APPENDIX C

Cost Detail Reports for
MWL Corrective Measures Alternatives

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: No Further Action Alternatives
ID: No Further Action Alternatives
Type: None

Phase Element

Name: MWL I.a - NFA With Institutional Controls
Type: Long Term Monitoring
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: None
Start Date: 10/1/2006
Media/Waste Type: Solids
Secondary Media/Waste Type: Soil
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A
Description: Under this alternative, the existing operational cover would be maintained and current institutional controls would

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Phase Element Technology Cost Detail Report (without Markups)

continue for the forseeable future. Soil would be added to the existing landfill surface to bring the operational cover to a central crown and uniform grade to prevent ponding and promote surface runoff. Estimated costs for groundwater, soil, vegetation, and air monitoring for 30 years are included. Estimated costs for seeding, mulching, grading, erosion control, signage, and fencing are also included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040101	Security Fence, 10' Galvanized with 3 Strands Barbed Wire	620.00	LF	12.40	8.56	6.93	$17,290.93	☐
18040105	Boundary Fence, 5' Galvanized	1,021.00	LF	1.33	2.23	1.90	$5,573.43	☐
18040115	Swing Gates, Complete	1.00	EA	641.73	117.00	94.77	$853.50	☐
18040116	5' Swing Gate, 12' Double	2.00	EA	534.92	89.52	26.90	$1,302.69	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	29.96	0.00	$1,340.94	☐
33220112	Field Technician	240.00	HR	0.00	17.66	0.00	$4,238.38	☐
				Total Element Cost			**$30,599.88**	
				Total Technology Cost			**$30,599.88**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
				Total Technology Cost			**$2,346.52**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	6,100.00	CY	0.28	1.72	4.35	$38,699.01	☐
17040101	General Area Cleanup	2.60	ACRE	0.00	201.17	43.35	$635.75	☐
				Total Element Cost			**$39,334.76**	
				Total Technology Cost			**$39,334.76**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:15:33 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Access Roads

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010102	Medium Brush without Grub, Clearing	5.81	ACRE	0.00	69.06	63.00	$767.28	☐
17030103	Rough Grading, 14G, 1 Pass	33,733.33	SY	0.00	0.31	0.68	$33,449.97	☐
17030108	Fine Grading, 130G, 2 Passes	13,493.33	SY	0.00	0.07	0.12	$2,571.83	☐
17030202	Ditch Excavation, Normal Soil, Haul Spoil 1 Mile	7,308.89	CY	0.00	1.59	0.96	$18,602.59	☐
17030506	Compact Sand Subgrade (Wet & 2 Passes)	16,866.67	SY	0.00	0.15	0.25	$6,682.57	☐
19030401	18' Complete, 24" Corrugated Metal Pipe Culvert with Headwalls	4.00	EA	2,487.47	1,208.27	306.16	$16,007.61	☐

Total Element Cost	**$78,081.85**
Total Technology Cost	**$78,081.85**
Total Phase Element Cost	**$179,163.40**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Containment Alternatives
ID: Containment Alternatives
Type: None

Phase Element

Name: MWL III.a - Bio-intrusion Barrier
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: In Situ
Start Date: 10/1/2006
Media/Waste Type: Solids
Secondary Media/Waste Type: Soil
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: System Defaults
Description: Under this alternative, a bio-intrusion barrier would be deployed on the existing operational cover. The barrier would be

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composed of a layer of cobbles or boulders to limit intrusion of deep-rooted plants and burrowing mammals. The barrier would be constructed once the landfill surface was centrally crowned and brought to a uniform grade. Estimated costs for groundwater, vadose zone, soil, vegetation, and air monitoring for 30 years are included. Estimated costs for seeding, mulching, grading, erosion control, signage, and fencing are also included.

Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐
				Total Element Cost			**$55,616.49**	
				Total Technology Cost			**$55,616.49**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Capping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	6,100.00	CY	0.28	2.10	4.35	$41,000.54	☐
17030430	Gravel, 6" Lifts	8,713.00	CY	37.50	3.18	1.56	$368,003.14	☐
33060301	Level and Compact Working Surface	6,292.00	CY	0.00	1.95	3.70	$35,544.14	☐
				Total Element Cost			**$444,547.82**	
				Total Technology Cost			**$444,547.82**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	30,594.53	0.00	$30,594.53	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	30,594.53	0.00	$30,594.53	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	33,653.98	0.00	$33,653.98	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	4,283.23	0.00	$4,283.23	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	4,283.23	0.00	$4,283.23	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	917.84	0.00	$917.84	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	61,189.05	0.00	$61,189.05	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$165,516.38**	
				Total Technology Cost			**$165,516.38**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$0.00**	

Element: Capping

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18050402	Seeding, Vegetative Cover	1.00	ACRE	1,889.64	71.35	48.92	$2,009.90	☐
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	6.00	ACRE	34.10	27.25	8.46	$418.83	☐
18050415	Mowing	16.00	ACRE	0.00	18.54	6.30	$397.50	☐
33220106	Staff Engineer	2.00	HR	0.00	26.31	0.00	$52.63	☐
33220112	Field Technician	7.00	HR	0.00	17.66	0.00	$123.62	☐
				Total Element Cost			**$3,002.48**	

Total Technology Cost	**$3,002.48**
Runtime Percent Cost Adjustment	**97%**
O & M Total Cost	**$2,912.41**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Access Roads

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010102	Medium Brush without Grub, Clearing	5.81	ACRE	0.00	69.06	63.00	$767.28	☐
17030103	Rough Grading, 14G, 1 Pass	33,733.33	SY	0.00	0.31	0.68	$33,449.97	☐
17030108	Fine Grading, 130G, 2 Passes	13,493.33	SY	0.00	0.07	0.12	$2,571.83	☐
17030202	Ditch Excavation, Normal Soil, Haul Spoil 1 Mile	7,308.89	CY	0.00	1.59	0.96	$18,602.59	☐
17030506	Compact Sand Subgrade (Wet & 2 Passes)	16,866.67	SY	0.00	0.15	0.25	$6,682.57	☐
19030401	18' Complete, 24" Corrugated Metal Pipe Culvert with Headwalls	4.00	EA	2,487.47	1,208.27	306.16	$16,007.61	☐
				Total Element Cost			**$78,081.85**	
				Total Technology Cost			**$78,081.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
				Total Technology Cost			**$2,346.52**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:16:13 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:16:13 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Vadose Zone Monitoring System

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	785.07	1,774.86	$2,559.93	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	480.00	HR	0.00	21.54	0.00	$10,337.52	☐
33231152	Air Rotary, 10" Dia Borehole (Unconsolidated), 100 ft < Depth <= 500 ft	750.00	LF	0.00	17.94	40.56	$43,874.40	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	3.00	EA	32.79	81.59	5.00	$358.14	☐
33232301	5' Guard Posts, Cast Iron, Concrete Fill	12.00	EA	20.85	34.61	0.05	$666.12	☐
95010803	Three Neutron Access Tubes, installed by Resonant Sonic Drilling	1.00	SET	78,313.00	0.00	0.00	$78,313.00	☑
95010804	Vadose FLUTe Sampling System, 5 Ports, 250 ft Deep	3.00	EA	7,343.00	0.00	0.00	$22,029.00	☑

Total Element Cost	**$158,921.66**
Total Technology Cost	**$158,921.66**
Total Phase Element Cost	**$984,282.83**

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:16:13 AM

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Containment Alternatives
ID: Containment Alternatives
Type: None

Phase Element

Name: MWL III.b - Vegetative Soil Cover
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: System Defaults
O&M Markup Template: System Defaults
Description: Under this alternative, a vegetative soil cover would be deployed on the existing operational cover. The vegetative soil

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Phase Element Technology Cost Detail Report (without Markups)

cover would be composed of multiple lifts of compacted soil to isolate buried waste from the surface environment and to minimize infiltration of water. A topsoil layer, admixed with gravel, would be vegetated with native plants to mitigate surface erosion and to promote evapotranspiration. A cover constructed of natural soil will perform with minimal maintenance by emulating the natural analog ecosystem. Estimated costs for groundwater, vadose zone, soil, vegetation, and air monitoring for 30 years are included. Estimated costs for seeding, mulching, grading, erosion control, signage, and fencing are also included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Access Roads

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010102	Medium Brush without Grub, Clearing	5.81	ACRE	0.00	69.06	63.00	$767.28	☐
17030103	Rough Grading, 14G, 1 Pass	33,733.33	SY	0.00	0.31	0.68	$33,449.97	☐
17030108	Fine Grading, 130G, 2 Passes	13,493.33	SY	0.00	0.07	0.12	$2,571.83	☐
17030202	Ditch Excavation, Normal Soil, Haul Spoil 1 Mile	7,308.89	CY	0.00	1.59	0.96	$18,602.59	☐
17030506	Compact Sand Subgrade (Wet & 2 Passes)	16,866.67	SY	0.00	0.15	0.25	$6,682.57	☐
19030401	18' Complete, 24" Corrugated Metal Pipe Culvert with Headwalls	4.00	EA	2,487.47	1,208.27	306.16	$16,007.61	☐
				Total Element Cost			**$78,081.85**	
				Total Technology Cost			**$78,081.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	41,408.35	0.00	$41,408.35	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	38,647.79	0.00	$38,647.79	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	33,126.68	0.00	$33,126.68	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	5,521.11	0.00	$5,521.11	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	5,521.11	0.00	$5,521.11	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	1,656.33	0.00	$1,656.33	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	55,211.13	0.00	$55,211.13	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$181,092.51**	
				Total Technology Cost			**$181,092.51**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$0.00**	

Element: Capping

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18050402	Seeding, Vegetative Cover	1.00	ACRE	1,889.64	71.35	48.92	$2,009.90	☐
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	6.00	ACRE	34.10	27.25	8.46	$418.83	☐
18050415	Mowing	16.00	ACRE	0.00	18.54	6.30	$397.50	☐
33220106	Staff Engineer	2.00	HR	0.00	26.31	0.00	$52.63	☐
33220112	Field Technician	7.00	HR	0.00	17.66	0.00	$123.62	☐
				Total Element Cost			**$3,002.48**	

Total Technology Cost	**$3,002.48**
Runtime Percent Cost Adjustment	**97%**
O & M Total Cost	**$2,912.41**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Capping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	16,000.00	CY	0.28	2.10	4.35	$107,542.40	☐
18050302	Topsoil, 6" Lifts, On-Site	2,200.00	CY	0.01	1.98	5.27	$15,970.90	☐
18050402	Seeding, Vegetative Cover	3.65	ACRE	1,889.64	87.01	48.92	$7,393.30	☐
33060301	Level and Compact Working Surface	8,833.00	CY	0.00	1.95	3.70	$49,898.50	☐
				Total Element Cost			**$180,805.10**	
				Total Technology Cost			**$180,805.10**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:16:31 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐
				Total Element Cost			**$55,616.49**	
				Total Technology Cost			**$55,616.49**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
				Total Technology Cost			**$2,346.52**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Vadose Zone Monitoring System

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	785.07	1,774.86	$2,559.93	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	480.00	HR	0.00	21.54	0.00	$10,337.52	☐
33231152	Air Rotary, 10" Dia Borehole (Unconsolidated), 100 ft < Depth <= 500 ft	750.00	LF	0.00	17.94	40.56	$43,874.40	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	3.00	EA	32.79	81.59	5.00	$358.14	☐
33232301	5' Guard Posts, Cast Iron, Concrete Fill	12.00	EA	20.85	34.61	0.05	$666.12	☐
95010803	Three Neutron Access Tubes, installed by Resonant Sonic Drilling	1.00	SET	78,313.00	0.00	0.00	$78,313.00	☑
95010804	Vadose FLUTe Sampling System, 5 Ports, 250 ft Deep	3.00	EA	7,343.00	0.00	0.00	$22,029.00	☑

Total Element Cost	**$158,921.66**
Total Technology Cost	**$158,921.66**
Total Phase Element Cost	**$736,116.24**

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:16:31 AM

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Containment Alternatives
ID: Containment Alternatives
Type: None

Phase Element

Name: MWL III.c - Vegetative Soil Cover w/ Bio Barrier
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: System Defaults
O&M Markup Template: System Defaults
Description: Under this alternative, a biointrusion barrier composed of a layer of cobbles or boulders would be constructed on the

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existing operational cover before deployment of a vegetative soil cover. Estimated costs for groundwater, vadose zone, soil, vegetation, and air monitoring for 30 years are included. Estimated costs for seeding, mulching, grading, erosion control, signage and fencing are also included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	51,425.00	0.00	$51,425.00	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	51,425.00	0.00	$51,425.00	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	56,567.50	0.00	$56,567.50	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	7,199.50	0.00	$7,199.50	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	7,199.50	0.00	$7,199.50	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	1,542.75	0.00	$1,542.75	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	102,850.01	0.00	$102,850.01	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$278,209.27**	
				Total Technology Cost			**$278,209.27**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Access Roads

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010102	Medium Brush without Grub, Clearing	5.81	ACRE	0.00	69.06	63.00	$767.28	☐
17030103	Rough Grading, 14G, 1 Pass	33,733.33	SY	0.00	0.31	0.68	$33,449.97	☐
17030108	Fine Grading, 130G, 2 Passes	13,493.33	SY	0.00	0.07	0.12	$2,571.83	☐
17030202	Ditch Excavation, Normal Soil, Haul Spoil 1 Mile	7,308.89	CY	0.00	1.59	0.96	$18,602.59	☐
17030506	Compact Sand Subgrade (Wet & 2 Passes)	16,866.67	SY	0.00	0.15	0.25	$6,682.57	☐
19030401	18' Complete, 24" Corrugated Metal Pipe Culvert with Headwalls	4.00	EA	2,487.47	1,208.27	306.16	$16,007.61	☐
				Total Element Cost			**$78,081.85**	
				Total Technology Cost			**$78,081.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Capping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	16,000.00	CY	0.28	2.10	4.35	$107,542.40	☐
17030430	Gravel, 6" Lifts	8,713.00	CY	37.50	3.18	1.56	$368,003.14	☐
18050302	Topsoil, 6" Lifts, On-Site	2,200.00	CY	0.01	1.98	5.27	$15,970.90	☐
18050402	Seeding, Vegetative Cover	25.00	ACRE	1,889.64	87.01	48.92	$50,639.06	☐
33060301	Level and Compact Working Surface	8,833.00	CY	0.00	1.95	3.70	$49,898.50	☐
33080513	Drainage Netting, Geotextile Fabric Heat-bonded 2 Sides	158,994.00	SF	0.36	0.05	0.00	$65,139.84	☐
				Total Element Cost			**$657,193.84**	
				Total Technology Cost			**$657,193.84**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$0.00**	

Element: Capping

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18050402	Seeding, Vegetative Cover	1.00	ACRE	1,889.64	71.35	48.92	$2,009.90	☐
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	6.00	ACRE	34.10	27.25	8.46	$418.83	☐
18050415	Mowing	16.00	ACRE	0.00	18.54	6.30	$397.50	☐
33220106	Staff Engineer	6.00	HR	0.00	26.31	0.00	$157.89	☐
33220112	Field Technician	29.00	HR	0.00	17.66	0.00	$512.14	☐
				Total Element Cost			**$3,496.25**	

Total Technology Cost	**$3,496.25**
Runtime Percent Cost Adjustment	**97%**
O & M Total Cost	**$3,391.36**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐
				Total Element Cost			**$55,616.49**	
				Total Technology Cost			**$55,616.49**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:17:00 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
			Total Technology Cost				**$2,346.52**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:17:00 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Vadose Zone Monitoring System

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	785.07	1,774.86	$2,559.93	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	480.00	HR	0.00	21.54	0.00	$10,337.52	☐
33231152	Air Rotary, 10" Dia Borehole (Unconsolidated), 100 ft < Depth <= 500 ft	750.00	LF	0.00	17.94	40.56	$43,874.40	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	3.00	EA	32.79	81.59	5.00	$358.14	☐
33232301	5' Guard Posts, Cast Iron, Concrete Fill	12.00	EA	20.85	34.61	0.05	$666.12	☐
95010803	Three Neutron Access Tubes, installed by Resonant Sonic Drilling	1.00	SET	78,313.00	0.00	0.00	$78,313.00	☑
95010804	Vadose FLUTe Sampling System, 5 Ports, 250 ft Deep	3.00	EA	7,343.00	0.00	0.00	$22,029.00	☑

Total Element Cost	**$158,921.66**
Total Technology Cost	**$158,921.66**
Total Phase Element Cost	**$1,310,100.69**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Containment Alternatives
ID: Containment Alternatives
Type: None

Phase Element

Name: MWL III.d - RCRA C Cap
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: System Defaults
O&M Markup Template: System Defaults
Description: Under this alternative, a RCRA Subtitle C cap would be deployed on the existing operational cover. The primary

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Phase Element Technology Cost Detail Report (without Markups)

function of a RCRA Subtitle C cap is to limit water infiltration into waste disposal cells in order to minimize creation of leachate that could migrate to groundwater. Estimated costs for groundwater, vadose zone, soil, vegetation, and air monitoring for 30 years are included. Estimated costs for seeding, mulching, grading, erosion control, signage, and fencing are also included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	65,835.27	0.00	$65,835.27	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	65,835.27	0.00	$65,835.27	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	82,294.08	0.00	$82,294.08	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	8,229.41	0.00	$8,229.41	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	8,229.41	0.00	$8,229.41	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	1,152.12	0.00	$1,152.12	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	82,294.08	0.00	$82,294.08	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$313,869.62**	
				Total Technology Cost			**$313,869.62**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Access Roads

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010102	Medium Brush without Grub, Clearing	5.81	ACRE	0.00	69.06	63.00	$767.28	☐
17030103	Rough Grading, 14G, 1 Pass	33,733.33	SY	0.00	0.31	0.68	$33,449.97	☐
17030108	Fine Grading, 130G, 2 Passes	13,493.33	SY	0.00	0.07	0.12	$2,571.83	☐
17030202	Ditch Excavation, Normal Soil, Haul Spoil 1 Mile	7,308.89	CY	0.00	1.59	0.96	$18,602.59	☐
17030506	Compact Sand Subgrade (Wet & 2 Passes)	16,866.67	SY	0.00	0.15	0.25	$6,682.57	☐
19030401	18' Complete, 24" Corrugated Metal Pipe Culvert with Headwalls	4.00	EA	2,487.47	1,208.27	306.16	$16,007.61	☐
				Total Element Cost			**$78,081.85**	
				Total Technology Cost			**$78,081.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Capping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	35,391.85	CY	0.28	2.10	4.35	$237,882.79	☐
18050302	Topsoil, 6" Lifts, On-Site	3,702.90	CY	0.01	1.98	5.27	$26,881.20	☐
18050402	Seeding, Vegetative Cover	3.65	ACRE	1,889.64	87.01	48.92	$7,393.30	☐
33060301	Level and Compact Working Surface	8,833.00	CY	0.00	1.95	3.70	$49,898.50	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	1,771.71	LF	0.04	0.58	0.15	$1,382.82	☐
33080507	Clay 10E-7, 6" Lifts, Off-Site	16,589.00	CY	5.95	5.86	7.13	$314,132.62	☐
33080513	Drainage Netting, Geotextile Fabric Heat-bonded 2 Sides	175,961.90	SF	0.36	0.05	0.00	$72,091.59	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	175,961.90	SF	0.25	1.00	0.09	$235,736.17	☐

Total Element Cost	**$945,399.00**
Total Technology Cost	**$945,399.00**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$0.00**	

Element: Capping

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18050402	Seeding, Vegetative Cover	1.00	ACRE	1,889.64	71.35	48.92	$2,009.90	☐
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	8.00	ACRE	34.10	27.25	8.46	$558.44	☐
18050415	Mowing	22.00	ACRE	0.00	18.54	6.30	$546.56	☐
33220106	Staff Engineer	7.00	HR	0.00	26.31	0.00	$184.20	☐
33220112	Field Technician	33.00	HR	0.00	17.66	0.00	$582.78	☐
				Total Element Cost			**$3,881.88**	
				Total Technology Cost			**$3,881.88**	
				Runtime Percent Cost Adjustment			**97%**	
				O & M Total Cost			**$3,765.42**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐
				Total Element Cost			**$55,616.49**	
				Total Technology Cost			**$55,616.49**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐

Total Element Cost	**$18,507.85**
Total Technology Cost	**$18,507.85**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
				Total Technology Cost			**$2,346.52**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:17:36 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Vadose Zone Monitoring System

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	785.07	1,774.86	$2,559.93	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	480.00	HR	0.00	21.54	0.00	$10,337.52	☐
33231152	Air Rotary, 10" Dia Borehole (Unconsolidated), 100 ft < Depth <= 500 ft	750.00	LF	0.00	17.94	40.56	$43,874.40	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	3.00	EA	32.79	81.59	5.00	$358.14	☐
33232301	5' Guard Posts, Cast Iron, Concrete Fill	12.00	EA	20.85	34.61	0.05	$666.12	☐
95010803	Three Neutron Access Tubes, installed by Resonant Sonic Drilling	1.00	SET	78,313.00	0.00	0.00	$78,313.00	☑
95010804	Vadose FLUTe Sampling System, 5 Ports, 250 ft Deep	3.00	EA	7,343.00	0.00	0.00	$22,029.00	☑

Total Element Cost	**$158,921.66**
Total Technology Cost	**$158,921.66**
Total Phase Element Cost	**$1,634,340.26**

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:17:36 AM

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study AI

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Containment Alternatives
ID: Containment Alternatives
Type: None

Phase Element

Name: MWL III.e - RCRA C Cap w/ Biointrusion Barrier
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006

Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: None
Secondary Contaminant: None
Markup Template: System Defaults
O&M Markup Template: System Defaults

Cost Database Date: 2001
Cost Type: User-Defined
Print Date: 3/14/2003 11:17:53 AM

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Phase Element Technology Cost Detail Report (without Markups)

Description: Under this alternative, a bio-intrusion barrier composed of a layer of cobbles would be included in the RCRA Subtitle C cap. EPA recommends that a 3-ft cobble barrier be placed between the vegetation/soil layer and the drainage layer. Estimated costs for groundwater, vadose zone, soil, vegetation, and air monitoring for 30 years are included. Estimated costs for seeding, mulching, grading, erosion control, signage, and fencing are also included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	97,554.30	0.00	$97,554.30	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	97,554.30	0.00	$97,554.30	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	121,942.88	0.00	$121,942.88	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	12,194.29	0.00	$12,194.29	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	12,194.29	0.00	$12,194.29	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	1,707.20	0.00	$1,707.20	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	121,942.88	0.00	$121,942.88	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$465,090.12**	
				Total Technology Cost			**$465,090.12**	

Phase Element Technology Cost Detail Report (without Markups)

Technology: Access Roads

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010102	Medium Brush without Grub, Clearing	5.81	ACRE	0.00	69.06	63.00	$767.28	☐
17030103	Rough Grading, 14G, 1 Pass	33,733.33	SY	0.00	0.31	0.68	$33,449.97	☐
17030108	Fine Grading, 130G, 2 Passes	13,493.33	SY	0.00	0.07	0.12	$2,571.83	☐
17030202	Ditch Excavation, Normal Soil, Haul Spoil 1 Mile	7,308.89	CY	0.00	1.59	0.96	$18,602.59	☐
17030506	Compact Sand Subgrade (Wet & 2 Passes)	16,866.67	SY	0.00	0.15	0.25	$6,682.57	☐
19030401	18' Complete, 24" Corrugated Metal Pipe Culvert with Headwalls	4.00	EA	2,487.47	1,208.27	306.16	$16,007.61	☐
				Total Element Cost			**$78,081.85**	
				Total Technology Cost			**$78,081.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Capping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030422	Unclassified Fill, 6" Lifts, On-Site, Includes Spreading and Compaction	35,391.85	CY	0.28	2.10	4.35	$237,882.79	☐
17030430	Gravel, 6" Lifts	13,313.00	CY	37.50	3.18	1.56	$562,289.20	☐
18050302	Topsoil, 6" Lifts, On-Site	3,702.90	CY	0.01	1.98	5.27	$26,881.20	☐
18050402	Seeding, Vegetative Cover	3.65	ACRE	1,889.64	87.01	48.92	$7,393.30	☐
33060301	Level and Compact Working Surface	8,833.00	CY	0.00	1.95	3.70	$49,898.50	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	1,771.71	LF	0.04	0.58	0.15	$1,382.82	☐
33080507	Clay 10E-7, 6" Lifts, Off-Site	16,589.00	CY	5.95	5.86	7.13	$314,132.62	☐
33080513	Drainage Netting, Geotextile Fabric Heat-bonded 2 Sides	351,923.80	SF	0.36	0.05	0.00	$144,183.19	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	175,961.90	SF	0.25	1.00	0.09	$235,736.17	☐
					Total Element Cost		**$1,579,779.79**	
					Total Technology Cost		**$1,579,779.79**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$0.00**	

Element: Capping

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18050402	Seeding, Vegetative Cover	1.00	ACRE	1,889.64	71.35	48.92	$2,009.90	☐
18050409	Fertilize, 800 Lbs/Acre, Push Rotary	8.00	ACRE	34.10	27.25	8.46	$558.44	☐
18050415	Mowing	22.00	ACRE	0.00	18.54	6.30	$546.56	☐
33220106	Staff Engineer	7.00	HR	0.00	26.31	0.00	$184.20	☐
33220112	Field Technician	33.00	HR	0.00	17.66	0.00	$582.78	☐
				Total Element Cost			**$3,881.88**	
				Total Technology Cost			**$3,881.88**	
				Runtime Percent Cost Adjustment			**97%**	
				O & M Total Cost			**$3,765.42**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐
				Total Element Cost			**$55,616.49**	
				Total Technology Cost			**$55,616.49**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:17:53 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
			Total Technology Cost				**$2,346.52**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:17:53 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Vadose Zone Monitoring System

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	785.07	1,774.86	$2,559.93	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	480.00	HR	0.00	21.54	0.00	$10,337.52	☐
33231152	Air Rotary, 10" Dia Borehole (Unconsolidated), 100 ft < Depth <= 500 ft	750.00	LF	0.00	17.94	40.56	$43,874.40	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	3.00	EA	32.79	81.59	5.00	$358.14	☐
33232301	5' Guard Posts, Cast Iron, Concrete Fill	12.00	EA	20.85	34.61	0.05	$666.12	☐
95010803	Three Neutron Access Tubes, installed by Resonant Sonic Drilling	1.00	SET	78,313.00	0.00	0.00	$78,313.00	☑
95010804	Vadose FLUTe Sampling System, 5 Ports, 250 ft Deep	3.00	EA	7,343.00	0.00	0.00	$22,029.00	☑

Total Element Cost	**$158,921.66**
Total Technology Cost	**$158,921.66**
Total Phase Element Cost	**$2,419,941.55**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option A
ID: Excavation Alternatives - Option A
Type: None

Phase Element

Name: MWL V.a - Complete Excavation w/ ARS
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: System Defaults
Description: Under this alternative, the landfill would be excavated and the wastes would be placed in permanent, aboveground,

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retrievable storage. Secure, high bay warehouses for processing and storage of classified and unclassified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and cost. Costs for shielding, remote handling, and/or robotic equipment required for excavation of the classified area are included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost **$710,372.89**

Total Technology Cost **$710,372.89**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$0.00**
Total Technology Cost	**$0.00**
Runtime Percent Cost Adjustment	**97%**
O & M Total Cost	**$0.00**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	201.51	CY	0.00	71.34	0.00	$14,376.03	☐
17030279	4 CY, Crawler-mounted, Hydraulic Excavator	66,783.70	CY	0.00	1.35	3.02	$291,424.05	☐
17030418	Delivered & Dumped, Backfill with Stone	1,749.82	BCY	21.29	1.17	1.28	$41,554.72	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	83,731.52	CY	4.95	2.21	2.70	$825,509.09	☐
33020217	Gamma Spectroscopy	212.00	EA	77.04	0.00	0.00	$16,333.33	☐
33020401	Disposable Materials per Sample	212.00	EA	7.22	0.00	0.00	$1,530.92	☐
33021102	Soil Moisture Content ASTM D2216	212.00	EA	21.04	0.00	0.00	$4,461.03	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	212.00	EA	570.45	0.00	0.00	$120,934.68	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	212.00	EA	148.07	0.00	0.00	$31,390.61	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	212.00	EA	176.56	0.00	0.00	$37,430.53	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	212.00	EA	260.02	0.00	0.00	$55,124.98	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	212.00	EA	38.52	0.00	0.00	$8,166.66	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	212.00	EA	59.39	0.00	0.00	$12,590.28	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	212.00	EA	73.83	0.00	0.00	$15,652.79	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	212.00	EA	72.23	0.00	0.00	$15,312.51	☐
33080584	Plastic Laminate Waste Pile Cover	623,967.30	SF	0.10	0.04	0.00	$89,040.14	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	59,700.00	CY	1,000.00	0.00	0.00	$59,700,000.00	☑
95010411	Waste Characterization for Debris	20,861.00	CY	10,000.00	0.00	0.00	$208,610,000.00	☑
				Total Element Cost			**$269,891,437.55**	
				Total Technology Cost			**$269,891,437.55**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	364.00	EA	0.00	29.84	24.51	$19,784.60	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	364.00	EA	118.57	0.00	0.00	$43,159.88	☐
				Total Element Cost			**$156,479.02**	
				Total Technology Cost			**$156,479.02**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	2,036,060.00	0.00	$2,036,060.00	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	1,628,848.00	0.00	$1,628,848.00	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	5,090,150.00	0.00	$5,090,150.00	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,018,030.00	0.00	$1,018,030.00	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	1,018,030.00	0.00	$1,018,030.00	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	20,360.60	0.00	$20,360.60	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	2,036,060.00	0.00	$2,036,060.00	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$12,847,538.60**	
				Total Technology Cost			**$12,847,538.60**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:18:28 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Transportation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	54,023.00	EA	0.00	32.86	2.91	$1,932,397.31	☐
33190103	Load Drums on Disposal Vehicle	364.00	EA	0.00	2.73	1.62	$1,584.60	☐
33190229	Van Trailer Transportation Hazardous Waste Minimum Charge	5,882.00	EA	66.71	0.00	0.00	$392,388.22	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	8,099.00	EA	668.00	0.00	0.00	$5,410,132.00	☑
95010302	4 ft X 2 ft X 7 ft Shipping Box wi Liner	45,924.00	EA	668.00	0.00	0.00	$30,677,232.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	115,333.00	CY	0.00	197.58	0.00	$22,787,494.14	☑

Total Element Cost	**$61,201,228.27**
Total Technology Cost	**$61,201,228.27**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	34,253.33	CY	4.95	2.21	2.70	$337,703.56	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	255,255.80	SF	0.10	0.04	0.00	$36,425.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑
				Total Element Cost			**$75,160,280.14**	
				Total Technology Cost			**$75,160,280.14**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$420,059,550.28**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option B
ID: Excavation Alternatives - Option B
Type: None

Phase Element

Name: MWL V.a - Complete Excavation w/ ARS
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: System Defaults
Description: Under this alternative, the landfill would be excavated and the wastes would be placed in permanent, aboveground,

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retrievable storage. Secure, high bay warehouses for processing and storage of classified and unclassified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and cost. Costs for shielding, remote handling, and/or robotic equipment required for excavation of the classified area are included. All soils, including contaminated soils, will be placed in the excavation as backfill.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
					Total Element Cost		**$18,507.85**	
					Total Technology Cost		**$18,507.85**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐
				Total Element Cost			**$710,372.89**	
				Total Technology Cost			**$710,372.89**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Operations and Maintenance (12 - months only)

Element: Miscellaneous

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
99020110	Annual Maintenance Materials and Labor	1.00	LS	0.00	0.00	0.00	$0.00	☐

Total Element Cost	**$0.00**
Total Technology Cost	**$0.00**
Runtime Percent Cost Adjustment	**97%**
O & M Total Cost	**$0.00**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
					Total Element Cost		**$18,089.47**	
					Total Technology Cost		**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	1,779,827.00	0.00	$1,779,827.00	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	1,423,861.63	0.00	$1,423,861.63	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	4,449,567.50	0.00	$4,449,567.50	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	889,913.50	0.00	$889,913.50	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	889,913.50	0.00	$889,913.50	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	17,798.27	0.00	$17,798.27	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	1,779,827.00	0.00	$1,779,827.00	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$11,230,708.39**	
				Total Technology Cost			**$11,230,708.39**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:25 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	364.00	EA	0.00	29.84	24.51	$19,784.60	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	364.00	EA	118.57	0.00	0.00	$43,159.88	☐
				Total Element Cost			**$156,479.02**	
				Total Technology Cost			**$156,479.02**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Transportation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	8,099.00	EA	0.00	32.86	2.91	$289,700.42	☐
33190103	Load Drums on Disposal Vehicle	364.00	EA	0.00	2.73	1.62	$1,584.60	☐
33190229	Van Trailer Transportation Hazardous Waste Minimum Charge	1,198.00	EA	66.71	0.00	0.00	$79,918.58	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	8,099.00	EA	668.00	0.00	0.00	$5,410,132.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	23,486.00	CY	0.00	197.58	0.00	$4,640,363.88	☑
				Total Element Cost			**$10,421,699.48**	
				Total Technology Cost			**$10,421,699.48**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	201.51	CY	0.00	71.34	0.00	$14,376.03	☐
17030279	4 CY, Crawler-mounted, Hydraulic Excavator	66,783.70	CY	0.00	1.35	3.02	$291,424.05	☐
17030415	Backfill with Excavated Material	61,626.40	CY	0.28	5.28	1.16	$413,993.82	☐
17030418	Delivered & Dumped, Backfill with Stone	1,749.82	BCY	21.29	1.17	1.28	$41,554.72	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	16,746.30	CY	4.95	2.21	2.70	$165,101.78	☐
33020217	Gamma Spectroscopy	212.00	EA	77.04	0.00	0.00	$16,333.33	☐
33020401	Disposable Materials per Sample	212.00	EA	7.22	0.00	0.00	$1,530.92	☐
33021102	Soil Moisture Content ASTM D2216	212.00	EA	21.04	0.00	0.00	$4,461.03	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	212.00	EA	570.45	0.00	0.00	$120,934.68	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	212.00	EA	148.07	0.00	0.00	$31,390.61	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	212.00	EA	176.56	0.00	0.00	$37,430.53	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	212.00	EA	260.02	0.00	0.00	$55,124.98	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	212.00	EA	38.52	0.00	0.00	$8,166.66	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	212.00	EA	59.39	0.00	0.00	$12,590.28	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	212.00	EA	73.83	0.00	0.00	$15,652.79	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	212.00	EA	72.23	0.00	0.00	$15,312.51	☐
33080584	Plastic Laminate Waste Pile Cover	124,793.50	SF	0.10	0.04	0.00	$17,808.03	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	59,700.00	CY	1,000.00	0.00	0.00	$59,700,000.00	☑
95010411	Waste Characterization for Debris	20,861.00	CY	10,000.00	0.00	0.00	$208,610,000.00	☑

Total Element Cost	**$269,573,791.96**
Total Technology Cost	**$269,573,791.96**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030415	Backfill with Excavated Material	28,992.02	CY	0.28	5.28	1.16	$194,762.59	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	2,740.27	CY	4.95	2.21	2.70	$27,016.32	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	20,420.46	SF	0.10	0.04	0.00	$2,914.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑

Total Element Cost	**$75,010,844.49**
Total Technology Cost	**$75,010,844.49**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$367,196,110.04**

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:25 AM

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option A
ID: Excavation Alternatives - Option A
Type: None

Phase Element

Name: MWL V.b - Complete Excavation With Offsite Disp.
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A

Cost Database Date: 2001
Cost Type: User-Defined
Print Date: 3/14/2003 11:18:42 AM

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Phase Element Technology Cost Detail Report (without Markups)

Description: Under this alternative, the landfill would be excavated and the wastes would be shipped to offsite, licensed facilities for disposal. Secure, high bay warehouses for processing and temporary storage of classified and unclassified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and costs. Costs for shielding, remote handling and/or robotic equipment required for excavation of the classified area are included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	3,166,428.50	0.00	$3,166,428.50	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	2,533,142.75	0.00	$2,533,142.75	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	7,916,071.00	0.00	$7,916,071.00	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,583,214.25	0.00	$1,583,214.25	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	1,583,214.25	0.00	$1,583,214.25	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	31,664.29	0.00	$31,664.29	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	3,166,428.50	0.00	$3,166,428.50	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$19,980,163.54**	
				Total Technology Cost			**$19,980,163.54**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:18:42 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Landfill Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	54,023.00	EA	0.00	22.04	2.18	$1,308,593.73	☐
33190103	Load Drums on Disposal Vehicle	364.00	EA	0.00	2.73	1.62	$1,584.60	☐
95010201	Low Level Radioactive Waste Shipping & Disposal	91,847.00	CY	673.92	0.00	0.00	$61,897,530.24	☑
95010202	Mixed Waste Shipping & Disposal	23,486.00	CY	6,739.20	0.00	0.00	$158,276,851.20	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	8,099.00	EA	668.00	0.00	0.00	$5,410,132.00	☑
95010302	4 ft X 2 ft X 7 ft Shipping Box wi Liner	45,924.00	EA	668.00	0.00	0.00	$30,677,232.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	115,333.00	CY	0.00	197.58	0.00	$22,787,494.14	☑

Total Element Cost	**$280,359,417.91**
Total Technology Cost	**$280,359,417.91**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	364.00	EA	0.00	29.84	24.51	$19,784.60	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	364.00	EA	118.57	0.00	0.00	$43,159.88	☐
				Total Element Cost			**$156,479.02**	
				Total Technology Cost			**$156,479.02**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost	**$710,372.89**
Total Technology Cost	**$710,372.89**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	201.51	CY	0.00	71.34	0.00	$14,376.03	☐
17030279	4 CY, Crawler-mounted, Hydraulic Excavator	66,783.70	CY	0.00	1.35	3.02	$291,424.05	☐
17030418	Delivered & Dumped, Backfill with Stone	1,749.82	BCY	21.29	1.17	1.28	$41,554.72	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	83,731.52	CY	4.95	2.21	2.70	$825,509.09	☐
33020217	Gamma Spectroscopy	100.00	EA	77.04	0.00	0.00	$7,704.40	☐
33020401	Disposable Materials per Sample	100.00	EA	7.22	0.00	0.00	$722.13	☐
33021102	Soil Moisture Content ASTM D2216	100.00	EA	21.04	0.00	0.00	$2,104.26	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	100.00	EA	570.45	0.00	0.00	$57,044.66	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	100.00	EA	148.07	0.00	0.00	$14,806.89	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	100.00	EA	176.56	0.00	0.00	$17,655.91	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	100.00	EA	260.02	0.00	0.00	$26,002.35	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	100.00	EA	38.52	0.00	0.00	$3,852.20	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	100.00	EA	59.39	0.00	0.00	$5,938.81	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	100.00	EA	73.83	0.00	0.00	$7,383.39	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	100.00	EA	72.23	0.00	0.00	$7,222.88	☐
33080584	Plastic Laminate Waste Pile Cover	623,967.30	SF	0.10	0.04	0.00	$89,040.14	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	66,784.00	CY	1,000.00	0.00	0.00	$66,784,000.00	☑
95010411	Waste Characterization for Debris	20,861.00	CY	10,000.00	0.00	0.00	$208,610,000.00	☑
				Total Element Cost			**$276,806,947.13**	
				Total Technology Cost			**$276,806,947.13**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:18:42 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	34,253.33	CY	4.95	2.21	2.70	$337,703.56	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	255,255.80	SF	0.10	0.04	0.00	$36,425.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑
				Total Element Cost			**$75,160,280.14**	
				Total Technology Cost			**$75,160,280.14**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$653,265,874.44**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option B
ID: Excavation Alternatives - Option B
Type: None

Phase Element

Name: MWL V.b - Complete Excavation With Offsite Disp.
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A

Cost Database Date: 2001
Cost Type: User-Defined
Print Date: 3/14/2003 11:19:39 AM

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Phase Element Technology Cost Detail Report (without Markups)

Description: Under this alternative, the landfill would be excavated and the wastes would be shipped to offsite, licensed facilities for disposal. Secure, high bay warehouses for processing and temporary storage of classified and unclassified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and costs. Costs for shielding, remote handling and/or robotic equipment required for excavation of the classified area are included. Under Option B, all soils (including contaminated soils) will be returned to the excavation as backfill.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	2,570,344.00	0.00	$2,570,344.00	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	2,056,275.25	0.00	$2,056,275.25	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	6,425,860.00	0.00	$6,425,860.00	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	1,285,172.00	0.00	$1,285,172.00	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	1,285,172.00	0.00	$1,285,172.00	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	25,703.44	0.00	$25,703.44	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	2,570,344.00	0.00	$2,570,344.00	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$16,218,870.69**	
				Total Technology Cost			**$16,218,870.69**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:39 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Landfill Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	8,099.00	EA	0.00	22.04	2.18	$196,181.27	☐
33190103	Load Drums on Disposal Vehicle	364.00	EA	0.00	2.73	1.62	$1,584.60	☐
95010202	Mixed Waste Shipping & Disposal	23,486.00	CY	6,739.20	0.00	0.00	$158,276,851.20	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	8,099.00	EA	668.00	0.00	0.00	$5,410,132.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	23,486.00	CY	0.00	197.58	0.00	$4,640,363.88	☑
				Total Element Cost			**$168,525,112.95**	
				Total Technology Cost			**$168,525,112.95**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	364.00	EA	0.00	29.84	24.51	$19,784.60	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	364.00	EA	118.57	0.00	0.00	$43,159.88	☐
				Total Element Cost			**$156,479.02**	
				Total Technology Cost			**$156,479.02**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost	**$710,372.89**
Total Technology Cost	**$710,372.89**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	201.51	CY	0.00	71.34	0.00	$14,376.03	☐
17030279	4 CY, Crawler-mounted, Hydraulic Excavator	66,783.70	CY	0.00	1.35	3.02	$291,424.05	☐
17030415	Backfill with Excavated Material	61,626.40	CY	0.28	5.28	1.16	$413,993.82	☐
17030418	Delivered & Dumped, Backfill with Stone	1,749.82	BCY	21.29	1.17	1.28	$41,554.72	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	16,746.30	CY	4.95	2.21	2.70	$165,101.78	☐
33020217	Gamma Spectroscopy	212.00	EA	77.04	0.00	0.00	$16,333.33	☐
33020401	Disposable Materials per Sample	212.00	EA	7.22	0.00	0.00	$1,530.92	☐
33021102	Soil Moisture Content ASTM D2216	212.00	EA	21.04	0.00	0.00	$4,461.03	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	212.00	EA	570.45	0.00	0.00	$120,934.68	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	212.00	EA	148.07	0.00	0.00	$31,390.61	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	212.00	EA	176.56	0.00	0.00	$37,430.53	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	212.00	EA	260.02	0.00	0.00	$55,124.98	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	212.00	EA	38.52	0.00	0.00	$8,166.66	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	212.00	EA	59.39	0.00	0.00	$12,590.28	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	212.00	EA	73.83	0.00	0.00	$15,652.79	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	212.00	EA	72.23	0.00	0.00	$15,312.51	☐
33080584	Plastic Laminate Waste Pile Cover	124,793.50	SF	0.10	0.04	0.00	$17,808.03	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	59,700.00	CY	1,000.00	0.00	0.00	$59,700,000.00	☑
95010411	Waste Characterization for Debris	20,861.00	CY	10,000.00	0.00	0.00	$208,610,000.00	☑
				Total Element Cost			**$269,573,791.96**	
				Total Technology Cost			**$269,573,791.96**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:39 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030415	Backfill with Excavated Material	28,992.02	CY	0.28	5.28	1.16	$194,762.59	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	2,740.27	CY	4.95	2.21	2.70	$27,016.32	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	20,420.46	SF	0.10	0.04	0.00	$2,914.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑

Total Element Cost	**$75,010,844.49**
Total Technology Cost	**$75,010,844.49**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$530,287,685.81**

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:39 AM

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option A
ID: Excavation Alternatives - Option A
Type: None

Phase Element

Name: MWL V.c - Partial Excavation w/ ARS
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A
Description: Under this alternative, the classified area of the landfill would be excavated and the wastes would be placed in

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permanent, aboveground retrievable storage. Secure, high bay warehouses for processing and storage of classified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and cost. Costs for shielding, remote-handling and/or robotic equipment required for excavation of the classified area are included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	36.00	EA	0.00	29.84	24.51	$1,956.72	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	36.00	EA	118.57	0.00	0.00	$4,268.56	☐
				Total Element Cost			**$99,759.82**	
				Total Technology Cost			**$99,759.82**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	475,003.28	0.00	$475,003.28	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	380,002.63	0.00	$380,002.63	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	1,187,508.25	0.00	$1,187,508.25	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	237,501.64	0.00	$237,501.64	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	237,501.64	0.00	$237,501.64	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	4,750.03	0.00	$4,750.03	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	475,003.28	0.00	$475,003.28	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$2,997,270.75**	
				Total Technology Cost			**$2,997,270.75**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
					Total Element Cost		**$18,507.85**	
					Total Technology Cost		**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost	**$710,372.89**
Total Technology Cost	**$710,372.89**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	34,253.33	CY	4.95	2.21	2.70	$337,703.56	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:18:56 AM

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	255,255.80	SF	0.10	0.04	0.00	$36,425.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑

Total Element Cost	**$75,160,280.14**
Total Technology Cost	**$75,160,280.14**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Transportation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	16,979.00	EA	0.00	32.86	2.91	$607,337.13	☐
33190103	Load Drums on Disposal Vehicle	36.00	EA	0.00	2.73	1.62	$156.72	☐
33190229	Van Trailer Transportation Hazardous Waste Minimum Charge	1,774.00	EA	66.77	0.00	0.00	$118,449.98	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	906.00	EA	668.00	0.00	0.00	$605,208.00	☑
95010302	4 ft X 2 ft X 7 ft Shipping Box wi Liner	16,073.00	EA	668.00	0.00	0.00	$10,736,764.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	34,772.00	CY	0.00	197.58	0.00	$6,870,112.67	☑
				Total Element Cost			**$18,938,028.50**	
				Total Technology Cost			**$18,938,028.50**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$97,997,925.91**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option B
ID: Excavation Alternatives - Option B
Type: None

Phase Element

Name: MWL V.c - Partial Excavation w/ ARS
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A
Description: Under this alternative, the classified area of the landfill would be excavated and the wastes would be placed in

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permanent, aboveground retrievable storage. Secure, high bay warehouses for processing and storage of classified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and cost. Costs for shielding, remote-handling and/or robotic equipment required for excavation of the classified area are included. Under Option B, all soils (including contaminated soils) will be returned to the excavation as backfill.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	36.00	EA	0.00	29.84	24.51	$1,956.72	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	36.00	EA	118.57	0.00	0.00	$4,268.56	☐
				Total Element Cost			**$99,759.82**	
				Total Technology Cost			**$99,759.82**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	385,393.72	0.00	$385,393.72	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	308,314.97	0.00	$308,314.97	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	963,484.31	0.00	$963,484.31	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	192,696.86	0.00	$192,696.86	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	192,696.86	0.00	$192,696.86	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	3,853.94	0.00	$3,853.94	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	385,393.72	0.00	$385,393.72	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$2,431,834.38**	
				Total Technology Cost			**$2,431,834.38**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
					Total Element Cost		**$18,507.85**	
					Total Technology Cost		**$18,507.85**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:54 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐
				Total Element Cost			**$710,372.89**	
				Total Technology Cost			**$710,372.89**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Transportation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	906.00	EA	0.00	32.86	2.91	$32,407.53	☐
33190103	Load Drums on Disposal Vehicle	36.00	EA	0.00	2.73	1.62	$156.72	☐
33190229	Van Trailer Transportation Hazardous Waste Minimum Charge	134.00	EA	66.77	0.00	0.00	$8,947.18	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	906.00	EA	668.00	0.00	0.00	$605,208.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	2,626.00	CY	0.00	197.58	0.00	$518,834.58	☑
				Total Element Cost			**$1,165,554.00**	
				Total Technology Cost			**$1,165,554.00**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030415	Backfill with Excavated Material	28,992.02	CY	0.28	5.28	1.16	$194,762.59	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	2,740.27	CY	4.95	2.21	2.70	$27,016.32	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	20,420.46	SF	0.10	0.04	0.00	$2,914.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑

Total Element Cost **$75,010,844.49**

Total Technology Cost **$75,010,844.49**

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$79,510,579.39**

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option A
ID: Excavation Alternatives - Option A
Type: None

Phase Element

Name: MWL V.d - Partial Excavation With Offsite Disp.
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A
Description: Under this alternative, the classifed area of the landfill would be excavated and the wastes would be shipped to offsite,

Cost Database Date: 2001
Cost Type: User-Defined
Print Date: 3/14/2003 11:19:10 AM

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licensed facilities for disposal. Secure, high bay warehouses for processing and temporary storage of classified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logicstics and costs. Costs for shielding, remote handling and/or robotic equipment required for excavation of the classied area are included.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	671,219.94	0.00	$671,219.94	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	536,975.94	0.00	$536,975.94	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	1,678,049.75	0.00	$1,678,049.75	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	335,609.97	0.00	$335,609.97	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	335,609.97	0.00	$335,609.97	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	6,712.20	0.00	$6,712.20	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	671,219.94	0.00	$671,219.94	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
					Total Element Cost		**$4,235,397.70**	
					Total Technology Cost		**$4,235,397.70**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
				Total Element Cost			**$18,507.85**	
				Total Technology Cost			**$18,507.85**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:10 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	36.00	EA	0.00	29.84	24.51	$1,956.72	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	36.00	EA	118.57	0.00	0.00	$4,268.56	☐
				Total Element Cost			**$99,759.82**	
				Total Technology Cost			**$99,759.82**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost	**$710,372.89**
Total Technology Cost	**$710,372.89**

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	34,253.33	CY	4.95	2.21	2.70	$337,703.56	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	255,255.80	SF	0.10	0.04	0.00	$36,425.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑
				Total Element Cost			**$75,160,280.14**	
				Total Technology Cost			**$75,160,280.14**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Landfill Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	16,979.00	EA	0.00	32.86	2.91	$607,337.13	☐
33190103	Load Drums on Disposal Vehicle	36.00	EA	0.00	2.73	1.62	$156.72	☐
95010201	Low Level Radioactive Waste Shipping & Disposal	32,147.00	CY	673.92	0.00	0.00	$21,664,506.24	☑
95010202	Mixed Waste Shipping & Disposal	2,626.00	CY	6,739.20	0.00	0.00	$17,697,139.20	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	906.00	EA	668.00	0.00	0.00	$605,208.00	☑
95010302	4 ft X 2 ft X 7 ft Shipping Box wi Liner	16,073.00	EA	668.00	0.00	0.00	$10,736,764.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	34,772.00	CY	0.00	197.58	0.00	$6,870,251.76	☑
				Total Element Cost			**$58,181,363.05**	
				Total Technology Cost			**$58,181,363.05**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:19:10 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$138,479,387.41**

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option B
ID: Excavation Alternatives - Option B
Type: None

Phase Element

Name: MWL V.d - Partial Excavation With Offsite Disp.
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2006
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A
Description: Under this alternative, the classifed area of the landfill would be excavated and the wastes would be shipped to offsite,

Cost Database Date: 2001
Cost Type: User-Defined
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licensed facilities for disposal. Secure, high bay warehouses for processing and temporary storage of classified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logicstics and costs. Costs for shielding, remote handling and/or robotic equipment required for excavation of the classied area are included. Under Option B, all soils (included contaminated soils) are returned to the excavation as backfill.

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	473,834.72	0.00	$473,834.72	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	379,067.78	0.00	$379,067.78	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	1,184,586.75	0.00	$1,184,586.75	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	236,917.36	0.00	$236,917.36	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	236,917.36	0.00	$236,917.36	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	4,738.35	0.00	$4,738.35	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	473,834.72	0.00	$473,834.72	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$2,989,897.03**	
				Total Technology Cost			**$2,989,897.03**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:20:08 AM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
					Total Element Cost		**$18,507.85**	
					Total Technology Cost		**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	36.00	EA	0.00	29.84	24.51	$1,956.72	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	36.00	EA	118.57	0.00	0.00	$4,268.56	☐
				Total Element Cost			**$99,759.82**	
				Total Technology Cost			**$99,759.82**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost	**$710,372.89**
Total Technology Cost	**$710,372.89**

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Off-site Transportation and Landfill Disposal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	906.00	EA	0.00	32.86	2.91	$32,407.53	☐
33190103	Load Drums on Disposal Vehicle	36.00	EA	0.00	2.73	1.62	$156.72	☐
95010202	Mixed Waste Shipping & Disposal	2,626.00	CY	6,739.20	0.00	0.00	$17,697,139.20	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	906.00	EA	668.00	0.00	0.00	$605,208.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	2,626.00	CY	0.00	197.58	0.00	$518,845.08	☑
				Total Element Cost			**$18,853,756.53**	
				Total Technology Cost			**$18,853,756.53**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030415	Backfill with Excavated Material	28,992.02	CY	0.28	5.28	1.16	$194,762.59	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	2,740.27	CY	4.95	2.21	2.70	$27,016.32	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	20,420.46	SF	0.10	0.04	0.00	$2,914.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	1,000.00	0.00	0.00	$27,354,000.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	10,000.00	0.00	0.00	$26,260,000.00	☑
95010501	Robotics Excavation of the MWL Classified Area	1.00	EA	20,811,193.00	0.00	0.00	$20,811,193.00	☑

Total Element Cost **$75,010,844.49**

Total Technology Cost **$75,010,844.49**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐

Total Element Cost	**$55,616.49**
Total Technology Cost	**$55,616.49**
Total Phase Element Cost	**$97,756,844.57**

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/14/2003 11:20:08 AM

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Phase Element Technology Cost Detail Report (without Markups)

Folder: MWL Corrective Measures Study Al

Project

Name: MWL Corrective Measures Study Alternatives
ID: MWL Corrective Measures Study Alternatives
Location: ALBUQUERQUE, NEW MEXICO
Modifiers: **Material** 0.935
Labor 1.031
Equipment 0.949
Category: None
Report Option: Fiscal Year

Site

Name: Excavation Alternatives - Option A
ID: Excavation Alternatives - Option A
Type: None

Phase Element

Name: MWL V.e - Future Excavation
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
Start Date: 10/1/2039
Media/Waste Type: N/A
Secondary Media/Waste Type: N/A
Contaminant: Low Level Radioactive
Secondary Contaminant: Metals
Markup Template: System Defaults
O&M Markup Template: N/A
Description: Under this alternative, the landfill would be excavated 50 years after landfill closure. Secure, high bay warehouses for

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processing and temporary storage of classified and unclassified waste would be built on-site, adjacent to the landfill to minimize handling and transportation logistics and costs. Costs for shielding, remote handling and/or robotic equipment required for excavation are not included. It is assumed that remote handling and robotics will not be required during future excavation. Because tritium activities will have decayed to background ranges, all soils will be returned to the excavation as backfill. Estimated costs for groundwater, vadose zone, soil, vegetation, and air monitoring in the interim period until excavation are included. Estimated costs for seeding, mulching, grading, erosion control, signage, and fencing are also included.

Phase Element Technology Cost Detail Report (without Markups)

Technology: Drum Removal

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030276	1 CY, Crawler-mounted, Hydraulic Excavator	806.67	CY	0.00	3.31	2.93	$5,038.38	☐
33080572	60 Mil Polymeric Liner, High-density Polyethylene	25,348.35	SF	0.38	2.89	0.22	$88,496.16	☐
33100101	Transfer Drums to Staging Area with Grappler	364.00	EA	0.00	29.84	24.51	$19,784.60	☐
33190972	Steel Overpack, 85 Gallon, UN Code 1A2/X440/S	364.00	EA	118.57	0.00	0.00	$43,159.88	☐
				Total Element Cost			**$156,479.02**	
				Total Technology Cost			**$156,479.02**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Professional Labor Management

Element: Professional Labor Percentage

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33220138	Project Management Labor Cost	1.00	LS	0.00	228,328.55	0.00	$228,328.55	☑
33220139	Planning Documents Labor Cost	1.00	LS	0.00	182,662.83	0.00	$182,662.83	☑
33220140	Construction Oversight Labor Cost	1.00	LS	0.00	570,821.38	0.00	$570,821.38	☑
33220141	Reporting Labor Cost	1.00	LS	0.00	114,164.27	0.00	$114,164.27	☑
33220142	As-Built Drawings Labor Cost	1.00	LS	0.00	114,164.27	0.00	$114,164.27	☑
33220143	Public Notice Labor Cost	1.00	LS	0.00	2,283.29	0.00	$2,283.29	☑
33220144	Site Closure Activities Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220145	Permitting Labor Cost	1.00	LS	0.00	228,328.55	0.00	$228,328.55	☑
33220146	Responsible Party Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220147	Reimbursement Claims Preparation Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
33220148	Other Labor Cost	1.00	LS	0.00	0.00	0.00	$0.00	☐
				Total Element Cost			**$1,440,753.13**	
				Total Technology Cost			**$1,440,753.13**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Fencing

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
18040105	Boundary Fence, 5' Galvanized	1,801.00	LF	1.33	2.72	1.90	$10,711.45	☐
18040116	5' Swing Gate, 12' Double	1.00	EA	534.92	109.17	26.90	$671.00	☐
18040501	Hazardous Waste Signing	30.00	EA	14.73	36.54	0.00	$1,538.27	☐
33220112	Field Technician	240.00	HR	0.00	21.54	0.00	$5,168.76	☐
				Total Element Cost			**$18,089.47**	
				Total Technology Cost			**$18,089.47**	

Cost Database Date: 2001

Cost Type: User-Defined

Print Date: 3/17/2003 1:04:54 PM

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Cleanup and Landscaping

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17040101	General Area Cleanup	25.00	ACRE	0.00	201.17	43.35	$6,113.03	☐
18050101	Area Preparation, 67% Level & 33% Slope	25.00	ACRE	0.00	29.16	36.19	$1,633.78	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	25.00	ACRE	313.67	84.41	32.36	$10,761.04	☐
					Total Element Cost		**$18,507.85**	
					Total Technology Cost		**$18,507.85**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Decontamination Facilities

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030109	Pad Subgrade Preparation	133.33	CY	0.00	2.56	2.93	$731.72	☐
17030257	Cat 215, 1.0 CY, Soil, Shallow, Trenching	2.49	CY	0.00	0.79	0.73	$3.79	☐
17030501	Compact Subgrade, 2 Lifts	133.33	CY	0.00	0.26	0.32	$76.72	☐
17030510	Dry Roll Gravel, Steel Roller	200.00	SY	0.00	0.70	0.30	$199.84	☐
18010102	Gravel, Delivered & Dumped	55.56	CY	17.74	2.98	1.86	$1,254.78	☐
18010103	Gravel (90%) & Sand Base (10%), with Calcium Chloride 3/4 - 1 Lb/CY	55.56	CY	17.70	3.32	1.96	$1,276.96	☐
18010201	Concrete Curb, 6" x 6"	166.00	LF	1.02	1.32	0.01	$390.50	☐
18020203	26" x 26", 5' Deep Area Drain with Grate	1.00	EA	1,374.82	1,533.90	28.90	$2,937.62	☐
18020321	6" Structural Slab on Grade	1,500.00	SF	2.24	3.22	0.19	$8,474.85	☐
19020313	5' x 5' x 5' Reinforced Concrete Sump	1.00	EA	1,321.01	2,184.04	94.73	$3,599.77	☐
19020604	12" x 12" CIP Concrete In-Ground Trench Drain with Metal Grate	28.00	LF	35.08	70.16	0.65	$2,965.00	☐
19040606	5,000 Gallon Steel Sump, Aboveground with Supports & Fittings	1.00	EA	4,044.81	1,793.22	207.74	$6,045.78	☐
33080503	Polymeric Liner Anchor Trench, 3' x 1.5'	199.20	LF	0.04	0.87	0.20	$222.75	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33080532	8 oz/sy Erosion Control/Drainage Filter Fabric (80 Mil)	200.00	SY	0.61	0.71	0.03	$269.26	☐
33080571	40 Mil Polymeric Liner, High-density Polyethylene	1,800.00	SF	0.25	1.49	0.12	$3,347.46	☐
33170814	1,800 PSI Pressure Washer, 6 HP, 4.8 GPM	1.00	EA	1,528.40	0.00	0.00	$1,528.40	☐
33170822	8' x 36' Decontamination Trailer with 2 Showers, Fans	25.00	MO	2,057.00	0.00	0.00	$51,425.00	☐
33170823	Operation of Pressure Washer, Including Water, Soap, Electricity, Labor	1,040.00	HR	5.84	54.48	0.00	$62,735.71	☐
33199921	DOT Steel Drum, 55 Gallon	361.00	EA	67.85	0.00	0.00	$24,494.93	☐
33220112	Field Technician	16,640.00	HR	0.00	32.11	0.00	$534,292.10	☐
33231306	High Sump Level Switch for Avoiding Overflow	1.00	EA	187.00	226.23	0.00	$413.23	☐
33260623	(2 1/2", 4") PVC Double-wall Piping, with Fittings	30.00	LF	14.22	29.56	0.00	$1,313.25	☐
33290401	25 GPM, 1 1/2" Discharge, Cast-iron Sump Pump	1.00	EA	1,844.34	529.14	0.00	$2,373.48	☐

Total Element Cost	**$710,372.89**
Total Technology Cost	**$710,372.89**

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Transportation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33170433	Load Shipping Boxes on Disposal Vehicle	8,099.00	EA	0.00	32.86	2.91	$289,700.42	☐
33190103	Load Drums on Disposal Vehicle	364.00	EA	0.00	2.73	1.62	$1,584.60	☐
33190229	Van Trailer Transportation Hazardous Waste Minimum Charge	1,198.00	EA	66.71	0.00	0.00	$79,918.58	☑
95010301	4 ft X 4 ft X 7 ft Shipping Box wi Liner	8,099.00	EA	668.00	0.00	0.00	$5,410,132.00	☑
95010407	Load Bulk Solid Waste Into Shipping Box: Level C	23,486.00	CY	0.00	197.58	0.00	$4,640,363.88	☑
				Total Element Cost			**$10,421,699.48**	
				Total Technology Cost			**$10,421,699.48**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	48.78	CY	0.00	71.34	0.00	$3,480.04	☐
17030415	Backfill with Excavated Material	28,992.02	CY	0.28	5.28	1.16	$194,762.59	☐
17030418	Delivered & Dumped, Backfill with Stone	520.91	BCY	21.29	1.17	1.28	$12,370.57	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	2,740.27	CY	4.95	2.21	2.70	$27,016.32	☐
33020217	Gamma Spectroscopy	229.00	EA	77.04	0.00	0.00	$17,643.08	☐
33020401	Disposable Materials per Sample	229.00	EA	7.22	0.00	0.00	$1,653.68	☐
33021102	Soil Moisture Content ASTM D2216	229.00	EA	21.04	0.00	0.00	$4,818.76	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	229.00	EA	570.45	0.00	0.00	$130,632.27	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	229.00	EA	148.07	0.00	0.00	$33,907.78	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	229.00	EA	176.56	0.00	0.00	$40,432.03	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	229.00	EA	260.02	0.00	0.00	$59,545.38	☐
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	229.00	EA	38.52	0.00	0.00	$8,821.54	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	229.00	EA	59.39	0.00	0.00	$13,599.87	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	229.00	EA	73.83	0.00	0.00	$16,907.96	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	229.00	EA	72.23	0.00	0.00	$16,540.40	☐
33080584	Plastic Laminate Waste Pile Cover	20,420.46	SF	0.10	0.04	0.00	$2,914.00	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	27,354.00	CY	100.00	0.00	0.00	$2,735,400.00	☑
95010411	Waste Characterization for Debris	2,626.00	CY	1,000.00	0.00	0.00	$2,626,000.00	☑
				Total Element Cost			**$5,947,051.49**	
				Total Technology Cost			**$5,947,051.49**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Excavation

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030212	Hand Excavation, Sand/Gravel	201.51	CY	0.00	71.34	0.00	$14,376.03	☐
17030279	4 CY, Crawler-mounted, Hydraulic Excavator	66,783.70	CY	0.00	1.35	3.02	$291,424.05	☐
17030415	Backfill with Excavated Material	61,626.40	CY	0.28	5.28	1.16	$413,993.82	☐
17030418	Delivered & Dumped, Backfill with Stone	1,749.82	BCY	21.29	1.17	1.28	$41,554.72	☐
17030423	Unclassified Fill, 6" Lifts, Off-Site, Includes Delivery, Spreading, and Compaction	16,746.30	CY	4.95	2.21	2.70	$165,101.78	☐
33020217	Gamma Spectroscopy	212.00	EA	77.04	0.00	0.00	$16,333.33	☐
33020401	Disposable Materials per Sample	212.00	EA	7.22	0.00	0.00	$1,530.92	☐
33021102	Soil Moisture Content ASTM D2216	212.00	EA	21.04	0.00	0.00	$4,461.03	☐
33021705	Targeted TCLP (Metals, Volatiles, Semi-Volatiles only), Soil Analysis	212.00	EA	570.45	0.00	0.00	$120,934.68	☐
33021717	Pesticides/PCBs (SW 3550B/SW 8081/8082), Soil Analysis	212.00	EA	148.07	0.00	0.00	$31,390.61	☐
33021720	Volatile Organic Analysis (SW 5035/SW 8260B), Soil Analysis	212.00	EA	176.56	0.00	0.00	$37,430.53	☐
33021739	Semi-Volatile Organics, GC/MS (SW 8270C), with prep, Soil Analysis	212.00	EA	260.02	0.00	0.00	$55,124.98	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021761	Metals, Furnace, 7000s, Per Each, Soil Analysis	212.00	EA	38.52	0.00	0.00	$8,166.66	☐
33022336	Vegetation/Soil/Sediment, Gross Beta - Total, Gas Flow Proportional Counting	212.00	EA	59.39	0.00	0.00	$12,590.28	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	212.00	EA	73.83	0.00	0.00	$15,652.79	☐
33022352	Vegetation/Soil/Sediment, Gross Alpha - Total, Gas Flow Proportional Counting	212.00	EA	72.23	0.00	0.00	$15,312.51	☐
33080584	Plastic Laminate Waste Pile Cover	124,793.50	SF	0.10	0.04	0.00	$17,808.03	☐
33170803	Decontaminate Heavy Equipment	1.00	EA	0.00	605.23	0.00	$605.23	☐
95010410	Waste Characterization for Soils	59,700.00	CY	100.00	0.00	0.00	$5,970,000.00	☑
95010411	Waste Characterization for Debris	20,861.00	CY	1,000.00	0.00	0.00	$20,861,000.00	☑
				Total Element Cost			**$28,094,791.96**	
				Total Technology Cost			**$28,094,791.96**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Clear and Grub

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17010101	Light Brush without Grub, Clearing	25.00	ACRE	0.00	36.99	19.74	$1,418.35	☐
17010501	Dozer 105 HP D5, Grubbing & Stacking	10,083.00	CY	0.00	2.37	3.01	$54,198.14	☐
				Total Element Cost			**$55,616.49**	
				Total Technology Cost			**$55,616.49**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
				Total Technology Cost			**$2,346.52**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Vadose Zone Monitoring System

Element: N/A

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010101	Mobilize/DeMobilize Drilling Rig & Crew	1.00	LS	0.00	785.07	1,774.86	$2,559.93	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	480.00	HR	0.00	21.54	0.00	$10,337.52	☐
33231152	Air Rotary, 10" Dia Borehole (Unconsolidated), 100 ft < Depth <= 500 ft	750.00	LF	0.00	17.94	40.56	$43,874.40	☐
33231504	Surface Pad, Concrete, 2' x 2' x 4"	3.00	EA	32.79	81.59	5.00	$358.14	☐
33232301	5' Guard Posts, Cast Iron, Concrete Fill	12.00	EA	20.85	34.61	0.05	$666.12	☐
95010803	Three Neutron Access Tubes, installed by Resonant Sonic Drilling	1.00	SET	78,313.00	0.00	0.00	$78,313.00	☑
95010804	Vadose FLUTe Sampling System, 5 Ports, 250 ft Deep	3.00	EA	7,343.00	0.00	0.00	$22,029.00	☑

Total Element Cost **$158,921.66**

Total Technology Cost **$158,921.66**

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020401	Disposable Materials per Sample	7.00	EA	7.22	0.00	0.00	$50.55	☐
33020402	Decontamination Materials per Sample	7.00	EA	6.45	0.00	0.00	$45.13	☐
33020561	Nylon Tubing, 1/4" Outside Diameter	2,525.00	LF	0.37	0.00	0.00	$944.35	☐
33021509	Water Quality Parameter Testing Device	1.00	WK	204.77	0.00	0.00	$204.77	☐
33021601	Specific Conductance (EPA 120.1), Water Analysis	6.00	EA	12.44	0.00	0.00	$74.61	☐
33021602	pH (EPA 150.1), Water Analysis	6.00	EA	9.10	0.00	0.00	$54.62	☐
33021603	Total Dissolved Solids (EPA 160.1), Water Analysis	6.00	EA	14.88	0.00	0.00	$89.29	☐
33021607	Temperature (EPA 170.1), Water Analysis	6.00	EA	12.04	0.00	0.00	$72.23	☐
33021618	Volatile Organic Analysis (EPA 624), Water Analysis	7.00	EA	220.70	0.00	0.00	$1,544.89	☐
33021620	TAL Metals (EPA 6010/7000s), Water, Water Analysis	7.00	EA	348.71	0.00	0.00	$2,440.96	☐
33021651	Alkalinity (EPA 310.1/310.2), Water Analysis	6.00	EA	27.59	0.00	0.00	$165.52	☐
33021653	Chloride (EPA 300), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021662	Nitrogen, Nitrate & Nitrite (EPA 353.2), Water Analysis	6.00	EA	71.85	0.00	0.00	$431.12	☐
33021667	Sulfate (EPA 300.0), Water Analysis	6.00	EA	20.77	0.00	0.00	$124.59	☐
33022036	Documentation Package for QA Verification, Data & Benchwork	6.00	EA	122.79	0.00	0.00	$736.73	☐
33022106	Turbidity (EPA 180.1)	6.00	EA	13.99	0.00	0.00	$83.97	☐
33022271	Liquid, Gamma Isotopic, Gamma Spectroscopy	7.00	EA	150.48	0.00	0.00	$1,053.34	☐
33022284	Liquid, Tritium, (Direct Counting), Liquid Scintillation	7.00	EA	75.24	0.00	0.00	$526.67	☐
33022290	Liquid, Gross Alpha & Gross Beta - Total	6.00	EA	74.24	0.00	0.00	$445.41	☐
33230510	4" Submersible Pump Rental, Week	1.00	WK	195.72	0.00	0.00	$195.72	☐
33231186	Well Development Equipment Rental (weekly)	1.00	WK	204.77	0.00	0.00	$204.77	☐
				Total Element Cost			**$9,613.83**	

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020603	Surface Soil Sampling Equipment	14.00	EA	433.98	0.00	0.00	$6,075.72	☐

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Phase Element Technology Cost Detail Report (without Markups)

Element: Surface Soil

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021102	Soil Moisture Content ASTM D2216	10.00	EA	26.30	0.00	0.00	$263.03	☐
33022342	Vegetation/Soil/Sediment, Gamma Isotopic, Gamma Spectroscopy	14.00	EA	120.38	0.00	0.00	$1,685.34	☐
33022351	Vegetation/Soil/Sediment, Tritium, Liquid Scintillation	14.00	EA	92.29	0.00	0.00	$1,292.09	☐
				Total Element Cost			**$9,316.19**	

Element: Air

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020315	Ambient Air Monitor, Monthly Rental	4.00	MO	797.67	0.00	0.00	$3,190.69	☐
33022235	Air, Gamma Isotopic, Gamma Spectroscopy	5.00	EA	124.39	0.00	0.00	$621.97	☐
33022240	Air, Gross Alpha & Gross Beta - Total, Gas Flow	5.00	EA	58.18	0.00	0.00	$290.92	☐
33029501	Tritium Analysis of Dessicant Column [From Air Sample]	5.00	LS	202.50	0.00	0.00	$1,012.50	☑
				Total Element Cost			**$5,116.08**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	48.00	MI	0.31	0.00	0.00	$14.79	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	160.00	HR	0.00	21.54	0.00	$3,445.84	☐
33220114	Word Processing/Clerical	13.00	HR	0.00	16.98	0.00	$220.71	☐
33220115	Draftsman/CADD	13.00	HR	0.00	22.26	0.00	$289.40	☐
				Total Element Cost			**$4,754.30**	
				Total Technology Cost			**$28,800.39**	

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Groundwater

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33020561	Nylon Tubing, 1/4" Outside Diameter	25.00	LF	0.37	0.00	0.00	$9.35	☐
				Total Element Cost			**$9.35**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
17030437	0.75 CY Backhoe with Front End Loader	8.00	HR	0.00	54.71	28.22	$663.49	☐
18040501	Hazardous Waste Signing	1.00	EA	14.73	36.54	0.00	$51.28	☐
18050401	Seeding, 67% Level & 33% Slope, Hydroseeding	0.50	ACRE	313.67	84.41	32.36	$215.22	☐
33010104	Car or Van Mileage Charge	32.00	MI	0.31	0.00	0.00	$9.86	☐
33220108	Project Scientist	8.00	HR	0.00	32.65	0.00	$261.18	☐
33220112	Field Technician	40.00	HR	0.00	21.54	0.00	$861.46	☐
33220114	Word Processing/Clerical	7.00	HR	0.00	16.98	0.00	$118.85	☐
33220115	Draftsman/CADD	7.00	HR	0.00	22.26	0.00	$155.83	☐
				Total Element Cost			**$2,337.17**	

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Phase Element Technology Cost Detail Report (without Markups)

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
				Total Technology Cost			**$2,346.52**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Technology: Monitoring (12 - months only)

Element: Soil Gas

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33021122	Neutron (Moisture Content)- per linear foot	600.00	LF	0.51	0.00	0.00	$303.54	☐
33021829	Canister Samples By GC or GC/MS, TO-14	16.00	EA	390.04	0.00	0.00	$6,240.56	☐
33022285	Liquid, Tritium, (Distillation), Liquid Scintillation	16.00	EA	73.83	0.00	0.00	$1,181.34	☐
				Total Element Cost			**$7,725.45**	

Element: General Monitoring

Assembly	Description	Quantity	Unit of Measure	Material Unit Cost	Labor Unit Cost	Equipment Unit Cost	Extended Cost	Cost Override
33010104	Car or Van Mileage Charge	40.00	MI	0.31	0.00	0.00	$12.33	☐
33220108	Project Scientist	24.00	HR	0.00	32.65	0.00	$783.55	☐
33220112	Field Technician	96.00	HR	0.00	21.54	0.00	$2,067.50	☐
33220114	Word Processing/Clerical	9.00	HR	0.00	16.98	0.00	$152.80	☐
33220115	Draftsman/CADD	9.00	HR	0.00	22.26	0.00	$200.36	☐
				Total Element Cost			**$3,216.54**	
				Total Technology Cost			**$10,941.99**	

Cost Database Date: 2001

Cost Type: User-Defined

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Phase Element Technology Cost Detail Report (without Markups)

Total Phase Element Cost	**$47,106,461.24**

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