

**UMTRA SURFACE PROJECT  
MANAGEMENT ACTION PROCESS  
DOCUMENT**

**FINAL**

**April 1996**

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	4/2/96	Level 2 edit; more client comments incorporated.
Rev. 1, Ver. 2	4/3/96	Single spaced in preparation for sign off.

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**April 1996**

**U.S. Department of Energy  
Environmental Restoration Division  
UMTRA Project Team  
Albuquerque, New Mexico**

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## LIST OF ACRONYMS

<b><u>Acronym</u></b>	<b><u>Definition</u></b>
AEC	Atomic Energy Commission
BA	budget authority
CDPHE	Colorado Department of Public Health and Environment
CR/PIP	Cost Reduction/Productivity Improvement Program
CWA	Clean Water Act
DOE	U.S. Department of Energy
DOE-AL	U.S. Department of Energy Albuquerque Operations
DOE-HQ	U.S. Department of Energy Headquarters
DOT	U.S. Department of Transportation
EA	environmental assessment
EIS	environmental impact statement
EM	Office of Environmental Management and Waste Management
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ERD	Environmental Restoration Division
FY	fiscal year
GJPO	Grand Junction Projects Office
HMTA	Hazardous Materials Transportation Act
M	million
MAP	management action process
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRC	U.S. Nuclear Regulatory Commission
ORNL	Oak Ridge National Laboratory
RAP	remedial action plan
RRM	residual radioactive material
SIP	stabilized in place
SOS	stabilized on site
TAC	Technical Assistance Contractor
UMTRA	Uranium Mill Tailings Remedial Action
UMTRCA	Uranium Mill Tailings Radiation Control Act
VP	vicinity property



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## 1.0 INTRODUCTION

A critical mission of the U.S. Department of Energy (DOE) is the planning, implementation, and completion of environmental restoration (ER) programs at facilities that were operated by or in support of the former Atomic Energy Commission (AEC) from the late 1940s into the 1970s. Among these facilities are the 24 former uranium mill sites designated in the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (42 USC §7901 *et seq.*) Title I of the UMTRCA authorized the DOE to undertake remedial actions at these designated sites and associated vicinity properties (VP), which contain uranium mill tailings and other residual radioactive materials (RRM) derived from the processing sites. Title II of the UMTRCA addresses uranium mill sites that were licensed at the time the UMTRCA was enacted. Cleanup of these Title II sites is the responsibility of the licensees. The cleanup of the Title I sites has been split into two separate projects: the Surface Project, which deals with the mill buildings, tailings, and contaminated soils at the sites and VPs; and the Ground Water Project, which is limited to the contaminated ground water at the sites. This management action process (MAP) document discusses the Uranium Mill Tailings Remedial Action (UMTRA) Surface Project only; a separate MAP document has been prepared for the UMTRA Ground Water Project.

Since its inception through March 1996, the Surface Project (hereinafter called the Project) has cleaned up 16 of the 24 designated processing sites and approximately 5000 VPs, reducing the risk to human health and the environment posed by the uranium mill tailings. Two of the 24 sites, Belfield and Bowman, North Dakota, will not be remediated at the request of the state, reducing the total number of sites to 22.

If resources are provided at the fiscal year (FY) 1998 field budget target level of \$29 million (M), remedial action will be completed in FY1998. This completion date is congressionally mandated in the third extension to the UMTRCA, expected to be approved by Congress this fiscal year. By the start of FY1998, the remaining 6 processing sites and associated VPs will be cleaned up. The remedial action activities to be funded in FY1998 by the FY1998 budget request are remediation of the remaining Grand Junction, Colorado, VPs; closure of the Cheney disposal cell in Grand Junction, Colorado; and preparation of the completion reports for 4 completed sites. Other activities to be funded in FY1998 include certifying remediated sites and VPs; prelicensing custodial care of remediated sites; licensing remediated sites; transferring licensed sites to the Grand Junction Projects Office (GJPO) for long-term surveillance and maintenance; reimbursing the states and tribes for their costs incurred in accordance with the cooperative agreements; paying for U.S. Nuclear Regulatory Commission (NRC) activities in support of site certification and licensing in accordance with the OMNIBUS budget reconciliation act of 1990 (PL 101-508); and performing program management activities to support the above work.

Completing this major DOE ER project in FY1998 will allow the DOE to accomplish the following:

- Send a positive message that DOE has completed UMTRA Surface cleanup by the congressionally mandated deadline.
- Honor DOE's commitment to stakeholders and regulators to complete the Project in FY1998.
- Take a major step in closing the circle on the splitting of the atom by disposing of the largest (by volume) component of nuclear weapons production radioactive waste/by-product.
- Fulfill a portion of the commitment to environmental quality in the performance agreement between President Clinton and Energy Secretary O'Leary.
- Achieve one of the goals in the Environmental Restoration Strategic Plan (DOE, 1995a).
- Make cost-effective use of limited funds in FY1998 by reducing the risk to the public and the environment posed by the VPs and the open cell at Cheney.

Conversely, if the Project is not funded in FY1998 at the target level requested in the FY1998 field budget, the Project would not be completed in FY1998, and would require an extension. An extension beyond FY1998 would result in the following:

- Failure to comply with the congressionally mandated end date.
- Failure to accomplish a DOE goal with stakeholder, congressional, and regulatory visibility.
- Failure to honor commitments to stakeholders such as the citizens of Grand Junction, Colorado, the Colorado Department of Public Health and Environment (CDPHE), and the Colorado congressional delegation that the cleanup of VPs in Grand Junction, Colorado, would be completed in FY1998.
- A DOE request to Congress for a fourth extension to the UMTRCA.

## **1.1 PURPOSE OF THE MANAGEMENT ACTION PROCESS**

The MAP is designed to assist the DOE and contractor management and technical personnel, regulators, and stakeholders in documenting and evaluating information essential for decision-making and completing the UMTRA Surface Project. It is an effective way to formally integrate existing activities into a single process to ensure that appropriate and cost-effective priorities are identified.

This document is a result of the MAP. It consolidates and identifies the Project's accomplishments to date, the status of current activities, and the Project's strategic course of action for completion.

## **1.2 ORGANIZATION OF THE MANAGEMENT ACTION PROCESS DOCUMENT**

This MAP document is organized into the following elements:

- Section 1.0 describes the mission and objectives of the Project, the purpose of the MAP, and organization of the MAP document. This section also identifies key Project participants, relationships between the Project and other DOE ER programs and outside agencies, the current status of the MAP, and the strategy for continuing the MAP on the Project.
- Section 2.0 summarizes the sites' current natural and physical characteristics; local and regional social, economic, cultural, and ecological factors influencing remedial action at the sites; the locations of the designated inactive sites; and information on planned future uses of the land at each site.
- Section 3.0 summarizes the status of ER activities at each site, the Project's public participation program, program management efforts, and regulatory drivers.
- Section 4.0 provides a summary of relative risk to be reduced by completing the Project in FY1998.
- Section 5.0 describes the ER strategy, including key assumptions and remedy selection (which is prescribed by the UMTRCA) and presents criteria for measuring the success of implementing the strategy.
- Section 6.0 presents the master schedule for completing all remaining activities at the sites and identifies specific milestones.

- Section 7.0 identifies specific technical and administrative issues facing the Project that will be addressed and resolved by the Project Team or higher authority, if necessary. This section also identifies initiatives to improve Project productivity.
- Section 8 is a list of references.
- Appendix A provides the Project cost baseline.
- Appendix B lists programmatic and site-specific ER documents.
- Appendix C identifies site-specific decision documents.
- Appendix D should contain conceptual models for high relative risk sites. However, no UMTRA sites were evaluated since remedial action at all processing sites will be complete by the start of FY1998 and all VPs will be complete by February 1998. Therefore, a conceptual model is not required.
- Appendix E summarizes the Project controls.

### 1.3 ENVIRONMENTAL RESTORATION OBJECTIVES

The mission of the Project is to remediate the 24 designated inactive uranium mill processing sites and associated the VPs by FY1998. The purpose of the remediation is to reduce or eliminate risks to the public health and the environment from radioactive, hazardous, and toxic constituents in uranium mill tailings and tailings-contaminated materials.

The objectives below were established to accomplish the overall Project mission:

- Health and safety
  - ñ Carry out remediation activities in a safe and environmentally sound manner in accordance with the standards promulgated by the U.S. Environmental Protection Agency (EPA) (40 CFR Part 192) and applicable federal and state laws.
- Regulatory
  - ñ Ensure that environmental factors are adequately addressed as remedial actions are selected and implemented and NEPA regulations (42 USC §4321 *et seq.*) (as implemented by the Council on Environmental Quality [40 CFR Parts 1500-1508]) and DOE guidelines, are satisfied.
  - ñ Return all former processing sites to a condition suitable for unrestricted use, except the portion needed to contain the tailings disposal cell.
  - ñ Comply with the NRC general license for long-term, postremedial action surveillance and monitoring for each tailings disposal site, and perform interim site maintenance until responsibility for the site is turned over to the DOE GJPO for inclusion in the DOE long-term surveillance program.
- Public involvement
  - ñ Carry out a public participation program that encourages public input during the Project's decision-making process.

- ñ Obtain the cooperation of the affected Indian tribes, states, and property owners in accomplishing the mission of the Project.
- Project management
  - ñ Complete the Project within the total project cost of \$1449M. This assumes the states' share is \$96M and the federal share is \$1353M. These figures are based on the FY1998 field budget as submitted in the activity data sheets.
  - ñ Complete all site and VP remediation by the end of FY1998.
  - ñ License and transfer responsibility for all sites to the GJPO by the end of FY1998, except for the Grand Junction, Colorado, disposal site. Grand Junction will be licensed in August 1999 and transferred in September 1999.

These objectives were extracted from the UMTRA Surface Project Plan (DOE, 1993).

## **1.4 PROJECT TEAM**

Four major contractors support the Project: the Technical Assistance Contractor (TAC), comprised of Jacobs Engineering Group Inc. and its teaming partners Roy F. Weston, Geraghty and Miller, and AGRA E&E; the Remedial Action Contractor (RAC), MK-Ferguson; the Grand Junction, Colorado, VP RAC, RUST Geotech Inc.; and the VP Inclusion Survey/Verification Contractor, Oak Ridge National Laboratory (ORNL).

The Project Team consists of the DOE Headquarters (DOE-HQ) Program Manager; key personnel from the Albuquerque Operations Office Environmental Restoration Division (ERD); and representatives from the states, Indian tribes, and the four major contractors. The Team, or subsets of the Team, implements the Process on the Project.

Table 1.4-1 lists the Project Team's core members, tribal and state members, and technical team members.

## **1.5 ORGANIZATIONAL INTERFACES**

Responsibility for implementing the UMTRCA is assigned to the DOE, tribes, states, and several other federal entities. Table 1.5-1 describes each of these organizations and its roles and responsibilities. Figure 1.5-1 shows the interfaces between the organizations.

## **1.6 STATUS OF THE MANAGEMENT ACTION PROCESS**

The management action process consists of six sequential steps. The Project has completed five of these steps. The draft straw document was completed and submitted to DOE-HQ in February 1996. A Project team has been identified, the project review has been conducted, recommendations have been compiled and adopted, and this MAP document has been assembled and written. The Project will continue to implement the process as summarized in Section 1.7.

Table 1.4-1 Project Team

Organization	Role/responsibility	Phone number
Core group DO E-HQ	Program Management	(301) 903-7222
DO E-ERD	Project Management	(505) 845-4887
DO E-ERD	Project Management	(505) 845-4022
DO E-GJPO	GRJ VP Project Management	(970) 248-6006
JEG	TAC Project Management	(505) 888-1300
MK-Ferguson	RAC Project Management	(505) 845-6868
RUST-Geotech	VP RAC Project Management	(970) 248-6356
Oak Ridge National Laboratory	VP Inclusion Survey/Verification Contractor Project Management	(970) 248-6229
State and tribal Arizona Radiation Regulatory Agency	Arizona Representative	(602) 255-4845, ext. 222
Colorado Department of Public Health and Environment	Colorado Representative	(303) 692-3387
Remediation Branch Division of Environmental Quality	Idaho Representative	(208) 373-0502
Hazardous and Radioactive Material Branch	New Mexico Representative	(505) 827-1558
Oregon DOE	Oregon Representative	(503) 378-4040
Bureau of Radiation Control Texas Department of Health	Pennsylvania Representative	(412) 834-6688
Texas Natural Resource Conservation Commission	Texas Representative	(512) 834-6688
Utah Department of Environmental Quality	Utah Representative	(801) 536-4250
Land Quality Division	Wyoming Representative	(307) 777-7756
Office of Mining and Mineral Resources	Hopi Tribal Representative	(520) 734-2441
Division of Resources	Navajo Nation Representative	(520) 871-6982

Table 1.5-1 Organizational interface

Organization	Role/responsibility
DOE-HQ UMTRA Project Surface/Ground Water Team	Conducts program policy.
DOE-AL ERD	Conducts Project direction, implementation, management, and oversight.
NRC	Provides primary regulatory oversight. Must concur with remedial action plans (RAP), completion reports, long-term surveillance plans, and certification reports before it will license a site.
EPA	Establishes compliance and remediation standards.
Indian Tribes and States	Participate in remediation of processing sites as defined through cooperative agreements. States provide 10 percent of the remedial action costs, Indian tribes share none of the costs. Acquire title to the processing or disposal sites, if necessary (states only). After remediation, states transfer ownership of the disposal sites to the federal government for long-term custodial care. Concur in RAPs, consult in NEPA documentation.
Jacobs Engineering Group Inc. (TAC)	Develops and implements site characterization; prepares NEPA documentation, conceptual designs, design criteria, site RAPs; coordinates site licensing; performs cost and schedule integration; develops, implements, and operates Project-level programs for safety and health, QA, public participation, cost reduction/productivity improvement, and document control.
MK-Ferguson (RAC)	Performs remedial action at the sites and VPs, except for VPs at Grand Junction. Performs detailed engineering, construction and inspections; operates the safety and health and QA programs at the sites.
RUST-Geotech (VP RAC)	Performs remedial action for Grand Junction VPs and precursing custodial care of the disposal sites.
Oak Ridge National Laboratory	Conducts VP inclusion surveys to determine eligibility for remedial action under the Project. Performs independent verification that remediated VPs comply with EPA standards.
Department of Interior/Bureau of Land Management, U.S. Army Corps of Engineers	Acquire public and private lands as necessary for disposal sites.

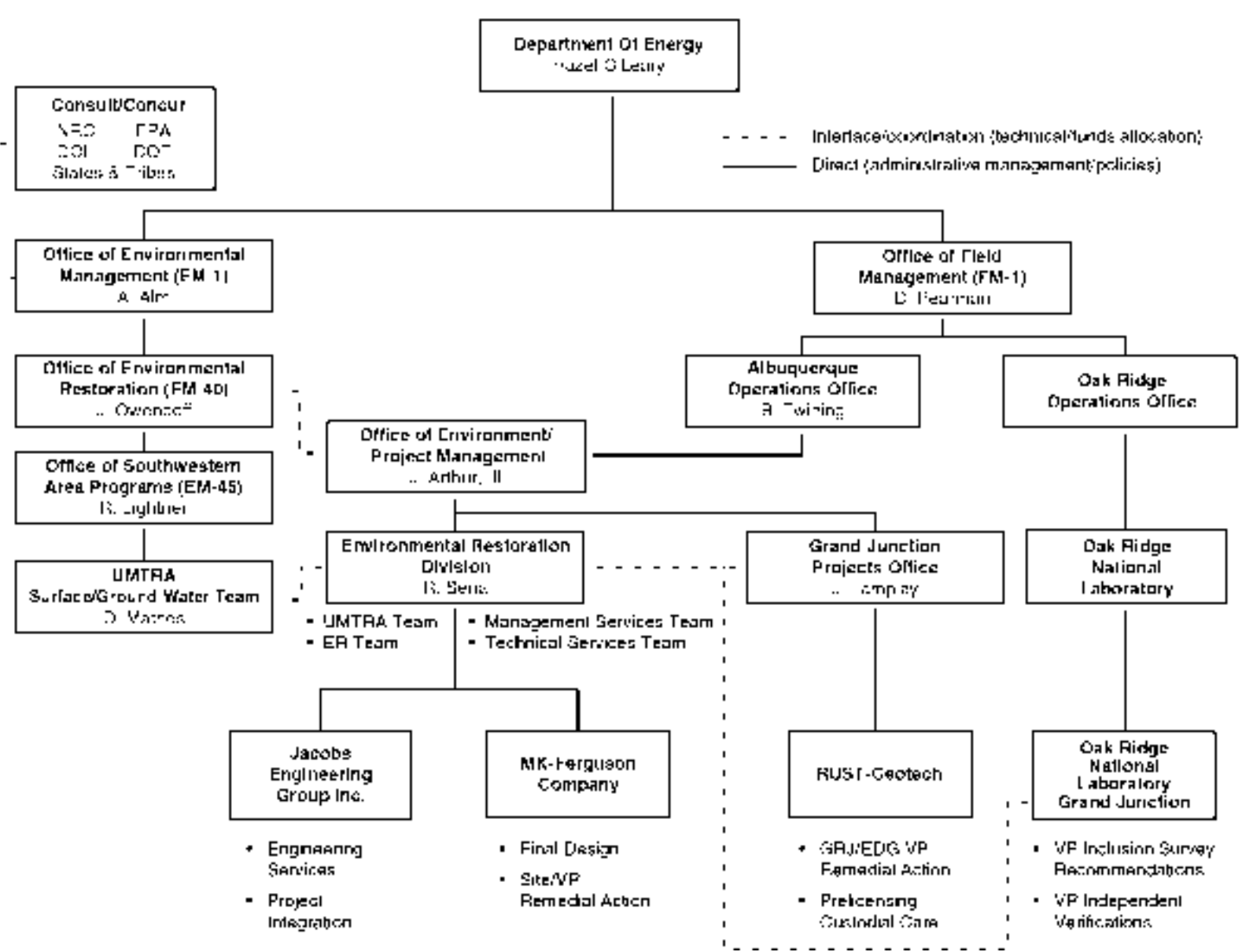


Figure 1.5-1  
UMTRA Surface Project Organization



## 1.7 STRATEGY FOR THE MANAGEMENT ACTION PROCESS

The Project currently has procedures in place to accomplish MAP requirements. The Project team works together to identify and implement strategies to accomplish the Project goals, as well as to identify and resolve issues that could jeopardize completing the Project within cost, schedule, and technical baselines. Scheduled team processes include:

- Monthly meetings with DOE ERD and TAC and RAC senior managers to address concerns, raise issues, and identify solutions.
- Biweekly conference calls between ERD, TAC, and NRC representatives to status licensing activities and resolve issues impacting the licensing process.
- Periodic meetings with state and tribal representatives to ensure their concerns are addressed.
- Triannual meetings with DOE and NRC managers to address programmatic issues and concerns and identify solutions.

Because this MAP document supports the FY1998 budget, the last budget the Project will prepare, a requirement to update the MAP document is not expected. However, if major Project changes occur, the program manager, in consultation with DOE ERD, will determine whether the Project will undertake the expense of updating the MAP document.

## 2.0 SITE DESCRIPTIONS AND COMPREHENSIVE PLANNING

### 2.1 OPERATIONAL HISTORY

The 24 sites designated under Title I of the UMTRCA actively processed uranium for the AEC from the 1940s to the 1970s. The sites received ore from a variety of sources and provided the concentrate (frequently in the form of yellow cake) to the AEC. Figure 2.1-1 shows the location of each UMTRA Project site.

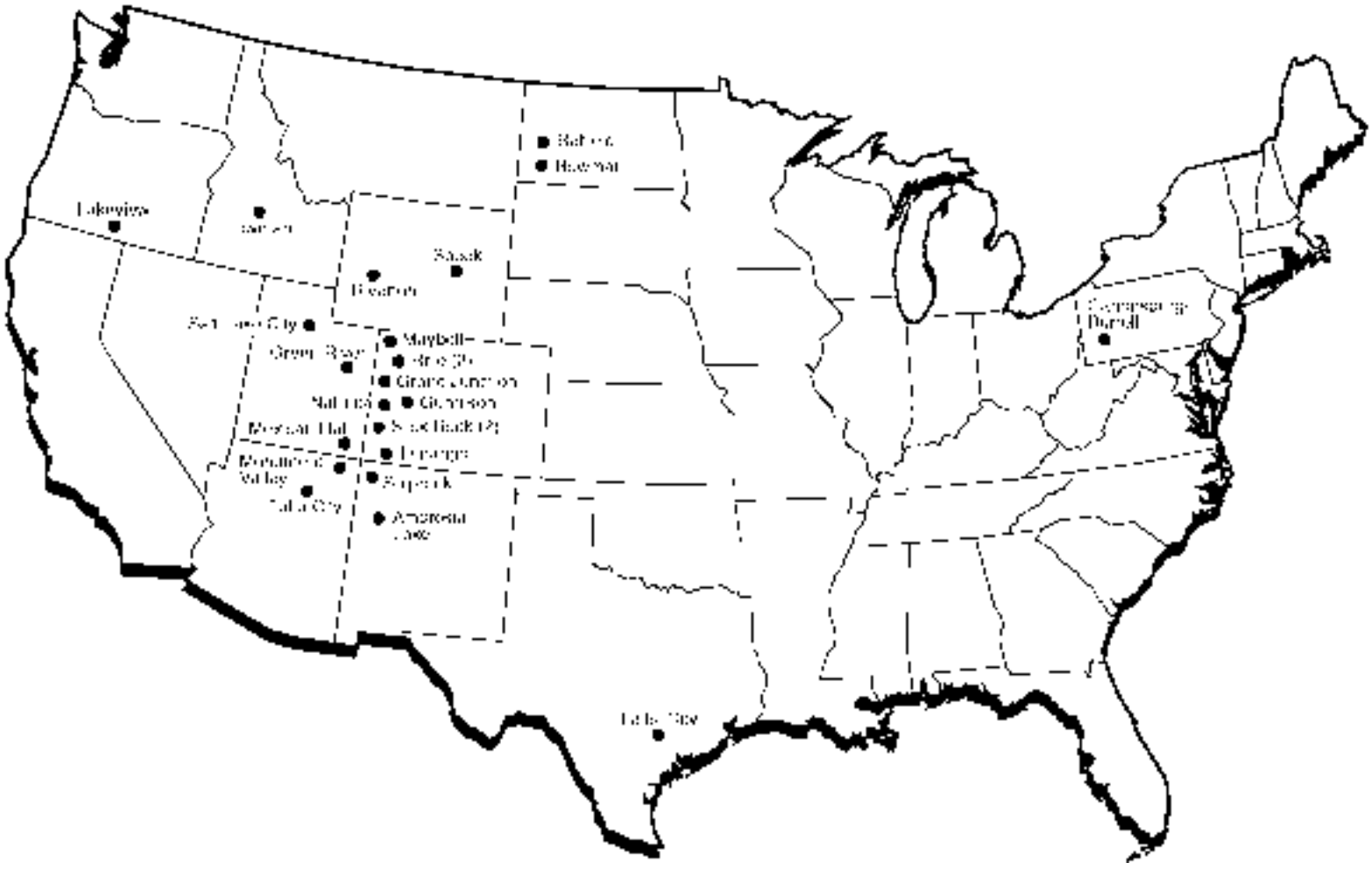
### 2.2 ENVIRONMENTAL SETTING

The 24 Title I sites are in 10 states. Table 2.2-1 presents the key environmental features of the processing sites. More detailed information on the environmental settings are contained in the environmental assessment (EA), environmental impact statement (EIS), and the remedial action plan (RAP) for each site.

### 2.3 CURRENT SITE AND ADJACENT LAND USES

Due to the contamination at the processing sites, they are restricted from public use until remediation is complete. Remedial action construction activities are complete at 16 processing sites. Where the disposal cell was created by contouring and covering the contaminated material in place, the contaminated materials are considered to be stabilized in place (SIP). Where the disposal cell was constructed some distance from the contaminated materials but still within the original site boundary, the contaminated materials are referred to as stabilized on site (SOS). When the contaminated materials were placed in an off-site disposal cell, the sites are referred to as "relocated" sites. The current use of each processing site depends on whether the remedial action at the site is complete and if the strategy for remediation is SIP/SOS or relocate. At the completed SIP/SOS sites, the land is available for use except for the portion that contains the disposal cell, which is fenced and restricted from public use. The completed relocate sites can be used by the Indian tribe, state, or private property owner. The six sites that have not been remediated are restricted from public use until remediation is complete. (However, at the request of the state, Belfield and Bowman, North Dakota, may not be remediated. Therefore, the Project's current plans do not include remediation of this site.) UMTRCA also authorizes the cleanup of properties in the vicinity of the processing sites that are contaminated with radioactive materials from the processing sites. Approximately 5300 VPs are included for remediation. They range in size and complexity from acres of vacant land with windblown contamination to private residences with contamination in the foundation to commercial properties. The VPs usually can be used by the private owners without restriction before remediation. UMTRCA requires a restriction in a property deed if the property was included but the owner refused remediation. Table 2.3-1 summarizes the status of the remedial action, the disposal option, cubic yards of contaminated materials and the acres of contaminated land at each site.

Figure 2.1-1  
UMTRA Surface Project Location of Release Sites



**Table 2.2-1 Site environmental settings**

Site	Site characteristics								
	Setting				Annual precipitation (inches)	Wetlands	Surface water	Cultural resources	Threatened and endangered species
	Tribal land	Urban	Suburban	Rural					
Ambrosia Lake, NM				✓	9			✓	
Belfield, ND			✓	✓	16	✓	✓	✓	
Bouman, ND				✓	16	✓	✓	✓	✓
Canonsburg, PA		✓			37		✓	✓	
Durango, CO			✓		19		✓		✓
Falls City, TX				✓	30	✓	✓		✓
Grand Junction, CO		✓			8	✓	✓		✓
Green River, UT				✓	6		✓	✓	
Gunnison, CO			✓		11	✓	✓		✓
Lakeview, OR			✓		17	✓	✓		
Lowman, ID				✓	27	✓	✓		
Maybell, CO				✓	13	✓	✓	✓	✓
Mexican Hat, UT	✓			✓	6	✓	✓		
Monument Valley, AZ	✓			✓	6	✓	✓	✓	
Naturita, CO				✓	9	✓	✓	✓	✓
New Rifle, CO			✓		11	✓	✓		✓
Old Rifle, CO			✓		11	✓	✓		✓
Riverton, WY	✓			✓	8	✓	✓	✓	
Salt Lake City, UT		✓			15	✓	✓		
Shiprock, NM	✓		✓		6	✓	✓		✓
Slick Rock, CO (North Continent)				✓	7	✓	✓	✓	✓
Slick Rock, CO (Union Carbide)				✓	7	✓	✓	✓	✓
Spook, WY				✓	11		✓		✓
Tuba City, AZ	✓			✓	6				
<b>Total</b>	<b>5</b>	<b>3</b>	<b>7</b>	<b>14</b>		<b>18</b>	<b>22</b>	<b>11</b>	<b>13</b>

Table 2.3-1 UMTRA Surface Project status and statistics

Site	Remedial action completion date	On-site disposal (SIP/SOP)	Off-site disposal (relocate)	Cubic yards of contaminated material to be remediated (thousands) <sup>a</sup>	Acres of contaminated land
Ambrosia Lake, NM	6-95	✓		5,126	612
Belfield, ND <sup>b</sup>				58	31
Bowman, ND <sup>b</sup>				100	71
Canonsburg, PA <sup>c</sup>	12-85	✓		265	79
Durango, CO	5-91		✓	2,533	127
Falls City, TX	7-94	✓		6,019	593
Grand Junction, CO	8-94		✓	4,425	114
Green River, UT	12-89	✓		382	48
Gunnison, CO	12-95		✓	796	68
Lakeview, OR	10-89		✓	944	116
Lowman, ID	6-92	✓		126	30
Maybell, CO	12-96 <sup>d</sup>	✓		4,100	214
Mexican Hat, UT	2-95	✓		2,558	250
Monument Valley, AZ	3-94		✓	925	83
Naturita, CO	9-97 <sup>d</sup>		✓	399	247
New Rifle, CO	7-96 <sup>d</sup>		✓	3,096	238
Old Rifle, CO	7-96 <sup>d</sup>		✓	661	88
Riverton, WY	9-90		✓	1,793	140
Salt Lake City, UT	6-89		✓	2,710	128
Shiprock, NM	9-86	✓		2,800	130
Slick Rock, CO (NC)	12-96 <sup>d</sup>		✓	85	47
Slick Rock, CO (UC)	12-96 <sup>d</sup>		✓	547	92
Spook, WY	9-89	✓		315	21
Tuba City, AZ	5-90	✓		1,631	327
Total		10	12	42,430	3894

<sup>a</sup>Estimated quantities for incomplete sites.

<sup>b</sup>At the request of the state, these sites may not be remediated.

<sup>c</sup>Includes Burrell, Pennsylvania, VP disposal cell volume and area.

<sup>d</sup>Anticipated completion date per FY1998 field budget.

UC - Union Carbide.  
 NC - North Continent.  
 NA - not applicable.

## 2.4 INFLUENCING FACTORS

The UMTRCA directed the tailings and other RRM resulting from site remediation to be encapsulated in a disposal cell that would contain the contamination for 200 to 1000 years. However, the factors that influenced how this would be accomplished and the location of the disposal cell at each of the sites include:

- Environmental factors, such as the presence and quality of ground water and the presence of threatened and endangered species.
- Social factors, such as nearby community and individual interests in location of disposal site and transportation of tailings.
- Economic factors. For example, recovering additional natural resources from the tailings piles is not economically viable and the distances between the sites eliminated the viability of a single, centralized disposal cell for all RRM.
- Cultural factors, such as the presence of historic buildings, areas of archaeological significance, and Native American sacred lands and beliefs.

## 2.5 FUTURE USES OF LAND, FACILITIES, AND EQUIPMENT

Where the disposal cell is located at the processing site (SIP or SOS), the land containing the disposal cell will be restricted from public use. Where the contamination was relocated to a disposal cell off the site, the site can be used by the tribe, state, or private owner without restriction, once the processing site is cleaned up. The DOE will control only the disposal cells, except for the sites located on Indian lands. The affected tribes will retain these lands, with DOE access obtained through custodial access agreements with the tribes. The DOE never owns the VPs, which will continue to be used by the owners without restriction. Table 2.5-1 summarizes the status of lands for the Project. This table shows that, pursuant to UMTRCA, the Project acquires private lands for the disposal cells. DOE control of the disposal cells is for the purposes of long-term surveillance of the cells.

The Project will not leave equipment or facilities in place at most of the processing or disposal sites. The existing mill buildings will be torn down and the building materials placed in the disposal cell. Temporary buildings (trailers) may be required at most sites, but will be removed when remedial action is complete.

Table 2.5-1 Status of lands

Cumulative through fiscal year	Private lands (acres)			DOE lands (acres)		Remediated and available for release	Not ready to be released
	Total to be remediated	Total completed and released <sup>a</sup>	Total owned by DOE <sup>c</sup>	DOE land to be retained <sup>b</sup>	Land that has been released		
Pre-FY1995	3792	1179	N/A	757	N/A	N/A	N/A
FY1995	1856	1759	N/A	1039	N/A	N/A	N/A
FY1996	994	1833	N/A	1359	N/A	N/A	N/A
FY1997	600	1845	N/A	1947	N/A	N/A	N/A
FY1998	0	1845	N/A	1947	N/A	N/A	N/A

<sup>a</sup>This is less than the total to be remediated at the processing sites since a portion of the processing site may be retained by the DOE for the disposal cell.

<sup>b</sup>Land occupied by the disposal site is under DOE control, not ownership. DOE retains control for purposes of long-term surveillance and maintenance. This is to be performed by DOE under a project other than UMTRA.

<sup>c</sup>Does not include acres for disposal sites on Indian Lands for which there is a custodial access agreement.

Note: At the state's request, Belfield and Bowman, North Dakota, may not be remediated. Therefore, they are not included.

### **3.0 STATUS OF ENVIRONMENTAL RESTORATION ACTIVITIES**

#### **3.1 CURRENT ENVIRONMENTAL RESTORATION ACTIVITIES**

As of March 1996, remediation was complete at 16 of the 24 processing sites and in process at 6 sites. The Project does not plan to remediate Belfield and Bowman, North Dakota, at the request of the state. Table 3.1-1 summarizes the status of the environmental cleanup activities at each of the sites and includes the cubic yards of contaminated material to be remediated, the cleanup phase, and cleanup activities completed as of March 1996 for each of the sites. Figure 3.1-1 shows the status of remediation at each site. Maps of the sites can be found in the 1994 environmental report (DOE, 1995a).

#### **3.2 REGULATORY AGREEMENTS, PERMITS, AND OTHER LEGAL DRIVERS**

The UMTRCA is the primary legal driver for the Project. UMTRCA requires the DOE to remediate designated inactive processing sites in accordance with EPA standards for RRM cleanup and disposal.

UMTRCA also requires the DOE to care for the permanent disposal sites in accordance with NRC general license requirements (10 CFR Part 40). Other regulatory drivers include the legislation discussed below.

##### **Clean Water Act**

The Clean Water Act (CWA) (33 USC §1251 *et seq.*) sets requirements to protect, maintain, and restore the chemical, physical, and biological integrity of the nation's water. The CWA established the National Pollutant Discharge Elimination System (NPDES), which requires permits for all point-source effluent and storm water discharges to water sources. All UMTRA sites must comply with NPDES requirements.

##### **National Environmental Policy Act**

The NEPA of 1969 (42 USC §4321 *et seq.*) requires federal agencies to prepare a detailed statement identifying and analyzing the potential environmental impacts of proposed actions that could significantly affect the quality of the human environment. EAs or EISs have been prepared for all the sites.

##### **Endangered Species Act**

The Endangered Species Act (16 USC §1531 *et seq.*) prohibits federal agencies from taking any action that would jeopardize the existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. The DOE performs field surveys or reviews published materials to determine the status of endangered species in the area of each site and prepares



**Figure 3.1-1  
UMTRA Surface Project Map of Activities**

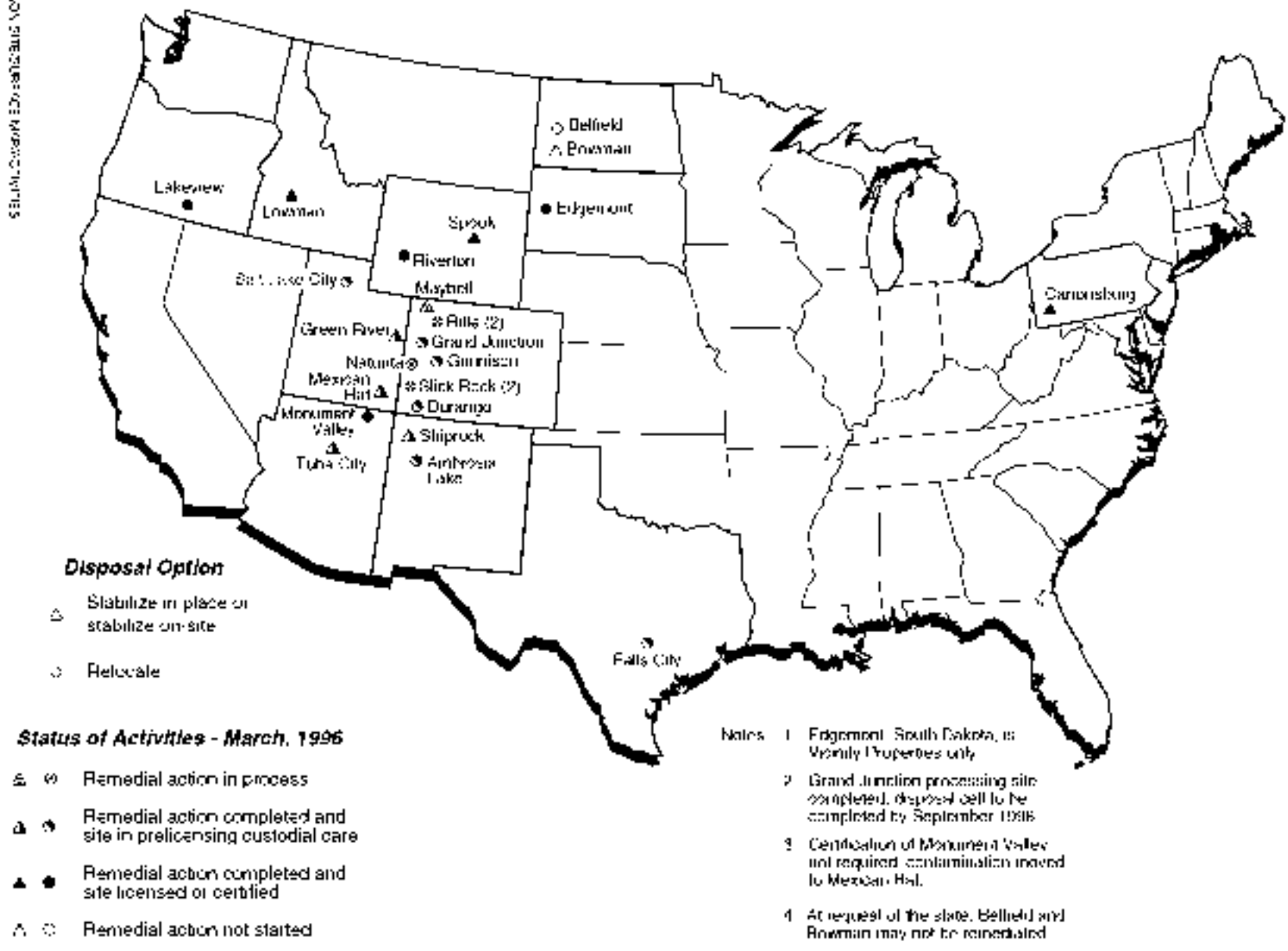


Table 3.1-1 Activity summary table

Site	Activity data sheet	Risk data sheet	Cubic yards of contaminated material to be remediated (thousands)	Current phase	Relative ranking	Cleanup activities completed as of March 1995
Ambrosia Lake, NM	NA	NA	5126	PLOC	NE	Site RA 6/95 VP RA (5 VPs)
Behlaid/Bowman, ND Cannonburg, PA	0 NA	0 NA	0 265	Licensed	NE NE	0 Site RA 12/95 VP RA (163 VPs)
Durango, CO	NA	NA	2833	PLOC	NE	Site HA 5/91 VP RA (128 VPs)
Falls City, TX	NA	NA	8019	PLOC	NE	Site RA 7/94 VP RA (13 VPs)
Grand Junction, CO (includes processing site, VPs, and disposal cell at Cheney)	ALUM 0002 (Cheney and VPs)	R95A 0002 (Cheney and VPs)	4425	VP RA, disposal cell closure	M	Processing site RA 8/94 RA of 4130 VPs as of 2/95
Green River, UT	NA	NA		PLOC	NE	Site RA 12/89 VP RA (17 VPs)
Gunnison, CO	ALUM 0005	R95A 0001	795	PLOC	NE	Alternate water system 8/94 Site RA 12/95 VP RA (12 VPs)
Lakeview, OR	NA	NA	944	Licensed	NE	Site HA 10/89 VP RA (8 VPs)
Lowman, ID	NA	NA	126	Licensed	NE	Site RA 5/92 VP RA (36 VPs)
Maybell, CO	ALUM 0002	R95A 0002	4100	RA	NE	Initiated site RA 5/95
Mexican Hat, UT	NA	NA	2568	Complete	NE	Site HA 2/95 VP RA (11 VPs)
Monument Valley, AZ	NA	NA	925	PLOC	NE	Site RA 3/94 VP RA (4 VPs)
Natunta, CO	ALUM 0002	R95A 0002	399	RA	NE	Demolition of mill buildings (Phase I RA) 12/94 RA of 12 Vps
Old and New Rifle, CO	ALUM 0005	R95A 0001	3757	RA	NE	Phase I RA 9/89 Cell excavation 11/92 Tailings placement 11/95 RA (110 VPs as of 3/95)
Riverton, WY	NA	NA	1793	Complete	NE	Site RA 9/90 VP RA (41 VPs)
Salt Lake City, UT	NA	NA	2710	PLOC	NE	Site RA 6/89 VP RA 12/87 (118 VPs)
Shiprock, NM	NA	NA	2800	PLOC	NE	Site RA 3/86 VP RA (15 VPs)
Slick Hook, CO (CO and NC sites)	ALUM 0002	R95A 0002	632	RA	NE	Initiated tailings haul 8/95 RA at 1 VP as of 3/95
Spock, WY	NA	NA	315	Licensed	NE	Site RA 11/89 VP RA (1 VP)
Tuba City, AZ	NA	NA	1631	No further action	NE	Site RA 6/90 VP RA (1 VP)

\*Activity data sheet and risk data sheet listed for each site indicate in which ADG/DCE the majority of the budget request appears for FY000. Sites that require no budget for FY000 show "NA" in these columns. Since the only sites to be accessed in FY1995 are the Cheney disposal cell in Grand Junction, CO, and the VPs to be enclosed in FY1995, the relative ranking for other sites is not included. With the request of the state, Behlaid and Bowman, ND, is a priority for remediation. Therefore, the 274256 for a budget request does not include these sites.

PLOC - pending custodial care

RA - remedial action

VP - waste process

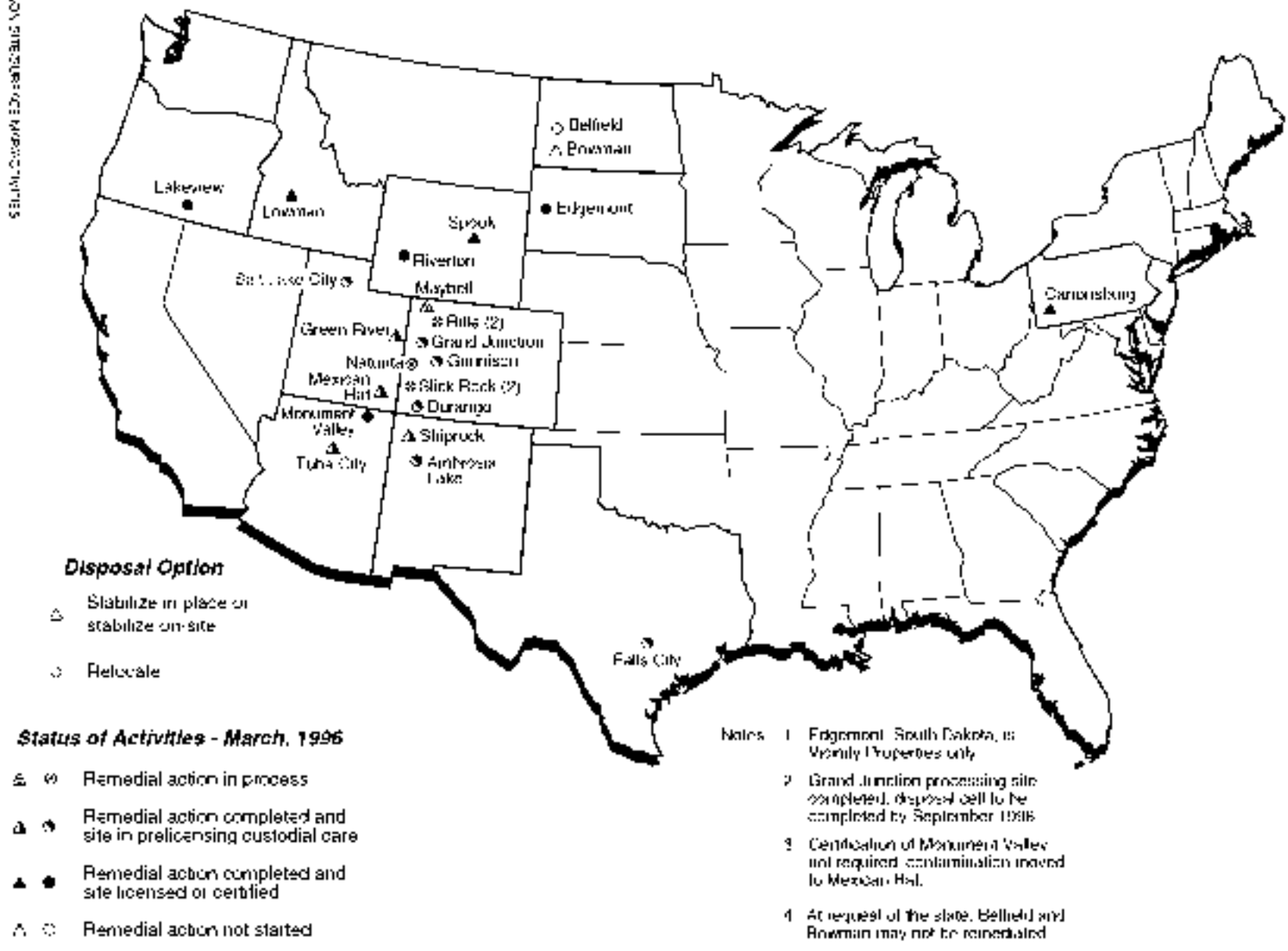
NA - not applicable

NE - not evaluated since all RA will be complete by 1998.

ALUM - budget indicator, identifying DCE-AL JNTRP Project

M - medium

Figure 3.1-1  
UMTRA Surface Project Map of Activities



biological assessments. These assessments, the Fish and Wildlife Service biological opinion of the assessments, and all agreed-upon mitigation documentation become part of the site-specific NEPA documentation.

### **Clean Air Act**

The Clean Air Act (42 USC §7401 *et seq.*) requires facilities that release airborne toxic materials to obtain permits. Although the UMTRA sites do not support any facilities, the sites must apply for air quality permits before construction begins.

### **Hazardous Materials Transportation Act**

The Hazardous Materials Transportation Act (HMTA) (49 USC §1801 *et seq.*), enforced by the U.S. Department of Transportation (DOT), is the major transportation-related statute affecting the Project. Uranium mill tailings with a total specific activity exceeding 2000 picocuries per gram (pCi/g) are classified as radioactive material. The HMTA regulates transport of these tailings and radiological samples, and regulates calibration standards for testing equipment. In 1994 the DOE acquired a renewal to its DOT exemption (E-10594) for the UMTRA Project to transport tailings at or above 2000 pCi/g in bulk shipments. The exemption grants the use of special placards for haul trucks, shipping documentation, and training to address the tailings hazards.

### **Applicable state and local regulatory requirements**

UMTRA Project sites comply with all viable state, county, and city regulatory requirements. Details of the regulatory requirements unique to each site can be found in the UMTRA Project 1994 environmental report (DOE, 1995b).

## **3.3 WASTE MANAGEMENT AND MATERIAL DISPOSITION ACTIVITIES IMPACTING THE ENVIRONMENTAL RESTORATION PROJECT**

No waste management and material disposition activities impact the Project. Wastes generated by site cleanup activities are disposed of as RRM in the disposal cells at those sites.

## **3.4 PROJECT SUPPORT ACTIVITIES**

### **Public participation**

The UMTRCA requires public involvement in remedial action planning and the Project implemented a public participation program very early in the Project. The DOE must hold public meetings in states that contain processing sites, VPs, or disposal sites. However, public participation in the UMTRA Project is not limited to the procedures formally required by law. The public is involved in informational meetings, workshops, local citizen task forces, and advisory groups. The UMTRA Project public affairs plan (DOE, 1995c) describes the procedures and methods of informing the public about all aspects of the Project to encourage informed participation from the public and government officials. Information is disseminated to federal, state, and local officials; the media; special interest groups; and all other interested parties.

### **Project management**

Day-to-day Project management is assigned to DOE-Albuquerque Operations Office (DOE-AL) in the Project charter, which was initially approved in June 1980 and amended in 1980, 1982, and 1986. Responsibility for DOE-AL management of the Project is assigned through the Office of

Environment/Project Management to DOE/ERD, which manages the Project in accordance with policies provided by DOE-HQ (Figure 1.5-1).

Because 16 sites are complete and remedial action has begun or will begin in FY1996 at all remaining sites (except Belfield and Bowman, North Dakota), ER Project management is now focusing on completing remedial action at the remaining sites and licensing the completed sites. Efforts to expedite licensing the sites are discussed in Section 5.3.

DOE-HQ program management efforts are focusing on the extension to the UMTRCA from September 1996 to September 1998 and implementing the state's request not to remediate the Belfield and Bowman, North Dakota, sites.

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## 4.0 SITE RELATIVE RANKING

The DOE Office of Environmental Restoration relative ranking framework provides a model for ranking release sites based on relative risk (DOE, 1995d). This model includes three factors: source hazard, pathway, and receptor. Through a combination of site characteristics and calculations, each factor is assigned a low, medium, or high level. The three factors and their levels then are combined to give an overall site relative risk ranking of low, medium, or high.

The Project applied this methodology only to the sites that would still pose a health risk in FY1998. Since remedial action will be complete at all processing sites by the start of FY1998, the only risks remaining in that year are the remaining Grand Junction VPs and the open disposal cell at Cheney.

Using this methodology, the Grand Junction disposal site received a risk ranking of "low." This ranking was based on the following evaluation of risk factors for soil contamination. Assumed data were used to arrive at a source hazard factor of "minimal." The tailings at the disposal site are now covered with either clean soil or low-activity dilute material from VPs. The pathway factor was identified as "confined" because most of the tailings in the disposal cell are capped and site access is restricted. The receptor factor is "identified" because site workers are directly exposed to tailings and the radon gas emanating from the tailings.

The Grand Junction VPs to be remediated in FY1998 are quite variable and were ranked as a group rather than individually. A composite VP ranking of "medium" was based on the following evaluation of risk factors for soil contamination. The source hazard factor is "minimal." The Project assumed that concentrations of contaminants (primarily radium-226 and other members of the radium-238 decay chain) in VP surface soil was diluted from the concentrations found in tailings and in most cases less than twice the standards listed in the EM-40 guidance document. The pathway factor was identified as "potential" because the nature of the tailings deposits is highly variable among the VPs and access is generally unrestricted since most VPs are privately owned. The receptor factor is "identified" because people work, reside, and recreate around the areas of contamination and are directly exposed to tailings and the radon gas emanating from the tailings.

No processing sites were evaluated since remedial action will be complete at all processing sites prior to FY1998.

## 5.0 ENVIRONMENTAL RESTORATION STRATEGY

### 5.1 KEY ASSUMPTIONS

Key Project assumptions are listed below.

- The UMTRCA will continue to be the primary regulatory driver and an amendment to the UMTRCA to extend the Project authorization through FY1998 will become law by 30 September 1996. However, if this does not occur, carryover funds from FY1996 will be used to accomplish Project shutdown in FY1997.
- Current plans not to remediate Belfield and Bowman, North Dakota, will be found acceptable to the DOE, state, other stakeholders, and outside intervenors.
- Target funding requested in the FY1998 field budget request will be received.
- The UMTRA Project will comply with applicable federal, state, tribal, and local laws and regulations and DOE Orders.
- Remedial action will be completed by the end of FY1997, with the exception of the disposal cell and VPs at Grand Junction, Colorado, which will be completed by 30 September 1998.
- The NRC will license all sites by the end of FY1998, except for Grand Junction, which will be licensed in August 1999.
- The transfer of long-term custodial care responsibility for the UMTRA Project disposal sites to the GJPO will be completed by the end of FY1998 except for Grand Junction, which will be complete by 30 September 1999.
- Cleanup of UMTRA Surface VPs beyond FY1998 will be the responsibility of a program other than UMTRA.
- State and tribal agencies will continue to take an active role in ensuring site cleanup and will continue to share remedial action costs in accordance with the cooperative agreements. Contingency funds will be used to continue work if state funding is not received as planned.
- ORNL's VP inclusion work on the Project will be completed by June 1997.
- NRC will conditionally accept supplemental standards for RRM remaining in Grand Junction, Colorado, utility lines and roads noting that a long-term radon management plan will be implemented by the DOE.

### 5.2 REMEDY SELECTION STRATEGY

The location of each disposal cell, and whether the tailings will be remediated on the site or relocated to another site, has already been determined for each site and can be found in each site's RAP. The basic strategy for remediating the sites, as dictated by the UMTRCA, is to dispose of the tailings and RRM in engineered disposal cells that will contain the contamination for 200 to 1000 years.

### 5.3 UMTRA SURFACE PROJECT RELEASE SITE MANAGEMENT STRATEGY

#### Strategy for accomplishing environmental restoration

Project ER activities are organized by site, with each site managed independently. Site teams, comprised of DOE and contractor management and technical personnel, work together to accomplish the remedial action at each site and associated VPs. The contamination from the VPs is disposed of in the nearby disposal cell. Limited personnel and funding resources require Project-level review of all work to ensure adequate resources are available as required.

Although there are 22 processing sites to be cleaned up by the Project (not including Belfield and Bowman, North Dakota), there are only 19 disposal cells. This is due to an effort to consolidate the contaminated material from sites close to each other into one disposal cell. For example, the tailings and other RRM from the processing site in Monument Valley, Arizona, were relocated to a disposal cell constructed near the Mexican Hat, Utah, processing site.

Remedial action construction is complete or under way at all but one site (Naturita, Colorado). The Belfield and Bowman, North Dakota, sites will not be remediated, as requested by the state. The strategy for cleanup of Naturita has already been determined. Therefore, no decisions remain regarding the strategy to be used for cleanup of the processing sites. The strategy for completing the VPs in Grand Junction is to complete remediation in time to get the contaminated material into the disposal cell by February 1998 and close the disposal cell by the end of FY1998. Then the NRC can license the disposal cell by August 1999 and transfer it to the GJPO in September 1999.

#### **Strategy for expediting licensing**

The ultimate goal of the Project is for each processing site to be cleaned up and for each disposal cell to be licensed by the NRC. After licensing, responsibility for the custodial care of the disposal cell will be transferred from the Project to the DOE's long-term surveillance project, managed by GJPO. The Project and the NRC are working together to expedite the licensing process. Thirteen disposal cells will require licensing before the end of FY1998.

### **5.4 NONENVIRONMENTAL RESTORATION REGULATORY STRATEGY**

There are no nonenvironmental restoration regulatory impediments to completing the Project.

### **5.5 PROJECT SUPPORT ACTIVITY STRATEGY**

#### **Strategy for stakeholder involvement**

Stakeholder involvement continues as detailed in the Project's public affairs plan (DOE, 1995c).

#### **Strategy for project management**

The Project currently has in place all the project management controls and procedures for a major systems acquisition to comply with the requirements of DOE Order 4700.1. This order recently was replaced with DOE Order 430.1, *Life Cycle Asset Management*, for new projects. This new order allows a graded approach to project management, and shifts the focus of project management from compliance to performance. The UMTRA Project will review its current project management systems and modify them as required to reflect a performance-based management philosophy and the declining size of the Project, while still in fulfilling the basic principles and requirements of prudent project management such as documented planning, decision approvals, change control, and reporting. The UMTRA Integrated Project Management System Description (DOE, 1995e) details the current project management procedures.



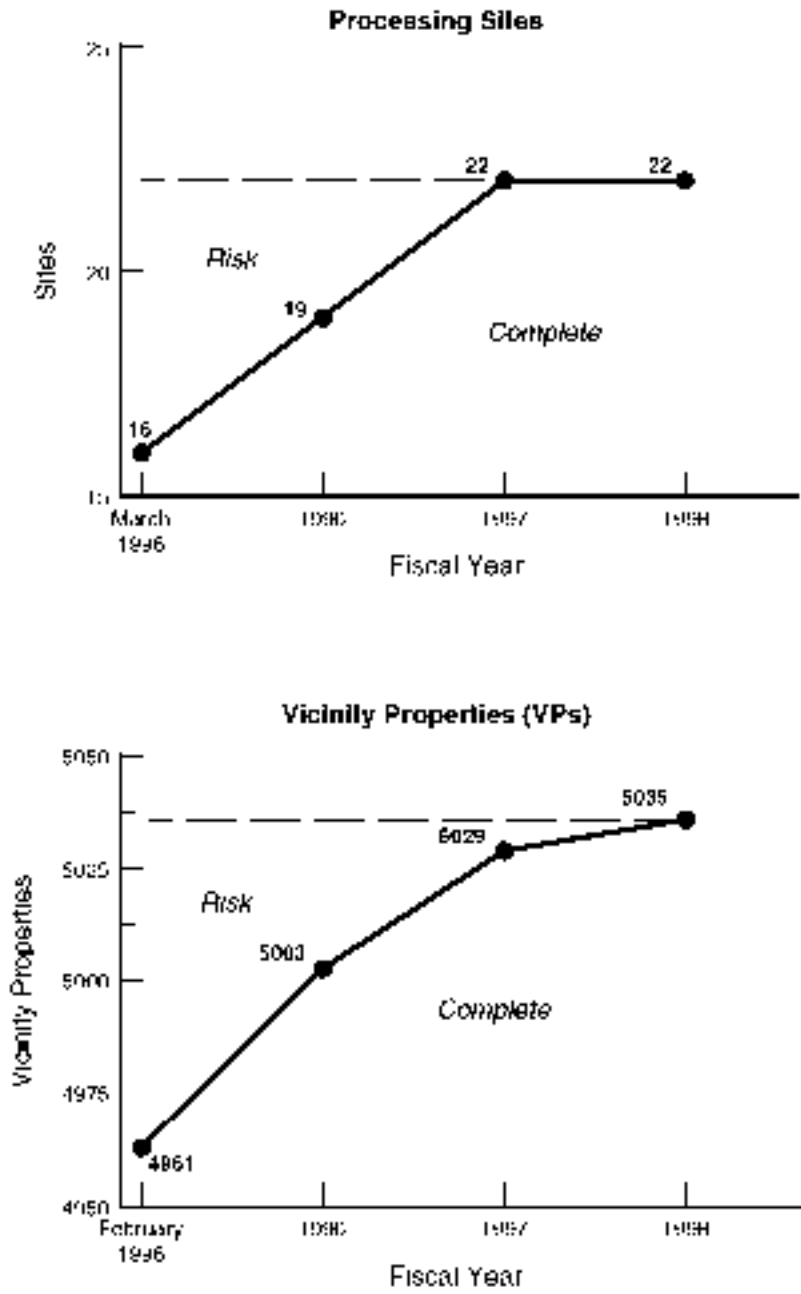
## **5.6 PERFORMANCE MEASURES**

The Project currently uses performance measures to track overall achievement of Project mission and objectives. These measures support the strategic measures outlined in the Environmental Restoration Strategic Plan (DOE, 1995a). The measures discussed below are used to examine macro-level long-term trends, and are part of a larger body of performance measures that DOE-EM uses for shorter-term management and external reporting purposes.

### **Strategic measure 1 - relative risk reduction**

Reduction of relative risk by the Project will be attained as remedial action construction is completed at the sites and VPs. As of March 1996, 16 processing sites were completed, with the remaining 6 (Belfield and Bowman, North Dakota, are not scheduled for remediation) sites scheduled for completion by the end of FY1997. Completion of Grand Junction VPs and closure of the Grand Junction disposal cell will be complete by the end of FY1998. The Project also had cleaned up 4961 VPs with the remaining 74 VPs scheduled for completion by February 1998. Figure 5.6-1 shows the completion schedule for the remaining sites and VPs.

**Figure 5.6-1  
Relative Risk Reduction**



Note: Totals do not include Belfield and Downman, ND processing sites and associated vicinity properties.

**Strategic measure 2 - land and facility status**

The DOE strategic plan states that the ultimate objective relative to lands is to remediate lands and decommission facilities so that they are ready to be transferred for future beneficial use. The Project measures attainment of this objective when the processing site is turned over to the state or private owner for unrestricted use. Some land at the former processing sites will not be turned over for unrestricted use, however, since the parcel of land which holds the disposal cell, if SIP or SOS, will be fenced and retained by the DOE. In addition, it is important to note that the DOE does not start out owning any of the processing sites it will clean up under the UMTRA Project. The land that will contain the disposal cells is acquired by the states and the deed transferred to the United States of America under the control of the DOE. Disposal sites on Indian lands are retained by the tribe with custodial access agreements enacted to allow DOE access for long-term monitoring. Also, the DOE never owns the VPs that are cleaned up under the Project. Table 2.5-1 shows the status of lands by fiscal year as the processing sites are cleaned up. The processing site is defined as cleaned up when the site subcontractor has completed work.

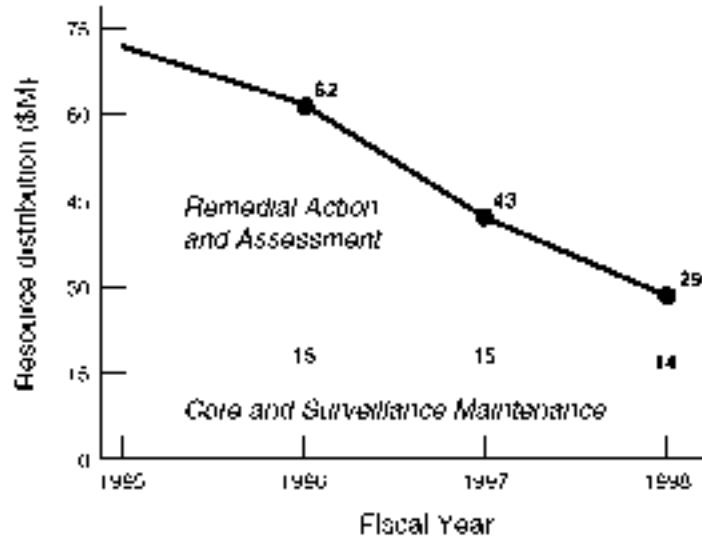
**Strategic measure 3 - resource distribution**

Figure 5.6-2 shows distribution of funds committed to assessment activities (to include licensing), remedial action, surveillance and maintenance, and core Project activities. Assessment activities will continue after remedial action due to the licensing activities that are captured under assessment.

**Strategic measure 4 - program efficiency**

The Project will continue efforts to improve Project efficiency and cost-effectiveness. The Project goal is to save \$6.8 million of the Project's budget authority (BA) in FY1996 and 5 percent of the budgeted BA in FY1997 and FY1998. Attainment of this goal will be measured and documented through the Project's Cost Reduction/Productivity Improvement Program (CR/PIP). This program has been operating since FY1988, and is a recent Hammer Award recipient.

**Figure 5.6-2**  
**Resource Distribution**  
**FY 1998 Field Budget**



	<b>\$Millions</b>		
	<u>1998</u>	<u>1997</u>	<u>1996</u>
<b>Remedial Action</b>	\$ 45	\$ 26	\$ 14
<b>Assessment</b>	2	2	1
<b>Surveillance and Maintenance</b>	2	2	1
<b>Core</b>	<u>13</u>	<u>13</u>	<u>13</u>
<b>Total Project Cost</b>	\$ 62	\$ 43	\$ 24

## **6.0 ENVIRONMENTAL RESTORATION PROGRAM MASTER SCHEDULE**

This section presents the Project's master schedule, which supports the FY1998 field budget submittal. The master schedule shows the Project complete by the end of FY1998, except for licensing and transferring the Grand Junction disposal cell at Cheney in FY1999.

### **6.1 SITE ENVIRONMENTAL RESTORATION MASTER SCHEDULE**

Figure 6.1-1 presents a chart of the Project's remediation schedule. The schedule is coded to show planning and design, remedial action, and engineering at the sites; remedial action at the VPs; and the extension for closure of Grand Junction's Cheney disposal cell. This summary level schedule is supported by lower level detail schedules, which are updated and maintained monthly.

### **6.2 COMPLIANCE SCHEDULE AND MILESTONES**

Figure 6.1-1 also lists the licensing schedule for the sites. Licensing is the final action that determines compliance under the Project. This schedule is consistent with the FY1998 field budget.

Figure 6.1-1 UMTRA Surface Project master schedule

## **7.0 SPECIFIC PROJECT ISSUES AND INITIATIVES**

### **7.1 KEY ISSUES AFFECTING PROJECT PERFORMANCE**

The issues below affect Project performance.

- UMTRCA needs to be extended to September 1998 to allow the Project to complete remedial action by the end of FY1998 and complete licensing by the end of FY1998, except Grand Junction.
- The requested target funding is essential to complete the Project in FY1998.
- Timely concurrence by NRC on licensing the remaining UMTRA sites following certification of remedial action is necessary to meet the scheduled Project completion in FY1998.

### **7.2 INITIATIVES TO IMPROVE PROJECT PERFORMANCE**

The Project recognizes there are risks to completing the Project within the approved cost and schedule and has initiated efforts to mitigate these risks. The following initiatives have been implemented:

- The DOE site certification and licensing process was expedited by streamlining the completion reports, final audit reports, and long-term surveillance plans, submitting only final reports in lieu of drafts and finals that result in several months' savings in the schedules and reducing the timeframe for the real estate process from 3 months to 1 month.
- Converting software from Open Plan/COBRA to Primavera streamlined and reduced the cost of Project control and scheduling efforts. This requires fewer hours and lowers maintenance costs.

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## 8.0 REFERENCES

- DOE (U.S. Department of Energy), 1995a. *Environmental Restoration Strategic Plan, Remediating the Nuclear Weapons Complex*, DOE/EM-0257, Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, Tennessee 37831.
- DOE (U.S. Department of Energy), 1995b. *UMTRA Project 1994 Environmental Report*, DOE/AL/62350-101, Rev. 0, prepared for the U.S. Department of Energy, Environmental Restoration Division, UMTRA Project Team, Albuquerque, New Mexico.
- DOE (U.S. Department of Energy), 1995c. *Public Affairs Plan*, DOE/AL/62350-208, Rev. 0, prepared for the U.S. Department of Energy, Environmental Restoration Division, UMTRA Project Team, Albuquerque, New Mexico.
- DOE (U.S. Department of Energy), 1995d. *Relative Ranking Evaluation Framework for EM-40 Release Sites, Facilities & Buildings*, Draft, 22 December 1995.
- DOE (U.S. Department of Energy), 1995e. *Integrated Project Management System Description*, DOE/AL/62350-151, Rev. 0, prepared for the U.S. Department of Energy, Environmental Restoration Division, UMTRA Project Team, Albuquerque, New Mexico.
- DOE (U.S. Department of Energy), 1993. *Uranium Mill Tailings Remedial Action (UMTRA) Surface Project Plan*, DOE/AL/62350-35F, Rev. 1, prepared for the U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico.

## CODE OF FEDERAL REGULATIONS

- 10 CFR Part 40, *Domestic Licensing of Source Material*, U.S. Nuclear Regulatory Commission.
- 40 CFR Part 61, *National Emission Standards for Hazardous Air Pollutants*, U.S. Environmental Protection Agency.
- 40 CFR Part 192, *Health and Environmental Protection Standard for Uranium and Thorium Mill Tailings*, U.S. Environmental Protection Agency.
- 40 CFR Part 1500, *Purpose, Policy, and Mandate*, Council on Environmental Quality.
- 40 CFR Part 1501, *NEPA and Agency Planning*, Council on Environmental Quality.
- 40 CFR Part 1502, *Environmental Impact Statement*, Council on Environmental Quality.
- 40 CFR Part 1503, *Commenting*, Council on Environmental Quality.
- 40 CFR Part 1504, *Predecision Referrals to the Council of Proposed Federal Actions Determined to Be Environmentally Unsatisfactory*, Council on Environmental Quality.
- 40 CFR Part 1505, *NEPA and Agency Decisionmaking*, Council on Environmental Quality.
- 40 CFR Part 1506, *Other Requirements of NEPA*, Council on Environmental Quality.
- 40 CFR Part 1507, *Agency Compliance*, Council on Environmental Quality.



40 CFR Part 1508, *Terminology and Index*, Council on Environmental Quality.

### DOE ORDERS

Order 430.1, *Life Cycle Asset Management*, U.S. Department of Energy, Office of Field Management.

Order 4700.1, *Project Management System*, U.S. Department of Energy, Office of Primary Interest, Project Management Division.

### UNITED STATES CODES

16 USC §1531 *et seq.*, *Endangered Species Act*, 28 December 1973.

33 USC §1251 *et seq.*, *Clean Water Act*, 18 October 1972.

42 USC §4321 *et seq.*, *National Environmental Policy Act*, 1 January 1970.

42 USC §7401 *et seq.*, *Clean Air Act*, 17 December 1963.

42 USC §7901 *et seq.*, *Uranium Mill Tailings Radiation Control Act*, 8 November 1978.

49 USC §1801 *et seq.*, *Hazardous Materials Transportation Act*, 3 January 1975.

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**APPENDIX A**  
**ENVIRONMENTAL RESTORATION COST BASELINE**

Installation cost baseline

Site	Phase	FY 89-95 (000\$)	FY96 (000\$)	FY97 (000\$)	FY98 (000\$)
<b>Medium relative risk<sup>a</sup></b>					
Grand Junction, CO	Assessment <sup>b</sup>		338	648	516
Vicinity property remedial action and disposal cell closure	Remediation <sup>c</sup>		12,439	10,011	12,335
All other sites <sup>b</sup>	Assessment <sup>b</sup>		1,891	1,086	329
	Remediation <sup>c</sup>		32,664	15,989	1,574
Subtotal	Assessment		2,228	1,733	844
Medium	Remediation		45,103	26,000	13,908
Program management			12,953	13,452	13,024
Surveillance and maintenance			2,162	1,381	1,109
Total federal share		1,219,276	62,446	42,567	28,886
State share		87,890	4,949	2,886	1,545
Total Project cost		1,307,166	67,395	45,452	30,431

<sup>a</sup>All sites are captured under one risk data sheet that was ranked "medium." Therefore all sites are categorized as medium for this chart.

<sup>b</sup>Postremediation assessment costs include Technical Assistance Contractor licensing support activities, environmental audits, preparation of the annual site environmental report and preparation for and conduct of public meetings.

<sup>c</sup>Remediation costs in fiscal year 1998 for preparation of Naturita site and vicinity property completion reports.

**APPENDIX B**

**MAJOR ENVIRONMENTAL RESTORATION DOCUMENTS**

Table B-1 Major programmatic documents

Title	Date
FY1993 annual environmental report	10/94
FY1994 annual environmental report	8/95
Environmental Protection Implementation Plan	10/94
Technical Approach Document	12/89
Surface Project Plan	8/93
Surface Project Management Plan	
Quality Assurance Program Plan	9/95
Waste Minimization and Pollution Prevention Awareness Program Plan	7/94
Environmental Monitoring Plan	12/92
Environment, Safety, and Health Plan	3/95
Human Health Risk Assessment Methodology	11/94
Quality Assurance Implementation Plan	9/94
LTSP Guidance Document	2/96
Vicinity Property Management and Implementation Plan	3/88
UMT RA Project Site Management Manual	10/90

Table B-2 Major site-specific documents

Site	RAP	NEPA	LTSP
Ambrosia Lake	2/91 F	6/87 F	11/95
Belfield	10/90 PF	9/93 F	
Bowman	10/90 PF	9/93 F	
Canonsburg	10/83 F	7/83 F	11/95
Durango	12/91 F	10/85 F	11/95
Falls City	9/92 F	12/91 F	8/95
Grand Junction	9/91 F	12/86 F	
Green River	3/91 F	7/88 F	8/94
Gunnison	10/92 F	2/92 F	2/96
Lakeview	7/92 F	4/85 F	8/94
Lowman	9/91 F	1/91 F	7/93
Maybell	6/94 F	11/94 F	
Mexican Hat	2/93 F	10/87 F	2/96
Monument Valley	2/93 F	6/89 F	
Naturita	3/94 F	10/94 F	
New Rifle	8/91 F	3/90 F	
Old Rifle	8/91 F	3/90 F	
Riverton	10/87 F	6/87 F	
Salt Lake City	12/84 F	7/84 F	
Shiprock	7/93 F	5/84 F	9/94
Slick Rock - NC	9/95 F	5/95 F	
Slick Rock - UC	9/95 F	5/95 F	
Spook	7/89 F	4/89 F 3/96 D	6/92
Tuba City	8/89 F	11/86 F	2/96

F - final; PF - preliminary final; D - draft.

RAP - remedial action plan.

LTSP - long-term surveillance plan.

NEPA - Surface Project National Environmental Policy Act document.

**APPENDIX C**

**DECISION DOCUMENT/RECORD OF DECISION SUMMARIES**

### **ROD Summaries**

The key decision document for each UMTRA Surface Project site is the site remedial action plan (RAP). The RAP presents the results of characterization efforts at the site, the design for the remedial action and supporting calculations, studies, and analyses demonstrating how the design satisfies the requirements of 40 CFR Part 192. NRC concurrence on the RAP allows the project to proceed to construction. Dates of the RAP for each site are shown in Appendix B.



**APPENDIX D**  
**CONCEPTUAL MODEL DATA SUMMARIES**

Only required for high relative risk sites; UMTRA does not have any sites ranked high therefore no models are required.

**APPENDIX E**  
**PROJECT CONTROLS**

The UMTRA Surface Project currently follows policies and procedures detailed in DOE Order 4700.1, *Project Management System*. The Project's Integrated Project Management System Description details the specific activities and procedures to be followed by each of the major contractors and the Project. The procedures contained in the IPMS description include work authorization, baseline planning and change control, budget development, and performance measurement and reporting. A new DOE Order 430.1, *Life Cycle Asset Management*, has been released, which provides a graded approach to Project management. However, since current procedures were developed to satisfy the requirements of DOE Order 4700.1, the Project will review them to see if any could be modified or eliminated under the new 430.1 requirements without impacting cost or schedule.