



Miramar Con Mine Ltd.
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December 04, 2007

Mackenzie Valley Land and Water Board
P.O. Box 1500
Yellowknife, NT X1A 2R3

Attention: Mr. Willard Hagen, Interim Chair

**Re: Comparison of Reclaim Models – INAC and MCML
Application for New Class “A” Water License for Con Mine**

Dear Mr. Hagen:

Miramar Con Mine Ltd (MCML) submits the attached table as a follow up to our letter of October 29th 2007, to the Mackenzie Valley Land and Water Board (MVLWB), which sets out the issues that MCML has identified in respect to Indian Northern Affairs Canada (INAC) closure cost estimate of October 15th, 2007. The attached table sets out the details on the differences between the two estimates. The table is intended to provide information in support of the discussion at the December 6th meeting with representatives of MCML, INAC, the MVLWB, and the Working Group.

The table compares the two closure cost estimates for Miramar Con Mine and is based on the approved Final Closure and Reclamation Plan, dated January 2007. The comparison uses the format for the Reclaim 5.1 model that was submitted by the INAC Water Resources Group. The information on unit costs and total estimated costs provided by each model is included. The MCML closure cost estimate is from Section 10 of the Miramar Con Mine Final Closure and Reclamation Plan, which utilized the Reclaim Model 4.2 format. The comparison has been inserted as an extension of each section on the INAC Reclaim spread sheet. In several cases there are differences in titles or task descriptions. An effort has been made to place similar items from the two estimates adjacent to each other – i.e. on the underground table, the titles for some of the caps are different, but they refer to the same cap. Also under the sheet ‘Buildings’, several building titles are different but refer to the same site or building. The buildings from the MCML estimate have been grouped relative to the same areas on site noted on the INAC estimate to reduce the list of buildings, but all buildings have been accounted for.

This submittal, and the letter of October 29th, 2007, are in support of the application by MCML for a new Water License to replace the Water License that mine currently operates under (#N1L2-0040', as granted by the Northwest Territories Water Board pursuant to the Northwest Territories Waters Act and Regulations on June 01, 1980).

The staff and management of MCML would be pleased to discuss with you, the members of the Mackenzie Valley Land and Water Board, or the technical advisory staff of the MVLWB, any items that require clarification before December 6th 2007.

If you have any questions on the information, please call the undersigned at 766-5317 or contact me by E-mail at rconnell@miramaryk.com .

Sincerely,



Ron Connell, Environmental Superintendent
Miramar Con Mine Ltd.

Distribution:

Peter Lennie-Misgeld – Mackenzie Valley Land & Water Board
Scott Stringer, Manager – Northern Operation, Miramar Mining Corporation
Jim Currie, VP-Operations, Miramar Mining Corporation

Project Name:
Con Mine

Reclaim Model - Overview of Program

All Users are urged to read the Guide for Using the Reclaim Model Spreadsheet.

Note the WorkSheet tabs at the bottom of your Window.
Please scroll down for more information

Information covered on this worksheet:

- The reclaim menu
- What's on the various worksheets
- Assumptions made by the Reclaim program

Reclaim Menu	The default menu bar has been replaced with a menu bar specific to the Reclaim Model.
Menu	Dflt Menu This restores the default Excel menu bar, but with an option to return to the Reclaim menu
Menu	Clear This option deletes all data input, deletes any duplicated elements and blanks out the project name
Menu	Duplicate This option Duplicates components of the project. E.g. if there is more than one Open Pit, use duplicate to add a second Open Pit. Quantities for the new Open Pit are erased, but the Cost Codes are carried over from the original Open Pit. The new Open Pit subtotal is added to the Summary page.
Menu	Unit Costs This option works like a toggle to show either 1 or 2 windows. If there is only 1 window open, this option splits the screen into 2 windows and selects the Unit Costs worksheet in the bottom window. If the Unit Costs are already showing, then this option closes the active window, and maximizes the other window. Be sure to select the window you want to close before selecting this option the second time.
Menu	Print All This option prints the Summary Worksheet, Unit Cost Worksheet, and all the component worksheets. Individual worksheets can be printed directly using regular printing methods, such as Ctl - P.
Menu	Quit You can press Quit from the menu, or you can exit using regular windows methods, such as alt - F4
Menu	Help Displays this page.

Project Name:
Con Mine

Reclaim Model - Overview of Program

All Users are urged to read the Guide for Using the Reclaim Model Spreadsheet.

Note the WorkSheet tabs at the bottom of your Window.

WorkSheets	WorkSheets	<p>The reclaim model makes use of separate worksheets to organize the information. There are 3 overview type worksheets, followed by 1 worksheet for each component of reclamation. After the component worksheets, there is a Summary Worksheet, a list of the Unit Costs, and finally the assumptions of the reclaim model.</p> <p>Title Authors, and history of revisions Conditions Conditions of use and Limitations Overview This overview page</p>
	Components	<p>This is where the component cost information is entered. Optionally, you can edit, add or delete activities from the components. This should be done with care as it requires that protection be disabled.</p> <p>Any worksheet can be printed individually. Use the Print All function on the menu to print component worksheets.</p> <p>Please do not change the column width, or the contents of the first column on the component worksheets.</p> <p>The component worksheets are layed out in the following sequence. You can navigate between the worksheets by selecting the worksheet's tab, at the bottom of your screen.</p> <p>Open Pit, UG Mine, Tailings, Rock Pile, Bldgs & Equip, Chemicals, Water, Mobilization, Monitor, Post Closure, Ongoing Water</p>
WorkSheets	Summary	<p>This contains the cost for each component, and the ongoing Post Closure costs. The model sums all the reclamation costs and presents the totals according to component type in the Reclamation Cost Summary table. Capital costs are presented separately from ongoing costs, such as monitoring, maintenance and water treatment.</p> <p>NOTE: The Summary sheet will show "#Div/0!" until values are entered on the work sheet</p>
	Unit Costs	<p>This contains the look up table with costs for typical work</p>
WorkSheets	Limitations	<p>The last Worksheet lists the assumptions of the Reclaim program. To quickly access this sheet, press the > tab navigator button.</p>

SUMMARY OF COSTS

Capital Costs		INAC				MCML	
COMPONENT TYPE	COMPONENT NAME	TOTAL COST	Land Liability	Water Liability	Difference	Reclamation Liability	
OPEN PIT	0	\$0	\$0	\$0	\$0	\$0	
UNDERGROUND MINE	0	\$883,750	\$883,750	\$0	-\$249,250	\$634,500	
TAILINGS	Upper Pud	\$1,504,100	\$1,148,604	\$355,497	-\$748,910	\$755,190	
	Middle Pud	\$1,754,311	\$1,335,178	\$419,134	-\$772,491	\$981,820	
	Lower Pud	\$1,089,637	\$837,995	\$251,643	-\$866,637	\$223,000	
	Negus & Neil & Crank	\$2,717	\$2,717	\$0	\$322,199	\$324,915	
ROCK PILE	0	\$0	\$0	\$0	\$0	\$0	
BUILDINGS AND EQUIPMENT	0	\$2,988,830	\$2,803,650	\$185,180	-\$932,075	\$2,056,755	
CHEMICALS AND SOIL MANAGEMENT	0	\$3,375,121	\$120,125	\$3,254,996	-\$2,655,091	\$720,030	
WATER MANAGEMENT	0	\$192,839	\$0	\$192,839	\$190,161	\$383,000	
POST-CLOSURE SITE MAINTENANCE		\$6,375,235	\$416,757	\$5,958,479	-\$2,335,578	\$4,039,657	
	SUBTOTAL	\$18,166,541	\$7,548,774	\$10,617,768	-\$8,047,675	\$10,118,867	
			Percentages	42%	58%		
MOBILIZATION/DEMobilIZATION	0	\$50,000	20,777	29,223	\$0	\$50,000	
MONITORING AND MAINTENANCE	Included in Post-closure site maintenance, above						
PROJECT MANAGEMENT	5 %	\$908,327	\$377,439	\$530,888	\$108,560	10 % \$1,016,887	
ENGINEERING	5 %	\$908,327	\$377,439	\$530,888	-\$603,261	3 % \$305,066	

SUMMARY OF COSTS

Capital Costs		INAC				MCML	
COMPONENT TYPE	COMPONENT NAME	TOTAL COST	Land Liability	Water Liability	Difference	Reclamation Liability	
CONTINGENCY	20 %	\$3,633,308	\$1,509,755	\$2,123,554	-\$2,616,422	10 %	\$1,016,887
Market Price Factor Adjustment	20 %	\$3,633,308	\$1,509,755	\$2,123,554	-\$3,633,308	0 %	\$0
GRAND TOTAL - CAPITAL COSTS		\$27,299,812	\$11,343,937	\$15,955,875	-\$14,792,106		\$12,507,706

1 **Open Pit Name:** _____ **Pit #** 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
A OBJECTIVE: CONTROL ACCESS								
. Fence	m		#N/A	0	\$0	\$0	\$0	
. Signs	each		#N/A	0	\$0	\$0	\$0	
. Berm	m3		#N/A	0	\$0	\$0	\$0	
. Block roads	m3		#N/A	0	\$0	\$0	\$0	
. Other			#N/A		\$0	\$0	\$0	
B OBJECTIVE: STABILIZE SLOPES								
. Off-load crest, soil A	m3		#N/A	0	\$0	\$0	\$0	
. Off-load crest, soil B	m3		#N/A	0	\$0	\$0	\$0	
. Doze/trim overburden at crest	m3		#N/A	0	\$0	\$0	\$0	
. Drill & blast pit crest	m3		#N/A	0	\$0	\$0	\$0	
. buttress slope	m3		#N/A	0	\$0	\$0	\$0	
. Other			#N/A	0	\$0	\$0	\$0	
C OBJECTIVE: COVER/CONTOUR SLOPES								
. Place fill, soil A	m3		#N/A	0	\$0	\$0	\$0	
. Place fill, soil B	m3		#N/A	0	\$0	\$0	\$0	
. Rip rap	m3		#N/A	0	\$0	\$0	\$0	
. Vegetate slopes	ha		#N/A	0	\$0	\$0	\$0	
. Vegetate pit floor	ha		#N/A	0	\$0	\$0	\$0	
. Other			#N/A	0	\$0	\$0	\$0	
. OBJECTIVE: SPILLWAY								
. Excavate channel, soil A	m3		#N/A	0	\$0	\$0	\$0	
. Excavate channel, soil B	m3		#N/A	0	\$0	\$0	\$0	
. Concrete	m3		#N/A	0	\$0	\$0	\$0	
. Rip rap	m3		#N/A	0	\$0	\$0	\$0	
. Other			#N/A	0	\$0	\$0	\$0	
E OBJECTIVE: FLOOD PIT								
. Embankment, soil A	m3		#N/A	0	\$0	\$0	\$0	
. Embankment, soil B	m3		#N/A	0	\$0	\$0	\$0	
. Remove pipes etc.	each		#N/A	0	\$0	\$0	\$0	
. Remove power lines	each		#N/A			\$0	\$0	
. Lime addition, kg/m3 of water	tonne		#N/A	0	\$0	\$0	\$0	
. Lime, purchase and shipping	tonne		#N/A	0	\$0	\$0	\$0	
. Other	tonne		#N/A	0	\$0	\$0	\$0	
F RECLAIM QUARRIES								
. Contour slopes	m3		#N/A	0	\$0	\$0	\$0	
. Berm at crest	m3		#N/A	0	\$0	\$0	\$0	
. Place overburden	m3		#N/A	0	\$0	\$0	\$0	
. Vegetate	m3		#N/A	0	\$0	\$0	\$0	
H OTHER ITEMS								
			#N/A	0	\$0	\$0	\$0	
Subtotal					\$0	#DIV/0!	\$0	\$0
					Total Pits	Percent Total Land	Total Land	Total Water

1 Underground Mine Name: UG Mine # 1

INAC

MCML

ACTIVITY/MATERIAL	INAC		Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	MCML		Cost Code	Unit Cost	Cost	Reclamation Liability
	Units	Quantity							Units	Quantity				
A OBJECTIVE: CONTROL ACCESS														
Fence	m		#N/A	0	\$0		\$0	0.00	m		#N/A	0	\$0	\$0
Signs	each		#N/A	0	\$0		\$0	0.00	each		#N/A	0	\$0	\$0
Ditch, mat'l A	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
, mat'l B	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
Berm	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
Robertson Shaft	m3	150 srh		1750	\$262,500	100%	\$262,500	-127,500.00	m3	250 CSh		540	\$135,000	\$135,000
Con Shaft	m3	65 srh		1750	\$113,750	100%	\$113,750	21,250.00	m3	250 CSh		540	\$135,000	\$135,000
Negus Shaft	m3	33 srh		1750	\$57,750	100%	\$57,750	77,250.00	m3	250 CSh		540	\$135,000	\$135,000
Cap 4 raises	m3	48 srh		1750	\$84,000	100%	\$84,000	10,500.00	m3	175 CSh	Rob vent and others	540	\$94,500	\$94,500
C 103J stope, 3 openings	m3	srh		1750	\$0		\$0	0.00	m3	CSh		540	\$0	\$0
C 204Q stope,	m3	209 srh		1750	\$365,750	100%	\$365,750	-230,750.00	m3	250 CSh		540	\$135,000	\$135,000
	each		#N/A	10000	\$0		\$0	0.00	each		#N/A	10000	\$0	\$0
	tonne		#N/A	500	\$0		\$0	0.00	tonne		#N/A	500	\$0	\$0
B OBJECTIVE: STABILIZE GROUND SURFACE														
Backfill mine	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
Collapse crown pillar	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
Contour, mat'l A	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
, mat'l B	m3		#N/A	0	\$0		\$0	0.00	m3		#N/A	0	\$0	\$0
Maintain dewatering (see "MONITORING/MAINTENANCE" cos			#N/A	0	\$0		\$0	0.00			#N/A	0	\$0	\$0
Other			#N/A	0	\$0		\$0	0.00			#N/A	0	\$0	\$0
C OBJECTIVE: FLOOD MINE														
U/G bulkheads to control water flow	each		#N/A	10000	\$0		\$0	0.00	each		#N/A	10000	\$0	\$0
Pump tailings water into lower mine	m3		#N/A	0.08	\$0		\$0	0.00	m3		#N/A	0.08	\$0	\$0
H2O2 for cyanide destruction	kg		#N/A	1.71	\$0		\$0	0.00	kg		#N/A	1.71	\$0	\$0
Pump tailings water into upper mine	m3		#N/A	0.08	\$0		\$0	0.00	m3		#N/A	0.08	\$0	\$0
water treatment	m3		#N/A	0.328	\$0		\$0	0.00	m3		#N/A	0.328	\$0	\$0
additional FeSO4 for arsenic stabilization	kg			1.02	\$0		\$0	0.00	kg			1.02	\$0	\$0
D OBJECTIVE: HAZARDOUS MATERIALS														

1 **Underground Mine Name:** **UG Mine #** 1

INAC

MCML

ACTIVITY/MATERIAL	INAC		Cost Code	Unit Cost	Cost %	Land	Water	Difference	MCML		Reclamation Liability				
	Units	Quantity							Units	Quantity		Cost	Cost		
. remove hazardous materials	each		#N/A	0			\$0	\$0	0.00	each	#N/A	0	\$0	\$0	
. remove/decontam. equipment	each		#N/A	0	\$0		\$0	\$0	0.00	each	#N/A	0	\$0	\$0	
. Other			#N/A	0	\$0		\$0	\$0	0.00		#N/A	0	\$0	\$0	
E SPECIALIZED ITEMS															
Remove batteries/oil from equip				42.5	\$0		\$0	\$0	0.00			42.5	\$0	\$0	
Remove misc. haz. Mat & explosives	each			2000	\$0		\$0	\$0	0.00	each		2000	\$0	\$0	
			#N/A	0	\$0		\$0	\$0	0.00		#N/A	0	\$0	\$0	
Subtotal					\$883,750	100%	\$883,750	\$0	-\$249,250				\$634,500	\$634,500	
						Percent Total	Total	Total							
					Total U/G	Land	Land	Water						Total U/G	Total

4 Tailings Impoundment Name: Upper Pud 1
INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Water			Difference	Units	Quantity	Cost Code	Unit Cost	%		Reclamation Liability	
						Land	Land	Cost						Cost	Land		Land Cost
A OBJECTIVE: CONTROL ACCESS																	
Fence	m		#N/A	0	\$0		\$0	\$0	\$0	m		#N/A	0	\$0		\$0	\$0
Signs	each	61	SL	11	\$671	100%	\$671	\$0	\$671	each	0	SL	11	\$0	0%	\$0	\$0
Ditch, mat'l A	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
, mat'l B	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Berm	m3	270	SB1L	3.2	\$864	100%	\$864	\$0	-\$34,136	m3	1000	SB1L	35	\$35,000	0%	\$0	\$35,000
Block roads	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0
B OBJECTIVE: STABILIZE EMBANKMENT																	
TRDSW DAM	m3	42	SB4H	8.95	\$376	75%	\$282	\$94	\$376	m3	0	SB4H	8.95	\$0	0%	\$0	\$0
TRD, Flatten slope	m3	11500	SB4H	8.95	\$102,925	75%	\$77,194	\$25,731	\$102,925	m3	0	SB4H	8.95	\$0	0%	\$0	\$0
DAM 1, Flatten slope	m3	8060	SB4H	8.95	\$72,137	75%	\$54,103	\$18,034	\$72,137	m3	0	SB4H	8.95	\$0	0%	\$0	\$0
Rip rap	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Vegetate	ha		#N/A	0	\$0		\$0	\$0	\$0	ha		#N/A	0	\$0		\$0	\$0
Raise crest	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Flatten slopes	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0
C OBJECTIVE: COVER TAILINGS																	
Doze Tailings to final contour	m3	15000	DSL	0.78	\$11,700	75%	\$8,775	\$2,925	-\$11,700	m3	0	DSL	0.78	\$0	0%	\$0	\$0
place rock cover	m3	168000		\$4.35	\$730,275	75%	\$547,706	\$182,569	-\$102,135	m3	174000	SB2I	\$3.61	\$628,140	0%	\$0	\$628,140
place till islands, 10% of cover area	m3	16800		3.90	\$65,468	100%	\$65,468	\$0	-\$65,468	m3	0		0.00	\$0	0%	\$0	\$0
Vegetate	ha	28	vhfl	1595	\$44,660	100%	\$44,660	\$0	-\$2,610	ha	29	VHFI	1450	\$42,050	0%	\$0	\$42,050
supply rock fill shortfall from off-site sour	m3	45633	#N/A	10.15	\$463,175	75%	\$347,381	\$115,794	-\$463,175	m3	0	#N/A	10	\$0	0%	\$0	\$0
D OBJECTIVE: FLOOD TAILINGS																	
Ditch, mat'l A	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
, mat'l B	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Raise crest	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0
E OBJECTIVE: TREAT SUPERNATANT																	
Pump water	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Supply reagents	tonne		#N/A	0	\$0		\$0	\$0	\$0	tonne		#N/A	0	\$0		\$0	\$0
Operate treatment plant	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0

4 Tailings Impoundment Name: Upper Pud 1
INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land	Land	Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	% Land			Reclamation Liability
															Cost	Land	Land Cost	
F OBJECTIVE: UPGRADE SPILLWAY																		
. Excavate channel through Dam F	m3	1030	SC1H	7.65	\$7,880	0%	\$0	\$7,880	\$0	-\$7,880	m3	0	SC1H	7.65	\$0	0%	\$0	\$0
. , mat'l B	m3		#N/A	0	\$0		\$0	\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
. Concrete	m3		#N/A	0	\$0		\$0	\$0	\$0	\$0	m3	0	#N/A	0	\$0		\$0	\$0
. Rip rap	m3	276	SB4H	8.95	\$2,470	0%	\$0	\$2,470	\$0	-\$2,470	m3	0	SB4H	8.95	\$0	0%	\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0
G OBJECTIVE: STABILIZE DECANT SYSTEM																		
. Remove	m3		#N/A	0	\$0		\$0	\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
. Plug/backfill	m3		#N/A	0	\$0		\$0	\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0
H OBJECTIVE: REMOVE TAILINGS DISCHARGE																		
. Cyclones	m3		#N/A	0	\$0		\$0	\$0	\$0	\$0	m3		#N/A	0	\$0		\$0	\$0
. Pipe	m3	2000	PPSS	0.75	\$1,500	100%	\$1,500	\$0	\$0	-\$1,500	m3	0	PPSS	0.75	\$0	0%	\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0	\$0	\$0			#N/A	0	\$0		\$0	\$0
I SPECIALIZED ITEMS																		
. Spillway			#N/A	0	\$0			\$0	\$0	\$50,000	1		#N/A	50000	\$50,000	0%	\$0	\$50,000
Subtotal					\$1,504,100	76%	\$1,148,604	\$355,497	\$0	-\$748,910					\$755,190	0%	\$0	\$755,190
					Total	Percent	Total	Total	Total					Total	Percent	Total	Total	
					Tailings	Land	Total Land	Water						Tailings	Land	Total Land	Total	

Tailings Impoundment Name: *Middle Pud*

2

INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost		Cost %	Land	Land	Water	Water	Difference	Units	Quantity	Cost Code	Unit Cost	Cost	Reclamation Liability	
			Code	Unit Cost													Cost
A OBJECTIVE: CONTROL ACCESS																	
Fence	m		#N/A	0	\$0			\$0	\$0	\$0	m		#N/A	0	\$0	\$0	
Signs	each	52	SL	11	\$572	100%		\$572	\$0	-\$572	each	0	SL	11	\$0	\$0	
Ditch, mat'l A	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, mat'l B	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Berm	m3		#N/A	0	\$0	100%		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Block roads, 2	m3	180	SB1L	3.2	\$576			\$0	\$576	-\$576	m3	0	SB1L	3.2	\$0	\$0	
Other			#N/A	0	\$0			\$0	\$0	\$0			#N/A	0	\$0	\$0	
B OBJECTIVE: STABILIZE EMBANKMENT																	
Toe buttress, drain material	m3		#N/A	0	\$0	100%		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, fill mat'l @ Dams2, 3W	m3	305	SB4H	8.95	\$2,730	100%		\$2,730	\$0	-\$2,730	m3	0	SB4H	8.95	\$0	\$0	
, fill mat'l B	m3		#N/A	0	\$0	100%		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Rip rap	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Vegetate	ha		#N/A	0	\$0			\$0	\$0	\$0	ha		#N/A	0	\$0	\$0	
Raise crest	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Flatten slopes	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Other			#N/A	0	\$0			\$0	\$0	\$0			#N/A	0	\$0	\$0	
C OBJECTIVE: COVER TAILINGS																	
Doze Tailings to final contour	m3	15000	DSL	0.78	\$11,700	75%		\$8,775	\$2,925	-\$11,700	Soil cover	m3	200	DSL	0	\$0	\$0
place rock cover	m3	246000		\$4.35	\$1,069,331	75%		\$801,999	\$267,333	-\$874,511	m3	51000	RR3I	\$3.82	\$194,820	\$194,820	
place till islands, 10% of cover area	m3	24600		3.90	\$95,863	100%		\$95,863	\$0	-\$95,863	m3	0		0.00	\$0	\$0	
Vegetate	ha	41	vhfl	1595	\$65,395	100%		\$65,395	\$0	-\$36,395	ha	20	VHFI	1450	\$29,000	\$29,000	
supply rock fill shortfall from off-site sour	m3	45633	#N/A	10.15	\$463,175	75%		\$347,381	\$115,794	\$286,825	m3	75000	#N/A	10	\$750,000	\$750,000	
D OBJECTIVE: STABILIZE TAILINGS SURFACE																	
Contour channel from mill	m3	1715	DSL	0.78	\$1,338	0%		\$0	\$1,338	-\$1,338	m3	0	DSL	0.78	\$0	\$0	
Channel from mill, rip rap	m3	1715	SB4H	8.95	\$15,349	0%		\$0	\$15,349	-\$15,349	m3	0	SB4H	8.95	\$0	\$0	
Runoff channel SE side, rip rap	m3	375	SB4H	8.95	\$3,356	0%		\$0	\$3,356	-\$3,356	m3	0	SB4H	8.95	\$0	\$0	
Tailings cover on WTP sludge	m3	13900	DSL	0.78	\$10,842	50%		\$5,421	\$5,421	-\$10,842	m3	0	DSL	0.78	\$0	\$0	
E OBJECTIVE: DEVELOP WETLAND																	
Earthworks, material A	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
material B	tonne		#N/A	0	\$0			\$0	\$0	\$0	tonne		#N/A	0	\$0	\$0	
Vegetate	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Other			#N/A	0	\$0			\$0	\$0	\$0			#N/A	0	\$0	\$0	
F OBJECTIVE: construct treatment precipitate pond																	
construct berm	m3	3240		\$4.35	\$14,084	50%		\$7,042	\$7,042	-\$14,084	m3	3240		\$0.00	\$0	\$0	
, mat'l B	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	

Tailings Impoundment Name: *Middle Pud*

2

INAC

MCML

ACTIVITY/MATERIAL	INAC		Cost Code	Unit Cost	Cost %	Land	Land	Water Cost	Water Cost	Difference	MCML		Unit Cost	Cost	Reclamation Liability		
	Units	Quantity									Units	Quantity					
. Concrete	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Rip rap	m3		SB4H	8.95	\$0	0%		\$0	\$0	\$0	m3		SB4H	8.95	\$0	\$0	
. Other	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
G OBJECTIVE: STABILIZE DECANT SYSTEM																	
. Remove	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Plug/backfill	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Other			#N/A	0	\$0			\$0	\$0	\$0			#N/A	0	\$0	\$0	
H OBJECTIVE: REMOVE TAILINGS DISCHARGE																	
. Cyclones	m3		#N/A	0	\$0			\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Pipe	m3		PPSS	0.75	\$0			\$0	\$0	\$0	m3		PPSS	0.75	\$0	\$0	
. Other			#N/A	0	\$0			\$0	\$0	\$0			#N/A	0	\$0	\$0	
I SPECIALIZED ITEMS																	
. Vegetate			#N/A	0	\$0			\$0	\$0	\$8,000	Vegetate de	m2	40000	#N/A	0.2	\$8,000	\$8,000
Subtotal					\$1,754,311	76%	\$1,335,178	\$419,134		-\$772,491					\$981,820	\$981,820	
					Percent		Total							Total		Total	
					Total Tailings Land		Total Land	Water							Total Tailings		Total

Tailings Impoundment Name: *Lower Pud*

3

INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	Cost	Reclamation Liability
A OBJECTIVE: CONTROL ACCESS														
Fence	m		#N/A	0	\$0	\$0	\$0	\$0	m		#N/A	0	\$0	\$0
Signs	each	50	SL	11	\$550	100%	\$550	\$0	-550	each	0	SL	11	\$0
Ditch, mat'l A	m3		#N/A	0	\$0	\$0	\$0	\$20,000	m3	1000	SC1s	20	\$20,000	\$20,000
, mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Berm	m3		SB1L	3.2	\$0	\$0	\$0	\$0	m3		SB1L	3.2	\$0	\$0
Block roads, 3	m3	270	SB1L	3.2	\$864	100%	\$864	\$0	-864	m3	0	SB1L	3.2	\$0
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0
B OBJECTIVE: STABILIZE EMBANKMENT														
DAM	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Flatten slope	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Flatten slope	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Rip rap	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Vegetate	ha		#N/A	0	\$0	\$0	\$0	\$0	ha		#N/A	0	\$0	\$0
Raise crest	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Flatten slopes	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0
C OBJECTIVE: COVER TAILINGS														
Doze Tailings to final contour	m3	2500	DSL	0.78	\$1,950	75%	\$1,463	\$488	-\$1,950	m3	0	DSL	0.78	\$0
place rock cover	m3	124560		\$4.35	\$541,447	75%	\$406,085	\$135,362	-\$541,447	m3	0		\$0.00	\$0
place till islands, 10% of cover area	m3	12456		3.90	\$48,539	100%	\$48,539	\$0	-\$48,539	m3	0		0.00	\$0
Vegetate	ha	20.76	vhfl	1595	\$33,112	100%	\$33,112	\$0	\$169,888	ha	140	VHFI	1450	\$203,000
supply rock fill shortfall from off-site sour	m3	45633	#N/A	10.15	\$463,175	75%	\$347,381	\$115,794	-\$463,175	m3	0	#N/A	10.15	\$0
D OBJECTIVE: FLOOD TAILINGS														
Ditch, mat'l A	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
, mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Raise crest	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0
E OBJECTIVE: TREAT SUPERNATANT														
Pump water	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Supply reagents	tonne		#N/A	0	\$0	\$0	\$0	\$0	tonne		#N/A	0	\$0	\$0
Operate treatment plant	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0

Tailings Impoundment Name: *Lower Pud*

3

INAC

MCML

ACTIVITY/MATERIAL	INAC		Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	MCML				Reclamation Liability	
	Units	Quantity							Units	Quantity	Cost Code	Unit Cost		Cost
F OBJECTIVE: UPGRADE SPILLWAY														
. Excavate channel through Dam F	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. , mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. Concrete	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. Rip rap	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0
G OBJECTIVE: STABILIZE DECANT SYSTEM														
. Remove	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. Plug/backfill	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0
H OBJECTIVE: REMOVE TAILINGS DISCHARGE														
. Cyclones	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
. Pipe	m3		#N/A	0.75	\$0	\$0	\$0	\$0	m3		#N/A	0.75	\$0	\$0
. Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0
I SPECIALIZED ITEMS														
.			#N/A	0	\$0		\$0	\$0			#N/A	0	\$0	\$0
Subtotal					\$1,089,637	77%	\$837,995	\$251,643	-\$866,637				\$223,000	\$223,000
					Total Tailings	Percent Land	Total Land	Total Water					Total Tailings	Total

Tailings Impoundment Name: **Negus & Neil**

4

Negus & Neil & Crank

Note: Crank Lake not covered in INAC data

INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Reclamation							
									Units	Quantity	Cost Code	Unit Cost	Cost	Liability		
A OBJECTIVE: CONTROL ACCESS																
Fence	m		#N/A	0	\$0	\$0	\$0	\$10,000	m	1000	FI	10	\$10,000	\$10,000		
. Signs	each	25	SL	11	\$275	100%	\$275	\$0	(\$275)	each		SL	11	\$0	\$0	
. Ditch, mat'l A	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. , mat'l B	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Berm	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Block roads, 3	m3	270	SB1L	3.2	\$864	100%	\$864	\$0	(\$864)	m3	0	SB1L	3.2	\$0	\$0	
. Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0	
B OBJECTIVE: STABILIZE EMBANKMENT																
. DAM	m3		SB4H	8.95	\$0		\$0	\$0	\$0	m3		SB4H	8.95	\$0	\$0	
. Flatten slope	m3		SB4H	8.95	\$0		\$0	\$0	\$0	m3		SB4H	8.95	\$0	\$0	
. Flatten slope dam	m3		SB4H	8.95	\$0		\$0	\$0	\$0	m3		SB4H	8.95	\$0	\$0	
. Rip rap	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Vegetate	ha		#N/A	0	\$0		\$0	\$0	\$0	ha		#N/A	0	\$0	\$0	
. Raise crest	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Flatten slopes	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0	
C OBJECTIVE: COVER TAILINGS																
. Doze Tailings to final contour	m3	1000	DSL	0.78	\$780	100%	\$780	\$0	\$51,720	Crank	m2	25000	SBSI	2.1	\$52,500	\$52,500
. place rock cover	m3			\$4.35	\$0		\$0	\$0	\$0	m3				\$0.00	\$0	\$0
. place till islands, 10% of cover area	m3	0		3.90	\$0		\$0	\$0	\$0	m3	0			0.00	\$0	\$0
. Vegetate	ha	0.5	vhfl	1595	\$798	100%	\$798	\$0	\$155,368	Negus and Nei	ha	107.7	VHFI	1450	\$156,165	\$156,165
. add peat to aid revegetation	ha		#N/A	20000	\$0		\$0	\$0	\$0	ha		#N/A	20000	\$0	\$0	\$0
D OBJECTIVE: FLOOD TAILINGS																
. Ditch, mat'l A	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. , mat'l B	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Raise crest	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0	
E OBJECTIVE: TREAT SUPERNATANT																
. Pump water	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Supply reagents	tonne		#N/A	0	\$0		\$0	\$0	\$0	tonne		#N/A	0	\$0	\$0	
. Operate treatment plant	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
. Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0	
F OBJECTIVE: UPGRADE SPILLWAY																

Tailings Impoundment Name: **Negus & Neil** 4
INAC

Negus & Neil & Crank Note: Crank Lake not covered in INAC data
MCML

ACTIVITY/MATERIAL	INAC		Cost	Unit	Land Cost	Water Cost	Difference	MCML		Reclamation				
	Units	Quantity	Code	Cost				Cost %	Units	Quantity	Cost Code	Unit Cost	Cost	Liability
. Excavate channel	m3		SC1H	7.65	\$0	\$0	\$0	\$0	m3	SC1H	7.65	\$0	\$0	
. doze & spread excavated material	m3		dsl	0.78	\$0	\$0	\$0	\$0	m3	dsl	0.78	\$0	\$0	
. Vegetate, spread material	ha		vhfl	1595	\$0	\$0	\$0	\$0	ha	vhfl	1595	\$0	\$0	
. Rip rap in channel base	m3		SC1H	7.65	\$0	\$0	\$0	\$0	m3	SC1H	7.65	\$0	\$0	
. Other			#N/A	0	\$0	\$0	\$0	\$0		#N/A	0	\$0	\$0	
G OBJECTIVE: STABILIZE DECANT SYSTEM														
. Remove	m3		#N/A	0	\$0	\$0	\$0	\$0	m3	#N/A	0	\$0	\$0	
. Plug/backfill	m3		#N/A	0	\$0	\$0	\$0	\$0	m3	#N/A	0	\$0	\$0	
. Other			#N/A	0	\$0	\$0	\$0	\$0		#N/A	0	\$0	\$0	
H OBJECTIVE: REMOVE TAILINGS DISCHARGE														
. Cyclones	m3		#N/A	0	\$0	\$0	\$0	\$0	m3	#N/A	0	\$0	\$0	
. Pipe	m3		PPSS	0.75	\$0	\$0	\$0	\$0	m3	PPSS	0.75	\$0	\$0	
. Other			#N/A	0	\$0	\$0	\$0	\$0		#N/A	0	\$0	\$0	
I SPECIALIZED ITEMS														
. Negus Pond			#N/A				\$0	\$106,250	Negus Pond	1	#N/A	106250	\$106,250	\$106,250
Subtotal				\$2,717	100%	\$2,717	\$0	\$322,199				\$324,915	\$324,915	
			Total	Percent	Total	Total						Total	Total	
			Tailings	Land	Land	Water						Tailings	Total	

1 **Rock Pile Name:** _____ **Rock Pile #:** 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
A OBJECTIVE: STABILIZE SLOPES								
Flatten slopes with dozer	m3		#N/A	0	\$0.00	\$0	\$0	
. Divert runon, ditch mat'l A	m3		#N/A	0	\$0.00	\$0	\$0	
. , ditch mat'l B	m3		#N/A	0	\$0.00	\$0	\$0	
. Toe buttress, drain mat'l	m3		#N/A	0	\$0.00	\$0	\$0	
. , fill mat'l A	m3		#N/A	0	\$0.00	\$0	\$0	
. , fill mat'l B	m3		#N/A	0	\$0.00	\$0	\$0	
. Other			#N/A	0	\$0.00	\$0	\$0	
B OBJECTIVE: COVER DUMP								
. Mat'l A	m3		#N/A	0	\$0.00	\$0	\$0	
. Mat'l B	m3		#N/A	0	\$0.00	\$0	\$0	
. Rip rap	m3		#N/A	0	\$0.00	\$0	\$0	
. Vegetate	ha		#N/A	0	\$0.00	\$0	\$0	
. Other			#N/A	0	\$0.00	\$0	\$0	
C OBJECTIVE: RELOCATE DUMPS								
. Load, haul, dump or doze	m3		#N/A	0	\$0.00	\$0	\$0	
. Add lime	tonne		#N/A	0	\$0.00	\$0	\$0	
. Contour reclaimed area	ha		#N/A	0	\$0.00	\$0	\$0	
. Other			#N/A	0	\$0.00	\$0	\$0	
D OBJECTIVE: COLLECT AND TREAT								
. See "ONGOING TREATMENT" costing component			#N/A	0	\$0.00	\$0	\$0	
E OBJECTIVE: DEVELOP WETLAND								
. Earthworks, mat'l A	m3		#N/A	0	\$0.00	\$0	\$0	
. , mat'l B	m3		#N/A	0	\$0.00	\$0	\$0	
. Vegetate	ha		#N/A	0	\$0.00	\$0	\$0	
. Other			#N/A	0	\$0.00	\$0	\$0	
F SPECIALIZED ITEMS								
.			#N/A	0	\$0.00	\$0	\$0	
.			#N/A	0	\$0.00	\$0	\$0	
Subtotal					\$0	#DIV/0!	\$0	\$0
Total for Rock Pile					Percent Land	Total Land	Total Water	

1 Building / Equip Name: Bldg / Equip #: 1
 INAC

MCML

ACTIVITY/MATERIAL	INAC			MCML					Reclamation							
	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	Cost	Liability	
A OBJECTIVE: DISPOSE MOBILE EQUIPMENT																
Decontaminate and ship off-site	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Decontaminate, dispose on-site	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Other	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
B OBJECTIVE: DISPOSE STATIONARY EQUIPMENT																
Decontaminate and ship off-site	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Decontaminate and dispose 1	each		#N/A	35000	\$0		\$0	\$0	\$0		each	#N/A	35000	\$0	\$0	
Other	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
C OBJECTIVE: DISPOSE ORE CONCENTRATION EQUIPMENT																
Decontaminate crushing plant	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Decontaminate tanks & plumb.	each		#N/A	50000	\$0		\$0	\$0	\$0		each	#N/A	50000	\$0	\$0	
Remove tanks & plumbing	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0	
D OBJECTIVE: DISPOSE WATER TREATMENT EQUIPMENT																
Decontaminate tanks & plumb.	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Remove tanks & plumbing	each		#N/A	0	\$0		\$0	\$0	\$0		each	#N/A	0	\$0	\$0	
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0	
E OBJECTIVE: DECONTAMINATE BUILDINGS & TANKS																
Buildings, asbestos siding	m2	7622	BDAL	21	\$160,062	100%	\$160,062	\$0	(\$160,062)	Complete	m2	0	BDAL	21	\$0	\$0
Buildings, friable asbestos	m2	1	#N/A	60000	\$60,000	100%	\$60,000	\$0	(\$53,975)		m2	317.13	BDAL	19	\$6,025	\$6,025
Arsenic/blend plant, decontaminate	each	1	#N/A	100000	\$100,000	0%	\$0	\$100,000	(\$100,000)	Complete	each	0	#N/A	100000	\$0	\$0
Bulk fuel storage	each		#N/A	0	\$0		\$0	\$0	\$35,000		each	1000	CSRI	35	\$35,000	\$35,000
Power plant	each		#N/A	0	\$0		\$0	\$0	\$1,900		each	1	POWRI	1900	\$1,900	\$1,900
Hazardous material - non asbestos	each		#N/A	0	\$0		\$0	\$0	\$19,530		each	434	BDC	45	\$19,530	\$19,530
F OBJECTIVE: Decontaminate buildings																
Robertson Complex	allow		#N/A	0	\$0		\$0	\$0	\$0		allow	#N/A	0	\$0	\$0	\$0
Robertson Shaft	allow		#N/A	0	\$0		\$0	\$0	\$0		allow	#N/A	0	\$0	\$0	\$0
Arsenic/blend plant	allow		#N/A	0	\$0		\$0	\$0	\$0		allow	#N/A	0	\$0	\$0	\$0
Mill & Con shaft area	allow		#N/A	0	\$0		\$0	\$0	\$0		allow	#N/A	0	\$0	\$0	\$0
Other Buildings	allow		#N/A	0	\$0		\$0	\$0	\$27,600	Process Plant-chemicals	allow	1380	BDA	20	\$27,600	\$27,600
Effluent Treatment plant	allow		#N/A	0	\$0		\$0	\$0	\$0		allow	#N/A	0	\$0	\$0	\$0
Town site buildings	allow		#N/A	0	\$0		\$0	\$0	\$0		allow	#N/A	0	\$0	\$0	\$0

1 Building / Equip Name: Bldg / Equip #: 1
 INAC

MCML

ACTIVITY/MATERIAL	INAC		Unit Cost	Cost %	Land	Land Cost	Water Cost	Difference	MCML		Unit Cost	Cost	Reclamation Liability			
	Units	Quantity							Cost Code	Units				Quantity	Cost Code	
G OBJECTIVE: REMOVE BUILDINGS																
. Robertson Complex	m2	549	BRW1L	21.5	\$11,804	100%	\$11,804	\$0	\$13,295	Vent	m2	784.34	BRS1I	32	\$25,099	\$25,099
. Robertson Shaft	m2	3480	BRS1S	240	\$835,200	100%	\$835,200	\$0	(\$475,200)		m2	1500	BRS1S	240	\$360,000	\$360,000
									\$12,917	Lab	m2	403.66	BRS1I	32	\$12,917	\$12,917
									\$79,270	Warehouse	m2	1651.45	BRS1H	48	\$79,270	\$79,270
									\$11,950	Shops	m2	612.8	BRW1I	19.5	\$11,950	\$11,950
									\$785	Yard	m2	156.97	BRW2I	5	\$785	\$785
. Arsenic/blend plant	m2	10704	BRS1L	35.2	\$376,781	100%	\$376,781	\$0	(\$240,053)		m2	2848.5	BRS1h	48	\$136,728	\$136,728
. Mill & Con shaft area	m2	33864	BRW1H	33	\$1,117,512	100%	\$1,117,512	\$0	(\$282,874)		m2	3477.66	BRS1S	240	\$834,638	\$834,638
									\$12,289	Sheds Mill	m2	630.18	BRW1L	19.5	\$12,289	\$12,289
									\$279,453	ns, Power plant, mill boiler	m2	8732.91	BRW1L	32	\$279,453	\$279,453
. Other Buildings	m2	1056	BRW1L	21.5	\$22,704	100%	\$22,704	\$0	(\$1,541)	Oxygen	m2	440.9	BRS1h	48	\$21,163	\$21,163
. Effluent Treatment plant	m2	1896	BRS1L	35.2	\$66,739	100%	\$66,739	\$0	(\$66,739)		m2	0	BRS1L	35.2	\$0	\$0
. Town site/Dock buildings	m2	5354	BRW1L	21.5	\$115,111	100%	\$115,111	\$0	(\$63,830)	Buildings - dock	m2	2441.93	BRW1L	21	\$51,281	\$51,281
									\$0		m2	0	BRW1L	19.5	\$0	\$0
									\$4,073	Other at Dock	m2	116.37	BRS1	35	\$4,073	\$4,073
. Remove bone yard waste	m3		#N/A	0	\$0		\$0	\$0	\$97,500	Yard	m2	5000	BRW1I	19.5	\$97,500	\$97,500
. Other			#N/A	0	\$0		\$0	\$0	\$1,605			53.51	BRCI	30	\$1,605	\$1,605
H OBJECTIVE: BREAK BASEMENT SLABS																
. Pump house			#N/A	0	\$0		\$0	\$0	\$729		m2	121.5	BRCs	6	\$729	\$729
. Rob headframe			#N/A	0	\$0		\$0	\$0	\$720			120	BRCs	6	\$720	\$720
			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
I OBJECTIVE: REMOVE BURIED TANKS																
. Tank 1, decontaminate	LS	1	#N/A	5000	\$5,000	0%	\$0	\$5,000	(\$5,000)		LS	0	#N/A	5000	\$0	\$0
. , excavate & dispose	LS	1	#N/A	5000	\$5,000	100%	\$5,000	\$0	(\$5,000)		LS	0	#N/A	5000	\$0	\$0
. Tank 2, decontaminate	m3		#N/A	0	\$0		\$0	\$0	\$0		m3		#N/A	0	\$0	\$0
. , excavate & dispose	m3		#N/A	0	\$0		\$0	\$0	\$0		m3		#N/A	0	\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
J OBJECTIVE: LANDFILL FOR DEMOLITION WASTE																
. Place soil cover	m3		#N/A	0	\$0		\$0	\$0	\$0		m3		#N/A	0	\$0	\$0
. Vegetate	ha		#N/A	0	\$0		\$0	\$0	\$0		ha		#N/A	0	\$0	\$0
. Landfill disposal fee	tonne		#N/A	0	\$0		\$0	\$0	\$31,500		tonne	15000	SBSI	2.1	\$31,500	\$31,500

1 Building / Equip Name: Bldg / Equip #: 1
INAC

MCML

ACTIVITY/MATERIAL	INAC		Cost Code	Unit Cost	Cost %	Land	Land Cost	Water Cost	Difference	MCML		Unit Cost	Cost	Reclamation Liability		
	Units	Quantity								Units	Quantity				Cost Code	Cost
K OBJECTIVE: GRADE AND CONTOUR																
. Grade mill Robertson areas	m2	2.5	SCFYL	3525	\$8,813	100%	\$8,813	\$0	(\$8,813)		m2	0	SCFYL	3525	\$0	\$0
. Place soil cover	m3		SB4H	8.95	\$0		\$0	\$0	\$0		m3		SB4H	8.95	\$0	\$0
. Rip rap on ditches	m3		#N/A	0	\$0		\$0	\$0	\$0		m3		#N/A	0	\$0	\$0
. Vegetate	ha	15	VHFL	1595	\$23,925	100%	\$23,925	\$0	(\$23,925)		ha	0	VHFL	1595	\$0	\$0
. Cover on-site landfill	m3		SB1L	3.2	\$0		\$0	\$0	\$0		m3		SB1L	3.2	\$0	\$0
. Backfill arsenic plant pits	m3		SB1I	3.2	\$0		\$0	\$0	\$0		m3		SB1I	3.2	\$0	\$0
L OBJECTIVE: RECLAIM ROADS																
. Scarify and install water breaks	ha	4	SCFYL	3525	\$14,100		\$0	\$14,100	(\$14,100)		ha	0	SCFYL	3525	\$0	\$0
. Vegetate	ha	4	VHFL	1595	\$6,380		\$0	\$6,380	(\$6,380)		ha	0	VHFL	1595	\$0	\$0
.			#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
K SPECIALIZED ITEMS																
. Dispose of misc. debris	m3	10000	SB2H	5.97	\$59,700		\$0	\$59,700	(\$59,700)	\$5,000	Pumps	2	PLs	2500	\$5,000	
											m3	0	SB2H	5.97	\$0	\$0
Subtotal					\$2,988,830	93.8%	\$2,803,650	\$185,180	(\$932,075)					\$2,056,755	\$2,051,755	
			Total Buildings		Percent Land	Total Land	Total Water						Total Buildings	Total		

Chemicals and Soil Contamination:

1

1

INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	Cost	Reclamation Liability
<p>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</p>								<p>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</p>						
A LABORATORY CHEMICALS	pallet	25 LCRH	2320	\$58,000	0%	\$0	\$58,000	-\$48,460	pallet	6 LCRI		1590	\$9,540	\$9,540
B PCB	litre	#N/A	0	\$0		\$0	\$0	\$24,990	litre	833 PCBRI		30	\$24,990	\$24,990
PCB, disposal	litre	#N/A	0	\$0		\$0	\$0	\$0	litre	#N/A		0	\$0	\$0
C FUEL		#N/A		\$0		\$0	\$0	\$0		#N/A			\$0	\$0
Type 1	kg	#N/A	0	\$0		\$0	\$0	\$0	kg	#N/A		0	\$0	\$0
Type 2	kg	#N/A	0	\$0		\$0	\$0	\$0	kg	#N/A		0	\$0	\$0
Type 3	kg	#N/A	0	\$0		\$0	\$0	\$0	kg	#N/A		0	\$0	\$0
D WASTE OIL														
Waste oils	litre	10000 ori	0.35	\$3,500	100%	\$3,500	\$0	-\$3,500	litre	0 ori		0.35	\$0	\$0
Oils/lubricants - ship off-site	litre	#N/A	0	\$0		\$0	\$0	\$0	litre	#N/A		0	\$0	\$0
Oils/lubricants - disposal fee	litre	#N/A	0	\$0		\$0	\$0	\$0	litre	#N/A		0	\$0	\$0
E PROCESS OR TREATMENT CHEMICALS														
waste batteries	pallet	20	#N/A	250	\$5,000	100%	\$5,000	-\$5,000	pallet	0	#N/A	250	\$0	\$0
Type 2	kg	#N/A	0	\$0		\$0	\$0	\$0	kg	#N/A		0	\$0	\$0
Type 3	kg	#N/A	0	\$0		\$0	\$0	\$0	kg	#N/A		0	\$0	\$0
Type 4	kg	#N/A	0	\$0		\$0	\$0	\$0	kg	#N/A		0	\$0	\$0
F HAZARDOUS MATERIALS AUDIT	each	1	#N/A	50000	\$50,000	50%	\$0	-\$50,000	each	0	#N/A	50000	\$0	\$0
			#N/A		\$0						#N/A		\$0	

Chemicals and Soil Contamination:

1

1

INAC

MCML

ACTIVITY/MATERIAL	INAC		Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	MCML				Reclamation Cost	Liability		
	Units	Quantity							Units	Quantity	Cost Code	Unit Cost			Cost	Liability
G CONTAMINATED SOILS & COVERS ON CON, NEGUS PONDS AND HAZ. WASTE LANDFILL																
arsenic contaminated soil, excav.																
Dump in disposal	m3	175000	SC1H	7.65	\$1,338,750	0%	\$0	\$1,338,750	-\$938,750	m3	40000	CSRs	10	\$400,000	\$400,000	
									\$0	m3	0	CSRs	10	\$0	\$0	
field supervision and testing	each	1	#N/A	0	\$80,000	0%	\$0	\$80,000	-\$80,000	each	0	#N/A	0	\$0	\$0	
disposal area, prepare foundation	each	1	#N/A	0	\$0	0%	\$0	\$0	\$0	each	0	#N/A	0	\$0	\$0	
supply & place liner, ES2	m2	51024	#N/A	17.9	\$913,330	0%	\$0	\$913,330	-\$913,330	m2	0	#N/A	17.9	\$0	\$0	
supply upper and lower sand bedding	m3	10205		22	\$224,510	0%	\$0	\$224,510	-\$224,510	m3	0		22	\$0	\$0	
place upper and lower sand bedding	m3	10205	SC1H	7.65	\$78,068	0%	\$0	\$78,068	-\$78,068	m3	0	SC1H	7.65	\$0	\$0	
supply rock	m2	22512	#N/A	10.15	\$228,497	0%	\$0	\$228,497	-\$228,497	m2	0	#N/A	10.15	\$0	\$0	
place rock cover	m3	22512	SC1H	7.65	\$172,217	0%	\$0	\$172,217	-\$156,217	m3	4000		4	\$16,000	\$16,000	
rip rap over tailings	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Type 1, gasoline	m3	500	CSRL	38.5	\$19,250	50%	\$9,625	\$9,625	\$55,750	m3	5000	CSRLs	15	\$75,000	\$75,000	
Type 2, diesel	m3	4000	CSRI	38.5	\$154,000	50%	\$77,000	\$77,000	-\$154,000	m3	0	CSRI	38.5	\$0	\$0	
Type 3, bunker C	m3	0	#N/A	0	\$0		\$0	\$0	\$0	m3	0	#N/A	0	\$0	\$0	
	m3	0	#N/A	0	\$0		\$0	\$0	\$90,000	Calcine	m3	45000	#N/A	2	\$90,000	\$90,000
	m3	0	#N/A	0	\$0		\$0	\$0	\$20,000	Base liner	m3	8000	#N/A	2.5	\$20,000	\$20,000
	m3	0	#N/A	0	\$0		\$0	\$0	\$32,500	Con Pond cover		1	#N/A	32500	\$32,500	\$32,500
									\$0	NON - HAZARDOUS WASTE LANDFILL						
	m3	0	#N/A	0	\$0		\$0	\$0	\$16,000	Cover	m3	4000	#N/A	4	\$16,000	\$16,000
	m3	0	#N/A	0	\$0		\$0	\$0	\$20,000	Liner	m3	8000	#N/A	2.5	\$20,000	\$20,000
	m3	0	#N/A	0	\$0		\$0	\$0	\$16,000	Topsoil	m3	4000	#N/A	4	\$16,000	\$16,000

Chemicals and Soil Contamination:

1

1

INAC

MCML

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	Reclamation		
													Cost	Liability	
H ARSENIC SLUDGE IN CON & NEGUS PONDS PLUS CALCINE TO BLEND PLANT															
. Con: remove concrete	allow	1	#N/A	25000		50%	\$12,500	\$12,500	-\$25,000	allow	0	#N/A	25000	\$0	\$0
. Con; excavate, load truck and dump int	ton	0	#N/A	0	\$0		\$0	\$0	\$0	ton	0	#N/A	0	\$0	\$0
. Negus: remove concrete	allow	1	#N/A	25000	\$25,000	50%	\$12,500	\$12,500	-\$25,000	allow	0	#N/A	25000	\$0	\$0
. Negus; excavate, load truck and dump i	ton	0	#N/A	0	\$0		\$0	\$0	\$0	ton	0	#N/A	0	\$0	\$0
. excavate road fill over buried ponds	m3	0	#N/A	0	\$0		\$0	\$0	\$0	m3	0	#N/A	0	\$0	\$0
. Buried; excavate, load truck and dump i	ton	0	#N/A	0	\$0		\$0	\$0	\$0	ton	0	#N/A	0	\$0	\$0
. Calcine: excavate, load truck, dump	ton	0	#N/A	0	\$0		\$0	\$0	\$0	ton	0	#N/A	0	\$0	\$0
. Calcine: dump into pits	ton	0	#N/A	0.25	\$0		\$0	\$0	\$0	ton	0	#N/A	0.25	\$0	\$0
. Con: Wash down pond area	m2	0	#N/A	10800	\$0		\$0	\$0	\$0	m2	0	#N/A	10800	\$0	\$0
. Negus: Wash down pond area	m2	0	#N/A	10800	\$0		\$0	\$0	\$0	m2	0	#N/A	10800	\$0	\$0
. Buried: Wash down pond area	m2	0	#N/A	2700	\$0		\$0	\$0	\$0	m2	0	#N/A	2700	\$0	\$0
. Decontaminate excavation equipment	each	0	#N/A	2000	\$0		\$0	\$0	\$0	each	0	#N/A	2000	\$0	\$0
. Burden to effluent treatment plant	LS	0	#N/A	55500	\$0		\$0	\$0	\$0	LS	0	#N/A	55500	\$0	\$0
. OTHER			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0
Subtotal				\$3,375,121		3.6%	#####	\$3,254,996	-\$2,655,091				\$720,030		\$720,030
				Total		Percent	Total	Total					Total		Total
				Chemical		Land	Land	Water					Chemical		Total

Comments:

1 Water Management Project: Project # 1

INAC							MCML								
ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	Cost	Reclamation Liability	
A OBJECTIVE: STABILIZE EMBANKMENT															
Toe buttress, drain mat'l	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, fill mat'l A	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, fill mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Rip rap	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Vegetate	ha		#N/A	0	\$0	\$0	\$0	\$0	ha		#N/A	0	\$0	\$0	
Raise crest	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0	
B OBJECTIVE: UPGRADE SPILLWAY															
Excavate channel, mat'l A	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Concrete	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Rip rap	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0	
C OBJECTIVE: STABILIZE SEDIMENT CONTAINMENT PONDS															
Place soil cover	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Place geotextile	m2		#N/A	0	\$0	\$0	\$0	\$0	m2		#N/A	0	\$0	\$0	
Vegetate	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0	
D OBJECTIVE: MONITORING WELLS - change															
Operating	m3		#N/A	0	\$0	\$0	\$0	\$40,000	each	8	#N/A	5000	\$40,000	\$40,000	
Other			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0	
E OBJECTIVE: STABILIZE DITCHES															
excavate ditches	m3	8000	SC1H	7.65	\$61,200	0%	\$0	\$61,200	-\$61,200	m3	0	SC1H	7.65	\$0	\$0
Rip rap	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Vegetate	ha		#N/A	0	\$0		\$0	\$0	\$0	ha		#N/A	0	\$0	\$0
Install monitoring wells	each	8	#N/A	5000	\$40,000	0%	\$0	\$40,000	-\$40,000	each	0	#N/A	5000	\$0	\$0
F OBJECTIVE: BREACH DITCHES															
Excavate channel	m3	9600	SC1H	7.65	\$73,440	0%	\$0	\$73,440	-\$25,440	m	4800	SCS1	10	\$48,000	\$48,000
doze & spread excavated material	m3	9600	dsl	0.78	\$7,488	0%	\$0	\$7,488	-\$7,488	m3	0	dsl	0.78	\$0	\$0
Vegetate, spread material	ha	0.96	vhfl	1595	\$1,531	0%	\$0	\$1,531	-\$1,531	ha	0	vhfl	1595	\$0	\$0
Rip rap in channel base	m3	1200	SC1H	7.65	\$9,180	0%	\$0	\$9,180	-\$9,180	m3	0	SC1H	7.65	\$0	\$0
G OBJECTIVE: REMOVE PIPELINES															
Remove pipes	m		#N/A	0	\$0		\$0	\$0	\$0	m		#N/A	0	\$0	\$0
Concrete plug deep pipes	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0
H OBJECTIVE: REMOVE STORAGE TANKS															
Remove tanks & plumbing	m2		#N/A	0	\$0		\$0	\$0	\$0	m2		#N/A	0	\$0	\$0
Excavate & backfill	m3		#N/A	0	\$0		\$0	\$0	\$0	m3		#N/A	0	\$0	\$0
Other			#N/A	0	\$0		\$0	\$0	\$0			#N/A	0	\$0	\$0

1 Water Management Project: Project # 1

INAC						MCML									
ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Units	Quantity	Cost Code	Unit Cost	Cost	Reclamation Liability	
I OBJECTIVE: COLLECT DRAINAGE FOR TREATMENT															
Excavate collection ditches	m3		#N/A	0	\$0	\$0	\$0	\$200,000	m3	8000	RB1s	25	\$200,000	\$200,000	
Rip rap ditches	m3		#N/A	0	\$0	\$0	\$0	\$90,000	Backfill	m3	6000	BFh	15	\$90,000	\$90,000
Pipes	m		#N/A	0	\$0	\$0	\$0	\$5,000	Pipes	m	1000	PPSh	5	\$5,000	\$5,000
Pumps	each		#N/A	0	\$0	\$0	\$0	\$0	each		#N/A	0	\$0	\$0	
Collect'n pond, exc. mat'l A	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, exc. mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Collect'n pond, fill mat'l A	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
, fill mat'l B	m3		#N/A	0	\$0	\$0	\$0	\$0	m3		#N/A	0	\$0	\$0	
Collect'n pond, liner	m2		#N/A	0	\$0	\$0	\$0	\$0	m2		#N/A	0	\$0	\$0	
J OBJECTIVE: TREAT DRAINAGE (see "ONGOING TREATMENT" for operating costs)															
Build treatment plant	lump sum		#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0	
			#N/A	0	\$0	\$0	\$0	\$0			#N/A	0	\$0	\$0	
Subtotal					\$192,839	0.0%	\$0	\$192,839					\$383,000	\$383,000	
					Total	Percent	Total	Total					Total	Total	
					Water	Land	Land	Water					Water	Total	

1 Mobilization Name: _____ Mob # 1 _____

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
A MOBILIZE HEAVY EQUIPMENT								
Equipment to regional centre								
. Excavators	km		#N/A	0	\$0	\$0	\$0	
. Dump trucks	km		#N/A	0	\$0	\$0	\$0	
. Dozers	km		#N/A	0	\$0	\$0	\$0	
. Demolition shears	km		#N/A	0	\$0	\$0	\$0	
Equipment, regional centre to site								
. Excavators	km		#N/A	0	\$0	\$0	\$0	
. Dump trucks	km		#N/A	0	\$0	\$0	\$0	
. Dozers	km		#N/A	0	\$0	\$0	\$0	
. Demolition shears	km		#N/A	0	\$0	\$0	\$0	
B MOBILIZE CAMP								
.			#N/A		\$0	\$0	\$0	
C MOBILIZE WORKERS manday								
GENERAL MOBILIZATION								
ALLOWANCE; all phases of reclamation								
work over numerous years		1	#N/A	0	\$50,000	\$0	\$50,000	
.			#N/A	0	\$0	\$0	\$0	
D MOBILIZE MISC. SUPPLIES								
. Fuel	litre		#N/A	0	\$0	\$0	\$0	
. Minor tools and equipment	owance		#N/A	0	\$0	\$0	\$0	
. Truck tires	owance		#N/A	0	\$0	\$0	\$0	
E MOBILIZE & HOUSE WORKERS person days								
.			#N/A		\$0	\$0	\$0	
WINTER ROAD								
. Full winter use	km		#N/A	0	\$0	\$0	\$0	
. Limited winter use	km		#N/A	0	\$0	\$0	\$0	
.			#N/A	0	\$0	\$0	\$0	
F BONDING lump sum								
.			#N/A		\$0	\$0	\$0	
G TAXES lump sum								
.			#N/A		\$0	\$0	\$0	
H INSURANCE lump sum								
.			#N/A		\$0	\$0	\$0	
Subtotal					\$50,000	0.0%	\$0	\$50,000
					Total	Percent	Total	Total
					Mob.	Land	Land	Water

1 Monitoring & Maintenance **Mon / Mtce # 1**

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
A OBJECTIVE: INSPECTIONS								
Annual geotechnical insp.	each		#N/A	\$0	\$0	\$0	\$0	
. Survey inspection	each		#N/A	\$0	\$0	\$0	\$0	
. Water sampling	each		#N/A	\$0	\$0	\$0	\$0	
. Reporting	each		#N/A	\$0	\$0	\$0	\$0	
. Other			#N/A	\$0	\$0	\$0	\$0	
B OBJECTIVE: MAINTENANCE								
. Security guard	month		#N/A	\$0	\$0	\$0	\$0	
. Accommodation	month		#N/A	\$0	\$0	\$0	\$0	
. Maintain pumping	month		#N/A	\$0	\$0	\$0	\$0	
. Clear spillway	each		#N/A	\$0	\$0	\$0	\$0	
. Other			#N/A		\$0	\$0	\$0	
Subtotal					\$0	0.0%	\$0	\$0
					Total Pits	Percent Land	Total Land	Total Water

1 Post-Closure Site Maintenance

INAC

MCML

ACTIVITY/MATERIAL	Units		Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	Difference	Units		Quantity	Cost Code	Unit Cost	Cost	Reclamation Liability	
A WATER TREATMENT																	
Net present value from supplemental workshee			1		\$4,708,209	\$4,708,209	0%	\$0	\$4,708,209	-\$2,299,430				1	\$2,408,779	\$2,408,779	\$2,408,779
B Cover Maintenance																	
Repair erosion, remove trees	ha			#N/A	0	\$0		\$0	\$0	\$0		ha		#N/A	0	\$0	\$0
C Spillway Maintenance																	
Repair erosion		m3		#N/A	0	\$0		\$0	\$0	\$0		m3		#N/A	0	\$0	\$0
Clear spillway		each		#N/A	0	\$0		\$0	\$0	\$0		each		#N/A	0	\$0	\$0
Other				#N/A	0	\$0		\$0	\$0	\$0				#N/A	0	\$0	\$0
D Ongoing Monitoring & Maintenance - taken from MGML FCRP																	
Net present value from supplemental workshee			1		\$1,667,026	\$1,667,026	25%	\$416,757	\$1,250,270	-\$36,148				1	\$1,630,878	\$1,630,878	\$1,630,878
<hr/>																	
Subtotal, Annual post-closure costs					\$6,375,235			\$416,757	\$5,958,479	-\$2,335,578					\$4,039,657		\$4,039,657
Discount rate for calculation of net present value of post-clo:				3.00%				\$0		\$0				3.00%			
Number of years of post-closure activity				0 years				\$0		\$0				0 years			
Present Value of payment stream					\$6,375,235	6.5%	\$416,757	\$5,958,479		-\$2,335,578					\$4,039,657		\$4,039,657
					<u>Total Post closure</u>	<u>Percent Land</u>	<u>Total Land</u>	<u>Total Water</u>							<u>Total Post Closure</u>		<u>Total</u>

A Unit Cost Estimator

Equipment Productivity

A10 EXCAVATION

A11	PRODUCTIVITY	Cat 345 B	
A12	bucket capacity	m3	2.4
A13	fill factor	%	75%
A14	cycle time	seconds	45
A15	operator skill	%	75%
A16	machine availability	%	83%
A17	Altitude adjustment	%	100%
A18	Hourly productivity	m3/hr	89.64
A19		0	
A20		0	
A21		0	
A22		0	
A23		0	

B OPERATING COSTS

B10	use contractor supplied cost or insert cost components		
B11	Hourly rate - contractor supplied		\$150.00
B12	Excavation cost		1.67 \$/m3
B13		0	
B14		0	
B15	Cost of:		
B16	ownership, daily		\$/day
B17	maintenance		\$/hr
B18	fuel		\$/hr
B19	consumables (cutters, tires)		\$/hr
B20	operator		\$/hr
B21		total hourly cost	0 \$/hr
B22	Excavation cost		0.00 \$/m3

Sum of costs for excavate load haul dump rock cover on tailings	3.90
ripping in excavation area	0.25
testing	0.2
	/m3
	\$4.35

G EXAMPLE EXCAVATOR PERFORMANCE FACTORS

G1: Fill Factor

G1: Material	% of heaped bucket capacity
G1: Moist loam or sandy clay	100 - 110
G1: sand and gravel (not till)	95 - 110
G1: hard tough clay	80 - 90
G1: rock - will blasted	60 - 75
G1: rock - poorly blasted	40 - 60

G1: 0

G1: Cycle Times - Typical Seconds

G1: description	Cat 320	Cat 325B	Cat 375
G20 heaped bucket capacity, m3	1.5	2.2	5.4
G2: easy digging, shallow diggin excellent	16	18	20
G2: med. To hard digging, rocky average	23	23	25
G2: toughest digging, sandstone poor	27	29	35

G2: 0

G2: Operator Skill	poor	average	good
G2: 0	0.6	0.75	1

G2: 0

G2: Machine availability	poor	average	good
G2: 0	0.9	0.95	1

ly Figures and Graphs have been reproduced from Caterpillar Performance

C Haul and Dumping

C10	PRODUCTIVITY	769 rock truck	
C11	Truck capacity	m3	24
C12		0	
C13	Cycle time		
C14	load time	min.	6.0
C15	haul distance	km	1.5
C16	average velocity	km/hr	20.0
C17	haul time + return time	min.	9.0
C18	wait time	min.	0.5
C19	dump time	min.	1.0
C20	machine availability	%	83%
C21	Altitude adjustment	%	100%
C22		0 e. min/cycle	16.33
C23	Hourly productivity	m3/hr	88.2

D OPERATING COSTS

D10	use contractor supplied cost or insert cost components		
D11	Hourly rate - contractor supplied		\$140.00
D12	Excvation cost		1.59 \$/m3
D13			
D14			
D15	Cost of:		
D16	ownership, daily		\$/day
D17	maintenance		\$/hr
D18	fuel		\$/hr
D19	consumables (cutters, tires)		\$/hr
D20	operator		\$/hr
D21		total hourly cost	0 \$/hr
D22	Excavation cost		0.00 \$/m3

H EXAMPLE PERFORMANCE FACTORS

#N/A

H10	0	Cat 771 D	Cat 777D	Cat 789C
H11 Truck capacity - heaped, m3		27.5	60.5	137

H12

H13

H14

H15

H16

H17

H18

H19

H20

H21

H22

H23

H24

H25

H26

H27 Machine availability

H28

poor	average	good
0.9	0.95	1

ce Handbook - Edition 32

E Spreading - Dozing

spreading

E10 **PRODUCTIVITY**

Cat D8

E11 Estimate production using example curves below or m3/hr 600

E12 equivalent from other supplier

E13 operator skill 0.75

E14 material type, see table 0.80

E15 slot dozing 1.00

E16 side by side dozing 1.00

E17 visibility 1.00

E18 job efficiency 0.83

E19 Altitude adjustment 1.00

E20 slope adjustment 1.00

E21

E22

E23 Hourly productivity m3/hr 298.8

F **OPERATING COSTS**

F10 use contractor supplied cost or insert cost components

F11 Hourly rate - contractor supplied \$190.00

F12 Excavation cost 0.64 \$/m3

F13

F14

F15 Cost of:

F16 ownership, daily \$/day

F17 maintenance \$/hr

F18 fuel \$/hr

F19 consumables (cutters, tires) \$/hr

F20 operator \$/hr

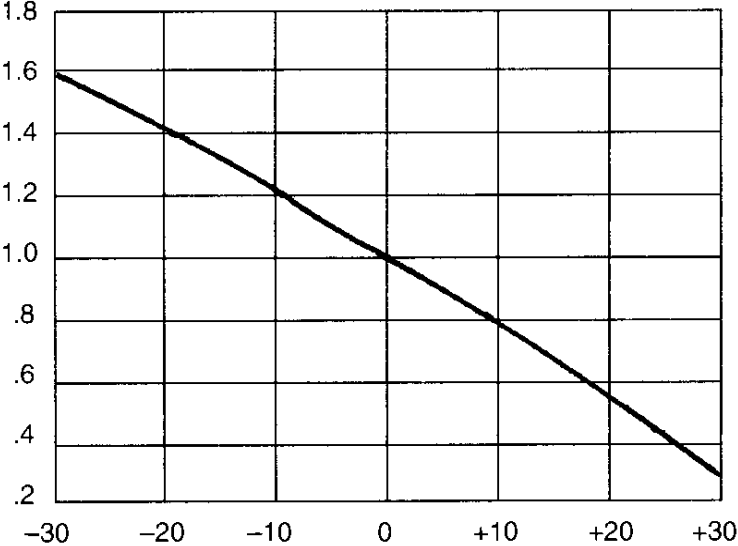
F21 total hourly Cost 0 \$/hr

F22 Excavation cost 0.00 \$/m3

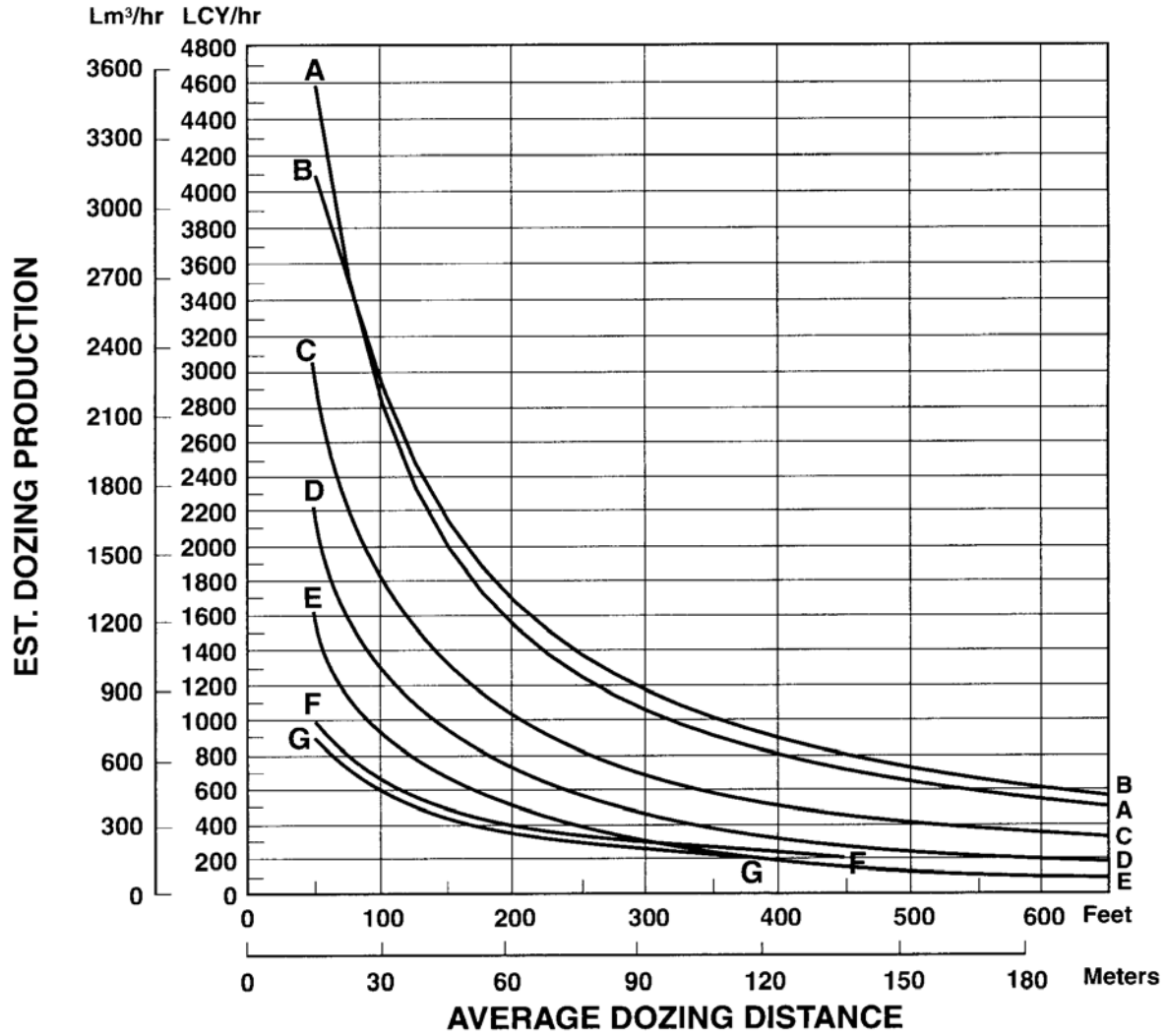
EXAMPLE PERFORMANCE FACTORS

% Grade vs. Dozing Factor

(-) Downhill
(+) Uphill



ESTIMATED DOZING PRODUCTION • Universal Blades • D7G through D11R



KEY

- A — D11R-11U
- B — D11R CD
- C — D10R-10U
- D — D9R-9U
- E — D8R/D8R Series II-8U
- F — D7R Series II-7U
- G — D7G-7U

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

JOB CONDITION CORRECTION FACTORS

	TRACK- TYPE TRACTOR	WHEEL- TYPE TRACTOR
OPERATOR —		
Excellent	1.00	1.00
Average	0.75	0.60
Poor	0.60	0.50
MATERIAL —		
Loose stockpile	1.20	1.20
Hard to cut; frozen —		
with tilt cylinder	0.80	0.75
without tilt cylinder	0.70	—
Hard to drift; "dead" (dry, non-cohesive material) or very sticky material	0.80	0.80
Rock, ripped or blasted	0.60-0.80	—
SLOT DOZING	1.20	1.20
SIDE BY SIDE DOZING	1.15-1.25	1.15-1.25
VISIBILITY —		
Dust, rain, snow, fog or darkness	0.80	0.70
JOB EFFICIENCY —		
50 min/hr	0.83	0.83
40 min/hr	0.67	0.67
BULLDOZER*		
Adjust based on SAE capacity relative to the base blade used in the Estimated Dozing Production graphs.		
GRADES — See following graph.		

*NOTE: Angling blades and cushion blades are not considered production dozing tools. Depending on job conditions, the A-blade and C-blade will average 50-75% of straight blade production.

WATER TREATMENT COSTS

ANNUAL VOLUME OF WATER (m3) _____

Reagent addition rates

Reagent	kg reagent/m3 water	cost in \$/kg, FOB site	Annual reagent cost
H2O2	0.1 kg/m3	1.5	\$0
lime	kg/m3	0.45	\$0
ferric sulphate	kg/m3		\$0
ferrous sulphate	kg/m3		\$0
flocculents	kg/m3		\$0
TOTAL			\$0

Supplies and Labour

power, kW-hr	0 rate, \$/kW-h	0.13	\$0
misc. supplies, hoses, tools			\$0
sampling equip.			\$0
equip. maintenance and parts			\$0
water analysis			\$0
reporting			\$0
truck rental			\$0
annual mileage			\$0
road maintenace & snow plowing			\$0
electrician/mechanic for treatment plant & power supply			\$0
Annual cost			\$0
labor, hourly rate	35		
men per day for water treatment work			1
on site, days per year			0
spring/fall maintenance, extra work			0
hours worked per year			0
annual labor cost			\$0
Total, labour and suppli			\$0
TOTAL ANNUAL COSTS, reagents plus labour and supplies			\$0
Average treatment cost, \$/m3			\$0.00

Water analyses	
samples per month	10
analysis cost/sample	100
shipping	200
Total Water Sampling	1200

Site Access	
annual site access cost	
road	\$0
air	\$0
winter road	\$0

Unit Cost Table

ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$	COMMENTS
1 excavate Rock, Bulk							
	drill, blast, load short haul (<500m) Dump	RB1	m3	9.35	14	#N/A	quarry operations for bulk fill
	RB1 + long haul, up to 1500 m	RB2	m3	9.9	14.6	#N/A	
	RB1 + spread and compact	RB3	m3	9.9	14.6	#N/A	
	RB1 + long haul + spread and compact	RB4	m3	10.45	25.25	#N/A	
	RB1 + Specified activity	RBS	m3	#N/A	#N/A	#N/A	
2 excavate Rock, Controlled							
	drill, blast, load short haul (<500m) Dump	RC1	m3	22	33	#N/A	spillway excavation
	RC1 + long haul, up to 1500 m	RC2	m3	10.45	15.1	#N/A	
	RC1 + spread and compact	RC3	m3	9.9	14.6	#N/A	
	RC1 + long haul + spread and compact	RC4	m3	11.1	15.73	#N/A	
	RC1 + Specified activity	RCS	m3	#N/A	#N/A	145	\$145/M3-drift excavation
3 excavate Soil, Bulk							
	excavate, load short haul (<500m) dump	SB1	m3	3.2	4.85	#N/A	LOW cost: excavation of loose soil, high volume
	SB1 + long haul, up to 1500 m	SB2	m3	3.98	5.97	#N/A	LOW cost: excavation of loose soil, 1.5 km haul, high volume
	SB1 + spread and compact	SB3	m3	3.7	5.31	#N/A	
	SB1 + long haul + spread and compact	SB4	m3	4.5	8.95	#N/A	LOW cost: excavation of loose soil, 1.5 km haul, high volume, const. of simple soil cover
	SB1 + Specified activity	SBS	m3	2.31	6.38	10.95	LOW cost: rehandle waste rock dump into pit, >500,000 m3, 2 km haul SPECIFIED cost: rehandle waste rock, haul 3 km, place & compact on dam
	Soil, tailings	SBT	m3	3.03	7.15		LOW cost: doze tailings, HIGH cost: excavate & short haul
4 excavate Soil, Controlled							
	excavate, load short haul (<500 m), dump	SC1	m3	5.61	7.65	#N/A	
	SC1 + long haul, up to 1500 m	SC2	m3	6.95	9.64	#N/A	
	SC1 + spread and compact	SC3	m3	5.61	11.66	#N/A	HIGH cost: for simple soil covers
	SC1 + long haul + spread and compact	SC4	m3	6.3	19.05	#N/A	HIGH cost: for complex covers & dam construction, spillway repair, LOW volume
	SC1 + Specified activity	SCS	m3	#N/A	#N/A	15.75	SPECIFIED cost: backfill adit with waste rock
Geo-synthetics							
	geotextile, filter cloth	GST	M2	0.99	1.98	#N/A	FOB Edmonton, add shipping & installation
	geogrid	GSG	M2	4.73		#N/A	

Unit Cost Table

ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$	
	liner, HDPE	GSHDPE	M2	5.89		#N/A	
	liner, PVC	GSPVC	M2			#N/A	
	geosynthetic installation	GSI	m2	0.83	1	#N/A	
	bentonite soil ammendment	GSBA	tonne	253	286	#N/A	FOB Edmonton, add shipping & mixing
Shaft, Raise & Portal Closures							
	Shaft & Raises	SR	m2	530	1750	#N/A	LOW cost: pre-cast concrete slabs, little site prep. HIGH cost: for hand construction, remote site
	Portals	POR	m3		205	1000	HIGH cost: for excavate & backfill collapsed portal SPECIFIED cost: installed pressure plug
5 Concrete work							
	Small pour, no forms	CS	m3	297	595	#N/A	
	Large pour, no forms	CL	m3	235	350	#N/A	
	Small pour, Formed	CSF	m3	350	1750	#N/A	
	Large pour, Formed	CLF	m3	290	410	#N/A	
6 Vegetation							
	Hydroseed, Flat	VHF	ha	1595	4950	#N/A	
	Hydroseed, Sloped	VHS	ha	1848	5555	#N/A	
	veg. Blanket/erosion mat	VB	ha	11000	13200	#N/A	
	Tree planting	VT	ha	11000	13200	#N/A	
	Wetland species	VW	ha	55000	82500	#N/A	
7 Pumps							
	Small, <	PS	each	3000	6000	#N/A	
	Large, >	PL	each	5000	100000	#N/A	large - 250 hp Gould w/diesel motor
8 PiPes							
	Small, < 6 inch diameter	PPS	m	0.5	5	#N/A	LOW cost: pipe removal, HIGH cost: supply new pipe SPECIFIED: small, heat traced & insulated pipe
	Large, > 6 inch diameter	PPL	m	1	180	#N/A	LOW cost: pipe removal, HIGH cost: supply 24" 100 psi HDPE pipe, FOB Edm. add shipping & installation

Unit Cost Table

ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$
9	pump sand BackFill	BF	m3	5.5	16.5	#N/A
10	Fence	F	m	11	165	#N/A
11	Signs	S	each	11	33	#N/A
12	rock, Drill and Blast only (flatten slope, collapse drift)	DB	m3	11	22	#N/A
13	excavate Rip Rap drill, blast, load short haul (<500 m) dump and spread	RR1	m3	10.95	16.35	#N/A
	RR1 + long haul	RR2	m3	11.1	16.95	#N/A
	excavate rock from waste dump, short haul, spread	RR3	m3	4.2	5.78	#N/A
	RR3 + long haul	RR4	m3	4.68	6.25	#N/A
	specified rip rap source	RR5	m3	#N/A	#N/A	#N/A
14	Import LimeStone	ILS	tonne	8.8	13.2	#N/A
15	Import LiMe	ILM	tonne	165	495	#N/A
16	Grouting	G	m3	198	240	#N/A
17	Dozing					
	doze Rock piles	DR	m3	0.85	1.95	#N/A
	doze overburden/Soil piles	DS	m3	0.78	3.11	#N/A
18						#N/A
						#N/A
19						#N/A
						#N/A
20			each	0	0	#N/A
			each			#N/A
21	Buildings - Decontaminate					

HIGH cost: quarry & place rip rap in channel
LOW cost: removal of 18 in minus from dump, long haul and spread
HIGH cost: removal of coarse rock from dump, long haul, armour spillway

LOW cost: bulk shipping, high volume, FOB Vancouver/Edmonton
HIGH cost: bags delivered to central Yukon, small volume

HIGH cost: cement, FOB Yellowknife

LOW cost: doze crest off dump

HIGH cost: push up to 300 m

Unit Cost Table

ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$	
	Chemicals	BDC	m3	#N/A	#N/A	#N/A	
	Asbestos	BDA	m2	21	42	#N/A	LOW cost: removal of asbestos siding & flooring HIGH cost: removal of insulated pipes, friable asbestos
22	Buildings - Remove areas are per floor on 3 m average height						LOW cost: removal and on-site disposal - small wooden structures
	Wood - teardown	BRW1	m2	21.5	33	#N/A	
	Wood - burn	BRW2	m2	5.5	11	#N/A	
	Masonry	BRM	m2	23.65	33	#N/A	
	Concrete	BRC	m	33	49.5	6	LOW cost: removal of building perimeter walls, HIGH cost: per m3 for bulk concrete SPECIFIED cost: \$/m2 to break floor slab SPECIFIED cost: demolition shear \$/hour operating
	Steel - teardown	BRS1	m2	35.2	52.8	240	
	Steel - salvage	BRS2	m2	55	82.5	#N/A	
23	Power & Pipe Lines						
	Power lines, remove	POWR	each	20.9	4620	#N/A	
						#N/A	
24	Laboratory Chemicals						
	Remove from site	LCR	pallet	1750	2320	#N/A	
	Dispose on site	LCD	each	#N/A	#N/A	#N/A	
25	PCB - Remove from site	PCBR	litre	33	38.5	#N/A	LOW cost: shipping, handling & disposal from Yellowknife
26	Fuel						
	Remove from site	FR	kg	0	1.02	#N/A	
	Burn on site	FB	kg	#N/A	#N/A	#N/A	
27	Oil						
	Remove from site	OR	litre	0.35	1.02	#N/A	
	Burn on site	OB	litre	0.35	0.55	#N/A	
28	Process Chemicals						
	Remove from site	PCR	kg	0.35	2.05	#N/A	
	Dispose on site	PCD	kg	#N/A	#N/A	#N/A	
29	Explosives						
	Remove from site	ER	kg	0	2.2	#N/A	
	Dispose on site	ED	kg	#N/A	#N/A	#N/A	

Unit Cost Table

ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$	
30	Contaminated Soils						
	Remediate on site	CSR	m3	38.5	120	#N/A	LOW cost: bio-remediate on-site. HIGH cost: ship off-site to landfill as haz. waste
	consolidate & cover						Use cost code items 1 - 4
	cover in place						Use cost code items 1 - 4
31	Mobilize Heavy Equipment						
	Road access	MHER	\$/km	2.81	8.42	2.05	SPECIFIED cost: \$/tonne/km in cargo plane
	Air access	MHEA	each	#N/A	#N/A	1375	SPECIFIED cost: helicopter cost, \$/hr of operation
32	Mobilize Camp						
	<20 persons Road access	MC<R	each	#N/A	#N/A	#N/A	
	<20 persons Air access	MC<A	each	#N/A	#N/A	#N/A	
33	Mobilize Workers						
	mobilize	MM<	person	193	990	#N/A	LOW cost: road access. HIGH cost: transport by Twin Otter aircraft
	>20 persons	MM>	person	990	1320	#N/A	
34	ACCoModation	ACCM	month	1320	1980	#N/A	LOW cost, accom in existing camp, per man, HIGH cost: - supply new camp
35	Mobilize Misc. Supplies	MMS	each	#N/A	#N/A	#N/A	LOW cost: winter road - limited use, LOW snowfall
36	Winter Road	WR	km	1320	2620	#N/A	
37	Visual site Inspection	VI	each	3520	7100	10000	
38	Survey site Inspection	SI	each	#N/A	#N/A	#N/A	
39	Water Sampling	WS	each	5500	9000	#N/A	
40	site inspection RePorT	RPT	each	#N/A	11000	#N/A	
41	Security Guard	SG	pers/mc	5500	7700	#N/A	
42	Maintain Pumping	MP	month	3300	#N/A	#N/A	
43	Clear SpillWay	CSW	each	1870	5280	#N/A	
44	Build Treatment Plant						
	Small (< 1000 m3/d)	BTPS	lump su	1E+06	2E+06	#N/A	
	Large (> 1000 m3/d)	BTPL	lump su	2E+06	3.5E+6	#N/A	
45	Operate Treatment Plant	OTP	m3	0.29	1.65	#N/A	
46	SCariFY road and install water breaks	SCFY	km	3525	4950	#N/A	

Unit Cost Table

ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$
water treatment chemicals						
	ferric sulphate	ferric	kg	0.67		
	ferrous sulphate	ferrous	kg	0.44		
	lime	lime	kg	0.3		
	hydrogen peroxide, 50%	hperox	kg	1.43		
	Sodium Metabisulfate	Nametab	kg	0.99		
	Caustic soda, 50%	caustic	kg	0.62		
	Sulfuric acid, 93%	sulfuric	kg	0.26		
	flocculant	flocc	kg	5.39		
	copper sulphate	copper	kg			
	typical shipping, to Whitehorse or Yellowknife		kg	0.072		
Typical Labour & Equipment Rates						
	Site manager		\$/hr	70		80
	Mine superintendent		\$/hr			60
	Environmental coordinator		\$/hr			60
	Journeyman (mech, elec, weld)		\$/hr	50		60
	Equipment operator		\$/hr	45		55
	labour - skilled		\$/hr	35		38
	labour - unskilled		\$/hr	32		35
	Security / first aid		\$/hr	38		48
	Admin.		\$/hr	42		49
	Front end loader, 9000, Cat990		\$/hr			330
	excavator, Cat230		\$/hr			175
	dump truck - tandem		\$/hr			
	dump truck off road, Cat 777		\$/hr	265		
	dozer, D8, D10		\$/hr	170		300

RECLAMATION COST ESTIMATING MODEL (Version 5.1)

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