

Facility ID #436570

Oxy USA - Pond 13 E/W

Estimate of Probable Closure Cost

Date: 05/05/15

By: WPM - Western Project Management



Probable Cost Estimate Summary

Item	Description	Quantity	Unit	Direct Unit Cost	Direct Total Cost	Contingency (15-25%)	Subtotal	Payment & Performance Bonds (1.5%)	Subtotal	Contractor Overhead & Profit (15%)	Total
A.	Construction Contractor Costs										
1	Mobilization / Demobilization	2	Lump Sum	\$ 10,000.00	\$ 20,000.00	\$ 4,000.00	\$ 24,000.00	\$ 360.00	\$ 24,360.00	\$ 3,654.00	\$ 28,014.00
2	Soil Sampling for Contamination	5	Locations	\$ 291.80	\$ 1,459.00	\$ 291.80	\$ 1,750.80	\$ 26.26	\$ 1,777.06	\$ 266.56	\$ 2,043.62
3	Surface Water Sampling for Contamination	12	Samples	\$ 409.08	\$ 4,909.00	\$ 981.80	\$ 5,890.80	\$ 88.36	\$ 5,979.16	\$ 896.87	\$ 6,876.04
4	Monitoring well Abandonment	2	Wells	\$ 857.00	\$ 1,714.00	\$ 342.80	\$ 2,056.80	\$ 30.85	\$ 2,087.65	\$ 313.15	\$ 2,400.80
5	Disposal of Pond Fluids (Assumed to be non-hazardous)	4,591,945	Gallons	\$0.026	\$ 120,493.07	\$ 24,098.61	\$ 144,591.69	\$ 2,168.88	\$ 146,760.56	\$ 22,014.08	\$ 168,774.65
6	Remove & Dispose of Equipment, Concrete, Metals	50.00	Hours	\$ 1,630.52	\$ 81,526.18	\$ 16,305.24	\$ 97,831.42	\$ 1,467.47	\$ 99,298.89	\$ 14,894.83	\$ 114,193.72
6.5	Removal & Disposal of all Steel Tanks	0		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7	Remove & Dispose of Pond Liners	360,000.00	Square feet	\$0.219	\$ 78,725.31	\$ 15,745.06	\$ 94,470.37	\$ 1,417.06	\$ 95,887.42	\$ 14,383.11	\$ 110,270.54
8	Backfill, Compact, & Restore Site	30,000.00	Cubic yards	\$ 3.02	\$ 90,592.09	\$ 18,118.42	\$ 108,710.50	\$ 1,630.66	\$ 110,341.16	\$ 16,551.17	\$ 126,892.33
9	Site Management Costs	8	Weeks	\$ 16,402.57	\$ 131,220.58	\$ 26,244.12	\$ 157,464.70	\$ 2,361.97	\$ 159,826.67	\$ 23,974.00	\$ 183,800.67
	Subtotal Construction				\$ 530,639.23	\$ 106,127.85	\$ 636,767.07	\$ 9,551.51	\$ 646,318.58	\$ 96,947.79	\$ 743,266.36
B.	Administrative and Misc Engineering Costs										
1	Construction Management Fee (5% of Construction)										\$ 37,163.32
2	Work plans, Engineering Design, and Bid Documents (15% of Construction)										\$ 111,489.95
Grand Total											\$ 891,919.64

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Soil Sampling for Contamination -		5 Locations			
Labor					
		Quantity	Unit	Unit Price	Total
	Soils Technician	10	hrs	\$ 60.00	\$ 600.00
					\$ 600.00
Equipment					
	Hand Auger - for testing at perimeter of pits	1	days	\$ 85.00	\$ 85.00
					\$ 85.00
Expenses					
	Transportation (90 mi. r/t from Grand Junction)	180	mi	\$ 0.55	\$ 99.00
	Misc. supplies (gloves, cleaners, containers etc.)	1	ls	\$ 250.00	\$ 250.00
					\$ 349.00
Laboratory Cost					
	BTEX (8015B)	5	ea	\$ 60.00	\$ 300.00
	Chlorides	5	ea	\$ 25.00	\$ 125.00
					\$ 425.00
	Soil Testing:				\$ 1,459.00
	Cost per locations				\$ 291.80

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Surface and Ground Water Well Testing for Contamination - 12 samples (3 - wells, 3 seeps/springs, 6 pond storage)						
Labor						
		Quantity	Unit	Unit Price		Total
	Soils Technician	24	hrs	\$	60.00	\$ 1,440.00
						\$ 1,440.00
Expenses						
	Transportation (90 mi. r/t from Grand Junction)	180	mi	\$	0.55	\$ 99.00
	Misc. supplies and shipping of samples	2	ls	\$	350.00	\$ 700.00
						\$ 799.00
Laboratory Cost						
	BTEX (8015B)	12	ea	\$	60.00	\$ 720.00
	Chlorides	12	ea	\$	25.00	\$ 300.00
						\$ 1,020.00
	Stored water samples		3 ea		550	1650
	Water Testing:					\$ 4,909.00
	Cost per locations					\$ 409.08

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Monitoring well abandonment		2 Wells			
Mobilization & Demobilization from Grand Junction (2 hrs each way)					
	Quantity	Unit	Unit Price		Total
Transportation (90 mi. r/t from Grand Junction)	180	mi	\$	0.55	\$ 99.00
Soils Technician	12	hrs	\$	60.00	\$ 720.00
Abandonment					
Abandonment of monitoring well (4 x 50' wells)	100	ft	\$	8.95	\$ 895.00
					\$ 895.00
Total cost:					\$ 1,714.00
	Cost per locations				\$ 857.00

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Remove & Dispose of Equipment, Concrete, Metals, etc

Crew Rate				
	Qty.	Unit	Rate	Total
Electrician	1	ea	\$ 56.05	\$ 56.05
Pipefitter	1	ea	\$ 54.02	\$ 54.02
Laborer - Common	2	ea	\$ 28.72	\$ 57.45
Equipment Operator - Level 2	2	ea	\$ 34.50	\$ 69.00
				<u>\$ 236.52</u>
Equipment & Fee Rates (Quantities are by the hour)				
	Qty.	Unit	Rate	Total
Work Truck - Crew Cab	2	ea	\$ 13.50	\$ 27.00
Reach Fork	2	ea	\$ 30.00	\$ 60.00
Backhoe -446B	1	ea	\$ 47.00	\$ 47.00
Crane	1	ea	\$ 400.00	\$ 400.00
Dump Truck & Driver	2	ea	\$ 150.00	\$ 300.00
Disposal (200 Tons estimated with an average of 10 Tons removed per hour)	20	hrs	\$ 28.00	\$ 560.00
				<u>\$ 1,394.00</u>
				<u>\$ 1,630.52</u>
Hourly Rate				<u>\$ 1,630.52</u>
Daily Rate				\$ 13,044.19
Weekly Rate				<u>\$ 78,265.13</u>

Assumptions:

- All metal items such as fencing & tanks will be recycled if available.
- Disposal includes (pipes, culverts, bird netting, concrete post cases, slabs, equipment, etc.).

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Disposal of Pond Fluids (Assumed to be non-hazardous)

Assumed water elevation in the pit (ft)	N/A	
Volume of pit fluid at elevation (bbl)	121,480	75% full at reclamation
Volume in gallons (factored) (90% capacity)	4,591,944	

Description	Qty.	Unit	Trips	Time	Unit	Time	Unit	Rate	Total
Pump fluid into wells through existing polypipe system (97% of factored volume)	4,454,186	gallons		309	hrs	12.89	days	\$ 682.83	\$ 8,800.52
Fuel for Pumps	1	ls				12.89	days	\$ 220.00	\$ 2,835.42
Pump, fill, and dispose of pit fluid at treatment plant (3% of factored volume)	137,758	gallons	25	50	hrs	6.31	days	\$ 2,406.85	\$ 15,181.48
Total Gallons removed	4,591,945	gallons	459						
Disposal at permitted facility fee (\$0.68/gallon)		137,758	gallons					0.68	\$ 93,675.66
Total cost estimated to remove all fluids									\$ 120,493.07
Cost per gallon to dispose of fluids (\$/gallon)									\$ 0.0262

Crew Rate - For pit fluid returned to local wells via existing polypipe system.

Laborer - Common	1	ea	\$	26.82	\$	26.82
Laborer - Foreman	1	ea	\$	31.53	\$	31.53
					\$	58.35
Equipment & Fee Rates						
Work Truck - Crew Cab	2	ea	\$	13.50	\$	27.00
					\$	27.00
Hourly Rate					\$	85.35
Daily Rate					\$	682.83

Crew Rate (2 trucks) - Disposal at a municipal facility

	Qty.	Unit	Rate	Total
Laborer - Common	1	ea	\$ 26.82	\$ 26.82
Truck Driver	2	ea	\$ 35.27	\$ 70.54
			Subtotal	\$ 97.36
Equipment & Fee Rates				
Water Truck - 130 barrel vac. Truck	2	ea	\$ 95.00	\$ 190.00
Work Truck - Crew Cab	1	ea	\$ 13.50	\$ 13.50
			Subtotal	\$ 203.50
			Total Hourly Rate	\$ 300.86
			Daily Rate	\$ 2,406.85

Estimate Cycle Time

Fill Water Truck	20 minutes
Travel time to disposal facility	90 minutes
Empty Water Truck at Well or facility	20 minutes
Return to Pit	90 minutes
Avg. down time for items such as fuel	20 minutes
Total Cycle time per truck	240 minutes

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Remove & Dispose of Pond Liners (2 -30 mil and 1-45 mil)							
Description	Qty.	Unit	Production	Unit	Days	Unit Cost	Total
Cut and remove liner	360,000.00	sf	44,318	sf/day	8.1	\$ 6,353.29	\$ 51,608.59
(2) Flatbed Truck, Trailer, & Driver		28 hrs		2 trips/day	2.3	\$ 182.74	\$ 5,116.72
Disposal*		200.0 tons				\$ 110.00	\$ 22,000.00
Subtotal							\$ 78,725.31
Unit Price (Remove & Dispose per sf)							<u>\$ 0.2187</u>
Liner Demolition & Loading							

* Assumes 0.5 lbs/sf for the membranes and a 30% increase amount in contaminant (such as sludge or clay) waste.

Crew Rate (3 cut & roll crews)				
	Qty.	Unit	Rate	Total
Laborer - Common	5	ea	\$ 28.72	\$ 143.62
Laborer - Foreman	1	ea	\$ 31.53	\$ 31.53
Equipment Operator - Level 2	2	ea	\$ 34.50	\$ 69.00
Equipment & Fee Rates				
Reach Fork	1	ea	\$ 500.00	\$ 500.00
Compressor, hose, & tools	1	ea	\$ 50.00	\$ 50.00
Subtotal				<u>\$ 794.16</u>
Daily Rate (8hrs)				<u>\$ 6,353.29</u>

Liner Cutting		
1 Laborer to cut, 2 to roll, 1 to assist with load & 1 Equip. Operator to operate the Backhoe or Reach Fork		
Liner (per layer with 3 layers - incl geonet)	120000 sf	13,333 SY per liner both ponds
Length of Liner (square root of area)	350 lf	
LF of cutting per liner	5775 lf	
Cutting rate per hour	267 lf/hr	<u>2 cutters</u>
Cutting time per liner	21.66 hrs	
Removal rate per hour (sf/hr)	5540 (Assumes 208' of a 20' wide roll)	
Number of liners per pond	3	
Total hours for all liners	64.98	
Total weeks for the removal	1.6	

Disposal Sites	
	<u>90</u> mi <u>2.97</u>
Round to the nearest full hour to include unload time	3.5 hrs
Round Trip	7 hrs
Total Trips to dispose of liner waste (65 tons) at 15-20 tons per load	12.2 trips
Round up to the next whole total trip value	4 trips

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Backfill, Compact Site, & Restore Site								
Description	Qty.	Unit	Production	Unit	Days	Unit Cost	Cost	
Rip Clay Layer	10	hrs	175,000	sf	1	\$ 291.50	\$	2,915.04
Push Soil (Dozer Crew 150ft max)	45000.00	cy	3,836	cy/day	11.7	\$ 4,651.63	\$	54,570.89
Spread Soils and Compact**	30000.00	cy	8,000	cy/day	3.8	\$ 2,094.98	\$	7,856.16
Finish work	5.00	Acres			2.0	\$ 1,500.00	\$	7,500.00
Disc, Seed & Mulch	10.00	Acres			1.0	\$ 1,250.00	\$	12,500.00
Post Closure Weed Control (1 day of spraying)	1.00	ls				\$ 4,500.00	\$	4,500.00
Compaction Tests (6 per day)	10	tests				\$ 75.00	\$	750.00
Subtotal - Backfill & Compaction							\$	90,592.09
Unit Price (Backfill & Compact per cubic yard)							\$	3.02

Bulldozer & Scraper Crew		# of Dozers			
Crew Rate	Qty.	Unit	Rate	Total	
Laborer - Common		2 ea	\$ 28.72	\$ 57.45	
Equipment Operator - Level 2		2 ea	\$ 34.50	\$ 69.00	
Equipment & Fee Rates					
Scraper (627G)		1 ea	\$ 232.50	\$ 232.50	
Bulldozer (D8T)		1 ea	\$ 222.50	\$ 222.50	
Subtotal				\$ 581.45	
Daily Rate (8hrs)				\$ 4,651.63	

Crew Rate (Spread & Compact)		# of S&C teams			
	Qty.	Unit	Rate	Total	
Truck Driver		1 ea	\$ 25.37	\$ 25.37	
Equipment Operator - Level 2		2 ea	\$ 34.50	\$ 69.00	
Equipment & Fee Rates					
Water Truck - 2500 gallon (1,250 gals/hr usage)		1 ea	\$ 67.50	\$ 67.50	
Compactor, Vibratory (815F)		1 ea	\$ 100.00	\$ 100.00	
Subtotal				\$ 261.87	
Daily Rate (8hrs)				\$ 2,094.98	

**6 in lift with (3 passes per lift), @ 1,000 cy/hr w/6 hrs per day = 3000 cy/day (for 1 crew)

*** Road base and Type L Riprap to be mixed in with soils and compacted.

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Site Management Costs							
	Time	Unit	Duration	Unit	Rate	Total	
Staff							
Site Superintendant	8	wks	320	hrs	\$ 65.00	\$ 20,800.00	
Project Manager	8	wks	320	hrs	\$ 75.00	\$ 24,000.00	
Equipment Operator - Level 2	8	wks	320	hrs	\$ 34.50	\$ 11,040.58	
Equipment							
Portable Toilets	2.5	mos			\$ 200.00	\$ 500.00	
Water Truck (40 x 2,500 tanks)	8	wks			\$ 3,400.00	\$ 27,200.00	
Grader or Bulldozer with road blade	8	wks			\$ 3,140.00	\$ 25,120.00	
Work Truck - Crew Cab	8	wks			\$ 320.00	\$ 2,560.00	
Field Expenses							
Erosion Control materials	1	ls			12000	\$ 12,000.00	
Subcontractor Costs							
Surveyor	1	ls			\$ 8,000.00	\$ 8,000.00	
						\$ 131,220.58	
Weekly Rate						\$ 16,402.57	

Labor Rates										
Labor Group		Rate	Fringe	Subtotal	Basic Payroll Tax (10.73%)	Worker's Comp. Ins. (13%)	Subtotal	Liability Ins. (1.5%)	Per diem	Total
Electrician		\$ 24.75	\$ 11.92	\$ 36.67	\$ 3.93	\$ 4.77	\$ 45.37	\$ 0.68	\$ 10.00	\$ 56.05
Ironworker		\$ 24.58	\$ 10.47	\$ 35.05	\$ 3.76	\$ 4.56	\$ 43.37	\$ 0.65	\$ 10.00	\$ 54.02
Laborer - Common		\$ 11.11	\$ 3.80	\$ 14.91	\$ 1.60	\$ 1.94	\$ 18.45	\$ 0.28	\$ 10.00	\$ 28.72
Laborer - Foreman	Foreman (Add 15% to Common)	\$ 12.78	\$ 4.37	\$ 17.15	\$ 1.84	\$ 2.23	\$ 21.22	\$ 0.32	\$ 10.00	\$ 31.53
Truck Driver	Semi & Water	\$ 16.29	\$ 3.83	\$ 20.12	\$ 2.16	\$ 2.62	\$ 24.89	\$ 0.37	\$ 10.00	\$ 35.27
Equipment Operator - Level 2	Bulldozer, Backhoe & Reach Fork	\$ 15.93	\$ 3.58	\$ 19.51	\$ 2.09	\$ 2.54	\$ 24.14	\$ 0.36	\$ 10.00	\$ 34.50
Equipment Operator - Level 3	Excavator & Scraper	\$ 24.73	\$ 9.15	\$ 33.88	\$ 3.64	\$ 4.40	\$ 41.92	\$ 0.63	\$ 10.00	\$ 52.55

Rates taken from the Davis Bacon Wage Decision Number:

CO130023 1/24/13 for Garfield County, CO

CO140013 Heavy

9/5/2014

Any rates not shown were derived by decisions issued for adjacent counties (ie GUNNISON & MESA).

Per diem per man per day	
hotel per man	
\$ 45.00 with 2 men/rm	\$ 35.00 Food & Incidentals