

COST ESTIMATE		MT TAYLOR MINE CLOSEOUT/ DP-61 CLOSURE						
Rev.2		November 2013. with July 2015 addendum for Mo/Se building						
Item #	Description	Material(s)	Units	\$/Unit	Quantity	Cost, \$	Cost Reference	Quantity Reference
<b>1 Direct Reclamation Costs</b>								
<b>1.1 Shaft Closures</b>								
<b>1.1.1 Production/ Haulage (24 ft) Shaft Shaft Fittings and Equipment</b>								Remove to plug level; Cut and drop in shaft
	crane		day	\$ 1,245	10	\$ 12,450	RSM 01 54 19.50 0100	12-ton crane with crew
	demo crew		day	\$ 1,156	10	\$ 11,560	RSM Crew B-1A	
<b>1.1.2 24 ft Shaft Headframe</b>								
	24 ft Production Shaft Headframe - drop using explosives, dozers	structural steel	leg	\$ 1,785	8	\$ 14,280	RSM 31 23 16.30; RSM 02 41 13.78 0800; WYDEQ, App. E	Assume each leg of headframe is equivalent to one radio tower 120 ft high
	Cut and remove to shaft, 20 ft max lengths	cut structural steel	hour	\$ 220.70	53	\$ 11,697	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate, Attachment G, item 8a2	<a href="http://www.structural-drafting-net-expert.com/steel-sections-i-beam-w-shape.html">http://www.structural-drafting-net-expert.com/steel-sections-i-beam-w-shape.html</a> ; estimated 10 cuts per hour by CAT 365 with hydraulic shear
	Cut vent pipe, decking, stairs, railing, cable, sheet metal, etc. to size	fabricated metal materials	SF	\$ 0.29	3750	\$ 1,088	RSM 02 41 16.13 0500	Wheel skidder with grapple, same production as CAT 365
	Load, haul, dump in shaft	steel, scrap	hour	\$ 59	40	\$ 2,360	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate, Attachment G: RSM 01 54 33 20 4896	Wheel skidder with grapple, same production as CAT 365
	Remove concrete from slab outside of collar, ore loading area	concrete	CY	\$ 264.06	226.90	\$ 59,916	RSM 02 41 16.17 0420	AutoCad base dimensions; concrete re-cycled for erosion protection per 1.4.4
<b>1.1.3 24 ft Shaft Plug</b>								
	Backfill Slurry batch plant		mo	\$ 4,600.00	3	\$ 13,800	RSM 01 54 33 50 0300	
	Set steel support	crane	day	\$ 1,245.00	5	\$ 6,225	RSM 01 54 19.50 0100	12-ton crane with crew
		crew	day	\$ 1,434.00	5	\$ 7,170	RSM B-2 crew	
	Cast Plug	concrete	CY	\$ 94.50	215	\$ 20,318	RSM 03 31 05.35 4350	1000 psi flowable; includes vent raise and tunnel to bulkhead
		placement	CY	\$ 13.27	215	\$ 2,853	RSM 03 31 05.70 3000	
		crane	day	\$ 1,245	5	\$ 6,225	RSM 01 54 19.50 0100	12-ton crane with crew
	Backfill (Shaft above plug, tunnel and vent raise)	mix	CY	\$ 81.50	2847	\$ 232,031	RSM 03 31 05.35 4100	Slurry of ore/cement/water. Includes vent raise and shaft tunnel to bulkhead at utility tunnel
		pumped placement	CY	\$ 5.29	2847	\$ 15,061	RSM 03 31 05.70 2900	
<b>1.1.4 Manway/ Ventilation (14 ft) Shaft Fittings and Equipment</b>								Remove to plug level; Cut and drop in shaft
		crane	day	\$ 1,245	5	\$ 6,225	RSM 01 54 19.50 0100	12-ton crane with crew
		crew	day	\$ 1,156	5	\$ 5,780	RSM Crew B-1A	

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<b>1.1.5 14 ft Shaft Headframe</b>								
	14 ft Vent/ Manway Shaft Headframe - drop using explosives, dozers	structural steel	leg	\$ 1,590	6	\$ 9,540	RSM 31 23 16.30; RSM 02 41 13.78 0700; WYDEQ, App. E	Assume each leg of headframe is equivalent to one radio tower 60 ft high
	Cut and remove to shaft, 10 ft max lengths	structural steel	hour	\$ 220.70	29	\$ 6,400	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate, Attachment G, item 8a2	<a href="http://www.structural-drafting-net-expert.com/steel-sections-i-beam-w-shape.html">http://www.structural-drafting-net-expert.com/steel-sections-i-beam-w-shape.html</a> ; estimated 10 cuts per hour by CAT 365 with hydraulic shear
	Cut vent pipe, decking, stairs, railing, cable, sheet metal, etc. to size	fabricated metal materials	SF	\$ 0.29	1215	\$ 352	RSM 02 41 16.13 0500	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support: Includes heater buildings.
	Load, haul, dump in shaft	steel, scrap	hour	\$ 59	24	\$ 1,416	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate, Attachment G: RSM 01 54 33 20 4896	Wheel skidder with grapple, same production as CAT 365
	Remove concrete slab outside of collar	concrete	CY	\$ 264.06	29.64	\$ 7,827	RSM 02 41 16.17 0420	AutoCad base dimensions; concrete re-cycled for erosion protection per 1.4.4
<b>1.1.6 14 ft Shaft Plug and Backfill</b>								
	Set steel support	crane	day	\$ 1,245.00	4	\$ 4,980	RSM 01 54 19.50 0100	12-ton crane with crew
		crew	day	\$ 1,434.00	4	\$ 5,736	RSM B-2 crew	
	Cast Plug	concrete	CY	\$ 94.50	153	\$ 14,459	RSM 03 31 05.35 4350	1000 psi flowable
		placement	CY	\$ 13.27	153	\$ 2,030	RSM 03 31 05.70 3000	
		crane	day	\$ 1,245.00	3	\$ 3,735	RSM 01 54 19.50 0100	12-ton crane with crew
	Backfill (Shaft above plug, vent raise and tunnel)	mix	CY	\$ 81.50	764	\$ 62,266	RSM 03 31 05.35 4100	Slurry of ore/cement/water. Includes vent raise and shaft tunnel to bulkhead at utility tunnel
		pumped placement	CY	\$ 5.29	764	\$ 4,042	RSM 03 31 05.70 2900	
	1.1.7 Access/ Utility Tunnels Backfill	mix	CY	\$ 81.50	3480	\$ 283,620	RSM 03 31 05.35 4100	Slurry of ore/cement/water. Includes all tunnels except shaft tunnels
		pumped placement	CY	\$ 5.29	3480	\$ 18,409	RSM 03 31 05.70 2900	
<b>1.2 Well and Conduit Plugging</b>								
<b>1.2.1 Mine Conduit</b>								
	Conduits (2)	4 ;1 cement bentonite grout mix	LF	\$ 6.60	6400	\$ 42,240	WYDEQ, App. L	10.5 inch ID x 3200 ft; plugging per 19.27.4 NMAC
<b>1.2.2 Well Abandonment</b>								
	Deep wells (21)	4 ;1 cement bentonite grout mix	LF	\$ 6.60	67205	\$ 443,403	WYDEQ, App. L	7 inch to 9 5/8 inch diameter casing grouted in all wells; plugging per 19.27.4 NMAC
	Abatement monitoring wells (5)	cement bentonite grout	ft	\$ 4.20	180	\$ 756	WYDEQ, App. L	2 to 6 inch diameter casing

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<b>1.3 Surface Facilities Demolition</b>								
1.3.1 Compressor Building	Steel Frame (2)	CF	\$ 0.145	25921	\$ 3,759	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	1620	\$ 2,527	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	1620	\$ 7,922	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.2 York Chiller Refrigeration Equipment and Building	Steel Frame (2)	CF	\$ 0.145	150000	\$ 21,750	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	5000	\$ 7,800	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	5000	\$ 24,450	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.3 Pump Building (Chill Water Pump House)	Steel Frame (2)	CF	\$ 0.145	15360	\$ 2,227	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	960	\$ 1,498	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	960	\$ 4,694	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.4 Shaft Heating Building	Steel Frame (2)	CF	\$ 0.145	24000	\$ 3,480	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	1500	\$ 2,340	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	1500	\$ 7,335	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.5 Hoist House	Steel Frame (2)	CF	\$ 0.145	24000	\$ 3,480	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	1500	\$ 2,340	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete hoist pedestals	CY	\$ 207.50	148	\$ 30,741	RSM 03 05 05.10 0070	Excavator with hydraulic hammer; tow heavily reinforced concrete pedestals 20' x 10' x 10'	
	concrete slab	SF	\$ 4.89	1500	\$ 7,335	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.6 Service Building (Office and Warehouse)	Steel Frame (2)	CF	\$ 0.145	642528	\$ 93,167	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	53544	\$ 83,529	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	53544	\$ 261,830	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.7 Electrical Building	Steel Frame (2)	CF	\$ 0.145	29760	\$ 4,315	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	1860	\$ 2,902	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	1860	\$ 9,095	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.8 Water Treatment and Boiler Building	Steel Frame (2)	CF	\$ 0.145	49600	\$ 7,192	RSM 02 41 16.13 0500, 5000		
	equipment, various	SF	\$ 1.56	3100	\$ 4,836	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	3100	\$ 15,159	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.9 Fuel Storage Tanks	Steel tanks at surface	EA	\$ 1,000.00	7	\$ 7,000	RSM 02 65 10.30 1029	7 tanks @30' x 8'	

Item #	Description	Material(s)	Units	\$/Unit	Quantity	Cost, \$	Cost Reference	Quantity Reference
1.3.10 Storage Building	Steel Frame (2)	CF	\$ 0.145	13440	\$ 1,949	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	840	\$ 1,310	Note 3	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support	
	concrete slab	SF	\$ 4.89	840	\$ 4,108	RSM 02 41 16.17 0420	assume 0.5 ft thickness	
1.3.11 Glycol Heat Exchanger	Steel Frame (2)	CF	\$ 0.145	24000	\$ 3,480	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	1500	\$ 2,340	Note 3	assume 1 ft <sup>3</sup> volume per ft <sup>2</sup> gutted area	
	concrete slab	SF	\$ 4.89	1500	\$ 7,335	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness	
1.3.12 Chlorine Building	concrete block	CF	\$ 0.145	6120	\$ 887	RSM 02 41 16.13 0080		
	equipment, various	CF	\$ 1.56	360	\$ 562	Note 3	assume 1 ft <sup>3</sup> volume per ft <sup>2</sup> gutted area	
	concrete slab	SF	\$ 4.89	360	\$ 1,760	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness	
1.3.13 Flocculant Treatment Building	Steel Frame (2)	CF	\$ 0.145	8280	\$ 1,201	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	690	\$ 1,076	Note 3	assume 1 ft <sup>3</sup> volume per ft <sup>2</sup> gutted area	
	concrete slab	SF	\$ 4.89	690	\$ 3,374	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness	
1.3.14 Barium Chloride Treatment Building	Steel Frame (2)	CF	\$ 0.145	16000	\$ 2,320	RSM 02 41 16.13 0500, 5000		
	equipment, various	CF	\$ 1.56	1000	\$ 1,560	Note 3	assume 1 ft <sup>3</sup> volume per ft <sup>2</sup> gutted area	
	concrete slab	SF	\$ 4.89	1000	\$ 4,890	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness	
1.3.15a Ion Exchange Building							<b>Radiological D&amp;D, including removal of resins and IX equipment, is covered under separate FA with NMED Radiation Control Bureau</b>	
	Steel Frame (2)	CF	\$ 0.145	392000	\$ 56,840	RSM 02 41 16.13 0500, 5000		
	concrete slab	SF	\$ 4.89	9800	\$ 47,922	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness	
1.3.15b Mo/Se Treatment Building	Steel Frame (2)	CF	\$ 0.145	655760	\$ 95,085	RSM 02 41 16.13 0500, 5000	LNV Design Drawings, O & M Manual	
	equipment, various	CF	\$ 1.56	16394	\$ 25,575	Note 3	assume 1 ft <sup>3</sup> volume per ft <sup>2</sup> gutted area	
	concrete slab	SF	\$ 4.89	16394	\$ 80,167	RSM 02 41 16.17 0420, 5000	LNV Design Drawings, O & M Manual; assume slab 0.5 ft thick	
1.3.16 Mine Water Treatment Pond Hydraulic Structures	concrete	CY	\$ 69.45	80	\$ 5,556	RSM 03 05 05.10 0050	Disposed in pond basins	
1.3.17 Mine Car Rails	90 lb steel rail	lineal ft	\$ 8.76	8787	\$ 76,974	WYDEQ, App. K; RSM 02 41 13.33 3500	Dwg C-159, -160, F-119; field survey "Rail Footage"; assume 4 lineal ft = 1 ft <sup>3</sup> volume	
	Concrete base for rail	SF	\$ 4.89	8569	\$ 41,903	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness	

Item #	Description	Material(s)	Units	\$/Unit	Quantity	Cost, \$	Cost Reference	Quantity Reference
1.3.18	Shaft Exhaust Fans and Vents	light structural steel, sheet metal	CF	\$ 0.145	18750	\$ 2,719	RSM 02 41 16.13 0500, 5000	
1.3.19	Cooling Towers	Steel frame and plate	CF	\$ 0.145	46875	\$ 6,797	RSM 02 41 16.13 0500, 5001	
		equipment, various	CF	\$ 1.56	5625	\$ 8,775	RSM 02 41 19.21 1000	assume 3 ft <sup>3</sup> volume per ft <sup>2</sup> gutted area
		concrete slab	SF	\$ 4.89	1875	\$ 9,169	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness
1.3.20	Mine Water Discharge Pipes	12in. Sch 40 PVC	LF	\$ 3.18	3000	\$ 9,540	RSM 02 41 13.38 1800	Remove only the portions of pipes extending beyond the tunnel. 0.1 ft3/ ft volume
1.3.21	Treated Water Discharge Pipeline	steel	LF	\$ 23.96	23000	\$ 551,080	RSM 22 05 05.10 2155; <a href="http://www.engineeringtoolbox.com/ansi-steel-pipes-d_305.html">http://www.engineeringtoolbox.com/ansi-steel-pipes-d_305.html</a> ; RSM 22 05 05.10 2220	Assume scrap at \$180/ton, 2.56 tons per 30 ft length = \$352,280. Pipeline will be cut in 30 ft lengths and staged on site for sale and removal by purchaser.
1.3.22	Truck Wash	plumbing, frame, siding, roof (2)	SF	\$ 1.55	10295	\$ 15,957	Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate, Attachment G, item 8a2 x 12.55% of 2009 Unit \$; RSM Crew B-1A	Estimated 200 SF per hour cutting with CAT 365 with hydraulic shear and crew support
		concrete slab	SF	\$ 4.89	14875	\$ 72,739	RSM 02 41 16.17 0420, 5000	assume 0.5 ft thickness
1.3.23 Manholes and culverts								
	Remove manholes and catch basins	steel, concrete	ea	\$ 186	2	\$ 371	RSM 02 41 13.33 0030	Remove only above final grade in ore pad and truck wash areas. Backfill below grade with soil/cement slurry.
	Remove culverts		LF	\$ 23.00	1220	\$ 28,060	RSM 02 41 13.33 2960	Trench to remove, then backfill
	Backfill trench		CY	\$ 2.04	1084	\$ 2,212	RSM 31 23 16.13 3020	
1.3.22	Non-contaminated debris hauling and dumping/ stacking for salvage or disposal in pond basins		CY	\$ 2.78	3897	\$ 10,834	RSM 31 23 23.20 5130	Assume 1 cf debris per 1sf of building floor area. 2000 ft average cycle distance
1.4	Earthwork							15 % swell of BCY to LCY assumed
1.4.1 Ore Pad								
	Excavate, load, haul, dump Travel Course/ Drainage Layer		LCY	\$ 4.05	15906	\$ 64,419	RSM 31 23 16.50 2100; Caterpillar Performance Handbook	21 CY scraper 3000 ft haul;
	Remove catch basins and culverts, dispose in Pond #1 basin		LF	\$ 36.92	1220	\$ 45,042	RSM G1030 805 1430; RSM 02 41 13.33 2960	Trench to remove, then backfill
1.4.2 Excavation and Disposal of Contaminated Soil		soil above 23 mR/hr, 6.8 pCi/g Ra						Disposal in pond basins and waste pile
	Mine Water Treatment Pond Area (less pond basins)	total pond area less pond basins	BCY	\$ 4.31	24943	\$ 107,504	RSM 31 23 16.50 2430: Caterpillar Performance Handbook	21 CY scraper, 3000 ft haul; 2000 CY/day; calc MT12.08-B
	County Road ROW		BCY	\$ 3.31	3791	\$ 12,548	RSM 31 23 16.50 2420: Caterpillar Performance Handbook	21 CY scraper, 1500 ft haul; calc MT12.08-B
	Borrow Soil Area		BCY	\$ 4.31	7395	\$ 31,872	RSM 31 23 16.50 2430: Caterpillar Performance Handbook	21 CY scraper, 3000 ft haul; 2000 CY/day; calc MT12.08-B
	North of Marquez Arroyo		BCY	\$ 4.31	12707	\$ 54,767	RSM 31 23 16.50 2430: Caterpillar Performance Handbook	21 CY scraper, 3000 ft haul; 2000 CY/day; calc MT12.08-B
	Service and Support Area		BCY	\$ 3.31	34104	\$ 112,884	RSM 31 23 16.50 2420: Caterpillar Performance Handbook	21 CY scraper, 1500 ft haul; calc MT12.08-B
	South Storm Water Pond		BCY	\$ 2.81	1514	\$ 4,254	RSM 31 23 16.42 1601; RSM 31 23 23.20 4014	Assume 1 ft of contaminated sediment; CAT 980 loader 3 cy bucket, 20 cy truck 0.5 mi cycle

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<b>1.4.3 HDPE-Liner Ponds -Water Treatment (MWTU) Ponds and Ore Runoff Retention Pond Backfill</b>								
	Pond sediment excavate, load, haul dump on waste pile	Contaminated pond sediments	BCY	\$ 7.33	7716	\$ 56,558	RSM G1030 140 4400	CAT 960 with 4.5 CY bucket and 20 CY trucks with 2 mi RT; calc MT13.07 and .08
	Remove HDPE liner from anchor trenches and tops of pond slopes	Fold HPDE membrane into pond to 4 ft below final grade	SF	\$ 0.081	121778	\$ 9,864	RSM B-6 Crews	laborers, operator, backhoe, truck, dozer for 2000 SF/hr; calc MT13.07
	Pond backfill by pond berm excavation and placement as backfill	large scale earthwork	BCY	\$ 2.54	170,060	\$ 431,952	RSM 31 23 16.46 6035; Caterpillar Performance Handbook	CAT D11, < 200 ft push
	Mine Water Treatment Pond Area cut/fill	total pond area less pond basins	BCY	\$ 3.31	58,195	\$ 192,625	RSM 31 23 16.50 2420; Caterpillar Performance Handbook	21 CY scraper, up to 1500 ft haul; calc MT12.08-B
<b>1.4.4 Waste Pile Buildout Stabilization (4)</b>								
	Disposal Cell for final pond sediments							Progressive buildout to final 5H:1V slopes with contemporaneous cover, erosion protection and revegetation
	Place and compact disposal cell berms	contaminated soil	BCY	\$ 1.46	17,400	\$ 25,404	RSM 31 23 16.46 6036; Caterpillar Performance Handbook	Cell and berm dimensions per MT13Drawing - dozer tread compaction on 50 ft haul. Construct with contaminated soil from site cleanup.
	Excavate, load, haul and place liner soil	clean clayey soil	BCY	\$ 4.31	2,489	\$ 10,727	RSM 31 23 16.50 2430; Caterpillar Performance Handbook	21 CY scraper, 3000 ft haul; 2000 CY/day; calc MT12.08-B; Clean soil from borrow area.
	Place and compact disposal cell liner	clean clayey soil	LCY	\$ 2.43	2,862	\$ 6,955	RSM 31 23 16.46 6006 and 31 23 23 23 5620; Caterpillar Performance Handbook	CAT D11, max. 50 ft push; 1.0 ft across cell surface; sheepsfoot compaction; calc MT12-08-F
	Cover soil excavate, load, haul, and place	clean soil	BCY	\$ 4.31	34,905	\$ 150,442	RSM 31 23 16.50 2430; Caterpillar Performance Handbook	21 CY scraper, 3000 ft haul; 2000 CY/day; calc MT12.08-B; Clean soil from borrow area.
	Cover placement - disposal cell and top of pile	stockpiled shaft muck, clean soil	LCY	\$ 1.46	40,141	\$ 58,606	RSM 31 23 16.46 6036; Caterpillar Performance Handbook	Cell and berm dimensions per MT13Drawing - dozer tread compaction on 50 ft haul. Construct with contaminated soil from site cleanup.
	Cover grading	grade to design slope	acre	\$ 936.54	8.30	\$ 7,770	RSM 31 22 16.10 3312	AutoCad measured
	Erosion control mat	tobacco netting	SY	\$ 0.50	26614	\$ 13,307	RSM 31 25 14.16 0300	Exposed slope during buildout, after reshaping for activation
<b>1.4.5 Riprap and Water Bars</b>								
	Rock and concrete crushing	concrete, rock	CY	\$ 1.67	2496	\$ 4,178	MB America Robbett Eyler, pers comm Nov 2013; RSM 31 23 16.42 0300	MB America BF90 crusher bucket on CAT 320 excavator, minus 4 inches at 46 CY/hr
	Concrete debris, rock loading and hauling	concrete, rock	CY	\$ 8.22	2496	\$ 20,514	RSM G1030 150 7000	Concrete broken by hydraulic pulverizer during facility demolition; CAT 980 with 5 cy bucket, D250E truck
	Screening	concrete, rock	day	\$ 532.20	14.26	\$ 7,590	RSM 01 54 33 3710	150-200 CY/day
	Placing channel riprap	concrete, rock	SY	\$ 28.50	889	\$ 25,333	RSM 31 37 13.10 0200	1500 CY machine placed, 2 ft thick
	Placing on waste pile slope	concrete, rock	CY	\$ 25.87	1607	\$ 41,568	RSM 31 37 13.10 0300	Placed on slope for rock mulch or spreading in finish grading

Item #	Description	Material(s)	Units	\$/Unit	Quantity	Cost, \$	Cost Reference	Quantity Reference
<b>1.4.6 Finish grading</b>								pond/ ore pad/ borrow area +surface facilities + waste pile
	Mine Water Treatment Pond area		acres	\$ 75.25	28.0	\$ 2,107	WYDEQ, App. G	AutoCad measured
	County road ROW		acres	\$ 75.25	4.7	\$ 354	WYDEQ, App. G	AutoCad measured
	Ore pad and borrow soil area		acres	\$ 75.25	19.0	\$ 1,430	WYDEQ, App. G	AutoCad measured
	Waste pile area	waste pile and adjacent area	acres	\$ 75.27	14.7	\$ 1,109	WYDEQ, App. G	AutoCad measured: calc MT12-08-B
	Pipeline corridor		acres	\$ 75.25	15.6	\$ 1,177	WYDEQ, App. G	Estimated
	Bench wall slope reduction		BCY	\$ 2.78	1852	\$ 5,148	RSM 31 23 16.42 0300; RSM 01 54 33 0347; Caterpillar Performance Handbook Model 160 hammer in massive sandstone	Drag slope to flatten from vertical to 1H:1V, all rock. CAT 320 excavator with hydraulic hammer, 200 CY/day
	North of Marquez Arroyo		acres	\$ 75.25	17.6	\$ 1,326	WYDEQ, App. G	AutoCad measured
	Service and Support Area		acres	\$ 73.79	39.3	\$ 2,902	WYDEQ, App. G	AutoCad measured
<b>1.5 Revegetation</b>								
	<b>1.5.1 Seeding</b>		acres	\$ 871.20	100	\$ 107,158	RSM 32 91 19.14	finish-graded area
	Mulching and Fertilizing		acres	\$ 1,933.63	100	\$ 192,748	RSM 32 91 13.16 0350, RSM 32 01 90.13 0140	finish-graded area
	Fencing		LF	\$ 1.49	10000	\$ 14,892	WYDEQ, App. H	Chain link fence around final pond and waste pile areas
	<b>1.5.2 Fencing</b>		LF	\$ 1.49	10000	\$ 14,892	WYDEQ, App. H	Chain link fence around final pond and waste pile areas
<b>1.6 Environmental Controls (temporary)</b>								
	<b>1.6.1 Dust control</b>	water truck	hours	\$ 89.15	1600	\$ 142,640	RSM 01 54 33 40 6950	earthwork periods, 200 days
	<b>1.6.2 SWPPP implementation</b>	silt fence	LF	\$ 0.60	3000	\$ 1,800	RSM 31 25 14.16 1000	
<b>Total Direct</b>						<b>\$ 5,135,745</b>		

2 Indirect Reclamation Costs (3)		% of Direct Cost (3)				
2.1	Mobilization and Demobilization	2%				\$ 102,715
2.2	Contingencies	10%				\$ 513,575
2.3	Redesign Costs	6%				\$ 308,145
2.4	Profit and Overhead	18%				\$ 924,434
2.5	Contract Management Fee	7%				\$ 359,502
2.6	MMD Procurement Cost (2%-10%)	6%				\$ 308,145
<b>Total Indirect</b>						<b>\$ 2,516,515</b>

**NOTES:**

- (1) RSM = RS Means Heavy Construction Cost Data 2013
- (2) Cost includes loading and hauling 1 mi. RT
- (3) Demolition cost per cubic foot = excavator \$81.05/hr (RSM 01 54 33 20 0200) + Shear \$14.05/hr (RSM 01 54 33 20 0347) + two operators \$48.80/hr @ (RSM Crew A-3H) + labor crew \$72.90/hr (RSM Crew B-1) + Skid steer with grapple \$46/hr (RSM 01 54 33 4890), = \$311.60/hr, 200 cf/hr=\$1.56/cf. Volume base on 1 cf/sf of floor area.
- (4) No costs for reclamation of the North (future) waste pile are included. If this pile is needed, costs will be included in a future update of the Financial Assurance estimate.

**Total Direct + Indirect** **\$ 7,652,260**

Location Cost Index - Cost adjustment to RS Means 2013 costs based on location versus national averages, 0.879 RSM 2013 page 592, 615, Location Factors for Albuquerque, Gallup

**Total Direct + Indirect, Present Cost P, Location-adjusted** **\$ 6,726,337**

**New Mexico Gross Receipts Tax (NMGRT)** 6.5625% **\$ 441,416**

**Total Direct + Indirect, Present Cost P, Location-adjusted, with NMGRT** **\$ 7,167,753**

**Escalation (Inflation)**

Rate, i, per CPI-U, updated 4/2/2013	2.0%		
Future cost, F=P*(1+i) <sup>n</sup>	n, years from 2013		F, Future Cost
in 2013	0		\$ 7,167,753
in 2014	1		\$ 7,311,108
in 2015	2		\$ 7,457,330
in 2016	3		\$ 7,606,477

<http://www.bls.gov/news.release/pdf/cpi.pdf>

The inflation rate is based on the year-to-year Consumer Price Index U. S. City Average for 2013 ( ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.txt).  
 The average rate for the preceding five years (2008-2012) was 2.06, so 2% represents a reasonable estimate based on recent history as the basis for projection over the current standby permit period.