

SHAWNEE FOSSIL PLANT
SCRUBBER GYPSUM STACK
(OPTION 2A)

Project name SHE0316302AGYPSUM STACK

Engineer Daniel Smith (Parsons)
757-8088

Estimator C. L. TONEY

Labor rate table SHF 40 2003

Equipment rate table TVA Equipment

Project SCRUBBER GYPSUM STCK
Locath Code(4 Dig) SHAWNEE FOSSIL
EST No./Rev: 0316302A
Agreement Type PMMA

Notes The concept for this design will stack the gypsum in the existing ash pond area. This option (2A) is a standalone gypsum occupying the existing ash pond area.

Construction of the earthen dike will require borrow material be brought over.

For comparison purpose all work is assumed to be in present day (2003) dollars.

Report format Sorted by 'Location/Activity'
'Detail' summary

Location	Activity	Description	Takeoff Quantity	Labor Productivity	Labor Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Cost/Unit	Total Amount
02	Erosion Controls	Erect Silt Fence (Trench Bottom Of Fence, 10% Hay Bales)	2,200.00 lf	0.069	150.85	3,388	1,087	-	684	-	2.34	5,139
		Rock Ck Dams	100.00 ln	0.200	20.00	456	1,000	-	420	-	18.76	1,876
		Construct Temporary Pond Within Pond To Detain Stormwr During Constr	12,000.00 cy	0.036	426.72	10,387	-	-	8,403	-	1.57	18,790
		72" Dia. CMP For Outlet Structure	6.00 lf	2.000	12.00	257	1,800	-	69	-	354.19	2,125
		48" Dia. CMP For Riser For Outlet Structure	7.00 lf	1.091	7.64	163	910	-	44	-	159.56	1,117
		48" Dia. CMP Outlet Pipe (Principle Spillway)	150.00 lf	0.620	93.00	1,988	7,280	-	531	-	65.33	9,800
		Cut. Holes In Riser	3.00 ea	1.000	3.00	56	-	-	15	-	23.80	71
		Remove Temporary Pond Within Pond To Detain Stormwater During Constr	12,000.00 cy	0.047	560.04	13,298	-	-	8,652	-	1.83	21,950
		Composite Concrete For Riser Base (Assume 7' x 7' x 2')	4.00 cy	10.000	40.00	982	800	-	103	-	471.12	1,884
		Anti-Sleep Collars (Assume Concrete)	7.00 ea	75.000	525.00	12,888	4,935	-	1,346	-	2,738.38	19,169
		Erosion Controls			1,838.25	43,844	17,812	-	20,266	-		81,921
03	Roads				1,838.25	43,844	17,812		20,266			81,921
		Bottom Ash (South Access Road)	2,400.00 cy	1.904,000	1.26	2,359	-	-	3,057	-	2.26	5,416
		Crushed Stone Base (South Access Road)	2,900.00 ln	0.120	348.00	8,713	24,360	-	3,350	-	12.56	36,422
		Roads			438.76	11,071	24,360		6,407			41,838
11	Seed/Mulch				438.76	11,071	24,360		6,407			41,838
		Seed / Mulch Disturbed Areas	26.00 ac					60,403			2,323.20	60,403
		Seed/Mulch						60,403				60,403
20	Gypsum Disp Facility							60,403				60,403
		Earthwork Fill (Obtain From Nearby Borrow Area)	1,132,296.00 cy	1.120,000	1,010.98	2,829,559	-	-	2,608,406	-	4.80	5,437,965
		Drainage Layer (4 Ft Thick) For Liner (No. 57 Stone)	738,000.00 ln	0.096	70,848.00	1,712,042	5,904,900	-	1,107,000	-	11.82	8,723,042
		Riprap For Ditch	18,200.00 ln	0.200	3,640.00	82,988	182,000	-	76,521	-	18.76	341,510
		Ditch For Riprap (.24' wide x 2' deep)	5,600.00 lf	0.046	259.98	6,743	-	-	10,119	-	3.01	16,862
		Geotextile (If Riprap Is Used)	14,400.00 sy	0.011	158.40	1,597	18,900	-	720	-	1.69	24,381
		Geotextile Fabric For Underdrain Pipe	6,900.00 sy	0.200	1,380.00	31,977	12,532	-	242	-	1.58	10,895
		8" Dia. HDPE, SDR 17 Perforated Pipe	7,700.00 lf	0.200	1,540.00	31,977	12,532	-	6,416	-	6.61	50,924
		8" Dia. HDPE Standard Fittings	60.00 ea	0.200	12.00	226	480	-	-	-	11.76	706
		Concrete Anchors For Underdrain Piping	102.00 ea	12.500	1,275.00	31,239	11,985	-	3,269	-	456.40	46,552
		Gypsum Disp Facility			191,089.03	4,701,191	6,138,953		3,812,693			14,652,837
30	Stack Closure				#####	4,701,191	6,138,953		3,812,693		#####	#####
		Place 1 Ft Low Permeable Clay (Obtain From Future On-Site Borrow Area)	125,000.00 cy	1,904,000	65.65	125,817	-	-	210,415	-	2.91	363,232
		Place 1.5 Ft Soil Cover (Obtain From New Future On-Site Borrow Area)	188,000.00 cy	1,904,000	98.74	166,465	-	-	249,811	-	2.21	416,276
		Riprap For Ditch	10,500.00 ln	0.200	2,100.00	47,878	105,000	-	44,147	-	18.76	197,025
		Ditch For Riprap (.28 Ditches, 500 Ft Long 10' wide x 1' deep)	14,000.00 lf	0.018	256.06	6,745	-	-	10,121	-	1.21	16,866
		Geotextile For Riprap Ditches	17,200.00 sy	0.015	258.00	5,687	22,575	-	860	-	1.69	29,122
		4" Dia. ADS HDPE Drain Tubing	103,000.00 lf	0.184	18,987.02	394,246	81,113	-	79,104	-	5.38	554,463
		Seed / Mulch	77.00 ac					178,886			2,323.20	178,886
		Stack Closure			31,697.72	773,839	208,688	178,886	594,458			1,755,870
40	Borrow Area Develop				33,697.72	773,839	208,688	178,886	594,458			1,755,870
		Disc Future Borrow Area	231.00 ac	6.000	38.50	17,568	-	-	10,010	-	119.39	27,578
		Seed / Fertilize / Lime Future Borrow Area	231.00 ac					536,659			2,323.20	536,659
		Borrow Area Develop			616.00	17,568		536,659	10,010			564,238

Location	Activity	Description	Takeoff Quantity	Labor Productivity	Labor Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Cost/Unit	Total Amount
50					616.00	17,568		536,659	10,010			564,238
	Construction Parking											
		Silt Fence	1,000.00 lf	0.020	20.00	397	315				0.71	712
		Cut And Fill (Balance)	500.00 cy	2,800.000	0.18	416			572		1.98	988
		Cut & Spoil Additional Material	500.00 cy	1,904.000	0.26	443			664		2.21	1,107
		Crushed Stone Base	1,400.00 tn	0.120	168.00	4,206	11,760		1,617		12.56	17,583
		Construction Parking			220.52	5,461	12,075		2,854			20,390
					220.52	5,461	12,075		2,854			20,390

Estimate Totals

Labor	5,652,974	227,900,274	hrs
Material	6,401,887		
Subcontract	775,949		
Equipment	4,446,687	123,332,584	hrs
	<u>17,177,497</u>	<u>17,177,497</u>	
Engineered Materials - Ph 2		100,000 %	
Adjustment - Engr Materials		(100,000) %	
	<u>17,177,497</u>	<u>17,177,497</u>	
Environmental Costs		100,000 %	
Adjustment Environmental		(100,000) %	
	<u>17,177,497</u>	<u>17,177,497</u>	
Small Tools Expense	102,555	0.450 \$/hr	
Consumables & Expendables	222,119	4,000 %	
Office Supplies & Expense		3,000 %	
Subcontract Fee	<u>324,674</u>	<u>17,502,171</u>	
Escalation - Craft Labor	277,649	5,000 %	
Escalation - Subcontract	38,797	5,000 %	
Escalation - Subcontract Fee		0.350 %	
Escalation - Perm Materials	320,094	5,000 %	
Escalation - HED Equipment		5,000 %	
Escalation - Tagged Equipment		5,000 %	
Escalation - Small Tools	7,749	0.034 \$/hr	
Escalation - Consumables	11,106	0.200 %	
Escalation - Non-Manual Labor		5,000 %	
Escalation - Office Supplies	<u>652,395</u>	<u>0.200 %</u>	
	<u>18,157,566</u>		
Partner Insurance (FY03)	166,589	3,000 %	
Partner Award Fee (FY03)	<u>277,649</u>	<u>5,000 %</u>	
	<u>444,238</u>	<u>18,601,804</u>	
FPG Engineering - Phase 1			
FPG Engineering - Phase 2			
FPG Engineering - Phase 3			
	<u>18,601,804</u>		
Plant Ovrd Chgs - Matl Hnding			
Phase 1 Other/Other Org			
Phase 2 Other/Other Org			
Phase 3 Other/Other Org			
	<u>18,601,804</u>		
Rounding			
	<u>18,601,804</u>		
		<u>Total</u>	<u>18,601,804</u>