

**Los Alamos National Laboratory EM Project(s)**  
**Baseline Summary**  
**June 2008**

**BACKGROUND**

Los Alamos National Laboratory (LANL), located in northern New Mexico, is a research facility of the National Nuclear Security Administration (NNSA) that is managed and operated by Los Alamos National Security (LANS) LLC.

Since its inception in 1943 (as part of the Manhattan Project), the primary mission of the Laboratory has been focused on high-level science and technology essential to national defense and global security. Many of the activities and operations at LANL have produced solids, liquids, and gases that contain radioactive and/or non-radioactive hazardous materials. Such activities include conducting research and development 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. The resulting legacy waste sites (also known as potential release sites) are found on mesa tops, in canyons, and in the Los Alamos town site. Since environmental management work began in 1989, the number of potential release sites requiring further action has been reduced by 60 percent 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 DOE Orders. Cleanup of historic hazardous wastes is being conducted under a Consent Order signed in March 2005 by the Department of Energy (Department), University of California, State of New Mexico Attorney General, and the New Mexico Environment Department. The Consent Order provides requirements and a timetable for environmental cleanup, with stipulated fines and penalties for violations and non-compliance.

Much environmental work has already been accomplished at LANL: retrieval, characterization, repackaging and disposition of legacy wastes and cleanup of major waste sites, including a landfill containing high explosives, a PCB-contaminated area, and plutonium-contaminated sediments where Manhattan-era waste effluents were released. However, substantial work remains to be done, including completing disposition of legacy Transuranic (TRU) wastes, particularly below grade retrieval and ultimately shipment to the Waste Isolation Pilot Plant (WIPP), and conducting corrective actions for groundwater, remaining landfills (which are some of the largest and most complex sites), and numerous surface waste sites on mesa tops and in canyons spread over LANL (approximately 39 square mile area).

**SCOPE DESCRIPTION**

The current LANL environmental cleanup program began in 1989 with an effort to identify past waste disposal sites that may constitute potential releases of contamination to the environment. A total of 2,129 sites were identified for further investigation and possible cleanup, and included

many sites that had been cleaned up for radioactive materials in the past. LANL conducts assessments and corrective actions at contaminated sites to reduce unacceptable human health and ecological risks, and to reduce the inventory of legacy TRU waste. The strategy for the environmental restoration is through a risk based methodology that complies with regulatory requirements and adheres to future land use scenarios. The legacy waste cleanup strategy is through the disposition of TRU waste, by characterizing, packaging, and shipping to WIPP. Primary functions of the EM program at LANL are to: (1) cleanup contaminated sites on LANL and surrounding private and government-owned lands to levels appropriate for the intended land use; (2) protect and monitor the drinking water aquifer; (3) decontaminate and decommission excess facilities affecting environmental restoration actions; (4) disposition legacy TRU wastes and ship to WIPP; and (5) conduct long-term surveillance and monitoring.

The LANL Environmental Management Program consists of three major components: Solid Waste Stabilization and Disposition (VL-LANL-0013), Soil and Water Remediation (VL-LANL-0030), and two components of decontamination and decommissioning (D&D) (VL-LANL-0040-D and VL-LANL-0040-N). The program is scheduled to be complete by the end of FY 2015. The execution of these components has been integrated into one baseline and critical aspects of each must be completed to ensure the success of the entire program.

The framework for investigation and remediation of contamination resulting from historical releases of hazardous waste and hazardous constituents at LANL is contained in the Compliance Order on Consent (Consent Order). The Consent Order, signed March 1, 2005, is the principal regulatory driver for the ER Project. Investigation and remediation of radionuclides at the Laboratory is conducted under DOE's authority pursuant to the Atomic Energy Act. The Consent Order contains requirements that include enforceable deadlines for submitting corrective action documents such as investigation work plans, investigation reports, periodic monitoring reports, and corrective measure evaluations. Failure to meet the enforceable deadlines can result in penalties up to \$3,000 per day. The Consent Order also contains specific technical requirements for implementing investigations, conducting corrective measures, managing investigation-derived wastes, and preparing documents, and establishes cleanup levels for groundwater, soil, and surface water. In addition, the Consent Order contains a document approval process whereby NMED may modify a document submitted by the Laboratory (e.g., by increasing the number of samples or analyses required) and approve the document with modifications. The NMED modifications then become enforceable conditions of the Consent Order.

## **PROJECT MANAGEMENT**

Based on the direction from EM Headquarters, Los Alamos National Laboratory developed the near-term baseline for each of its projects. These project baselines have undergone an independent review to verify the reasonableness of the scope, cost, and schedule for each project. An approved near-term baseline reflects the identified scope that can reasonably be accomplished for the identified cost in the identified time period if near-term baselines are funded as profiled and contingency funds are provided as required during project execution. It also establishes the baseline as an acceptable point from which to track and control future change. The certified baseline for LANL is integrated between all EM functional areas (PBSs) and is structured to meet regulatory requirements for EM completion in 2015. However, the baseline has not been funded at the levels necessary to maintain compliance with our obligations

to the New Mexico Environmental Department. The review and approval process accommodates the likely changes in the EM complex, site priorities and funding plans. These changes could affect both near-term (within the next five years) and life-cycle cost, schedule and scope. Such future changes may be required to comply with applicable environmental legal obligations while maintaining essential functions necessary to protect human health, the environment and national security; reflect funding different from the baseline assumptions; incorporate technological advances; realize specific programmatic risks; or implement programmatic business cases.

## LIST OF PROJECTS

The LANL EM program consists of 4 PBS projects as shown below: The Near-Term Baseline (NTB) for these projects is from FY 2007 – FY 2015.

Project	Date Approved	
	Near Term Baseline (NTB) (\$M)	Out Year Planning Estimate Range (OPER)
VL-LANL-0013, Solid Waste Stabilization and Disposition	March 28, 2008	NA
VL-LANL-0030, Soil and Water Remediation	March 28, 2008	NA
VL-LANL-0040-D, Nuclear Facility D&D- LANL (Defense)	March 28, 2008	NA
VL-LANL-0040-N, Nuclear Facility D&D- LANL (Non-Defense)	March 28, 2008	NA

## PROJECT SCOPE

### **VL-LANL-0013 – Solid Waste Stabilization and Disposition (or Legacy Waste Project)**

The LANL EM program (under PBS VL-LANL-0013) has responsibility for the disposition of legacy TRU waste. Legacy waste is defined as LLW, MLLW, and TRU waste generated before FY 1999. LANL has been involved in nuclear weapons stockpile development, production, and maintenance since the 1940s. LANL is responsible for disposal of 68.6 cubic meters (m<sup>3</sup>) quantity of MLLW (which was disposed by 2006), approximately 42,000 drum equivalents (8400 m<sup>3</sup>) of legacy TRU waste, and any additional MLLW generated during characterization and repacking of containers for disposal. This waste comprises mostly protective clothing, tools, equipment, and sludge contaminated with manmade radioactive elements such as plutonium. Materials contaminated with TRU elements, to the extent that they are classified as TRU waste, pose health and safety risks that require storage and disposal in a deep underground repository such as the WIPP.

The process for disposing LANL TRU waste inventory at WIPP involves three stages:

- Waste is characterized to ensure it meets the waste acceptance criteria for WIPP
- Data generated by the characterization process is reviewed, waste may be repacked if it does not meet criteria, and then the waste is certified for disposal
- Certified waste is shipped to WIPP for disposal

On-going characterization of the waste designated as stored TRU has resulted in some waste being characterized as not having enough activity to meet the current TRU Waste Acceptance Criteria (WAC) requirements. The majority of this reclassified waste resulted from the changed definition of TRU in place when the waste was generated (<10nCI/gm) to a newer higher standard of <100nCI/gm. This waste is undergoing further characterization to document any hazardous waste components (MLLW) or whether the hazardous components are absent and the waste can be disposed of as LLW. This reclassification effort results in the generation of MLLW and LLW, not specifically identified in the initial PBS-0013 scope.

LLW resulting from reclassified TRU or secondary LLW resulting from other TRU operations is disposed on site or shipped to an off-site disposal facility. The decision as to which path is used is based on the ultimate unit disposal cost or the availability of an off-site disposal facility. MLLW resulting from reclassified TRU or secondary MLLW resulting from other TRU operations is treated at an off-site treatment facility and disposed of at an off-site facility (currently Nevada Test Site [NTS]). However, NTS is scheduled to close for acceptance of MLLW at the end of FY 2010, and an alternate has not yet been identified.

LANL is responsible for drum preparation, drum retrieval, nondestructive assay (NDA)/real-time radiography (RTR) prescreening, prohibited item disposition (PID)/visual examination (as required), and on-site transportation. The Carlsbad Field Office (CBFO) subcontractor, Washington TRU Solutions (WTS) Central Characterization Project (CCP) is responsible for the characterization, certification, and transportation of TRU waste to Waste Isolation Pilot Plant (WIPP).

The completion of the Legacy Waste Project is a necessary predecessor to accomplish environmental corrective actions at Area G. Corrective actions at material disposal area (MDA) G need to be completed by 2015 to be compliant with requirements of the Consent Order.

### **VL-LANL-0030 – Soil and Water Remediation**

The LANL Soil and Water Remediation (or ER Project) work was initiated in 1989 and consists of all investigation, remediation, regulatory and public interfacing, and associated work related to PRS, SWMUs, MDAs, and the affected ground and surface waters at the LANL site. The scope is for investigation and cleanup (if needed) of the 860 solid waste management units (SWMUs) and areas of concern (AOCs) remaining from the original 2129 sites spread over the approximately 39 mi<sup>2</sup> of the Laboratory. These sites include septic tanks and lines, chemical storage areas, wastewater outfalls, landfills, incinerators, firing ranges, surface spills, and electric transformers. The scope includes protection of surface water and groundwater resources. Activities are prioritized to eliminate or reduce human health and ecological risks by addressing the highest-risk sites first.

Project activities include determination of the nature and extent of contamination, assessment of the risks to human health and the environment, and completion of the cleanup actions to eliminate or reduce risks to acceptable levels in compliance with federal, state, and local statutes. The strategy for EM completion is to achieve an acceptable risk-based end-state commensurate with intended land use. The technical approach is designed to identify cumulative human health and ecological risks within each of eight watersheds and assess human health risks on a site basis. A watershed is comprised of one or more mesas (or portions thereof), the drainages from

those mesas, and the major canyons into which the drainages converge. The ER Project assesses an entire watershed to evaluate how contamination moves in sediments, surface water, soils, and groundwater. Remediation decisions are made by quantification of human health and ecological risks, taking the watershed system into consideration through evaluation of the types and levels of contamination as well as public accessibility.

The requirements for the ER Project are delineated in the Consent Order and an EPA Federal Facilities Compliance Agreement (FFCA). The Consent Order, signed in March 2005 (NMED 2005, 088207), and the FFCA, signed in February 2005 (EPA, 2005), added considerable scope to the ER Project, including requirements for characterization of sites; installation of wells and monitoring of groundwater; and characterization, monitoring, and remedial actions for surface waters. The Consent Order contains approximately 100 milestones associated with the investigation, design, and remediation of the LANL facility. ER Project activities are conducted in accordance with the Consent Order as well as applicable environmental laws, regulations, and end-state objectives. Key performance parameters are measured against progress towards completion of the Consent Order schedule.

#### **VL-LANL-0040-N – Nuclear Facility D&D –Non-Defense (TSTA)**

The scope of this project is the surveillance and maintenance and decontamination and decommissioning of the TSTA facility. The TSTA facility, which remains contaminated with residual radionuclides, consists of 5 structures; including building 21-155, an air exhaust stack, two cooling towers, and an associated warehouse. Accountable items to be removed include four molecular sieves, three waste cylinders, an Isotope Separation System, process piping, the HVAC system, and the stack itself.

Key performance parameters for current project activities include S&M, limited deactivation, characterization, and maintenance of the facility until D&D. Key performance parameters, once D&D is initiated, will be based on the demolition of the structures and removal of the resulting waste. The Consent Order sets requirements for completion of all investigations and corrective action activities in the Los Alamos/Pueblo watershed by 2011; this will require D&D of the TSTA facility on time for completion of the corrective actions of potential release sites (associated with PBS 0030) beneath or adjacent to the facility.

#### **VL-LANL-0040-D – Nuclear Facility D&D –Defense**

The scope of PBS 0040-D includes the decontamination and decommissioning (D&D) of retired process buildings at TA-21 (known as the DP Site) and waste handling facilities at TA-54. These facilities must be decontaminated and decommissioned in order to accommodate completion of the Soil and Water Remediation program at both areas. DP Site consists two areas called DP West and DP East. Work will be sequenced to address the highest priority buildings first. These include DP West Buildings 21-2 and 21-5.

Within the DP West section of TA-21, building 21-257 is an approximately 5,000 square foot facility built to process radioactive liquid waste in conjunction with MDA-T by underground process waste lines and sumps from buildings 21-2, 21-3, 21-4 and 21-5. Once the last of the DP East buildings is deactivated and declared surplus, no further waste will be sent to the processing facility. The presumptive remedy for MDA-T is capping and monitoring, which cannot be done without first demolishing Building 21-257.

Buildings 21-2, 21-3, 21-4, 21-5 and associated structures were originally constructed for plutonium recovery, precipitation, conversion, purification, reduction, metal casting and machining. Encompassing approximately 96,000 square feet of vacated and decaying space, these buildings are currently undergoing surveillance and maintenance. Documented releases have occurred near and under the buildings. Remediation of the acid waste collection and transfer system under the buildings has been deferred until D&D is performed.

DP East Buildings consist of 21-155—the Tritium Science Test Assembly (TSTA), 21-152 and 21-209—the Tritium System Fabrication Facility (TSFF). DP East 21-152 has the highest release of contaminants. TSFF and its laboratory are contiguous with TSTA, and some of the utilities for TSFF pass beneath TSTA. Because of this close proximity, significant cost savings are expected if D&D of the three facilities can occur concurrently.

At TA-54, the PBS scope includes over 100 structures and active facilities located in MDA L and MDA G. Construction of remedies for these material disposal areas (PBS 0030) must be complete by 2015 to meet the Consent Order schedule.

PBS 0040-D has not been funded to date resulting of delay of D&D activities. LANL has already experienced consequences of Consent Order non-compliance and has received fines from the regulator in FY 2008. Key performance parameters, once D&D is initiated, will be based on the demolition of the structures and removal of the resulting waste. The Consent Order sets requirements for completion of all investigations and corrective action activities in the Los Alamos/Pueblo watershed by 2011; this will require D&D of the DP East and DP West facilities on time for completion of the corrective actions of potential release sites (associated with PBS 0030) beneath or adjacent to the facility.

## PROJECT COST

(dollars in millions)

Cost Element	Project Number			
	VL-LANL-0013	VL-LANL-0030	VL-LANL-0040-D	VL-LANL-0040-N
1. Prior Year Costs (1997-2006)	\$224	\$579	0	\$2
2. Total Near-Term Baseline (50% Confidence Level)	\$516	\$1,051	\$128	\$16
3. Unfunded Contingency	\$49	\$859	\$39	0
4. Performance Baseline (80% Confidence Level)	\$565	\$1,910	\$237	\$16
5. Out Year Planning Estimate Range	0	0	0	0
6. <b>Total Life Cycle Cost</b>	\$789	\$2,489	\$237	\$18

**SUMMARY LIFECYCLE BASELINE SCHEDULE**

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Budgeted Cost	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18																				
<b>013 LEGACY WASTE DISPOSITION</b>																																				
<b>0A CH TRU Disposition</b>																																				
Subtotal		1,586	01OCT06	02FEB11	185,969,305																															
<b>+ 07 CH TRU PROJECT MANAGEMENT</b>																																				
		1,063	02OCT06	02FEB11	12,445,365																															
<b>+ 08 CH TRU OPERATIONS MANAGEMENT</b>																																				
		1,063	02OCT06	02FEB11	6,763,852																															
<b>+ 09 CH TRU OPERATIONS SUPPORT</b>																																				
		1,063	02OCT06	02FEB11	5,051,814																															
<b>+ 72 CH TRU CHARACTERIZATION</b>																																				
		1,248	01OCT06	01MAR10	13,824,237																															
<b>+ 73 CH TRU MLLW/LLW</b>																																				
		856	02OCT06	31MAR10	31,110,555																															
<b>+ 74 CH TRU REPACK DRUMS/BOXES</b>																																				
		1,586	01OCT06	02FEB11	59,642,975																															
<b>+ 90 CH TRU FACILITY MODIFICATIONS</b>																																				
		1,439	02OCT06	09SEP10	11,437,181																															
<b>+ 91 CH TRU STORAGE/CONTAINER MOVEMENTS</b>																																				
		1,278	01OCT06	31MAR10	20,997,816																															
<b>+ 92 CH TRU SHIPPING</b>																																				
		1,586	01OCT06	02FEB11	14,281,334																															
<b>+ 93 CH TRU PRODUCTION CONTROL</b>																																				
		856	02OCT06	31MAR10	10,414,172																															
<b>0B RH TRU Disposition EM</b>																																				
Subtotal		1,585	02OCT06	02FEB11	81,082,344																															
<b>+ 43 RH 16</b>																																				
		496	02OCT06	09FEB08	1,619,313																															
<b>+ 44 33 SHAFTS</b>																																				
		1,063	02OCT06	02FEB11	70,944,784																															
<b>+ 45 HOT CELL LINERS</b>																																				
		493	01OCT07	30SEP09	3,015,875																															
<b>+ 96 RH TRU PROJECT MANAGEMENT</b>																																				
		1,063	02OCT06	02FEB11	3,013,935																															
<b>+ 97 RH TRU OPERATIONS MANAGEMENT</b>																																				
		1,063	02OCT06	02FEB11	1,127,634																															
<table border="0" style="width:100%"> <tr> <td style="width:25%">Start Date</td> <td style="width:25%">01OCT06</td> <td colspan="2" rowspan="3" style="text-align:center"><b>EM PROGRAM LIFECYCLE SCHEDULE</b></td> <td style="width:10%">Date</td> <td style="width:15%">Revision</td> <td style="width:10%">Checked</td> <td style="width:10%">Approved</td> </tr> <tr> <td>Run Date</td> <td>03JUN08 15:58</td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>Data Date</td> <td>01OCT06</td> <td></td><td></td><td></td><td></td> </tr> </table>						Start Date	01OCT06	<b>EM PROGRAM LIFECYCLE SCHEDULE</b>		Date	Revision	Checked	Approved	Run Date	03JUN08 15:58					Data Date	01OCT06															
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Run Date	03JUN08 15:58																																			
Data Date	01OCT06																																			
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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Budgeted Cost	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
<b>+ 58 RH TRU OPERATIONS SUPPORT</b>																
		225	01OCT07	28AUG08	1,360,795											
<b>0C CH Retrievals EM</b>																
Subtotal		928	02OCT06	13JUL10	44,773,192											
<b>+ 36 CH RET OPERATIONS SUPPORT</b>																
		738	02OCT06	30SEP09	1,769,025											
<b>+ 37 TRENCHES A-D</b>																
		902	02OCT06	04JUN10	8,573,003											
<b>+ 38 CORRUGATED METAL PIPES</b>																
		928	02OCT06	13JUL10	15,582,407											
<b>+ 39 PIT 9</b>																
		589	01OCT07	01MAR10	14,438,586											
<b>+ 94 CH RET PROJECT MANAGEMENT</b>																
		928	02OCT06	13JUL10	3,282,554											
<b>+ 95 CH RET OPERATIONS MANAGEMENT</b>																
		928	02OCT06	13JUL10	1,127,613											
<b>0E EM-LASO-CBFO</b>																
Subtotal		1,585	02OCT06	02FEB11	25,029,701											
<b>+ 47 LASO-CBFO</b>																
		1,585	02OCT06	02FEB11	25,029,701											
<b>030 ENVIRONMENTAL RESTORATION</b>																
<b>01 WATERSHED INTEGRATION</b>																
Subtotal		3,293	02OCT06	07OCT15	260,674,311											
<b>+ 10 MORTANDAD CANYONS</b>																
		3,286	02OCT06	30SEP15	43,010,355											
<b>+ 1A MORTANDAD CANYONS REMEDIATION</b>																
		2,810	15OCT07	24JUN15	30,603,465											
<b>+ 20 LA/PUEBLO CANYONS</b>																
		2,313	02OCT06	30JAN13	27,908,456											
<b>+ 2A LA/PUEBLO CANYONS REMEDIATION</b>																
		2,198	01OCT09	07OCT15	22,901,393											
<b>+ 30 WATER/VALLE CANYONS</b>																
		1,766	02OCT06	02AUG11	12,189,040											
<b>+ 40 SANDIA CANYONS</b>																
		545	02OCT06	18DEC08	2,256,736											
Start Date	01OCT06		EM PROGRAM													
Run Date	03JUN08 15:58		LIFECYCLE													
Data Date	01OCT06		SCHEDULE													
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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Budgeted Cost	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18			
<b>+ 50 PAJARITO CANYONS</b>																			
		836	02OCT06	14JAN09	10,649,968														
<b>+ 60 ANCHO CANYONS</b>																			
		1,300	01OCT07	22APR11	4,139,967														
<b>+ 70 CHAQUEHUI CANYONS</b>																			
		712	02JUN08	22APR11	1,740,138														
<b>+ EA INTERIM SITE-WIDE MONITORING</b>																			
		2,214	02OCT06	30SEP15	75,648,484														
<b>+ EC SWMU/SWPPP</b>																			
		2,213	02OCT06	29SEP15	28,924,113														
<b>+ TE FSF CORE REPOSITORY</b>																			
		492	02APR07	31MAR09	702,196														
<b>02 TOWNSITES</b>																			
Subtotal		1,040	02OCT06	06AUG09	33,571,920														
<b>+ 21 RENDIJA, BARRANCAS, GUAJE</b>																			
		397	02OCT06	02NOV07	2,081,680														
<b>+ 22 BAYO</b>																			
		575	01MAY07	25NOV08	5,375,333														
<b>+ 23 PUEBLO</b>																			
		554	02OCT06	07APR08	1,360,147														
<b>+ 24 UPPER LOS ALAMOS</b>																			
		1,040	02OCT06	06AUG09	9,795,405														
<b>+ 2C AIRPORT ASHPILE</b>																			
		179	02OCT06	26JUN07	3,993,987														
<b>+ 2D MIDDLE LOS ALAMOS</b>																			
		554	16APR07	20OCT08	10,965,368														
<b>03 DP SITE</b>																			
Subtotal		2,708	01OCT06	28FEB14	142,978,830														
<b>+ 25 DP SITE AGGREGATE</b>																			
		2,557	01OCT06	30SEP13	44,340,353														
<b>+ 2K TA-21 EAST PRSs</b>																			
		829	01OCT07	06JAN10	1,523,325														
<b>+ 2M MDA-A</b>																			
		2,707	02OCT06	28FEB14	17,077,796														
<b>+ 2N MDA-T</b>																			
		1,893	02OCT06	07DEC11	8,565,282														
Start Date			01OCT06			EM PROGRAM LIFECYCLE SCHEDULE										Date	Revision	Checked	Approved
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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Budgeted Cost	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
<b>+ 2P WASTE LINES</b>																
		1,040	01OCT07	05AUG10	10,879,814											
<b>+ 2R MDA-B</b>																
		1,180	02OCT06	20JUL11	53,591,768											
<b>+ 2T MDA-V</b>																
		662	02OCT06	24JUL08	853,911											
<b>+ 2X SITE CHARACTERIZATION AND ANALYSIS</b>																
		62	02JAN07	30MAR07	146,575											
<b>04 TA-54</b>																
Subtotal		3,022	01OCT06	08JAN15	75,462,645											
<b>+ 5A MDA-H</b>																
		1,149	02OCT06	23NOV09	2,594,605											
<b>+ 5B MDA-L</b>																
		2,195	01OCT06	03OCT12	7,884,781											
<b>+ 5D MDA-G</b>																
		3,022	01OCT06	08JAN15	64,983,263											
<b>05 CORRECTIVE ACTIONS</b>																
Subtotal		3,287	01OCT06	30SEP15	175,631,287											
<b>+ 11 MIDDLE MORTANDAD/TEN-SITE</b>																
		2,137	02OCT06	07AUG12	2,378,823											
<b>+ 12 UPPER MORTANDAD</b>																
		3,285	02OCT06	29SEP15	45,936,085											
<b>+ 13 LOWER MORTANDAD/CEDRO</b>																
		1,364	15MAY09	06FEB13	1,556,811											
<b>+ 14 MIDDLE CAÑADA del BUEY</b>																
		130	15AUG07	29FEB08	200,000											
<b>+ 15 UPPER MORTANDAD/CAÑADA del BUEY</b>																
		1,561	06JUL07	13OCT11	4,835,224											
<b>+ 1B MDA-C</b>																
		2,153	02OCT06	23AUG12	13,659,925											
<b>+ 31 CANYON DE VALLE</b>																
		2,061	01OCT06	22MAY12	25,485,335											
<b>+ 32 S-SITE (MARTIN)</b>																
		1,894	02OCT06	08DEC11	5,460,728											
<b>+ 33 UPPER WATER</b>																
		2,221	01SEP09	30SEP15	6,874,122											
Start Date		01OCT06				<b>EM PROGRAM LIFECYCLE SCHEDULE</b>										
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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Budgeted Cost	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
<b>+ 2P WASTE LINES</b>																
		1,040	01OCT07	05AUG10	10,879,814											
<b>+ 2R MDA-B</b>																
		1,180	02OCT06	20JUL11	53,591,768											
<b>+ 2T MDA-V</b>																
		662	02OCT06	24JUL08	853,911											
<b>+ 2X SITE CHARACTERIZATION AND ANALYSIS</b>																
		62	02JAN07	30MAR07	146,575											
<b>04 TA-54</b>																
Subtotal		3,022	01OCT06	08JAN15	75,462,645											
<b>+ 5A MDA-H</b>																
		1,149	02OCT06	23NOV09	2,594,605											
<b>+ 5B MDA-L</b>																
		2,195	01OCT06	03OCT12	7,884,781											
<b>+ 5D MDA-G</b>																
		3,022	01OCT06	08JAN15	64,983,263											
<b>05 CORRECTIVE ACTIONS</b>																
Subtotal		3,287	01OCT06	30SEP15	175,631,287											
<b>+ 11 MIDDLE MORTANDAD/TEN-SITE</b>																
		2,137	02OCT06	07AUG12	2,378,823											
<b>+ 12 UPPER MORTANDAD</b>																
		3,285	02OCT06	29SEP15	45,936,085											
<b>+ 13 LOWER MORTANDAD/CEDRO</b>																
		1,364	15MAY09	06FEB13	1,556,811											
<b>+ 14 MIDDLE CAÑADA del BUEY</b>																
		130	15AUG07	29FEB08	200,000											
<b>+ 15 UPPER MORTANDAD/CAÑADA del BUEY</b>																
		1,561	06JUL07	13OCT11	4,835,224											
<b>+ 1B MDA-C</b>																
		2,153	02OCT06	23AUG12	13,659,925											
<b>+ 31 CANYON DE VALLE</b>																
		2,061	01OCT06	22MAY12	25,485,335											
<b>+ 32 S-SITE (MARTIN)</b>																
		1,894	02OCT06	08DEC11	5,460,728											
<b>+ 33 UPPER WATER</b>																
		2,221	01SEP09	30SEP15	6,874,122											
Start Date		01OCT06	EM PROGRAM LIFECYCLE SCHEDULE			Date	Revision	Checked	Approved							
Run Date		03JUN08 15:58														
Data Date		01OCT06														
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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Budgeted Cost	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
<b>40D D&amp;D</b>																
<b>13 DP SITE D&amp;D</b>																
	Subtotal		1,071	22JUN07	27MAY10	71,516,441										
+ 2F D&D - DP WEST																
			1,071	22JUN07	27MAY10	71,516,441										
<b>14 TA-54 D&amp;D</b>																
	Subtotal		1,850	02APR07	30SEP14	41,015,107										
+ 5C D&D - MDA-L																
			954	02APR07	15FEB11	6,771,326										
+ 5E D&D - MDA-G																
			1,476	01OCT08	30SEP14	34,243,781										
<b>40N TSTA D&amp;D</b>																
<b>16 TSTA</b>																
	Subtotal		821	02OCT06	09FEB10	15,233,772										
+ 2J D&D - TSTA																
			816	10OCT06	09FEB10	14,043,972										
+ 2U TSTA SURVEILLANCE & MAINTENANCE																
			492	02OCT06	30SEP08	1,189,800										

Start Date 01OCT06  
Run Date 03JUN08 15:58  
Data Date 01OCT06  
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**EM PROGRAM  
LIFECYCLE  
SCHEDULE**

Date	Revision	Checked	Approved