	MHEA	km/tonne	16.23		cargo rate=500lb	12.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
158	Large Equipment Mobilization	LEQMB	Each	16000.00						IH	In-house Data By Stantec
159	Large Truck	LTRKMB	Each	8000.00						IH	In-house Data By Stantec
160	Crane	CRNMB	Each	20000.00						IH	In-house Data By Stantec
161	Medium Construction Equipment	MDEQMB	Each	6500.00						IH	In-house Data By Stantec
162	Seacans	SEAMMB	Each	15000.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
163	Highway Trailers	HTRMB	Each	10000.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
164	Large Equipment Mobilization Load / Unload Barge	LEQMIL	Each	4000.00						IH	In-house Data By Stantec
165	Large Truck Load / Unload Barge	LTRMBL	Each	2000.00						IH	In-house Data By Stantec
166	Crane Load / Unload Barge	CRNMBL	Each	10000.00						IH	In-house Data By Stantec
167	Medium Construction Equipment Load / Unload Barge	MDEQMIL	Each	8500.00						IH	In-house Data By Stantec
168	Seacans Load / Unload Barge	SEAMBL	Each	2500.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
169	Highway Trailers Load / Unload Barge	HTRMBL	Each	400.00						REC 7.0	Reclaim 7.0 Escalated 35.27%
170											
171	Mobilize Camp and Workers									IH	In-house Data By Stantec
172	Refurbish Existing Camp	MCR	each	67635.00	125000	refurbish existing camp	50000.00			IH	In-house Data By Stantec
173	Worker Accommodations	WACCOM	manmonths	6000.00						IH	In-house Data By Stantec
174	Flights and Travel Time	FLTRV	Each	1250.00						IH	In-house Data By Stantec
175											
176	Mobilize Workers	MW	each	6087.15	12309.57		4500.00	9100.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
177	flight										
178	Annual Monitoring										
179	SHIPWAMP water sampling & reporting	SMPL	each	7500.00		Low: e.g.: 8 passenger; High: Dash 7				REC 7.0	Reclaim 7.0 Escalated 35.27%
180	geotechnical assessment	GASS	each	45000.00		Low: e.g.: 8 passenger; High: Dash 7				REC 7.0	Reclaim 7.0 Escalated 35.27%
181	interim water treatment	WTRT	each			Low: e.g.: 8 passenger; High: Dash 7				REC 7.0	Reclaim 7.0 Escalated 35.27%
182											
183	Oil Removal										
184	oil removal	OR	litre	0.58	1.62	Low: waste oil heater; High: ship offsite	0.43	1.20		REC 7.0	Reclaim 7.0 Escalated 35.27%
185											
186	PCB Removal										
187	Remove from site	PCBR	litre	54.38	63.44	Low: shipping, handling & disposal from Yellowknife	40.20	46.90		REC 7.0	Reclaim 7.0 Escalated 35.27%
188											
189	Pipes, small (<6in dia.)										
190	remove/dispose on site	PSR	m	1.35	32.46	Low: remove/dispose on site; High: remove/re-use	1.00	24.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
191	supply	PSS	m	8.25	15.01	Low: supply; High: supply and ship	6.10	11.10		REC 7.0	Reclaim 7.0 Escalated 35.27%
192	install	PSI	m	33.82			25.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
193	Cut Top of Drill Pipes and Cap	PCTC	Each	17.50						IH	In-house Data By Stantec
194											
195	Pipes, large (>6in dia.)										
196	remove/dispose on site	PLR	m	29.76	97.39	Low: remove/dispose on site; High: remove/re-use	22.00	72.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
197	supply	PLS	m	114.50	193.44	Low: supply; High: supply and ship	129.00	143.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
198	install	PLI	m	67.64			50.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
199	Disconnect Piping and Controls	DPCS	each	5000.00	10000.00					IH	In-house Data By Stantec
200	Conduct Survey of Submerged Section of Pipeline	CSSPL	each	10000.00						IH	In-house Data By Stantec
201	Cut Large Pipeline and Dispose on site	PLRPL	m	12.75	20.00					IH	In-house Data By Stantec
202											
203	Post-Closure Monitoring & Maintenance										
204	Annual Geotechnical Inspections	PGDASS		45000.00			\$35,000.00			IH	In-house Data By Stantec
205	Regulatory Costs	PGRLG		25000.00						IH	In-house Data By Stantec
206	Site Water Monitoring (AEMP and SNP)	PCSMPL		75000.00			\$60,000.00			IH	In-house Data By Stantec
207	Cover Monitoring	PCCVR		45000.00			\$35,000.00			IH	In-house Data By Stantec
208											
209	Power Lines										
210	remove/dispose on site	POWR	m	34.49			25.50			REC 7.0	Reclaim 7.0 Escalated 35.27%
211											
212	Process Chemicals										
213	Remove from site	PCR	kg	0.61	3.38	Low: shipping, handling & disposal from Yellowknife	0.45	2.50		REC 7.0	Reclaim 7.0 Escalated 35.27%
214											
215	Pumps										
216	Pump capital cost	PC	each	26376.50			195000.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
217	Pump shipping	PS	each	3381.75			2500.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
218	Pump operating cost	POC	m3	0.16		pump operating costs should be calculated based on pump capx	0.12			REC 7.0	Reclaim 7.0 Escalated 35.27%
219	Pump maintenance	PM	allow	33817.50			25000.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
220	Supply and Install Pumps for Pond Draining	PCS	allow	40000.00			25000.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
221											
222	Pump sand Backfill	PBF	m3	114.98	405.81		85.00	300.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
223											
224	Remove Bridge										
225	Remove Bridge	RDCBS	Lump sum	65000.00	100000.00					IH	In-house Data By Stantec
226	Remove Bridge Access Bridge	RBABS	Lump Sum	5000.00	5000.00					IH	In-house Data By Stantec
227	Cut Piles to Ground Surface	RBCPL	each	50.00	200.00					IH	In-house Data By Stantec
228											
229	Remove Culvert	RCULS	each	1500.00	5000.00					IH	In-house Data By Stantec
230	Remove Culvert	RCULMS	m	25.00	100.00					IH	In-house Data By Stantec
231	Remove Div. Old Doris-Windy All Weather Road Arched Culvert Crossing	RCULCRS	each	115000.00	150000.00					IH	In-house Data By Stantec
232											
233	Remove Explosives	REXS	m3	5.00	10.00					IH	In-house Data By Stantec
234											
235	Remove Ducts, Pipes, and Cables										
236	Remove Ducts, Pipes, and Cables and Dispose of On site	PDCS1	m	200.00	250.00	Low: remove/dispose on site; High: remove/re-use	1.00	24.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
237	Decommission Electrical, Mechanical (including Connections to Generator House & Transformer)	PDCS2	each	5000.00	10000.00	Low: remove/dispose on site; High: remove/re-use	1.00	24.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
238											
239	Remove Roberts Bay Jetty										
240	Remove on-Shore Mooring Points	RMP5	LS	2500.00	5000.00					IH	In-house Data By Stantec
241	Remove Mooring Buoy	RMBS	LS	3500.00	5000.00					IH	In-house Data By Stantec
242	Remove Sheet Piles to 0.3m below LLWL	RMSPS	Each	50000.00						IH	In-house Data By Stantec
243											
244	Remove Traffic Barriers										
245	Remove Traffic Barriers (Boulders)	RMTRFC	LS	250.00	500.00					IH	In-house Data By Stantec
246											
247	Scarify - road/mine site	SCFY	ha	5816.61	8156.781	2908.305	4300	6030	2150	REC 7.0	Reclaim 7.0 Escalated 35.27%
248											
249	Septic System										
250	Flush and Remove Sewage Plumbing, Collect Sewage Sludge/Waste Water in 55 Gallon Drums	CSEWS	each	725.00	900.00					IH	In-house Data By Stantec
251											
252	Shaft, Raise & Portal Closures										
253	Shaft & Raises	SR	m2	872.49	2883.96	Low: pre-cast concrete slabs, little site prep. Area=shaft>1m x	645.00	2132.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
254	Portal	POR	m3	25.43	338.18	Low: unit cost code SCS; High: excavate & backfill collapsed po	18.80	250.00	1200.00	REC 7.0	Reclaim 7.0 Escalated 35.27%
255											
256	Site Inspection Report	RPT	each	13527.00	27054.00		10000.00	20000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
257											
258	Spillway - Clear	SW	each	4058.10	9468.90		3000.00	7000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
259											
260	Survey/Hazardous Materials										
261	Hydrocarbon Contamination Survey	SHCS	each	25000.00	50000.00	2 person crew				IH	In-house Data By Stantec
262	Metal Contamination Survey	SMCS	each	25000.00	50000.00	2 person crew				IH	In-house Data By Stantec
263											
264	Survey/Instrumentation	SI	each	2434.86	4869.72	2 person crew	1800.00	3600.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
265											
266	Treatment Plant - Construct										
267	Small (< 1000 m3/d)	TPL	lump sum	12114300	20290500		9000000	15000000		REC 7.0	Reclaim 7.0 Escalated 35.27%
268	Large (> 1000 m3/d)	TPL	lump sum	20290500	62224300		15000000	46000000		REC 7.0	Reclaim 7.0 Escalated 35.27%
269	Constructed Wetland	CWTS	ha	27054.00	40581.00		20000	30000		REC 7.0	Reclaim 7.0 Escalated 35.27%
270											
271	Treatment Plant - Operate										
272	Treatment Plant - Operate	TPO	m3	0.473445	2.71		0.35	2.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
273	Treat Contained Water and Discharge	TCWDS	lump sum	10000						IH	In-house Data By Stantec
274											
275	Treatment Chemicals										
276	ferric sulphate	ferric	kg	1.61			1.19			REC 7.0	Reclaim 7.0 Escalated 35.27%
277	ferrrous sulphate	ferrous	kg	1.79			1.32			REC 7.0	Reclaim 7.0 Escalated 35.27%
278	lime	lime	kg	0.76			0.56			REC 7.0	Reclaim 7.0 Escalated 35.27%
279	hydrogen peroxide, 30%	hperox	kg	2.00			1.50			REC 7.0	Reclaim 7.0 Escalated 35.27%
280	Sodium Metabisulfate	NaMetabS	kg	1.60			1.18			REC 7.0	Reclaim 7.0 Escalated 35.27%
281	Caustic soda, 50%	caustic	kg	1.00			0.74			REC 7.0	Reclaim 7.0 Escalated 35.27%
282	Sulfuric acid, 99%	sulfuric	kg	0.42			0.31			REC 7.0	Reclaim 7.0 Escalated 35.27%
283	bleach	bleac	kg	8.12			6.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
284	copper sulphate	copper	kg							REC 7.0	Reclaim 7.0 Escalated 35.27%
285	shipping	shipping		0.27			0.20			REC 7.0	Reclaim 7.0 Escalated 35.27%
286											
287	Hydroseed, Flat	VHF	ha	5410.80			4000.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
288	Hydroseed, Sloped	VHS	ha	6087.15	4500.00		4500.00			REC 7.0	Reclaim 7.0 Escalated 35.27%
289	Veget. blanket/erosion mat	VW	ha	1795.10	13000.00		2600.00	6000.00		REC 7.0	Reclaim 7.0 Escalated 35.27%
290	Tree planting	VT	ha	3517.62	8116.29	64.55 Specified: /m3, Wetland Growth Media Substrate mixed and installed (pand, biochar and i		47.72		REC 7.0	Reclaim 7.0 Escalated 35.27%
291	Wetland species	VW	ha							REC 7.0	Reclaim 7.0 Escalated 35.27%
292	Hydroseed, Flat	VHFM	m2	0.54	0.00	0.00					