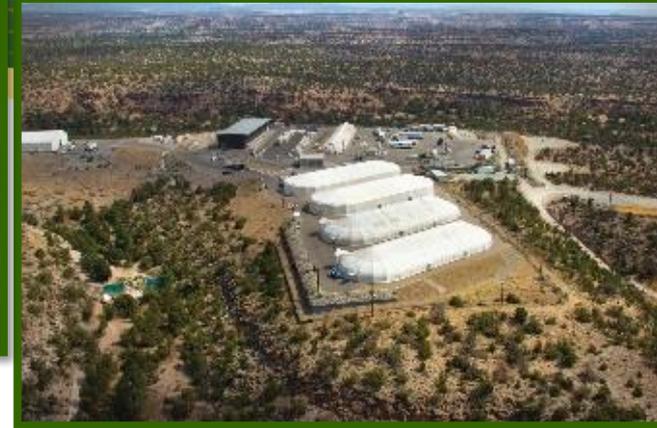




U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**



# Legacy Cleanup at Los Alamos National Laboratory

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Completion Project Delivery  
Environmental Management Los Alamos Field Office

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Executive Officer  
N3B



**ENVIRONMENTAL MANAGEMENT**  
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- The EM-LA mission is to safely, efficiently, and with full transparency complete the cleanup of legacy contamination and waste (pre-1999) resulting from nuclear weapons development and government-sponsored nuclear research.





# Environmental Management at Los Alamos National Laboratory

*The DOE Office of Environmental Management (EM), under the Defense Programs, begins the cleanup of legacy material, facilities and waste sites at Los Alamos National Laboratory (LANL).*

*Los Alamos National Security (LANS) begins to perform EM scope at LANL for EM-LA under a Bridge Contract.*

*N3B commences work on the Los Alamos Legacy Cleanup Contract.*

1989

March 2015

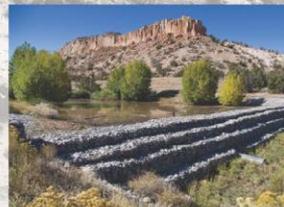
October 2015

December 2017

May 2018

*The cleanup work of legacy waste at LANL is transitioned from the NNSA directly to EM. The Environmental Management Los Alamos Field Office (EM-LA) is established.*

*DOE awards a dedicated cleanup contract for legacy waste at LANL to N3B.*





## ➤ **Mission activities**

- Surface and groundwater monitoring and remediation
- Removing contaminated soil
- Decontaminating and decommissioning surplus process-contaminated buildings
- Legacy waste management

## ➤ **Cleanup locations**

- Former LANL buildings
- Hillsides, canyon sides and canyon bottoms
- Old landfills

## ➤ **Current cleanup priorities**

- Chromium Interim Measure and Characterization Campaign
- Royal Demolition Explosives Characterization Campaign
- Technical Area 21 Campaign
- Removing TRU waste from Technical Area 54



*A crane places workers at a cleanup site in Los Alamos Canyon*



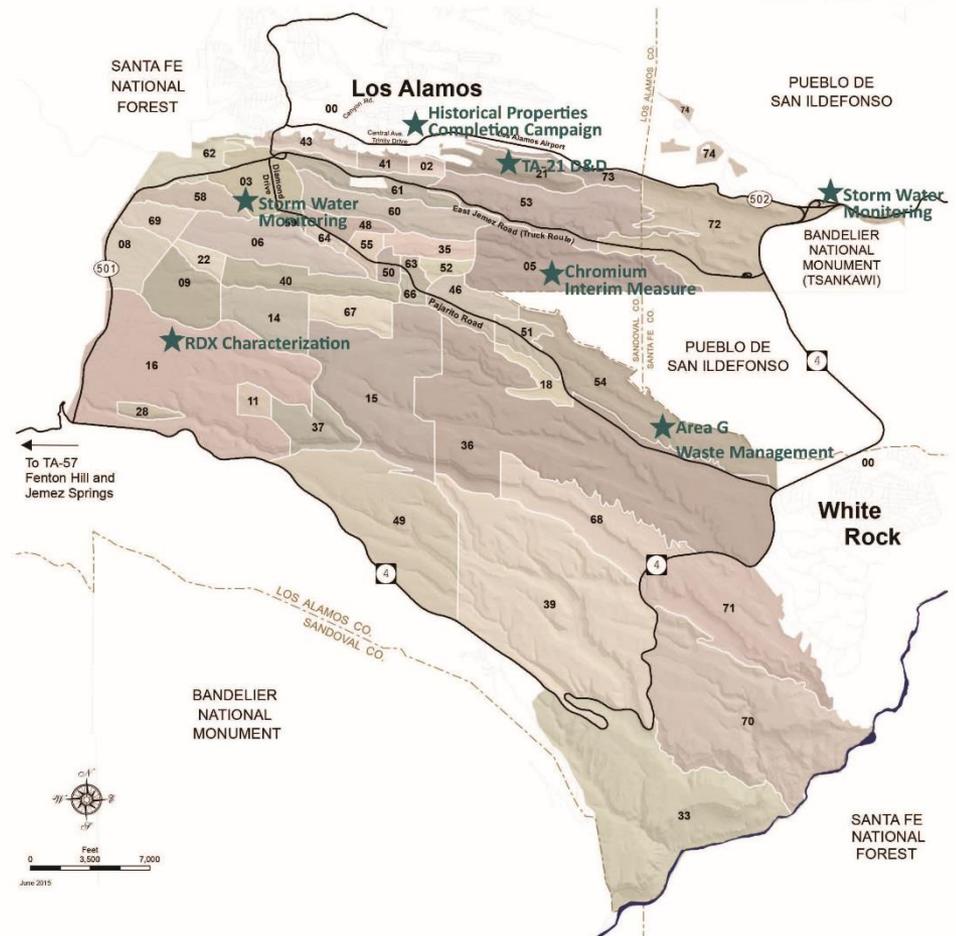


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# Key Environmental Management Legacy Cleanup and Waste Management Sites at Los Alamos National Laboratory



Overview of EM's Legacy Cleanup and Legacy Waste Management at LANL

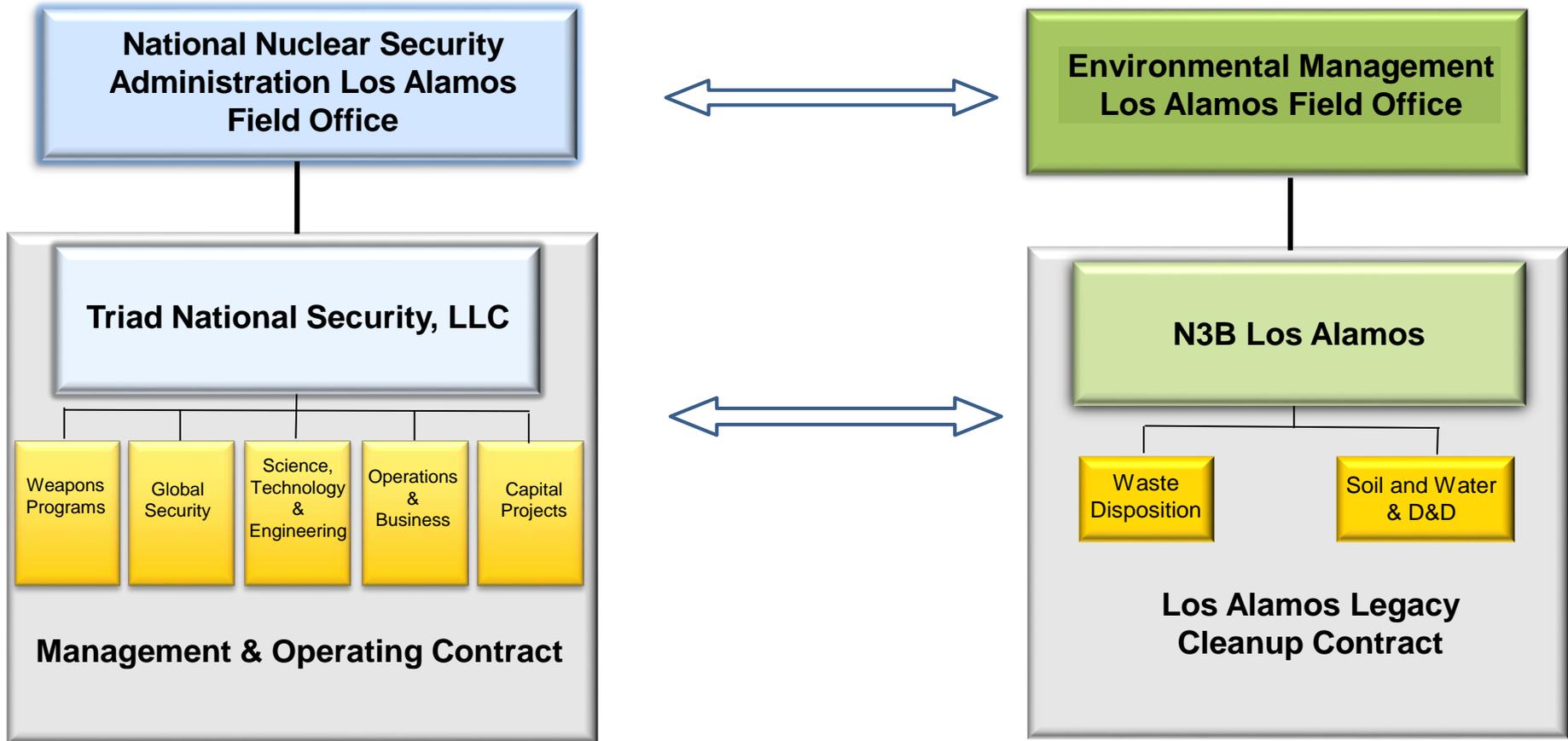


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# Los Alamos National Laboratory Organizational Structure





- EM-LA utilizes a strategic planning tool known as the Lifecycle Cost Estimate (LCE) to forecast schedule and associated costs of its legacy cleanup mission
- The EM-LA LCE is based on a campaign approach
  - LCE is integrated with the 2016 Consent Order
    - 17 soil and water campaigns identified
  - Legacy waste is a stand alone campaign
- As one campaign completes, the next scheduled campaign commences
- Multiple campaigns underway simultaneously
- Safe, efficient and transparent execution





# Chromium Interim Measure and Characterization Campaign



*Workers use an angled drilling rig at the injection well CrIN-4 site*



*The closed vault at injection well CrIN-5*

- There is a chromium plume beneath Sandia and Mortandad canyons.
- An Interim Measure is underway to control plume advancement and shrink its footprint.
- Recent samples at the regional aquifer well R-50, near the Laboratory boundary with San Ildefonso, are showing consistently decreasing trends in chromium concentrations.
- This data helps to indicate that hydraulic plume control under the Interim Measure is taking hold.





*N3B staff conduct field work near the latest RDX monitoring well, R-69.*

- Royal Demolition Explosives (RDX) was used widely in World War II and remains common in military applications.
- RDX in groundwater was first identified in LANL's Technical Area 16 in the late 1990s and discovered in the regional aquifer in 2005.
- Residual RDX remains in the subsurface groundwater.
- There are nine wells monitoring the regional groundwater as part of the RDX Characterization Campaign.





*Concrete slabs and other debris will be cleaned up from Technical Area 21 in FY 2019.*

- Technical Area 21 is a former Manhattan Project and Cold War-era complex of buildings that housed plutonium processing facilities and was where groundbreaking tritium research for energy, environment and weapons defense took place.



*Trailers have been installed at TA-21 to accommodate staff.*





# Legacy Waste Management

- EM-LA also retrieves, remediates, packages, and disposes of radioactive waste.
- Most low level and mixed low level waste is transported from LANL and disposed of in commercial licensed facilities, while transuranic (TRU) waste is disposed of at the Waste Isolation Pilot Plant, located in Carlsbad, New Mexico.



*N3B waste management staff prepare the waste shipment for transport to the Waste Isolation Pilot Plant.*



*The waste management teams for EM-LA and N3B gathered to mark the completion of the first waste shipment*





	FY 2018		FY 2018 Plus-Up Funding Received	FY 2019		FY 2019 Plus-Up Funding Received
	Congressional Request \$192M	Enacted \$220M		Congressional Request \$192M	Enacted \$220M	
	<b>\$192.68M</b>		<b>\$28M</b>	<b>\$192.63M</b>		<b>\$27M</b>
<b>Activities</b>	<ul style="list-style-type: none"> <li>Completed treatment of remediated nitrate salt waste and unremediated nitrate salt waste</li> <li>Initiated Interim Measure for the Chromium plume</li> <li>Completed the last planned cleanup of legacy sites at the Los Alamos townsite</li> <li>Consent Order milestones</li> </ul>		<ul style="list-style-type: none"> <li>Reskinned domes in waste management storage area</li> <li>Installed additional RDX monitoring well (R-69)</li> <li>Accelerated cleanup at TA-21</li> </ul>	<ul style="list-style-type: none"> <li>Initiate TRU waste shipments to WIPP</li> <li>Commence cleanup activities at TA-21 for eventual land transfer to Los Alamos County</li> <li>Consent Order milestones</li> </ul>		<ul style="list-style-type: none"> <li>Accelerate TRU waste processing and shipments</li> <li>Add TRU waste processing capability</li> <li>Execute additional chromium monitoring well (R-70) installation and infrastructure modifications to control migration of the plume</li> <li>Complete TA-21 site-wide cleanup, relocate waste program support staff, and accelerate site D &amp; D</li> <li>Reskin domes in waste management storage area</li> </ul>

