

**Pantex EM Project(s)**  
**Baseline Summary**  
**February 2009**

**BACKGROUND**

The Pantex Plant is located in the Texas Panhandle, approximately 17 miles northeast of Amarillo, Texas. Pantex was established in 1942 to build conventional munitions in support of World War II. Pantex was deactivated in 1945 and sold to Texas Technical University. In 1951 the Plant was reclaimed for use by the Atomic Energy Commission to build nuclear weapons. Pantex continues with an active mission to support the nuclear weapons stockpile for the United States Department of Energy/National Nuclear Security Administration.

The primary mission of the Pantex Plant is to:

- Evaluate, retrofit, and repair nuclear weapons in support of life extension programs and certification of weapon safety and reliability programs.
- Dismantle nuclear weapons surplus to the stockpile.
- Demilitarize and sanitize components from dismantled weapons.
- Develop, test, and fabricate chemical and explosive components.
- Provide interim storage and surveillance of the plutonium components.

Pantex has a long-term mission to extend the life of nuclear weapons in the stockpile to preserve the security of the United States. The more than 3,500 federal employees and contractors who work at Pantex are dedicated to safely and securely maintaining the nation's nuclear weapons stockpile, dismantling weapons retired by the military, storing the resulting surplus plutonium on an interim basis, and developing, testing, and fabricating high explosives. Pantex work is done in full compliance with applicable federal and state environmental regulations.

Historical waste management operations at the Pantex plant have resulted in contamination of the soils and the groundwater. Primarily High Explosives, metals, and solvents exist in the soil located in the main operational areas and Burning Ground at the Pantex Plant. The perched groundwater contaminant plume has migrated past the Plant boundaries and onto adjacent Texas Tech property to the south. The lower Ogallala Aquifer is the primary water supply for Pantex and the area landowners. Located immediately north of the Pantex property boundary is a well field in the Ogallala Aquifer that supplies a portion of the water supply to the cities of Amarillo and Panhandle. Contamination in the perched groundwater has the potential to leach deeper if appropriate corrective measures are not implemented to mitigate the risk.

In 1989, the U.S. Environmental Protection Agency conducted a Resource Conservation and Recovery Act Facility Assessment of the Pantex Plant that identified 252 potential release sites, and resulted in an Environmental Protection Agency Order stipulating response measures for these release sites.

In 2008, TCEQ approved the Corrective Measure Study/Feasibility Study (CMS/FS) and EPA approved all of the Human Health Risk Assessments, the Ecological Risk Assessment, and the CMS/FS. Both agencies approved the Proposed Plan for public notice and distribution. Public comments on the proposed remedies were received following its issuance in March 2008, along with comments from EPA's National Remedy Review Board after a meeting in April 2008.

## **SCOPE DESCRIPTION**

Starting in the late 1980's, DOE EM began funding the ER Program at Pantex. This Program investigates historical release sites, as well as potential contamination sites, and performs corrective actions to mitigate future releases, risks to human health and the environment. Corrective actions are implemented using a risk-based corrective action approach that is consistent with applicable state and federal regulatory requirements.

Environmental work is identified and conducted under the requirements of the current solid and hazardous waste permit issued by the State of Texas to Pantex. Also, the Environmental Protection Agency has listed Pantex Plant on the National Priority List.

The remedial investigation and feasibility study phases of the program were implemented through a Memorandum of Agreement between the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). The EPA and TCEQ provided oversight for investigations and risk assessments with the majority of the work being conducted under the Resource Conservation and Recovery Act (RCRA) process. The EPA retained oversight of radionuclide contamination and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) issues.

Pantex is currently working closely with the EPA, Region 6 and the TCEQ through a Core Team. This team collectively reviews site data to expedite integration of both RCRA and CERCLA statutory requirements. Interactions between DOE/NNSA, EPA, and TCEQ were recently redefined with issuance of a tri-party Interagency Agreement. This agreement became effective on February 22, 2008 and establishes the framework for completing CERCLA requirements for the site.

As required by CERCLA, a Record of Decision (ROD) was issued by DOE/NNSA and EPA on September 25, 2008, with the concurrence of the TCEQ.

## **PROJECT MANAGEMENT**

Based on the direction from EM Headquarters, Pantex 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 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 Pantex EM program consists of two projects as shown below: The Near-Term Baseline (NTB) for these projects is from FY 2007 – FY 2008.

Project	Date Approved	
	Near Term Baseline (NTB)	Out Year Planning Estimate Range (OPER)
VL-PX-0030	Feb. 9, 2005	Project will complete in FY09
VL-PX-0040	Feb. 9, 2005	Project was completed in FY08

## PROJECT SCOPE

### VL-PX-0030, Soil and Water Remediation - Pantex

The ER Program at Pantex investigates historical release sites, as well as potential contamination sites, and performs corrective actions to mitigate future releases, risks to human health and the environment. Corrective actions are implemented using a risk-based corrective action approach that is consistent with applicable state and federal regulatory requirements. The determination of appropriate corrective actions and preferred remediation alternatives has been evaluated in the CMS/FS and agreed upon in the ROD.

There are 237 identified release sites within 144 solid waste management units and areas of concern at Pantex. These sites are organized into Zones and as independent sites for investigation and remediation purposes. Final corrective action design and construction activities to implement preferred remediation alternatives are being implemented as documented in the ROD. Corrective measures of the perched groundwater include the Southeast Pump and Treat to stabilize and treat the groundwater plume, the Playa 1 Pump and Treat to stabilize the head of the perched groundwater and treat contaminants, and In Situ Bioremediation to treat contaminants at specific areas of the groundwater plume with potentially higher risk of contaminant migration.

The Texas Commission on Environmental Quality has approved closure of all 237 release sites, with an additional 15 active release sites remaining in operation after the Environmental Remediation project completion in FY 2009.

### VL-PX-0040, Nuclear Facility D&D - Pantex

The Pantex Deactivation and Decommissioning project reduces the plant footprint and risks to workers, public health, and the environment through safe shutdown, decontamination, and

demolition of contaminated surplus facilities. These facilities are targeted for completion of deactivation and decommissioning activities during FY03 through FY07. When completed, the facility sites are scheduled for transfer to the landlord for potential reuse or long-term monitoring.

Scope includes four performance metrics, which include deactivation and decommission of Building 8-08 (completed), Building 11-44 and equipment (completed), Zone 10 Ruins (completed), Building 12-24 Complex (Buildings 12-43, 12-25, 12-24A, 12-24 North, and 12-24 South) (D&D completed, site restoration to be completed in FY08). Technical approach is consistent with DOE Order 430.1-4, LCAM.

All four performance measures have been completed.

## PROJECT COST

(dollars in millions)

Cost Element	Project Number	
	VL-PX-0030	VL-PX-0040
1. Prior Year Costs (1995-2004)	104.1	18.4
2. Total Near-Term Baseline (50% Confidence Level)	76.7	0
3. Unfunded Contingency	0	0
4. Performance Baseline (80% Confidence Level)	180.9	18.4
5. Out Year Planning Estimate Range	0	0
6. <b>Total Life Cycle Cost</b>	180.9	18.4





