

## C.1 ALBUQUERQUE OPERATIONS OFFICE SUMMARY

**NOTE:** This site summary provides information and data for sites under the Department's Albuquerque Operations Office. The data for this summary were collected in 1999 and do not necessarily reflect funding or completion profiles for the site. The data do not include changes that resulted from actual FY 2000 appropriations or anticipated changes as a result of both FY 2000 supplemental and FY 2001 budget requests. The Department is in the process of updating its life-cycle information for the EM program.

The 1999 data were the basis for DOE's *Status Report on Paths to Closure* (March 2000). The costs in the "Cost and Completion Date" section of this summary are the sum of the project planning baselines prepared by the field office and generally do not include estimates of project uncertainty. On the other hand, the cost range in the national status report includes an estimate of the cost resulting from project uncertainties, and EM's overall estimate of life-cycle costs of \$151-195 billion from FY 2000 to FY 2070 (or \$168-\$215 billion if the costs incurred between FY 1997 and FY 2000 are included in the cost range estimate).

The Albuquerque Operations Office is located on Kirtland Air Force Base, directly south of the City of Albuquerque, New Mexico. Historically, the Albuquerque Operations Office's primary mission has been to manage sites involved in research, development, production, and maintenance of nuclear weapons. In recent years, this mission has evolved to include environmental management, science and technology, technology transfer and commercialization, and national energy objectives. The Albuquerque Operations Office oversees national laboratories, production plants, a research institution, Environmental Management (EM) sites, and the Uranium Mill Tailings Remedial Action (UMTRA) Groundwater Project.

### National Laboratories

The *Los Alamos National Laboratory* was established in 1943 to design, develop, and test nuclear weapons. Research programs in nuclear physics, hydrodynamics, conventional explosives, chemistry, metallurgy, radiochemistry, and life sciences supported this mission. In addition to research, an important function of the Laboratory has been processing plutonium metal and alloys from nitrate solution feedstock provided by other production facilities. Processing plutonium metal took place from 1945 to 1978. Other operations included reprocessing nuclear

fuel, processing polonium and actinium, and producing nuclear weapons components.

The ***Sandia National Laboratories*** were established in the 1940s as the engineering arm of the nuclear weapon development program. Sandia National Laboratories - New Mexico is a multi-program national laboratory with research and development programs in a broad range of scientific and technical fields, including fundamental energy research, energy conservation and renewable energy, nuclear reactor safety and reliability, nuclear waste management, and magnetic-confinement fusion. Sandia National Laboratories - California was established in 1956 to conduct research and development in the interest of national security, with principal emphasis on nuclear weapons development and engineering (excluding nuclear materials). This research and development focus as well as the site's location has enabled a close working relationship with Lawrence Livermore National Laboratory.

#### Production Plants

The ***Kansas City Plant*** was constructed in 1942 to build aircraft engines for the U.S. Navy. After World War II, it was used for storage, and in 1949 it was selected for its current mission—the manufacturing of non-nuclear components for nuclear weapons. Electrical, electromechanical, mechanical, and plastic components are manufactured or procured by this facility.

In 1942, the ***Pantex Plant*** was built by the U.S. Army as a conventional bomb plant. The current mission of the Pantex Plant involves fabricating high explosives for nuclear weapons, assembling nuclear weapons, maintaining and evaluating nuclear weapons in the stockpile, and dismantling nuclear weapons as they are retired from the stockpile. At present, the principal operation is the disassembly of nuclear weapons.

The ***Pinellas Plant*** has been part of the Department of Energy's (DOE) nuclear weapons complex since 1957. The plant's former mission was component fabrication. In September 1994, the plant stopped producing weapons-related components and began the transition from a defense mission to an EM mission. In 1997, this facility was closed and responsibility was transferred to Pinellas County.

## Research Institutes

The *Inhalation Toxicology Laboratory* was established in 1960 to conduct research on the human health consequences of inhaling airborne radioactive materials. Beginning in the 1980s, the program shifted to more basic research on the human respiratory tract and its response to inhaled toxicants.

## Environmental Management Sites

The *Grand Junction Office* was established in 1943 under the Manhattan Engineer District. Between 1943 and 1946, the U.S. Vanadium Corporation constructed and operated a uranium refinery for the federal government at the site. As a result of past uranium-related activities, surface and near surface soils, buildings, and related equipment were contaminated with uranium mill tailings and ore. These activities also resulted in groundwater contamination. In addition to the cleanup of this contamination, the Grand Junction Office serves as a central office for managing long-term surveillance and maintenance at some DOE sites and uranium leasing activities.

### **Long Term Surveillance and Maintenance at Grand Junction**

DOE created the Long-Term Surveillance and Maintenance (LTSM) Program in 1988 to establish a central concentration of stewardship expertise to provide long-term care for low-level radioactive materials disposal site. Effective January 1, 1989, the DOE Grand Junction Office was designated as the program office for disposal site long-term surveillance and maintenance. The mission of the LTSM Program is to assume long-term custody of completed DOE remedial action project disposal sites, as well as other assigned sites, and to establish a common office for the operation, security, surveillance, monitoring, and maintenance of these sites. Four major elements make-up the responsibilities of the LTSM Program: (1) site monitoring, maintenance, and reporting; (2) institutional controls; (3) information and records management; and (4) engineered controls maintenance. Currently, the program is responsible for 25 sites including UMTRA sites. By 2006, the program will be responsible for 51 sites including Monticello, Weldon Spring, Pinellas, and other DOE projects.

The *Monticello Remedial Action Program* is a site located in Monticello, Utah. It was transferred to DOE's EM program in 1987 for the remediation of contamination caused by past vanadium and uranium milling at the site. The Grand Junction Office is responsible for managing the cleanup activities at the site and vicinity properties.

The *UMTRA Surface Project and UMTRA Groundwater Project* were created to fulfill the mission of Title 1 of the Uranium Mill Tailing Radiation Control Act (UMTRCA). Congress passed UMTRCA in 1978 in response to public concern regarding potential health hazards of long-term exposure to radiation from uranium mill tailings. UMTRCA authorized DOE to stabilize, dispose of, and control uranium mill tailings and other contaminated material at 22 uranium mill processing sites and approximately 5,000 associated vicinity properties. The twenty-two UMTRA sites are: Ambrosia Lake (New Mexico), Canonsburg (Pennsylvania), Durango (Colorado), Falls City (Texas), Grand Junction (Colorado), Green River (Utah), Gunnison (Colorado), Lakeview (Oregon), Lowman (Idaho), Maybell (Colorado), Mexican Hat (Utah), Monument Valley (Arizona), Naturita (Colorado), New Rifle (Colorado), Old Rifle (Colorado), Riverton (Wyoming), Salt Lake City (Utah), Shiprock (New Mexico), Slick Rock - Old North Continent (Colorado), Slick Rock - Union Carbide (Colorado), Spook (Wyoming), and Tuba City (Arizona). Two other sites, Belfield and Bowman (North Dakota), were deemed “No Action Sites” and were removed from the site list.

The cleanup of these sites was split into two separate projects, the Surface Project and the Groundwater Project. Cleanup under the Surface Project dealt with the processing site mill buildings, tailings at the processing sites, and over 5,000 vicinity properties associated with the tailings from the processing sites. Surface Project cleanups were completed in FY 1999. The mission of the Groundwater Project is to achieve compliance with the Environmental Protection Agency (EPA) standards for contaminated groundwater at the processing sites and is still ongoing.

Under the Groundwater Project, 22 inactive uranium processing sites will be characterized to determine the necessary compliance strategy. Once a strategy has been determined for each site, regulatory approval will be required from the Nuclear Regulatory Commission (NRC); the strategy will be implemented; and the site monitored for a sufficient period to ensure compliance. Baseline risk assessments and initial site observational work plans have been completed for most sites. Field investigations are progressing at sites requiring additional data on a priority basis.

The Uranium Lease Management Program provides technical and administrative support for 43 lease tracts in Colorado and Utah. The reclamation efforts involve cleanup in and around the mine sites using conventional equipment and other technologies. DOE’s long-term goal is to restore these lands to the public domain for unrestricted multiple use. Under this program, 12 of the 15 active leases will

expire in FY 2006. The other three active leases will expire in FY 2007. The remaining 28 lease tracts (all currently inactive) will have been reclaimed and restored back to the public domain under Bureau of Land Management administrative control. DOE anticipates that this action will occur in approximately FY 2010 if the current lease agreements are not extended beyond their current expiration dates in FY 2006 and FY 2007.

In January 1963, the *Maxey Flats Disposal Site* opened under a lease arrangement between the Commonwealth of Kentucky and the Nuclear Engineering Company (now U.S. Ecology, Inc.) of Louisville, Kentucky. The site contains short- and long-lived radionuclides brought to the site from research laboratories, electric utilities, government and private health care facilities, manufacturing companies, and nuclear power plants throughout the United States. DOE has no management responsibilities for the cleanup of this site, but pays a share of the cleanup costs as a responsible party under the authority of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

The *South Valley Superfund Site* is a privately owned site located in Albuquerque's South Valley area. DOE was identified as a potentially responsible party for soil and groundwater contamination under CERCLA. The soil contamination has been cleaned up to EPA risk-based levels. A groundwater treatment program is currently underway. In January of 1999, the New Mexico Office of the Natural Resources Trustee (ONRT) issued a notice of intent to sue DOE and other South Valley Potentially Responsible Parties for damage caused by environmental releases. A Pre-assessment Screen completed by ORNT estimated the damage at \$260 million. ONRT plans to conduct a Natural Resource Damage Assessment to assess the amount of the damage.

### C.1.1 End State

The Albuquerque Operations Office planned end states for each site are compliance-based and generally can be achieved with currently available technology. Therefore, these end states are not likely to be modified as new technologies become available. Although resources are likely to affect schedules, the Albuquerque Operations Office does not expect resources to affect planned end states significantly. An exception to this is the Kansas City Plant where there is no known economically feasible technology suitable to meet cleanup standards. As a result, long-term contaminant and institutional controls are planned for the

foreseeable future. Unanticipated new regulatory requirements have the greatest potential to change the planned end states at Albuquerque Operations Office sites.

The landlord programs at non-EM sites will have responsibility for determining future use and final end state at the completion of EM activities. Facilities being decontaminated or decommissioned under EM programs will revert to landlord control upon completion. While EM activities will eventually be completed, Albuquerque Operations Office laboratories and production plants will continue to operate. The final end states will be determined by the Defense Program landlord. At these sites, DOE will maintain stewardship, and overall land use will likely continue as is for the foreseeable future. Exhibit C.1-1 provides a summary of the anticipated end states for sites managed by the Albuquerque Operations Office.

Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
UMTRA– Surface Project sites including Grand Junction Cheney Disposal Cell	<p>The UMTRA Surface Project completed final contract close out in FY 1999. All remedial action was completed as of the end of FY 1998, with the exception of the Grand Junction Cheney Disposal Cell. At the request of the State of North Dakota, DOE revoked the designation of the Belfield and Bowman sites under UMTRCA. As a result of the revocation, these two sites no longer require remediation under UMTRCA and DOE has no long-term stewardship responsibilities.</p> <p>The Cheney disposal cell will be left open until FY 2023 in order to accept contaminated material from uranium processing sites and associated vicinity properties. The Grand Junction Office (GJO LTSM Program) will perform the continued operations of the Cheney disposal cell. Previous remedial action under the surface project included remediation of 22 processing sites and over 5,000 vicinity properties within the communities or surrounding area of the processing sites. A total of approximately 32.7 million cubic meters of contaminated material were placed in the disposal sites. Nineteen sites were licensed by the NRC and transferred to the LTSM Program by the end of FY 1999. Groundwater contamination will be brought into compliance by GJO under the UMTRA Groundwater Project (see below).</p>

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Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
UMTRA– Groundwater Project sites (Rifle, CO–2 sites; Riverton, WY; Naturita, CO; Slick Rock, CO–2 sites; Durango, CO; and Gunnison, CO)	Natural attenuation or passive remediation is the compliance strategy selected or projected for these eight sites. Adequate monitoring and institutional controls should be established and maintained throughout the natural attenuation period, and should result in conditions that are protective of human health and the environment. At all eight sights, the groundwater is neither a current nor a projected drinking water source. These sites will be monitored through the end of FY 2011, at which time they will be transferred to the LTSM Program. Natural attenuation sites will have institutional controls and periodic compliance monitoring under the LTSM program until constituents are below EPA standards. To date, the Riverton, Wyoming site is the first under this compliance strategy to be completed.
UMTRA–Active Groundwater Project sites (Tuba City, AZ; Monument Valley, AZ; and Shiprock, NM)	Active remediation is the compliance strategy selected for these three UMTRA sites. Active remediation can be used at sites where methods such as gradient manipulation, groundwater extraction, and in-situ groundwater treatments are required to meet groundwater standards. Operation of these active compliance strategy sites will occur through FY 2011, at which time the sites will be transferred to the LTSM program.
UMTRA– Completed Groundwater Project sites (Ambrosia Lake, NM; Falls City, TX; Lowman, ID; Maybell and Grand Junction, CO; Spook, WY; Canonsburg, PA; Salt Lake City, UT, Mexican Hat, UT, Green River, UT; and Lakeview, OR)	No further remediation is the compliance strategy targeted for these eleven sites. Sites that have been determined to require no further remediation will either be closed out or transferred to the LTSM program. These are sites where groundwater contamination does not exceed maximum concentration limits or background, or where supplemental standards or alternate concentration limits have been applied. To date, Ambrosia Lake, NM; Falls City, TX; Lowman, ID; Maybell, CO; Canonsburg, PA; Salt Lake City, UT; Mexican Hat, UT; and Spook, WY are completed. The remaining sites that fall within this compliance strategy (Lakeview, OR and Green River, UT) will be completed in FY 2011.

Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
Grand Junction Office (GJO)	Under the Grand Junction Remedial Action Project, all radiological contamination will either be removed and disposed of off site, or supplemental limits will be selectively applied and approved. Significantly contaminated buildings will be decontaminated or demolished. All slightly contaminated buildings on the Grand Junction site will either be remediated, demolished, or approved by DOE for unrestricted reuse (with supplemental limits in place). An independent verification contractor will certify the removal of contaminants for the site by performing document reviews and field measurements. Administrative control of groundwater will continue until it is verified that passive remediation has achieved cleanup goals.
Inhalation Toxicology Laboratory	This site was cleaned to industrial standards and completed in 1997. Contaminated soil was shipped off site. Groundwater contamination exceeds the cleanup level for some constituents set by the New Mexico Environmental Department. The site is currently undergoing LTSM for several contaminants with the expectation that contamination will be reduced to acceptable levels through natural attenuation. Inhalation Toxicology Laboratory (ITL) is located on land the U.S. Air Force leases to DOE. DOE's Office of Science is the current operational landlord and will likely make future mission and end state decisions. ITL will continue to manage DOE generated waste as long as the site has a DOE mission.
Kansas City Plant	Surface remediation is scheduled for completion by the end of FY 2004. Institutional controls and containment of surface and groundwater contamination is the current cleanup strategy. Groundwater contamination, primarily dense non-aqueous phase liquids, will be cleaned up primarily through the use of innovative technologies; however, final cleanup levels are still undetermined. Groundwater treatment and monitoring is currently planned to continue until three consecutive years have passed during which the maximum contaminant levels have not been exceeded or until an alternative can be agreed to by the regulators. With current technologies and cleanup standards, groundwater treatment could continue for hundreds of years. Future land use is expected to be commercial or industrial. The ongoing waste management mission is operated by the Office of Defense Programs.

Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
Los Alamos National Laboratory (LANL)	<p>By the end of FY 2013, all legacy transuranic (TRU) waste, including remote-handled TRU waste, will be retrieved, characterized, treated, certified, placed in TRU package transporters, and shipped directly to the Waste Isolation Pilot Plant (WIPP). In FY 1999, management of the newly generated waste transferred to the Defense Program landlord, who will certify and ship the waste to WIPP starting in FY 2002.</p> <p>Legacy mixed low-level waste (MLLW) will be appropriately disposed of by the end of FY 2003. It is expected that a small volume of waste may not have a treatment or disposal path. This small volume waste may not be treated until as late as 2006. In FY 1999, management of the newly generated waste transferred to the Defense Program landlord, who will certify and ship the waste to WIPP starting in FY 2002. The Waste Characterization, Reduction, Repackaging Facility and the Radioactive Materials Research, Operation, and Demonstration Facility (RAMROD) will be decommissioned and decontaminated by the end of FY 2015.</p> <p>The LANL environmental restoration project will be completed in FY 2009. This project has two components: environmental restoration and land transfer. The majority of lands and facilities addressed under the project will be used to fulfill the future landlord mission. The site will maintain most of its 43 square mile property but is considering transfer of up to 7,000 acres to the county for industrial use. Land and facilities that DOE will retain will be remediated to allow for industrial use. Other land that is scheduled for release will be remediated to allow for unrestricted use. The ongoing waste management mission is operated by Defense Programs.</p>
Maxey Flats Disposal Site	<p>In accordance with the CERCLA Record of Decision, planned cleanup levels will result in natural stabilization with waste remaining on site. DOE has no control or management responsibility. With the placement of the interim cap and completion of all initial closure construction support activities, DOE will have fulfilled its responsibilities as a potentially responsible party. DOE has no further liability once they have made the final payment that is currently scheduled for FY 2003. The Commonwealth of Kentucky is responsible for long-term stewardship. The site will remain a permanent low-level waste (LLW) disposal site, and will be under controlled access.</p>

Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
Monticello Remedial Action Program	<p>DOE-owned land on the mill site is expected to be deeded to the City of Monticello for recreational use. The Monticello site will be remediated to the radium-226 standards established in 40 CFR 192. Tailings and tailings-contaminated soil will be excavated and placed in a permanent repository on DOE-owned property. A cover will be placed over the tailings to control radon emissions, infiltration of precipitation, and erosion. EPA and the State of Utah have approved supplemental standards, with some qualifications, for some vicinity and peripheral properties. Areas that meet radium-226 standards will be released for unrestricted use. Final land-use restrictions for other areas are being determined by DOE, EPA, and the State of Utah. The on-site repository will remain under DOE control. The remedy for contaminated sediment, surface water, and groundwater associated with the millsite has not yet been selected. An independent verification contractor will certify the removal of contaminants for both sites by performing document reviews and field measurements.</p>
Pantex Plant	<p>This site has ongoing mission under the responsibility of the Office of Defense Programs. As a result, facility decontamination and decommissioning and future land use are not addressed in the <i>Status Report on Paths to Closure</i>. Current land use (industrial) will remain unchanged. The Defense Programs landlord will continue waste management operations in support of the site's ongoing mission.</p> <p>By FY 2002, when the site is estimated to close, all currently identified release sites will be remediated to achieve completion in accordance with cleanup levels contained in the Texas Risk Reduction Standards Guidance. Groundwater pump and treat operations will continue until FY 2015 or until final groundwater cleanup levels are met. Further regulatory requirements for landfills—covering maintenance, groundwater monitoring, and treatment operations—will be negotiated periodically.</p> <hr/>

Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
Pinellas Plant	<p>This site was sold to Pinellas County Industrial Council in FY 1995, and DOE completed surface remediation in FY 1997. Pinellas' liability under CERCLA for former off-site waste disposal was transferred to GJO as of October 1997. The site will require treatment of contaminated groundwater where high levels of groundwater contamination exist to meet the "industrial with unrestricted access" classification. Groundwater will be cleaned to Clean Water Act maximum contaminant levels. When site groundwater is remediated to the specified level, DOE's responsibility will be terminated. Ongoing liability for annual contractor retiree benefit payment will continue in accordance with Employee Retirement Income Security Act regulations or lump sum buyout. The site is currently in LTSM.</p>
Sandia National Laboratories– California (SNL-CA)	<p>SNL-CA has an ongoing mission under the responsibility of the Office of Defense Programs. DOE will close all excess waste management facilities. Beginning in FY 1999, the ongoing waste management mission is operated by the Office of Defense Programs.</p>
Sandia National Laboratories– New Mexico (SNL-NM)	<p>This site has an ongoing mission under the responsibility of the Office of Defense Programs. By FY 2005, all identified environmental restoration sites will have been remediated and associated waste disposed of in a Corrective Action Management Unit (CAMU) disposal cell or at an off-site location. Many of the sites are expected to be available for industrial users with security safeguards remaining in place. Some risk-based future land-use designations may include recreational use, although there will be controlled access for sites such as the landfills and CAMU. Closure or planned closure of excess waste management facilities, disposal of all historical waste, and waste generated within permit regulatory will be completed. The waste management mission is operated under the Office of Defense Programs.</p>

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Exhibit C.1-1  
Summary of Albuquerque Operations Office End States

Site Name	End State Description
South Valley Superfund Site	The site met the definition of completion in 1996. Groundwater remediation to address deep groundwater contamination (underway since 1996) involves a pump and treat system to remove the contamination from the groundwater and prevent migration of the contamination. Groundwater remediation of shallow contamination is also underway. Groundwater remediation will take place until sampling indicates that all cleanup levels have been achieved, or a waiver of technical impracticability is approved by EPA. Remediation is currently estimated to take from 10 to 30 years. DOE, the U.S. Air Force, and General Electric entered into a settlement agreement whereby the three parties share the cost of environmental services performed at the site.

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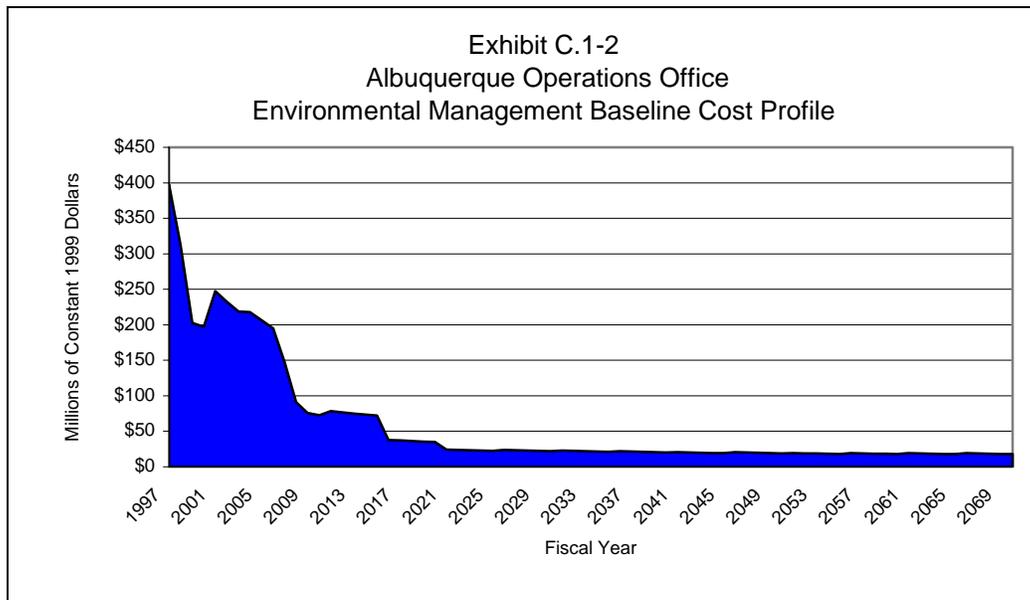
### C.1.2 Cost and Completion Dates

The Albuquerque Operations Office has divided its EM work into 26 discrete projects including the two UMTRA projects (one for surface tailings and one for groundwater). A minimum of one Project Baseline Summary (PBS) exists for each project and contains detailed information, including cost, schedule, scope, end state, and interim milestones. For additional information about these projects, refer to the individual PBSs.

The sum of the costs of the planning baselines for individual projects managed by the Albuquerque Operations Office is \$4.4 billion (constant 1999 dollars). Of that, approximately \$1.1 billion is associated with the LTSM Program managed by the Grand Junction Office. The overall site planned completion dates are as follows:

Site	Date
Grand Junction Office Site . . . . .	2001
Kansas City Plant . . . . .	2004
Los Alamos National Laboratory . . . . .	2015
Inhalation Toxicology Laboratory . . . . .	1997
Maxey Flats Disposal Site . . . . .	2003
Monticello Remedial Action Project. . . . .	2001
Pantex Plant . . . . .	2002
Pinellas Plant . . . . .	1997
Sandia National Laboratories – CA . . . . .	1999
Sandia National Laboratories – NM . . . . .	2005
South Valley Superfund Site . . . . .	1996
UMTRA – Surface Project sites . . . . .	1999
UMTRA – Groundwater Project sites . . . . .	2011

The projected cost profile for EM associated with the Albuquerque Operations Office was developed by combining the cost estimates in each of the PBSs. This reflects the lower end of the cost range. Exhibit C.1-2 displays the resultant baseline cost profile.



### C.1.3 Accomplishments Since the 1998 *Paths to Closure* Report

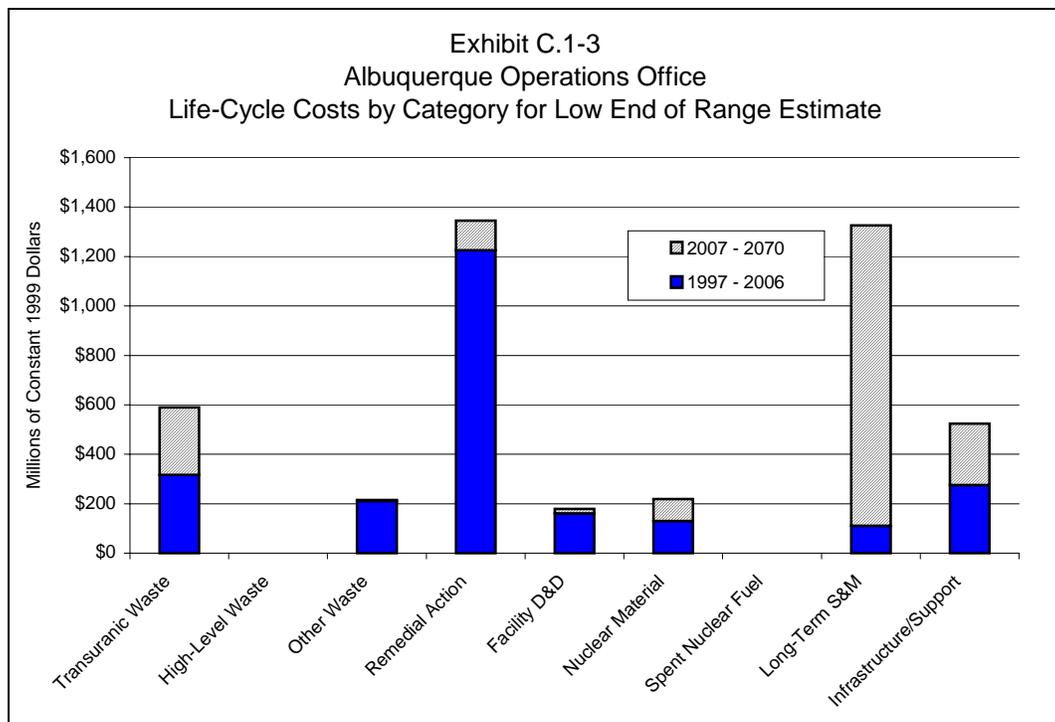
The Albuquerque Operations Office successfully completed a number of program goals, finishing several objectives ahead of schedule including the following:

- ❑ Completed eighty-nine cleanups, whereas only 78 had been planned;
- ❑ Deactivated five facilities, whereas only three deactivations had been planned;
- ❑ Inspected surveillance and monitoring inspections at 23 sites finishing ahead of schedule and under budget;
- ❑ Completed surface remediation of the final two uranium mill tailings sites
- ❑ Finished remedial actions ahead of schedule at the Monticello Mill and Vicinities site—1,806,000 cubic yards of tailings had been placed in the repository by the end of 1998; and
- ❑ Shipped twelve loads of TRU safely and successfully to WIPP as of June 1999.

### C.1.4 Work Scope Summary

The EM cleanup mission at Albuquerque Operations Office focuses on the safe and efficient cleanup of national laboratories and production plants within its complex. More information about work scope can be found at the following websites, which contain links to the conceptual summary disposition maps (<http://emi-web.inel.gov/summary.html>) and the detailed disposition maps (<http://emi-web.inel.gov/dmaps.html>) in PDF format.

The sum of life-cycle costs at the Albuquerque Operations Office sites is illustrated in Exhibit C.1-3, broken out by major work scope category.



The primary EM task at the Albuquerque Operations Office sites involves the assessment and remediation of inactive/surplus facilities and contaminated sites; the treatment, storage, and disposal of transuranic, hazardous, and low-level waste; and the surveillance, environmental monitoring, maintenance, site security, and emergency response for completed environmental cleanup sites from various programs.

### C.1.5 Critical Closure Path and Programmatic Risk

The critical closure path schedule, presented as Exhibit C.1-4, sets forth the estimate for completing closure activities at Albuquerque Operations Office. In this exhibit, the bars represent critical activities. The Albuquerque Operations Office critical closure path reflects those cleanup activities, excluding LTSM, which are key to achieving completion of the sites' cleanup missions and end states.

Completing the EM mission at Albuquerque Operations Office as scheduled will depend on the timely accomplishment of critical activities and milestones. Sites have assigned programmatic risk scores to each of the critical activities/milestones. Exhibit C.1-5 displays a summary of waste disposition data that have high programmatic risk (programmatic risk score of 4 or 5 in any category).

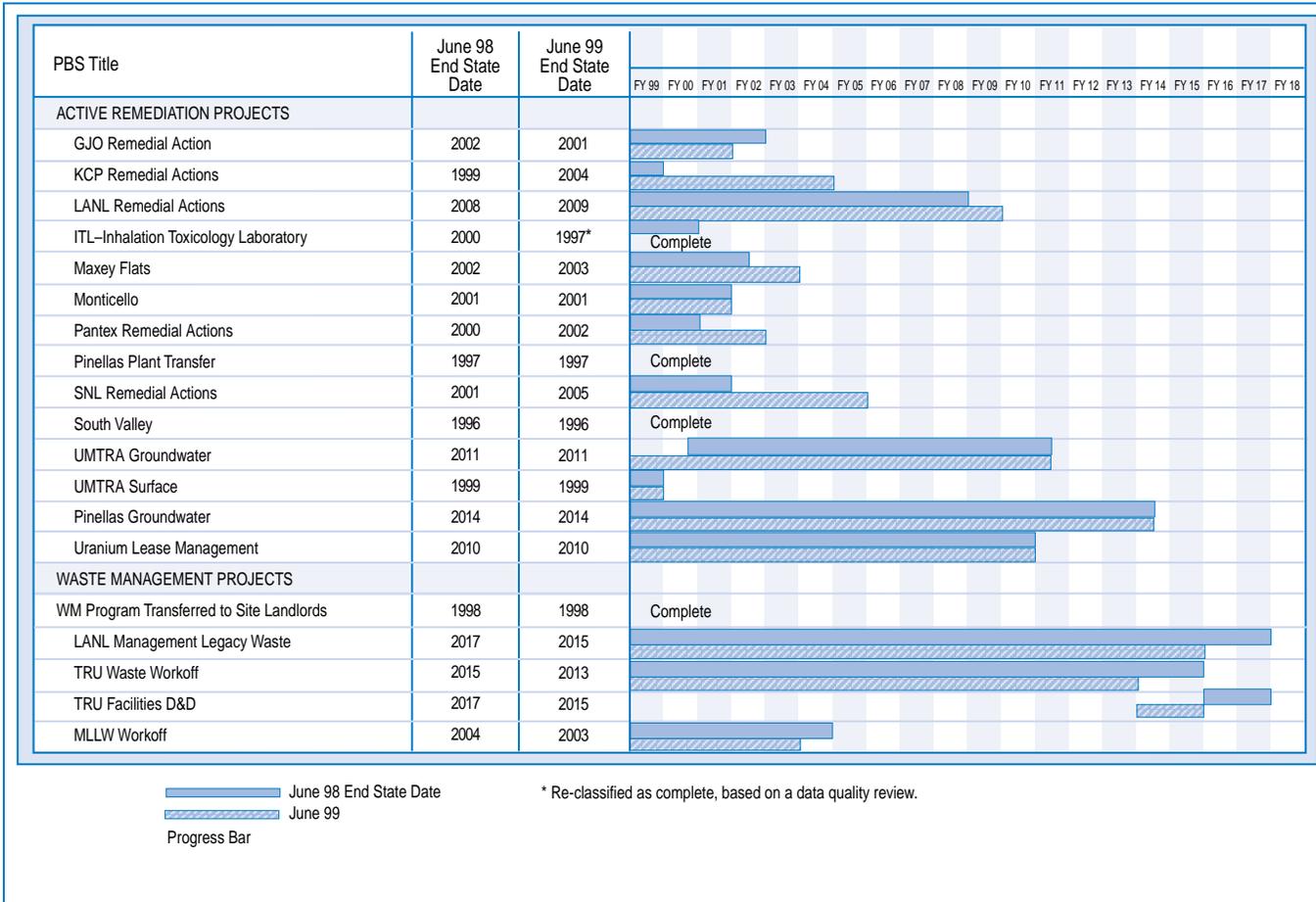


Exhibit C.1-5  
 Albuquerque Operations Office  
 Summary of High Programmatic Risk Waste Disposition Data

Site	Stream Name	Waste Stream Activity Name	Programmatic Risk Categories*		
			Technological	Work Scope Definition	Intersite Dependency
Los Alamos National Laboratory	Radioactive	Treatment/ Disposal	1	4	4
	Polychlorinated Biphenyl (PCB) Legacy	Treatment/ Disposal	1	4	4
	PCB Resource Conservation & Recovery Act of 1976 Legacy	Treatment/ Disposal	4	4	1
	Gas Cylinders Legacy	Treatment/ Disposal	4	4	1

\*For a discussion of programmatic risk categories, see Appendix D on the Internet site <http://www.em.doe/closure/>.