

APPENDIX B

Cost Summary Reports for MWL Corrective Measures Alternatives

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Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the existing operational cover would be maintained and current institutional controls would continue for the foreseeable 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Access Roads	\$78,082	\$48,129	\$126,211
Cleanup and Landscaping	\$39,335	\$16,485	\$55,820
Fencing	\$30,600	\$19,586	\$50,186
Monitoring	\$864,012	\$506,827	\$1,370,839
Monitoring	\$70,115	\$99,710	\$169,825
Total Capital Cost	\$1,082,143	\$690,739	\$1,772,882

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$1,082,143	\$690,739	\$1,772,882
		Escalation	\$852,395
		Escalated Phase Element Cost	\$2,625,277

Phase Element Cost Summary Report (with 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.a - Bio-intrusion Barrier
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: In Situ
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
Start Date: 10/1/2006
Description: Under this alternative, a bio-intrusion barrier would be deployed on the existing operational cover. The barrier would be 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 Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Access Roads	\$78,082	\$44,472	\$122,554
Capping	\$444,548	\$212,191	\$656,739
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Fencing	\$18,089	\$15,924	\$34,013
Monitoring	\$864,012	\$494,492	\$1,358,504
Monitoring	\$70,115	\$98,629	\$168,744
Monitoring	\$328,260	\$261,249	\$589,509
Professional Labor Management	\$165,516	\$334,180	\$499,696
Vadose Zone Monitoring System	\$158,922	\$69,535	\$228,457
Total Capital Cost	\$2,201,668	\$1,573,937	\$3,775,605

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$629,089	\$1,265,951	\$1,895,040
Total O&M Cost	\$629,089	\$1,265,951	\$1,895,040

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$2,830,756	\$2,839,890	\$5,670,646
		Escalation	\$2,416,852
	Escalated Phase Element Cost		\$8,087,498

Phase Element Cost Summary Report (with 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.b - Vegetative Soil Cover
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
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
Start Date: 10/1/2006
Description: Under this alternative, a vegetative soil cover would be deployed on the existing operational cover. The vegetative soil 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Access Roads	\$78,082	\$44,472	\$122,554
Capping	\$180,805	\$98,230	\$279,035
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Fencing	\$18,089	\$15,924	\$34,013
Monitoring	\$864,012	\$494,492	\$1,358,504
Monitoring	\$70,115	\$98,629	\$168,744
Monitoring	\$328,260	\$261,249	\$589,509
Professional Labor Management	\$181,093	\$399,244	\$580,337
Vadose Zone Monitoring System	\$158,922	\$69,535	\$228,457
Total Capital Cost	\$1,953,501	\$1,525,040	\$3,478,541

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$309,301	\$547,432	\$856,733
Total O&M Cost	\$309,301	\$547,432	\$856,733

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$2,262,802	\$2,072,472	\$4,335,274
		Escalation	\$1,794,257
	Escalated Phase Element Cost		\$6,129,531

Phase Element Cost Summary Report (with 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.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
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
Start Date: 10/1/2006
Description: Under this alternative, a biointrusion barrier composed of a layer of cobbles or boulders would be constructed on the 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Access Roads	\$78,082	\$44,472	\$122,554
Capping	\$657,194	\$318,898	\$976,092
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Fencing	\$18,089	\$15,924	\$34,013
Monitoring	\$864,012	\$494,492	\$1,358,504
Monitoring	\$70,115	\$98,629	\$168,744
Monitoring	\$328,260	\$261,249	\$589,509
Professional Labor Management	\$278,209	\$613,353	\$891,562
Vadose Zone Monitoring System	\$158,922	\$69,535	\$228,457
Total Capital Cost	\$2,527,007	\$1,959,816	\$4,486,823

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$849,300	\$1,760,736	\$2,610,036
Total O&M Cost	\$849,300	\$1,760,736	\$2,610,036

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$3,376,306	\$3,720,553	\$7,096,859

	Escalation	\$2,916,273
Escalated Phase Element Cost		\$10,013,132

Phase Element Cost Summary Report (with 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.d - RCRA C Cap
Type: Remedial Action
Labor Rate Group: System Labor Rate
Analysis Rate Group: System Analysis Rate
Approach: Ex Situ
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
Start Date: 10/1/2006
Description: Under this alternative, a RCRA Subtitle C cap would be deployed on the existing operational cover. The primary 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Access Roads	\$78,082	\$44,472	\$122,554
Capping	\$945,399	\$384,345	\$1,329,744
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Fencing	\$18,089	\$15,924	\$34,013
Monitoring	\$864,012	\$494,492	\$1,358,504
Monitoring	\$70,115	\$98,629	\$168,744
Monitoring	\$328,260	\$261,249	\$589,509
Professional Labor Management	\$313,870	\$691,970	\$1,005,840
Vadose Zone Monitoring System	\$158,922	\$69,535	\$228,457
Total Capital Cost	\$2,850,872	\$2,103,882	\$4,954,754

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$2,409,049	\$5,251,623	\$7,660,672
Total O&M Cost	\$2,409,049	\$5,251,623	\$7,660,672

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$5,259,921	\$7,355,505	\$12,615,426
		Escalation	\$5,805,274
	Escalated Phase Element Cost		\$18,420,700

Phase Element Cost Summary Report (with 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
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
Start Date: 10/1/2006
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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Access Roads	\$78,082	\$44,472	\$122,554
Capping	\$1,579,780	\$581,447	\$2,161,227
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Fencing	\$18,089	\$15,924	\$34,013
Monitoring	\$864,012	\$494,492	\$1,358,504
Monitoring	\$70,115	\$98,629	\$168,744
Monitoring	\$328,260	\$261,249	\$589,509
Professional Labor Management	\$465,090	\$1,025,358	\$1,490,448
Vadose Zone Monitoring System	\$158,922	\$69,535	\$228,457
Total Capital Cost	\$3,636,474	\$2,634,371	\$6,270,845

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$3,947,422	\$8,708,136	\$12,655,558
Total O&M Cost	\$3,947,422	\$8,708,136	\$12,655,558

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$7,583,896	\$11,342,507	\$18,926,403

Escalation \$8,784,285

Escalated Phase Element Cost \$27,710,688

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the landfill would be excavated and the wastes would be placed in permanent, aboveground, 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$156,479	\$69,889	\$226,368
Excavation	\$269,891,456	\$77,649,131	\$347,540,587
Excavation	\$75,160,280	\$21,624,351	\$96,784,631
Fencing	\$18,089	\$15,924	\$34,013
Professional Labor Management	\$12,847,539	\$25,939,341	\$38,786,880
Transportation	\$61,201,228	\$24,584,135	\$85,785,363
Total Capital Cost	\$420,059,569	\$151,294,081	\$571,353,650

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$420,059,569	\$151,294,081	\$571,353,650
		Escalation	\$81,189,340
		Escalated Phase Element Cost	\$652,542,990

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the landfill would be excavated and the wastes would be placed in permanent, aboveground, 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$156,479	\$69,889	\$226,368
Excavation	\$269,573,792	\$77,601,458	\$347,175,250
Excavation	\$75,010,848	\$21,601,922	\$96,612,770
Fencing	\$18,089	\$15,924	\$34,013
Professional Labor Management	\$11,230,708	\$22,674,941	\$33,905,649
Transportation	\$10,421,699	\$4,392,687	\$14,814,386
Total Capital Cost	\$367,196,113	\$127,768,130	\$494,964,243

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$367,196,113	\$127,768,130	\$494,964,243
		Escalation	\$70,334,407
		Escalated Phase Element Cost	\$565,298,650

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$156,479	\$69,889	\$226,368
Excavation	\$276,806,944	\$79,636,314	\$356,443,258
Excavation	\$75,160,280	\$21,624,351	\$96,784,631
Fencing	\$18,089	\$15,924	\$34,013
Off-site Transportation and Landfill Disposal	\$280,359,424	\$87,392,869	\$367,752,293
Professional Labor Management	\$19,980,164	\$44,049,149	\$64,029,313
Total Capital Cost	\$653,265,878	\$234,199,805	\$887,465,683

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$653,265,878	\$234,199,805	\$887,465,683
		Escalation	\$126,108,852
	Escalated Phase Element Cost		\$1,013,574,535

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$156,479	\$69,889	\$226,368
Excavation	\$269,573,760	\$77,601,450	\$347,175,210
Excavation	\$75,010,848	\$21,601,922	\$96,612,770
Fencing	\$18,089	\$15,924	\$34,013
Off-site Transportation and Landfill Disposal	\$168,525,120	\$49,799,058	\$218,324,178
Professional Labor Management	\$16,218,871	\$35,756,838	\$51,975,709
Total Capital Cost	\$530,287,665	\$186,256,390	\$716,544,055

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$530,287,665	\$186,256,390	\$716,544,055
		Escalation	\$101,820,893
		Escalated Phase Element Cost	\$818,364,948

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the classified area of the landfill would be excavated and the wastes would be placed in 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$99,760	\$50,711	\$150,471
Excavation	\$75,160,280	\$21,624,351	\$96,784,631
Fencing	\$18,089	\$15,924	\$34,013
Professional Labor Management	\$2,997,271	\$6,607,915	\$9,605,186
Transportation	\$18,938,030	\$7,558,069	\$26,496,099
Total Capital Cost	\$97,997,927	\$37,268,281	\$135,266,208

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$97,997,927	\$37,268,281	\$135,266,208
		Escalation	\$19,221,325
		Escalated Phase Element Cost	\$154,487,533

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the classified area of the landfill would be excavated and the wastes would be placed in 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.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$99,760	\$50,711	\$150,471
Excavation	\$75,010,848	\$21,601,922	\$96,612,770
Fencing	\$18,089	\$15,924	\$34,013
Professional Labor Management	\$2,431,835	\$5,361,329	\$7,793,164
Transportation	\$1,165,554	\$491,233	\$1,656,787
Total Capital Cost	\$79,510,583	\$28,932,428	\$108,443,011

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$79,510,583	\$28,932,428	\$108,443,011

Escalation	\$15,409,750
Escalated Phase Element Cost	\$123,852,761

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the classified area of 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 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 classied area are included.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$99,760	\$50,711	\$150,471
Excavation	\$75,160,280	\$21,624,351	\$96,784,631
Fencing	\$18,089	\$15,924	\$34,013
Off-site Transportation and Landfill Disposal	\$58,181,364	\$18,834,777	\$77,016,141
Professional Labor Management	\$4,235,398	\$9,337,543	\$13,572,941
Total Capital Cost	\$138,479,388	\$51,274,617	\$189,754,005

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$138,479,388	\$51,274,617	\$189,754,005
		Escalation	\$26,964,040
		Escalated Phase Element Cost	\$216,718,045

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2006
Description: Under this alternative, the classified area of 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 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 classied area are included. Under Option B, all soils (included contaminated soils) are returned to the excavation as backfill.

Phase Element Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$99,760	\$50,711	\$150,471
Excavation	\$75,010,848	\$21,601,922	\$96,612,770
Fencing	\$18,089	\$15,924	\$34,013
Off-site Transportation and Landfill Disposal	\$18,853,756	\$5,573,987	\$24,427,743
Professional Labor Management	\$2,989,897	\$6,591,659	\$9,581,556
Total Capital Cost	\$97,756,847	\$35,245,512	\$133,002,359

	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Total Phase Element Cost	\$97,756,847	\$35,245,512	\$133,002,359
		Escalation	\$18,899,632
		Escalated Phase Element Cost	\$151,901,991

Phase Element Cost Summary Report (with 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: 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
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
Start Date: 10/1/2039
Description: Under this alternative, the landfill would be excavated 50 years after landfill closure. 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 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 Cost Summary Report (with Markups)

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Cleanup and Landscaping	\$18,508	\$10,640	\$29,148
Clear and Grub	\$55,616	\$32,624	\$88,240
Decontamination Facilities	\$710,373	\$1,368,045	\$2,078,418
Drum Removal	\$156,479	\$69,889	\$226,368
Excavation	\$5,947,051	\$1,756,270	\$7,703,321
Excavation	\$28,094,792	\$8,211,856	\$36,306,648
Fencing	\$18,089	\$15,924	\$34,013
Monitoring	\$864,012	\$494,492	\$1,358,504
Monitoring	\$70,115	\$98,629	\$168,744
Monitoring	\$328,260	\$261,249	\$589,509
Monitoring	\$115,202	\$65,932	\$181,134
Monitoring	\$9,349	\$12,964	\$22,313
Monitoring	\$43,768	\$34,826	\$78,594
Professional Labor Management	\$1,440,753	\$3,176,348	\$4,617,101
Transportation	\$10,421,699	\$4,392,687	\$14,814,386
Vadose Zone Monitoring System	\$158,922	\$69,535	\$228,457
Total Capital Cost	\$48,452,987	\$20,071,912	\$68,524,899

<u>Technology</u>	<u>Direct Cost</u>	<u>Markups</u>	<u>Total Cost</u>
Operations and Maintenance	\$0	\$0	\$0
Total O&M Cost	\$0	\$0	\$0

Phase Element Cost Summary Report (with Markups)

	Direct Cost	Markups	Total Cost
Total Phase Element Cost	\$48,452,987	\$20,071,912	\$68,524,899
		Escalation	\$69,793,601
		Escalated Phase Element Cost	\$138,318,500