June 2006

Cost Summary - Page 1

Financial Assurance	ce	
		Total
Waste Rock Dumps		6,065,676
Stockpiles		327,748
Growth Media Stockpiles		22,111
Mill Decommission		207,308
Building Foundations		87,296
Building Sites		312,635
Borrow Areas		85,076
Roads		30,313
Pit		64,667
Pit Powerline Demolition		14,519
Gil Causeway		12,306
Tailing - Earthwork		1,108,089
Tailing - Spillway Construct		1,466,015
Tailings Water Mgmt		1,742,779
Heap Leach		1,512,931
Heap Leach Water Mgmt		1,280,143
Well Closure		35,782
Post-Closure Monitoring		734,704
TOTAL DIRECT COSTS		15,110,097
Mobilization/Demobilization	5%	755,505
Engineering/Redesign	4%	604,404
Contractor Profit & Overhead	10%	1,511,010
Performance Bond	1.5%	226,651
Payment Bond	1.5%	226,651
Contract Administration	8%	1,208,808
Contingencies	4%	604,404
Insurance Premiums	1.5%	50,614
Indirect Costs	21%	253,850
TOTAL INDIRECT COSTS	36%	5,441,897
TOTAL		20,551,994

Cost Summary - Page 2

Labor Costs		
Total	\$3	8,807,648
Waste Rock Dumps	\$ 1	,286,816
Heap Leach	\$ 1	,360,238
Heap Leach Water Mgmnt	\$	654,319
Tailings - Earthwork	\$	186,548
Tailings - Water Mgmnt	\$	74,087
Borrow Areas	\$	10,113
Growth Media Locations	\$	2,628
Stockpiles	\$	81,405
FK Roads	\$	4,336
Pits & Walls	\$	15,682
Gil Causeway	\$	3,026
Site Complex	\$	79,005
Foundation Demo	\$	25,929
Demo Pit Powerline	\$	4,730
Well Closure	\$	18,784

Assumptions:

Fort Knox will complete mining in 2010

Fort Knox will complete milling in 2012

Waste rock dumps will be reclaimed by sloping to 3:1 and covering with 6 inches of growth media Reclamation of the pit will be as a final pit lake and will require a berm and signs warning of hazards. Pit walls at the cessation of mining are asssumed to meet the criteria of 11 AAC 97.200 that states

"...shall leave the wall in a condition such that it will not collapse nor allow loose rock that presents a hazard to fall from it.

Reclamation of the tailing in conjunction with the wetland functional analysis will satisfy Fort Knox's 404 permit requirements for wetland mitigation.

Water quality standards for discharging surface water and seepage from the tailing will be achieved in two years following closure.

The water balance in the tailing impoundment can be pumped to the pit to maintain the water balance prior to meeting water quality standards for discharge.

Building foundations will be rubbled to ground level and covered with one foot of waste rock and one foot of growth media

Cost of demolition of facilities is assumed to be equal to salvage value of facilities and associated equipment.

Powerline removal will be required for a length of 4 miles.

Powerline removal can occur after established that seepage discharge meets standards and no additional pumping will be required.

Post Reclamation Funding agreement requires FGMI to donate to State of Alaska that portion of the millsite lease downstream of the tailingimpoundment including the freshwater lake for development of a public recreation area.

Major reclamation activities will be completed within two years after mill production ceases and property will be turned over to State of Alaska ten years thereafter.

Ft. Knox Reclamation Plan
Base Case Assumptions & Costs - Page 1
June-06

	une-oo							
EQUIPMENT			A ==	unned Evel Cent	¢0.00	aal		
			ASS	sumed Fuel Cost	\$2.00	gai		
		2006						
Equipment	Туре	Monthly	Hours	Hour Cost	Fuel \$/hour ²	Lube/wear ²	Total per hour	Source
Cat D10R	Dozer						\$200	AIC June 2006
at D9R	Dozer	\$27,000	200	\$135	\$32	\$4	\$171	NC Machinery, June 2006
Cat D8	Dozer	\$17,000	200	\$85	\$25	\$4	\$114	NC Machinery, June 2006
Cat D6R	Dozer	\$9,750	200	\$49	\$11	\$2	\$62	NC Machinery, June 2006
88	Loader	\$21,000	200	\$105	\$24	\$3	\$132	NC Machinery, June 2006
uclid B-70	Truck						\$150	AIC June 2006
Grader 16H	Grader	\$19,750	200	\$99	\$18	\$3	\$120	NC Machinery, June 2006
Vater Truck-3000	Truck	\$10,584	200	\$53	\$6	\$2	\$61	Airport Rental 7/20/05, adjusted upward 12%
WD Pickup	Truck	\$2,117	200	\$11	\$4	\$1	\$16	Airport Rental 7/20/05, adjusted upward 12%
25L	Excavator	\$9,975	200	\$50	\$14	\$3	\$67	NC Machinery, June 2006
lydraulic Hammer -H140 with CAT 330CL		\$24,500	200	\$123	\$17	3	\$143	NC Machinery, June 2006
·)		4 - 1,000						
No	tes: 1	Equipment cost	determined from	m sources as note	d NC Machinery	rental rates -6/2006		
		NC Machinery re	ental rates -6/2	006				
		AIC Contractorra	ate - 6/2006					

AIC Contractorrate - 6/2006 Lube/Wear/Fuel use for machines - Larry Jackson - conversation 6/23/05, equipment cost guide with adjustment for AK North Dakota Public Service Commission, *Policy Memorandum No. 16 to Mine Operators: Reclamation Cost Estimating Guideline, Variable Costs Appendix.* July 2004 Data 28 June, 2005 http://www.psc.state.nd.us/jurisdiction/reclamation/files/703update.pdf Cover letter. http://www.psc.state.nd.us/jurisdiction/reclamation/files/bdupdtmem.pdf Airport Rentals - 7/20/05 guote from Mike Lynch Water Turck - 3000 \$9.450 2

3 \$9,450 \$1,890

Water Truck - 3000 4WD Pickup

LABOR

	\$/	'hour	
Equipment Operator (includes 50% burden)	\$	48.79	
Supervisor (includes 50% burden)	\$	53.39	
Supervisor hours = sum of operator hours divided by	6 (16%	% of total	job hours)

As per Delbert Parr, June 2005

Base Case Assumptions & Costs - Page 2			
REVEGETATION CONTRACTORS AND MATERIALS			
Upland Mix			
Contractor Estimates			
Aerial Application Seed & Fertilizer	\$ 80.00		Quote
Seed	\$ 83.60	\$/acre	Materials Quote
Fertilizer	\$ 135.00	\$/acre	Materials Quote
	\$ 298.60	\$/acre	
Seed & Fertilizer Unit Price			
Applied lb/acre	Uni	t Costs	lb/ac Cost per Acre
Seed	\$ 7.60	\$/lb	11 \$ 83.60
Fertilizer	\$ 0.45	\$/lb	300 \$ 135.00

Aerial Application- GlennAir 907-746-2585 quote to Larry Jackson. April, 2005

AK Garden and Pet, 907-279-4519, quote to Larry Jackson, 17 May, 2005 (seed mix 50% Arcta Red,20% Tundra Bluegrass,20% Alpine Bluegrass, 10% Hairgrass) 20N-20P-10K Fertilizer application rate: As per Delbert Parr, 27 June 2005

Wetland Mix Contractor Estimate

Contractor Estimates					
Aerial Application Seed & Fertilizer	\$ 80.00	\$/acre	Labor Quote		
Seed	\$ 114.00	\$/acre	Materials Quote		
Fertilizer	\$ 135.00	\$/acre	Materials Quote		
	\$ 329.00	\$/acre			
Seed & Fertilizer Unit Price					
Applied lb/acre	Unit	Costs	lb/ac	Cost	per Acre
Seed	\$ 7.60	\$/lb	15	\$	114.00
Fertilizer	\$ 0.45	\$/lb	300	\$	135.00

Topsoil Haul Production - Page 1

Growth media stockpiles	
Name	Volume (CY)
Yellow Pup	1,537,000
Phase 6 Yellow Pup	512,700
Walter Creek	617,000
Tailing North	3,186,400
Tailing South	291,400
Water Supply	1,750,000

Cover requirements	
Name	Volume (CY)
Yellow Pup WR	411,550
Fish Creek WR	79,000
Barnes Creek WR	253,950
Walter Creek LP	188,115
Stockpiles	79,053
Tailing North Sector	46,787
Tailing Northwest Sector	50,013
Tailing Southwest Sector	62,920
Tailing South Sector	66,147
Tailing East Sector	41,947
Laydown yard	17,250
Admin	10,650
Mill	26,400
Total	1,333,781

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			Cover material haulage										
	Source			Yellow Pup WR	Fish Creek	WR	Barnes Creek WR	Walter Creek LP	Tailing North Sector	Tailing Northwest Sector	Tailing Southwest Sector	Tailing South Sector	Tailing East Sector
	Total needed			411,550		79,000	253,950	188,115	46,787	50,013	62,920	66,147	41,947
Available	Phase 6 Yellow Pup		Prod. Table #	1									
101,150		512,700	Volume Used Avg distance (Ft) Avg grade (%)	411,550 1,800 -15									
	Yellow Pup		Prod. Table #		2		3				7	8	
941,630		1,537,000	Volume Used Avg distance (Ft) Avg grade (%)			79,000 3,000 5	253,950 7,000 4				62,920 3,000 -2	66,147 8,000 -1	
	Walter Creek		Prod. Table #					4	5	6			
332,085		617,000	Volume Used Avg distance (Ft) Avg grade (%)					188,115 3,500 16	46,787 3,000 -5	50,013 2,000 -8			
	Tailing North		Prod. Table #										
3,186,400		3,186,400	Volume Used Avg distance (Ft) Avg grade (%)										
	Tailing South		Prod. Table #										9
249,453		291,400	Volume Used Avg distance (Ft) Avg grade (%)										41,947 2,000 10
	Total Used			411,550		79,000	253,950	188,115	46,787	50.013	62,920	66,147	41,947

Growth Media Load and Haul Productivity

Loading & Hauling - Truck/Loader			
Equipment	Rated Heap Capacity	Equipment	Weight
Euclid B-70	48.00	Euclid Loaded	Est. 120 tons
988 Loader	8.30	Euclid Empty	Est 48.5 tons

Topsoil Haul	Production - Pa	age 2 (right)		
Barnes Creek Old & New	Laydown yard	Admin	Mill	Total used
79,053	17,250	10,650	26,400	1,333,781
				411,550
10 79,053 4,000 4	11 17,250 11,000 3	12 10,650 4,000 2	13 26,400 5,500 2	595,370
				284,915
				0
				41,947
79,053	17,250	10,650	26,400	1,333,781

Topsoil Ha	Il Production - Page 3 (left)										
Prod. Table	# From	То	Distance (ft)								
1	Phase 6 Yellow Pup	Yellow Pup WR	1,800		_						
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(су)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			2.50	1.40		411.43	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" correc	ction	7.00		
	Truck Hauling Time	Grade (%)	Machine Weight	Rolling Resistance	Grade Resistance	Total					Total Time
	Euclid B-70		Tons							time	
	loaded	(15.00)) Est. 120 tons	3.5		11.50		From Charts Cl	HP Vol 34, page 9-2	1.75	
	empty	15.00	Est 48.5 tons	3.5	15.00	18.50				1.40	
											3.2

From	То	Distance (ft)							
Yellow Pup	Fish Creek WR	3,000							
Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Productio Rates
Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Productio Rate
	(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)
Euclid B-70	48.00	1.00	48.00			3.20	1.36		375.98
988 Loader	8.30	1.00	8.30	0.60	6				830.00
Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction	7.66	
Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total				
Euclid B-70		Tons							time
loaded	5.00	Est. 120 tons	3.5	5.00	8.50		From Chart CH	P Vol 34, page 9-3 [.]	3
empty	(5.00) Est 48.5 tons	3.5		5.00				1

		Production Rates	
mpty Haul (min)	Total Load / Haul Time (min)	Maximum Production Rate (cy/hr)	Altitude
1.36		375.98	1.00
		830.00	1.00
	7.66		

	time	Total Time	
? Vol 34, page 9-3 [.]	3.20		
	1.36		
			4.6

Topsoil Haul	Production - P	Page 3 (right)			
				-	
Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				411,550 cy
0.80 0.80	0.83 0.83			3	2254 Truck Time (hrs) 751 Loader Time (hrs)
0.00		0.66	547.80		

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				79,000 cy
0.80	0.83			3	433 Truck Time (hrs)
0.80	0.83				144 Loader Time (hrs)
		0.66	547.80		

Topsoil Haul F	Production - Page 4 (left)										
3	From	То	Distance (ft)								
	Yellow Pup	Barnes Creek WR	7,000		_						
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			6.40	3.00		230.40	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction	12.50		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total			I		
	Euclid B-70		Tons							time	Total Time
	loaded	4.00	Est. 120 tons	3.5	4.00	7.50		From Chart CH	IP Vol 34, page 9-3 [.]	6.40	
	empty	(4.00)	Est 48.5 tons	3.5		4.00				3.00	
											9.4

From		То	Distance (ft)					
Walter Cree	ek	Walter Creek LP	3,500					
Loading & Hau Truck/Load	ıling - er		Capacity			Cycle Time		
Equipmen	t	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul
		(cy)	Soil	(cy)	(min)		(min)	(min)
Euclid B-70		48.00	1.00	48.00			5.50	2.34
988 Loader		8.30	1.00	8.30	0.60	6		
Truck/Lo	ader Team				0.5	"spot hauler ass	sumption" correct	ction
Truck Hauling	Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total		
Euclid B-70			Tons					
loaded		16.00	Est. 120 tons	3.5	5 16.00	19.50		From Chart CHF
empty		(16.00) Est 48.5 tons	3.5	5	16.00		

	Production Rates	
Total Load / Haul Time (min)	Maximum Production Rate (cy/hr)	Altitude
10.94	263.25 830.00	1.00 1.00

time	Total Time	
5.50		
2.34		
		7.8
	time 5.50 2.34	time Total Time 5.50 2.34

Correction			Factored	Max Truck/Loader	Total Task Time
Factors			Production Rate	Ratio	
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				253,950 cy
0.80	0.83			4	1854 Truck Time (hrs)
0.80	0.83				464 Loader Time (hrs)
		0.66	547.80		

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				188,115 cy
0.80	0.83			4	1374 Truck Time (hrs)
0.80	0.83				343 Loader Time (hrs)
		0.66	547.80		

Topsoil Haul F	Production - Page 5 (left)										
5	From	То	Distance (ft)								
	Walter Creek	Tailing North Sector	3,000								
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			1.20	1.60		488.14	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" correct	ction	5.90		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total					
	Euclid B-70		Tons							time	Total Time
	loaded	(5.00)	Est. 120 tons	3.5		1.50		From Chart CH	P Vol 34, page 9-3 ⁻	1.20	
	empty	5.00	Est 48.5 tons	3.5	5.00	8.50				1.60	
											2.8

6	From	То	Distance (ft)					
	Walter Creek	Tailing Northwest Sector	2,000					
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time		
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul
		(cy)	Soil	(cy)	(min)		(min)	(min)
	Euclid B-70	48.00	1.00	48.00			1.00	1.34
	988 Loader	8.30	1.00	8.30	0.60	6		
	Truck/Loader Team				0.5	"spot hauler ass	umption" corre	ction
						-		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total		
	Euclid B-70		Tons					
	loaded	(8.00)	Est. 120 tons	3.5		4.50		From Chart CHF
	empty	8.00	Est 48.5 tons	3.5	8.00	11.50		

	Production Rates	
Total Load / Haul Time (min)	Maximum Production Rate (cy/hr)	Altitude
	529.41 830.00	1.00 1.00
5.44		

	time	Total Time	
? Vol 34, page 9-3 [.]	1.00		
	1.34		
			2.3

Topsoil Haul	Production - F	Page 5 (right)			
			•	-	
Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				46,787 cy
0.80	0.83			2	171 Truck Time (hrs)
0.80	0.83				85 Loader Time (hrs)
		0.66	547.80		
			•		

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				50,013 cy
0.80	0.83			2	183 Truck Time (hrs)
0.80	0.83				91 Loader Time (hrs)
		0.66	547.80		

Topsoil Haul I	Production - Page 6 (left)										
7	From	То	Distance (ft)								
	Yellow Pup	Tailing Southwest Sector	3,000	-							
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			1.00	1.00		564.71	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction	5.10		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total					
	Euclid B-70		Tons							time	Total Time
	loaded	(2.00)	Est. 120 tons	3.5		(1.50)		From Chart CH	P Vol 34, page 9-3 ⁻	1.00	
	empty	2.00	Est 48.5 tons	3.5	2.00	5.50				1.00	
											2.0

8	From	То	Distance (ft)					
	Yellow Pup	Tailing South Sector	8,000					
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time		
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul
		(cy)	Soil	(cy)	(min)		(min)	(min)
	Euclid B-70	48.00	1.00	48.00			2.50	5.00
	988 Loader	8.30	1.00	8.30	0.60	6		
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total		
	Euclid B-70		Tons					
	loaded	(1.00)) Est. 120 tons	3.5		(2.50)		From Chart CHF
	empty	1.00	Est 48.5 tons	3.5	1.00	4.50		

	Production Rates	
Total Load / Haul Time (min)	Maximum Production Rate (cy/hr)	Altitude
	271.70 830.00	1.00 1.00
10.60	000.00	1.00

	time	Total Time	
^o Vol 34, page 9-3 [.]	2.50		
	5.00		
			7.5

Operator EfficiencyJob EfficiencyTotal Correction Factor(Cy/Hr)Good50 min/hr62,920 cy0.800.832	
Good 50 min/hr 62,920 cy 0.80 0.83 2 230 Truck	
0.80 0.83 2 230 Truck	
	ck Time (hrs)
0.80 0.83 115 Loade	der Time (hrs
0.66 547.80	

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				66,147 cy
0.80	0.83			4	483 Truck Time (hrs)
0.80	0.83				121 Loader Time (hrs)
		0.66	547.80		
			<u> </u>	<u> </u>	

Topsoil Haul F	Production - Page 7 (left)										
10	From	То	Distance (ft)								
	Yellow Pup	Barnes Creek Old & New	4,000						-		
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			3.60	1.80		338.82	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction	8.50		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total					
	Euclid B-70		Tons							time	Total Time
	loaded	4.00	Est. 120 tons	3.5	4.00	7.50		From Chart CH	IP Vol 34, page 9-3 [.]	3.60	
	empty	(4.00)	Est 48.5 tons	3.5		4.00				1.80	
											5.4

9	From	То	Distance (ft)					
	Tailing South	Tailing East Sector	2,000					
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time		
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul
		(cy)	Soil	(cy)	(min)		(min)	(min)
	Euclid B-70	48.00	1.00	48.00			3.60	1.50
	988 Loader	8.30 1.00		8.30	0.60	6		
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total		
	Euclid B-70		Tons					
	loaded	10.00	Est. 120 tons	3.5	10.00	13.50		From Chart CHF
	empty	(10.00) Est 48.5 tons	3.5		10.00		

	Production Rates	
Total Load / Haul Time (min)	Maximum Production Rate (cy/hr)	Altitude
	351.22 830.00	1.00 1.00
8.20		

	time	Total Time	
P Vol 34, page 9-3 [.]	3.60		
	1.50		
			5.1

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				79,053 cy
0.80 0.80	0.83 0.83			3	433 Truck Time (hrs) 144 Loader Time (hrs)
		0.66	547.80		, , , , , , , , , , , , , , , , , , ,

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				41,947 cy
0.80	0.83			3	230 Truck Time (hrs)
0.80	0.83				77 Loader Time (hrs)
		0.66	547.80		

Topsoil Haul F	Production - Page 8 (left)										
11	From	То	Distance (ft)								
	Yellow Pup	Laydown yard	11,000								
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			8.40	3.50		192.00	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction	15.00		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total					
	Euclid B-70		Tons							time	Total Time
	loaded	3.00	Est. 120 tons	3.5	3.00	6.50		From Chart CH	IP Vol 34, page 9-3 [.]	8.40	
	empty	(3.00)	Est 48.5 tons	3.5		3.00				3.50	
											11.9

From	То	Distance (ft)					
Yellow Pup	Admin	4,000					
Loading & Hauling - Truck/Loader		Capacity			Cycle Time		
Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul
	(cy)	Soil	(cy)	(min)		(min)	(min)
Euclid B-70	48.00	1.00	48.00			2.80	1.30
988 Loader	8.30 1.00 8.30		0.60	6			
Truck/Loader Tea	m			0.5	"spot hauler ass	sumption" corre	ction
Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total		
Euclid B-70		Tons					
loaded	2.00	Est. 120 tons	3.5	2.00	5.50		From Chart CHF
a mana fa c	(2.00) Est 48.5 tons	3.5		2.00		

	Production Rates	
Total Load / Haul Time (min)	Maximum Production Rate (cy/hr)	Altitude
	400.00 830.00	1.00 1.00
7.20	000.00	1.00

	time	Total Time	
^o Vol 34, page 9-3 [.]	2.80		
	1.30		
			4.1

Operator Efficiency Job Efficiency Total Correction Factor (Cy/Hr) Good 50 min/hr 50 min/hr	
Good 50 min/hr	
0.80 0.83	17,250 cy
0.00 0.03 3	157 Truck Time (hrs)
0.80 0.83	31 Loader Time (hrs
0.66 547.80	

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				10,650 cy
0.80	0.83			3	58 Truck Time (hrs)
0.80	0.83				19 Loader Time (hrs)
		0.66	547.80		

Topsoil Haul F	Production - Page 9 (left)										
13	From	То	Distance (ft)								
	Yellow Pup	Mill	5,500		_						
	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates	
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Hau	Total Load / Haul Time	Maximum Production Rate	Altitude
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)	
	Euclid B-70	48.00	1.00	48.00			3.60	1.80		338.82	1.00
	988 Loader	8.30	1.00	8.30	0.60	6				830.00	1.00
	Truck/Loader Team				0.5	"spot hauler ass	sumption" corre	ction	8.50		
	Truck Hauling Time	Grade	Machine Weight	Rolling Resistance	Grade Resistance	Total					
	Euclid B-70		Tons							time	Total Time
	loaded	2.00	Est. 120 tons	3.5	2.00	5.50		From Chart CH	IP Vol 34, page 9-3 [.]	3.60	
	empty	(2.00)) Est 48.5 tons	3.5		2.00				1.80	
											5.4

Correction Factors			Factored Production Rate	Max Truck/Loader Ratio	Total Task Time
Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)		
Good	50 min/hr				26,400 cy
0.80	0.83			3	145 Truck Time (hrs)
0.80	0.83				48 Loader Time (hrs)
		0.66	547.80		

Ft. Knox Reclamation Plan Waste Rock Dumps - Page 1

Grade slope from bench crest to bench crest to achieve final grade of 2	\$ 3,007,531.39
Load, haul, dump and spread 6 in. growth media	\$ 1,766,988.83
Rip on the contour	\$ 134,704.81
Revegetation (Seeding and fertilization)	\$ 275,428.64
Supervision	\$ 164,100.65
Drainage construction	\$ 716,922
	\$ 6,065,676.46

Americ Due lity Units Detaility Units See 97.3	Estimated Reclamation and Closure Cost	Barnes (Creek	Fish (Creek	Yellow Pup)	Waste Rock	COMMENT
Acros 137.4 no 197.5 no 101.7		Quantity	Units	Quantity	Units	Quantity	Units	Totals	
Top-shop 123 ar: 18.4 ar: 77.7 ar: 77.7 ar: 21.50 Construction 184.4 ar: 18.4 ar: 18.4 ar: 77.7 ar: 77.7 0.00 Construction 18.4 ar: 18.4 ar: 18.4 ar: 77.7 0.00 Construction 3.225.000 or 319.500 or 4.399.200 or 7.877.700.00 Construction 18.65 19.000 or 3.225.000 or 3.225.000 or 4.399.200 or 7.877.700.00 Construction 18.00 rt 19.00 rt 4.000.00 or 7.877.700.00 <td< td=""><td>Acres</td><td>314.4</td><td>ac</td><td>97.8</td><td>ac</td><td>510.2</td><td>ac</td><td>922.40</td><td></td></td<>	Acres	314.4	ac	97.8	ac	510.2	ac	922.40	
Bide box Display Box Pion	Top slope	125	ac	16.8	ac	79.7	ac	221.50	
Gandle and Ascentrating Formation of the sector of the secto	Side slope	189.4	ac	81	ac	430.5	ac	700.90	
Experiment - Dro Date T	Grading and Recontouring								
What is the total output of utarge logical action of the maximum? 3.228,000 or 3.19 500 or 4.389,200 or 7.347,700.30 or 7.347,700.30 or 7.347,700.30 or 7.347,700.30 or 7.347,700.30 or 7.337,700.30	Equipment - D10 Dozer								
Calibritism of the solution of the solu	What is the total volume of material to be recontoured?	3,229,000	су	319,500	су	4,399,200	су	7,947,700.00	
Cold Control C	Cut/fill volume of top slopes	363,000	су	67,500	су	679,200	су	1,109,700.00	
What is the speed of charm-putching of indicate putching 100% r 100% <td>Cut/fill volume of side slopes</td> <td>2,866,000</td> <td>су</td> <td>252,000</td> <td>су</td> <td>3,720,000</td> <td>су</td> <td>6,838,000.00</td> <td></td>	Cut/fill volume of side slopes	2,866,000	су	252,000	су	3,720,000	су	6,838,000.00	
Calibration of constraining of constrai	What percentage of material will be dozer-pushed?	100%		100%		100%		100%	
Spectral Spectra Spectral Spectral	Calculated quantity of dozer-pushed material	3,229,000	су	319,500	су	4,399,200	су	7,947,700.00	
main accide main accide products with a detauxum 2.000.00 main accide to gate accidence accidenc	l op slope	363,000	су	67,500	су	679,200	су	1,109,700.00	
Write the event point of the compront? 100 T 100 T 100 T Top slops 443.3 oyhr 712.53 0yhr 8 200.00 Shr 5 200.00 Shr 5 200.00 Shr 5 0.05 Skr 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5 1.028.086 5		2,866,000	су	252,000	cy	3,720,000	cy	6,838,000.00	
What is the balaced with the department? 443.3 or phr 38 a sign 445.3 or phr 712.33 or phr 714.400.00	What is the average push distance?	150	rt	150	π	150	π		
Based of the state of	what is the productivity of the equipment?	445.00	()	445.00	//	445.00	//		
Improvement of the solution of the solu	l op slope Side slope	445.33	cy/nr	445.33	Cy/nr	445.33	Cy/nr		
Invalue and put data for the put best or the put of th	Side slope	/12.03	Cy/nr	/ 12.53	cy/nr	712.53	Cy/nr	40,000,00	
Initia the the physical conservation s 2.0000 ability s 2.0007 ability s ability s ability s ability ability s ability s ability s ability ability s ability s ability abili	How many hours will the job take?	¢ 200.00	nrs ¢/br	\$00.2 \$	nis ¢/br	6,746.0	nis ¢/br	12,088.03	
What is the several restrict is a using variable restrict is using v	What is the labor cost per hour?	\$ 200.00 ¢ 49.70	⊅/111 ድ/⊳r	\$ 200.00 ¢ 49.70	⊅/111 ⊄/br	\$ 200.00	⊅/111 ⊄/br	\$ 200.00	
Vince into volume where	What is the everell east per rupit (i.e., subia varda, carea)?	φ 48.79 ¢ 0.27	\$/III \$/ov	\$ 48.79 ¢ 0.20	\$/nr	φ 48.79 ¢ 0.29	\$/nr \$/or	\$ 48.79 ¢ 0.29	Difference due to prop
Cost per cube (and package) S 0.35 8'ry S 0.35 0.35 0'ry 1.35 0.35 0'ry 1.35 0.35 0'ry 1.35	Cost per cubic yard top clope	\$ 0.37 ¢ 0.56	⊅/Cy ⊈/cv/	\$ 0.59	\$/Cy \$/ov	φ 0.30 ¢ 0.56	\$/Cy \$/ov	ф 0.30	Difference due to prop
Control Function 3 2227.04.47 8*0 3 2707.47.2 2*0 3 3707.44.54 9*07.7 Control Fishels Stope \$ 1000/70417 \$ 24807.47 \$ 1288.001 \$ 2.328.156.64 \$ \$ 2.837.85 What is the babor total cost or grading and reconcurrent? \$ 1.202.498.95 \$ 125.699.05 \$ 1.678.333.75 \$ \$ 3.007.531.39 Load, Auut, dump and spread growth media - - - - - 65.350 cy 64.3600 cy 2.20.400.00 Valueme to 58 licelit 2*** 101.1550 cy 65.350 cy 64.3600 cy 2.00.800.00 Valueme to Side Slope 101.1550 cy 65.350 cy 64.3600 cy 2.03.800.00 cy 51.800.00 cy <td>Cost per cubic yard top stope</td> <td>φ 0.50 ¢ 0.55</td> <td>⊅/Cy €/cv</td> <td>\$ 0.50 ¢ 0.25</td> <td>\$/Cy</td> <td>φ 0.50 ¢ 0.25</td> <td>\$∕Cy €∕ov</td> <td></td> <td></td>	Cost per cubic yard top stope	φ 0.50 ¢ 0.55	⊅/Cy €/cv	\$ 0.50 ¢ 0.25	\$/Cy	φ 0.50 ¢ 0.25	\$∕Cy €∕ov		
Control thy above 3 1 0.0000 (1) 3 0.0000 (1) 0.	Cost for Top Slope	Φ	ъ∕су	\$ 0.35 ¢ 27 700 72	\$/Cy	۵ U.35 ۲ 270 442 E4	ъ∕су	¢ 610.047.72	
What is the balance cost Image: Control of Control Control of Control of Control of Control of Control Control of	Cost for Side Siene	φ 202,794.47 ¢ 1.000.704.12		\$ 37,709.72		φ 379,443.54 ¢ 1.209,900,21		¢ 019,947.73	
What is the table listed in a standard reconstruing? \$ 1,200,00,11 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 1,25,00,07 \$ 2,20,00,00 \$ 2,20,00 \$ 2,20,00,00 \$ 2,2	Cost for Side Side	\$ 1,000,704.12		\$ 87,989.34		\$ 1,298,890.21 \$ 220,126,64		\$ 2,387,383.00	
What is the found used for grand gran	What is the total cost for grading and recentouring?	\$ 230,017.11 \$ 1,202,409,50		\$ 24,030.74		φ 329,130.04 ¢ 1,679,222,75		φ 2 007 521 20	
Calculation of the carbon of the carb	I oad haul dump and spread growth media	φ 1,203,490.39		ψ 125,099.05		\$ 1,078,333.75		\$ 3,007,331.39	4
What is smooth of uppoil to be loaded with house? 233,850 cy 78,900 cy 411,850 cy 744,400,00 Volume to Top Stope 1152,800 cy 13,550 cy 643,300 cy 53,800,00 What is wid ys had distance one wy from TS Pile? See TS Production 1 ft See TS Production 1 ft th See TS Production 1 ft	Equipment - 988 Euclid B-70 Haul Truck Water Truck G16 G	rador D8							
Init Induct Init Ising O O Init Ising InitIsing Init Ising Init Ising	What is amount of topsoil to be loaded with loader?	253 050	CV	78 000	CV/	411 550	CV	744 400 00	
Volume to Side Stope 112,200 0,20 113,200 0,20 127,200 127,200 127,200 127,200 127,200 127,200 127,200 127,200 127,200 127,200 123,200 123,200 123,200 133,200 133,200 133,200 133,200 133,200 137,1 133,200 137,1 137,1 137,1 137,1 137,1 137,1 137,1 137,1 137,1 137,1 137,1 137,1	Volume to Top Slope	101 150	CV	65 350	CV	64 300	CV	230,800,00	
What is wid any huld discore one way from TS Pile? See TS Production Ti th See TS Production Ti th See TS Production Tisbe fit fit fit What is maround of posell to be hauld by truck? 253.950 cy 78,900 cy 411,550 cy 744,400.00 What is the bading equipment? 548 cy/hr 144 hrs 751 hrs 1,358.89 Estimated hours for Vacer to support hauling effort 464 hrs 1444 hrs 751 hrs 1,358.89 Estimated hours for Vacer to support hauling effort 464 hrs 1444 hrs 753 hrs 1,477.60 Took Sope dozer productivity 537 <	Volume to Side Slope	152 800	CV	13 550	CV	347 250	CV	513 600 00	
What is smooth of topsell be heading equipment? Both 225,990 cyl 78,900 cyl 78,900 cyl 744,400.00 What is the productivity of the loading equipment? 464 hrs 144 hrs 751 hrs 1,358.89 What is the leatined bours for houland support equipment? 464 hrs 751 hrs 1,358.89 Estimated hours for Crack 1,854 hrs 444 hrs 2,254 hrs 4,588 Estimated hours for Crack 1,854 hrs 444 hrs 2,254 hrs 4,588.89 Estimated hours for Crack to support hauling effort 464 hrs 144 hrs 2,254 hrs 1,358.89 Estimated hours for Crack to support hauling effort 464 hrs 144 hrs 751 hrs 1,358.89 Estimated hours for Value Truck to support hauling effort 464 hrs 1342.00 Shr 5,358.99 Top Stope dozer productivity 373 cyhr 373 cyhr 5,80 5,1477.60 What	What is wtd avg haul distance one way from TS Pile?	See TS Production Ta	ft	See TS Production	ft	See TS Production Table	ft	010,000.00	
What is the productivity of the loading equipment? 1548 cyftr 1548 cyftr 1548 cyftr 144 hrs 144 hrs 144 hrs 144 hrs 144 hrs 144 hrs 751 hrs 1,358.89 What are the estimated hours for Loader 464 hrs 144 hrs 751 hrs 1,358.89 Estimated hours for Loader 464 hrs 144 hrs 751 hrs 1,358.89 Estimated hours for Tuck 1,854 hrs 1444 hrs 751 hrs 1,358.89 Estimated hours for Yuck 1,854 hrs 1444 hrs 751 hrs 1,358.89 Estimated hours for Dozer to support hauling effort 464 hrs 1444 hrs 751 hrs 1,358.89 Top Slope dozer productivity 598 cythr 373 cythr 373 cythr 373 cythr 373 cythr 3132.00 \$thr \$ 132.00 \$thr \$ 132.00 \$thr \$ 150.00 \$thr \$	What is amount of topsoil to be hauled by truck?	253 950	CV	78 900	CV	411 550	CV	744 400 00	
How many hours will the job take?	What is the productivity of the loading equipment?	548	cv/hr	548	cv/hr	548	cv/hr	111,100.00	
What are the estimated hours for haul and support equipment? I. H.	How many hours will the job take?	464	brs	144	hrs	751	brs	1 358 89	
Estimated hours for Loader 444 hrs 144 hrs 751 hrs 1,358,89 Estimated hours for Tuck 1,854 hrs 433 hrs 2,254 hrs 1,358,89 Estimated hours for Grader to support hauling effort 464 hrs 144 hrs 751 hrs 1,358,89 Estimated hours for Water Truck to support hauling effort 464 hrs 1444 hrs 751 hrs 1,358,89 Disped ozer productivity 573 hrs 1,477.60 1,477.60 1,477.60 Top Stope dozer productivity 733 cy/hr 733 cy/hr 598 50hr 5 132.00 \$hr 5 500 \$hr <t< td=""><td>What are the estimated hours for haul and support equipment?</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1,000.00</td><td></td></t<>	What are the estimated hours for haul and support equipment?							1,000.00	
Estimated hours for Truck 1,854 hrs 433 hrs 2,254 hrs 4,540.80 Estimated hours for Grader to support hauling effort 464 hrs 144 hrs 751 hrs 1,358.89 Estimated hours for Dozer to spread topsoil 527 hrs 198 hrs 753 hrs 1,358.89 Top Slop dozer productivity 373 cy/hr 733 cy/hr 373 cy/hr 1,477.60 Side Slope dozer productivity 598 cy/hr 598 5/hr 59	Estimated hours for Loader	464	hrs	144	hrs	751	hrs	1.358.89	
Estimated hours for Grader to support hauling effort	Estimated hours for Truck	1.854	hrs	433	hrs	2.254	hrs	4.540.80	
Estimated hours for Water Truck to support hauling effort 464 hrs 144 hrs 751 hrs 1,358.89 Estimated hours for Dozer to spread topsoil 527 hrs 198 hrs 753 hrs 1,477.60 Stope dozer productivity 373 cythr 373 cythr 598 fit fit fit fit fit fit fit f	Estimated hours for Grader to support hauling effort	464	hrs	144	hrs	751	hrs	1.358.89	
Estimated hours for Dozer to spread topsoil 527 hrs 198 hrs 753 hrs 1.477.60 Top Slope dozer productivity 373 cy/hr 373 cy/hr 373 cy/hr Side Slope dozer productivity 598 cy/hr 373 cy/hr 373 cy/hr What is the equipment cost per hour? Loader \$ 132.00 \$/hr \$ 132.00 \$/hr \$ 150.00 \$/hr \$ 119.75 \$/hr \$ 114.00 \$/hr \$ 114.00 \$/hr \$ 114.00 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr \$ </td <td>Estimated hours for Water Truck to support hauling effort</td> <td>464</td> <td>hrs</td> <td>144</td> <td>hrs</td> <td>751</td> <td>hrs</td> <td>1.358.89</td> <td></td>	Estimated hours for Water Truck to support hauling effort	464	hrs	144	hrs	751	hrs	1.358.89	
Top Slope dozer productivity Side Slope dozer productivity 373 cy/hr 373 cy/hr 588 cy/hr 588 cy/hr What is the equipment cost per hou? Loader \$ 132.00 \$/hr \$ 130.00 \$/hr \$ 140.00 \$/hr \$ 140.00 \$/hr \$ 140.00 \$/hr \$ 140.00 <t< td=""><td>Estimated hours for Dozer to spread topsoil</td><td>527</td><td>hrs</td><td>198</td><td>hrs</td><td>753</td><td>hrs</td><td>1,477.60</td><td></td></t<>	Estimated hours for Dozer to spread topsoil	527	hrs	198	hrs	753	hrs	1,477.60	
Side Slope dozer productivity Loader 598 o'/hr 598 o'/hr 598 o'/hr 598 o'/hr What is the equipment cost per hour? Loader \$ 132.00 \$/hr \$ 132.00 \$/hr \$ 132.00 \$/hr \$ 132.00 \$/hr \$ 150.00 \$/hr \$ 119.75 \$/hr \$ 119.75 \$/hr \$ 119.75 \$/hr \$ 60.92 \$/hr \$ 114.00 \$/hr<	Top Slope dozer productivity	373	cy/hr	373	cy/hr	373	cy/hr	,	
What is the equipment cost per hour? Loader \$ 132.00 \$/hr	Side Slope dozer productivity	598	cy/hr	598	cy/hr	598	cy/hr		
Loader \$ 132.00 \$/hr \$ 132.00 \$/hr \$ 132.00 \$/hr Truck \$ 150.00 \$/hr \$ 160.92 \$/hr \$ 160.92 \$/hr \$ 160.92 \$/hr \$ 160.92 \$/hr \$ 114.00 \$/hr \$ 148.79 \$/hr \$	What is the equipment cost per hour?		,		,		,		
Truck Grader \$ 150.00 \$/hr \$ 150.00 \$/hr \$ 150.00 \$/hr Grader \$ 119.75 \$/hr \$ 119.75 \$/hr \$ 119.75 \$/hr \$ Water Truck Water Truck \$ 60.92 \$/hr \$ 7/hr \$	Loader	\$ 132.00	\$/hr	\$ 132.00	\$/hr	\$ 132.00	\$/hr		
Grader \$ 119.75 \$/hr \$ 119.75 \$/hr \$ 119.75 \$/hr Water Truck \$ 60.92 \$/hr \$ 60.92	Truck	\$ 150.00	\$/hr	\$ 150.00	\$/hr	\$ 150.00	\$/hr		
Water Truck Dozer \$ 60.92 \$/hr \$ 60.92 \$/hr \$ 60.92 \$/hr What is the labor cost per hour? -	Grader	\$ 119.75	\$/hr	\$ 119.75	\$/hr	\$ 119.75	\$/hr		
Dozer \$ 114.00 \$/hr \$ 114.00 \$/hr <td>Water Truck</td> <td>\$ 60.92</td> <td>\$/hr</td> <td>\$ 60.92</td> <td>\$/hr</td> <td>\$ 60.92</td> <td>\$/hr</td> <td></td> <td></td>	Water Truck	\$ 60.92	\$/hr	\$ 60.92	\$/hr	\$ 60.92	\$/hr		
What is the labor cost per hour? Loader \$ 48.79 \$/hr \$ 5	Dozer	\$ 114.00	\$/hr	\$ 114.00	\$/hr	\$ 114.00	\$/hr		
Loader \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr Truck \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr Grader \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr Water Truck \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr Dozer \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr What is the overall cost per unit (i.e. cubic yards, acres)? \$ 2.63 \$/cy \$ 2.23 \$/cy \$ 2.37 Cost per cubic yard to doze top slope \$ 0.27 \$/cy \$ 0.27 \$/cy \$ 0.27 \$/cy \$ 2.37 What are the total equipment costs \$ 0.27 \$/cy \$ 0.27 \$/cy \$ 0.27 \$/cy \$ 1.274,450.41 What are the total labor costs \$ 184,019.13 \$ \$ 184	What is the labor cost per hour?								
Truck \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr Grader \$ 48.79 \$/hr \$ 5 5 5 5 5	Loader	\$ 48.79	\$/hr	\$ 48.79	\$/hr	\$ 48.79	\$/hr		
Grader § 48.79 \$/hr § 48.79 \$/hr \$ 48.79 \$/hr Water Truck \$ 48.79 \$/hr \$ 5 5 5 5 5	Truck	\$ 48.79	\$/hr	\$ 48.79	\$/hr	\$ 48.79	\$/hr		
Water Truck \$ 48.79 \$/hr \$ 48.79 \$/hr \$ 48.79 \$/hr Dozer \$ 48.79 \$/hr \$ 5 5 5 \$ 5 5 5 5 <	Grader	\$ 48.79	\$/hr	\$ 48.79	\$/hr	\$ 48.79	\$/hr		
Dozer \$ 48.79 \$\nr \$ 48.79 \$\nr \$ 48.79 \$\nr \$ 48.79 \$\nr What is the overall cost per unit (i.e. cubic yards, acres)? \$ 2.63 \$\nr \$ 2.34 \$\nr \$ 2.22 \$\nr \$ 2.37 Cost per cubic yard to doze top slope \$ 0.44 \$\nr \$ 0.44 \$\nr \$ 0.44 \$\nr \$ 2.32 \$\nr \$ 2.37 Cost per cubic yard to doze top slope \$ 0.44 \$\nr \$ 0.44 \$\nr<	Water Truck	\$ 48.79	\$/hr	\$ 48.79	\$/hr	\$ 48.79	\$/hr		
What is the overall cost per unit (i.e. cubic yards, acres)? \$ 2.63 \$/cy \$ 2.22 \$/cy \$ 2.37 Cost per cubic yard to doze top slope \$ 0.44 \$/cy \$ 0.47 \$/cy \$	Dozer	\$ 48.79	\$/hr	\$ 48.79	\$/hr	\$ 48.79	\$/hr		
Cost per cubic yard to doze top slope \$ 0.44 \$/cy \$ 0.44 \$/cy \$ 0.44 \$/cy Cost per cubic yard to doze side slope \$ 0.27 \$/cy \$	What is the overall cost per unit (i.e. cubic yards, acres)?	\$ 2.63	\$/cy	\$ 2.34	\$/cy	\$ 2.22	\$/cy	\$ 2.37	
Cost per cubic yard to doze side slope \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 0.27 \$ 1 0.27 \$ 1 0.27 \$ 1 0.27 \$ 1 0.27 \$ 1 0.27 \$ 1 0.27<	Cost per cubic yard to doze top slope	\$ 0.44	\$/cy	\$ 0.44	\$/cy	\$ 0.44	\$/cy		
What are the total equipment costs \$ 483,127.77 \$ 132,464.44 \$ 658,858.21 \$ 1,274,450.41 What are the total labor costs \$ 184,019.13 \$ 51,834.60 \$ 256,684.69 \$ 492,538.42 What is the total cost for growth media placement? \$ 667,146.90 \$ 184,299.04 \$ 915,542.90 \$ 1,766,988.83	Cost per cubic yard to doze side slope	\$ 0.27	\$/cy	\$ 0.27	\$/cy	\$ 0.27	\$/cy		
What are the total labor costs \$ 184,019.13 \$ 51,834.60 \$ 256,684.69 \$ 492,538.42 What is the total cost for growth media placement? \$ 667,146.90 \$ 184,299.04 \$ 915,542.90 \$ 1,766,988.83	What are the total equipment costs	\$ 483,127.77		\$ 132,464.44		\$ 658,858.21		\$ 1,274,450.41	
What is the total cost for growth media placement? \$ 667,146.90 \$ 184,299.04 \$ 915,542.90 \$ 1,766,988.83	What are the total labor costs	\$ 184,019.13		\$ 51,834.60		\$ 256,684.69		\$ 492,538.42]
	What is the total cost for growth media placement?	\$ 667,146.90		\$ 184,299.04	<u>_</u>	\$ 915,542.90		\$ 1,766,988.83	J

portion of top slope to side slope for each dump

Waste Rock Dumps - Page 2											
Estimated Reclamation and Closure Cost - Continued											
Rip on the contour											
Equipment - D8 dozer											
How many acres are to be ripped?		314.4	ac		97.8	ac		510.2	ac		922.40
What is the productivity of the equipment?		1.1	ac/hr		1.1	ac/hr		1.1	ac/hr		
How many hours will the job take?		282.0	hrs		87.7	hrs		457.7	hrs		827.48
What is the equipment cost per hour?	\$	114.00	\$/hr	\$	114.00	\$/hr	\$	114.00	\$/hr		
What are the labor costs per hour?	\$	48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	\$	146.04	\$/ac	\$	146.04	\$/ac	\$	146.04	\$/ac		
What are the total equipment costs	\$ 32	2,153.15		\$	10,001.84		\$	52,177.28		\$	94,332.26
What are the total labor costs	\$ 13	3,760.98		\$	4,280.61		\$	22,330.96		\$	40,372.55
What is the total cost for ripping?	\$ 4	5,914.13		\$	14,282.45		\$	74,508.23		\$	134,704.81
Revegetation											
How many acres are to be vegetated?		314.4	ac		97.8	ac		510.2	ac		922.40
What is the cost per acre?	\$	298.60	\$/ac	\$	298.60	\$/ac	\$	298.60	\$/ac		
What is the total cost of seed, fertilize and mulch?	\$ 93	3,879.84		\$	29,203.08		\$	152,345.72		\$	275,428.64
Supervision											
Hours		930.51	hrs		122.83	hrs		1,325.83	hrs		2,379.17
Equipment	\$	15.58	\$/hr	\$	15.58	\$/hr	\$	15.58	\$/hr		
Supervisor	\$	53.39	\$/hr	\$	53.39	\$/hr	\$	53.39	\$/hr		
Supervision Costs	\$ 64	4,180.70		\$	8,472.39		\$	91,447.55		\$	164,100.65
SUBTOTAL - GRADE, COVER & REVEG COSTS	\$ 2,	074,620		\$	361,956		\$	2,912,178		\$	5,348,754
Drainage (See Details in Supporting Information)											
Excavation											
Quantity		15,978	СУ		144	су		1,644	су		17,766.67
Unit Cost	\$	1.75	\$/cy	\$	1.75	\$/cy	\$	1.75	\$/cy		
Subtotal	\$ 2	7,961.11		\$	252.78		\$	2,877.78		\$	31,091.67
Geofabric											
Quantity		247.078	saft		8.222	saft		55.656	saft		310.955.88
Unit Cost	\$	0.15	\$/saft	\$	0.15	\$/saft	\$	0.15	\$/saft		,
Subtotal	\$ 3	7.061.68	+,	\$	1.233.29	+,	\$	8.348.41	t, e 1	\$	46.643.38
Riprap	•	,		·	,			-,		•	- ,
Quantity		13 727	CV		457	CV		3 092	CV		17 275 33
Linit Cost	\$	35.00	\$/cv	\$	35.00	\$/cv	\$	35.00	\$/cv		17,270.00
Subtotal	\$ 480	1 429 19	φioy	φ s	15 987 07	φ/Ογ	ŝ	108 220 17	φ/Ογ	\$	604 636 43
Place riprap	ψ	5,420.10		φ	10,007.07		Ψ	100,220.17		Ψ	004,000.40
Quantity		12 727	CV/		457	<u>ev</u>		2 002	C)/		17 275 22
Linit Cost	¢	2 00	s/cv	¢	2 00	s/cv	\$	3,092	s/cv		11,210.00
Subtotal	Ŷ	2.00	φισγ	ф Ф	2.00 ·	φισγ	¢ ¢	2.00 6.19/	ψισγ	¢	34 550 65
Drainage Construction Costs	¢ V	572 005		Ψ Φ	19 207		Ψ ¢	125 620		ψ ¢	716 000
Total Labor Costs	¢ V	107 070		ф Ф	10,307		ф Ф	120,030		φ Φ	1 206 940
	φ • •	491,918		¢	89,∠38		Ф Ф	099,000		ф Ф	1,200,010
TUTAL CUSTS)	047,525		\$	380,343		Þ	3,037,809		\$	6,065,676

Waste Rock Dumps - Page 3

SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY. REVEGETATION MATERIALS AND OTHER SUPPORT ITEMS	EMS
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Dozer Production								
Data	LCY/hr production to area (acre) of volume (yds)							
3H:1V	down	ι	up					
grade33%	1.0		grade- +33%		0.3			
Density	Rock		Topsoil	NOTE:	1.75 spg - loose			
		3500		650	2.16 spg - bank			
Unadjusted Dozer Productivity Calculations		(CPH V33 p1-40): CPH V31 p1-43	3			
	LCY/hr							
Cat D10R	1350		150 ft distance					
Cat D8	500	2	200 ft distance					

Waste Rock Dozer Grading Productivity

Dozer Production Factors	CPH V 33	p.1-42						
Regrade								
Rock Dump	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Rock		Good	50min/hr		Rock
Slope -18°	0.5278	0.8	0.7	1.2	0.9	0.83	1.6	0.66
Slope 0°	0.3299	0.8	0.7	1.2	0.9	0.83	1	0.66
		-						

Rock Dump - Adjusted Productivity	Regrade
Slope -18°	150 ft distance
	LCY/hr
Cat D10R	712.5
Rock Dump - Adjusted Productivity	Regrade
Slope 0°	150 ft distance
	LCY/hr

Growth Media - Spread Productivity								
Growth Media	12	12 depth (inches)		1613	1613 CY/acre			
	14.4	14.4 depth (inches)		0.4 1936 CY/acre		before compaction		
Spread Growth Media								
Topsoil	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Topsoil		Good	50min/hr		Topsoil
Slope -18°	1.1950	0.8	1.2	1.2	0.9	0.83	1.6	0.87
Slope 0°	0 7469	0.8	12	12	0.9	0.83	1	0.87

Growth Media - Adjusted Productivity	Topsoil
Slope -18°	200 ft distance
	LCY/hr
Cat D8	597.5

Growth Media - Adjusted Productivity	Topsoil
Slope 0°	200 ft distance
	LCY/hr
Cat D8	373

Ripping Productivity									
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83	
	MPH	FPM							
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/a

	production		
acre	0.90	hr/acre	1.11 ac/hr

Waste Rock Dumps - Page 4 Drainage Construction

Drainage Construction							
Barnes Creek	U	Init Cost	Quantity		Unit		Total
Northeast trib channel							
Excavation	\$	1.75	8	300 cv		\$	1,400
Geofabric	\$	0.15	22.7	768 saft		\$	3,415
Rinran	Ŝ	35.00	,	265 CV		Ŝ	44 272
	¢	2.00	1.5	265 CV		¢ ¢	2 530
Northwort trib channel	ψ	2.00	1,2	200 Cy		ψ	2,550
	•	4 75				•	4 000
Excavation	\$	1.75	, ,	933 cy		\$	1,633
Geofabric	\$	0.15	26,5	563 sqft		\$	3,984
Riprap	\$	35.00	1,4	476 cy		\$	51,651
Place riprap	\$	2.00	1,4	176 cy		\$	2,951
Southwest trib channel				-			
Excavation	\$	1.75	1.2	244 cv		\$	2,178
Geofabric	\$	0.15	35 4	118 saft		ŝ	5 313
Rinran	¢ ¢	35.00	1 (A68 CV		¢	68 867
Place riprop	¢	33.00	1,8			ф Ф	2 025
	Φ	2.00	1,9	лод су		Ф	3,935
Central channel	•						_
Excavation	\$	1.75	13,0	000 cy		\$	22,750
Geofabric	\$	0.15	162,3	329 sqft		\$	24,349
Riprap	\$	35.00	9,0	018 cy		\$	315,639
Place riprap	\$	2.00	9.0)18 cv		\$	18,037
TOTALS			- , -	,			, -
Excavation			15.	978 cv		\$	27.961.11
Geofabric			247	078 saft		\$	37,061.68
Rinran			10	727 0		¢	480 420 10
Diago rinron			13,	727 OV		φ Φ	400,429.19
Field Crook	, ,	Init Cost	I.J.	izi Cy	Linit	Φ	Z1,403.10
Wost channel	0		Quantity		Unit		TULAI
	¢	4 75					ф о г о
Excavation	\$	1.75	144	су			\$
Geofabric	\$	0.15	8,222	sqft			\$ 1,230
Riprap	\$	35.00	457	су			\$ 15,987
Place riprap	\$	2.00	457	су			<u>\$ 914</u>
Yellow Pup	U	Init Cost	Quantity		Unit		Total
West drainage channel							
Excavation	\$	1 75	1.9	333 cv		\$	2 333
Geofabric	\$	0.15	27 (A7 saft		¢	5 685
	φ Φ	0.15	37,8			φ Φ	3,003
rupiap Disessiones	Ф Ф	35.00	2,1			¢	13,186
Place riprap	\$	2.00	2,1	IU8 CY		\$	4,216
East slope channel							
Excavation	\$	1.75	3	311 cy		\$	544
Geofabric	\$	0.15	17,7	709 sqft		\$	2,655
Riprap	\$	35.00	ç	984 cv		\$	34.434
Place riprap	\$	2.00	ç	984 cv		\$	1,968
TOTALS	+	2.00				Ψ	1,000
Excavation			1 /	644 CV		¢	2 877 79
Geofabric			55	SFA caft		Ψ ¢	8 340 00
Diprop			55,			φ Φ	6,340.00
rupiap			3,	U92 CY		\$	108,220.17
Place riprap			3,	092 CY		\$	6,184.01

Waste Rock Dumps - Page 5 Channel Calculations

Channel type	Bottom width	Depth	Top width	Excav Vol	Fabric Area	Riprap size		Riprap
				(w/20% incr)			Riprap thickness	volume
	Ft	Ft	Ft	CY/Ft	SF/Ft	In	Ft	CY/Ft
Trapezoidal (3:1 side slopes)	6		3 2-	4 2.0	25.0	9	1.5	1.4
V-notch (3:1 side slopes)	0	:	3 1	3 1.0	19.0	9	1.5	1.1
V-notch (3:1 side slopes)	0		2 1	2 0.4	12.6	9	1.5	0.7
V-notch (3:1 side slopes)	0		1	6 0.1	6.3	9	1.5	0.4

Barnes Creek

Northeast trib channel length - 2 ft v-notch	Ft	1,800
Northwest trib channel length - 2 ft v-notch	Ft	2,100
Southwest trib channel length - 2 ft v-notch	Ft	2,800
Central channel length - 3 ft trapezoidal	Ft	6,500
Fish Creek		
West channel - 1 ft v-notch	Ft	1,300
Yellow Pup		
West channel length - 3 ft deep v-notch	Ft	3,000
East slope channel length - 1 ft deep v-notch	Ft	2,800

Stockpiles (After Ore Removal) - Page 1	
Scarify	\$ 6,918
Load, haul, dump and spread 6 in. growth media	\$ 274,266
Rip on the contour	\$ 14,312
Revegetation (Seeding and fertilization)	\$ 29,263
Supervision	\$ 2,989
	\$ 327,748

Estimated Reclamation and Closure Cost		Barnes	Old	Barnes	Stockpiles		
		Quantity	Units	Quantity	Units		Totals
Acres		42	ac	56	ac		98
Flat		35	ac	3	ac		38
Sloped		7	ac	53	ac		60
Scarify on the contour							
Equipment - D10 dozer							
How many acres are to be scarified?		35	ac	3	ac		
What is the productivity of the equipment?		1.4	ac/hr	1.4	ac/hr		
How many hours will the job take?		25.6	hrs	2.2	hrs		
What is the equipment cost per hour?		200.00	\$/hr	200.00	\$/hr		
What are the labor costs per hour?		48.79	\$/hr	48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	\$	182.05	\$/ac	\$ 182.05	\$/ac		
What are the total equipment costs	\$	5,122.33		\$ 439.06		\$	5,561
What are the total labor costs	\$	1,249.59		\$ 107.11		\$	1,357
What is the total cost for scarifying?	\$	6,371.92		\$ 546.16		\$	6,918
Load, haul, dump and spread growth media							
Equipment - 988, Euclid B-70 Haul Truck, Water Truck, G16 Gra	ader,	D8					
What is amount of topsoil to be loaded with loader?		33,880.00	су	45,173.33	су		79,053
What is wtd avg haul distance one way from TS Pile?	See	TS Productio	ft	See TS Production 7	ft		
What is amount of topsoil to be hauled by truck?		33,880.00	су	45,173.33	су		
What is the productivity of the loading equipment?		547.80	cy/hr	547.80	cy/hr		
How many hours will the job take?		61.85	hrs	82.46	hrs		
What are the estimated hours for haul and support equipment?							
Estimated hours for Loader		61.85		82.46			
Estimated hours for Truck		432.93	hrs	432.93	hrs		
Estimated hours for Grader to support hauling effort		61.85	hrs	82.46	hrs		
Estimated hours for Water Truck to support hauling effort		61.85	hrs	82.46	hrs		
Estimated hours for Dozer to spread topsoil		94.50	hrs	126.00	hrs		221
Dozer productiivity		358.51	cy/hr	358.51	cy/hr		
What is the equipment cost per hour?							
Loader		132.00	\$/hr	132.00	\$/hr		
Truck		150.00	\$/hr	150.00	\$/hr		
Grader		119.75	\$/hr	119.75	\$/hr		
Water Truck		60.92	\$/hr	60.92	\$/hr		
Dozer		114.00	\$/hr	114.00	\$/hr		
What is the labor cost per hour?							
Loader		48.79	\$/hr	48.79	\$/hr		
Truck		48.79	\$/hr	48.79	\$/hr		
Grader		48.79	\$/hr	48.79	\$/hr		
Water Truck		48.79	\$/hr	48.79	\$/hr		
Dozer		48.79	\$/hr	48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?		3.83	\$/cy	3.20	\$/cy	1	
What are the total equipment costs	\$	95,050.96	-	\$ 105,088.03	-	\$	200,139
What are the total labor costs	\$	34,786.16		\$ 39,340.63		\$	74,127
What is the total cost for growth media placement?	\$	129,837.12		\$ 144,428.66		\$	274,266

Stockpiles (After Ore Removal) - Page 2							
Rip on the contour							
Equipment - D8 dozer							
How many acres are to be ripped?	42	ac		56	ac		98
What is the productivity of the equipment?	1.1	ac/hr		1.1	ac/hr	_	
How many hours will the job take?	37.7	hrs		50.2	hrs		88
What is the equipment cost per hour?	114	\$/hr		114	\$/hr		
What are the labor costs per hour?	48.79	\$/hr		48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	\$ 146.04	\$/ac	\$	146.04	\$/ac		
What are the total equipment costs	\$ 4,295.27		\$	5,727.02		\$	10,022
What are the total labor costs	\$ 1,838.30		\$	2,451.07		\$	4,289
What is the total cost for ripping?	\$ 6,133.57		\$	8,178.09		\$	14,312
Revegetation							
How many acres are to be vegetated?	42	ac		56	ac		98
What is the cost per acre?	\$ 298.60	\$/ac	\$	298.60	\$/ac		
What is the total cost of seed, fertilize and mulch?	\$ 12,541.20		\$	16,721.60		\$	29,263
Supervision							
Hours	20.86	hrs		22.48	hrs		43
Equipment	\$ 15.58	\$/hr	\$	15.58	\$/hr		
Supervisor	\$ 53.39	\$/hr	\$	53.39	\$/hr		
Supervision Costs	\$ 1,438.53		\$	1,550.71		\$	2,989
Total Labor Costs	\$ 38,062.99		\$	43,342.41		\$	81,405
TOTAL COSTS	\$ 156,322.34		\$	171,425.23		\$	327,748

Stockpiles (After Ore Removal) - Page 3 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Dozer Production											
Data	LCY/hr production to	o area (acre) of	volume (vds)								
3H:1V	down u)	() ()								
grade33%	1.6 qi	ade- +33%	0.	3							
Density	Rock Te	posoil N	IOTE:	1.75 spg - loose							
	3500	2650		2.16 spg - bank							
Unadiusted Dozer Productivity Calculations	C	PH V33 p1-40: 0	CPH V31 p1-43								
	300 ft distance										
	LCY/hr										
Cat D8	300										
Waste Rock Dozer Grading Productivity											
Dozer Production Factors	CPH V 33 p.	1-42									
Regrade	· · · ·										
Rock Dump	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density			
	Factor	Ava	Rock		Good	50min/hr		Rock			
Slope -18°	0.5278	0.8	0.7	1.2	0.9	0.83	1.6	0.66			
Slope 0°	0.3299	0.8	0.7	1.2	0.9	0.83	1	0.66			
Growth Media - Spread Productivity											
Growth Media	12 de	epth (inches)	0.33	3 1613 C	Y/acre	hoforo composi	on to 12" donth (20	907.)			
	14.4 00	eptin (inches)	0.	4 1930 C				76)			
Spread Growth Media											
Topsoil	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density			
	Factor	Avg	Topsoil		Good	50min/hr		Topsoil			
Slope -18°	1.1950	0.8	1.2	1.2	0.9	0.83	1.6	0.87			
One with Mardian Adjusted Desident (init)	Tanaali										
Growth Media - Adjusted Productivity											
Slope -18*	300 ft distance										
0-1 00	LCY/hr										
Cat D8	358.5										
Ripping Productivity											
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83	product	ion	
	MPH	FPM	•	•					•		
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre 0.90	hr/acre	1.11 ac/h
D-10R (Pads, etc.)	1.00	88.00	9.58	4.00	13.58	36.44	min/acre	43.91	min/acre 0.73	hr/acre	1.37 ac/h



Growth Meda Locations	
After growth media removal, ground is sloped for drainage	
Retain 6" growth media	
Rip on the contour	\$ 7,097
Revegetation (Seeding and fertilization)	\$ 14,512
Supervision	\$ 501
	\$ 22,111

Estimated Reclamation and Closure Cost		Barnes C	Creek	Borrow	5 GM		Pit Perim	eter	Walter Cre	eek	}	Yellow Pu	ЪА	Yellow Pu	лр В	Yellow P	лр С		Growth Media
	Q	uantity	Units	Quantity	Units	0	Quantity	Units			Qu	uantity	Units						Totals
Acres		0.4	ac	2.4	ac		2.5	ac	13	ac	1	13.5	ac	10.7	ac	6.1		ac	48.60
Flat		0	ac	0	ac		0	ac	0	ac		0	ac	0	ac	0		ac	0.00
Sloped		0.4	ac	2.4	ac		2.5	ac	13	ac	1	13.5	ac	10.7	ac	6.1		ac	48.60
Rip on the contour																			
Equipment - D8 dozer																			
How many acres are to be ripped?		0.4	ac	2.4	ac		2.5	ac	13	ac		13.5	ac	10.7	ac	6.1	ac		48.60
What is the productivity of the equipment?		1.1	ac/hr	1.1	ac/hr		1.1	ac/hr	1.1	ac/hr		1.1	ac/hr	1.1	ac/hr	1.1	ac/h	r	
How many hours will the job take?		0.4	hrs	2.2	hrs		2.2	hrs	11.7	hrs		12.1	hrs	9.6	hrs	5.5	hrs		43.60
What is the equipment cost per hour?		114	\$/hr	114	\$/hr		114	\$/hr	114	\$/hr		114	\$/hr	114	\$/hr	114	\$/hr		
What are the labor costs per hour?		48.79	\$/hr	48.79	\$/hr		48.79	\$/hr	48.79	\$/hr		48.79	\$/hr	48.79	\$/hr	48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	\$	146.04	\$/ac	\$ 146.04	\$/ac	\$	146.04	\$/ac	\$ 146.04	\$/ac	\$	146.04	\$/ac	\$ 146.04	\$/ac	\$ 146.04	\$/ac		
What are the total equipment costs	\$	40.91		\$ 245.44		\$	255.67		\$ 1,329.49		\$ 1	,380.62		\$ 1,094.27		\$ 623.84			\$ 4,970.2
What are the total labor costs	\$	17.51		\$ 105.05		\$	109.42		\$ 569.00		\$	590.88		\$ 468.33		\$ 266.99			\$ 2,127.17
What is the total cost for ripping?	\$	58.41		\$ 350.49		\$	365.09		\$ 1,898.49		\$ 1	1,971.50		\$ 1,562.60		\$ 890.83			\$ 7,097.41
Revegetation																			
How many acres are to be vegetated?		0.4	ac	2.4	ac		2.5	ac	13	ac		13.5	ac	10.7	ac	6.1	ac		48.60
What is the cost per acre?	\$	298.60	\$/ac	\$ 298.60	\$/ac	\$	298.60	\$/ac	\$ 298.60	\$/ac	\$	298.60	\$/ac	\$ 298.60	\$/ac	\$ 298.60	\$/ac		
What is the total cost of seed, fertilize and mulch?	\$	119.44		\$ 716.64		\$	746.50		\$ 3,881.80		\$4	1,031.10		\$ 3,195.02		\$ 1,821.46			\$ 14,511.96
Supervision																			
Hours		0.06	hrs	0.36	hrs		0.37	hrs	1.94	hrs		2.02	hrs	1.60	hrs	0.91	hrs		7.27
Equipment	\$	15.58	\$/hr	\$ 15.58	\$/hr	\$	15.58	\$/hr	\$ 15.58	\$/hr	\$	15.58	\$/hr	\$ 15.58	\$/hr	\$ 15.58	\$/hr		
Supervisor	\$	53.39	\$/hr	\$ 53.39	\$/hr	\$	53.39	\$/hr	\$ 53.39	\$/hr	\$	53.39	\$/hr	\$ 53.39	\$/hr	\$ 53.39	\$/hr		
Supervision Costs	\$	4.13		\$ 24.75		\$	25.78		\$ 134.06		\$	139.22		\$ 110.35		\$ 62.91			\$ 501.19
Total Labor Costs	\$	21.63		\$ 129.80		\$	135.20		\$ 703.06		\$	730.10		\$ 578.67		\$ 329.90			\$ 2,628.37
TOTAL COSTS	\$	181.98		\$ 1,091.88		\$	1,137.37		\$ 5,914.35		\$ 6	6,141.82		\$ 4,867.96		\$ 2,775.19			\$ 22,110.57

SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND RE	VEGETATION	MATERIAL	S							
Ripping Productivity										
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83	production	
	MPH	FPM								
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre 0.90 hr/ac	re

1.11 ac/hr	
	8

Building Demolition - Page 1	
Foundations broken using equipment	
Slope to 2.5:1 or flatter & establish drainage	\$ 72,597
2 feet rock material placed over foundation area	\$ 10,219.93
No Revegetation	\$ -
50 ft dozer push for rock material	\$ 4,478.95
	\$ 87,296

Remainder of process included in Site Complex

Acres - Foundations	Sq Ft	CY		Flat (ac)	Slope (ac)	Total
Admin/Maintenance Bldg	7	7200	1067	0.165	0.000	0.165
Mill Bldgs	50	0000	7407	1.148	0.000	1.148
Crusher/Conveyor Bldgs	1	200	178	0.028	0.000	0.028
Substation Bldg	1	400	207	0.032	0.000	0.032
Total	59	9800	8859	1.373	0.000	1.373

Estimated Reclamation and Closure Cost	A	Admin/Maintenance Bldg			Mill Bldg	IS		Crusher/Conveyor Bldgs			Substation I	Bu	Idign Demolition	
		Quantity	Units		Quantity	Units		Quantity	Units		Quantity	Units		Totals
Foundation Removal														
Equipment - Hydraulic Hammer -H140 with CAT 330CL														
What is the total volume of material to be broken?		1,067	су		7,407	су		178	су		207	су		8,859
What is the productivity of the equipment?		23.34	cy/hr		23.34	cy/hr		23.34	cy/hr		23.34	cy/hr		
How many hours will the job take?		46	hrs		317	hrs		8	hrs		9	hrs		
What is the equipment cost per hour?	\$	142.50	\$/hr	\$	142.50	\$/hr	5	\$ 142.50	\$/hr	\$	142.50	\$/hr	\$	142.50
What is the labor cost per hour?	\$	48.79	\$/hr	\$	48.79	\$/hr	5	\$ 48.79	\$/hr	\$	48.79	\$/hr	\$	48.79
What is the cost per unit (i.e. cubic yards, acres)?	\$	8.19	\$/cy	\$	8.19	\$/cy	9	8.19	\$/cy	\$	8.19	\$/cy	\$	8.19
What are the total labor costs?	\$	2,229.40		\$	15,481.98		5	\$ 371.57	-	\$	433.50	-	\$	18,516
What is the total cost for concrete demolition?	\$	8,740.78		\$	60,699.89			1,456.80		\$	1,699.60		\$	72,597
Load, haul, dump and spread cover														
Equipment - 988, Euclid B-70 Haul Truck, Water Truck, G16 G	rader	, D8												
What is amount of topsoil to be loaded with loader?		533.33	су		3,703.70	су		88.89	су		103.70	су		4,429.63
What is wtd avg haul distance one way from TS Pile?		2,640.00	ft		2,640.00	ft		2,640.00	ft		2,640.00	ft		
What is amount of topsoil to be hauled by truck?		533.33	су		3,703.70	су		88.89	су		103.70	су		4,429.63
What is the productivity of the loading equipment?		438.24	cy/hr		438.24	cy/hr		438.24	cy/hr		438.24	cy/hr		
How many hours will the job take?		1.22	hrs		8.45	hrs		0.20	hrs		0.24	hrs		10.11
What are the estimated hours for haul and support equipment?														
Estimated hours for Loader	1	1.22	hrs		8.45	hrs		0.20	hrs		0.24	hrs		10.11
Estimated hours for Truck		2.43	hrs		16.90	hrs		0.41	hrs		0.47	hrs		20.22
Estimated hours for Grader to support hauling effort		1.22	hrs		8.45	hrs		0.20	hrs		0.24	hrs		10.11
Estimated hours for Water Truck to support hauling effort		1.22	hrs		8.45	hrs		0.20	hrs		0.24	hrs		10.11
Estimated hours for Dozer to spread topsoil		1.15	hrs		8.02	hrs		0.19	hrs		0.22	hrs		9.59
Dozer productiivity		461.83	cv/hr		461.83	cv/hr		461.83	cv/hr		461.83	cv/hr		
What is the equipment cost per hour?									.,.			.,.		
Loader	\$	132.00	\$/hr	\$	132.00	\$/hr	5	132.00	\$/hr	\$	132.00	\$/hr		
Truck	\$	150.00	\$/hr	\$	150.00	\$/hr	S	5 150.00	\$/hr	\$	150.00	\$/hr		
Grader	Ŝ	119.75	\$/hr	\$	119.75	\$/hr	9	119.75	\$/hr	Ŝ	119.75	\$/hr		
Water Truck	\$	60.92	\$/hr	\$	60.92	\$/hr	ġ	60.92	\$/hr	\$	60.92	\$/hr		
Dozer	Ŝ	114.00	\$/hr	\$	114.00	\$/hr	9	5 114.00	\$/hr	Ŝ	114.00	\$/hr		
What is the labor cost per hour?	*		•,	*		+		,	•,	*		•, • • •		
Loader	\$	48.79	\$/hr	\$	48.79	\$/hr	5	6 48.79	\$/hr	\$	48.79	\$/hr		
Truck	Ŝ	48.79	\$/hr	\$	48.79	\$/hr	9	48.79	\$/hr	Ŝ	48.79	\$/hr		
Grader	\$	48.79	\$/hr	\$	48.79	\$/hr	9	48.79	\$/hr	\$	48.79	\$/hr		
Water Truck	Ŝ	48.79	\$/hr	\$	48.79	\$/hr	9	48.79	\$/hr	Ŝ	48.79	\$/hr		
Dozer	\$	48.79	\$/hr	\$	48.79	\$/hr	e	48.79	\$/hr	ŝ	48.79	\$/hr		
What is the cost per unit (i.e. cubic vards, acres)?	\$	2.31	\$/cv	ŝ	2.31	\$/cv	ġ	2.31	\$/cv	ŝ	2.31	\$/cv	\$	2.31
What are the total equipment costs	\$	877.26	<i><i>ϕ</i>, oy</i>	ŝ	6 092 11	φ, σγ	e e	146.21	ψ/ Cy	ŝ	170.58	φ, σγ	ŝ	7 286 17
What are the total labor costs	\$	353.23		\$	2.452.98		ġ	58.87		\$	68.68		\$	2.933.76
What is the total cost for rock placement?	\$	1.230.49		\$	8.545.09		5	205.08		\$	239.26		\$	10.219.93
Revegetation	Ť	,		Ť	-,					Ţ			Ţ	-,
How many acres are to be vegetated?		0.000	ac		0.000	ac		0.000	ac		0.000	ac		0.00
What is the cost per acre?	\$	298.60	\$/ac	\$	298.60	\$/ac	5	\$ 298.60	\$/ac	\$	298.60	\$/ac		
What is the total cost of seed, fertilize and mulch?	\$	-		\$	-		9	6 -		\$	-		\$	-
Supervision														
Hours		7.82	hrs		54.29	hrs		1.30	hrs		1.52	hrs		64.94
Equipment	\$	15.58	\$/hr	\$	15.58	\$/hr	5	5 15.58	\$/hr	\$	15.58	\$/hr		
Supervisor	\$	53.39	\$/hr	\$	53.39	\$/hr	9	53.39	\$/hr	\$	53.39	\$/hr		
Supervision Costs	\$	539.27		\$	3,744.94		3	\$ 89.88		\$	104.86		\$	4,478.95
Total Labor Costs	\$	3,121.91		\$	21,679.90			520.32		\$	607.04		\$	25,929.16
TOTAL COSTS	\$	10,510.55		\$	72,989.92		0	\$ 1,751.76		\$	2,043.72		\$	87,295.95

Building Demolition - Page 2 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Hydraulic Hammer -H140 with CAT 330CL	(CPH V-33	17-10				
Unadjusted Production							
Unadjusted	Production Rates	250-650	cy/8hr				
	Using 250cy	31.	25 cy/hr				
Operations factors							
C	perator Efficiency	().9				
	50 min/hr	0.	83				
	Production Factor	0.7	47				
Adjusted Production							
Adjuste	d Production Rate		23 cy/hr				
					•		
Dozer Production							
Data	L	LCY/hr produc	tion to are	a (acre	e) of volume	e (yds)	
3H:1V	C	down	up				
grade33%			I.6 grade-	+33%		C).3
Density	F	Rock	Topso		NOTE:		
		35	00	2650			
Unadjusted Dozer Productivity Calculations			CPH \	′33 p1-4	40: CPH V	31 p1-43	
	5	50 ft distance					

LCY/hr 1400 Cat D8

Waste Rock Dozer Grading Productivity								
Dozer Production Factors	CPH V 33	n 1-42						
Regrade	01111000	p.1 42						
Rock Dump	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Rock		Good	50min/hr		Rock
Slope -18°	0.5278	0.8	0.7	1.2	0.9	0.83	1.6	0.66
Slope 0°	0.3299	0.8	0.7	1.2	0.9	0.83	1	0.66
		_						

Rock Dump - Adjusted Productivity	Regrade
Slope 0°	50 ft distance
	LCY/hr
Cat D8	461.8

Growth Media Load and Haul Productivity

	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates		Correction Factors			Factored Production Rate	Max Truck/Loader Ratio
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude	Operator Efficiency	Job Efficiency	Total Correction Factor	(Cy/Hr)	
		(cy)	Rock	(cy)	(min)		(min)	(min)	(min)	(cy/hr)		Good	50 min/hr			
Euclid B-70		48.00	0.80	38.40			2.00	1.00		349.09	1.00	0.80	0.83			2
988 Loader		8.30	0.80	6.64	0.60	6				664.00	1.00	0.80	0.83			
	Truck/Loader Team								6.60					0.66	438.24	

Building Site Complex - Page 1		
Scarify hardpack		\$ 9,467
Grade to 2.5:1 or flatter & establish drainage		\$ 53,794
Load, haul, dump and spread 12 in. growth media		\$ 216,301
Rip on the contour		\$ 9,814
Revegetation (Seeding and fertilization)		\$ 20,066
Supervisor		\$ 3,194
	Subtotal	\$ 312,635

Building Site Complex - Page 2									
Estimated Reclamation and Closure Cost	Admin/Mainten	ance Complex		Mill Comp	lex		Laydown	i Yard	Site Complex
	Quantity	Units		Quantity	Units	Qu	Jantity	Units	Totals
Acres	13.1	ac		32.7	ac	2	21.4	ac	67.20
Flat	16	ac		14	ac		22	ac	52.00
Sloped	4	ac		1	ac		4	ac	9.00
Scarify on the contour									
Equipment - D10 dozer									
How many acres are to be scarified?	1	6 ac		14	ac		22	ac	52.00
What is the productivity of the equipment?	1	4 ac/hr		1.4	ac/hr		1.4	ac/hr	
How many hours will the job take?	11	7 hrs		10.2	hrs		16.1	hrs	38.05
What is the equipment cost per hour?	\$ 200.0) \$/hr	\$	200.00	\$/hr	\$	200.00	\$/hr	
What are the labor costs per hour?	\$ 48.7	9 \$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr	
What is the cost per unit (i.e. cubic yards, acres)?	\$ 182.0	5 \$/ac	\$	182.05	\$/ac	\$	182.05	\$/ac	
What are the total equipment costs	\$ 2,341.6	1	\$	2,048.93		\$	3,219.75		
What are the total labor costs?	\$ 571.2	1	\$	499.84		\$	785.46		
What is the total cost for scarifying?	\$ 2.912.8	3	\$	2.548.77		\$	4.005.21		9.466.86
Grading and Recontouring	+ _,• •	-	Ť	_,• • • • •		+	.,		-,
Equipment - D10 Dozer									
What is the total volume of material to be recontoured?	21 134 6	7 CV		52 756 00	CV		34 525 33	CV	108 416 00
What is the weighted average push distance?	200.0	0 ft		200.00	ft		200.00	ft	100,110.00
What percentage of material will be dozer-pushed?	100	%		100%	it it		100%	i.	
Calculated quantity of dozer-pushed material	21 134 6	57 CV		52 756 00	CV		34 525 33	CV	108 416 00
What is the productivity of the equipment?	501.4	1 cv/br		501 41	501 A		501 41	cv/br	100,410.00
How many hours will the job take?	001	2 hrs		105.2	brs		69	brs	216.22
What is the equipment cost per hour?	200 (0 \$/hr		200.00	\$/br		200.00	\$/br	210.22
What is the labor cost per hour?	/8 7	√0 ψ/m ′0 \$/br		200.00 /18.70	\$/hr		18 79	\$/hr	
What is the cost per upit (i.e. cubic yards, acres)?	40.7	0 \$/ov		-0.79	\$/cv		40.79	\$/cv	
What is the total labor costs?	\$ 2,056,5	ο φ/cy	¢	5 133 45	ψ/Ογ	¢	3 350 51	φ/Ογ	10 5/10 /18
What are the total pact for grading and report ouring?	¢ 2,000.0		ψ	26 176 50		Ψ Φ 1	17 120 90		52 702 00
Lead houl dump and arread growth madia	φ 10,400.0	I	ψ	20,170.30		ψι	17,130.00		55,795.90
Load, naul, dump and spread growth media	 reder D10								
Equipment - 988, Euclid B-70 Haul Truck, Water Truck, G16 G	rader, D10	7		00,400,00			47.050.00		05 500 07
What is until our bould distance and way from TO Bile?	41,940.0	Cy	0 T	26,400.00	Cy		7,250.00	Cy	85,596.67
What is an avg naul distance one way from 15 Pile?	See 15 Production 1	ac π	See I	S Production	π		5,280.00	π	05 500 07
What is the preductivity of the leading a puller set 2	41,940.0	Cy Cy		26,400.00	Cy		17,250.00	Cy	85,596.67
What is the productivity of the loading equipment?	547.8	0 cy/nr		547.80	cy/nr		547.80	Cy/nr	450.00
How many hours will the job take?	/0.5	nrs		48.19	nis		31.49	nrs	100.20
Fatimated hours for Loader	70.6	7 hro	1	40.40	h ro		24.40	h ro	
Estimated hours for Erack	/0.0	nrs		48.19	nrs		31.49	nrs	
Estimated hours for Truck	229.7	Z nrs		144.58	nrs		157.45	nrs	
Estimated hours for Grader to support hauling effort	76.5	nrs 7 hrs		48.19	nrs		31.49	nrs	
Estimated hours for Water Truck to support hauling enort	C.01	nis Distant		48.19	nrs		31.49	nrs	
Estimated nours for Dozer to spread topsol	117.0) nrs		73.64	nrs		48.12	nrs	
Dozer productilivity	358.5	i cy/nr		358.51	cy/nr		358.51	cy/nr	
what is the equipment cost per hour?	¢ 400.0	<u>۴</u> /۱۰۰۰	¢	400.00	ф /I- н	¢	400.00	<u>ф</u> /н	
Loader	\$ 132.0) \$/nr	\$	132.00	\$/nr	ъ С	132.00	\$/nr	
	\$ 150.0) \$/nr	þ	150.00	\$/nr \$/hr	Э ¢	150.00	\$/nr ¢/\	
	\$ 119.7	> \$/nr	þ	119.75	\$/nr ¢/h.r	Ъ С	119.75	\$/nr ¢/\	
Water Fruck	\$ 60.9	2 \$/nr	þ	60.92	\$/nr \$/hr	Э ¢	60.92	\$/nr ¢/\	
Dozer	\$ 114.0) \$/nr	Ъ	114.00	\$∕nr	Ъ	114.00	\$/nr	
what is the labor cost per nour?	40 -	۰ ۵ (۱۰		40.70	ф /I- н		40.70	<u>ф</u> /н	
	48.7	ອ \$/nr ທີ່//		48.79	⊅/∏Γ ድ/⊾		48.79	⊅/∏୮ ¢/⊾-	
TTUCK	48.7	9 \$/nr		48.79	ው/በበ ድ/ኬም		48.79	¢/hr	
	48.7	ອ ຈ/ກເ ທີ່//		48.79	⊅/11ſ ድ/⊾		40.79	¢/۱۱۲ ¢/۲۰۰	
vvater Truck	48.7	ອ \$/nr ທີ່/ພະ		48.79	⊅/∏Γ ¢/⊾		48.79	⊅/∏Ր ¢/⊾	
Dozer	48.7	ອ ຈ/ກເ		48.79	¢/م		48.79	¢/م	
What is the cost per unit (i.e. cubic yards, acres)?	2.3 ¢ 74.700.0	o ⊅/Cy 7	¢	2.38	⊅/СУ	¢ ~	3.11	⊅/СУ	155 006 70
what are the total labor costs?	φ (1,/38.3		Ф Ф	40,100.02		φ 3 ¢ 4	20,940.31		100,000.70
What is the total aget for growth medic placement?	ψ 20,124.0	7	φ Φ	62.050.00		φ ¢ -	17,000.02		00,404.01
what is the total cost for growth media placement?	φ 99,862.9	r	Э	o∠,ŏ5U.82		D 5	JJ,500.93		210,300.72

Building Site Complex - Page 3								
Rip on the contour								
Equipment - D8 dozer								
How many acres are to be ripped?	13.1	ac		32.7	ac	21.4	ac	67.20
What is the productivity of the equipment?	1.1	hr/ac		1.1	hr/ac	1.1	hr/ac	
How many hours will the job take?	11.8	hrs		29.3	hrs	19.2	hrs	60.28
What is the equipment cost per hour?	114	\$/hr		114	\$/hr	114	\$/hr	
What are the labor costs per hour?	48.79	\$/hr		48.79	\$/hr	48.79	\$/hr	
What is the cost per unit (i.e. cubic yards, acres)?	\$ 146.04	\$/ac	\$	146.04	\$/ac	\$ 146.04	\$/ac	
What are the total equipment costs	\$ 1,339.71		\$	3,344.17		\$ 2,188.54		6,872.43
What are the total labor costs?	\$ 573.37		\$	1,431.25		\$ 936.66		2,941.28
What is the total cost for ripping?	\$ 1,913.09		\$	4,775.42		\$ 3,125.20		9,813.71
Revegetation								
How many acres are to be vegetated?	13.1	ac		32.7	ac	21.4	ac	67.20
What is the cost per acre?	\$ 298.60	\$/ac	\$	298.60	\$/ac	\$ 298.60	\$/ac	
What is the total cost of seed, fertilize and mulch?	\$ 3,911.66		\$	9,764.22		\$ 6,390.04		20,065.92
Supervision								
Hours	23.70	hrs		32.16	hrs	22.61	hrs	78.47
Equipment	\$ 15.58	\$/hr	\$	15.58	\$/hr	\$ 15.58	\$/hr	
Supervisor	\$ 53.39	\$/hr	\$	53.39	\$/hr	\$ 53.39	\$/hr	
Supervision Costs	\$ 1,634.49					\$ 1,559.30		3,193.79
Total Labor Costs	\$ 32,960.23		\$	24,765.33		\$ 21,279.54		79,005.10
TOTAL COSTS	\$ 120,721.70		\$	106,115.72		\$ 85,797.47		312,634.90

Building Site Complex - Page 4 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Dozer Production										
Data	LCY/hr production to area (acre) of volume (yds)									
3H:1V	down	up								
grade33%		1.6 grade- +33%		0.3						
Density	Rock	Topsoil	NOTE:	1.75 spg - loose						
		3500 2650		2.16 spg - bank						
Unadjusted Dozer Productivity Calculations		CPH V33 p1-40: 0	CPH V31 p1-4	3						
	200 ft distance	300 ft distance								
	LCY/hr	LCY/hr								
Cat D10R	950	650								
Cat D8	500	300								

Waste Rock Dozer Grading Productivity

Dozer Production Factors	CPH V 33	p.1-42						
Regrade								
Rock Dump	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Rock		Good	50min/hr		Rock
Slope -18°	0.5278	0.8	0.7	1.2	0.9	0.83	1.6	0.66
Slope 0°	0.3299	0.8	0.7	1.2	0.9	0.83	1	0.66
Rock Dump - Adjusted Productivity	Regrade	Regrade						
Slope -18°	200 ft distance	300 ft distance						
	LCY/hr	LCY/hr						
Cat D10R	501.4	343.1						
Cat D8	263.9	158.3						

Growth Media - Spread Productivity								
Growth Media	12	2 depth (inches)	0.333	1613	CY/acre			
	14.4	14.4 depth (inches)		1936 CY/acre		before compaction to 12" depth (20%)'		
Spread Growth Media								
Topsoil	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Topsoil		Good	50min/hr		Topsoil
Slope -18°	1.1950	0.8	1.2	1.2	0.9	0.83	1.6	0.87
Slope 0°	0.7469	0.8	1.2	1.2	0.9	0.83	1	0.87

Growth Media - Adjusted Productivity	Topsoil	Topsoil
Slope -18°	200 ft distance	300 ft distance
	LCY/hr	LCY/hr
Cat D10R	1135.3	776.8
Cat D8	597.5	358.5

	Ripping Productivity												
ſ	Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83		production		
		MPH	FPM										
	Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre	0.90	hr/acre	1.11 ac/hr
	D-10R (Pads, etc.)	1.00	88.00	9.58	4.00	13.58	36.44	min/acre	43.91	min/acre	0.73	hr/acre	1.37 ac/hr

Borrow Areas	
Rip on the contour	\$ 27,309
Revegetation (Seeding and fertilization)	\$ 55,838
Supervision	\$ 1,928
	\$ 85,076

Estimated Reclamation and Closure Cost	E	Borrow /	Areas	Tailings dam	/ Borrow 3	Powerline	S	Boi	rrow Areas
	Quant	tity	Units	Quantity	Units				Totals
Acres	72		ac	76	ac	39 ac			187.00
Flat	0		ac	3	ac	0	ac		3.00
Sloped	72		ac	73	ac	39	ac		184.00
Rip on the contour									
Equipment - D8 dozer									
How many acres are to be ripped?		72	ac	76	ac	39	ac		187.00
What is the productivity of the equipment?		1.1	ac/hr	1.1	ac/hr	1.1	ac/hr		
How many hours will the job take?		64.6	hrs	68.2	hrs	35.0	hrs		167.76
What is the equipment cost per hour?		114	\$/hr	114	\$/hr	114	\$/hr		
What are the labor costs per hour?		48.79	\$/hr	48.79	\$/hr	48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	\$ 14	46.04	\$/ac	\$ 146.04	\$/ac	\$ 146.04	\$/ac		
What are the total equipment costs	\$ 7,36	63.32		\$ 7,772.39		\$ 3,988.46		\$	19,124.2
What are the total labor costs	\$ 3,15	51.37		\$ 3,326.45		\$ 1,706.99		\$	8,184.81
What is the total cost for ripping?	\$ 10,51	14.69		\$ 11,098.84		\$ 5,695.46		\$	27,308.98
Revegetation									
How many acres are to be vegetated?		72	ac	76	ac	39	ac		
What is the cost per acre?	\$ 29	98.60	\$/ac	\$ 298.60	\$/ac	\$ 298.60	\$/ac		
What is the total cost of seed, fertilize and mulch?	\$ 21,49	99.20		\$ 22,693.60		\$ 11,645.40		\$	55,838.20
Supervision									
Hours	1	10.77	hrs	11.36	hrs	5.83	hrs		27.96
Equipment	\$ 1	15.58	\$/hr	\$ 15.58	\$/hr	\$ 15.58	\$/hr		
Supervisor	\$ 5	53.39	\$/hr	\$ 53.39	\$/hr	\$ 53.39	\$/hr		
Supervision Costs	\$ 74	12.51		\$ 783.76		\$ 402.19		\$	1,928.47
Total Labor Costs	\$ 3,89	93.88		\$ 4,110.21		\$ 2,109.19		\$	10,113.27
TOTAL COSTS	\$ 32,75	56.40		\$ 34,576.20		\$ 17,743.05		\$	85,075.64

SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND R	EVEGETATION	MATERIALS							
Ripping Productivity									
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83	
	MPH	FPM							
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	mi

production

in/acre 0.90 hr/acre

1.11 ac/hr

Roads - Page 1

Fish Creek Road and Pipeline Access Road below Tailings Dam will not be reclaimed to provide access to proposed camping area Main Access (Walter Creek Road) and Melba Causeway will not be reclaimed to provide pit access. Causeway covered by tails

Roads will need ripping with D-10 to loosen hardpack - 1 pass	\$ 3,063
Grade to 2.5:1 or flatter & establish drainage	\$ 1,610
No growth media necessary	\$ -
Rip on the contour (furrow)	\$ 8,149
Revegetation (Seeding and fertilization)	\$ 16,663
Supervision	\$ 827
	\$ 30,313

Roads - Page 2								
Estimated Reclamation and Closure Cost	Pipeline A	ccess	Heap Ore Haul Road			Miscellaneo	Roads	
	Quantity	Units	Quantity	Units		Quantity	Units	Totals
Acres	9.5	ac	21.3	ac		25	ac	55.80
Flat	8	ac	10.65	ac		15	ac	33.65
Sloped	1.5	ac	10.65	ac		10	ac	22.15
Scarify on the contour								
Equipment - D10 dozer								
How many acres are to be scarified?	8	ac	10.65	ac		15	ac	33.65
What is the productivity of the equipment?	2.7	ac/hr	2.7	ac/hr		2.7	ac/hr	
How many hours will the job take?	2.9	hrs	3.9	hrs		5.5	hrs	12.31
What is the equipment cost per hour?	200.00	\$/hr	200.00	\$/hr		200.00	\$/hr	
What are the labor costs per hour?	48.79	\$/hr	48.79	\$/hr		48.79	\$/hr	
What is the cost per unit (i.e. cubic yards, acres)?	\$ 91.03	\$/ac	\$ 91.03	\$/ac	\$	91.03	\$/ac	
What are the total equipment costs	\$ 585.41		\$ 779.47		\$	1,097.64		\$ 2,462.
What are the total labor costs	\$ 142.81		\$ 190.15		\$	267.77		\$ 600.
What is the total cost for scarifying?	\$ 728.22		\$ 969.62		\$	1,365.41		\$ 3,063.
Grading and Recontouring								
Equipment - G16 Grader								
How many acres are to be graded?	9.5	ac	21.30394858	ac		25	ac	55.80
What is the productivity of the equipment?	5.8	ac/hr	5.8	ac/hr		5.8	ac/hr	
How many hours will the job take?	1.6	hrs	3.6	hrs		4.3	hrs	9.55
What is the equipment cost per hour?	119.75	\$/hr	119.75	\$/hr		119.75	\$/hr	
What are the labor costs per hour?	48.79	\$/hr	48.79	\$/hr		48.79	\$/hr	
What are the material costs?	0	\$	0	\$		0	\$	
What is the cost per unit (i.e. cubic yards, acres)?	\$ 28.85	\$/ac	\$ 28.85	\$/ac	\$	28.85	\$/ac	
What are the total equipment costs	\$ 194.74		\$ 436.70		\$	512.47		\$ 1,143.9
What are the total labor costs	\$ 79.34		\$ 177.93		\$	208.80		\$ 466.
What is the total cost for road grading?	\$ 274.08		\$ 614.63		\$	721.27		\$ 1,609.
Rip on the contour								
Equipment - D8 dozer								
How many acres are to be ripped?	9.5	ac	21.3	ac		25	ac	55.80
What is the productivity of the equipment?	1.1	ac/hr	1.1	ac/hr		1.1	ac/hr	
How many hours will the job take?	8.5	hrs	19.1	hrs		22.4	hrs	50.06
What is the equipment cost per hour?	\$ 114.00	\$/hr	\$ 114.00	\$/hr	\$	114.00	\$/hr	
What are the labor costs per hour?	\$ 48.79	\$/hr	\$ 48.79	\$/hr	\$	48.79	\$/hr	
What is the cost per unit (i.e. cubic yards, acres)?	\$ 146.04	\$/ac	\$ 146.04	\$/ac	\$	146.04	\$/ac	
What are the total equipment costs	\$ 971.55		\$ 2,178.72		\$	2,556.71		\$ 5,706.
What are the total labor costs	\$ 415.81		\$ 932.45		\$	1,094.23		\$ 2,442.4
What is the total cost for ripping?	\$ 1,387.35		\$ 3,111.17		\$	3,650.93		\$ 8,149.4
Revegetation								
How many acres are to be vegetated?	9.5	ac	21.30394858	ac		25	ac	55.80
What is the cost per acre?	\$ 298.60	\$/ac	\$ 298.60	\$/ac	\$	298.60	\$/ac	
What is the total cost of seed, fertilize and mulch?	\$ 2,836.70		\$ 6,361.36		\$	7,465.00		\$ 16,663.
Supervision		_		_			_	\$ -
Hours	2.18	hrs	4.44	hrs		5.37	hrs	
Equipment	\$ 15.58	\$/hr	\$ 15.58	\$/hr	\$	15.58	\$/hr	
Supervisor	\$ 53.39	\$/hr	\$ 53.39	\$/hr	\$	53.39	\$/hr	
Supervision Costs	\$ 150.31		\$ 306.43		\$	370.10		\$ 826.
Total Labor Costs	\$ 788.27		\$ 1,606.96		\$	1,940.89		\$ 4,336.
IOTAL COSTS	\$ 5,376.67		\$ 11,363.21		\$	13,572.71		\$ 30,312.



Roads - Page 3 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Ripping Productivity											
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83		production	
	MPH	FPM									
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre	0.90 hr/acre	e 1.11 ac/hr
D-10R (Roads)	2.00	176.00	9.58	4.00	13.58	18.22	min/acre	21.95	min/acre	0.37 hr/acre	e 2.73 ac/hr
Road Grading Productivity											
Road Grading		speed	Width of Pass	Time		0.90		production			
	MPH	FPM									
G16 Grader	4.50	396.00	11.90	9.24	min/acre	10.27	min/acre	0.17	hr/acre	5.84 ac/hr	

Ft. Knox Reclamation Plan	
Pits and Walls - Page 1	
Berm constructed with material within 100 feet of pit edge	
Slope to 2.5:1 or flatter & establish drainage	\$ 6,803
Load, haul, dump and spread 12 in. growth media	\$ 41,602
Berm not require growth media	
Rip on the contour	\$ 4,381
Revegetation (Seeding and fertilization)	\$ 10,750
Supervision	\$ 1,131
	\$ 64,667

Pits and Walls - Page 2											
Estimated Reclamation and Closure Cost		Pit Be	erm		50 ft Berm Dist	urbance	25 ft	Berm Disturba	ance to Pit Ec	lg€ Pit	and Walls
	Q	uantity	Units		Quantity	Units		Quantity	Units		Totals
Acres		6	ac		20	ac		10	ac		36.0
Flat		4	ac		10	ac		4	ac		18.0
Sloped		2	ac		10	ac		6	ac		18.0
Grading and Recontouring		_						-			
Fouinment - D10 Dozer											
What is the total volume of material to be pushed?		30 840	<u>CV</u>								30 840 5
What is the weighted everage push distance?		50,049	Cy 44							`	50,045.5
What represente as of motorial will be deper pucked?		1000	п								
what percentage of material will be dozer-pushed?		100%									
Calculated quantity of dozer-pushed material		30,849.49	су								
What is the productivity of the equipment?		1,128.17	cy/hr								
How many hours will the job take?		27.3	hrs								27.3
What is the equipment cost per hour?		200.00	\$/hr								
What is the labor cost per hour?		48.79	\$/hr								
What is the cost per unit (i.e. cubic vards, acres)?	\$	0.22	\$/cv								
What is the labor cost?	Ŝ	1.334.15	<i>4, 2</i>	\$	-					\$	1.334
What is the total cost for grading and recontouring?	¢	6 803 07		¢	_		¢	-		¢	6 803
	φ	0,803.07		φ	-		φ	-		φ	0,003
Load, haul, dump and spread growth media											
Equipment - 988, Euclid B-70 Haul Truck, Water Truck, G16 G	rader,	D10									
What is amount of topsoil to be loaded with loader?					16,130.00	су		8,065.00	су	2	24,195.0
What is wtd avg haul distance one way from TS Pile?					5,280.00	ft		5,280.00	ft		
What is amount of topsoil to be hauled by truck?					16,130.00	CV		8,065.00	CV	2	24,195.0
What is the productivity of the loading equipment?					547.80	cv/hr		547.80	cv/hr		,
How many hours will the job take?					20.45	bre		1/ 72	bre		11 2
What are the estimated hours for houl and support equipment?					29.45	1115		14.72	1115		44.2
what are the estimated hours for hauf and support equipment?					00.45			4470			
Estimated hours for Loader					29.45	hrs		14.72	hrs		
Estimated hours for Truck					58.89	hrs		29.45	hrs		
Estimated hours for Grader to support hauling effort					29.45	hrs		14.72	hrs		
Estimated hours for Water Truck to support hauling effort					29.45	hrs		14.72	hrs		
Estimated hours for Dozer to spread topsoil					15.43	hrs		7.71	hrs		23.1
Dozer Productivity					1 045 64	cv/br		1 045 64	cv/br		2011
What is the equipment part par hour?					1,040.04	Cy/III		1,040.04	Cy/III		
what is the equipment cost per hour?					400.00	• "		400.00	• "		
Loader					132.00	\$/nr		132.00	\$/nr		
Truck					150.00	\$/hr		150.00	\$/hr		
Grader					119.75	\$/hr		119.75	\$/hr		
Water Truck					60.92	\$/hr		60.92	\$/hr		
Dozer					114.00	\$/hr		114.00	\$/hr		
What is the labor cost per hour?						•,			•		
I obder					48 70	¢/hr		18 70	¢/hr		
Loadel					40.79	φ/11 Φ/Ι		40.79	φ/11		
Truck					48.79	\$/nr		48.79	¢/nr		
Grader					48.79	\$/nr		48.79	\$/nr		
Water Truck					48.79	\$/hr		48.79	\$/hr		
Dozer					48.79	\$/hr		48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?					1.72	\$/cy		1.72	\$/cy		
What are the total equipment costs	\$	-		\$	19.798.66		\$	9.899.33		\$	29.698
What are the total labor costs	Ŝ	-		Ŝ	7 935 75		ŝ	3 967 88		ŝ	11 904
What is the total east for growth madia placement?	¢			¢	27 724 44		¢	12,967,20		¢	41,601
	Ф	-		Ф	27,734.41		Ф	13,007.20		Ф	41,002
	1										
Equipment - D8 dozer											
How many acres are to be ripped?	1				20	ac		10	ac		30.0
What is the productivity of the equipment?					1.1	ac/hr		1.1	ac/hr		
How many hours will the job take?					17.9	hrs		9.0	hrs		26.9
What is the equipment cost per hour?					114	\$/hr		114	\$/hr		
What are the labor costs per hour?					18 70	\$/hr		48 70	\$/hr		
What are the approximation of the second sec				¢	146.04	¢/nn	¢	146.04	¢/cc		
What is the cost per unit (i.e. cubic yards, acres)?	¢			Ð	140.04	⊅/ac	Ð	140.04	a/ac	¢	0.000
what are the total equipment costs	\$	-		\$	2,045.37		\$	1,022.68		\$	3,068
vvnat are the total labor costs	\$	-		\$	875.38		\$	437.69		\$	1,313
What is the total cost for ripping?	\$	-		\$	2,920.75		\$	1,460.37		\$	4,381
Revegetation											
How many acres are to be vegetated?		6	ac		20	ac		10	ac		36.0
What is the cost per acre?	\$	298.60	\$/ac	\$	298.60	\$/ac	\$	298.60	\$/ac		
What is the total cost of seed fortilize and mulch?	¢	1 701 60	¥, 55	¢	5 072 00	4,00	¢	2 986 00	4100	¢	10 750
Comenciation	φ	1,791.00		φ	5,912.00		φ	2,900.00		φ	10,750
Supervision	1							_			
Hours	1.	4.56	hrs		7.90	hrs		3.95	hrs		16.4
Equipment	\$	15.58	\$/hr	\$	15.58	\$/hr	\$	15.58	\$/hr		
Supervisor	\$	53.39	\$/hr	\$	53.39	\$/hr	\$	53.39	\$/hr		
Supervision Costs	\$	314 34		\$	544 74		\$	272 37		\$	1,131
Total Labor Costs	¢	1 6/8 /0		¢	0 325 80		¢	1 677 04		¢	15 682
	φ	0,040.49		φ Φ	3,000.00		ψ	10 505 05		φ Φ	04.007
101AL 60313	\$	8,909.02		\$	31,171.90		\$	10,585.95		\$	04,667

Pits and Walls - Page 3 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Dozer Production	
Data	LCY/hr production to area (acre) of volume (yds)
3H:1V	down up
grade33%	1.6 grade- +33% 0.3
Density	Rock Topsoil NOTE: 1.75 spg - loose
	3500 2650 2.16 spg - bank
Unadjusted Dozer Productivity Calculations	CPH V33 p1-40: CPH V31 p1-43
	50 ft distance
	LCY/hr
Cat D10R	2850
Cat D8	1400

Growth Media - Spread Productivity								
Growth Media	12	depth (inches)	0.333	1613	CY/acre			
	14.4	depth (inches)	0.4	1936	CY/acre	before compac	tion to 12" depth	(20%)'
Spread Growth Media								
Topsoil	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Topsoil		Good	50min/hr		Topsoil
Slope -18°	1.1950	0.8	1.2	1.2	0.9	0.83	1.6	0.87
Slope 0°	0.7469	0.8	1.2	1.2	0.9	0.83	1	0.87
Growth Media - Adjusted Productivity	Topsoil							
Slope 0°	50 ft distance							
	LCY/hr							
Cat D10R	2129							
Cat D8	1046							

Growth Media Load and Haul Productivity

	Loading & Hauling - Truck/Loader		Capacity			Cycle Time				Production Rates		Correction
	Equipment	Rated Heap Capacity	Material Correction	Adjusted Capacity	Loader Cycle Time	Loader Cycles Per Load	Loaded Haul / Dump	Empty Haul	Total Load / Haul Time	Maximum Production Rate	Altitude	Operator
		(cy)	Soil	(cy)	(min)		(min)	(min)	(min)	(cy/hr)		Go
Euclid B-70		48.00	1.00	48.00			1.75	1.00		453.54	1.00	0.8
988 Loader		8.30	1.00	8.30	0.60	6				830.00	1.00	0.8
	Truck/Loader Team								6.35			

Ripping Productivity											
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83		production	
	MPH	FPM									
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre	0.90	hr/acre
Pit Berm Assumptions											
Berm Construction											
Equipment - D10R											
Berm center perimeter	17353 ft										
Base width	16 ft										
Berm height	6 ft										
Berm Volume	30849 C	Y									
Berm Acres	6										
Grade 10%		Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density			
		Avg	Rock		Good	50min/hr		Rock			
Production Factor	0.3959	0.8	0	.7 1.2	0.9	0.83	1.2	0.66			
50ft push	1128.2 L0	CY/Hr									
Production	27 hr										
Production Rate	0.2 ad	cres/hr									

		Factored Production Rate	Max Truck/Loader Ratio
Job Efficiency	Total Correction Factor	(Cy/Hr)	
50 min/hr			
0.83			2
0.83			
	0.66	547.80	
		_	
1.11	ac/hr		
	Job Efficiency 50 min/hr 0.83 0.83 1.11	Job Efficiency 50 min/hr 0.83 0.83 0.66 1.11 ac/hr	Job Efficiency Total Correction Factor (Cy/Hr) 50 min/hr 0.83 0.66 547.80 0.83 0.66 547.80

Ft. Knox Reclamation Plan												
Cost Estimate - Pit Powerline Re	moval											
	L. I. Pata and			Las Hardana				540	540		510	0
Power Lines	haul distance	poles	loads	handle time	speed	labor	l	D10 bandla bra	D10 boul bro	labor	D10	Oper
Total power line 12 000	5 000	48	1	ach pole/wire	1 1584(nis 1	48		0.95	\$ 2,341,92	\$ 978939	<u>cosi</u> \$ 2,388,12
	0,000						70		0.00	Ψ 2,041.02	ψ 0,100.00	$\Psi 2,000.12$
Total Labor Costs	\$ 4,730											
Total power line removal cost	\$ 14,519											ł
Laborar (* 49.70												
Coperator \$ 46.79												
D10 \$ 200.00												
					-							
CAT SPEED AT 3 MPH/15,840 FE	ET PER HOUF	र										
PIPELINE DISTANCE IS TO LAB												
12000 FEET TO BARNES CREEK	WASTE DUMF	P FOR LA	ND FIL	L.								
Pull 16 poles at a time with the wire	attached to ea	ach each s	set of pc	ວles.								

Gil Causeway	
Open Gill Causeway & Misc.	\$ 5,806
Grade to establish drainage, install ditch & ponds	\$ -
Revegetation (Seeding and fertilization)	\$ 5,922
Supervision	\$ 577
	\$ 12,306

Estimated Reclamation and Closure Cost	G	il Causeway		Ca	auseway
		Quantity	Units		Totals
Acres		18	ac		18.0
Flat		18	ac		18.0
Sloped		0	ac		0.0
Excavate Causeway					
Equipment - 325C Excavator					
What is the total volume of material to be excavated?		12,000	су	1	2,000.0
What percentage of material will be excavated?		100%			
Calculated quantity of excavated material		12,000.00	су		
What is the productivity of the equipment?		239.04	cy/hr		
How many hours will the job take?		50.20	hrs		50.2
What is the equipment cost per hour?	\$	66.88	\$/hr		
What is the labor cost per hour?	\$	48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	\$	0.48	\$/cy		
What is total labor costs?	\$	2,449.30		2,449	9.3
What is the total cost for grading and recontouring?	\$	5,806.48		\$	5,806
Revegetation					
How many acres are to be vegetated?		18	ac		18.0
What is the cost per acre?	\$	329.00	\$/ac		
What is the total cost of seed, fertilize and mulch?	\$	5,922.00		\$	5,922
Supervision					
Hours		8.37	hrs		
Equipment	\$	15.58	\$/hr		
Supervisor	\$	53.39	\$/hr		
Supervision Costs	\$	577.09		\$	577
	\$	3,026.39		\$	3,026
TOTAL COSTS	\$	12,305.57		\$	12,306

SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND RE		I ERIALS							
325C EXCAVATOR									
RATED PRODUCTION RATE	Material	Adjusted	Cycle	Maximum	CORRECTION	FACTORS			ADJUSTED
Rated Heap Capacity	Correction	Capacity	Time	Production Rate	Altitude	Operator Efficie	Job Efficiency	Correction	PRODUCTION RATE
(cy)	packed road	(cy)	(min)	(cy/hr)		Average	50 min/hr	Factor	(cy/hr)
2.20	0.90	1.98	0.33	360	1.00	0.80	0.83	0.66	239.04

Ft. Knox Reclamation Plan	
Tailings Impoundment Earthwork - Topsoil Perimeter - Page 1	
Construct access roads for topsoil haulage	\$ 150,000
Load, haul, dump and spread 12 in. growth media	\$ 598,766
Rip on the contour	\$ 30,123
Revegetation (Seeding and fertilization)	\$ 143,662
Supervision	\$ 7,747
Drainage Construction	\$ 177,792
	\$ 1,108,089

Estimated Reclamation and Closure Cost	North S	Sector	1	Northwest S	ectior		Sourhwest	Sector		South Sect	or		East Sector	(Dam)	Taili	ngs Area
	Quantity	Units	Quar	ntity	Units		Quantity	Units		Quantity	Units		Quantity	Units	-	otals
Acres	2												2			
Uplands	29.0	ac	31	.0	ac		39.0	ac		41.0	ac		26.0	ac	1	66.00
Wetlands	50.0		53	.4			67.2			70.6			44.8		2	86.00
Construct Access Roads																
What is the length of road to be constructed?	1000	lf	50	0	lf		500	lf		1000	lf		0	lf	3,	00.00
What is the cost per linear foot	\$ 50.00	lf	\$	50.00	lf	\$	50.00	lf	\$	50.00	lf	\$	50.00	lf		
What is the cost for the TS haul road	\$ 50,000.00		\$ 2	5,000.00		\$	25,000.00		\$	50,000.00		\$	-		150	,000.00
Load, haul, dump and spread growth media																
Equipment - 988, Euclid B-70 Haul Truck, Water Truck, G16 (Grader, D8															
What is amount of topsoil to be loaded with loader?	46,787	су		50,013	су		62,920	су		66,147	су		41,947	су	267	,813.33
What is wtd avg haul distance one way from TS Pile?	See TS Productior	ft	See TS Pr	oduction 7	ft	See	TS Productio	ft	See	TS Production T	ft	See	TS Productior	ft		
What is amount of topsoil to be hauled by truck?	46,786.67	су	5	50,013.33	су		62,920.00	су		66,146.67	су		41,946.67	су	267	,813.33
What is the productivity of the loading equipment?	547.80	cy/hr		547.80	cy/hr		547.80	cy/hr		547.80	cy/hr		547.80	cy/hr	2,	739.00
How many hours will the job take?	85.41	hrs		91.30	hrs		114.86	hrs		120.75	hrs		76.57	hrs	4	88.89
What are the estimated hours for haul and support equipment?																
Estimated hours for Loader	85.41	hrs		91.30	hrs		114.86	hrs		120.75	hrs		76.57	hrs	4	88.89
Estimated hours for Truck	170.82	hrs		182.60	hrs		229.72	hrs		483.00	hrs		229.72	hrs	1,	295.85
Estimated hours for Grader to support hauling effort	85.41	hrs		91.30	hrs		114.86	hrs		120.75	hrs		76.57	hrs	4	88.89
Estimated hours for Water Truck to support hauling effort	85.41	hrs		91.30	hrs		114.86	hrs		120.75	hrs		76.57	hrs	4	88.89
Estimated hours for Dozer to spread topsoil	125.28	hrs		133.92	hrs		168.49	hrs		177.13	hrs		112.32	hrs	7	17.15
Dozer Production	373.44	cy/hr		373.44	cy/hr		373.44	cy/hr		373.44	cy/hr		373.44	cy/hr		
What is the equipment cost per hour?					-									-		
Loader	\$ 132.00	\$/hr	\$	132.00	\$/hr	\$	132.00	\$/hr	\$	132.00	\$/hr		132.00	\$/hr		
Truck	\$ 150.00	\$/hr	\$	150.00	\$/hr	\$	150.00	\$/hr	\$	150.00	\$/hr		150.00	\$/hr		
Grader	\$ 119.75	\$/hr	\$	119.75	\$/hr	\$	119.75	\$/hr	\$	119.75	\$/hr		119.75	\$/hr		
Water Truck	\$ 60.92	\$/hr	\$	60.92	\$/hr	\$	60.92	\$/hr	\$	60.92	\$/hr		60.92	\$/hr		
Dozer	\$ 114.00	\$/hr	\$	114.00	\$/hr	\$	114.00	\$/hr	\$	114.00	\$/hr		114.00	\$/hr		
What is the labor cost per hour?																
Loader	\$ 48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr		48.79	\$/hr		
Truck	\$ 48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr		48.79	\$/hr		
Grader	\$ 48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr		48.79	\$/hr		
Water Truck	\$ 48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr		48.79	\$/hr		
Dozer	\$ 48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr	\$	48.79	\$/hr		48.79	\$/hr		
What is the cost per unit (i.e. cubic yards, acres)?	2.00	\$/cy		2.00	\$/cy		2.00	\$/cy		2.73	\$/cy		2.36	\$/cy		
What are the total equipment costs	\$ 66,609.53	-	\$ 7	1,203.29	-	\$	89,578.33	-	\$	130,396.99	-	\$	71,204.83	-	\$	428,993
What are the total labor costs	\$ 26,947.98		\$2	8,806.46		\$	36,240.39		\$	49,881.62		\$	27,896.25		\$	169,773
What is the total cost for growth media placement?	\$ 93,557.51		\$ 10	0,009.75		\$	125,818.72		\$	180,278.61		\$	99,101.08		\$	598,766

Tailings Impoundment Earthwork - Topsoil Perimeter - Page 2

Rip on the contour												
Equipment - D8 dozer												
How many acres are to be ripped?		29 ac		31 ac		39 ac		41 ac		26 ac		166.00
What is the productivity of the equipment?		1.1 hr/ac		1.1 hr/ac		1.1 hr/ac		1.1 hr/ac		1.1 hr/ac		5.57
How many hours will the job take?		32.3 hrs		34.6 hrs		43.5 hrs		45.7 hrs		29.0 hrs		185.04
What is the equipment cost per hour?		114 \$/hr		114 \$/hr		114 \$/hr		114 \$/hr		114 \$/hr		
What are the labor costs per hour?		48.79 \$/hr		48.79 \$/hr		48.79 \$/hr		48.79 \$/hr		48.79 \$/hr		
What is the cost per unit (i.e. cubic vards, acres)?	\$	181.46 \$/ac	\$	181.46 \$/ac	\$	181.46 \$/ac	\$	181.46 \$/ac	\$	181.46 \$/ac		
What are the total equipment costs	\$	3.685.25	\$	3.939.40	\$	4.956.02	\$	5.210.18	\$	3.304.02	\$	21.095
What are the total labor costs	\$	1.577.22	\$	1.686.00	\$	2.121.09	\$	2.229.87	\$	1.414.06	\$	9.028
What is the total cost for ripping?	\$	5,262.47	\$	5,625.40	\$	7,077.11	\$	7,440.04	\$	4,718.08	\$	30,123
Revegetation		- , -	Ť		•		Ţ	,	Ť	,	,	, -
How many Wetland acres are to be vegetated?		50.0		53.4		67.2		70.6		44,79518072		286.00
What is the cost per acre (Wetlands Mix)?	\$	329.00	\$	329.00	\$	329.00	\$	329.00	\$	329.00		200100
Subtotal	ŝ	16 438 11	ŝ	17 571 77	ŝ	22 106 42	ŝ	23 240 08	ŝ	14 737 61	\$	94 094
How many Upland acres are to be vegetated?	Ψ	29 ac	Ψ	31 ac	Ψ	39 ac	Ψ	41 ac	Ψ	26 ac	Ψ	166.00
What is the cost per acre (I Inland Mix)?	\$	298.60 \$/ac	\$	298.60 \$/ac	\$	298.60 \$/ac	\$	298.60 \$/ac	\$	298.60 \$/ac		100.00
Subtotal	Ψ ¢	8 659 40	φ ¢	9 256 60	¢ ¢	11 645 40	¢ ¢	12 242 60	¢ ¢	7 763 60	\$	49 568
What is the total cost of seed fertilize and mulch?	\$	25 097 51	\$	26 828 37	\$	33 751 82	\$	35 482 68	\$	22 501 21	\$	143 662
	Ψ	20,001.01	Ψ	20,020.01	Ψ	00,701.02	Ψ	00,402.00	Ψ	22,001.21	Ψ	140,002
Hours		19.62 hrs		20.98 hrs		26.39 hrs		27 74 hrs		17.59 hrs		112 32
Equipment	\$	15.58 \$/br	\$	15.58 \$/br	\$	15.58 \$/br	\$	15.58 \$/br	\$	15.58 \$/br		112.02
Supervisor	\$	53.39 \$/hr	\$	53.39 \$/hr	ŝ	53.39 \$/hr	ŝ	53.39 \$/hr	ŝ	53.39 \$/hr		
Supervision Costs	\$	1.353	\$	1.447	\$	1.820	\$	1.913	\$	1.213	\$	7,747
SUBTOTAL - GRADE, COVER & REVEG COSTS	\$	175,271	\$	158,910	\$	193,468	\$	275,115	\$	127,534	\$	930,298
Drainage (See Details in Supporting Information)		· · · · ·		•		·				·		
Excavation												
Quantity		622 cv		667 CV		667 CV		800 cv		0 cv		2.755.56
Unit Cost	\$	1.75 \$/cv	\$	1.75 \$/cv	\$	1.75 \$/cv	\$	1.75 \$/cv	\$	1.75 \$/cv		
Subtotal	\$	1 088 89	\$	1 166 67	ŝ	1 166 67	ŝ	1 400 00	ŝ	-		4 822 22
Geofabric	Ŷ	1,000.00	Ŷ	1,100.01	Ŷ	1,100.07	Ŷ	1,100.00	Ŷ			1,022.22
Quantity		17 709 saft		18 974 saft		18 974 saft		22 768 saft		0 saft	-	78 424 49
Unit Cost	\$	0.15 \$/saft	\$	0.15 \$/saft	\$	0.15 \$/saft	\$	0 15 \$/saft	\$	0 15 \$/saft	,	0,121.10
Subtotal	¢	2 656 31	¢	2 8/6 05	¢	2 846 05	¢	3 /15 26	¢		1	1 763 67
Piprop	Ψ	2,030.31	Ψ	2,040.05	Ψ	2,040.03	φ	5,415.20	Ψ	-		1,705.07
		004 01		1.054.01		1.054.004		1 205 214				4 250 02
Quantity	•	984 Cy	^	1,054 Cy	•	1,054 Cy	•	1,265 Cy	•			4,356.92
Unit Cost	\$	35.00 \$/cy	\$	35.00 \$/cy	\$	35.00 \$/cy	\$	35.00 \$/cy	\$	35.00 \$/cy		50 400 00
Subtotal	\$	34,433.69	\$	36,893.24	\$	36,893.24	\$	44,271.89	\$	-	1	52,492.06
Place riprap												
Quantity		984 cy		1,054 cy		1,054 cy		1,265 cy		0 cy	-	4,356.92
Unit Cost	\$	2.00 \$/cy	\$	2.00 \$/cy	\$	2.00 \$/cy	\$	2.00 \$/cy	\$	2.00 \$/cy	1	
Cubtotol					-		-				• •	
Subtotal	\$	1,968	\$	2,108	\$	2,108	\$	2,530	\$	-	\$	8,714
Drainage Construction Costs	\$ \$	1,968 40,147	\$ \$	2,108 43,014	\$ \$	2,108 43,014	\$ \$	2,530 51,617	\$ \$	-	\$ \$	8,714 177,792
Drainage Construction Costs Total Labor Costs	\$ \$ \$	1,968 40,147 29,879	\$ \$ \$	2,108 43,014 31,939	\$ \$	2,108 43,014 40,182	\$ \$ \$	2,530 51,617 54,025	\$ \$ \$	- - 30,524	\$ \$	8,714 177,792 186,548

 Tailings Impoundment Earthwork - Topsoil Perimeter - Page 3

 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Dozer Production								
Data	LCY/hr production	to area (acre) of	volume (vds)					
3H:1V	down	up	() ==)					
grade33%	1.6	arade- +33%	0.	3				
Density	Rock	Topsoil	NOTE:	1.75 spg - loose	ġ			
	3500	2650)	2.16 spg - bank				
Unadiusted Dozer Productivity Calculations		CPH V33 p1-40	CPH V31 p1-43	2.10 009 00	•			
	200 ft distance	0111 V00 p1 10.						
	LCY/hr							
Cat D8	500							
Growth Media - Spread Productivity								
Growth Media	12	depth (inches)	0.33	3 1613	3 CY/acre			
	14.4	depth (inches)	0.	4 1936	6 CY/acre	before compact	on to 12" depth (20	1%)'
Spread Growth Media								
	Performance	Operator	Material	Slot	Visibility	lob Eff	Grade Eff	Density
TopSoli	Factor	Ava	Topsoil	0101	Good	50min/hr	Oldue LII.	Topsoil
Slopo -18º	1 1050	Avg	1 2	1 2	0.0	0.83	16	0.87
Slope -10	0.7460	0.0	1.2	1.2	0.9	0.03	1.0	0.07
	0.7409	0.0	1.2	1.2	0.9	0.63		0.07
Growth Media - Adiusted Productivity	Topsoil	1						
Slope 0°	200 ft distance							
	LC Y/nr							

Ripping Productivity												
Dump & Pad Ripping		speed	width pass	between pass	Total swath	Time		0.83		productio	n	
	MPH	FPM										
Cat D8R	1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre	0.90	hr/acre	1.11 ac/hr

Lailings Impoundment Farthwork - Lonsoil Perimeter - Page 4	
Taimings impoundment cartinwork - ropson r crinicter - rage +	

Taimings impoundment Earthwork - ropsoint enmeter - rage 4						
Drainage Construction						
Tailings Soil Cover Channels	Unit Cost	Quantity		Unit	Total	
North Sector						
Excavation	\$ 1.75	622	су	\$	1,089	
Geofabric	\$ 0.15	17,709	sqft	\$	2,656	
Riprap	\$ 35.00	984	су	\$	34,434	
Place riprap	\$ 2.00	984	cy	\$	1,968	
Northwest Sectior						
Excavation	\$ 1.75	667	су	\$	1,167	
Geofabric	\$ 0.15	18,974	sqft	\$	2,846	
Riprap	\$ 35.00	1,054	cy	\$	36,893	
Place riprap	\$ 2.00	1,054	су	\$	2,108	
Sourhwest Sector			-			
Excavation	\$ 1.75	667	су	\$	1,167	
Geofabric	\$ 0.15	18,974	sqft	\$	2,846	
Riprap	\$ 35.00	1,054	cy	\$	36,893	
Place riprap	\$ 2.00	1,054	cy	\$	2,108	
South Sector			-			
Excavation	\$ 1.75	800	су	\$	1,400	
Geofabric	\$ 0.15	22,768	sqft	\$	3,415	
Riprap	\$ 35.00	1,265	cy	\$	44,272	
Place riprap	\$ 2.00	1,265	cy	\$	2,530	
East Sector (Dam)			•	\$	-	
Excavation	\$ 1.75	0	су	\$	-	
Geofabric	\$ 0.15	0	sqft	\$	-	
Riprap	\$ 35.00	0	cy	\$	-	
Place riprap	\$ 2.00	0	cy	\$	-	
TOTALS			,	Ť		
Excavation		2,756	су	\$	4,822	
Geofabric		78,424	sqft	\$	11,764	
Riprap		4,357	су	\$	152,492	
Place riprap		4,357	CV	\$	8,714	

Channel Calculations

Channel type	Bottom width	Depth	Top width	Excav Vol	Fabric Area	Riprap size		Riprap
				(w/20% incr)			Riprap thickness	volume
	Ft	Ft	Ft	CY/Ft	SF/Ft	In	Ft	CY/Ft
Trapezoidal (3:1 side slopes)	6	3	24	. 2.0	25.0	9	1.5	1.4
V-notch (3:1 side slopes)	0	3	18	1.0	19.0	9	1.5	1.1
V-notch (3:1 side slopes)	0	2	12	0.4	12.6	9	1.5	0.7
V-notch (3:1 side slopes)	0	1	6	0.1	6.3	9	1.5	0.4

Tailings Soil Cover Channels

North sector channel length - 2ft v-notch	Ft	1,400
Northwest sector channel length - 2ft v-notch	Ft	1,500
Southwest sector channel length - 2ft v-notch	Ft	1,500
South sector channel length - 2ft v-notch	Ft	1,800
East sector channel length - 2ft v-notch	Ft	0

Tailing Dam Spillway	
Earthworks	\$ 1,310,431
Add'l items	\$ 155,584
	\$ 1,466,015

Quantities and cost basis		UNIT	QTY		
DESCRIPTION					
Area anilway abannala		Aaroo	1	2	
Area spillway channels		Acres	4.	3	
Cost estimate					
DESCRIPTION	RATE	QTY	UNIT	E	ST. COST
EARTHWORKS					
Spillway					
Excavation - rock	\$ 10.00	14,800	су	\$	148,000
Excavation - soil	\$ 4.00	32,100	cy	\$	128,400
Geofabric	\$ 0.20	142,300	sqft	\$	28,460
Riprap - 12 in	\$ 35.00	4,160	cy	\$	145,600
Riprap - 6 in	\$ 35.00	560	cy	\$	19,611
Place riprap	\$ 3.00	4,720	cy	\$	14,161
Grouted riprap - 12 in	\$ 135.00	4,860	cy	\$	656,100
Place grouted riprap	\$ 35.00	4,860	су	\$	170,100
Subtotal				\$	1,310,431
Other Items					
Seepage collection system	\$100,000	1	ls	\$	100,000
Clear and grub	\$ 1.000.00	4.3	acres	\$	4.300
Revegetate disturbed area	\$ 298.60	4.3	acres	\$	1,284
Subtotal				\$	105,584
TECHNICAL SUPPORT					
Field exploration along alignment	\$ 35.000	1	LS	\$	35.000
Survey	\$ 15,000	1	LS	\$	15,000
				¢	50.000
Subiolai				Ф	50,000
TOTAL				\$	1,466,015

SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY, REVEGETATION MATERIALS AND OTHER SUPPORT ITEMS

		Channel Type									
	Units	Spillway	Grtd 12 in riprap	12 in riprap	6 in riprap	Stilling basin					
Slope		1%	>8%	2-8%	<2%	0%					
Excavation volume	CY/Ft	5.2	2 5.6	8.0	8.0	20.0					
Fabric area	SF/Ft		30.0	38.0	38.0	60.0					
Riprap volume	CY/Ft			2.8	1.3	3.8					
Grouted riprap volume	CY/Ft		1.9			1.5					

Channel Section		Туре	Length	Excav rock	Excav soil	12 in riprap	6 in riprap	Fabric SF	Grtd 12 in riprap
0	740	Spillway	740	14.800	01	01	01	01	01
740	1550	Grtd 12 in ripra	810	,	4.536			24.300	1.539
1550	1612	12 in riprap	62		496	174		2,356	,
1612	1703	6 in riprap	91		728		118	3,458	
1703	1950	Grtd 12 in ripra	247		1.383			7,410	469
1950	2050	Stilling basin	100		2.000	375		6.000	150
2050	2138	12 in riprap	88		704	246		3.344	
2138	2478	6 in riprap	340		2,720		442	12,920	
2478	2550	Grtd 12 in ripra	72		403			2.160	137
2550	2650	Stilling basin	100		2.000	375		6.000	150
2650	2702	12 in riprap	52		416	146		1.976	
2702	3150	Grtd 12 in ripra	448		2,509			13,440	851
3150	3200	12 in riprap	50		400	140		1.900	
3200	3300	Stilling basin	100		2.000	375		6.000	150
3300	3615	12 in riprap	315		2,520	882		11.970	
3615	3800	Grtd 12 in ripra	185		1.036			5.550	352
3800	3900	Stilling basin	100		2.000	375		6.000	150
3900	4300	Grtd 12 in ripra	400		2,240			12,000	760
4300	4550	12 in riprap	250		2.000	700		9.500	
4550	4650	Stilling basin	100		2,000	375		6,000	150
		Totals	4.650	14.800	32,100	4.160	560	142.300	4.860

Tailings Impoundment - Water Management	ł	
Dismantle equipment	\$	142,928
Construct drainfield and wetland channel	\$	70,111
Pumping	\$	1,529,741
	\$	1,742,779

Dismantle and Construct

		Est. Labor	Total Cost
Remove Pipelines	\$	23,012.36	\$ 55,667.15
Remove Tailing/Freshwater Powerline	\$	27,937.78	\$ 87,260.36
Construct drainfield for seepage	\$	16,931.64	\$ 51,308
Const. Wetlands/channel north	\$	6,204.99	\$ 18,803
Subtota	\$	74,086.77	\$ 213,039

Pumping Costs

	Operat	ing Time	Days/yr	Cost/day	Cost
Seepage Pump	9/30/2012	12/31/2012	92	683.18	\$ 62,853
	12/31/2012	12/31/2013	365	683.18	\$ 249,361
	12/31/2013	12/31/2014	365	684.18	\$ 249,726
	12/31/2014	7/1/2015	182	683.18	\$ 124,339
Pump to Pit	9/30/2012	12/31/2012	92	840.94	\$ 77,366
	12/31/2012	12/31/2013	365	840.94	\$ 306,943
	12/31/2013	12/31/2014	365	840.94	\$ 306,943
	12/31/2014	6/30/2015	181	840.94	\$ 152,210
Subtotal	2/28/2009	7/1/2015	2,314		\$ 1,529,741
Based on calculations by Charlie Wells (PUMPI	NG COST.xls)				
Total Cost					\$ 1,742,779

							—							
Ft. Knox Reclama	tion Pla	an - • •		Dermony										
Cost Estimate - Tailing	g Pipeiin	ie & r	'owerline	Remova	Al									
Water Lines	Feet	haul	distance/	speed	loads	handle line	#	· pieces	labor	D10	D10	labor	D10	Oper
				ft/hr		hrs			hrs	handle hrs	haul hrs	cost	cost	cost
Fresh Water														
18"	18,280		21,140	15,840	4.57	(ງ.5	91.40	45.70	0.20	6.10	\$ 2,229.70	\$ 4,875.82	\$ 1,189.46
12"	32,730		28,365	15,840	8.18	ſ	J.5	163.65	81.83	0.20	14.65	\$ 3,992.24	\$ 9,476.51	\$ 2,311.80
Reclaim	14,450		19,125	15,840	7.23	1,	.05	72.25	75.86	0.40	8.72	\$ 3,701.33	\$ 7,524.67	\$ 1,835.64
Tails line	20,000		22,000	15,840	10.00	1.	.05	100.00	105.00	0.40	13.89	\$ 5,122.95	\$ 10,777.78	\$ 2,629.24
Total	85,460		90,630									\$15,046.23	\$ 32,654.78	\$ 7,966.13
Total Labor Costs			23,012											
Total water and tails I	ines	\$	55,667											
Power Lines		haul	distance	poles	loads	handle time	γ S	need	labor	D10	D10	labor	D10	Oper
		1.0.0.	ule la le c	PC.00	100.00	each pole/w	ire ft	/hr	hrs	handle hrs	haul hrs	cost	cost	cost
Total power line	30,417		27,209	276	12		1	15840	276	276	20.61	\$13,466.04	\$ 59,322.58	\$14,471.74
Total Labor Costs		\$	27,938			TOTAL LAF	30R (COST FC				D WATER LI	N \$ 50,950.14	
Total power line cost		\$	87,260			TOTAL COS	ቆፐ Fር	or Powi	ER LINE T	AILS LINE A		R LINES=	\$142,927.50	
Laborer \$ 48.79														
Operator \$ 48.79														
D10 \$200.00														
														l
														l
Pull 2000 feet of 24" HI	OPE EAC	TIN	JE IN 200	J' LENGT'	HS.(10 I	PIECES)	P	ull						
Pull 4000 feet of 18" pip	pe each t	ime ir	1 200' lenç	jths.										
Pull 4000 feet of 12" pip	pe each t	ime in	1 200' lenç	jths.										Ĩ
CAT SPEED AT 3 MPH	1/15,840	FEET	PER HO	UR										
PIPELINE DISTANCE	IS TO LA	'B												
12000 FEEL TO BARN	IES CREI	EK W	ASTE DU	MP FOR	LAND	ILL.								
Pull 23 poles at a time	with the v	vire a	itached to	each eac	ch set oi	poies.								

Crada to 2:1 or flatter 8 establish drainage	456,730
Grade to 3.1 of hatter & establish drainage 5	
Load, haul, dump and spread 12 in. growth media \$	485,865
Rip on the contour \$	45,272
Revegetation (Seeding and fertilization) \$	92,566
Supervisor \$	31,033
Drainage Construction \$	401,465
\$ 1.	,512,931

Heap Phase III Footprint (costs included in rip, reveg and supervisor al

193.4 acres

Heap Leach - Page 2							
Estimated Reclamation and Closure Cost	V	Valter Heap P	hase I & II	Heap Phas	e III Footprint		Heap Leach
	Q	uantity	Units	Quantity	Units		Totals
Acres	1	116.6	ac	193.4	ac		310
l op slope Side slope		14.9	ac		ac		15
Side slope		101.7	ac		ac	<u> </u>	102
Fauinment		r					
Equipment What is the total volume of material to be recontoured?	D9 D02e	033 587 05	CV				033 587
Cut/fill volume of top slopes		80,100,00	Cy				80 100
Cut/fill volume of side slopes		844 388 05	Cy CV				844 388
What percentage of material will be dozer-pushed?		100%	0y				1
Calculated quantity of dozer-pushed material		933.587.05	CV				933.587
Top slope		89,199.00	cv				89.199
Side slope		844.388.05	cv				844.388
What is the weighted average push distance?		150.00	ft				- ,
What is the productivity of the equipment?							
Top slope		296.89	cy/hr				
Side slope		475.02	cy/hr				
How many hours will the job take?		2,078.0	hrs				2,078
What is the equipment cost per hour?	\$	171.00	\$/hr				
What is the labor cost per hour?	\$	48.79	\$/hr				
What is the overall cost per unit (i.e. cubic yards, acres)?	\$	0.49	\$/cy				
Cost per cubic yard top slope	\$	0.74	\$/cy				
Cost per cubic yard side slope	\$	0.46	\$/cy				
Cost for Top Slope	\$	66,035.24				\$	66,035
Cost for SIde Slope	\$	390,695.00				\$	390,695
What are the total labor costs	\$	101,387.09				\$	101,387
What is the total cost for grading and recontouring?	\$	456,730.23		\$ -		\$	456,730
Load, haul, dump and spread growth media							
Equipment - 988, Euclid B-70 Haul Truck, Water Truck, G16 G	Grader, D8	100 115					100 115
What is amount of topsoil to be loaded with loader?		188,115	су				188,115
Volume to Top Slope		23,984.62	су				23,985
What is with aver haul distance one way from TS Pile?	Soo TS I	Production To	Cy ft				164,130
What is amount of topsoil to be bould by truck?	366 13 1	199 11/ 67	IL CV				199 115
What is the productivity of the loading equipment?		547.80	cy/hr				548
How many hours will the job take?		343 40	brs				343
What are the estimated hours for haul and support equipment?		010.10	nio -				0
Estimated hours for Loader		343.40	hrs				343
Estimated hours for Truck		1.373.60	hrs				1.374
Estimated hours for Grader to support hauling effort		343.40	hrs				343
Estimated hours for Water Truck to support hauling effort		343.40	hrs				343
Estimated hours for Dozer to spread topsoil		338.92	hrs				339
Top Slope dozer productivity		373.44	cy/hr				
Side Slope dozer productivity		597.51	cy/hr				
What is the equipment cost per hour?							
Loader	\$	132.00	\$/hr				
Truck	\$	150.00	\$/hr				
Grader	\$	119.75	\$/hr				
Water Truck	\$	60.92	\$/hr				
Dozer	\$	114.00	\$/hr				
what is the labor cost per hour?	¢	40 70	¢ /				
Loader	ф С	48.79	¢/hr				
Gradar	\$	40.79	ወ/111 © /br				
Water Truck	ŝ	40.79 18 70	φ/11 \$/hr				
	ŝ	<u>40.79</u> <u>18</u> 70	\$/hr				
What is the overall cost per unit (i.e. cubic vards, acres)?	ŝ	2 58	\$/cv				
Cost per cubic vard to doze top slope	š	0.44	\$/cv				
Cost per cubic vard to doze side slope	\$	0.27	\$/cv				
What are the total equipment costs	\$	352,047.51	÷. • j			\$	352.048
What are the total labor costs	\$	133,817.19				\$	133,817
What is the total cost for growth media placement?	\$	485,864.70		\$ -		\$	485,865

116.6	ac		193.4	ac		310
1.1	ac/hr		1.1	ac/hr		
104.6	hrs		173.5	hrs		278
\$ 114.00	\$/hr	\$	114.00	\$/hr		
\$ 48.79	\$/hr	\$	48.79	\$/hr		
\$ 146.04	\$/ac	\$	146.04	\$/ac		
\$ 11,924.48		\$	19,778.69		\$	31,703
\$ 5,103.47		\$	8,464.93		\$	13,568
\$ 17,027.95		\$	28,243.62		\$	45,272
116.6	ac		193.4	ac		310
\$ 298.60	\$/ac	\$	298.60	\$/ac		
\$ 34,816.76		\$	57,749.24		\$	92,566
421.01	hrs		28.92	hrs		450
\$ 15.58	\$/hr	\$	15.58	\$/hr		
\$ 53.39	\$/hr	\$	53.39	\$/hr		
\$ 29,038.41		\$	1,994.47		\$	31,033
\$ 1,023,478.05		\$	87,987.32		\$	1,111,465
6,222	су					6,222
\$ 1.75	\$/cy					
\$ 10,888.89					\$	10,889
177,088	sqft					177,088
\$ 0.15	\$/sqft					
\$ 26,563.13	•				\$	26,563
9,838	CV					9,838
\$ 35.00	\$/cv					
\$ 344,336.90					\$	344,337
,						,
9,838	су					9,838
\$ 2.00	\$/cy					
\$ 19,676					\$	19,676
\$ 401,465		\$	-		\$	401,465
\$ 1,263,786		\$	96,452		\$	1,360,238
\$ 1,424,943		\$	87,987		\$	1,512,931
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	116.6 1.1 104.6 \$ 114.00 \$ 48.79 \$ 146.04 \$ 11,924.48 \$ 5,103.47 \$ 17,027.95 116.6 \$ 298.60 \$ 34,816.76 421.01 \$ 15.58 \$ 29,038.41 \$ 1,023,478.05 \$ 1,023,478.05 \$ 10,888.89 177,088 \$ 0.15 \$ 26,563.13 9,838 \$ 344,336.90 9,838 \$ 2.00 \$ 19,676 \$ 401,465 \$ 1,263,786	$\begin{array}{c cccccc} & & 116.6 & \mathrm{ac} & & & & & & & & & & & & & & & & & & &$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Heap Leach - Page 4 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Dozer Production						
Data	LCY/hr productio	on to area (acre) of vol	ume (yds)			
3H:1V	down up					
grade33%		1.6 grade- +33%		0.3		
Density	Rock	Topsoil	NOTE:	1.75 spg - loose		
		3500 26	50	2.16 spg - bank		
Unadjusted Dozer Productivity Calculations		CPH V33 p1-40	CPH V31 p1-43			
	LCY/hr					
Cat D9R	900	150 ft distance				
Cat D8	500	200 ft. distance				

Waste Rock Dozer Grading Productivity

Dozer Production Factors	CPH V 33	p.1-42						
Regrade								
Rock Dump	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Rock		Good	50min/hr		Rock
Slope -18°	0.5278	0.8	0.7	1.2	0.9	0.83	1.6	0.66
Slope 0°	0.3299	0.8	0.7	1.2	0.9	0.83	1	0.66
Book Dump Adjusted Breductivity	Degrada							

Rock Dump - Adjusted Productivity	Regrade
Slope -18°	150 ft distance
	LCY/hr
Cat D9R	475.0
Rock Dump - Adjusted Productivity	Regrade
Slope 0°	150 ft distance
	LCY/hr
Cat D9R	296.9

Growth Media - Spread Productivity								
Growth Media	12	depth (inches)	0.333	1613	B CY/acre			
	14.4	14.4 depth (inches)			CY/acre	before compacti	1%)'	
Spread Growth Media								
Topsoil	Performance	Operator	Material	Slot	Visibility	Job Eff.	Grade Eff.	Density
	Factor	Avg	Topsoil		Good	50min/hr		Topsoil
Slope -18°	1.1950	0.8	1.2	1.2	0.9	0.83	1.6	0.87
Slope 0°	0.7469	0.8	1.2	1.2	0.9	0.83	1	0.87
Growth Media - Adjusted Productivity	Topsoil	1						
Slope -18°	150 ft distance							
	LCY/hr							
Cat D8	597.5							

Growth Media - Adjusted Productivity	Topsoil
Slope 0°	150 ft distance
	LCY/hr
Cat D8	373

Ripping Productivity										
Dump & Pad Ripping			speed	width pass	between pass	Total swath	Time		0.83	
	MPH		FPM							
Cat D8R		1.00	88.00	8.08	3.00	11.08	44.68	min/acre	53.83	min/acre

production

0.90

hr/acre

1.11 ac/hr

Heap Leach - Page 5 SUPPORTING INFORMATION - EQUIPMENT PRODUCTIVITY AND REVEGETATION MATERIALS

Walter Heap Phase I & II	Unit Cost	Quantity	Unit	Total
East Perimeter Channel				
Excavation	1.75	3,111	су	\$ 5,444
Geofabric	0.15	88,544	sqft	\$ 13,282
Riprap	35.00	4,919	су	\$ 172,168
Place riprap	2.00	4,919	су	\$ 9,838
West Perimeter Channel				
Excavation	1.75	3,111	су	\$ 5,444
Geofabric	0.15	88,544	sqft	\$ 13,282
Riprap	35.00	4,919	су	\$ 172,168
Place riprap	2.00	4,919	су	\$ 9,838
TOTALS				
Excavation		6,222	су	\$ 10,888.89
Geofabric		177,088	sqft	\$ 26,563.13
Riprap		9,838	су	\$ 344,336.90
Place riprap		9,838	су	\$ 19,676.39

Channel Calculations

Bottom width	Depth	Top width	Excav Vol	Fabric Area	Riprap size		Riprap
			(w/20% incr)			Riprap thickness	volume
Ft	Ft	Ft	CY/Ft	SF/Ft	In	Ft	CY/Ft
6	3	2	4 2.0	25.0	9	1.5	1.4
0	3	1	8 1.0	19.0	9	1.5	1.1
0	2	1	2 0.4	12.6	9	1.5	0.7
0	1		6 0.1	6.3	9	1.5	0.4
	Bottom width Ft 6 0 0 0 0	Bottom width Depth Ft Ft 6 3 0 3 0 2 0 1	Bottom width Depth Top width Ft Ft Ft 6 3 2 0 3 1 0 2 1 0 1 1	Bottom width Depth Top width (w/20% incr) CY/Ft Ft Ft Excav Vol (w/20% incr) CY/Ft 6 3 24 2.0 0 3 18 1.0 0 2 12 0.4 0 1 6 0.1	Bottom width Depth Top width Excav Vol (w/20% incr) CY/Ft Fabric Area Ft Ft CY/Ft SF/Ft 6 3 24 2.0 25.0 0 3 18 1.0 19.0 0 2 12 0.4 12.6 0 1 6 0.1 6.3	Bottom width Depth Top width Excav Vol (w/20% incr) CY/Ft Fabric Area Riprap size Ft Ft Ft CY/Ft SF/Ft In 6 3 24 2.0 25.0 9 0 3 18 1.0 19.0 9 0 2 12 0.4 12.6 9 0 1 6 0.1 6.3 9	Bottom width Depth Top width Excav Vol (w/20% incr) CY/Ft Fabric Area Riprap size Riprap thickness Ft Ft Ft CY/Ft SF/Ft In Riprap thickness 6 3 24 2.0 25.0 9 1.5 0 3 18 1.0 19.0 9 1.5 0 2 12 0.4 12.6 9 1.5 0 1 6 0.1 6.3 9 1.5

Walter Heap Phase I & II

East perimeter channel length - 2 ft deep v-notch	Ft	7,000
West perimeter channel length - 2 ft deep v-notch	Ft	7,000

Heap Leach Rinse

Rinse at 8,000 gpm for 6 months following termination of production.	Labor	\$ 654,319
Pump draindown water to pit	Pumping	\$ 550,824
Draindown and pump to pit with 2 pumps 20 days	Contractor	\$ 75,000
Draindown and pump to pit with 1 pump 160 days		\$ 1,280,143

Labor												
			N	lo of		F	Hours		Total		Cost/	Total
			Pers	sonnel	Davs		/Dav		Hours		Hour	Cost
Pad Operators - 8			1 010	8	180)	8		11520	\$	48.79	\$ 562.060
Supervisor - 1				1	216	5	8		1728	\$	53.39	\$ 92.257
Total Labor										•		\$ 654,318
Pumping Cost												
			F	Power N		F	Pump		Cost/		Total	Total
	KWH	GPM	\$	/KWH	Pumps	Ма	int. \$/Hr		Hour		Hours	Cost
Pump to Rinse	373	2,000	\$	0.10	2	\$	0.57	\$	75.74		4320	\$ 327,196
Pump Makeup water	298	2,500	\$	0.10	1	\$	\$ 0.57 \$		30.41		4320	\$ 131,37 <i>°</i>
Draindown to Pit	187	3,500	\$	0.10	2	\$	\$ 0.57 \$		38.44		480	\$ 18,45 <i>′</i>
Draindown to Pit	187	3,500	\$	0.10	1	\$	0.57	\$	19.22		3840	\$ 73,804
Total Pumping												\$ 550,824
Contractor												
Open Heap Leach Drai	n Pipes											Total
· ·	•											Cost
Drilling to Puncture Liner	r	3 Wells		250	feet	\$	100.00	/ft				\$ 75,000
Total Labor												\$ 75,000
Total Cost												\$ 1.280.142



Ft. Knox Reclamation Plan Cost Estimate - Well Closure - Page 1

. . . .

		Labo	or Component
Dewatering Wells	\$ 30,092.3	\$7 \$	15,612.80
Interceptor Wells	\$ 3,560.1	3 \$	1,951.60
Monitoring Wells	\$ 2,129.9	6 \$	1,219.75
Grand Total	\$ 35,782.4	6 \$	18,784.15

Estimated Closure Costs for	r Well Abandonmei	nt	- ·	_			_													
Well #	Diameter	Depth	Stemming Stemming Ben		Bentonite	Be	entonite		Labor	Su	pervisor	Cost	/Well							
			Cu. Yd.		Cost	50# /Bag		Cost												
Dewatering Wells & Piezor	meters																			
DW97-24	6	439	3	\$	38.31	11	\$	150.90	\$	243.95	\$	44.31	\$	477.47						
DW97-28	6	1312	10	\$	114.49	21	\$	291.18	\$	243.95	\$	44.31	\$	693.94						
DW98-36	8	714	9	\$	108.57	24	\$	339.92	\$	243.95	\$	44.31	\$	736.75						
DW98-40	8	693	9	\$	105.37	24	\$	334.04	\$	243.95	\$	44.31	\$	727.68						
DW98-47	8	641	8	ŝ	97 47	23	ŝ	319 48	ŝ	243 95	ŝ	44 31	ŝ	705 21						
DW98-50	8	390	5	ŝ	59 30	18	ŝ	249.20	ŝ	243.95	¢ ¢	44 31	ŝ	596.76						
DW08 51	0	500	0	¢	00.00	22	¢	207 44	¢	242.05	¢	44.01	¢	696.63						
DW98-51	0	596	0	φ Φ	90.93	22	φ ¢	307.44	ф Ф	243.95	φ Φ	44.31	φ ¢	745.00						
DW99-62	8	735	9	\$	111.76	25	\$	345.80	\$	243.95	\$	44.31	\$	745.82						
DW99-73	8	1038	13	\$	157.83	31	\$	430.64	\$	243.95	\$	44.31	\$	876.73						
DW99-75	6	957	7	\$	83.51	17	\$	234.14	\$	243.95	\$	44.31	\$	605.91						
DW00-78	8	1220	15	\$	185.50	34	\$	481.60	\$	243.95	\$	44.31	\$	955.37						
DW00-79	8	1015	13	\$	154.33	30	\$	424.20	\$	243.95	\$	44.31	\$	866.80						
DW01-99	8	600	8	\$	91.23	22	\$	308.00	\$	243.95	\$	44.31	\$	687.50						
DW01-107	8	990	13	\$	150.53	30	\$	417.20	\$	243.95	\$	44.31	\$	856.00						
DW01-108	8	1293	16	\$	196.60	36	\$	502.04	\$	243.95	\$	44.31	\$	986.91						
DW01-112	8	850	11	Ś	129 25	27	Ś	378.00	ŝ	243 95	Ŝ	44 31	ŝ	795 51						
DW01-117	8	1197	15	¢	182.01	34	ŝ	475 16	ŝ	243.05	¢ ¢	44 31	ŝ	945 43						
DW01-172	S S	680	0	φ Φ	102.01	2/	¢	330 10	¢	2/2 05	¢ ¢	44 21	Ψ ¢	722 06						
DW01-122	0	540	3	φ ¢	00.40	24	φ ¢	201.20	φ ¢	243.95	φ Φ	44.51	φ ¢	722.00						
DW04-138	8	540	1	¢	02.11	21	¢	291.20	ф Ф	243.95	¢	44.31	¢	7001.57						
DW04-143	8	820	10	\$	124.68	26	\$	369.60	\$	243.95	\$	44.31	\$	782.55						
DW04-145	8	645	8	\$	98.07	23	\$	320.60	\$	243.95	\$	44.31	\$	706.94						
DW04-148	8	740	9	\$	112.52	25	\$	347.20	\$	243.95	\$	44.31	\$	747.98						
PL98-536	2	1269	1	\$	11.34	2	\$	29.11	\$	243.95	\$	44.31	\$	328.71						
PL98-556	2	1648	1	\$	14.73	3	\$	35.35	\$	243.95	\$	44.31	\$	338.34						
PL98-35	2	1233	1	\$	11.02	2	\$	28.52	\$	243.95	\$	44.31	\$	327.80						
PL98-37	2	1274	1	\$	11.38	2	\$	29.19	\$	243.95	\$	44.31	\$	328.84						
PL98-39	2	1266	1	\$	11.31	2	\$	29.06	\$	243.95	\$	44.31	\$	328.64						
PI 98-41	2	1263	1	ŝ	11 29	2	ŝ	29.01	ŝ	243.95	ŝ	44.31	ŝ	328 56						
PI 08-42	2	1526	1	¢	13.64	2	¢	23.34	¢	2/3 05	¢	1/1.01	¢	335.24						
DI 00 92	1 1/2	1020	0	φ	5.04	2	φ	14 60	φ	243.33	φ	44.01	φ	200.24						
FL-00-62	1 1/2	1077	0	φ Φ	5.41	1	φ	14.00	φ	243.95	φ	44.31	φ ¢	306.27						
PL-00-83L	1 1/Z	108	0	\$	4.03	1	\$	12.04	\$	243.95	\$	44.31	\$	304.33						
PL-00-830	1 1/2	1818	1	\$	9.14	2	\$	21.46	\$	243.95	\$	44.31	\$	318.86						
PL-00-90	2	710	1	\$	6.34	1	\$	19.91	\$	243.95	\$	44.31	\$	314.52						
PL-00-91	2	692	1	\$	6.18	1	\$	19.61	\$	243.95	\$	44.31	\$	314.06						
PL-00-92	2	1241	1	\$	11.09	2	\$	28.65	\$	243.95	\$	44.31	\$	328.00						
PL-00-94	1 1/2	1276	1	\$	6.41	1	\$	16.44	\$	243.95	\$	44.31	\$	311.12						
PL-01-105	2	755	1	\$	6.75	1	\$	20.65	\$	243.95	\$	44.31	\$	315.66						
PL-03-109	2	850	1	\$	7.60	2	\$	22.21	\$	243.95	\$	44.31	\$	318.07						
PL-03-109	2	850	1	\$	7.60	2	\$	22.21	\$	243.95	\$	44.31	\$	318.07						
PL-03-110	2	848	1	ŝ	7 58	2	\$	22 18	Ś	243.95	Ś	44 31	\$	318 02						
PI _03_110	2	1574	1	¢	14 07	2	ŝ	34 13	\$	243.05	¢	44 31	ŝ	336.46						
DI _02 4421	2	1226	1	¢	11 0/	2	¢ ¢	30.24	φ	242.05	¢	1/ 21	¢ ¢	330 /1						
FL-03-1131 DL 02 4420	2	1407	1	φ	10.75	2	φ Φ	21 71	φ Φ	240.90	¢	44.01	φ Φ	330.41						
	2	1427	4	φ ¢	7.70	2	ው ድ	01.71	¢ ¢	243.90	φ ¢	44.01	φ	332.13						
PL-03-114	2	841	1	\$	1.52	2	\$	22.07	\$	243.95	\$	44.31	Э Ф	317.85						
PL-03-114	2	1281	1	\$	11.45	2	\$	29.31	\$	243.95	\$	44.31	\$	329.02						
PL-03-116	2	669	0	\$	5.98	1	\$	19.24	\$	243.95	\$	44.31	\$	313.48						
PL-03-116	2	1040	1	\$	9.29	2	\$	25.34	\$	243.95	\$	44.31	\$	322.90						
PL-03-119	1 1/2	1438	1	\$	7.23	1	\$	17.94	\$	243.95	\$	44.31	\$	313.43						
PL-03-119	1 1/2	1803	1	\$	9.06	2	\$	21.32	\$	243.95	\$	44.31	\$	318.64						
PL-03-124	2	842	1	\$	7.52	2	\$	22.08	\$	243.95	\$	44.31	\$	317.87						
PL-03-127	2	1249	1	\$	11.16	2	\$	28.78	\$	243.95	\$	44.31	\$	328.21						
PI -03-127	2	1465	1	ŝ	13.09	2	÷.	32 33	Ś	243 95	Ś	44 31	\$	333.69						
PI _03_1301	2	801	1	¢	7 96	2	ŝ	22.80	ŝ	243.05	¢ ¢	44 31	ŝ	310 12						
DI _02_120	2	1520	1	φ Φ	13.66	2	Ψ Φ	22 30	φ Φ	243.55	φ Φ	1/ 31	¢ ¢	335 32						
FL-03-130	1.1/0	1029	4	φ ¢	13.00	~	ው ድ	46.70	¢ ¢	243.90	φ ¢	44.01	φ	000.02						
PL-03-131	1 1/2	1304	1	¢	0.55	1	9	16.70	¢	243.95	¢	44.31	¢	311.52						
PL-03-131	1 1/2	1645	1	\$	8.27	1	\$	19.85	\$	243.95	\$	44.31	\$	316.39						
PL-04-132	1 1/2	538	0	\$	2.70	1	\$	9.61	\$	243.95	\$	44.31	\$	300.58						

	B !		A 1	•							~			
Well #	Diameter	Depth	Stemming Stemming Be		Bentonite	Be	entonite		Labor	Su	pervisor	Cost	/Well	
			Cu. Yd.	Cost 5		50# /Bag		Cost						
PL-04-139	2	1438	1		\$12.85	2		\$31.89		\$243.95		\$44.31		\$333.00
PL-04-140	2	1328	1	\$	11.87	2	\$	30.08	\$	243.95	\$	44.31	\$	330.21
PL-04-141	2	1256	1	\$	11.22	2	\$	28.90	\$	243.95	\$	44.31	\$	328.38
PL-04-142	1 1/2	1367	1	\$	6.87	1	\$	17.28	\$	243.95	\$	44.31	\$	312.42
PL-04-144	1 1/2	962	0	\$	4.84	1	\$	13.53	\$	243.95	\$	44.31	\$	306.63
PL-04-146	2	937	1	\$	8.37	2	\$	23.65	\$	243.95	\$	44.31	\$	320.28
PL-04-146	2	1367	1	\$	12.22	2	\$	30.72	\$	243.95	\$	44.31	\$	331.20
Dewatering Well Closure	Total												\$	30,092
erceptor Wells														
IVV-1	6	320	2	\$	27.93	9	\$	131.77	\$	243.95	\$	44.31	\$	447.96
IW-2	6	329	2	\$	28.71	10	\$	133.22	\$	243.95	\$	44.31	\$	450.19
IW-3	6	310	2	\$	27.05	9	\$	130.17	\$	243.95	\$	44.31	\$	445.48
IVV-4	6	330	2	\$	28.80	10	\$	133.38	\$	243.95	\$	44.31	\$	450.44
IW-5	6	380	3	\$	33.16	10	\$	141.41	\$	243.95	\$	44.31	\$	462.84
IW-6	6	380	3	\$	33.16	10	\$	141.41	\$	243.95	\$	44.31	\$	462.84
MW-3	6	296	2	\$	25.83	9	\$	127.92	\$	243.95	\$	44.31	\$	442.01
MW-5	6	120	1	\$	10.47	7	\$	99.63	\$	243.95	\$	44.31	\$	398.37
Interceptor Well Closure	Fotal												\$	3,560
onitor Wells														
MW-1	6	305	2	\$	26.62	9	\$	129.36	\$	243.95	\$	44.31	\$	444.24
MW-2	6	279	2	\$	24.35	9	\$	125.18	\$	243.95	\$	44.31	\$	437.79
MW-4	6	288	2	\$	25.13	9	\$	126.63	\$	243.95	\$	44.31	\$	440.03
MW-6	6	150	1	\$	13.09	7	\$	104.45	\$	243.95	\$	44.31	\$	405.81
MW-7	6	135	1	\$	11.78	7	\$	102.04	\$	243.95	\$	44.31	\$	402.09
Manitar Wall Cleaves Tate		.00	•	Ŧ			- -		Ŧ		T		é	2 4 2 0

Cost Estimate - W	lell Closure -	Page 3		
SUPPORTING INF	ORMATION	- MATERIALS	AND AMOUNTS	
Hole Diameter	Pi	R ²	Area (sq ft)	ft/cu yd
8" =	3.14159	0.1089	0.342119151	78.9
6" =	3.14159	0.0625	0.196349375	137.5
4" =	3.14159	0.0289	0.090791951	297.4
2" =	3.14159	0.0064	0.020106176	1342.9
1.5" =	3.14159	0.0036	0.011309724	2387.3
		Ba	ags surface seal	
8" =	6.84	0.68	10.00	
6" =	3.93	0.68	5.74	
4" =	1.82	0.68	2.65	
2" =	0.40	0.68	0.59	
1.5" =	0.23	0.68	0.33	
Bentonite mixed w	ith stemming		ft/bag	
8" =	17.10596	1	50	
6" =	17.10596		87	
4" =	17.10596		188	
2" =	17.10596		851	
1.5" =	17.10596		1,513	
Bentonite:				
	1 1/2" well	0.15 II	b/ft	\$/lb
	2" well	0.26 ll	b/ft	\$/lb
	5" well	1.60 ll	b/ft	\$/lb
	6" well	2.31 I	b/ft	\$/lb
	8" well	4.11 ll	b/ft	\$/lb
Driller:				
	1 1/2"	2.36		
	2"	2.36		
	6"	2.8		
	8"	2.8		

Steming Cost\$ 12.00\$/cyBetonite\$ 14.00per 50# bag

Ft. Knox Reclamation Plan Cost Estimate Post-Reclamation Monitoring

All Post-Reclamation Monitoring by Category			2011	2012	2013	2014	4 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 2023	7 2028	2029	2030	2031	2032	2033 2	2034 2	036 203	7 2038	2039	2041	2042	2043 2	044 204	46 2047	2048	2049	2051 20	52 2053-7	209
Analytical	\$ 257,23	6	1,300) 1,300	1,300	1,300	0 1,300	1,300	1,300	34,632	34,632	33,332	33,332	20,042	20,042	5,498	5,498	5,498 5,49	8 5,498	5,498	4,848	4,848	4,848	(650	4,84	8	650		4,848	6	650	4,848		650	4,1	348 2,60	0
Contract Sampling	\$ 237,46	8								33,26	4 33,264	4 32,032	2 32,032	19,096	5 19,096	5,236	5,236	5,236 5,2	236 5.2	36 5,236	4,620	4,620	4,620		616	4,	620	616	6	4,620		616	4,620)	616		4,620 2	.464
Periodic Dam Safety Inspection	\$ 210,00	0											30,000					30,000				30,000			3	0,000			30,000			30,	000			30,000		
Diver Inspection - Freshwater Dam	\$ 30,00	0													5,000				5,00	0				5,000			5,00	D			5,000			5,000				
TOTAL MONITORING	5 734,70	4	1,3	00 1,30	0 1,3	00 1.	1,300 1,3	300 1,30	0 1,3	00 67,896	67,896	65,364	95,364	39,138	44,138	10,734	10,734	40,734 10,73	34 15,73	4 10,734	9,468	39,468	9,468	5,000	1,266 3	0,000 9,4	68 5,00	0 1,266	30,000	9,468	5,000	1,266 30,	000 9,468	5,000	1,266	30,000 9	,468 5,0	J64
																																						_
Post-Reclamation Analytical Monitoring (Sam	ple and Analysis)																																					
Sample Type	Analysis Type	Samples/Year	Cost Each 2011	2012	2013	2014	4 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 2023	7 2028	2029	2030	2031	2032	2033 2	2034 2	036 203	7 2038	2039		2042	2	044	2047		2049	20	/52 2053-2	2090
Fort Knox-755100515				1	1	1	1	1	1	1 2	7 27	7 26	6 26	17	7 17	17	17	17	17	17 17	15	15	15	0	2	0	15	0 2	2 0	15	0	2	0 15	5 0	2	0	15	1
Analytical Costs																																						
Upper Wetlands	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Lower Wetlands	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Water Reservoir	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Water Reservoir IML Dup	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Water Dam Seepage	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Tailings Seepage	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Tailings Seepage IML Dup	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Tailings Decant	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Duplicate	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Rinse Blank	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Surface Compliance Point	profile I	4	\$ 325											\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325	
Pit Lake	profile I	4	\$ 325 \$ 1,3	00 \$ 1,30	1,30	00 \$ 1,	1,300 \$ 1,3	300 \$ 1,30	0 \$ 1,3	00 \$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325	\$ 325	\$ 325 \$	325			\$ 3	25			\$ 325			\$ 325			\$	325 \$ 2,F	00ز
HL PCMS	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 325	\$ 325 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325				\$	325			\$ 325			\$	325			\$ 325			
HL Unerdrain System	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300	\$ 1,300	\$ 1,300	\$ 325	\$ 325 \$	325 \$	\$ 325	\$ 325 \$ 32	25 \$ 32	5 \$ 325				\$	325			\$ 325			\$	325			\$ 325			
HL In-Heap Storage Pond	profile I	4	\$ 325							\$ 1,300	0 \$ 1,300																											
MW-1	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
MW-2	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
MW-3	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
MW-4	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
MW-5 (Monitor)	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264	\$ 1,264	\$ 1,264 \$	316 \$	\$ 316	\$ 316 \$ 31	16 \$ 31	6 \$ 316	\$ 316	\$ 316 \$	316			\$ 3	16			\$ 316			\$ 316			\$	316	
MW-6 (Monitor)	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264	\$ 1,264	\$ 1,264 \$	316 \$	\$ 316	\$ 316 \$ 31	16 \$ 31	6 \$ 316	\$ 316	\$ 316 \$	316			\$ 3	16			\$ 316			\$ 316			\$	316	
MW-7 (Monitor)	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264	\$ 1,264	\$ 1,264 \$	316 \$	\$ 316	\$ 316 \$ 31	16 \$ 31	6 \$ 316	\$ 316	\$ 316 \$	316			\$ 3	16			\$ 316			\$ 316			\$	316	
IW-1	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
IW-2	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
IW-3	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
IW-4	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
IW-5	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
IW-6	profile II	4	\$ 316							\$ 1,264	4 \$ 1,264	\$ 1,264	\$ 1,264																									
Fort Knox Total Monthly Samples		112																																				
Fort Knox Annual Analytical Costs			\$ 1,3	00 \$ 1,30	0 \$ 1,3	00 \$ 1	1,300 \$ 1,3	<u>300 \$ 1,30</u>	<u>1,3 0 (1</u>	00 \$ 34,632	2 \$ <u>34,</u> 632	\$ 33,332	\$ 33,332	\$ 20,042	\$ 20,042	5,498	\$ 5,498	\$5,498 \$5,49	98 \$ <u>5</u> ,49	8 \$ <u>5,4</u> 98	\$ 4,848	\$ 4,848 \$	4,848 \$	\$	650 \$	- \$ 4,8	48 \$ -	\$ 650	\$ -	\$ 4,848 \$	<u> </u>	650 \$	- \$ 4,848	\$ -	\$ 650 \$	- \$ 4	,848 \$ 2,f	<u>50</u> 0
						_											_																		_			
Total Post Reclamation Analytical Monitorin S	\$ 257,236.0	0																																				