DOMINION DIAMOND

JAY PROJECT
RECLAIM SECURITY ESTIMATE

June 2016

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Abbreviations

Abbreviation	Definition
AEMP	Aquatic Effects Monitoring Program
CPK	coarse processed kimberlite
Dominion Diamond	Dominion Diamond Ekati Corporation
Ekati mine	Ekati Diamond Mine
FPK	fine processed kimberlite
ICRP	Interim Closure and Reclamation Plan
JCRP	Conceptual Closure and Reclamation Plan for the Jay Project
SNP	Surveillance Network Program
WLWB	Wek'èezhìı Land and Water Board

Units of Measure

Unit	Definition
ha	hectare
m^2	square metre
m^3	cubic metre

1 INTRODUCTION

1.1 Jay Project Closure and Reclamation

The Jay Project (Project) will extend the existing operations at the Ekati Diamond Mine (Ekati mine) to 2034, using existing mine facilities to support the development of the Jay kimberlite pipe (Jay pipe) and to process the kimberlite. The Project involves the development of the Jay pipe, which is located beneath Lac du Sauvage, using an open-pit mining method.

The Project will require the reclamation of new mine facilities that are specific to the Project. The Project will also result in the modification of the closure and reclamation plan for Ekati mine facilities as outlined in the existing Wek'èezhìı Land and Water Board (WLWB) approved Interim Closure and Reclamation Plan (ICRP; BHP Billiton 2011).

A Conceptual Closure and Reclamation Plan for the Jay Project (JCRP) has been prepared and is provided as part of the water licence application (Golder 2016). The JCRP outlines activities proposed for the closure and reclamation of the following Project facilities:

- open pit;
- waste rock storage area (WRSA);
- dikes, diversion channel, and sumps; and,
- buildings and infrastructure: roads, pipeline benches, pads, power line, and pumping and pipeline systems.

The JCRP also outlines the modification to the reclamation plan for the following items:

- Misery Pit – to be used for water management during the dewatering and operation stages of the Jay Project;
- Panda and Koala pits – to be used as containment areas for fine processed kimberlite (FPK) and coarse processed kimberlite (CPK) from the Jay Project; and,
- Lynx Pit – to be used to receive the natural lake water from the later stages of dewatering of the Jay Project.

1.2 Jay Project Early Works

The early works activities are land-based activities required to ready the site for full construction of the Project. A separate permit application has been submitted to the WLWB for these activities. The scope of early works was outlined in the Jay Project Early Works Supporting Information (Dominion Diamond 2016). The overall closure and reclamation of the early works and infrastructure is encompassed into the JCRP and includes the following items:

- Jay Road, including the cut through the esker, Jay North Road, and Jay Pipeline Road, to allow equipment access to the Jay site;
- Pipeline bench, laydown areas (L1, L2, and L3), and caribou crossings associated with the Jay Road; and,

- Esker cut stockpile.

1.3 RECLAIM Estimate

Dominion Diamond Ekati Corporation (Dominion Diamond) has developed an update to the Ekati mine reclamation security RECLAIM estimate that presents all the works outlined in the JCRP. A copy of the RECLAIM estimate is provided in Appendix A. All costs were developed based on the reclamation activities outlined in the JCRP. Development of costs for the new Jay Project facilities primarily relied on reclamation costs and quantitates professionally developed by Golder Associates Ltd. (Golder). A copy of the technical memorandum that outlines Golder's development of costs is provided in Appendix B.

Table 1.3-1 provides a summary of the proposed Jay RECLAIM updates and their relative change to the current WLWB-approved RECLAIM estimate (based on September 25, 2015 WLWB Reasons for Decision). The total proposed change to the RECLAIM grand total estimate is an increase of $13,580,699.

The Project early works are encompassed within the Jay Project RECLAIM estimate as provided in Appendix A and are included in Table 1.3-1. For clarity, however, Dominion Diamond has provided tracking reference (EW #) for RECLAIM updates that encompass the early works. Table 1.3-2 provides a summary of the proposed RECLAIM updates which encompass the early works. This represents an increase of $1,420,045 to the RECLAIM grand total estimate.

Table 1.3-1 Jay Project RECLAIM Updates

Ref #	RECLAIM Update	RECLAIM Grand Total Change
Jay #1	Jay Project Pit Flooding Plan (including pit lake monitoring)	($6,805,226)
Jay #2	WRSA Reclamation	$11,536,040
Jay #3	Jay Building and Infrastructure Demolition	$3,508,675
Jay #4	Road Reclamation	$365,059
Jay #5	Site Scarifying, Vegetation, and Regrading	$184,073
Jay #6	Dike Breaching and Shoreline Vegetation	$3,116,490
Jay #7	Chemicals and Soil Contamination	$618,707
Jay #8	Primary Reclamation Accommodations	$662,880
Jay #9	Non Pit Flooding Closure Monitoring	$394,000
	TOTAL:	**$13,580,699**

Table 1.3-2 Jay Project – Early Works RECLAIM Updates

Ref #	RECLAIM Update	RECLAIM Grand Total Change
EW #1	Jay Culverts (Jay Ref #3)	$870,912
EW #2	Road Reclamation (Jay Ref #4)	$365,059
EW #3	Site Scarifying, Vegetation, and Regrading (Jay #5)	$184,073
	TOTAL:	**$1,420,045**

2 JAY PROJECT RECLAIM UPDATES

2.1 Jay Project Pit Flooding Plan (Jay Ref #1)

The Project required an update to the existing WLWB-approved pit flooding plan for the Ekati mine. Appendix C includes an updated pit flooding plan that incorporates the Project. Provided is a summary of the key changes to the flooding plan as a result of the Project:

- Pit Flooding Program Start: Due to an extended life of mine from the Jay Project, the pit flooding program will start at the end of Jay operations (2034);
- Beartooth and Pigeon: Pump flooding of freshwater cap will be completed during Jay Project mine operations as a progressive reclamation activity;
- Pit Flooding Program Duration: Shorter pump flooding duration of 18.5 years versus 21 years for the WLWB-approved plan (time now governed by Fox pit flooding duration rather than Panda/Koala);
- Panda/Koala: Shorter flooding timeframe of 3 years versus 21 years for WLWB-approved plan;
- Misery Pit: Pumping out minewater to Jay Pit and placing of freshwater cap pumped from Lac du Sauvage;
- Lynx Pit: Residual freshwater amount filled with natural precipitation and surface water inflows; and,
- Jay Pit (new): Back-flooding from Lac du Sauvage.

Detailed RECLAIM costs summary for the WLWB-approved pit flooding plan and the updated Jay Project pit flooding plan are provided in Appendix D. Table 2.1-1 provides a summary of the RECLAIM costs for the Jay Project Pit Flooding Plan. The updated Jay Project Pit Flooding Plan results in an overall decrease of approximately $ 6.8 million when compared to the WLWB-approved plan. In general, the net decrease results from the new cost of back flooding the Jay Pit ($ 5.4 million) and increased costs for Misery Pit flooding ($ 0.8 million) being offset by the following reductions in the pit-flooding plan:

- $9.4 million reduction for Panda/Koala pits due to lower freshwater cap volume (from deposition of FPK/CPK);
- $0.8 million reduction for flooding the Lynx Pit with natural rainfall and precipitation.
- $2.8 million reduction in costs for labour, airfare, and accommodations as a result of shorter time frame for the pit flooding program;

Table 2.1-1 Jay Project Pit Flooding Plan RECLAIM costs summary

Infrastructure, Equipment, Fuel, and Monitoring	WLWB-Approved Pit Flooding Plan	Jay Project Pit Flooding Plan	Difference
Pigeon	$5,258,821	$5,258,821	$0
Misery	$7,882,854	$8,645,668	$762,814
Lynx	$1,239,729	$420,000	($819,729)
Beartooth	$3,332,026	$3,332,026	$0
Fox	$8,464,195	$8,464,195	$0
Panda/Koala	$12,951,226	$3,563,046	($9,388,180)
Sable	$6,587,950	$6,587,950	$0
Jay	$0	$5,390,608	$5,390,608
Sub Total:	**$45,716,802**	**$41,662,314**	**($4,054,488)**
Labour	$9,578,695	$8,438,374	($1,140,321)
Airfare	$3,105,000	$2,711,250	($393,750)
Accommodations	$8,760,000	$7,543,333	($1,216,667)
Sub Total:	**$21,443,695**	**$18,692,958**	**($2,750,738)**
TOTAL:	**$67,160,497**	**$60,355,271**	**($6,805,226)**

2.2 WRSA Reclamation (Jay Ref #2)

Consistent with the currently approved ICRP for the existing Ekati mine WRSAs, reclamation costs have been included for the levelling of the upper surface to discourage snow accumulation and completion of WRSA access ramps. The above items represent an overall increase of $836,469 to the RECLAIM security estimate.

As is the case for the Misery WRSA, placement of the final cover will be completed throughout the operational period of the Jay WRSA. Preliminary WRSA construction sequencing indicates that the rock pile can be constructed in a manner such that the amount of co-placed mixed metasediment can be minimized throughout Jay operations. Provided in Appendix E is a conceptual Jay WRSA sequencing for the first five years of the Jay WRSA operation. Within this period, an average of 150,000 square metres (m^2) of exposed co-placed mixed granite/metasediment is expected. Allocation for covering of 150,000 m^2 corresponds to a RECLAIM increase of $11,536,040. Dominion Diamond sees an allocation for the potential amount of exposed metasediment during the first five years of operations as a reasonable strategy given the development of the construction sequencing. As is currently being completed for the Misery WRSA, once construction of the Jay WRSA begins, annual exposed granite/metasediment values (and corresponding security amounts credits or increases) can be proposed and regulated by the WLWB through the submission of Annual Progress Reclamation Progress Reports.

2.3 Jay Building and Infrastructure (Jay Ref #3)

Reclamation of the buildings and infrastructure will be completed according to procedures outlined in the ICRP. The demolition costs were developed by Golder and represent a total RECLAIM increase of $3,508,675 for the reclamation demolition of the following Jay infrastructure:

- 250 person Misery Construction Camp;
- Temporary Truck Shop;
- Other associated buildings;
- Pipelines and Pumps;
- Culverts; and,
- Misery to Jay Power line.

The costs developed by Golder are intended to be part of the overall reclamation and buildings estimate that was developed for the Ekati mine. Dominion Diamond has acknowledged (March 2, 2016 2015 Annual Progress Report Response to GNWT #15) that the best timeframe for an overall update to the developed estimate would be as part of the update to ICRP. The updated estimate would include all current Ekati developments and future infrastructure as part of the Jay Project.

For planning purposes, the Jay cost estimate assumes that all non-hazardous materials generated from the infrastructure reclamation will be deposited into a demolition landfill after operations have ended. This assumption is conservative for the 250 person Misery Construction Camp item, as it is likely that this camp will be reclaimed after the end of Jay construction activities. Reclamation for this item could consist of towing the modular units off site and potentially providing them for community housing. Similarly, the temporary truck shop will be a modular building and also has the potential to be disassembled and reused elsewhere.

2.4 Road Reclamation (Jay #4)

Reclamation of the access and haul roads will follow as outlined in the ICRP and will consist of scarifying the surface and dozing of the safety berms. This cost represents an additional reclamation scarifying area of 20 hectares (ha) and dozing volume of 44,193 cubic metres (m^3). Additionally, costs include the placement of 25,000 m^3 of stockpiled esker material for an overall increase of $365,059.

2.5 Site Scarifying, Vegetation, and Regrading (Jay #5)

Reclamation site wide costs for scarifying an additional 5 ha and vegetating 20 ha from Project land disturbances such as the laydown areas were included. Dominion Diamond utilized its proposed unit rate site-specific cost for vegetation (proposed as part of 2015 Annual Closure and Reclamation Progress Report). An additional $50k was included in reclamation costs for site wide regrading to promote natural drainage. Included in this allowance was regrading of the Sub-Basin B Diversion Channel. The site scarifying, vegetation, and regrading represented an overall increase of $184,073 to the RECLAIM estimate.

2.6 Dike Breaching and Shoreline Vegetation (Jay #6)

Once the water quality within the back-flooded area of Lac du Sauvage has been demonstrated to be suitable for direct mixing with the lake, the Jay Dike will be strategically breached in local areas. The dike breaching volumes were estimated to be 176,00 m^3 and were based on the proposed dike breaching

locations identified in Figure 6 of the JCRP. Reclamation costs for the dike breaching include costs for the installation of turbidity curtains. Additionally, an allowance of $225,000 was included for vegetation of the riparian (shoreline) and littoral (shallow) areas within the diked area. This reclamation item represented an overall increase of $3,116,490 to the RECLAIM estimate.

2.7 Chemicals and Soil Contamination (Jay #7)

Representative allowances for increased reclamation cost for the chemicals and soil contamination section of RECLAIM were provided. These changes represented an overall increase of $618,707 to the RECLAIM estimate. Provided is a summary of the allowances:

- Increase costs to complete the Phase (1,2,3) Environmental Site Assessment;
- Increases in hazardous waste material that will need to be removed (waste batteries, waste oil, paints, solvents, explosives); and,
- Increase in the volume of containment soil that will be managed at a land farm.

2.8 Primary Reclamation Accommodations (Jay #8)

Excluding the back-flooding of the Jay Pit, it is assumed that the additional reclamation activities outlined JCRP will be completed within a 3 year primary reclamation period (see Reclamation Schedule outlined in Dominion Diamond Round 1 Information Request response DAR-IEMA-IR-53 for the Jay Project Developer's Assessment Report [Dominion Diamond 2015]). A total additional 16,030 man days has been estimated for the completion of the additional Project primary reclamation activities. Using the Dominion Diamond proposed rate for accommodations of $96 per man day (proposed as part of 2015 Annual Closure and Reclamation Progress Report), this represents an overall increase of $662,880 to the RECLAIM estimate.

2.9 Non Pit Flooding Closure Monitoring (Jay #9)

Dominion Diamond has provided a detailed summary of the updated costs for post-closure monitoring in Appendix F. Similar to the process that was completed for the Pigeon Pit development, allowances were completed for additional reclamation monitoring requirements for the Project. Excluding the pit flooding monitoring cost (accounted for in RECLAIM update Jay Ref #1), these changes represented an increase of $394,000 to the RECLAIM estimate. Provided below is a summary of the additional allowances for monitoring:

- $50k increase to the annual cost for the Surveillance Network Program (SNP) and Aquatic Effects Monitoring Program (AEMP) during the three years of primary reclamation;
- $25k increase to the annual SNP and AEMP costs during ten year post closure monitoring period;
- $5k increase to the annual SNP and AEMP costs for remaining six years of the pit flooding program;
- $15k increase to annual costs for geotechnical monitoring program;
- $15k increase to annual cost for Wildlife Effects Monitoring Program;

- $15k increase to annual costs for seepage monitoring program;
- $5k increase to annual costs for air quality monitoring program;
- $5k increase to annual costs for site wide vegetation monitoring; and,
- $312k lump sum cost for Jay turbidity monitoring during dike breaching.

3 REFERENCES

BHP Billiton. 2011. Ekati Diamond Mine, Interim Closure and Reclamation Plan – Version 2.4. Submitted to Wek'èezhìi Land and Water Board. Yellowknife, NWT, Canada.

Dominion Diamond (Dominion Diamond Ekati Corporation). 2015. Re: EA1314-01 Jay Project, Dominion Diamond Corporation Developer's Assessment Report – Responses to Information Requests. Submitted to Mackenzie Valley Environmental Impact Review Board, Yellowknife, NWT, Canada, April 7, 2015.

Dominion Diamond. 2016. Jay Project Early Works Supporting Information. Submitted to Wek'èezhìı Land and Water Board. Yellowknife, NWT, Canada.

Golder (Golder Associates Ltd.). 2016. Jay Project Conceptual Closure and Reclamation Plan. Submitted to Dominion Diamond Ekati Corporation. Yellowknife, NWT.

DOMINION DIAMOND

Appendix A

Jay RECLAIM Estimate

SUMMARY OF COSTS			September 25, 2015 WLWB Reasons for Decision	Differrence
OPEN PITS				
Misery		$8,156,762	$6,651,276	1,505,486
Pigeon		$4,561,731	$4,561,731	0
Sable		$5,476,081	$5,476,081	0
Beartooth		$3,264,574	$3,264,574	0
Fox		$7,506,874	$7,506,874	0
Panda		$3,916,699	$5,826,462	(1,909,763)
Koala North		$2,339,837	$4,249,600	(1,909,763)
Koala		$1,571,174	$3,480,937	(1,909,763)
Lynx		$951,565	$1,584,605	(633,040)
Jay		$3,960,800	$0	3,960,800
OPEN PIT TOTAL:		**$41,706,097**	**$42,602,140**	**(896,043)**
TAILINGS				
Cell A		$10,817,526	$10,817,526	0
Cell B		$10,060,658	$10,060,658	0
Cell C		$13,327,755	$13,327,755	0
Cell D		$92,298	$92,298	0
Cell E		$455,112	$455,112	0
Phase 1		$599,954	$599,954	0
TAILINGS TOTAL		**$35,353,303**	**$35,353,303**	**0**
ROCK PILES				
Fox WRSA		$21,335,101	$21,335,101	0
Misery WRSA		$2,504,800	$2,504,800	0
Panda WRSA		$12,379,271	$12,379,271	0
Pigeon WRSA		$13,146,243	$13,146,243	0
Sable WRSA		$809,962	$809,962	0
Lynx WRSA		$185,690	$185,690	0
JayWRSA		$9,130,249	$0	9,130,249
ROCK PILE TOTAL		**$59,491,315**	**$50,361,066**	**9,130,249**
BUILDINGS AND EQUIPMENT		**$14,176,758**	**$11,022,512**	**3,154,245**
WATER MANAGEMENT		**$6,899,730**	**$4,470,730**	**2,429,000**
CHEMICALS AND SOIL CONTAMINATION		**$3,519,264**	**$3,046,969**	**472,295**
UNDERGROUND MINE				
Panda		$679,621	$679,621	0
Koala		$316,716	$316,716	0
Koala North		$679,621	$679,621	0
UNDERGROUND MINE TOTAL		**$1,675,958**	**$1,675,958**	**0**
SUBTOTAL		**$162,822,426**	**$148,532,679**	**14,289,747**
MOBILIZATION/DEMOBILIZATION		**$60,781,539**	**$65,622,775**	**(4,841,235)**
POST-CLOSURE MONITORING AND MAINTENANCE		**$14,854,012**	**$14,632,109**	**221,904**
PROJECT MANAGEMENT	5%	**$8,141,121**	**$7,426,634**	**714,487**
ENGINEERING	5%	**$8,141,121**	**$7,426,634**	**714,487**
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	0.5%	**$814,112**	**$742,663**	**71,449**
BONDING/INSURANCE	0.5%	**$814,112**	**$742,663**	**71,449**
CONTINGENCY (Open Pit Flooding)	15%	**$4,120,954**	**$4,255,360**	**(134,406)**
CONTINGENCY (Capping)	15%	**$11,426,787**	**$10,129,212**	**1,297,576**
CONTINGENCY (Buildings Decommissioning)	15%	**$1,260,512**	**$865,067**	**395,445**
CONTINGENCY (Other Reclamation Activities)	20%	**$10,153,480.97**	**$9,373,684.00**	**779,797**
GRAND TOTAL		**$283,330,179**	**$269,749,480**	**13,580,699**

Open Pit Name:	***Misery***						Pit #	***1***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	38,858	SBSBS	3.98	$154,826			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	122,711	RCSS	7.50	$920,330			
Dozing	m3	79,762	DSL	0.95	$75,774			
Substrate Produce and Place	m3	12,271	SCSTS	22.80	$279,756			
Sediment Berm Produce and Place	m3	1,227	SCSBS	24.21	$29,706			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	80	#N/A	181.52	$14,522			
Spillway Construction	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Flooding Equipment	L.S	1	#N/A	#N/A	$429,000	Jay Ref #1		
Lower and Backflood	m3	27,340,000	#N/A	0.11	$6,162,800	Jay Ref #1		
				Subtotal	$8,156,762			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Pigeon***						**Pit #**	***2***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	25,070	SBSBS	3.98	$99,888			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	79,168	RCSS	7.50	$593,761			
Dozing	m3	51,459	DSL	0.95	$48,886			
Substrate Produce and Place	m3	7,917	SCSTS	22.80	$180,488			
Sediment Berm Produce and Place	m3	792	SCSBS	24.21	$19,165			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	45	#N/A	79.05	$3,557			
Spillway Construction	m3	0	#N/A	0	$0			
Concrete	m3	0	#N/A	0	$0			
Pump Capital	each	2	PLS	195,000.00	$390,000			
Pipe Capital	m	7,400	PPLS	128.58	$951,492			
New Pipe Install	m	7,400	PPIS	50.00	$370,000			
Break and Install Pipe	m	0	PPIS	50.00	$0			
Pump Fuel	litre	1,113,469	FLONAS	0.92	$1,018,825			
Pumps Maintenance	yr*pump	5.1	PLMS	20,000.00	$102,620			
Access Road	L.S	1	#N/A	693,000.00	$693,000			
				Subtotal	$4,561,731			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Sable***						**Pit #**	***3***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	37,605	SBSBS	3.98	$149,832			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	118,752	RCSS	7.50	$890,642			
Dozing	m3	77,189	DSL	0.95	$73,329			
Substrate Produce and Place	m3	11,875	SCSTS	22.80	$270,731			
Sediment Berm Produce and Place	m3	1,188	SCSBS	24.21	$28,748			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	45	#N/A	79.05	$3,557			
Spillway Construction	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	1	PLS	195,000.00	$195,000			
Pipe Capital	m	4,000	PPLS	128.58	$514,320			
New Pipe Install	m	4,000	PPIS	50.00	$200,000			
Break and Install Pipe	m	0	PPIS	50.00	$0			
Pump Fuel	litre	3,038,112	FLONAS	0.92	$2,779,872			
Pumps Maintenance	yr*pump	14	PLMS	20,000.00	$280,000			
Access Road	L.S	0	#N/A	0.00	$0			
				Subtotal	$5,476,081			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Beartooth***						**Pit #**	***4***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	26,323	SBSBS	3.98	$104,882			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	83,127	RCSS	7.50	$623,449			
Dozing	m3	54,032	DSL	0.95	$51,331			
Substrate Produce and Place	m3	8,313	SCSTS	22.80	$189,512			
Sediment Berm Produce and Place	m3	831	SCSBS	24.21	$20,123			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	50	#N/A	233.96	$11,698			
Spillway Construction	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	0	PLS	195,000.00	$0			
Pipe Capital	m	10,164	PPLS	128.58	$1,306,887			
New Pipe Install	m	10,164	PPIS	50.00	$508,200			
Break and Install Pipe	m	0	PPBS	72.00	$0			
Pump Fuel	litre	355,893	FLONAS	0.92	$325,642			
Pumps Maintenance	yr*pump	2	PLMS	20,000.00	$32,800			
Access Road	L.S	0	#N/A	0.00	$0			
				Subtotal	$3,264,574			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Fox***						**Pit #**	***5***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	56,407	SBSBS	3.98	$224,747			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	178,128	RCSS	7.50	$1,335,962			
Dozing	m3	115,783	DSL	0.95	$109,994			
Substrate Produce and Place	m3	17,813	SCSTS	22.80	$406,097			
Sediment Berm Produce and Place	m3	1,781	SCSBS	24.21	$43,121			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	8,300	#N/A	20.5	$170,150			
Spillway Construction	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	1	PLS	195,000.00	$195,000			
Pipe Capital	m	4,992	PPLS	128.58	$641,871			
New Pipe Install	m	4,992	PPIS	50.00	$249,600			
Break and Install Pipe	m	0	PPIS	50.00	$0			
Pump Fuel	litre	4,011,548	FLONAS	0.92	$3,670,566			
Pumps Maintenance	yr*pump	18.5	PLMS	20,000.00	$369,714			
Access Road	L.S	0	#N/A	0.00	$0			
				Subtotal	$7,506,874			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Panda***						**Pit #**	***6***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	45,126	SBSBS	3.98	$179,798			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	142,503	RCSS	7.50	$1,068,770			
Dozing	m3	92,627	DSL	0.95	$87,995			
Substrate Produce and Place	m3	14,250	SCSTS	22.80	$324,878			
Sediment Berm Produce and Place	m3	1,425	SCSBS	24.21	$34,497			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Connector Channel	m3	48,700	#N/A	10.9	$530,830			
Spillway Construction	m3	42000	RC1H	17.8	$747,600			
Concrete Weir Construction	m3	225	CSFH	639.75	$143,944			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	0	PLS	195,000.00	$0			
Pipe Capital	m	317	PPLS	128.58	$40,717			
New Pipe Install	m	317	PPIS	50.00	$15,833			
Break and Install Pipe	m	0	PPBS	72.00	$0			
Pump Fuel	litre	547037	FLONAS	0.915	$500,539	Jay Ref #1		
Pumps Maintenance	yr*pump	8	PLMS	20,000.00	$151,249	Jay Ref #1		
Access Road	L.S	0	#N/A	0.00	$0			
Costs Split Amongst Three Pits				**Subtotal**	$3,916,699			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Koala North***						**Pit #**	***7***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	16,922	SBSBS	3.98	$67,424			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: CONSTRUCT LITORAL ZONES								
Blast Rim	m3	138,544	RCSS	7.50	$1,039,082			
Dozing	m3	90,054	DSL	0.95	$85,551			
Substrate Produce and Place	m3	13,854	SCSTS	22.80	$315,853			
Sediment Berm Produce and Place	m3	1,385	SCSBS	24.21	$33,539			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	0	#N/A	0	$0			
Drill and Blast Spillway	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	0	PLS	195,000.00	$0			
Pipe Capital	m	317	PPLS	128.58	$40,717			
New Pipe Install	m	317	PPIS	50.00	$15,833			
Break and Install Pipe	m	0	PPBS	72.00	$0			
Pump Fuel	litre	547037	FLONAS	0.915	$500,539	Jay Ref #1		
Pumps Maintenance	yr*pump	8	PLMS	20,000.00	$151,249	Jay Ref #1		
Access Road	L.S	0	#N/A	0.00	$0			
Costs Split Amongst Three Pits				**Subtotal**	$2,339,837			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Koala***						**Pit #**	***8***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	43,872	SBSBS	3.98	$174,803			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: COVER/CONTOUR SLOPES								
Blast Rim	m3	53,438	RCSS	7.50	$400,789			
Dozing	m3	34,735	DSL	0.95	$32,998			
Substrate Produce and Place	m3	5,344	SCSTS	22.80	$121,829			
Sediment Berm Produce and Place	m3	534	SCSBS	24.21	$12,936			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	2,700	#N/A	10.9	$29,430			
Drill and Blast Spillway	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	0	PLS	195,000.00	$0			
Pipe Capital	m	317	PPLS	128.58	$40,717			
New Pipe Install	m	317	PPIS	50.00	$15,833			
Break and Install Pipe	m	0	PPBS	72.00	$0			
Pump Fuel	litre	547037	FLONAS	0.915	$500,539	Jay Ref #1		
Pumps Maintenance	yr*pump	8	PLMS	20,000.00	$151,249	Jay Ref #1		
Access Road	L.S	0	#N/A	0.00	$0			
Costs Split Amongst Three Pits				**Subtotal**	$1,571,174			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Lynx***						**Pit #**	***9***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Fence and Signs	each	1	FSS	10,000.00	$10,000			
Berm at Crest	m3	25,070	SBSBS	3.98	$99,888			
Block Roads (20 m ramp length)	m3	9,000	RCSS	7.50	$67,500			
Dozing	m3	9,000	DSL	0.95	$8,550			
OBJECTIVE: COVER/CONTOUR SLOPES								
Blast Rim	m3	71,251	RCSS	7.50	$534,385			
Dozing	m3	46,313	DSL	0.95	$43,998			
Substrate Produce and Place	m3	7,125	SCSTS	22.80	$162,439			
Sediment Berm Produce and Place	m3	713	SCSBS	24.21	$17,249			
Vegetation	ha	1	VHFL	4,000.00	$4,000			
OBJECTIVE: WATER MANAGEMENT								
Outflow Channel	m3	45	#N/A	79.05	$3,557			
Drill and Blast Spillway	m3	0	#N/A	0	$0			
Concrete Weir Construction	m3	0	#N/A	0	$0			
OBJECTIVE: FLOOD PIT								
Pump Capital	each	0	PLS	195,000.00	$0			
Pipe Capital	m	0	PPLS	128.58	$0			
New Pipe Install	m	0	PPIS	50.00	$0			
Break and Install Pipe from Misery	m	0	PPBS	72.00	$0	Jay Ref #1		
Pump Fuel	litre	0	FLONAS	0.92	$0	Jay Ref #1		
Pumps Maintenance	yr*pump	2	PLMS	20,000.00	$0	Jay Ref #1		
Access Road	L.S	0	#N/A	0.00	$0			
				Subtotal	$951,565			
						Pct Land	Total Land	Total Water

Open Pit Name:	***Jay***						**Pit #**	***10***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
OBJECTIVE: COVER/CONTOUR SLOPES								
OBJECTIVE: WATER MANAGEMENT								
OBJECTIVE: FLOOD PIT								
Flooding Equipment	L.S	1	#N/A	#N/A	$429,000	Jay Ref #1		
Backflood Jay	m3	84,050,000	#N/A	0.10	$3,531,800	Jay Ref #1		
				Subtotal	$3,960,800			
						Pct Land	Total Land	Total Water

Tailings Impoundment Name: ***Cell A*** **Pond #** ***1***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: COVER TAILINGS								
Rock cover - Upper Zone								
Drill Blast Granite Rock	m3	369,204	GRCBLS	5.28	$1,949,524			
Ripp Granite Rock	m3	290,089	GRRPS	1.05	$304,593			
Load/Long Haul/Spread Compact	m3	659,293	GRCLHSS	6.35	$4,187,352			
Rock cover - Central Zone								
Drill Blast Granite Rock	m3	106,924	GRCBLS	5.28	$564,594			
Ripp Granite Rock	m3	84,012	GRRPS	1.05	$88,212			
Load/Long Haul/Spread Compact	m3	190,935	GRCLHSS	6.35	$1,212,683			
Rock cover - Water Interface Zone								
Drill Blast Granite Rock	m3	31,846	GRCBLS	5.28	$168,155			
Ripp Granite Rock	m3	25,021	GRRPS	1.05	$26,273			
Load/Long Haul/Spread Compact	m3	56,867	GRCLHSS	6.35	$361,178			
Vegetatation								
Vegetation Supplies (Seed, Fertilizer Plugs)	L.S	1	#N/A	963,000	$963,000			
Vegetation Equipment Capital Cost	L.S	1	#N/A	125,667	$125,667			
Vegetation Eqquipment Fuel	liter	41,667	FLONAS	0.92	$38,125			
OBJECTIVE: WEIR								
Excavate channel (Breach dike, dozer, unfrozen)	m3	0	SC3L	8.90	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJECTIVE: INTERNAL CHANNEL								
Excavate channel	m3	30,800	SC3L	8.90	$274,120			
Rip-rap	m3	13,650	RR2H	20.65	$281,873			
Transition material	m3	8,190	RR2S	21.77	$178,288			
Filter material - sand	m3	4,102	SCSH	22.89	$93,890			
OBJECTIVE: EXTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
OBJECTIVE: OUTLET DAM								
Excavate channel (Breach dike, dozer, unfrozen)	m3	0	SC3L	8.90	$0			
Excavate channel (Breach dike, dozer, frozen)	m3	0	RC3L	12.70	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJETIVE: PHASE 1 RECLAMATION POND								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip Rap	m3	0	RR2H	20.65	$0			
Granular Cap	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
				Subtotal	**$10,817,526**			
						Pct Land	**Total Land**	**Total Water**

Tailings Impoundment Name:	***Cell B***						**Pond #** ***2***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: COVER TAILINGS								
Rock cover - Upper Zone								
Drill Blast Granite Rock	m3	257,584	GRCBLS	5.28	$1,360,133			
Ripp Granite Rock	m3	202,388	GRRPS	1.05	$212,507			
Load/Long Haul/Spread Compact	m3	459,972	GRCLHSS	6.35	$2,921,409			
Rock cover - Central Zone								
Drill Blast Granite Rock	m3	124,081	GRCBLS	5.28	$655,189			
Ripp Granite Rock	m3	97,492	GRRPS	1.05	$102,367			
Load/Long Haul/Spread Compact	m3	221,573	GRCLHSS	6.35	$1,407,270			
Rock cover - Water Interface Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Vegetatation								
Vegetation Supplies (Seed, Fertilizer Plugs)	L.S	1	#N/A	963,000	$963,000			
Vegetation Equipment Capital Cost	L.S	1	#N/A	125,667	$125,667			
Vegetation Eqquipment Fuel	liter	41,667	FLONAS	0.92	$38,125			
OBJECTIVE: WEIR								
Excavate channel (Breach dike, dozer, unfrozen)	m3	1,755	SC3L	8.90	$15,621			
Rip-rap	m3	501	RR2H	20.65	$10,346			
Transition material	m3	357	RR2S	21.77	$7,775			
OBJECTIVE: INTERNAL CHANNEL								
Excavate channel	m3	48,400	SC3L	8.90	$430,760			
Rip-rap	m3	21,450	RR2H	20.65	$442,943			
Transition material	m3	12,870	RR2S	21.77	$280,167			
Filter material - sand	m3	6,446	SCSH	22.89	$147,541			
OBJECTIVE: EXTERNAL CHANNEL								
Excavate channel	m3	105,600	SC3L	8.90	$939,840			
OBJECTIVE: OUTLET DAM								
Excavate channel (Breach dike, dozer, unfrozen)	m3	0	SC3L	8.90	$0			
Excavate channel (Breach dike, dozer, frozen)	m3	0	RC3L	12.70	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJETIVE: PHASE 1 RECLAMATION POND								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip Rap	m3	0	RR2H	20.65	$0			
Granular Cap	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
				Subtotal	**$10,060,658**			
						Pct Land	**Total Land**	**Total Water**

Tailings Impoundment Name:	***Cell C***						**Pond # *3***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: COVER TAILINGS								
Rock cover - Upper Zone								
Drill Blast Granite Rock	m3	356,124	GRCBLS	5.28	$1,880,454			
Ripp Granite Rock	m3	279,811	GRRPS	1.05	$293,802			
Load/Long Haul/Spread Compact	m3	635,935	GRCLHSS	6.35	$4,038,999			
Rock cover - Central Zone								
Drill Blast Granite Rock	m3	195,447	GRCBLS	5.28	$1,032,028			
Ripp Granite Rock	m3	153,566	GRRPS	1.05	$161,244			
Load/Long Haul/Spread Compact	m3	349,013	GRCLHSS	6.35	$2,216,677			
Rock cover - Water Interface Zone								
Drill Blast Granite Rock	m3	28,474	GRCBLS	5.28	$150,351			
Ripp Granite Rock	m3	22,372	GRRPS	1.05	$23,491			
Load/Long Haul/Spread Compact	m3	50,846	GRCLHSS	6.35	$322,937			
Vegetatation								
Vegetation Supplies (Seed, Fertilizer Plugs)	L.S	1	#N/A	963,000	$963,000			
Vegetation Equipment Capital Cost	L.S	1	#N/A	125,667	$125,667			
Vegetation Eqquipment Fuel	liter	41,667	FLONAS	0.92	$38,125			
OBJECTIVE: WEIR								
Excavate channel (Breach dike, dozer, unfrozen)	m3	2,093	SC3L	8.90	$18,630			
Rip-rap	m3	594	RR2H	20.65	$12,272			
Transition material	m3	424	RR2S	21.77	$9,230			
OBJECTIVE: INTERNAL CHANNEL								
Excavate channel	m3	75,900	SC3L	8.90	$675,510			
Rip-rap	m3	33,638	RR2H	20.65	$694,614			
Transition material	m3	20,183	RR2S	21.77	$439,353			
Filter material - sand	m3	10,109	SCSH	22.89	$231,371			
OBJECTIVE: EXTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
OBJECTIVE: OUTLET DAM								
Excavate channel (Breach dike, dozer, unfrozen)	m3	0	SC3L	8.90	$0			
Excavate channel (Breach dike, dozer, frozen)	m3	0	RC3L	12.70	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJETIVE: PHASE 1 RECLAMATION POND								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip Rap	m3	0	RR2H	20.65	$0			
Granular Cap	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
				Subtotal	**$13,327,755**			
						Pct Land	**Total Land**	**Total Water**

Tailings Impoundment Name:	***Cell D***						**Pond # *4***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: COVER TAILINGS								
Rock cover - Upper Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Central Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Water Interface Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Vegetatation								
Vegetation Supplies (Seed, Fertilizer Plugs)	L.S	0	#N/A	0	$0			
Vegetation Equipment Capital Cost	L.S	0	#N/A	0	$0			
Vegetation Eqquipment Fuel	liter	0	FLONAS	0.92	$0			
OBJECTIVE: WEIR								
Excavate channel (Breach dike, dozer, unfrozen)	m3	4,982	SC3L	8.90	$44,336			
Rip-rap	m3	1,319	RR2H	20.65	$27,239			
Transition material	m3	952	RR2S	21.77	$20,723			
OBJECTIVE: INTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
OBJECTIVE: EXTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
OBJECTIVE: OUTLET DAM								
Excavate channel (Breach dike, dozer, unfrozen)	m3	0	SC3L	8.90	$0			
Excavate channel (Breach dike, dozer, frozen)	m3	0	RC3L	12.70	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJETIVE: PHASE 1 RECLAMATION POND								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip Rap	m3	0	RR2H	20.65	$0			
Granular Cap	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
				Subtotal	**$92,298**			
						Pct Land	**Total Land**	**Total Water**

Tailings Impoundment Name:	***Cell E***							**Pond # *5***
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: COVER TAILINGS								
Rock cover - Upper Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Central Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Water Interface Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Vegetatation								
Vegetation Supplies (Seed, Fertilizer Plugs)	L.S	0	#N/A	0	$0			
Vegetation Equipment Capital Cost	L.S	0	#N/A	0	$0			
Vegetation Eqquipment Fuel	liter	0	FLONAS	0.92	$0			
OBJECTIVE: WEIR								
Excavate channel (Breach dam, dozer, frozen)	m3	0	RC3L	12.70	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJECTIVE: INTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
OBJECTIVE: EXTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
OBJECTIVE: OUTLET DAM								
Excavate channel (Breach dike, dozer, unfrozen)	m3	19,197	SC3L	8.90	$170,853			
Excavate channel (Breach dike, dozer, frozen)	m3	6,399	RC3L	12.70	$81,267			
Rip-rap	m3	716	RR2H	20.65	$14,785			
Transition material	m3	8,646	RR2S	21.77	$188,206			
OBJETIVE: PHASE 1 RECLAMATION POND								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip Rap	m3	0	RR2H	20.65	$0			
Granular Cap	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
				Subtotal	**$455,112**			
						Pct Land	**Total Land**	**Total Water**

Tailings Impoundment Name:	***Phase 1***						**Pond # *6***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: COVER TAILINGS								
Rock cover - Upper Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Central Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Water Interface Zone								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Vegetatation								
Vegetation Supplies (Seed, Fertilizer Plugs)	L.S	0	#N/A	0	$0			
Vegetation Equipment Capital Cost	L.S	0	#N/A	0	$0			
Vegetation Eqquipment Fuel	liter	41,667	FLONAS	0.92	$38,125			
OBJECTIVE: WEIR								
Excavate channel (Breach dike, dozer, unfrozen)	m3	0	SC3L	8.90	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
OBJECTIVE: INTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip-rap	m3	0	RR2H	20.65	$0			
Transition material	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
OBJECTIVE: EXTERNAL CHANNEL								
Excavate channel	m3	0	SC3L	8.90	$0			
OBJECTIVE: OUTLET DAM								
Excavate channel	m3	0	SC3L	8.90	$0			
Rip Rap	m3	0	RR2H	20.65	$0			
Granular Cap	m3	0	RR2S	21.77	$0			
Filter material - sand	m3	0	SCSH	22.89	$0			
OBJETIVE: PHASE 1 RECLAMATION POND								
Excavate channel	m3	30,000	SC3L	8.90	$267,000			
Rip Rap	m3	3,100	RR2H	20.65	$64,015			
Granular Cap	m3	8,500	RR2S	21.77	$185,037			
Transition material	m3	2,000	SCSH	22.89	$45,778			
				Subtotal	**$599,954**			
						Pct Land	**Total Land**	**Total Water**

Rock Pile Name:	***Fox WRSA***					Rock Pile #: ***1***		
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	357,120	DRL	1.05	$374,976			
OBJECTIVE: WASTE ROCK COVER								
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	611,520	GRCBLS	5.28	$3,229,034			
Ripp Granite Rock	m3	480,480	GRRPS	1.05	$504,504			
Load/Short Haul/Spread Compact	m3	1,092,000	GRCSHSS	6.04	$6,597,816			
Rock cover -Waste Kimberlite								
Drill Blast Granite Rock	m3	609,000	GRCBLS	5.28	$3,215,728			
Ripp Granite Rock	m3	478,500	GRRPS	1.05	$502,425			
Load/Short Haul/Spread Compact	m3	1,087,500	GRCSHSS	6.04	$6,570,627			
OBJECTIVE: TOP AREA								
Dozer and contour	**m3**	**323,800**	**DRL**	**1.05**	**$339,990**			
				Subtotal	$21,335,101			
						Pct Land	Total Land	Total Water

Rock Pile Name:	***Misery WRSA***					**Rock Pile #: *2***		
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	357,120	DRL	1.05	$374,976			
OBJECTIVE: WASTE ROCK COVER								
Rock cover - Exposed Metasediment								
Drill Blast Granite Rock	m3	175,000	GRCBL2S	5.28	$924,060			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Short Haul/Spread Compact	m3	175,000	GRCSHSS	6.04	$1,057,342			
OBJECTIVE: TOP AREA								
Dozer and contour	**m3**	**141,354**	**DRL**	**1.05**	**$148,422**			
				Subtotal	$2,504,800			
						Pct Land	Total Land	Total Water

Rock Pile Name:	***Panda WRSA***						**Rock Pile #: *3***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	499,968	DRL	1.05	$524,966			
OBJECTIVE: WASTE ROCK COVER								
Rock cover - Landfill								
Drill Blast Granite Rock	m3	110,454	GRCBLS	5.28	$583,233			
Ripp Granite Rock	m3	86,785	GRRPS	1.05	$91,124			
Load/Short Haul/Spread Compact	m3	197,239	GRCSHSS	6.04	$1,191,707			
Rock cover - Landfarm								
Drill Blast Granite Rock	m3	15,081	GRCBLS	5.28	$79,632			
Ripp Granite Rock	m3	11,849	GRRPS	1.05	$12,442			
Load/Short Haul/Spread Compact	m3	26,930	GRCSHSS	6.04	$162,710			
Rock cover -CRSA								
Drill Blast Granite Rock	m3	543,064	GRCBLS	5.28	$2,867,562			
Ripp Granite Rock	m3	426,693	GRRPS	1.05	$448,028			
Load/Short Haul/Spread Compact	m3	969,757	GRCSHSS	6.04	$5,859,227			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
OBJECTIVE: TOP AREA								
Dozer and contour	m3	517,751	DRL	1.05	$543,639			
Aerial Seed	L.S.	1	#N/A	15000.00	$15,000			
				Subtotal	$12,379,271			
						Pct Land	Total Land	Total Water

Rock Pile Name:	***Pigeon WRSA***					**Rock Pile #: *4***		
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	357,120	DRL	1.05	$374,976			
Place Crushed Gravel	Lump Sum	5	#N/A	30000.00	$150,000			
OBJECTIVE: WASTE ROCK COVER								
Cover - Exposed Metasediment								
Dozer Slopes	m3	394,400	DRL	1.05	$414,120			
Place 3 m of Till	m3	1,479,000	SB3L	5.10	$7,542,900			
Drill Blast Granite Rock	m3	276,080	GRCBLS	5.28	$1,457,797			
Ripp Granite Rock	m3	216,920	GRRPS	1.05	$227,766			
Load/Short Haul/Spread Compact	m3	493,000	GRCSHSS	6.04	$2,978,684			
Rock cover -CRSA								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
OBJECTIVE: TOP AREA								
Dozer and contour	m3	0	DRL	1.05	$0			
				Subtotal	$13,146,243			
						Pct Land	Total Land	Total Water

Rock Pile Name:	***Sable WRSA***					**Rock Pile #: *5***		
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	571,392	DRL	1.05	$599,962			
OBJECTIVE: WASTE ROCK COVER								
Rock cover - Landfill								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Landfarm								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover -CRSA								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
OBJECTIVE: TOP AREA								
Dozer and contour	m3	200,000	DRL	1.05	$210,000			
				Subtotal	$809,962			
						Pct Land	Total Land	Total Water

Rock Pile Name:	***Lynx WRSA***						**Rock Pile #: *6***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	142,848	DRL	1.05	$149,990			
OBJECTIVE: WASTE ROCK COVER								
Rock cover - Landfill								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Landfarm								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover -CRSA								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
Rock cover - Low Grade Kimberlite								
Drill Blast Granite Rock	m3	0	GRCBLS	5.28	$0			
Ripp Granite Rock	m3	0	GRRPS	1.05	$0			
Load/Long Haul/Spread Compact	m3	0	GRCLHSS	6.35	$0			
OBJECTIVE: TOP AREA								
Dozer and contour	m3	34,000	DRL	1.05	$35,700			
				Subtotal	$185,690			
						Pct Land	Total Land	Total Water

Rock Pile Name: ***JAY WRSA*** **Rock Pile #:** ***7***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: WILDLIFE RAMPS								
Flatten slopes with dozer	m3	357,120	DRL	1.05	$374,976	Jay Ref #2		
OBJECTIVE: WASTE ROCK COVER								
Rock cover - Exposed Metasediment								
Drill Blast Granite Rock	m3	750,000	GRCBL2S	5.28	$3,960,256	Jay Ref #2		
Ripp Granite Rock	m3	0	GRRPS	1.05		Jay Ref #2		
Load/Short Haul/Spread Compact	m3	750,000	GRCSHSS	6.04	$4,531,467	Jay Ref #2		
OBJECTIVE: TOP AREA								
Dozer and contour	m3	251,000	DRL	1.05	$263,550	Jay Ref #2		
				Subtotal	$9,130,249			
						Pct Land	Total Land	Total Water

Building / Equip Name:	***All Areas***						Bldg / Equip #: ***1***	
ACTIVITY/MATERIAL	**Units**	**Quantity**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: INFRASTRUCTURE DECONTAMINATION & HAZ. MATERIAL REMOVAL								
Main Camp (Clean/Strip)	day	44	BDCSS	7,339.00	$322,916			
Main Camp (Purge/Decon)	day	28	BDPDS	13,184.00	$369,152			
Fox (Clean/Strip)	day	1	BDCSS	7,339.00	$7,339			
Misery Camp (Clean/Strip)	day	12	BDCSS	7,339.00	$88,068			
Misery Camp Purge/Decon)	day	1	BDPDS	13,184.00	$13,184			
Koala (Clean/Strip)	day	8	BDCSS	7,339.00	$58,712			
Pump Houses (Purge/Decon)	day	7	BDPDS	13,184.00	$92,288			
OBJECTIVE: INFRASTRUCTURE DEMOLITION & DISPOSAL								
Main Camp (450 excavator)	day	227	BR450S	3,792.00	$860,784			
Main Camp (330 excavator)	day	257	BR330S	3,420.00	$878,940			
Main Camp (35 ton truck)	day	187	BR30S	3,612.00	$675,444			
Main Camp (Demolition Supervisor)	day	126	BRDSS	1,800.00	$226,800			
Main Camp (Foreman)	day	112	BRFRS	1,764.00	$197,568			
Main Camp (4 Labourers)	day	115	BRLBRS	4,500.00	$517,500			
Main Camp	day	108	BRLDS	1,620.00	$174,960			
Koala (450 excavator)	day	38	BR450S	3,792.00	$144,096			
Koala (330 excavator)	day	20	BR330S	3,420.00	$68,400			
Koala (35 ton truck)	day	22	BR30S	3,612.00	$79,464			
Koala (Demolition Supervisor)	day	23	BRDSS	1,800.00	$41,400			
Koala (Foreman)	day	20	BRFRS	1,764.00	$35,280			
Koala (4 Labourers)	day	20	BRLBRS	4,500.00	$90,000			
Koala (2 Lead Hands)	day	20	BRLDS	1,620.00	$32,400			
Misery Camp (450 excavator)	day	15	BR450S	3,792.00	$56,880			
Misery Camp (330 excavator)	day	30	BR330S	3,420.00	$102,600			
Misery Camp (35 ton truck)	day	10	BR30S	3,612.00	$36,120			
Misery Camp (Demolition Supervisor)	day	15	BRDSS	1,800.00	$27,000			
Koala (2 Lead Hands)	day	15	BRLDS	1,620.00	$24,300			
Jay Culverts	L.S.	1	#N/A	691,200.00	691,200	Jay Ref #3 & EW #1		
Jay Powerline	L.S.	1	#N/A	476,400.00	476,400	Jay Ref #3		
Jay Pipelines and Pumps	L.S.	1	#N/A	487,200.00	487,200	Jay Ref #3		
Jay Misery Camp Buildings	L.S.	1	#N/A	981,500.00	981,500	Jay Ref #3		
Jay Truck Shop	L.S.	1	#N/A	142,700.00	142,700	Jay Ref #3		
OBJECTIVE: LANDFILL FOR INFRASTRCUTURE DEMOLITION WASTE								
Drill Blast Granite Rock	m3	110,454	GRCBLS	5.28	$583,233			
Ripp Granite Rock	m3	86,785	GRRPS	1.05	$91,124			
Load/Long Haul/Spread Compact	m3	197,239	GRCLHSS	6.26	$1,233,997			
OBJECTIVE: GRADE AND CONTOUR								
Scarify Landscape	ha	15	SCFYL	4300.00	$65,407			
Establish Vegetation	ha	365	VHFL	4000.00	$1,461,201			
Jay Scarify Landscape	ha	5	SCFYL	4300.00	$21,500	Jay Ref #5 & EW #3		
Jay Establish Vegetation	ha	20	VHFL	3400.00	$69,014	Jay Ref #5 & EW #3		
Capital Cost Seeding Equipment	L.S.	1	#N/A	109,969.24	$109,969			
Remove Culverts	L.S.	1	BRCLVS	27,620.79	$27,621			
Drill Blast Granite Rock for Concrete Slabs	m3	40,332	GRCBLS	5.28	$212,966			
Ripp Granite Rock for Concrete Slabs	m3	31,689	GRRPS	1.05	$33,274			
Cover Concrete Slabs	m3	72,021	GRCLHSS	6.35	$457,427			
OBJECTIVE: LINED SUMPS								
Drill Blast Granite Rock for Concrete Slabs	m3	26,878	GRCBLS	5.28	$141,923			
Ripp Granite Rock for Concrete Slabs	m3	21,118	GRRPS	1.05	$22,174			
Remove liner and place rock cover	m3	47,996	GRCLHSS	6.35	$304,833			
OBJECTIVE: RECLAIM ROADS & AIRSTRIP & OTHER								
Scarify Access and Haul Roads	ha	36	SCFYL	4300.00	$154,411			
Dozer Road Berms	m3	80,012	DSL	0.95	$76,012			
Jay Scarify Access and Haul Roads	ha	20	SCFYL	4300.00	$83,966	Jay Ref #4 & EW #2		
Dozer Road Berms	m3	44,193	DSL	0.95	$41,983	Jay Ref #4 & EW #2		
Placement of Esker Material	m3	25,000	GRCLHSS	6.35	$158,782	Jay Ref #4 & EW #2		
Scarify Airstrip	ha	11	SCFYL	4300.00	$47,300			
Remove Powerlines	m3	30,000	PWRL	25.50	$765,000			
Remove Bridges	L.S.	1	BRBRDGS	13,044.53	$13,045			
				Subtotal	$14,176,758		Total Land	Total Water

Post-Closure Monitoring & Maintenance: ***All Areas***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: MONITORING &REPORTING								
During Pit Flooding - Pit Water Quality Monitoring (SNP)	years*pit lake	54	#N/A	20,000	$1,080,000	Jay Ref #1		
Post Flooding - Pit Water Quality Monitoring (AEMP & SNP)	years*pit lake	80	#N/A	30,000	$2,400,000	Jay Ref #1		
Site Wide (AEMP & SNP)- Primary Reclamarion	yrs	3	#N/A	350,000	$1,050,000	Jay Ref #9		
Site Wide (AEMP & SNP)- Closure Monitoring	yrs	10	#N/A	175,000	$1,750,000	Jay Ref #9		
Site Wide (AEMP & SNP)- Pit Flooding Program	yrs	6	#N/A	30,000	$180,000	Jay Ref #9		
Panda Diversion Inspections	yrs	10	#N/A	$1,500	$15,000			
Geotechnical Inspections (Land)	yrs	13	#N/A	$60,000	$780,000	Jay Ref #9		
Geotechnical Inspections (Permafrost)	yrs	13	#N/A	$50,000	$650,000	Jay Ref #9		
Air Quality Monitoring Program (AQMP)	yrs	13	#N/A	$30,000	$390,000	Jay Ref #9		
Wildlife Effects Monitoring Program (WEMP)	yrs	13	#N/A	$120,000	$1,560,000	Jay Ref #9		
LLCF Vegetation Monitoring (VMP)	yrs	10	#N/A	$75,000	$750,000			
Site Vegetation Monitoring (VMP)	yrs	13	#N/A	$36,000	$468,000	Jay Ref #9		
Seepage Monitoring Program	yrs	13	#N/A	$67,500	$877,500	Jay Ref #9		
Archaeology Monitoring Program	yrs	6	#N/A	$10,000	$60,000			
Jay Turbity Monitoring	LS	1	#N/A	$312,000	$312,000	Jay Ref #9		
Pit Flooding Annual Staff (5 Labourers)	hrs	67525	lab-uss	37.49	$2,531,512	Jay Ref #1		
				Subtotal	$14,854,012			
						Pct Land	Total Land	Total Water

Water Management : ***All Areas***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: BREACH EMBANKMENT								
Bearclaw Dam								
Breach dam, dozer, unfrozen	m3	11,202	SC3L	8.90	$99,695			
Breach dam, dozer, frozen	m3	1,977	RC4L	13.50	$26,686			
Rip-rap	m3	512	RR2H	20.65	$10,583			
Transition material	m3	4,503	RR2S	21.77	$98,033			
King Pond Dam								
Breach dam, dozer, unfrozen	m3	4,860	SC3L	8.90	$43,254			
Breach dam, dozer, frozen	m3	0	RC4L	13.50	$0			
Rip-rap	m3	375	RR2H	20.65	$7,744			
Transition material	m3	1,744	RR2S	21.77	$37,960			
Waste Rock Dam								
Breach dam, dozer, unfrozen	m3	67,575	SC3L	8.90	$601,418			
Breach dam, dozer, frozen	m3	0	RC4L	13.50	$0			
Rip-rap	m3	731	RR2H	20.65	$15,100			
Transition material	m3	23,389	RR2S	21.77	$509,150			
Two Rock Dam								
Breach dam, dozer, unfrozen	m3	9,916	SC3L	8.90	$88,255			
Breach dam, dozer, frozen	m3	1,750	RC4L	13.50	$23,624			
Rip-rap	m3	379	RR2H	20.65	$7,821			
Transition material	m3	4,244	RR2S	21.77	$92,377			
Two Rock Dike								
Breach dike, dozer, unfrozen	m3	1,154	SC3L	8.90	$10,274			
Rip-rap	m3	357	RR2H	20.65	$7,372			
Transition material	m3	251	RR2S	21.77	$5,472			
Pigeon Outlet Pit Berm								
Breach berm, dozer, unfrozen - 2 areas	m3	784	SC3L	8.90	$6,978			
Rip-rap	m3	165	RR2H	20.65	$3,407			
Transition material	m3	379	RR2S	21.77	$8,250			
East Coffer Dam								
Breach dam, dozer, unfrozen	m3	726	SC3L	8.90	$6,460			
Rip-rap	m3	98	RR2H	20.65	$2,013			
Transition material	m3	366	RR2S	21.77	$7,958			
West Coffer Dam								
Breach dam, dozer, unfrozen	m3	135	SC3L	8.90	$1,202			
Rip-rap	m3	48	RR2H	20.65	$981			
Transition material	m3	89	RR2S	21.77	$1,943			
Breach Jay Dike								
Breach Jay Dike	m3	176,000	#N/A	9.48	$1,669,200	Jay Ref #6		
Turbidity Curtain	L.S.	1	#N/A	287,878.00	$484,800	Jay Ref #6		
Revegeate Shoreline	L.S.	1	#N/A	225,000.00	$225,000	Jay Ref #6		
OBJECTIVE: PANDA DIVERSION CHANNEL								
Cross Grades	L.S.	1	#N/A	20,000	$20,000			
1.0 Ice Access (Labour and Equipment)	L.S.	1	#N/A	28,182.00	$28,182			
2.0 Ice Ppad (Labour and Equipment)	L.S.	1	#N/A	540,128.00	$540,128			
3.0 Drill/Blast (Labour and Equipment)	L.S.	1	#N/A	287,707.00	$287,707			
4.0 Excavate (Labour and Equipment)	L.S.	1	#N/A	229,664.00	$229,664			
5.0 Produce Material (Labour and Equipmer	L.S.	1	#N/A	162,123.00	$162,123			
6.0 Scale (Labour and Equipment)	L.S.	1	#N/A	46,304.00	$46,304			
7.0 Berm Placement (Labour and Equipmen	L.S.	1	#N/A	87,671.00	$87,671			
8.0 Clean	L.S.	1	#N/A	77,558.00	$77,558			
9.0 PM/Survey	L.S.	1	#N/A	398,376.00	$398,376			
10.0 Fuel Operaiting Cost	liters	285253	FLONAS	0.92	$261,006			
OBJECTIVE: EKATI MINE								
Associated Streams - Re-establish drainage	L.S.	1	#N/A	325,000.00	$325,000	Jay Ref #5 & EW #3		
OBJECTIVE: QUARRY SITE								
Regrade and armor channels	L.S.	1	#N/A	333,000.00	$333,000			
				Subtotal	$6,899,730			
						Pct Land	Total Land	Total Water

Chemicals and Soil Contamination: ***All Areas***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
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 on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.								
HAZARDOUS MATERIALS AUDIT								
Phase (1,2,3) ESA (Drilling and Sampling)	L.S	1	#N/A	750,000.00	$750,000	Jay Ref #7		
TANK DECONTAMINATION								
Main Camp (Tank Decontamination)	day	22	BDTKS	18,184.00	$400,048			
Fox (Tank Decontamination)	day	6	BDTKS	18,184.00	$109,104			
Koala (Tank Decontamination)	day	2	BDTKS	18,184.00	$36,368			
HAZARDOUS MATERIALS REMOVAL								
Waste batteries	kg	30,000	#N/A	0.50	$15,000	Jay Ref #7		
Waste Oils Ship Off Site	liters	780,000	ORL	0.39	$306,752	Jay Ref #7		
Glycols Ship Off Site	litre	24,000	#N/A	1.25	$30,000	Jay Ref #7		
Paints	litre	1,800	#N/A	0.27	$486	Jay Ref #7		
Solvents	litre	9,000	#N/A	0.75	$6,750	Jay Ref #7		
Explosives	allow	2	#N/A	10,000.00	$20,000	Jay Ref #7		
CONTAMINATED SOIL REMEDIATION								
Excavate, Load, Haul to Landfarm	m3	35,000	SC4L	9.30	$325,500	Jay Ref #7		
Drill Blast Granite Rock	m3	14,000	GRCBLS	5.28	$73,925			
Ripp Granite Rock	m3	11,000	GRRPS	1.05	$11,550			
Backfill Excavations Granite Rock	m3	25,000	GRCLHSS	6.35	$158,782			
Remediate Soil	m3	25,000	CSRL	47.00	$1,175,000			
Technician and Analysis	L.S	1	#N/A	100,000.00	$100,000			
				Subtotal	$3,519,264			
						Pct Land	Total Land	Total Water

Underground Mine Name ***Panda*** **UG Mine #** ***1***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
OBJECTIVE: CONTROL ACCESS								
Portal - bulkhead and cover entrance	L.S.	1	PTS	362,904	$362,904			
Cap fresh air raise - concrete cap	L.S.	2	CC6S	158,358	$316,716			
				Subtotal	$679,621			
						Pct Land	Total Land	Total Water

Underground Mine Name	***Koala***						**UG Mine # *2***	
ACTIVITY/MATERIAL	**Unit**	**Qty**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Portal - bulkhead and cover entrance	L.S.	0	PTS	362,904	$0			
Cap fresh air raise - concrete cap	L.S.	2	CC6S	158,358	$316,716			
				Subtotal	$316,716			
						Pct Land	Total Land	Total Water

Underground Mine Name	***Koala North***					**UG Mine #** ***3***		
ACTIVITY/MATERIAL	**Unit**	**Qty**	**Cost Code**	**Unit Cost**	**Cost**	**% Land**	**Land Cost**	**Water Cost**
OBJECTIVE: CONTROL ACCESS								
Portal - bulkhead and cover entrance	L.S.	1	PTS	362,904	$362,904			
Cap fresh air raise - concrete cap	L.S.	2	CC6S	158,358	$316,716			
				Subtotal	$679,621			
						Pct Land	Total Land	Total Water

Mobilization: ***All Areas***

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
MOBILIZE EQUIPMENT								
Pipe Shipping	m	27,506	PPSS	14.0	$385,084	Jay Ref #1		
Pump Shipping	each	4	PLSS	2500.0	$10,000	Jay Ref #1		
*Minor Tools and Equipment (Inlcuding Vegetation)	L.S.	1	#N/A	100,000	$100,000			
Exacavators, 3	L.S.	1	#N/A	37,710	$37,710			
Dump Trucks, 12	L.S.	1	#N/A	203,052	$203,052			
Dozers, 3	L.S.	1	#N/A	377,096	$377,096			
Demolotion Shears, 2	L.S.	1	#N/A	25,140	$25,140			
Crane, 3	L.S.	1	#N/A	37,710	$37,710			
*Truck Tires	L.S.	1	#N/A	50,000	$50,000			
DEMOBILIZE EQUIPMENT								
Exacavators, 3	L.S.	1	#N/A	37,710	$37,710			
Dump Trucks, 12	L.S.	1	#N/A	203,052	$203,052			
Dozers, 3	L.S.	1	#N/A	377,096	$377,096			
Demolotion Shears, 2	L.S.	1	#N/A	25,140	$25,140			
Crane, 3	L.S.	1	#N/A	37,710	$37,710			
MOBILIZE CAMP								
Reclamation Activities Camp	allow	1	#N/A	150,000	$150,000			
Pit Flooding Camp	allow	1	#N/A	75,000	$75,000			
MOBILIZE WORKERS								
Reclamation Activities Airfare (two flights a week)	each	312	DSH7S	9100	2,839,200			
Pump Flooding Airfaire (one flight a week)	each	543	FLTSS	4500	2,441,250	Jay Ref #1		
Monitoring Airfare (6 flights a year)	each	60	FLTSS	4500	$270,000			
MOBILIZE FUEL								
Fuel Freight (Open Pit Pump Flooding)	litre	10,160,132	FLMBS	0.219	$2,225,069	Jay Ref #1		
Winter Road Usage (Diesel Density 0.832 kg/l)	tonnes	8,453	WRS	111.9	$946,151.1	Jay Ref #1		
Fuel Freight (Reclamation Activities Equipment)	litre	16,500,000	FLMBS	0.219	$3,613,500			
Winter Road Usage (Diesel Density 0.832 kg/l)	tonnes	13,728	WRS	111.9	$1,536,544.3			
WORKER ACCOMODATIONS								
Reclamation Activities	manday	235,030	ACCMS	96	$22,562,880	Jay Ref #8		
Pit Pump Flooding	manday	75,433	ACCML	100	$7,543,333	Jay Ref #1		
INTERIM CARE & MAINTENANCE								
Interim Care & Maintenance	annual	3	#N/A	$2,223,639	$6,670,917			
FINAL CLOSURE PLAN								
Preparation of final Closure Plan	L.S.	1	#N/A	1,000,000	$1,000,000			
PUMP FLOODING AND VEGETATION STAFF								
Pit Flooding Annual Staff (5 Labourers)	hrs	157,558	lab-uss	37.49	$5,906,862	Jay Ref #1		
Vegetation Labour	hrs	29,190	lab-uss	37.49	$1,094,333			

* Assumed to include winter road usage

Subtotal $60,781,539

Pct Land | Total Land | Total Water

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

ITEM	COST CODE	UNITS	LOW $	HIGH $	SPECIFIED $	COMMENTS
Granite Rock Capping						
Drill Blast Granite Rock (Remined Rock)	GRCBL	m3	#NA	#NA	5.28	
Drill Blast Granite Rock (Intact Rock)	GRCBL2	m3	#NA	#NA	5.28	
Ripping Granite Rock	GRRP	m3	#NA	#NA	1.05	Using DRL value
Load/Long Haul/Spread Compact	GRCLHS	m3	#NA	#NA	6.35	Ekati Internal
Load/Short Haul/Spread Compact	GRCSHS	m3	#NA	#NA	6.04	Ekati Internal
Fuel						
Fuel Operating Cost Automotive	FLOA	litre	0.99	1.39	1.05	Based on internal operating data and including automotive tax
Fuel Operating Cost Non -Automotive	FLONA	litre	0.99	1.39	0.92	Based on internal operating data excluding automotive tax
Fuel Mobilizattion	FLMB	litre	0.22	0.42	0.22	Based on internal operating data for freight from edmonton to ekati excluding winter road
Dozing						
Doze Rock piles	DR	m3	1.05	2.40	#N/A	LOW cost: doze crest off dump
Doze overburden/Soil piles	DS	m3	0.95	3.80	#N/A	HIGH cost: push up to 300 m
Excavate Rock, Controlled						
RC1 (Drill, blast, load, short haul (<500m) Dump	RC1	m3	12.05	17.80	#N/A	low - foundation excavation, high - spillway excavation
RC1 (Drill, blast, load, short haul (<500m) Dump + spread and compact	RC3	m3	12.70	18.40	#N/A	LOW Reclaim Default value designated for blasting of frozen core damns and short haul
RC1 + long haul + spread and compact	RC4	m3	13.50	19.20	#N/A	LOW Reclaim Default value designated for blasting of frozen core damns/access ramps and long haul
Drill and Blast (Specified Activity)	RCS	m3	#N/A	#N/A	7.50	2004 RCSL value for low specified, blast & doze pit rim)
Excavate Rip Rap						
RR1 (Drill, blast, Load Short Haul (<500 m) Dump and Spread + Long Haul	RR2	m3	14.20	20.65	21.77	HIGH cost: quarry & place rip rap in channel SPECIFIED for transational material average of sand and rip rap
Excavate Soil, Controlled						
SC1 (Excavate, Load, Short Haul (<500 m), Dump) + Spread and Compact	SC3	m3	8.90	14.20	#N/A	LOW Reclaim Default value designated for breaching dykes and excavations and short haul
SC1 (Excavate, Load, Long Haul (<500 m), Dump) + Spread and Compact	SC4	m3	9.30	23.20	#N/A	LOW Reclaim Default value designated for breaching dykes and excavations and long haul
SC1 (Excavate, Load, Short haul (<500 m), Dump) + Specified activity	SCS	m3	#N/A	22.89	17.35	SPECIFIED cost: backfill adit with waste rock, High - sand bedding layer for liners
Produce and Place Littoral Substrate	SCST	m3	#NA	#NA	22.80	Internal Estimate 2011 EBA $16.27 produce + $ 6.53 average for placement)
Produce and Plate Littotal Sediment Berm	SCSB	m3	#NA	#NA	24.21	Internal Estimate 2011 EBA $10.85 produce + $ 13.36 average for placement)
Excavate Soil; Low Spec's and QA/QC						
excavate/load/short haul + spread and compact	SB3	m3	5.10	8.90		Low: non-engineered; High:engineered
Scarify						
Scarify Road	SCFY	ha	4,300.00	6,030.00	2150	LOW Reclaim Default
Vegetation						
Hydroseed, Flat	VHF	ha	4,000.00			
Excavate Soil, Bulk						
Construct and Reshape Berm	SBSB	m3	3.20	6.30	3.98	
Shaft, Raise & Portal Closures						
Portals - Type 7 and Type 8	PT	L.S.	#NA	#NA	362,904.30	SPECIFIED Source: McIntosh 2004 report - bulkhead (in rock), backfilling tunnel and covering the entrance with waste rock. See report for more details.
Concrete work						
Small pour, Formed	CSF	m3	426.50	639.75	#N/A	LOW Reclaim value used for Spillway Construction
Type 6 - concrete cap	CC6	L.S.			158,358.24	SPECIFIED Source: McIntosh 2004 report - ventilation raises (filling raises with waste rock and covering caps after construction). See report for more details.
Pumps						
Pump Capital Cost Large, >	PL	each	5,618.16	112,363.20	195,000.00	EBA Estimate
Pump Shipping	PLS	each			2,500.00	EBA Estimate
Pump Maintenance	PLM	yr/pump	25,000.00	25,000.00	20,000.00	Internal Estimate
PiPes						
Pipe - Large, > 6 inch diameter	PPL	m	1.12	202.25	128.58	EBA Estimate for 18" DR11 HDPE Pipe
Pipe Shipping	PPS	m			14.00	EBA Estimate for 18" DR11 HDPE Pipe
Pipe Install	PPI	m			50.00	EBA Estimate for 18" DR11 HDPE Pipe
Break and Install	PPB	m			72.00	EBA Estimate for 18" DR11 HDPE Pipe
Signs and Fence						
Signs and Fence	FS	each	#NA	#NA	10,000.00	Based on internal estimate per pit
Oil						
Remove from site	OR	litre	0.43	1.20		LOW Reclaim Default Value
Remediate on site	CSR	m3	47.00	146.00	#N/A	LOW cost: bio-remediate on-site. HIGH cost: ship off-site to landfil as haz. waste
Buildings - Decontaminate						
Clean/Strip	BDCS	days			7,339.00	Golder Report Site Specific Estimated Cost
Purge/Decon	BDPD	days	0.00	0.00	13,184.00	Golder Report Site Specific Estimated Cost
Tank Decontamination	BDTK	days			18,184.00	Golder Report Site Specific Estimated Cost
Buildings - Remove						
450 Excavator	BR450	days			3,792.00	Golder Report Site Specific Estimated Cost
330 Excavator	BR330	days			3,420.00	Golder Report Site Specific Estimated Cost
35 Ton Truck	BR30	days			3,612.00	Golder Report Site Specific Estimated Cost
Demolition Supervisor	BRDS	days			1,800.00	Golder Report Site Specific Estimated Cost
Demolition Foreman	BRFR	days			1,764.00	Golder Report Site Specific Estimated Cost
4 Demolition Labourers	BRLBR	days			4,500.00	Golder Report Site Specific Estimated Cost
2 Demolition Leadhands	BRLD	days			1,620.00	Golder Report Site Specific Estimated Cost
Culverts	BRCLV	L.S.			27,620.79	Komex estimate for removal of culverts
Bridges	BRBRDG	L.S.			13,044.53	Komex estimate for removal of bridges
Winter Road						
Usage Rate	WR	tonnexkm	#N/A	#N/A	111.93	Calculated from a rate of $0.2907 tonne/km multipled by 385 distance from Yellowknife to Ekati
Mobilize Workers						
Dash 7 Flight	DSH7	each	4500.00	9100.00	9,100.00	Ekati Cost
10 person plane	FLTS	each	4500.00	9100.00	4,500.00	AANDC Interim Care and Maintenance Value
Accomodation						
Primary Reclamation Activities	ACCM	manday	100.00	175.00	96.00	
Pit Flooding	ACCM	manday	100.00	175.00	100.00	
Typical Labour & Equipment Rates						
labour - unskilled	lab-us	$/hr	31.00	43.98	37.49	Specific avergae of high and low RECLAIM values

DOMINION DIAMOND

Appendix B

Jay Reclamation Cost Estimate Golder Technical Memorandum

TECHNICAL MEMORANDUM

DATE May 17, 2016 **REFERENCE No.** 1546701-E16028-TM-Rev0-8100

TO Mr. Lukas Novy
Dominion Diamond Ekati Corporation

CC Elliot Holland and Claudine Lee

FROM John Cunning and Ermanno Rambelli **EMAIL** John_Cunning@golder.com; Ermanno_Rambelli@golder.com

CLOSURE COST ESTIMATE – JAY PROJECT COMPONENTS

1.0 INTRODUCTION AND OBJECTIVES

At the request of Dominion Diamond Ekati Corporation (Dominion Diamond), Golder Associates Ltd. (Golder) has prepared a conceptual-level closure costs for specific Jay Project reclamation activities outlined in the Jay closure and reclamation plan. The costs will be utilized by Dominion Diamond in the development of an overall regulatory RECLAIM estimate for the Jay Project.

2.0 SCOPE OF WORK AND EXCLUSIONS

The scope of work covered by this cost estimate the following activities:

- backflooding the lower portion of Jay Pit with water from the Misery Pit;
- backflooding remaining Jay Pit and diked area with water from Lac du Sauvage;
- backflooding to create a freshwater cap on the Misery Pit with water from Lac du Sauvage;
- breaching the Jay Dike;
- Sub-Basin B Diversion Channel regrading;
- roads, pipeline benches, and pad reclamation;
- power line demolition and removal;
- reclamation of surface facilities for Jay Pit mining, including infrastructure demolition/removal;
- demolition and removal of fabric-covered truck shop and 250-persons dorm for the Misery camp expansion;
- water management pumping and pipeline systems; and,
- post closure monitoring

Excluded from the scope of work are the following items:

- Changes in the Ekati Pit Flooding Plan reclamation cost that result from the Jay Project including decreased flooding volume for the Panda/Koala Open Pits. The changes to the pit flooding plan will be developed by Dominion Diamond as part of the Jay RECLAIM security estimate.
- Development of costs for capping exposed co-placed mixed granite and metasediment during the operational period of the Jay Waste Rock Storage Area. This costs will be developed based on preliminary construction sequencing of the rock pile (developed by Golder) and will be included in the Jay RECLAIM security estimate.
- Mobilization and indirect costs such as crew accommodations and flights, site equipment, project management are not included in the estimate. These costs will be included by Dominion Diamond as part of the Jay RECLAIM estimate.

3.0 KEY ASSUMPTIONS

All cost estimates have been prepared at a conceptual level. To prepare the estimates, assumptions were necessary about various aspects of the work that will be defined in the detailed design stage.

The following bullet points summarize key assumptions that form the basis of this cost estimate. They represent an integral component of this technical memorandum and should not be separated from the costs provided. Changes to the conditions associated with these assumptions will likely impact closure costs.

- All costs are to be calculated in absolute values. Distribution in time and application of discounting or inflation rates will be the responsibility of Dominion Diamond.
- Specific mobilization and demobilization costs for the Jay work are not included, as all such activities are assumed to be conducted in conjunction with Ekati closure works.
- The final cost of fuel delivered to a central storage location at the Jay site is CAD $1.20 per litre.
- Misery Pit and Jay Pit backflooding will occur year round, subject to the limits indicated in the closure plan for the project (Golder 2016).
- As part of the Jay Project, Lynx Pit will be used as a settling facility for total suspended solid (TSS) laden water during the final dewatering of the diked area of Lac du Sauvage (in conjunction with the Misery Pit). For final closure, the approximately 3 m or 300,000 m^3 remaining volume will be filled with natural precipitation and surface water inflow. Closure costs for pit lake monitoring of the Lynx Pit during its flooding with natural precipitation and surface water inflow have been allocated.
- For costing purposes, it has been assumed that each of the planned dike breaches will be on average 100 m long and 4 m deep. This assumption will likely need to be updated as the design advances.
- Breach materials will be placed locally to extend shallower areas of the dike.
- Regrading is required for the following areas:
  - diversion channel
  - access roads—Jay Road, Jay North Road, pipeline roads
  - pipeline benches

  - laydown areas—laydowns 1 to 3, pit operations laydown; ore transfer pad assumed to be flooded and not requiring regrading

- An estimated 25,000 m^3 of esker material will be stockpiled and will need to be placed on the access roads for reclamation.
- Ten percent of access road materials will need to be removed to restore natural water and drainage management after the removal of the culverts.
- Approximately 5 km of power line is to be removed, with poles approximately 80 m apart.
- Power poles and cables will be left at an on-site landfill (in practice, they will likely be removed for salvage/scrap value, but this is not considered in the cost estimate).
- Power poles and lines are assumed to be similar to the ones constructed for Misery powerline.
- Two 25-tonne loads of potentially contaminated materials and other materials will need to be removed from the site, generated by closure activities. This material will be hauled to Edmonton and disposed at an approved waste facility.
- The fabric-covered truck shop and 250-person expansion specifications are based on the information provided by Dominion Diamond on April 2, 2016 (Novy 2016, pers. comm.).
- Demolition and removal of utilities and septic facilities at the expansion has not been included in the estimate. It is assumed that the expansion camp will tie into the existing main camp facilities and have been included in the Ekati closure estimate.
- All equipment, labour, and material will be supplied by a third party contractor.
- A 20% markup for contractor overhead and profit was applied to reflect that a third party will be hired to complete the work.
- Dominion Diamond will provide site operations buildings for contractor use during closure activities.
- Employees will work a two week on, two week off schedule with an average production of 10.5 hours per 12-hour shift.
- Overtime is calculated based on a two week on, two week off schedule with overtime averaged over three weeks.
- Pit Water Quality Monitoring will include monitoring during the flooding of Misery, Lynx, and Jay pits and a 10 year post pit flooding monitoring period (per pit).
- Site wide AEMP and SNP water quality monitoring to include 3 year period during primary reclamation, and a 10 year post closure period, and for 6 years for the remainder of the pit flooding program.
- Site wide Jay monitoring requirements for geotechnical, wildlife, seepage, air quality and vegetation were based on monitoring during a three year primary reclamation period and then a 10 year post closure monitoring period.
- An allowance of $225,000 is included for revegetation along the shoreline of the Jay dike.
- No allowance is made for contingencies or scope growth.

- No allowance is made for escalation.
- Taxes are not included.

4.0 COST SUMMARY

A high level summary of the estimated conceptual direct cost for the closure of the Jay Project facilities is provided in Table 1. A more detailed summary is provided in Table 2.

Table 1: Estimated Costs Summary

Item	Estimated Cost (CAD)
Backflooding	10,552,600
Breaching Jay Dike	2,379,000
Access Roads	284,800
Buildings and Infrastructure - Demolition and Removal	2,779,000
Buildings and Infrastructure - Regrading	140,400
Chemicals and Soil Contamination	472,300
WRSA Reclamation	638,600
Closure and Post-Closure Monitoring	2,617,000
Total Estimated Cost	**19,863,700**

Note: Costs include contractor overhead and profit.

CAD = Canadian dollars; WRSA = waste rock storage area.

Table 2: Detailed Estimated Costs Summary

Description	Estimated Cost (CAD)
Backflooding	
Pumping water from Misery to Jay	1,493,300
Backflooding Misery Pit	4,669,500
Backflooding Jay Pit	3,531,800
Backflooding equipment	858,000
Breaching Jay Dike	
Breaching earthworks	1,669,200
Supply and install turbidity curtain	267,600
Maintain turbidity curtain	136,800
Remove turbidity curtain	80,400
Revegetation	225,000
Access Roads	
Regrade Access Roads	126,000
Place Esker Material	158,800
Buildings and Infrastructure - Demolition and Removal	
Culverts	265,200
Remove excess materials	426,000
Demo power lines	476,400
Demo pipeline and pumps	487,200
Demo, remove, dispose of Misery Camp buildings	981,500
Demo, remove, dispose of truck shop	142,700
Buildings and Infrastructure - Regrading	
Diversion Channel	15,600
Pipeline Benches	12,000
Laydowns	112,800
Chemicals and Soil Contamination	
Materials and Soil Remediation	472,300
WRSA Reclamation	
Wildlife Access Ramps	375,000
Dozer Top WRSA Surface	263,600
Closure (3 year) Post-Closure (10 year) Monitoring	
During Flooding Monitoring	260,000
Post Flooding Monitoring	900,000
Jay Turbidity Monitoring	312,000
Site Wide (AEMP & SNP)	430,000
Geotechnical Inspections	195,000
Wildlife Effects Monitoring	195,000
Seepage Monitoring	195,000
Air Quality Monitoring	65,000
Site Wide Vegetation Monitoring	65,000
Total Estimated Cost	**19,863,700**

Note: Costs include contractor overhead and profit.
CAD = Canadian dollars; WRSA = waste rock storage area.

5.0 CLOSURE

This memorandum has been prepared to provide a high level overview of the incremental closure costs associated with closing installations associated with the Jay Project, in accordance with the closure plan presented in the *Jay Project Conceptual Closure Plan and Reclamation* report (Golder 2016). All exclusions and assumptions presented should be taken into account in the use of the cost estimate.

The reader is referred to the Study Limitations which follows the text and forms an integral part of this technical memorandum.

If you have any questions, please do not hesitate to contact the authors of this memorandum.

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Björn Weeks, Ph.D., P.Eng. (MB)
Principal, Senior Geo-Environmental Engineer

ORIGINAL SIGNED

Leon Lam BASC, EIT
Estimator

ORIGINAL SIGNED & SEALED

John Cunning, P.Eng.
Principal, Senior Geotechnical Engineer

ORIGINAL SIGNED

Ermanno Rambelli, P.Geo. (BC)
Associate, Senior Engineering Geologist
Project Manager

BW/LL/JCC/ER/rs/it

Attachment: Study Limitations

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PERMIT TO PRACTICE
GOLDER ASSOCIATES LTD.
Signature ORIGINAL SIGNED
Date _____
PERMIT NUMBER: P 049
NT/NU Association of Professional Engineers and Geoscientists

REFERENCES

Golder (Golder Associates Ltd.). 2016. Jay Project Conceptual Closure and Reclamation Plan. Prepared for Dominion Diamond Ekati Corporation.

Novy, Lukas. 2016. Senior Environmental Advisor – Closure & Reclamation, Dominion Diamond Ekati Corporation. Small 2 Bay Fabric Truck Shop.pdf; 250 Person Misery Camp Expansion.pdf. Email attachments sent to Björn Weeks, Principal, Senior Geotechnical Engineer, Golder Associates Ltd. April 2, 2016.

STUDY LIMITATIONS

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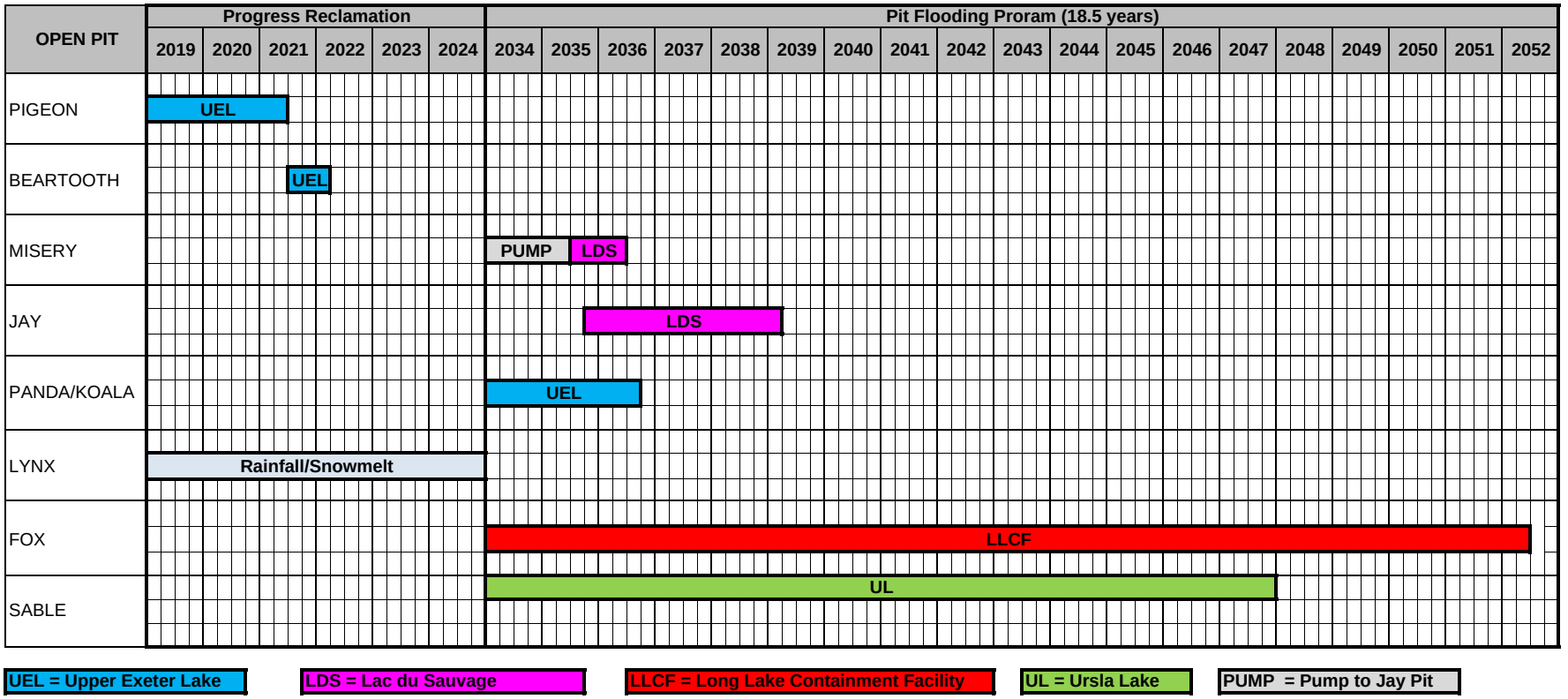
Appendix C

Jay Project Pit Flooding Plan



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Appendix D

WLWB Approved and Jay Project Pit Flooding RECLAIM Costs

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WLWB APPOVED PIT FLOODING PLAN RECLAIM COSTS	$67,160,497

RECLAIM: OPEN PITS							
Open Pit	**Access Road**	**Pump Capital**	**Pipe Capital**	**New Pipe Install**	**Break Install Pipe**	**Fuel Purchase**	**Pump Maintenance**
Pigeon	693,000	390,000	951,492	370,000	--	1,018,825	102,620
Misery	425,000	780,000	369,282	143,600	--	3,060,196	308,235
Lynx	--	--	--	--	206,784	387,251	39,005
Beartooth	--	--	1,306,887	508,200	--	325,642	32,800
Fox		195,000	641,871	249,600	--	3,670,566	369,714
Panda/Koala	--	--	122,151	47,500	--	6,981,451	703,200
Sable		195,000	514,320	200,000	--	2,779,872	280,000
TOTAL	**1,118,000**	**1,560,000**	**3,906,003**	**1,518,900**	**206,784**	**18,223,804**	**1,835,575**

RECLAIM MOB/DEMOB								
Open Pit	**Pipe Shipping**	**Pump Shipping**	**Fuel Freight**	**Fuel Winter Road**	**Pump Flooding Airfare**	**Flood Monitoring Airfare**	**Accommodations**	**Labor**
Pigeon	103,600	5,000	243,850	103,691				
Misery	40,208	10,000	732,440	311,451				
Lynx	--	--	92,686	39,412				
Beartooth	142,296	--	77,941	33,142	2,835,000	270,000	8,760,000	6,705,087
Fox	69,888	2,500	878,529	373,571				
Panda/Koala	13,300	--	1,670,970	710,535				
Sable	56,000	2,500	665,347	282,921				
TOTAL	**425,292**	**20,000**	**4,361,763**	**1,854,723**	**2,835,000**	**270,000**	**8,760,000**	**6,705,087**

RECLAIM POST CLOSURE MONITORING				
Open Pit	**During Pit Lake (yrs)**	**During Pit Lake**	**Post Flooding**	**Labor**
Pigeon	3	60,000	300,000	
Misery	4	80,000	300,000	
Lynx	1	10,000	300,000	
Beartooth	2	40,000	300,000	2,873,609
Fox	19	380,000	300,000	
Panda/Koala	18	360,000	300,000	
Sable	14	280,000	300,000	
TOTAL	**61**	**1,210,000**	**2,100,000**	**2,873,609**

RECLAIM BUILT IN COSTS					
Open Pit	**PM**	**Eng**	**H&SE**	**Bonding**	**Contingency**
Pigeon	176,297	176,297	17,630	17,630	528,890
Misery	254,316	254,316	25,432	25,432	762,947
Lynx	31,652	31,652	3,165	3,165	94,956
Beartooth	108,676	108,676	10,868	10,868	326,029
Fox	256,338	256,338	25,634	25,634	769,013
Panda/Koala	392,715	392,715	39,272	39,272	1,178,145
Sable	198,460	198,460	19,846	19,846	595,379
TOTAL	**1,418,453**	**1,418,453**	**141,845**	**141,845**	**4,255,360**

DOMINION DIAMOND

JAY PIT FLOODING PLAN RECLAIM COSTS	$ 60,355,271

RECLAIM: OPEN PITS									
Open Pit	**Flooding Equipment**	**Lower/Backflood**	**Access Road**	**Pump Capital**	**Pipe Capital**	**New Pipe Install**	**Break Install Pipe**	**Fuel Purchase**	**Pump Maintenance**
Pigeon			693,000	390,000	951,492	370,000	--	1,018,825	102,620
Beartooth			--	--	1,306,887	508,200	--	325,642	32,800
Misery	429,000	6,162,800	--	--	--	--	--	--	--
Jay	429,000	3,531,800							
Panda/Koala			--	--	122,151	47,500	--	1,501,616	453,746
Lynx	--	--	--	--	--	--	--	--	--
Fox				195,000	641,871	249,600	--	3,670,566	369,714
Sable				195,000	514,320	200,000	--	2,779,872	280,000
TOTAL	**858,000**	**9,694,600**	**693,000**	**780,000**	**3,536,721**	**1,375,300**	**0**	**9,296,521**	**1,238,881**

RECLAIM MOB/DEMOB								
Open Pit	**Pipe Shipping**	**Pump Shipping**	**Fuel Freight**	**Fuel Winter Road**	**Pump Flooding Airfare**	**Flood Monitoring Airfare**	**Accommodations**	**Labor**
Pigeon	103,600	5,000	243,850	103,691				
Beartooth	142,296	--	77,941	33,142				
Misery	--	--						
Jay	--	--	--	--	2,441,250	270,000	7,543,333	5,906,862
Panda/Koala	13,300	--	359,403	152,827				
Lynx	--	--	--					
Fox	69,888	2,500	878,529	373,571				
Sable	56,000	2,500	665,347	282,921				
TOTAL	**385,084**	**10,000**	**2,225,069**	**946,151**	**2,441,250**	**270,000**	**7,543,333**	**5,906,862**

RECLAIM POST CLOSURE MONITORING				
Open Pit	**During Pit Lake (yrs)**	**During Pit Lake**	**Post Flooding**	**Labor**
Pigeon	3	60,000	300,000	
Beartooth	2	40,000	300,000	
Misery	2	40,000	300,000	
Jay	5	100,000	300,000	2,531,512
Panda/Koala	3	60,000	300,000	
Lynx	6	120,000	300,000	
Fox	19	380,000	300,000	
Sable	14	280,000	300,000	
TOTAL	**54**	**1,080,000**	**2,400,000**	**2,531,512**

RECLAIM BUILT IN COSTS					
Open Pit	**PM**	**Eng**	**H&SE**	**Bonding**	**Contingency**
Pigeon	176,297	176,297	17,630	17,630	528,890
Beartooth	108,676	108,676	10,868	10,868	326,029
Misery	329,590	329,590	32,959	32,959	988,770
Jay	198,040	198,040	19,804	19,804	594,120
Panda/Koala	106,251	106,251	10,625	10,625	318,752
Lynx	0	0	0	0	0
Fox	256,338	256,338	25,634	25,634	769,013
Sable	198,460	198,460	19,846	19,846	595,379
TOTAL	**1,373,651**	**1,373,651**	**137,365**	**137,365**	**4,120,954**

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Appendix E

Jay WRSA Construction Sequence

April 26, 2016

Jay WRSA Sequence and Co-placement surface areas

Golder Associates

2020

Co-placed <u>total</u> <u>exposed</u> surface area: 18,000 m^2

Competent Overburden Soils

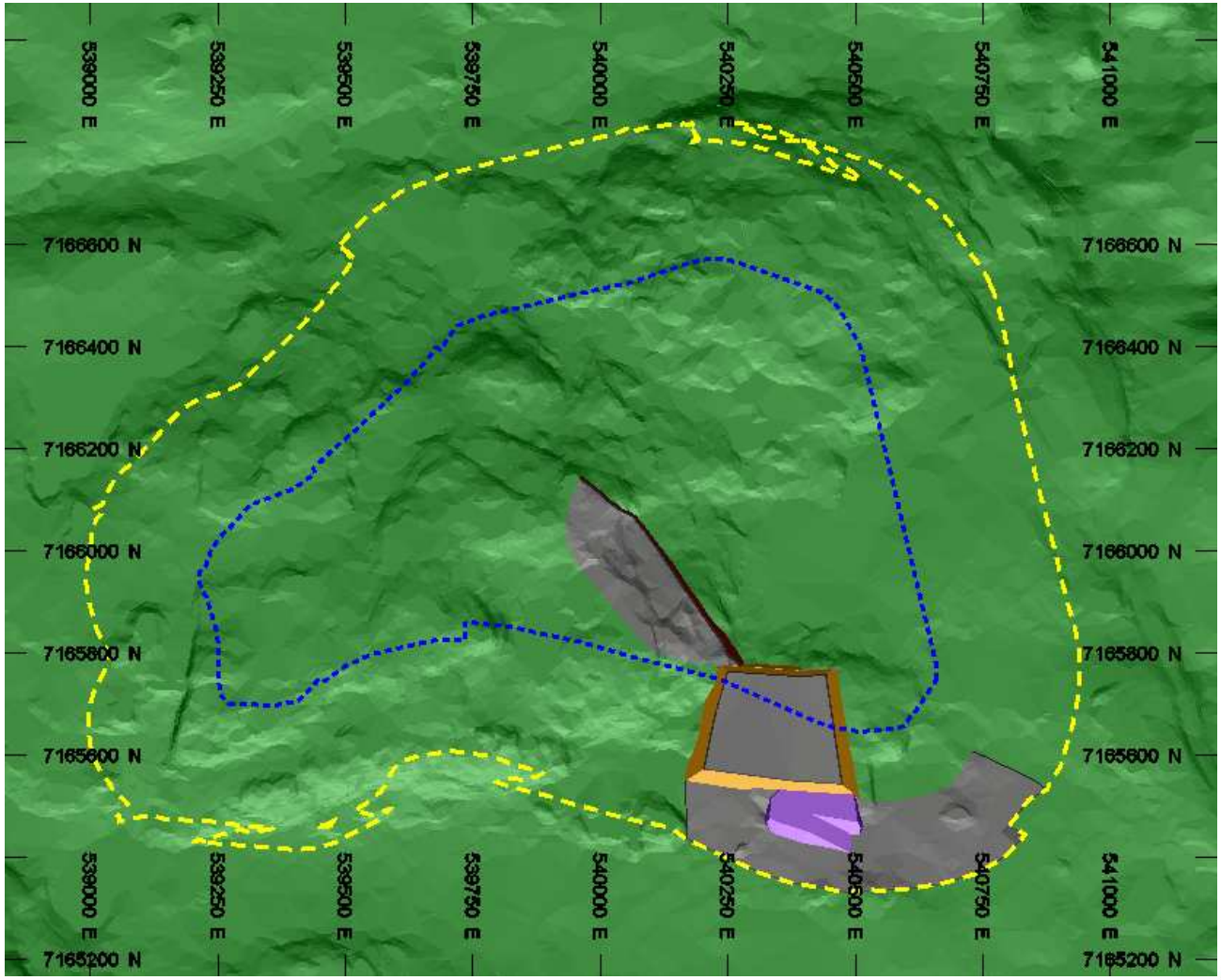
Lakebed Sediments

Granite

Co-placed Metasediments, Diabase, and Granite

WRSA final crest

WRSA footprint



Golder Associates

2021

Co-placed surface area:
172,000 m^2

Competent Overburden Soils

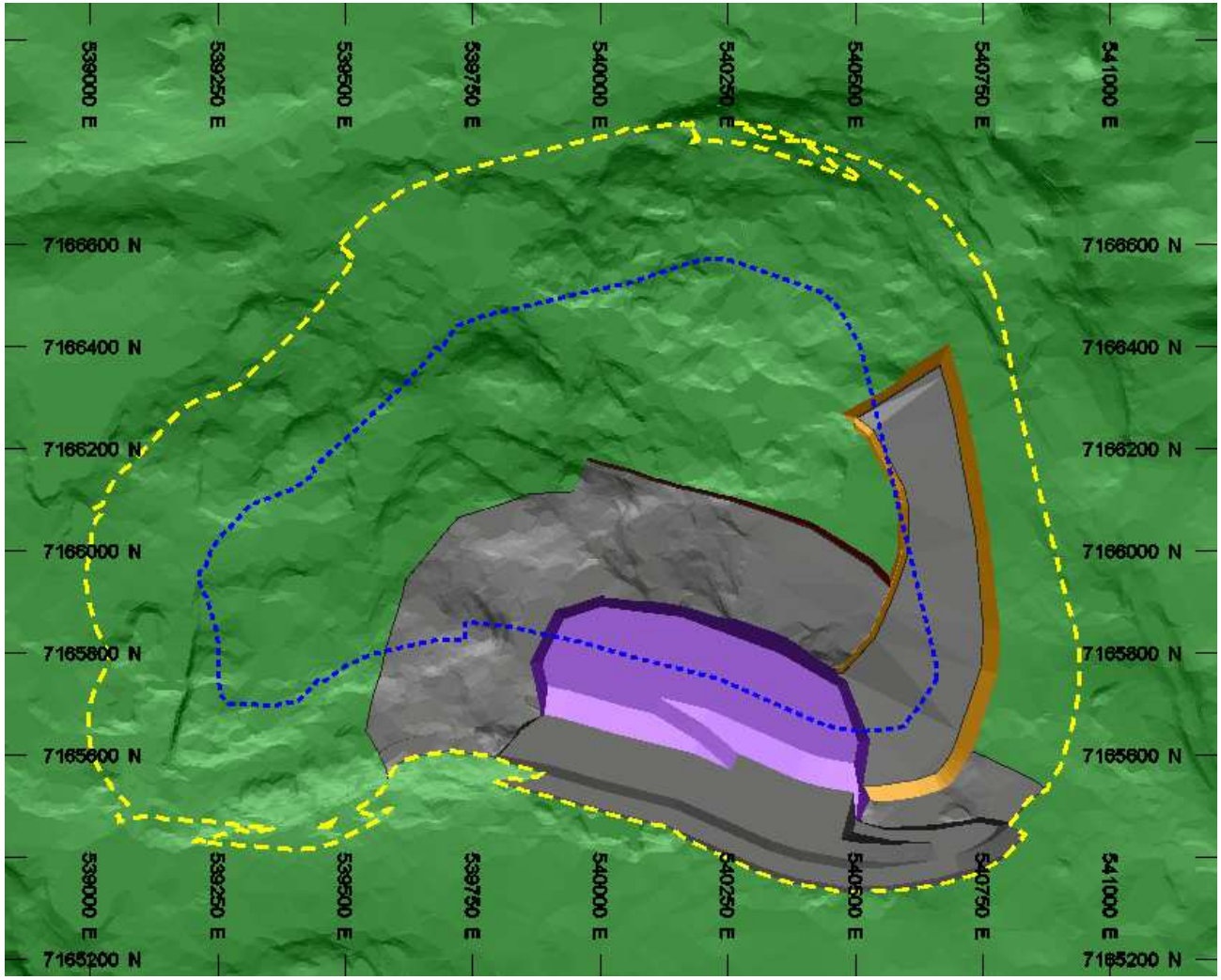
Lakebed Sediments

Granite

Co-placed Metasediments, Diabase, and Granite

WRSA final crest

WRSA footprint



Golder Associates

2022

Co-placed surface area:
188,500 m^2

Competent Overburden Soils

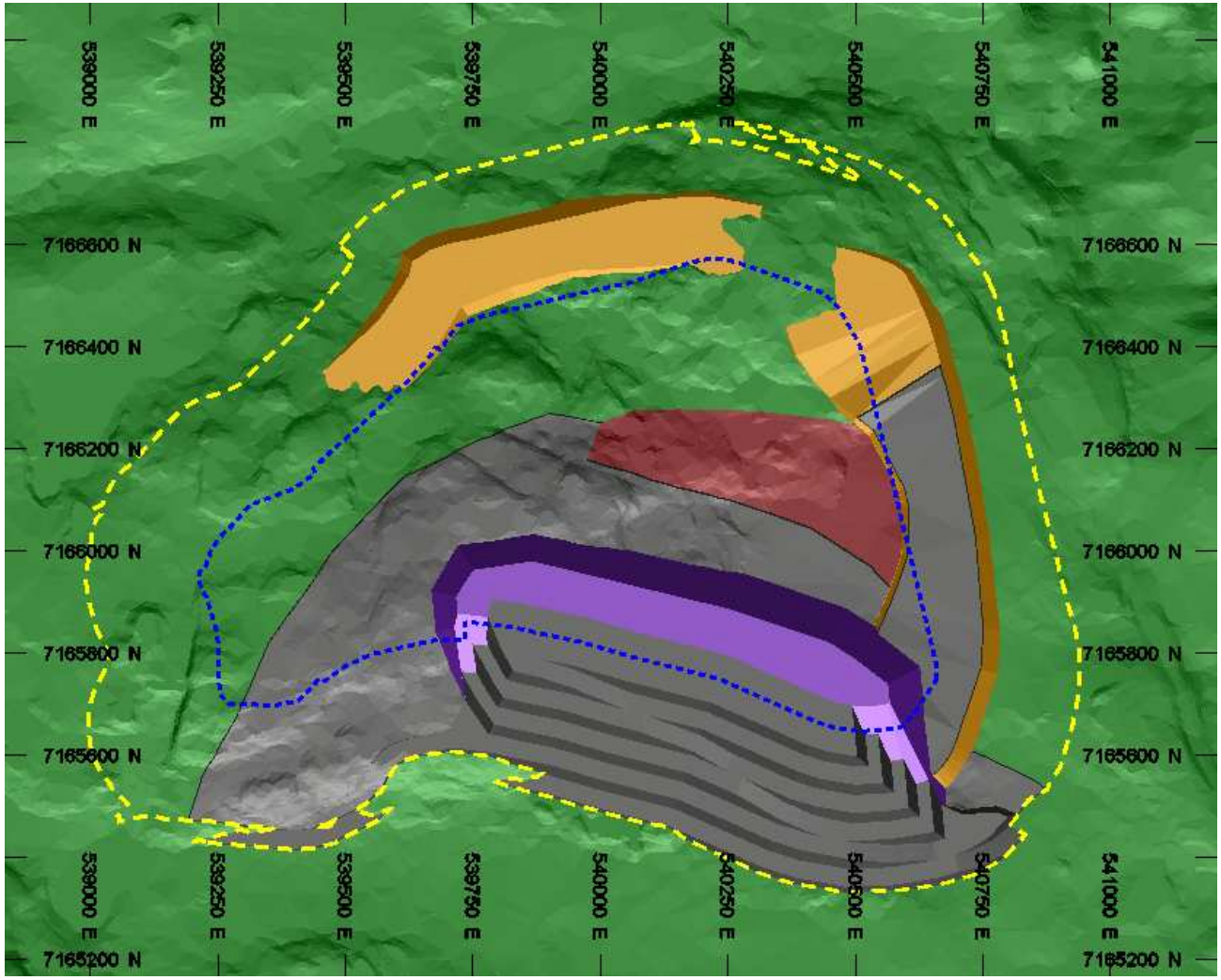
Lakebed Sediments

Granite

Co-placed Metasediments, Diabase, and Granite

WRSA final crest

WRSA footprint

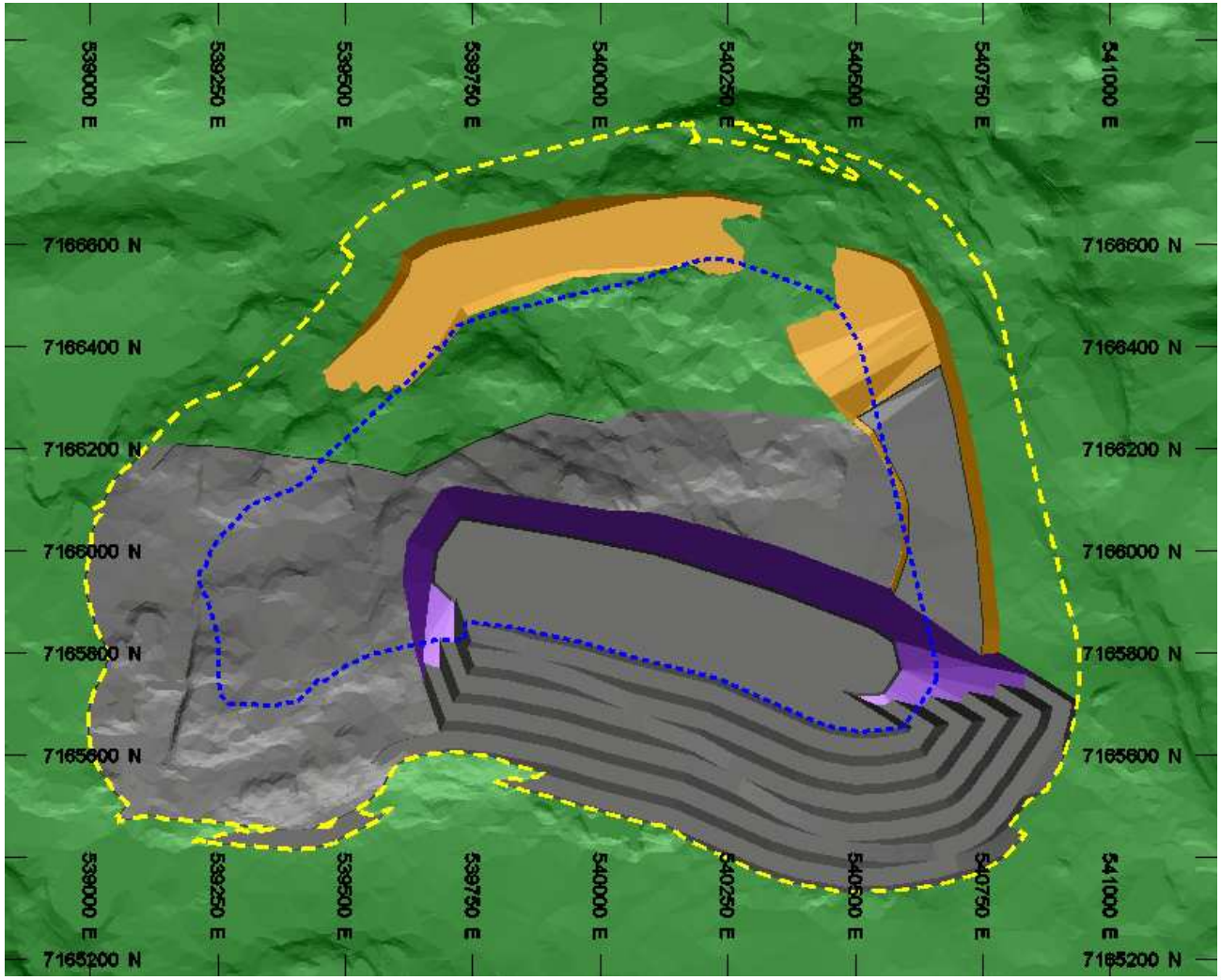


Golder Associates

2023

Co-placed surface area:
141,000 m^2

- Competent Overburden Soils
- Lakebed Sediments
- Granite
- Co-placed Metasediments, Diabase, and Granite
- WRSA final crest
- WRSA footprint



2024

Co-placed surface area: 230,000m^2

Competent Overburden Soils

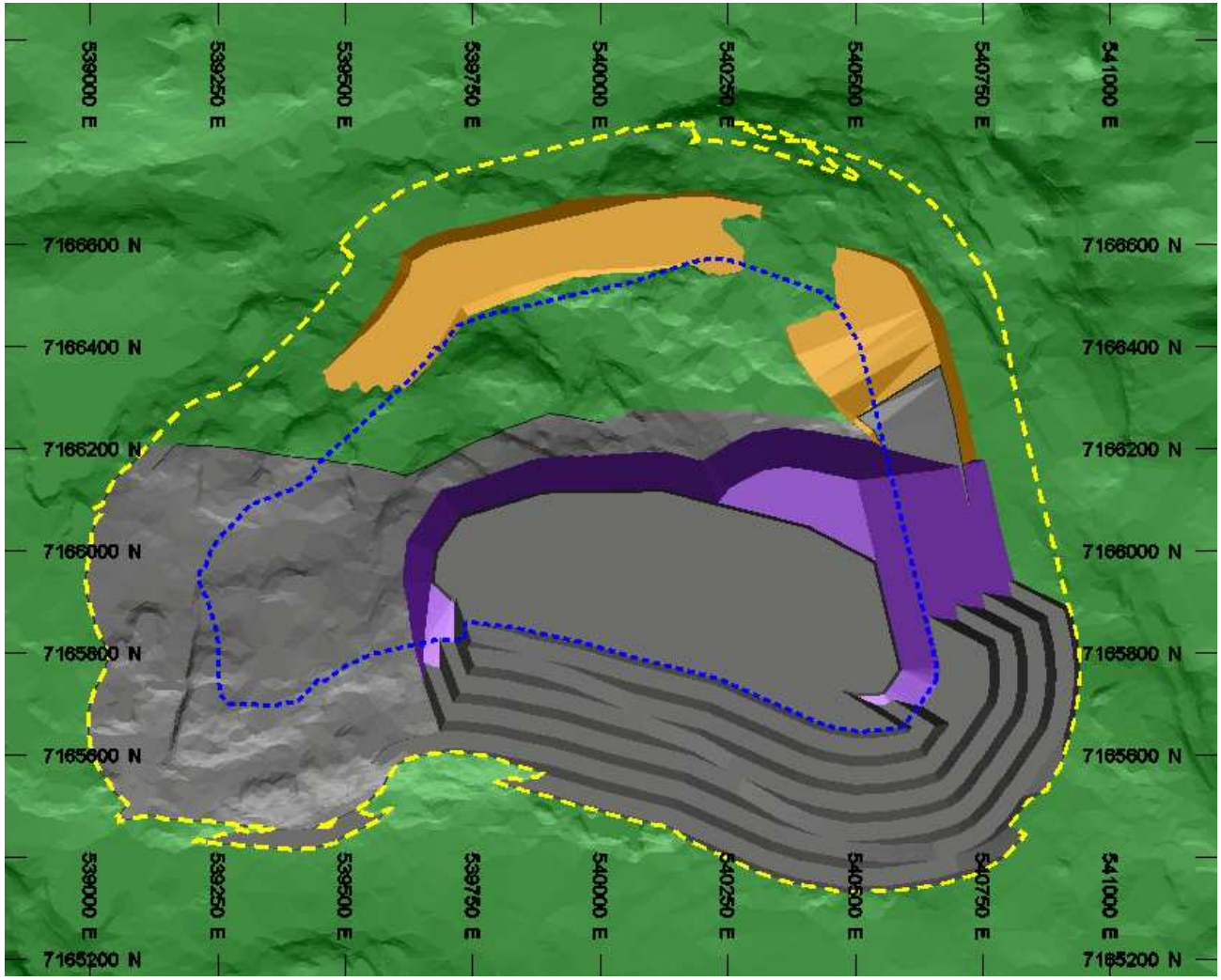
Lakebed Sediments

Granite

Co-placed Metasediments, Diabase, and Granite

WRSA final crest

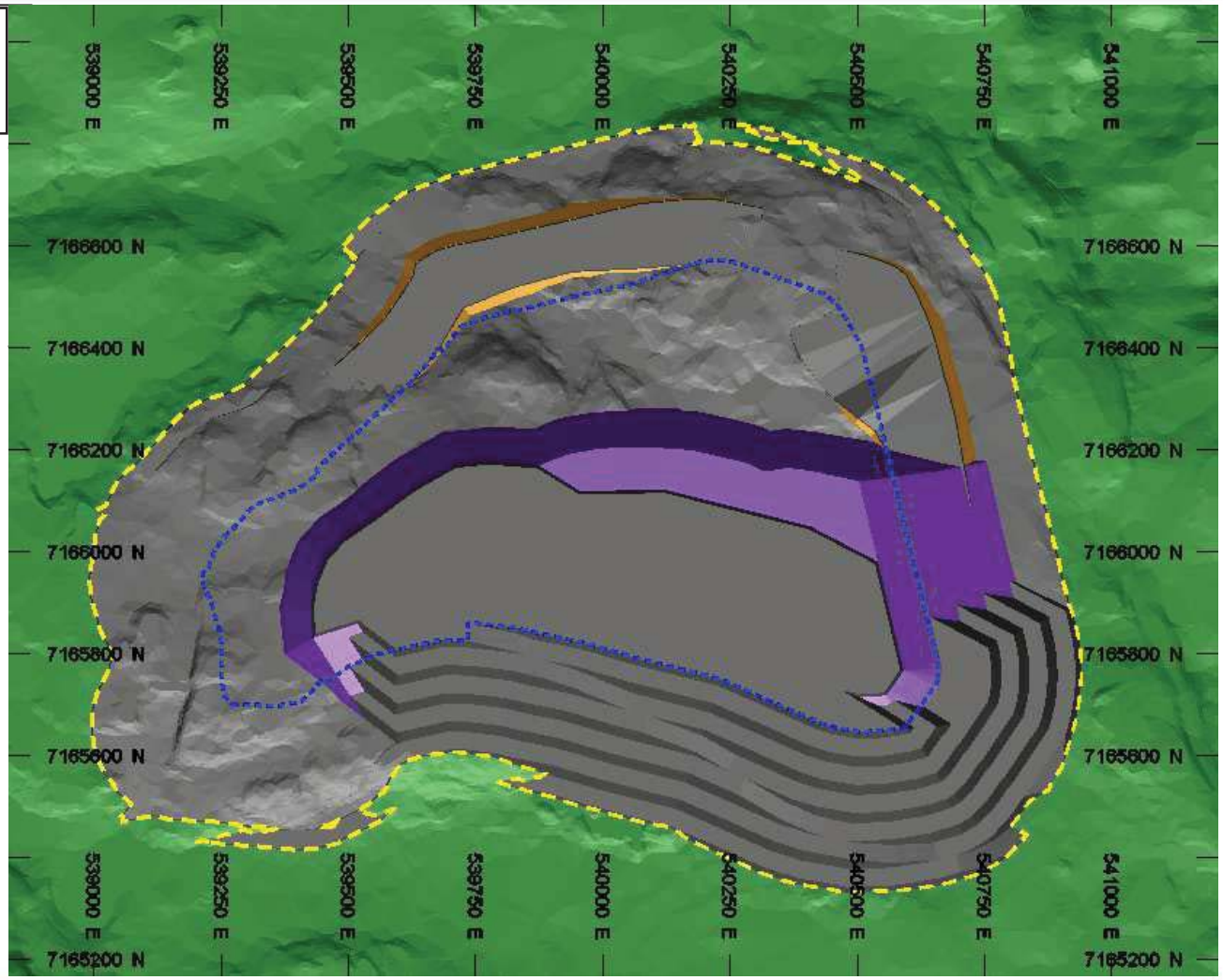
WRSA footprint



Golder Associates

2025

Co-placed surface area:
294,000 m^2



- Competent Overburden Soils
- Lakebed Sediments
- Granite
- Co-placed Metasediments, Diabase, and Granite
- WRSA final crest
- WRSA footprint

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Appendix F

Post-Closure Monitoring Costs

		Jay Operations																	Primary Activities			10 year reclanation monitoring										Pit Flooding Completion						10 Year Pit Flooding Monitoring									
Monitoring	**TOTAL**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**	**2055**	**2056**	**2057**	**2058**	**2059**	**2060**	**2061**	**2062**
Pigeon Pit (During and Post Flooding)	$360,000				20K	20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K																																	
Bearooth Pit (During and Post Flooding)	$340,000						20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K																																
Misery Pit (During and Post Flooding)	$340,000																				20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K																	
Jay Pit (During and Post Flooding)	$400,000																				20K	20K	20K	20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K													
Panda/Koala Pit (During and Post Flooding)	$360,000																			20K	20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K																
Lynx Pit (During and Post Flooding)	$420,000				20K	20K	20K	20K	20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K																												
Fox Pit (During and Post Flooding)	$680,000																			20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K
Sable Pit (During and Post Flooding)	$580,000																			20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	20K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K				
Subtotal:	**$3,480,000**																																														
Site Wide (AEMP & SNP)	$2,980,000																			350K	350K	350K	175K	175K	175K	175K	175K	175K	175K	175K	175K	175K	30K	30K	30K	30K	30K	30K										
Panda Diversion Inspection	$15,000	2K	2K	2K	2K	2K	2K	2K	2K	2K	2K																																				
Geotechnical Inspections (Land)	$780,000																			60K	60K	60K	60K	60K	60K	60K	60K	60K	60K	60K	60K	60K																
Geotechnical Inspections (Permafrost)	$650,000																			50K	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K																
Air Quality Monitoring Program (AQMP)	$390,000																			30K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K	30K																
Wildlife Effects Monitoring Program (WEMP)	$1,560,000																			120K	120K	120K	120K	120K	120K	120K	120K	120K	120K	120K	120K	120K																
LLCF Vegetation Monitoring (VMP)	$750,000																						75K	75K	75K	75K	75K	75K	75K	75K	75K	75K																
Site Vegetation Monitoring (VMP)	$468,000																			36K	36K	36K	36K	36K	36K	36K	36K	36K	36K	36K	36K	36K																
Seepage Monitoring Program	$877,500																			68K	68K	68K	68K	68K	68K	68K	68K	68K	68K	68K	68K	68K																
Archaeology Monitoring Program	$60,000																			10K	10K	10K	10K			10K						10K																
Jay Turbity Monitoring	$312,000																			75K																													
Subtotal:	**$8,842,500**																																														

TOTAL:	**$12,322,500**

AEMP = Aquatic Effects Monitoring Program
SNP = Surveillance Network Program
VMP = Vegetation Monitoring Program
= During Reclamation Monitoring
= 10 yr Post Closure Monitoring
= Adational Monitoring

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