

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN FOR ACCELERATING CLEANUP

U.S. Department of Energy
Los Alamos National Laboratory
Environmental Management Program



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EXECUTIVE SUMMARY

This Performance Management Plan (PMP) for environmental work at the Los Alamos National Laboratory (LANL) sets forth an accelerated plan for completing the Environmental Management (EM) mission at LANL by 2015—seventeen years sooner than the current end date. It details how new approaches and changed business practices will accomplish the complete removal and disposal of legacy waste by 2010 and closeout of Environmental Restoration (ER) by 2015. It charts a forward path to the EM end-state at LANL of complete removal of legacy wastes, completion of all cleanup corrective actions, and transition to long-term environmental stewardship.

Managers and staff at the US Department of Energy (DOE) and the University of California (UC) hold a strong desire to accelerate our work. We believe that the initiatives set forth in this PMP are challenging, but achievable, and will yield meaningful benefits. Accelerating EM's completion dates will realize cost savings of approximately \$974 million. The accelerated projects will reduce the highest risks that remain from historic operations, reduce programmatic risk to LANL's ongoing stockpile stewardship mission, and help address high-profile threats such as terrorism and wildfire danger. We further believe that successful implementation of this plan will be a major accomplishment to be shared by the public, stakeholders, regulators, Congress, and the Administration. In fact, many of these parties have expressed strong expectations that environmental work at LANL should be accelerated from the current timeline.

The end-state for EM activities at LANL consists of off-site disposition of mixed and transuranic (TRU) legacy waste—including shipment of all legacy TRU waste to the Waste Isolation Pilot Plant—and completion of all EM corrective actions for groundwater and surface waste sites. All required post-remedy monitoring and maintenance will be transitioned from EM to the site landlord, the National Nuclear

Background. Activities at LANL have produced byproduct wastes since the 1940s and many of the historic practices for disposing these wastes, although generally accepted at the time, are not in keeping with today's standards. As a result, there exist numerous environmental management challenges at LANL today including

- 9100 cubic meters (~25,000 packages) of transuranic waste in temporary storage and in need of final disposition;
- groundwater contamination from historic discharges that includes radiological and hazardous constituents; and
- hundreds of surface waste sites remaining from the more than 2100 sites spread over 43 square miles that were originally identified for cleanup, including septic tanks and lines, chemical storage areas, wastewater outfalls, landfills, incinerators, firing ranges, surface spills, and electric transformers.

Much has been accomplished already; however, substantial work remains to be done, and the plans for completing waste disposition and cleanup work currently extend to 2032.

Security Administration (NNSA), through the Long-Term Environmental Stewardship (LTES) program.

Acceleration of EM's end-state at LANL from 2032 to 2015 means implementing the reforms and initiatives of the Top-to-Bottom Review and the commitments of the May 2002 letter of intent signed by DOE, the New Mexico Environment Department (NMED), and the Environmental Protection Agency (EPA). This PMP implements those commitments through three key initiatives:

Initiative	Previous Completion Date	Accelerated Completion Date
Legacy Waste Disposition	2032	2010
Groundwater Protection	2018	2007
Environmental Restoration	2030	2015
Total EM Acceleration	2032	2015

This acceleration will be accomplished through earlier investment of funds and through significant reform of business practices. These reforms include increasing performance-based contracting, implementing larger (turnkey) work scopes, streamlining decision-making, increasing project focus, and realigning DOE and UC organizations.

Acceleration does not mean cutting corners or avoiding regulatory processes. During acceleration, sound environmental stewardship practices will be used, and all applicable regulatory processes will be followed including ongoing involvement of the public in decision making. Fundamental to the success of this PMP are the partnerships that have been built among DOE and UC, NMED, EPA, stakeholders, and the public. These parties have worked together in the development of this document, and plans exist for continued partnering as we move through the next steps of finalizing and implementing the PMP.

The primary benefits of this PMP are to reduce risk through accelerated EM work and to reduce costs for completing this work. In addition, there exists a mutual need between DOE-EM and the NNSA that these PMP initiatives succeed. After DOE-EM cleans up waste sites, lands within LANL will become available for other uses by NNSA, and for transfer to the Los Alamos County and San Ildefonso Pueblo as DOE fulfills its Congressionally mandated Land Transfer commitments. Further, by accelerating legacy waste disposition, the programmatic risk to stockpile management becomes greatly reduced, and by accelerating groundwater protection efforts, the quality of water supplies at LANL, Los Alamos County, and surrounding land-owners is assured. Importantly, these PMP actions will enable a clear and timely handoff between DOE-EM and NNSA of post-cleanup responsibilities through LTES.

Another significant benefit of implementing this PMP is that it will substantially resolve issues underlying the Draft Administrative Order and the Determination of Imminent and Substantial Endangerment that DOE and UC received from NMED in May 2002. The Draft Order and the accompanying Determination refer to a need for sustained funding of cleanup projects and to potential impacts to drinking water supplies through the groundwater pathway. This PMP addresses these issues by calling for sustained funding, advancing groundwater protection, and reducing the highest-priority risks to the public and the environment.

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1.0 INTRODUCTION

1.1 Audience and Purpose

This Performance Management Plan (PMP) has been written primarily for senior level Department of Energy (DOE) managers who fund and oversee environmental work at Los Alamos National Laboratory (LANL). In addition, this document is also intended for DOE and University of California (UC) managers and staff at Los Alamos, regulators, stakeholders, and interested members of the public.

The purpose of this PMP is to provide a management-level synopsis of how LANL's Environmental Management (EM) program will be accelerated from its current completion date of 2032 to the new date of 2015. It describes the funding requirements, strategies, and reforms necessary for this acceleration, and thus provides a plan for agreement among the parties who will perform or assist this work. These parties include the DOE, UC, the New Mexico Environment Department (NMED), the Environmental Protection Agency (EPA), stakeholders, and the public.

This PMP implements the recommendations of DOE's Top-to-Bottom Review, which emphasized that risk reduction, not risk management, is key to accelerating closure. It stressed that accelerated closure is urgently needed. The Top-to-Bottom Review was followed by a May 2002 Letter of Intent for LANL signed by DOE, NMED, and EPA (Appendix D). The Letter of Intent contains statements of commitment to accelerate disposition of legacy waste (waste generated and packaged before October 1998), establish groundwater protection measures, and complete Environmental Restoration (ER) work at LANL. The accelerated cleanup initiatives included in this PMP will fulfill these commitments by reducing highest-priority risks through accelerating legacy waste disposition (WD), groundwater protection, and completion of ER.

In addition, this PMP describes how the PMP initiatives integrate with and benefit other LANL activities, including ongoing NNSA mission activities. Further, for those ER sites that will require post-cleanup monitoring and maintenance, this PMP provides a description of the transition of responsibilities from EM to the National Nuclear Security Administration (NNSA) through the Long-Term Environmental Stewardship (LTES) program.

1.2 Roadmap to the PMP

Section 2 of this PMP presents background information and the context for the accelerated cleanup initiatives.

Section 3 presents a vision statement of end states for the EM program at LANL, including the LTES program.

Section 4 contains the strategic initiatives for accelerating disposition of legacy waste, protection of groundwater, and completion of ER.

Section 5 presents specific reforms and management strategies for implementing the PMP initiatives.

Section 6 discusses the regulatory framework that exists at LANL and specific needs to help acceleration.

Section 7 details cost and schedule profiles for the initiatives.

The appendices contain detailed information on government-furnished activities, responsibilities matrix, and the Letter of Intent.

1.3 Development of the Accelerated Cleanup Proposal

Senior Management Steering Committee

DOE and UC have followed a disciplined process to develop and refine the elements of this PMP and to establish the commitments necessary for implementing accelerated plans. The primary development of this PMP was made by the Senior Management Steering Committee (SMSC) that consists of DOE, NMED, EPA, and contractor managers for DOE sites in New Mexico (LANL and Sandia National Laboratory [SNL] facilities). The SMSC is chartered to provide leadership and guidance to its staff in removing barriers and achieving completion of cleanup objectives.

Letter of Intent

Appendix D contains the May 2002 Letter of Intent signed by DOE, NMED, and EPA Region VI. This letter, directed to both LANL and SNL, set forth the following key commitments:

- Accelerate risk reduction of groundwater and soil contamination as well as legacy waste;
- Define regulatory endpoints;
- Continue partnerships;
- Shorten review periods and provide timely decisions;
- Streamline internal processes for quality control.

Stakeholder and Public Interactions

Proposal development also included two focused interactions with the public, government officials, and stakeholders, including a session with the Northern New Mexico Citizens' Advisory Board (NNMCAB). Feedback from these interactions has been incorporated into this PMP, and commitments exist for ongoing inclusion of stakeholders and the public in the development and implementation of PMP initiatives. These plans include posting the PMP on the Internet, making it available in reading rooms, delivering it to the NNMCAB, and sending it by email to interested parties. Comments received during the development of accelerated plans will be included as the PMP is updated.

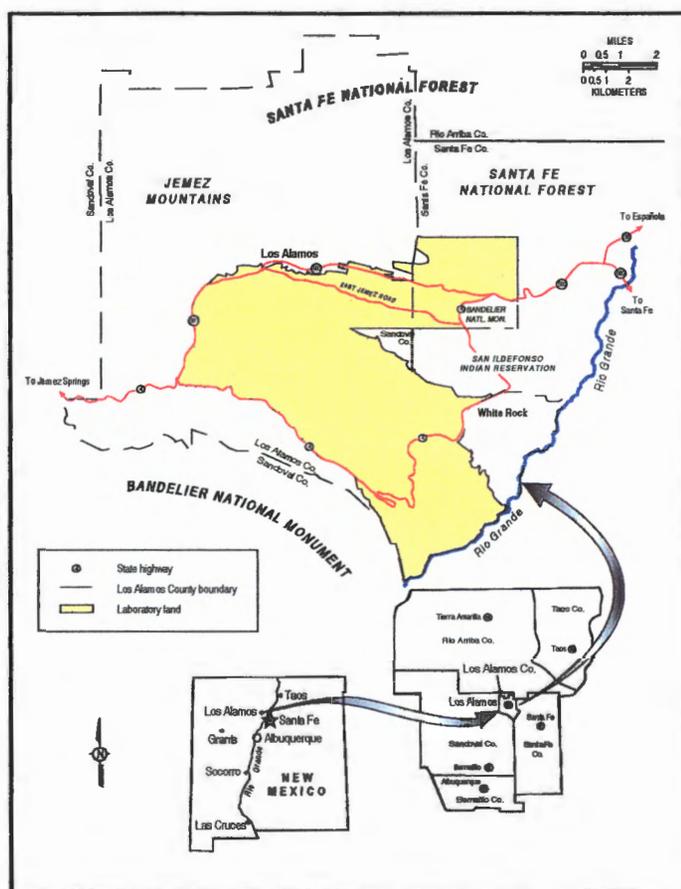
2.0 ACCELERATED CLEANUP PROPOSAL CONTEXT

2.1 Setting

LANL is a research facility of the DOE/NNSA that is managed by the Regents of the University of California. Research at LANL focuses on high-level science and technology essential to national defense and global security.

Today, LANL's central missions are (1) to ensure the safety and reliability of the nation's nuclear weapons stockpile; (2) to develop the technical means for reducing the global threat from weapons of mass destruction and terrorism; and (3) to solve national problems in energy, environment, infrastructure, and health security.

The 43 square miles of LANL are divided into 47 technical areas that are used for scientific sites, experimental areas, waste disposal locations, roads and utilities, and safety and security buffers. LANL and its subcontractors employ approximately 13,000 people. LANL shares Los Alamos County with two residential communities: Los Alamos townsite and White Rock. Most of the other land surrounding LANL is held by the Bureau of Land Management, the Santa Fe National Forest, Bandelier National Monument, and the Department of Interior in trust for the Pueblos of San Ildefonso, Santa Clara, Cochiti, and Jemez. Santa Fe, the state capital, is 25 miles southeast of Los Alamos; Española is located 20 miles to the east; and Albuquerque, New Mexico's largest city, is 60 miles to the south. In 2000, approximately 264,000 people lived within a 50-mile radius of LANL.



The geography and ecology of Los Alamos are diverse. The terrain of the Pajarito Plateau, where Los Alamos is situated, alternates between mesas and deep canyons. Elevations across Los Alamos County range from 6200 feet to 7800 feet. The primary groundwater aquifer is more than 1000 feet below ground surface in most areas of LANL, with a complex system of subsurface water bodies existing at shallower depths. This varied geographical and geological setting provides a unique set of challenges for the environmental experts at LANL. Detailed descriptions of LANL's operations and its

environmental setting are included in the "Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory" (DOE 1999) and in annually produced Environmental Surveillance reports.

2.2 Environmental Management History

Many of the activities and operations at LANL have produced solids, liquids, and gases that contain radioactive and/or nonradioactive hazardous materials. Such activities include conducting research and development (R&D) programs in basic and applied chemistry, biology, and physics; fabricating and testing explosives; cleaning chemically contaminated equipment; and working with



radioactive materials. In addition, many of the historic practices for disposing wastes from these activities, although generally accepted at the time, are not in keeping with today's standards. As a result, at LANL there exist numerous environmental management challenges, including

- 9100 cubic meters (~25,000 packages) of TRU waste, including approximately 16,900 drums of solid transuranic and mixed waste, that have been stored beneath an earthen cover for nearly twenty years.
- Groundwater contamination from historic discharges that included radiological and hazardous constituents dating back to the early 1940s.
- More than 2100 potential release sites spread over 43 square miles originally identified as septic tanks and lines, chemical storage areas, wastewater outfalls, landfills, incinerators, firing ranges, surface spills, and electric transformers. These sites are found on mesa tops, in canyons, and in the Los Alamos townsite. Since environmental restoration work began, the number of potential release sites requiring further action has been reduced by 60% through active remediation, or by confirming that no action is needed.

Disposition of legacy wastes is being conducted under the Resource and Conservation Recovery Act (RCRA) and under regulations from Nuclear Regulatory Commission (NRC) and the DOE. Cleanup of historic hazardous wastes is being conducted under the Hazardous and Solid Waste Amendments (HSWA) of RCRA. The NMED issued an

operating permit (Hazardous Waste Facility Permit) to LANL in 1989, and the EPA issued a corrective action permit for HSWA in 1994 that is administered by NMED.

Much has already been accomplished: retrieval, characterization, and repackaging of legacy wastes and cleanup of major waste sites, including a landfill containing high-explosives, a PCB-contaminated storage area, and plutonium-contaminated sediments where Manhattan-era waste effluents were released. However, substantial work remains to be done, including final disposition of legacy wastes, particularly shipment of legacy TRU wastes from LANL to the Waste Isolation Pilot Plant (WIPP), and conducting corrective actions for groundwater, remaining landfills, and numerous surface waste sites on mesa tops and in canyons spread over LANL's 43 square mile area. Current plans call for completing this work by 2032 at a cost of \$1889 million. This PMP sets forth strategies for using the best available business practices and commensurate funding to accelerate completion to 2015 at a reduced cost of \$915 million (cost savings of \$974 million).

3.0 SHARED VISION FOR ACCELERATING CLEANUP AT LANL.

The DOE, NMED, EPA, with input from stakeholders and the public, have developed a shared vision for risk reduction and environmental stewardship of LANL by accelerating the completion of the EM program by seventeen years—from 2032 to 2015.

The shared vision focuses on reducing, first, the greatest risks to the public, workers and the environment from stored legacy wastes and from historically contaminated sites. The Letter of Intent signed by DOE, NMED, and EPA describes the priorities and principles that make up a common strategy for acceleration and completion of EM work at LANL.

The strategy includes accelerating the disposition of legacy TRU waste through characterization and packaging efficiencies and by focusing first on early shipment of the ~5% of waste volume that makes up ~60% of the risk associated with legacy wastes. It includes applying contaminant-control measures in shallow groundwater to protect regional drinking water supplies and completing corrective actions in the public areas outside of LANL's boundaries. These public areas include residential, business, and recreation areas where any historic waste issues tend to become high priority because of the proximity of waste sites to people. The strategy focuses resources on completing cleanups using an already established aggregate/watershed approach that, with sufficient up-front investment, is the most efficient and cost-effective way of completing work at numerous sites spread over watershed areas.

The risk reduction strategy results in a completion of the EM program at LANL by 2015, with NNSA assuming responsibility for LTES as major milestones are achieved from 2003–2015.

The strategy contains three specific initiatives:

- Accelerated disposition of all legacy TRU and mixed waste by 2010;
- Accelerated groundwater characterization, monitoring, and source control assuring regional aquifer protection by 2007; and
- Accelerated environmental restoration through completion of all corrective actions by 2015.

The Accelerated Legacy Waste Disposition Initiative has three major goals. These are (1) completion of all legacy mixed and TRU WD activities by 2010, (2) shipping 12,000 cubic meters (1500 shipments) of TRU wastes to WIPP, and (3) returning to NNSA in 2010 continued LTES for the LANL Treatment Storage and Disposal facility (TA-54) for newly generated WD.

The Accelerated Groundwater Protection Initiative has three major goals. They are (1) complete the Hydrogeologic Workplan characterization of the regional groundwater

and shallow aquifers by 2005, (2) complete monitoring well construction by 2007, and (3) establish contaminant control at the highest-priority shallow groundwater sites by 2005. Monitoring and maintenance after these dates will transition to NNSA through the LTES program.

The Accelerated Environmental Restoration Initiative has three objectives. They are (1) completion of high-priority remedies in Los Alamos/Pueblo Watershed, including land transfer parcels, by 2008, (2) completion of remedy implementation on material disposal areas by 2008, and (3) completion of all other ER activities at LANL by 2015. Monitoring and maintenance after these dates will transition to NNSA through the LTES program.

4.0 ACCELERATED CLEANUP INITIATIVES AT LANL

The priorities of the Top-to-Bottom Review, and the strategy outlined in the Letter of Intent as discussed in earlier sections were used to develop three accelerated cleanup initiatives for LANL. These initiatives focus on the highest-priority risks and on achieving cost efficiencies. The details of these initiatives are described in the following sections (summarized in Table 4-1, and the locations for key initiative waste elements are shown in Figure 4-1).

**Table 4-1
Accelerated Cleanup Initiatives at LANL**

Strategic Initiative	Current LANL Baseline	Accelerated Strategy
Accelerated Legacy Waste Disposition	Complete legacy waste disposition by 2032	Complete legacy waste disposition by 2010
	46,000 cubic meters of waste shipped to WIPP	12,000 cubic meters of waste shipped to WIPP
	4500 waste shipments to WIPP	1500 waste shipments to WIPP
Accelerated Groundwater Protection	Complete EM Hydrogeologic Workplan wells by 2005	Complete EM Hydrogeologic Workplan wells by 2005
	Construct EM monitoring wells by 2018	Construct EM monitoring wells 2007
	Construct new measures for control of shallow groundwater contamination (date undefined)	Construct new measures for control of shallow groundwater contamination by 2005
Accelerated Environmental Restoration	Completion of Material Disposal Areas by 2013	Completion of Material Disposal Areas by 2008
	Completion of Los Alamos/Pueblo Watershed by 2021	Completion of Los Alamos/Pueblo Watershed by 2008
	Completion of Mortandad, Pajarito, Sandia, Ancho, Chaquehui, and Frijoles Watersheds by 2030	Completion of Mortandad, Pajarito, Sandia, Ancho, Chaquehui, and Frijoles Watersheds by 2015

A-22415

M/C 20-11415
Assume 12 regional wells.

Mortandad PRB

A-5415

A-13415

A-15415

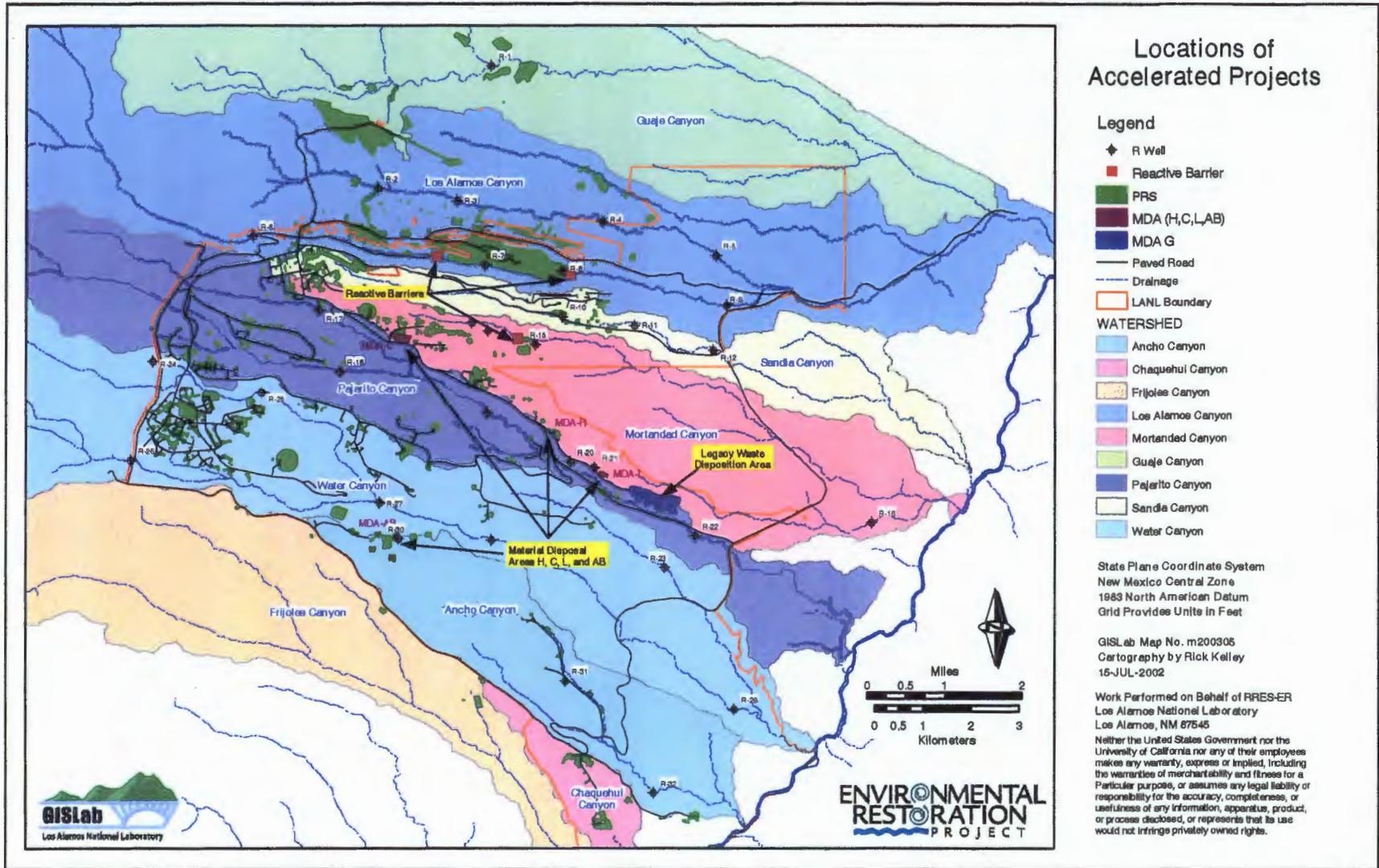


Figure 4-1. LANL Site Map and Locations of Accelerated Cleanup Initiatives

4.1 Legacy TRU and Mixed Low Level Waste Initiative

Two fairly recent events, the Cerro Grande fire and the 9/11 terrorist attack, have heightened awareness that the TRU waste stored at TA-54, Area G, in aboveground storage facilities is vulnerable to release and dispersal of radioactive materials in the event of an emergency. This waste has the potential of significantly impacting the public health and the environment. This realization has led to the conclusion that it would be prudent to accelerate the shipment of TRU waste to WIPP. In addition, Area G is nearing full capacity for waste storage, and when capacity is reached, Area G will not be able to accept additional TRU waste unless waste shipments to WIPP increase substantially. If storage capacity is exceeded, LANL's mission critical operations will be affected.



DOE/LANL have proposed a project to accelerate the shipment of all legacy TRU waste in New Mexico to WIPP by the year 2010 instead of the 2032 date in the present baseline plan. LANL has approximately 46,000 55-gallon drum equivalents stored at TA-54, Area G. About two thirds of the waste is stored in aboveground domes and the remainder is under earth cover. Legacy TRU waste from SNL and Lovelace Respiratory Research Institute (LRRI) are planned to be consolidated at LANL for characterization and shipment to disposal. About 50 cubic meters of contact-handled TRU waste and 20 cubic meters of remote-handled TRU waste is stored at SNL and LRRI.

DOE and LANL have also proposed a subproject, designated the "Quick to WIPP" project with the objective of achieving the early characterization and shipment of approximately 2000 drums of high activity TRU waste, which accounts for about 60% of the potential risk from dispersal of radioactive materials in storage at Area G. The Carlsbad Field Office (CBFO) has teamed with DOE/AL and LANL in

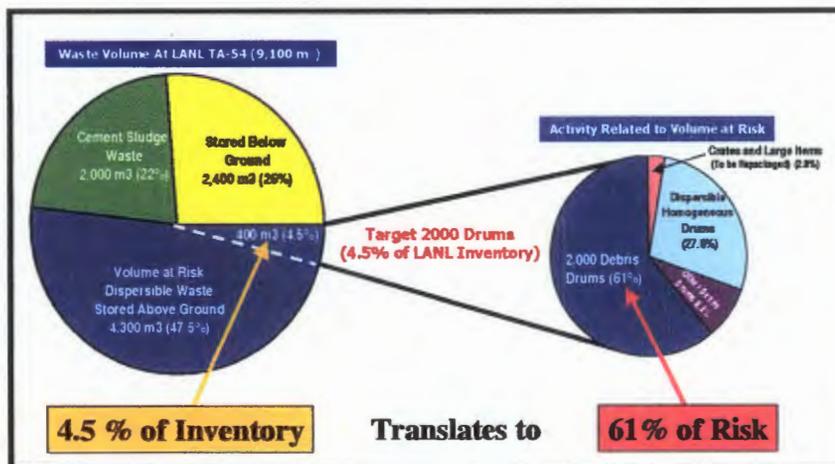


Figure 4-2. Waste Inventories for Disposition

developing and submitting to the NRC a revision (Rev. 19a) to the documentation for the TRUPACT II to change how certain shipping requirements are met for 2000 drums of LANL TRU waste. On July 5, 2002, the NRC approved Rev. 19a which will enable LANL to ship these 2000 high-activity drums with minimal repackaging and to dispose of these drums in WIPP over the next 18–24 months. If NRC approves extending Rev. 19a to all of the LANL TRU inventory, worker safety will be greatly enhanced and public risk will be reduced as LANL will dispose of its TRU waste with 3000 fewer shipments to WIPP and shorten the work-off schedule by 20 years.

As a part of this proposal, LANL intends to complete final treatment and disposal of legacy mixed low-level waste (MLLW). LANL's initial legacy of over 700 cubic meters has been reduced to less than 50 cubic meters through aggressive use of commercial treatment options. This activity is currently two years ahead of schedule and under budget. At this time, we plan to delay completion of this activity to more aggressively pursue disposal of legacy TRU waste.

4.1.1 Initiative End-State

TRU waste is currently being stored at LANL in aboveground storage facilities and below ground in pits and trenches. The TRU waste in storage includes both legacy waste, generated and packaged before October 1998, and newly generated waste resulting from on-going activities. New waste is the responsibility of the site landlord—NNSA—and will continue to be generated at LANL because of current and future missions. Since EM now



TRU Stored in Domes

“owns” no waste facilities at LANL, the transition to NNSA upon completion of the EM mission will be relatively straightforward with respect to legacy waste. Once all legacy waste is disposed of and the facilities cleaned up, the EM waste mission at LANL will be complete.

4.1.2 Strategy

DOE and LANL have developed an integrated, risk-based plan to accelerate characterization and disposal at WIPP for all New Mexico legacy TRU waste. This plan avoids over \$447 million in life cycle costs, shortens the time to completion by 20 years and will result in 3000 fewer shipments to WIPP. DOE and LANL are partnering with CBFO, SNL, LRRI, and NMED to accelerate legacy waste disposal in New Mexico. The

accelerated plan consists of the following strategy:

- Early risk reduction through characterization and shipping of approximately 2000 high-activity drums that account for 60% of the risk from dispersible radioactivity in TRU waste in storage at TA-54.
- Minimize existing TRU by decontaminating and volume reducing large boxes containing oversized TRU waste.
- Accelerate retrieval of remaining TRU waste emplaced under earth cover.
- Reduce fixed costs by transitioning out of fixed nuclear facilities and into modular characterization units to improve capability and efficiency.
- Employ best business tools to optimize the entire TRU management process: including storage, characterization, loading and shipping.
- Deploy two supplemental characterization 'production lines' under contract to CBFO.
- Complete treatment and disposal of the remaining MLLW.
- Characterize and ship 100% of legacy waste inventory by 2010.



4.1.3 Milestones

- Complete treatment of Federal Facility Compliance Order Site Treatment Plan mixed low-level waste by 2006.
- Begin operation of Decontamination Volume Reduction System as radiological facility by 2003.
- Ship sludge sample drums to INEEL for coring and analytical by 11/02.
- Begin shipment of the 6000 sludge/cemented drums to WIPP by 9/03.
- Begin volume reduction of Large Object TRU wastes by 9/02.
- Prepare characterized RH TRU wastes for shipment to WIPP for when the permit is modified.
- Complete the shipment of all legacy wastes to WIPP by 2010.

4.1.4 Metrics

TRU Waste Volumes and Total Shipments

	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	Totals
LANL waste volume (m ³)	400	600	600	600	600	400	400	400	4000
CCP*(1) waste volume (m ³)	400	800	800	800	800	800	800		5200
Total Combined volume (m ³)	800	1400	1400	1400	1400	1200	1200	400	9200
Total number of shipments	95	166	166	166	166	142	142	48	1091

*CCP = Centralized Characterization Program, managed and funded by CBFO

Key Project Work

- ▶ Completion of Hydrogeologic Workplan wells on time
- ▶ Installation of permeable reactive barriers to intercept potential contamination associated with high-risk sites
- ▶ Completion of new monitoring wells
- ▶ Definition and transfer of LTES groundwater responsibilities to Landlord

4.2 Groundwater Protection Initiative

4.2.1 Initiative

This initiative targets EM responsibilities in protecting groundwater at LANL. LANL's highest priority groundwater protection measures are those that

- Protect drinking water supply wells on the Pajarito Plateau,
- Protect the quality of groundwater moving from beneath LANL to San Ildefonso, Los Alamos County, and other off-site lands,
- Protect quality of surface water in springs and the Rio Grande including downstream areas, and
- Reduce discharges that may impact the quality of the regional aquifer.

EM's responsibilities include characterizing groundwater contamination from historical releases or surface waste sites that may pose a risk through the groundwater pathway. Corrective action is required for sites or contaminated areas that may pose significant risk. Part of corrective action is expected to include control of contaminated plume areas and monitoring for assurance that selected remedies are successful. In addition to EM groundwater activities, there exist at LANL further regulatory-mandated groundwater requirements addressed by NNSA. Currently, EM and NNSA evenly support groundwater actions at LANL.

Benefits

- ▶ Control of shallow groundwater with the highest contamination levels will contribute to any groundwater corrective actions.
- ▶ Accelerating monitoring under this proposal will advance the LTES handoff.
- ▶ Monitoring under this proposal will aide NNSA in its need to demonstrate environmentally benign operations.
- ▶ The contamination control and monitoring proposals will aide DOE and UC in responding to the draft NMED Imminent and Substantial Endangerment Order that cited potential risks through the groundwater pathway as its primary justification.

4.2.2 Strategy

The strategic approach for completing EM's groundwater responsibilities includes (1) complete Hydrogeologic Workplan characterization, (2) control highest priority shallow contamination that may spread and pose a threat to drinking water supplies, and (3) establish groundwater monitoring relative to historic waste releases or surface sites.

Complete Hydrogeologic Workplan

Characterization is needed to establish fate and transport rates of contaminants in groundwater and to establish monitoring locations and requirements. This characterization is currently being accomplished through the Hydrogeologic Workplan—a regulatory-required activity mandated by NMED in 1998. The primary purpose of the Hydrogeologic Workplan is to characterize the hydrogeologic setting to design a monitoring network (LANL 1998). The characterization activities that will accelerate groundwater protection measures are

- Completion of hydrogeologic characterization sufficient to design and site monitoring wells, and
- Completion of characterization and analysis to detail fate and

transport in support of corrective remedies (expected to be mostly NFA, or monitored natural attenuation).

Eight regional aquifer characterization wells remain in EM's component of the Hydrogeologic Workplan. Completion of these wells will allow the corrective action process for groundwater to proceed. In addition, characterization information is necessary for enhancing monitoring such that there is assurance that environmental restoration has adequately remediated actual and potential sources of groundwater contaminants.

Control of Groundwater Contamination

Elevated contaminant levels currently exist in shallow (canyon bottom) alluvial systems that could spread to deep groundwater bodies such as the regional aquifer that serves as the primary drinking water supply to LANL and surrounding communities. Preliminary analysis indicates potentially rapid (10–50 year) travel times exist at some LANL locations between surface waters and the deeper regional aquifer. The Accelerated Cleanup proposal addresses the problem of elevated contamination in certain canyon-bottom groundwater locations (specifically in Mortandad and Los Alamos Canyons) through the use of permeable reactive barrier technologies to control

the migration of contamination. A site-specific permeable reactive barrier design (along with some field work) will be completed for Mortandad Canyon in FY02.

The project design indicates that LANL's steep, confined canyons are ideal for using permeable reactive technologies. However, as these barriers are constructed, they will be evaluated for effectiveness in controlling contaminants, and a range of possible measures will continue to be considered to meet contaminant control objectives.

Benefits of controlling the spread of elevated contamination include

- reduced characterization and analysis costs (reduced effort of "proving" monitored natural attenuation will be sufficient in a highly complex hydrogeologic setting);
- reduced risk and perceived risk, through a proactive measure to address a major regulatory and public concern; and
- stimulating endpoint focus for groundwater by implementing the first steps in a graded approach.

Monitoring

Groundwater monitoring is a key element of the EM end-state for groundwater at LANL. Monitoring and monitored natural attenuation are expected to be the primary elements of the remedies for most contaminated groundwater locations at LANL. A substantial amount of groundwater monitoring is expected in the LTES program for LANL.

Table 4-1 summarizes the groundwater monitoring requirements that are applicable at LANL.

**Table 4-1
Summary of Groundwater Monitoring Requirements**

LANL Program	Monitoring Plan	Regulatory Authority
Environmental Restoration (RCRA/HSWA)	<ul style="list-style-type: none"> ▪ Sources of groundwater contamination remediated to meet groundwater protection criteria ▪ Surface sites with residual contamination in place ▪ Alluvial groundwater remedial action sites 	NMED
RCRA units	Monitoring of aggregates in the Hydrogeologic Workplan or demonstrated groundwater monitoring waivers	NMED
Discharge Plans	Monitoring as described in approved Discharge Plans	NMED
Environmental Surveillance	Monitoring to identify and quantify releases to the public from DOE sites required by DOE Order 5400	DOE

Attributes of effective groundwater monitoring at LANL include

- Protection of water supplies, particularly from the seven water supply wells located within LANL;
- Assurance that historic contamination dispersed in groundwater does not pose a risk (demonstrates attenuation);
- Attainment of cleanup objective for surface waste sites; and
- Assurance that LANL operations are meeting environmental stewardship goals.

Ten monitoring wells are proposed to fulfill the expected RCRA/HSWA monitoring obligations relative to historic releases and surface waste sites. These wells will monitor contaminant migration and contaminant levels downgradient of key liquid discharge locations, primarily in Los Alamos, Pueblo, Mortandad, and Water Canyons. Where possible, these wells will have supplementary benefits and may serve as multipurpose monitoring wells relative to material disposal areas (MDAs), RCRA units, and groundwater discharge plans. However, additional wells are expected to be needed to fulfill all LANL groundwater monitoring needs, and the ten wells proposed comprise the EM-required component for monitoring.

4.2.3 Key Milestones

EM Groundwater

- Complete Hydrogeologic Workplan characterization by December 31, 2005.
- Begin installation of three reactive barriers by 2002; complete construction by December 31, 2005.
- Begin installation of EM monitoring wells by before December 31, 2003; complete well installation by December 31, 2007.

4.2.4 Metrics

	2003	2004	2005	2006	2007
Wells completed	5	5	4	3	1
Percent Complete	26%	53%	74%	89%	100%
Reactive barriers completed	1	1	1		
Percent Complete	33%	66%	100%		

4.3 Environmental Restoration Project

4.3.1 Initiative and End-State

This initiative targets acceleration of LANL's ER project and when implemented will significantly reduce risks associated with LANL's historic waste sites and accelerate the ER completion date from 2030 to 2015. Cost savings for the acceleration of the entire ER project are \$526 million compared to today's life-cycle baseline budget.

The end-state for EM's responsibilities at LANL is the ER Project's successful completion of corrective actions for all historical potential release sites (PRSs) such that they can be approved by the administrative authority for no further action required (NFA).

For PRSs located within the Los Alamos townsite and on county properties, successful approval of NFA will mean a reduction in DOE's regulated footprint and its long-term liability, because these sites generally will have met residential risk levels and are then available for unrestricted land use.

For PRSs located on DOE property, successful approval of NFA will mean that a site has been investigated and remediated or stabilized to an approved risk level tied to future land use or need.

After successful cleanup of all historic waste sites, the required ongoing monitoring and maintenance will be conducted through the LTES program under NNSA.

4.3.2 Strategy

LANL's approach focuses on addressing groups of PRS aggregates within watersheds. Eight major watersheds exist at LANL, all of which drain from LANL lands to and Pueblo lands and eventually to the Rio Grande. The DOE, UC, and NMED have prioritized these watersheds and their associated sites and site aggregates. This watershed approach is a systematic, integrated, risk-based process for characterizing PRSs that follows EPA guidance. Watersheds at LANL were ranked by priority with the basis for ranking as follows:

- human health and ecological risk,
- regulatory drivers,
- stakeholder issues,
- programmatic investment, and
- LANL mission impact.

Background: Watershed Approach

The ranking process resulted in the following watershed priorities:

1. Los Alamos/Pueblo
2. Mortandad
3. Water/Cañon de Valle
4. Pajarito
5. Sandia
6. Ancho
7. Chaquehui
8. Frijoles

The ER strategic approach focuses on three elements: (1) completing all corrective actions in the Los Alamos/Pueblo watershed, (2) accelerate completion of work at MDAs, and (3) complete all corrective actions in the remaining watersheds.

The Los Alamos/Pueblo watershed contains public (townsite) residential and business areas as well as the nearby TA-21 Manhattan-era plutonium processing area. Accelerating cleanup in the Los Alamos townsite will reduce risks closest to where people live, reduce the footprint of affected lands under EM responsibility by 12 square miles, and accelerate the schedule from the existing ER Project baseline by three years.

Numerous historic waste sites exist within the community of Los Alamos which over the years has expanded and developed over the top of early Manhattan-era waste and operation locations. Many of these sites have been cleaned up or have been determined to require NFA. However, resolution has yet to be attained at numerous sites. These particular sites have associated with them heightened programmatic risk because of their proximity to residential and business areas. PRSs in property owners' backyards or in business parking lots tend to become high priority and demand expeditious action, even when contaminant levels are low. By completing all sites on Los Alamos County lands not administered by DOE, EM's ongoing liability with respect to these sites will be eliminated. The Accelerated Cleanup proposal is designed to accomplish that goal.



Accelerated cleanup at TA-21 will result in a schedule savings of 13 years and will close out EM responsibility at the highest-priority watershed aggregate and at the highest-priority MDA (MDA B) at LANL by 2008.

A total of 154 PRSs are associated with the TA-21 site. They consist of five MDAs (MDAs A, B, T, U, and V), numerous outfalls, subsurface units, surface units, and two geographical areas affected by stack emissions. Of

these, approximately 115 PRSs remain to be investigated and have the necessary

remedial activities applied. Another 39 PRSs have been investigated and, if necessary, remediated. These have been proposed to the administrative authority as requiring NFA. Under the Accelerated Cleanup proposal for TA-21, investigation, and where necessary, remediation will be completed at all 154 PRSs.

In addition, TA-21 is bounded by Los Alamos Canyon and DP Canyon (a branch of Los Alamos Canyon). The TA-21 surface sites, MDAs, and outfall areas are located upgradient of the surrounding canyon drainage areas. Therefore, expedited cleanup of TA-21 is integral to completing EM responsibilities within the Los Alamos Canyon watershed.

Acceleration of High-Risk MDAs

The ER accelerated strategy calls for accelerating investigations and CMSs at LANL's four highest-priority MDAs (MDAs H, L, C, and B). The end-state is that by 2008 final remedies will have been selected for these four MDAs, and the presumptive remedy of covering in place will have been implemented for all of these MDAs. This initiative is expected to result in a reduction in schedule by 13 years.



An HPT has been piloting MDA H as a precedent-setting MDA for the purpose of identifying key elements that need to be addressed during the CMS process prior to selecting a remedy. The team has made significant progress. The RCRA facility investigation (RFI) and CMS Plan for MDA H has been approved, and the CMS Report with the Statement of Basis for remedy selection will be issued for public comment in the summer of 2002. This Accelerated Cleanup proposal advocates accelerating and expanding the work of the HPT to bring forward characterization and RFI reporting for high-priority MDAs so that all CMI decisions and final remedy actions can be achieved by 2008. The streamlined approach used for MDA H would be adopted for the remaining MDAs.

The ER Project is responsible for conducting corrective actions under RCRA at a total of 26 MDAs. Of the 26 MDAs, eleven are considered high priority and are likely to require a CMS process. Four of these are included in this MDA accelerated project. Five additional MDAs are included in the TA-21 accelerated project. One MDA is nearly completely remediated (MDA P). The remaining MDA (MDA G) continues to operate and will be addressed at a later date. These are sites where wastes and materials associated with the R&D of nuclear weapons were disposed of in pits, shafts, seepage pits, or sorption beds. This waste is buried at depths up to 90 feet on relatively narrow

mesas, and excavation may be technically impracticable and require an unacceptably high level of risk to workers and the surrounding community at this time. Containment in place is the likely corrective action end-state for many of these sites, based on the current assumption that they meet the CMS evaluation criteria for capping. However, all corrective action decisions will be made in accordance with regulatory requirements governing the CMS process and the evaluation of alternative remedies and will include public participation as an integral part of the process.

For MDAs where containment in place is the preferred alternative, long-term monitoring and maintenance of the MDA by a future landlord (now NNSA) will be required. A component of the Accelerated Cleanup proposal for MDAs is to address LTES now with the LANL DOE Landlord (NNSA), the regulatory agencies (DOE and NMED), the ER Project, and the public to define the scope and expectations for LTES. This effort will also enhance the current MDAs HPT's efforts to include stewardship (beyond compliance or post-100 years) into the final remedy-selection process.

Completion of Remaining ER Work

Completion of corrective actions in the Los Alamos/Pueblo watershed first will accelerate all ER Project sites forward by ensuring regulatory approval of the key strategic elements of the watershed approach. Completion of the Los Alamos townsite sites will establish the risk assessment approaches for integrated human health and ecological endpoints and for the investigation of larger areas encompassing combined mesa-top and canyon ecosystems and pathways. In addition, the completion of the Los Alamos townsite sites will identify the appropriate amount and type of environmental data for evaluating contaminant transport and making watershed-level decisions. The TA-21 effort will provide a methodology for handling complex industrial waste for multiple-site aggregates and provide the paradigm for the remaining aggregated industrial sites. The initiative implementing MDA completion will provide the paradigm for monitoring high-risk residual contamination and will establish future landlord agreements for NFA acceptance by the regulatory authority. In addition, finishing the major MDAs nearly completes two watersheds in addition to the LA/Pueblo watershed.

Finishing the high-priority accelerated initiatives provides a clear regulatory path forward, accelerates cleanup of Mortandad, Water/Cañon de Valle, Pajarito, Sandia, Ancho, Chaquehui, and Frijoles watersheds, and establishes the framework for long-term stewardship.

Key Milestones

EM Restoration

- Complete Los Alamos/Pueblo Watershed by 2008
- Complete corrective action on all high priority Material Disposal Areas by 2008
- Completion of all other Watersheds (Project Completion) by 2015

Metrics	Fiscal Year												
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Major MDAs Complete		1		1	1	6					1		1
Percent Complete		9%		18%	27%	81%					90%		100%
Watershed Reports Complete									1		1	4	2
Percent Complete									12%		25%	75%	100%

5.0 MANAGEMENT STRATEGIES

In order to accelerate and complete WD and environmental restoration activities, significant changes in practices at UC, DOE, and regulator offices must be accomplished. These changes, discussed below address UC/LANL process changes, DOE project management and execution changes, and integration with NNSA since LANL is a site operated for NNSA. Specific responsibilities of the parties involved in this accelerated plan are indicated in Appendix C. Finally, the stakeholder and public involvement process in the acceleration planning is discussed. The regulatory process changes are described in Chapter 6.

5.1 UC/LANL Changes to Support Acceleration

The UC/LANL has already made, and proposes to make, additional, substantial changes in its business practices to enhance progress in both ER and legacy WD. Business processes are being changed to increase efficiency, eliminate redundancy, and apply innovations from lessons learned on ER and WD projects. These changes have been in progress since a major reorganization at LANL in the spring of 2002 is fundamentally changing the LANL ER approach to undertaking cleanup actions.

5.1.1 Business Practice Changes

Specific reforms include

- Changing acquisition strategy from a task-by-task subcontracting for site-by-site scopes of work to one subcontracting turnkey scopes for watershed aggregates.
- Having new subcontracts with incentive clauses that specify unit-priced and fixed-priced requirements and are completely performance based.
- Establishing new increased targets for subcontracting turnkey geotechnical and remediation services.
- Partnering with the Carlsbad Field Office (CBFO) to supplement site capability with needed characterization units to accelerate the certification for shipment of TRU waste.

5.1.2 Organizational Changes to Accelerate EM Program Completion

In the spring of 2002, LANL made significant organizational changes to improve accountability and productivity. All ER and WD activities were reassigned from LANL R&D directorates to the Operations directorate to ensure accelerated completion of EM programs. One of the primary drivers for these changes was to consolidate all environmental compliance activities within LANL, an NNSA site operating in compliance with RCRA permits. Realignment of LANL infrastructure ensures that EM supports only its proportional share of environmental work and that funded projects

are integrated where appropriate. The following specific changes are underway to support accelerated environmental cleanup and WD:

- ER, WD, as well as all compliance programs are now the mission of one LANL Division, Risk Reduction and Environmental Stewardship (RRES), and LANL has vested the institutional authority for ER and WD in the RRES Division Leader.
- Outreach and communication have been centralized at the RRES Division Office and streamlined using the LANL Communication and External Relations as its primary support.
- The ER Project Sample Management Office (SMO) was elevated to the LANL SMO for all environmental programs without increasing staff by consolidating analytical chemistry subcontracting and by using a single process for chain-of-custody.
- Database management and information technology are being streamlined using standardization processes to support all RRES activities and to complete ongoing data automation improvements supporting WIPP shipment "data packages."
- A senior business acquisition manager now reports to the RRES Division Leader on the acquisition and management of all ER and WD contracts, and procurement for ER and WD was consolidated within a smaller but more experienced business team.

5.2 Changed DOE Project Management and Execution

Historically, the ER project reported at a very detailed level (work-breakdown structure [WBS] Level 9). The new reporting structure for ER established a DOE Federal Project Manager (FPM) and streamlined reporting is implemented based on DOE Order 413.3. This process has been successfully implemented by DOE at LANL for the completion of the Cerro Grande Rehabilitation Program (several hundred million dollars).

A work authorization process will be implemented to formally approve discrete work elements identified within the ER baseline. This process will allow individual or multiple WBS elements to be approved, managed, and controlled by the FPMs, as shown in Figure 5-1.

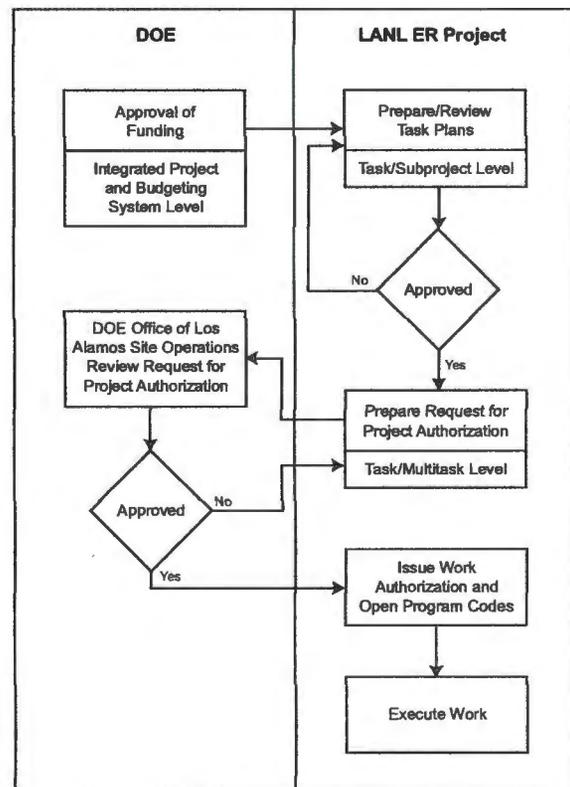


Figure 5-1. Work authorization process

DOE/NNSA has assigned FPMs from NNSA-Office of Los Alamos Site Operations to ER and legacy waste projects. FPMs are responsible for the DOE onsite management related to the ER Project and are the lead DOE point of contact at Los Alamos for the project. Additionally, the FPM maintains close communications and coordination with the LANL Project team to provide the support, guidance, and approval required to assure success of the project. Among other responsibilities, the FPM has project ownership responsibility, serves as primary project advocate, resolves performance issues, and oversees development of the acquisition strategy for project work.

5.3 Integration with NNSA

The LTES strategy/process incorporates existing and emerging guidance from EPA and DOE on risk-based decision-making, streamlined corrective-action programs, integrated environmental management systems, and long-term environmental stewardship. It integrates environmental protection activities into the DOE mandated Laboratory's core national-security mission to formalize the Laboratory's commitment to restore and protect the environment from detriment associated with past, present and future operations.

NNSA is the responsible landlord at LANL and, prior to development of this PMP, has participated in LANL's environmental restoration and TRU WD activities in meaningful ways.

Because the landlord is responsible for maintaining a monitoring and surveillance program for the site, the Office of Los Alamos Site Operations (OLASO) oversees the ES&H programs at LANL. As EM activities are completed and regulatory status moved from corrective action to LTES, funding for these obligatory activities will shift from EM to NNSA. OLASO will continue to be the DOE LTES organizational element.

Prior to 1998, the waste management operations at LANL were developed and managed by EM. Then in 1998, funding for the characterization, treatment, and disposal of newly generated waste transitioned from EM to NNSA. At that time, the funding for waste facilities was also transferred to NNSA. Currently at LANL, EM and NNSA share the waste facility costs, and NNSA funds the core capabilities for TRU waste characterization.

NNSA is the landlord and responsible Agency for ongoing operations at LANL and participation in Accelerated Cleanup will benefit NNSA by reducing programmatic risks to LANL missions. In addition, the changes in UC and DOE business practices and organizational structure will allow increased efficiencies and cost savings for NNSA operations at LANL.

5.4 Stakeholder and Public Involvement

Stakeholders and the public have been regularly involved in LANL legacy waste and environmental restoration activities through the Northern New Mexico Citizen's Advisory Board and through public meetings on waste management and cleanup decisions. These interactions will continue in the future, and accelerated projects will go through public review and comment processes according to the legal requirements and the outreach practices that have already been established at LANL. The accelerated proposal does not call for shortening public review times or lessening public input opportunities in any way.

Key to public input is the Northern New Mexico Citizen's Advisory Board whose charter calls for providing recommendations to DOE on EM work at LANL. The Board has interacted with DOE, NNSA and UC concerning the accelerated proposal primarily its ER Committee, Waste Management Committee, and Environmental Monitoring and Surveillance Committee. Through these mechanisms, the DOE expects to receive ongoing input on accelerated cleanup plans and implementation.

6.0 REGULATORY FRAMEWORK

6.1 Regulatory Framework for Legacy Waste

Disposition of legacy wastes is being conducted under RCRA and under regulations from NRC, the Department of Transportation (DOT) and the DOE. Before TRU waste can be shipped to WIPP for disposal, the waste must be characterized and packaged to meet the requirements of RCRA as reflected in the WIPP waste acceptance criteria (WAC). Characterization includes headspace gas sampling and analysis and an assay of the radiological contents of the package. The characterization also includes the radiography of packages to identify any prohibited items (containers with liquids or compressed gas cans or cylinders) in the package that must be removed prior to shipment. Many of the drums may require repackaging because they contain prohibited items; a subset will be repackaged to meet the permit requirements for visual examination, but a large fraction will exceed the wattage limit established for the TRUPACT II shipping container. Together, the repackaging would cause the 9000+ cubic meters of inventory to grow to 46,000 cubic meters shipped. A proposed revision to the shipping requirements was submitted to NRC for 2000 high-activity drums. It proposed to meet the NRC requirements that drive much of this repackaging in a different fashion. On July 5, 2002, the NRC approved this revision. It will greatly reduce the repackaging needed for these 2000 drums. At a later date, we propose to submit a similar revision to the NRC that would apply to the rest of the TRU waste inventory. If approved, the total number of projected shipments will be reduced by two thirds. This is a key element allowing for the dramatic cost reductions and schedule improvements discussed in this proposal.

6.2 Regulatory Framework for Environmental Restoration and Groundwater

Environmental Restoration work, including groundwater work, is conducted primarily under RCRA and its state counterpart, the New Mexico Hazardous Waste Act. The NMED issued an operating permit (Hazardous Waste Facility Permit) to LANL in 1989, and the EPA issued a corrective action permit (Hazardous and Solid Waste Amendments [HSWA]) to LANL in 1994 (administered by NMED).

The HSWA process can be divided into four phases: site assessment, remedial investigations, development of proposed corrective actions, and selecting and performing corrective actions. The "Solid Waste Management Units (SWMU) Report," (LANL 1990) fulfilled phase one, "site assessment." The original SWMU report listed 2124 potential release sites (PRSs). These PRSs include SWMUs regulated originally by EPA, then by NMED when it received RCRA authority in 1994, and areas of concern, regulated by DOE or other applicable authorities such as EPA, which administers regulations pursuant to the Toxic Substances Control Act. Since 1990, the ER Project has

planned and conducted remedial investigations and executed cleanups at over a thousand PRSs.

Agreements between DOE, UC, and NMED for corrective action emphasize

- risk-based approach,
- effective permit modification,
- EPA's watershed management approach, and
- DOE/UC/NMED/EPA team approach.

Regulatory Partnering Teams

Several management teams already exist consisting of members of the DOE, UC, NMED, and EPA. These teams will be instrumental in implementing the Accelerated Cleanup projects. These management teams, and their hierarchy, are depicted in Figure 6-1. The Senior Management Steering Committee, consisting of high level managers, will oversee continued development and execution of accelerated cleanup at LANL. The Management Coordination Team for LANL consists of the UC and DOE project managers for ER and the Chiefs of the NMED Hazardous Waste Bureau and DOE Oversight Bureau. The Groundwater Core Team consists of senior DOE, UC, and NMED managers who oversee groundwater activities at LANL.

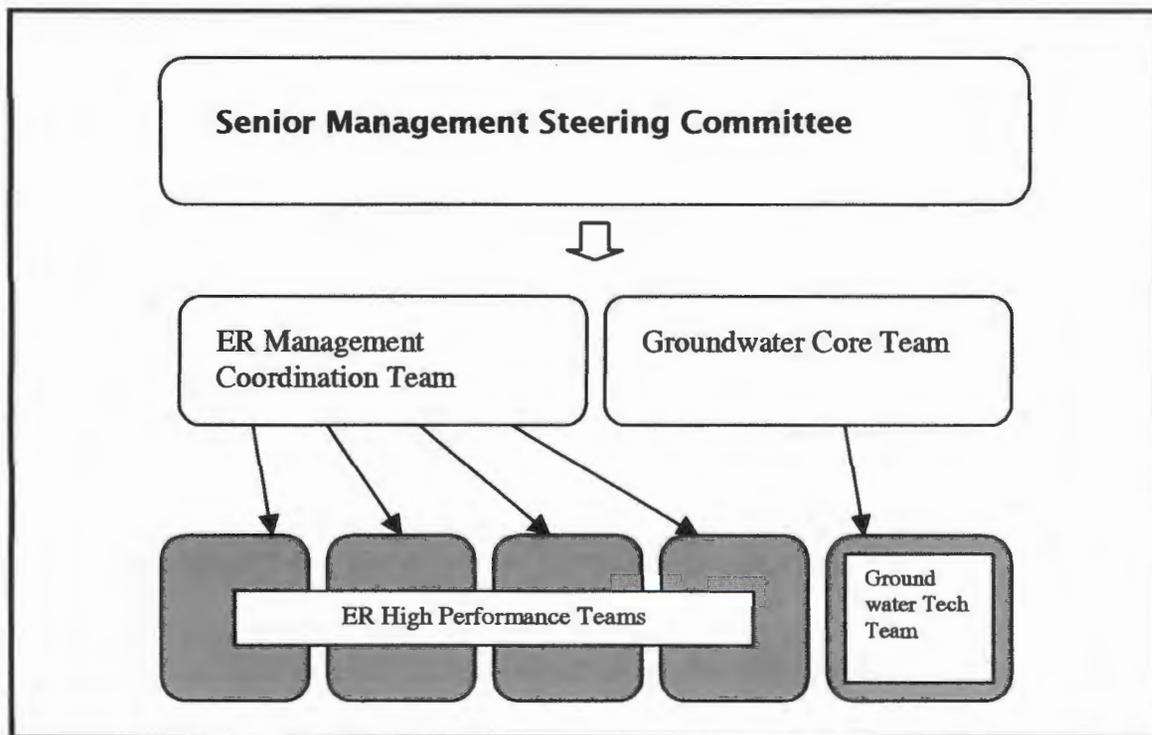


Figure 6-1. Hierarchy of DOE-UC-NMED-EPA partnering teams

In 1999, DOE, UC, and NMED jointly developed a High Performance Team (HPT) approach to facilitate and focus decision-making on selected high-priority projects. Each HPT is composed of technical staff representing DOE, UC, and NMED. Team members meet regularly to make decisions as new data become available. HPTs exist for numerous sites including the airport landfill, MDA H, TA-35, and the 260 outfall at TA-16. This team approach has been successful and will be established as the method for advancing the Accelerated Cleanup projects.

High Performance Teams: The 260 Outfall

Building 16-260 was LANL's conventional high explosives (HE) machining facility during much of the Cold War. It remains a vital NNSA resource for the Weapon's Program, with much of LANL's HE processing continuing within it. From 1951 to 1996, 13 sumps discharged HE-contaminated wastewater through the 16-260 outfall. Nearby soils, springs, seeps, Cañon de Valle, other surface waters, and groundwater were all significantly contaminated with HE from the 260 outfall. This contaminated area was considered one of LANL's highest environmental risk areas.



Using the High Performance Team (HPT) approach, LANL, NMED, and the DOE have successfully implemented actions at TA-16-260 to reduce risks. Most contamination has been removed using a bias for action approach. Several "firsts" for LANL's cleanup efforts are associated with the 16-260 activities, including (1) the first RCRA facility investigation (RFI) report and corrective measures study (CMS) plan approved by the NMED, (2) the first-ever NMED-approved "contained-out" determination for F-listed waste, and (3) the first NMED-approved nonresidential cleanup criteria for a LANL cleanup project.

6.3 Review Times

Achievement of accelerated cleanup project milestones and endpoints requires a commitment by NMED to faster review and approval of regulatory decision documents. DOE/UC and NMED have committed to clarifying agreements for document submittal to help accelerate decision-making. NMED has committed to expanding or augmenting its staff as needed to contribute to the accelerated pace. DOE has committed to support NMED as necessary with sufficient permit funding to sustain the accelerated pace. All parties involved are committed to a decision-making and review processes that include public participation as an integral part.

7.0 COST, FUNDING, AND SCHEDULE

This section presents the current estimated life-cycle costs and schedule for completing cleanup and dispositioning legacy TRU waste and compares it with the Accelerated Cleanup life-cycle baseline costs and schedule.

LANL accelerated cleanup initiatives will

- Accelerate EM's completion by 17 years
- Reduce costs for completion by \$974 million

7.1 Comparison of Funding Profiles: Existing Baseline vs Accelerated Cleanup Baseline

The current life-cycle cost for completing cleanup and dispositioning legacy TRU waste at LANL is \$1,889 million through 2032. This profile does not reflect the efficiencies that are possible when work is planned and executed according to the reforms proposed in this PMP. The current profile reflects lower annual levels of funding between FY03 and FY10, resulting in reduced efficiency in program execution. The existing profile also fails to reflect the reformed business practices that UC and the DOE have implemented to position LANL to respond effectively and efficiently when allocated Accelerated Cleanup funding. By increasing EM funding for LANL in the short term, the overall life-cycle cost of cleanup and waste disposition will be reduced substantially and will ultimately afford the DOE greater flexibility in responding to emerging federal priorities.

Funding requirements for implementing this PMP are shown in Figure 7-1, including the current LANL baseline, which is estimated at \$1,889 million. The Accelerated Cleanup baseline, estimated at \$915 million, is superimposed. A savings of \$974 million can be realized if LANL's Accelerated Cleanup proposal is implemented in its entirety. Additional detail is presented in Table 7.1, which shows the current projected annual funding profiles for environmental restoration (including groundwater) and for legacy waste disposition under the existing baseline as well as the annual funding profiles for these two programs under the Accelerated Cleanup proposal.

Figure 7-1 also shows schedule acceleration with a total EM program acceleration of 17 years from 2032 to 2015. Specifically, the ER schedule is accelerated by 15 years from 2030 to 2015 and the WD schedule is accelerated 22 years from 2032 to 2010.

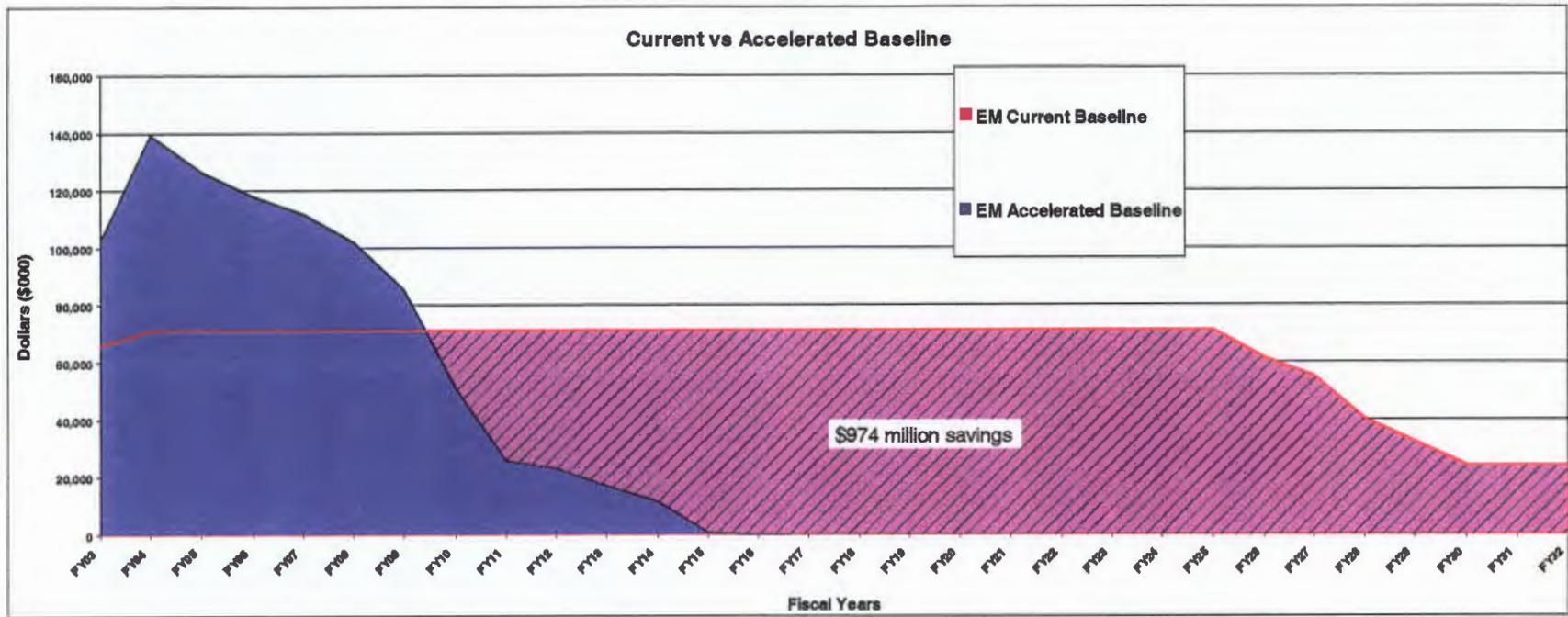


Figure 7-1. Environmental Management Program at LANL: Current Life-Cycle Baseline Versus Accelerated Baseline

Table 7-1
Funding Profiles for the Environmental Management Program at LANL

	FY03	FY04	FY05	FY06	FY07	FY08	FY08	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	
EM Current	65,674	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074	71,074
EM Accelerated	102,585	139,244	128,441	117,962	111,808	101,957	85,516	51,902	26,925	22,954	17,074	11,488	915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Current ER and GW	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074	47,074
Accelerated ER and GW	72,595	87,244	83,441	79,992	73,808	73,957	57,516	41,902	26,925	22,954	17,074	11,488	915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Current WD	18,800	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Accelerated WD	30,000	52,000	43,000	38,000	38,000	28,000	28,000	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

7.2 Accelerated Cleanup Schedule

Five major activities comprise the critical path for the completion of all EM activities at LANL by 2015. These activities are

- Legacy TRU waste disposition,
- Groundwater,
- Manhattan-Era Plutonium Processing Area (TA-21),
- MDAs, and
- Los Alamos County lands.

The master schedule for the entire Accelerated Cleanup project will be prepared based on these critical path activities. Appendix B presents the activity-specific schedule to which the DOE must subscribe, for the Accelerated Cleanup project at LANL to be successful.

8.0 REFERENCES

DOE (Department of Energy), January 1999. "Site-Wide Environmental Statement for Continued Operations of the Los Alamos National Laboratory," DOE/EIS-0238, Washington D.C.

LANL (Los Alamos National Laboratory), May 1998. "Hydrologic Workplan," rev. 1.0, Los Alamos, New Mexico.

LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Vol. I-IV, Los Alamos National Laboratory Report LA-UR-90-3400, prepared by International Technology Corporation, Contract No. 9-XS8-0062R-1, Los Alamos, New Mexico.

LANL (Los Alamos National Laboratory), May 2002, "Site and Watershed Aggregation and Prioritization," Los Alamos National Laboratory Report LA-UR-02-2962, Los Alamos, New Mexico.

APPENDIX A ACRONYMS AND ABBREVIATIONS

CBFO	Carlsbad Field Office
CGRP	Cerro Grande Rehabilitation Project
CMS	corrective measures study
CRA	Cleanup Reform Account
DOE	Department of Energy
DOI	Department of Interior
DP	Defense Programs
EM	Environmental Management
EPA	Environmental Protection Agency
ER	environmental restoration
FPM	Federal Project Manager
FY	fiscal year
HE	high explosive
HPT	High Performance Team
HSWA	Hazardous and Solid Waste Amendments
LANL	Los Alamos National Laboratory
LRRRI	Lovelace Respiratory Research Institute
LTES	Long-Term Environmental Stewardship
LTS	Long-Term Stewardship
MDA	material disposal area
NFA	no further action
NMED	New Mexico Environmental Department
NNMCAB	Northern New Mexico Citizen's Advisory Board
NNSA	National Nuclear Security Administration
NRC	Nuclear Regulatory Commission
PMP	Program Management Plan
PRS	potential release site
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RRES	Risk Reduction and Environmental Stewardship (LANL Division)
RTBF	Readiness in Technical Base and Facilities

SARP	safety analysis report for packaging
SMSC	Senior Management Steering Committee
SMO	Sample Management Office
SNL	Sandia National Laboratory
SWMU	solid waste management unit
TA	technical area
TRU	transuranic
UC	University of California
WAC	waste acceptance criteria
WBS	work-breakdown structure
WD	waste disposition
WIPP	Waste Isolation Pilot Plant

GOVERNMENT FURNISHED SERVICES AND ITEMS

Strategic Initiative 1: Legacy TRU Waste

- Allocate \$30 million in funding (October 2002)
- Allocate \$52 million in funding (October 2003)
- Allocate \$43 million in funding (October 2004)
- Allocate \$38 million in funding (October 2005)
- Allocate \$38 million in funding (October 2006)
- Allocate \$28 million in funding (October 2007)
- Allocate \$28 million in funding (October 2008)
- Allocate \$10 million in funding (October 2009)

Strategic Initiative 2: Groundwater

- Funding requirements included in Strategic Initiative 3: Environmental Restoration

Strategic Initiative 3: Environmental Restoration (ER)

- Allocate \$72.6 million in funding for ER and Groundwater, combined (October 2002)
- Allocate \$87.2 million in funding for ER and Groundwater, combined (October 2003)
- Allocate \$83.4 million in funding for ER and Groundwater, combined (October 2004)
- Allocate \$80 million in funding for ER and Groundwater, combined (October 2005)
- Allocate \$73.8 million in funding for ER and Groundwater, combined (October 2006)
- Allocate \$80 million in funding for ER and Groundwater, combined (October 2007)
- Allocate \$57.5 million in funding for ER and Groundwater, combined (October 2008)
- Allocate \$41.3 million in funding for ER and Groundwater, combined (October 2009)
- Allocate \$26 million in funding for ER and Groundwater, combined (October 2010)
- Allocate \$23 million in funding for ER and Groundwater, combined (October 2011)
- Allocate \$17 million in funding for ER and Groundwater, combined (October 2012)
- Allocate \$11.5 million in funding for ER and Groundwater, combined (October 2013)
- Allocate \$915,000 in funding for ER and Groundwater, combined (October 2014)

- Approve Sampling & Analysis Plan for TA-0, 03, 26, 32, 41, and 43 (June 2003)
- Approve LA/Pueblo canyon surface aggregate report (September 2003)
- Approve 73-1 Airport Landfill interim measure (January 2004)
- Approve VCA report for DP Road land transfer tracts (March 2004)
- Approve TA-0 (Rendija canyon) Sampling & Analysis Plan (July 2004)
- Approve Airport Landfill VCM report (May 2005)
- Approve Guaje/Rendija canyon surface aggregate report (October 2005)
- Approve VCA plan for TA-03, 32, 41, 43 (February 2006)
- Approve TA-2 Omega West Reactor RFI report (February 2006)
- Approve TA-0 RFI report (March 2006)

- Approve VCA report for TA-03, 32, 41, 43 (September 2006)
 - Approve TA-10 VCM report (November 2007)
 - Approve PRS 73-002 VCM (January 2008)
 - Approve TA-01 VCA report (September 2008)
-
- Approve TA-49 Phase II Sampling & Analysis Plan (December 2002)
 - Approve MDA C RFI report (December 2002)
 - Approve MDA H CMI design (February 2003)
 - Approve MDA G, L CMS plan (May 2003)
 - Approve MDA C CMS plan (July 2003)
 - Approve TA-49 RFI report (September 2003)
 - Approve MDA AB CMS plan (March 2004)
 - Approve MDA G, L CMS report (May 2004)
 - Approve MDA C CMS report (July 2004)
 - Approve MDA H completion report (August 2004)
 - Approve MDA AB CMS report (December 2004)
 - Approve MDA L CMI design (May 2005)
 - Approve MDA C CMI design (March 2006)
 - Approve MDA AB CMI design (June 2006)
 - Approve MDA C CMI completion report (November 2006)
-
- Approve SAP for 21-003-99 (October 2002)
 - Approve Stage II NTISV hot demo at MDA V (December 2002)
 - Approve VCM report for 21-011(k) (January 2003)
 - Approve MDA T SAP (January 2003)
 - Approve MDA V SAP (January 2003)
 - Approve VCA report for 21-024(f) & 21-015 (March 2003)
 - Approve TA-21 Project Plan (March 2003)
 - Approve SAP for 21-012(b) (April 2003)
 - Approve SAP for 21-020(a & b) (May 2003)
 - Approve SAP for 21-022(h)-99 (May 2003)
 - Approve SAP for 21-004(b)-99 (July 2004)
 - Approve RFI report for 21-004(b)-99 (May 2003)
 - Approve VCM report for 21-024(i) outfall (May 2003)
 - Approve SAP for 21-002(b) (June 2003)
 - Approve MDA A SAP (June 2003)
 - Approve VCA/VCM plan for 21-013(d)-99 & 21-013(l) (July 2003)
 - Approve VCA/VCM plan for 21-023(a)-99 (January 2003)
 - Approve VCA/VCM report for 21-023(a)-99 (January 2004)
 - Approve RFI report for 21-003-99 (March 2004)
 - Approve SAP for 21-024(c) outfall (May 2004)
 - Approve MDA B & 21-009 RFI report (May 2004)
 - Approve RFI report for 21-012(b) (June 2004)
 - Approve RFI report for 21-020(a & b) (July 2004)

- Approve RFI report for 21-002(b) (July 2004)
- Approve MDA V RFI report (July 2004)
- Approve RFI report for 21-022(h)-99 (August 2004)
- Approve CMS plan for 21-003-99 (November 2004)
- Approve MDA T RFI report (November 2004)
- Approve MDA A RFI report (November 2004)
- Approve MDA B CMS plan (December 2004)
- Approve VCA plan for 21-026(a)-99 (May 2003)
- Approve VCA/VCM report for 21-026(a)-99 (March 2005)
- Approve SAP for 21-011(b) (April 2005)
- Approve CMS report for 21-003-99 (June 2005)
- Approve VCA report for 21-024(n) (June 2005)
- Approve SAP for 21-022(b)-99 (June 2005)
- Approve MDA T CMS plan (June 2005)
- Approve MDA A CMS Plan (June 2005)
- Approve MDA B CMS report (August 2005)
- Approve MDA T CMS report (December 2005)
- Approve MDA A CMS report (January 2006)
- Approve VCA/VCM plan for 21-017(a)-99 (MDA U) (November 2004)
- Approve VCA report for 21-006(c)-99 and 21-006(e)-99 (April 2006)
- Approve VCA plan for 21-024(g,h) (June 2003)
- Approve VCA plan for 21-024(l)-99 and 21-022(a) (May 2005)
- Approve VCA report for 21-024(l) and 21-022(a) (October 2006)
- Approve CMI design for 21-003-99 (May 2007)
- Approve MDA V CMS/CMI (July 2007)
- Approve MDA U CMI completion report (July 2007)
- Approve MDA A CMI design (August 2007)
- Approve MDA B CMI design (September 2007)
- Approve VCA report for 21-022(b)-99 (September 2007)
- Approve VCA report for 21-011(b) (December 2007)
- Approve RFI report for 21-002(a) and 21-021-99 and 21-008 (May 2008)
- Approve CMI completion report for 21-003-99 (July 2008)
- Approve VCA plan for 21-011(b) (July 2006)
- Approve RFI report for 21-017(a)-99 (MDA U) (January 2004)
- Approve CMS plan for 21-017(a)-99 (MDA U) (June 2004)
- Approve CMS report for 21-017(a)-99 (MDA U) (April 2005)

Strategic Initiative 1: Legacy TRU Waste Responsibility Assignment Matrix

WBS TITLE	ROLE	NAME
Transuranic Waste Treatment Operations	CAM/Project Manager	Garry Allen
Waste Characterization		
Non-Destructive Examination (RTR)	RTR Ops Leader	Paul Martinez
Non-Destructive Assay	NDA/NDE Section Leader	Mike Baker
Hgas/H2 Generation Analyses	HGAS/H2Gen Ops Leader	Greg Bayhurst
RCRA Analysis	RCRA Analysis Ops Leader	TBD
VE/Repack	VE/Rpk Ops Leader	Andy Adams
Waste Certification		
Waste Certification Operations	TWCP Cert Official	Greg Bayhurst
Shipping		
TRUPACT II Operations	TWCP Transportation Official	Mark Polley
On-Site Transportation	Transportation Ops leader	Mark Polley
Technical Management		
Data Management	TWCP Section Leader/SPM	Pam Rogers
Project Management	Project Manager	Garry Allen
Quality Management	TWCP QA Official	Marji Gavett
Facilities		
Programmatic Support	Nuclear Operations Manager	Mark Polley
Facility Upgrades	Modular Unit Ops Leader	Guy Lussiez
Warm Standby	Facility Manager	Sara Helmick
Decontamination Volume Reduction System	Group Leader	Ray Hahn
Remote Handled Waste	Project Leader	Lee Leonard
Off-Site Recovery Project	Project Leader	Lee Leonard
Quick to WIPP	Project Leader	Bob Jones
Cerro Grande Repackaging Unit	Project Leader	Bob Jones
Newly Generated Waste Characterization	Project Leader	Garry Allen
Mixed Low Level Waste Disposition	Project Leader	Dianne Wilburn

Strategic Initiative 2: Groundwater Responsibility Assignment Matrix

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN						
Responsibility Assignment Matrix						
Key Decisions	Target Date					
	UC	DOE- OLASO	DOE-HQ	Others	NMED	Other sites
1. Install ER Regional Wells						
• Well R-17 completion	11/03					
• Well R-18 completion	8/03					
• Well R-30 completion	11/03					
• Well R-3 completion	7/04					
• Well R-4 completion	1/04					
• Well R-10 completion	7/04					
• Well R-27 completion	3/04					
• Well R-23 completion	3/03					
2. Groundwater Decision Analysis and Monitoring						
• MW-1 completion	6/04					
• MW-2 completion	8/04					
• MW-3 completion	11/04					
• MW-4 completion	1/05					
• MW-5 completion	3/05					
• MW-6 completion	5/05					
• MW-7 completion	8/05					
• MW-8 completion	10/05					
• MW-9 completion	12/05					
• MW-10 completion	2/06					
3. LA/Pueblo/Mortandad Passive Reactive Barriers						
• Barrier Emplacement	11/06					

Strategic Initiative 3: Environmental Restoration Responsibility Assignment Matrix

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN						
Responsibility Assignment Matrix						
Key Decisions	Target Date					
	UC	DOE-OLASO	DOE-HQ	Others	NMED	UC Final
Accelerate Closure of Townsite PRSs						
• LA/Pueblo Cyn Surface Aggregate Report	8/03	9/03			10/03	1/04
• Guaje/Rendija Cyn Sediment Investigation	1/05					
• Guaje/Rendija Surface Aggregate Report	9/05	10/05			11/05	2/06
• TA-01 VCA	5/08	6/08			8/08	9/08
• 73-1 Airport Landfill IM	1/04	1/04			3/04	4/04
• TA-01 Fieldwork	9/05					
• TA-0, 03, 26, 32, 41, 43 SAP	5/03	6/03			8/03	9/03
• TA-03, 32, 41, 43 VCA	8/06	9/06			10/06	12/06
• Airport Landfill VCM Plan	10/02	11/02			1/03	2/03
• TA-01 RFI Report	5/06	6/06			8/06	9/06
• TA-0, 03, 26, 32, 41, 43 Fieldwork	7/05					
• Airport Landfill VCM Fieldwork	11/04					
• TA-0, 03, 26, 32, 41, 43 Report	1/06	2/06			4/06	5/06
• Airport Landfill VCM Report	4/05	5/05			6/05	7/05
• 73-002 VCM	11/07	1/08			2/08	4/08
• VCA DP Road Land Transfer Tracts	3/04	3/04			5/04	6/04
• VCA TA-0, 19, 31, 45	9/07	10/07			12/07	1/08
• TA-0 (Rendija) SAP	6/04	7/04			8/04	9/04
• TA-0 (Rendija) Fieldwork	8/05					
• TA-0 RFI Report	2/06	3/06			5/06	6/06
• TA-10 VCM	10/07	11/07			1/08	2/08
• TA-2 OWR Fieldwork & Report	1/06	2/06			4/06	5/06

**Strategic Initiative 3: Environmental Restoration Responsibility Assignment Matrix
(continued)**

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN						
Responsibility Assignment Matrix						
Key Decisions	Target Date					
	UC	DOE-OLASO	DOE-HQ	Others	NMED	UC Final
Accelerate Closure of MDAs						
• MDA H CMI Design	2/03	2/03			8/03	10/03
• MDA H CMI Construction	4/04					
• MDA H Completion report	7/04	8/04			9/04	10/04
• MDA G RFI Report					12/02	12/02
• MDA L RFI Report					12/02	12/02
• MDA G, L CMS Plan	5/03	5/03			7/03	9/03
• MDA G, L CMS Report	4/04	5/04			6/04	7/04
• MDA G,L Statement of Basis					7/05	
• MDA AB CMI Construction	11/06					
• MDA AB CMI Design	5/06	6/06			8/06	8/06
• MDA L CMI Design	4/06	5/05				7/06
• MDA L CMI Construction	7/07					
• MDA L Completion Report	2/08					
• TA-49 Phase II SAP	11/02	12/02			1/03	2/03
• TA-49 Fieldwork	4/03					
• TA-49 RFI Report	9/03	9/03			10/03	11/03
• MDA C RFI Report	11/02	12/02			1/03	2/03
• MDA C CMS Plan	7/03	7/03			8/03	11/03
• MDA AB CMS Plan	3/04	3/04			4/04	5/04
• MDA AB Completion Report	7/07					
• MDA AB CMS	12/04	12/04			2/05	2/05
• MDA AB Statement of Basis					11/05	
• MDA C CMS Report	6/04	7/04			8/04	9/04
• MDA C Statement of Basis					9/05	
• MDA C CMI Design	3/06	3/06			4/06	6/06
• MDA C CMI Construction	8/06					
• MDA C CMI Completion Report	10/06					

**Strategic Initiative 3: Environmental Restoration Responsibility Assignment Matrix
(continued)**

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN						
Responsibility Assignment Matrix						
Key Decisions	Target Date					
	UC	DOE-OLASO	DOE-HQ	Others	NMED	UC Final
Accelerate Closure of TA-21						
1. TA-21 Non-MDAs						
• RFI Report RSI/NOD 21-028(b-e)	10/02					
• VCM 21-011(k)	1/03	1/03			2/03	3/03
• SAP 21-012(b)	3/03	4/03			5/03	6/03
• VCA 21-024(f) & 21-015	3/03	3/03				4/03
• SAP 21-002(b)	5/03	6/03			7/03	8/03
• SAP 21-008	4/03	4/03			5/03	7/03
• RFI Fieldwork 21-012(b)	1/04					
• RFI Fieldwork 21-002(b)	3/04					
• RFI Fieldwork 21-008	1/04					
• RFI Report 21-002(a) & 21-021-99	5/08	5/08			7/08	8/08
• TA-21 Project Plan	3/03	3/03	3/03			
• SAP 21-020(a & b)	5/03	5/03			6/03	7/03
• RFI Fieldwork 21-020(a & b)	1/04					
• RFI Report 21-020(a & b)	6/04	7/04			8/04	9/04
• VCA 21-006(a,b) & 21-006(c,e,-)99	4/06	4/06			5/06	6/06
• RFI Report 21-012(b)	5/04	6/04			8/04	8/04
• RFI Report 21-002(b)	7/04	7/04			9/04	10/04
• SAP for 21-022(h)-99	5/03	5/03			6/03	7/03
• RFI Field Work for 21-022(h)-99	2/04					
• RFI Report 21-022(h)-99	8/04	8/04			9/04	11/04
• VCA/VCM 21-023(a)-99	1/04	1/04			2/04	3/04
• VCA 21-024(a)	5/04					
• VCA 21-024(g,h)	3/06	4/06			5/06	6/06
• SAP 21-004(b)-99	5/03	5/03			6/03	7/03
• RFI Fieldwork 21-004(b)-99	2/04					
• RFI Report 21-004(b)-99	7/04	7/04			9/04	10/04
• VCA 21-024(l)-99 & 21-022(a)	9/06	10/06			11/06	12/06
• SAP for 21-024(c) Outfall	5/04	5/04			6/04	7/04
• SAP for 21-003-99	10/02	10/02			11/02	11/02
• RFI Field Work 21-003-99	10/03					
• RFI Report 21-003-99	3/04	3/04			4/04	5/04
• CMS Plan 21-003-99	10/04	11/04			1/05	1/05
• CMS Report 21-003-99	6/05	6/05			8/05	8/05
• Statement of Basis 21-003-99	9/05				8/06	
• CMI Design 21-003-99	4/07	5/07			6/06	7/07
• CMI Construction 21-003-99	5/08					
• VCA/VCM 21-017(a)-99	2/06	3/06			4/06	5/06
• Construction Completion Rpt 21-003-99	7/08	7/08			8/08	9/08
• SAP 21-011(b)	3/05	4/05			5/05	6/05
• RFI Fieldwork 21-011(b)	12/05					
• VCA 21-011(b)	11/07	12/07			12/07	2/08

**Strategic Initiative 3: Environmental Restoration Responsibility Assignment Matrix
(continued)**

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN						
Responsibility Assignment Matrix						
Key Decisions	Target Date					
	UC	DOE-OLASO	DOE-HQ	Others	NMED	UC Final
• RFI Fieldwork	3/05					
• VCA Plan 21-024I	1/07	2/07			3/07	4/07
• VCA/VCM 21-026(a)-99	2/05	3/05			4/05	5/05
• VCA 21-024(b)	2/05					
• VCA 21-024(d)	8/03					
• VCA 21-024I	12/03					
• VCA 21-024(j)	8/03					
• VCA 21-024(k)	2/04					
• VCA 21-024(n)	5/05	6/05			7/05	8/05
• VCA 21-024(o)	4/04					
• VCA 21-027(a)	9/04					
• VCA 21-027I	2/04					
• SAP 21-022(b)-99	5/05	6/05			7/05	8/05
• RFI Fieldwork 21-022(b)-99	2/06					
• VCA 21-022(b)-99	8/07	9/07			10/07	10/07
• VCA/VCM 21-013(d)-99 & 21-013I	7/03	7/03			8/03	9/03
• VCM 21-024(i) Outfall	4/03	5/03			6/03	7/03
2. TA-21 MDAs						
• Stage 2 NTISV Hot Demo MDA-V	12/02	12/02			1/03	1/03
• MDA T SAP	12/02	1/03			2/03	3/03
• MDA T RFI Fieldwork	3/04					
• MDA T RFI Report	11/04	11/04			1/05	1/05
• MDA T CMS Report	12/05	12/05			2/06	3/06
• MDA T Statement of Basis					1/07	
• MDA T CMI Design	7/07				8/07	9/07
• MDA T CMI Construction	5/08					
• MDA T Completion Report	7/08					
• MDA T CMS Plan	5/05	6/05			7/05	8/05
• MDA A SAP 21-014	5/03	6/03			7/03	8/03
• MDA A RFI Fieldwork 21-014	4/04					
• MDA A RFI Report 21-014	10/04	11/04			12/04	1/05
• MDA A CMS Plan 21-014	5/05	6/05			7/05	8/05
• MDA A CMS Report 21-014	12/05	1/06			2/06	3/06
• MDA A Statement of Basis					11/06	
• MDA A CMI Design	7/07	8/07			10/07	10/07
• MDA A CMI Construction 21-014	5/08					
• MDA A Completion report	9/08					
• MDA U RFI/CMS/CMI 21-017(a)-99	7/07	7/07			9/07	8/08
• MDA B CMS Plan	11/04	12/04			1/05	2/05
• MDA B & 21-009 Fieldwork	9/03					
• MDA B & 21-009 SAP	10/02				10/02	
• MDA B CMS Report	8/05	8/05			9/05	11/05
• MDA B Statement of Basis					12/06	
• MDA B CMI Design	9/07	9/07			11/07	11/07
• MDA B CMI Construction	7/08					
• MDA B & 21-009 RFI Report	4/04	5/04			7/04	7/04

**Strategic Initiative 3: Environmental Restoration Responsibility Assignment Matrix
(continued)**

LOS ALAMOS NATIONAL LABORATORY PERFORMANCE MANAGEMENT PLAN						
Responsibility Assignment Matrix						
Key Decisions	Target Date					
	UC	DOE-OLASO	DOE-HQ	Others	NMED	UC Final
• MDA B Completion Report	9/08					
• MDA V SAP	1/03	1/03			3/03	3/03
• MDA V RFI Fieldwork	1/04					
• MDA V RFI Report	7/04	7/04			9/04	9/04
• MDA V CMS/CMI	7/07	7/07			11/07	6/08

Letter of Intent
Meeting Environmental Responsibilities
At New Mexico DOE Facilities

The U.S. Department of Energy (DOE), New Mexico Environment Department (NMED), and U.S. Environmental Protection Agency (EPA), Region 6, are collectively committed to accelerating risk reduction and cleanup of environmental contamination at DOE facilities in New Mexico. When completed, the cleanup will: 1) result in reduced risk from New Mexico's legacy waste sites sooner; 2) allow the National Nuclear Security Administration's (NNSA) focus to remain on its core national security mission; 3) support Environmental Management's (DOE-EM) mission of expedited transuranic (TRU) waste cleanup at numerous sites by disposal of this waste in the Waste Isolation Pilot Project (WIPP) repository; and 4) provide a significant benefit to New Mexico and the nation by reducing the potential environmental, public and worker health, and security risks posed by TRU waste.

In light of the benefits to be obtained from the accelerated cleanup, the undersigned are committed to accelerating all environmental restoration, legacy waste disposal, and implementation of long-term environmental stewardship from 2009 to 2006 at Sandia National Laboratories (SNL), and from 2030 to 2015 at Los Alamos National Laboratory (LANL), and acceleration of TRU waste disposal from New Mexico facilities at WIPP.

Key Commitments to Ensure Success

All of the parties to this agreement commit to the following in order to achieve accelerated risk reduction and completion of cleanup:

1. Accelerate risk reduction of groundwater and soil contamination, as well as legacy waste at both LANL and SNL, giving priority to the highest risk activities, by:
 - a. Implementing the "Quick to WIPP" strategy which would accelerate the removal and disposal of legacy TRU waste at LANL from 2030 to 2010 (addressing 61% of the radioactivity by 2004);
 - b. Implementing the watershed aggregate approach for environmental restoration at LANL, and accelerating completion of activities of the highest risk watershed and high priority Material Disposal Areas from 2022 to 2008 specifically, and total project from 2030 to 2015; and,
 - c. Completing the remaining risk reduction and resolving uncertainties, resulting in site acceleration of cleanup at SNL from 2009 to 2006.

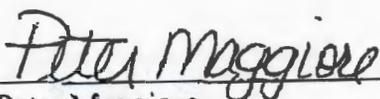
2. Define regulatory endpoints for LANL and SNL:
 - a. Determine likely future use scenarios and associated cleanup standards;

- b. Pursue necessary actions to ensure long-term effectiveness of institutional controls;
 - c. Continue to improve the definition of data quality objectives and what constitutes sufficient and acceptable data for predictive modeling; and,
 - d. Plan and implement a Long-Term Environmental Stewardship program, working with our regulators and surrounding communities.
3. Continue the established partnership between DOE, its contractors, and regulators for LANL and SNL to:
 - a. Ensure senior-level involvement and support to achieve the desired end state; and,
 - b. Include expansion of high performance teams to focus on accelerated decision making and to optimize cleanup schedules.
4. Shorten review periods within the regulatory framework and provide timely decisions for project execution.
5. Streamline internal processes such as quality control and verification of data, preparation of regulatory documents, maximization of electronic commerce, consolidation and integration of databases, and elimination of duplicative processes.
6. Address resource issues by seeking additional state funding and pursuing new, more tractable hazardous waste fee regulations that provide sufficient (increased) regulatory resources.
7. Integrate DOE and NMED/EPA public participation for more efficient and effective public involvement.
8. DOE, NMED, and EPA are committed to the acceleration of risk reduction and the completion of the environmental cleanup program while at the same time being protective of site workers and the environment.
9. DOE, NMED and EPA further commit to pursuing and adopting innovative cleanup approaches that are protective of the environment and designed to achieve demonstrable risk reduction at a reasonable cost, therefore serving as an effective investment for the American taxpayers.

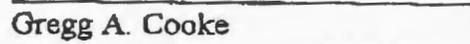
DOE and its contractors will develop a performance management plan by August 2002. The plan will include actions, milestones, responsibilities, business processes, and acquisition strategies necessary to achieve the agreements made in this letter. The Department recognizes that funding commensurate with the approved performance plan is necessary to achieve the above stated goals of acceleration and closure.

We the undersigned recognize the significant role New Mexico plays in addressing cleanup issues of national importance. By virtue of WIPP's presence, New Mexico plays a crucial role in reducing the risks posed by TRU waste nationwide.

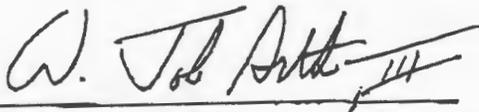
We the undersigned are committed to an accelerated completion of the SNL and LANL environmental projects and the accelerated TRU waste disposal from New Mexico facilities at WIPP. We agree to the above working commitments to support this very important goal. We will continually seek and adopt additional opportunities that further advance the remediation and legacy waste mission in a safe, protective and cost effective manner.



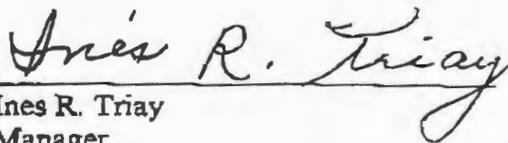
Peter Maggione
Cabinet Secretary
New Mexico Environment Department



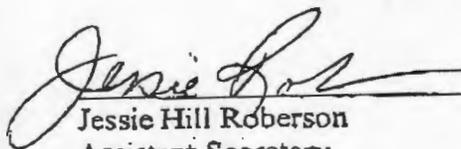
Gregg A. Cooke
Regional Administrator (6RA)
Environmental Protection Agency



W. John Arthur, III
Manager
Albuquerque Operations Office
U.S. Department of Energy



Ines R. Triay
Manager
Carlsbad Field Office
U.S. Department of Energy



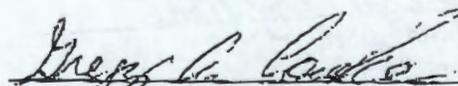
Jessie Hill Roberson
Assistant Secretary
for Environmental Management
U.S. Department of Energy

*See attached
EPA Signature.*

We the undersigned recognize the significant role New Mexico plays in addressing cleanup issues of national importance. By virtue of WIPP's presence, New Mexico plays a crucial role in reducing the risks posed by TRU waste nationwide.

We the undersigned are committed to an accelerated completion of the SNL and LANL environmental projects and the accelerated TRU waste disposal from New Mexico facilities at WIPP. We agree to the above working commitments to support this very important goal. We will continually seek and adopt additional opportunities that further advance the remediation and legacy waste mission in a safe, protective and cost effective manner.

Peter Maggiore
Cabinet Secretary
New Mexico Environment Department



Gregg A. Cooke
Regional Administrator (6RA)
Environmental Protection Agency

W. John Arthur, III
Manager
Albuquerque Operations Office
U.S. Department of Energy

Ines R. Triay
Manager
Carlsbad Field Office
U.S. Department of Energy

Jessie Hill Roberson
Assistant Secretary
for Environmental Management
U.S. Department of Energy