

December 2024

Fiscal Year 2024 Mitigation Action Plan Annual Report for the Continued Operation of Los Alamos National Laboratory

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EXECUTIVE SUMMARY

In compliance with U.S. Department of Energy (DOE)/National Nuclear Security Administration (NNSA) Policy NAP-451.1, National Environmental Policy Act Compliance Program, the DOE/NNSA Los Alamos Field Office compiled the fiscal year (FY; October 1, 2023, through September 30, 2024) “2024 Mitigation Action Plan Annual Report.”

This FY 2024 annual report includes mitigations identified in the “Mitigation Action Plan for Los Alamos National Laboratory Operations” (MAP for LANL Operations). Actions taken to meet these mitigations are presented in this report. During FY 2024, the mitigation commitments identified in the MAP for LANL Operations have been met, are ongoing, or are on hold until preceding actions are taken.



1 INTRODUCTION

The “Mitigation Action Plan for Los Alamos National Laboratory” (MAP for LANL Operations) is a comprehensive plan for all current and ongoing mitigations identified in the “2008 Site-Wide Environmental Impact Statement” (SWEIS) and other National Environmental Policy Act (NEPA) documents. The MAP for LANL Operations discusses the measures that the U.S. Department of Energy (DOE)/National Nuclear Security Administration (NNSA) considered for the mitigation or reduction of potential adverse effects contributed to operations at Los Alamos National Laboratory (LANL). The MAP is a living document that is revised to incorporate additional mitigation requirements associated with additional records of decision (RODs) and NEPA decisions or to meet the objectives established in the 2008 SWEIS and other NEPA documents.

NNSA Policy, NAP-451.1, National Environmental Policy Act Compliance Program, requires the tracking and annual reporting of the progress made in implementing mitigations and the effectiveness of the mitigation actions committed to in a NEPA decision document and documented in the associated MAPs. This “Mitigation Action Plan Annual Report” (MAPAR) fulfills this requirement, documenting the mitigation actions identified in the MAP for LANL Operations and subsequent MAPs associated with the operation of LANL. As required by the MAP for LANL Operations, a draft MAPAR that summarizes the work conducted by LANL during the previous fiscal year (FY) is submitted for review to the DOE/NNSA Los Alamos Field Office, and this office finalizes and publishes the MAPAR.

The MAP for LANL Operations requires tracking of mitigation actions in a log that includes information regarding the scope, schedule, interim milestones, deliverables, and closures of the mitigation actions and any issues identified during the previous FY. The MAPAR provides the completed tracking log that summarizes the major actions taken during the previous FY (Table 3-1).

During the preparation of the MAPAR, the MAP for LANL Operations is reviewed to determine whether the mitigation actions remain effective and if any mitigation actions have been completed and need to be formally closed. Revision of the MAP for LANL Operations may be recommended in the MAPAR to address significant changes, new actions, or deficiencies.

This MAPAR reports on the status of mitigation commitments and all executed actions for mitigation commitments that have taken place during FY 2024.

2 BACKGROUND

In May 2008, the 2008 SWEIS was published. Since then, two associated RODs have been published. The first ROD was published in September 2008, and the second ROD was published in June 2009 (DOE 2008a; 2008b, 2009). In January 2009, the original 2008 SWEIS MAP (DOE 2008c) was finalized. In November 2010, the 2008 SWEIS MAP was revised (DOE 2010a) to incorporate the MAP associated with the “Final Environmental Assessment for the Expansion of the Sanitary Effluent Reclamation Facility and Environmental Restoration of Reach S-2 of Sandia Canyon at Los Alamos National Laboratory, Los Alamos, New Mexico” (DOE 2010b). Following this revision, the 2008 SWEIS MAP was revised several more times during FYs 2014 and 2016 (DOE 2014, 2016) to close out completed mitigations and to add new mitigations identified in other NEPA documents, such as environmental assessments (EAs).

3 MITIGATION ACTION COMMITMENTS

The mitigation actions are outlined in the MAPAR Tracking Log for FY 2024, Table 3-1. These actions are based on the mitigation measures and commitments that were previously incorporated in the 2008 SWEIS alternatives and includes other mitigation measures and commitments from previous NEPA decisions. Table 3-2 provides a separate list for mitigations that are on indefinite hold based on project status, typically being cancelled.

In FY 2024, the mitigation commitments identified in the MAP for LANL Operations have been met, are ongoing, or are on hold until preceding actions are taken.

Table 3-1. Mitigation Tracking Log for FY 2024

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ¹	Recommendation	Responsible Party
Special Environmental Analysis Mitigations	Monitor biota and sediment contamination behind the Los Alamos Canyon weir and the Pajarito Canyon Flood Retention Structure (FRS) and report results in the Annual Site Environmental Report (ASER).	DOE/SEA-03 (DOE 2000)	<ul style="list-style-type: none"> Collected small mammal and understory vegetation samples in June 2023 from Los Alamos Canyon. Sent samples to offsite analytical laboratories for radionuclide, inorganic element, polychlorinated biphenyls (PCBs), and/or per- and polyfluoroalkyl substances (PFAS). Statistically analyzed the 2022 data and reported the data in the 2023 ASER (LANL 2024a). Some radionuclides, including americium-241 and plutonium-239/-240, continue to exceed the regional statistical reference levels in small mammals collected in Los Alamos Canyon; however, these concentrations are below levels associated with adverse effects. 	Annual requirement complete	<ul style="list-style-type: none"> Recommend the cessation of biota monitoring at the Pajarito Canyon FRS; it is no longer needed, citing that <ul style="list-style-type: none"> the majority of radionuclide and chemical concentrations are below regional statistical reference levels, all radionuclide and chemical concentrations are below levels that are associated with adverse effects, and the majority of constituents are stable over time (LANL 2024b). Recommend that the Los Alamos Canyon weir remain operational and that biota monitoring there be reduced to small mammals only and on a triennial basis, which will coincide with monitoring efforts that are conducted downstream of the weir (LANL 2024b). 	LANL Environmental Protection and Compliance (EPC) DOE Environmental Management Newport News Nuclear BWXT (N3B)
	Periodically remove sediment from the Los Alamos Canyon weir.		No sediments have been removed in FY 2024 from the sediment detention basins behind the Los Alamos Low-Head Weir.	Ongoing	Continue maintenance on clean-outs as necessary.	DOE Environmental Management N3B

¹ Green is an annual completed action; yellow is an ongoing action; red is a closed or on-hold mitigation.

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ¹	Recommendation	Responsible Party
Flood and Sediment Retention Structure	Perform a field visit and inspection triennially of the FRS for structural integrity and safe operations until removed.	DOE/EA-1408 (DOE 2002)	<ul style="list-style-type: none"> Issued (bi)annual inspection of the Pajarito Canyon FRS on September 12, 2023 (UIDO-RPT-003-R2); no corrective actions are recommended at this time. Inspections are biannual, and the last one occurred in FY 2023; therefore, no inspection took place in FY 2024. The next inspection is scheduled FY 2025. Recommendations from the FY 2023 inspection are included in the Recommendation column. 	Annual requirement complete	<ul style="list-style-type: none"> The portion of the existing access road from the top of the mesa bench to the canyon bottom on the northwest side of the structure (~200 yd) should not be used without an extensive geotechnical evaluation, design, and reconstruction. Because of landslide risk, access to the existing road should be administratively restricted. Utilities & Infrastructure should work with NNSA Los Alamos Field Office (NA-LA) to begin development of a decontamination, decommissioning, and demolition plan for the FRS in accordance with DOE/EA-1408 (DOE 2002) recommendation for its removal once significant structural deficiencies are observed. 	NA-LA LANL Utilities and Institutional Facilities Division
	<ul style="list-style-type: none"> Remove portions of the FRS in accordance with DOE/EA-1408. Recycle demolition spoils from FRS decontamination, decommissioning, and demolition, as appropriate. 		Not applicable	Mitigation on hold	<ul style="list-style-type: none"> Recommend development of a decontamination, decommissioning, and demolition plan for the FRS structure. Remain on hold pending removal of the FRS. 	NA-LA LANL
	<ul style="list-style-type: none"> Consider leaving an aboveground portion of the FRS equivalent to the dimensions of a low-head weir to retain potentially contaminated sediments on LANL land. Remove aboveground portions of the steel diversion wall below the FRS. Re-contour and re-seed disturbed areas to protect surface water quality in Pajarito Canyon after the FRS is removed. 		Not applicable	Mitigation on hold	Remain on hold pending removal of the FRS.	NA-LA LANL Associate Directorate for Nuclear and High-Hazard Operations LANL EPC

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ¹	Recommendation	Responsible Party
Off-Site Source Recovery Project (OSRP)	Institute adequate controls on quantities and methods of storing sealed sources that contain cobalt-60, iridium-192, or cesium-137 to mitigate effects of potential accidents.	2008 LANL SWEIS ROD DOE/EIS-0380 (DOE 2008b)	Not applicable	Mitigation on hold; LANL currently does not accept sealed sources that contain cobalt-60, iridium-192, or cesium-137.	Not applicable	NA-LA LANL Nuclear Engineering and Nonproliferation Division
Wildland Fire Management	Continue to further reduce risks from wildfire by shipping legacy transuranic waste currently stored in the Technical Area 54 domes to the Waste Isolation Pilot Plant (WIPP).	DOE Wildfire Management Policy (February 2004) 2001 Federal Wildland Fire Management Policy and Implementing Actions (January 2001) SWEIS MAPs DOE/EIS-0380 (DOE 2008c)	N3B participated in 22 legacy transuranic (TRU) waste shipments to WIPP for disposal in FY 2024.	Annual requirement complete	Continue shipments to WIPP.	NA-LA DOE Environmental Management N3B LANL EPC
Chromium Plume Control Interim Measure and Plume-Center Characterization	Mitigate potential noise and light impacts to the Mexican spotted owl during construction, drilling, and pumping activities by <ul style="list-style-type: none"> planning activities outside the breeding season, selecting equipment with lower noise levels, using noise barriers where appropriate, and directing all lighting away from the canyon and habitat areas. 	DOE/EA-2005 MAP (DOE 2015a; 2015b)	Met noise and tree-cutting restrictions for FY 2024 associated with the Endangered Species Act and the LANL Threatened and Endangered Species Habitat Management Plan (LANL 2022).	Ongoing	Continue implementation.	DOE Environmental Management N3B

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ¹	Recommendation	Responsible Party
Chromium Plume Control Interim Measure and Plume-Center Characterization (cont.)	Paint infrastructure so it blends in with the landscape to minimize potential visual impacts. Comply with the LANL Cultural Resources Management Plan (LANL 2017b).	DOE/EA-2005 MAP (DOE 2015a; 2015b)	No actions were taken in FY 2024.	Ongoing	Continue implementation.	DOE Environmental Management N3B
	Comply with the Endangered Species Act and adhere to LANL Threatened and Endangered Species Habitat Management Plan (LANL 2022).		Met restrictions for the Endangered Species Act and the LANL Threatened and Endangered Species Habitat Management Plan (LANL 2022) for FY 2024.			
	Generated “Floodplain Assessment of the Chromium Plume Control Interim Measure and Plume-Center Characterization in Mortandad Canyon” in accordance with best management practices to minimize short- and long-term negative impacts.		No excavations or soil stockpiles occurred in FY 2024.			
	Limit well pad footprints to the smallest size possible to minimize land-use impacts.		Based on cultural assets, R-80 was moved to a less impacted location.		Continue as necessary.	
	Revegetate with native perennial vegetation to restore the area as infrastructure is downsized or is no longer needed.		Carried out a vegetation plan that included native perennial vegetation. Began preparations for the previous R-80 well pad rehabilitation. Seeded with a native seed mix that conforms to LANL’s Pollinator Protection Plan (LANL 2021).			

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ¹	Recommendation	Responsible Party
Chromium Plume Control Interim Measure and Plume-Center Characterization (cont.)	<p>Implement Environmental Protection Agency–regulated National Pollutant Discharge Elimination System General Permit requirements for discharges from construction activities to minimize the discharge of potential pollutants to watercourses.</p> <p>Require best management practices that will minimize short-term negative impacts associated with Discharge Permit 1793.</p>	DOE/EA-2005 MAP (DOE 2015a; 2015b)	Met all National Pollutant Discharge Elimination System General Permit requirements for FY 2024.	Ongoing	Continue implementation.	DOE Environmental Management N3B
Wildland Fire/Forest Management	<p><i>Fire Road Stabilization</i></p> <p>Update the LANL Engineering Standards to include standards for new unpaved roads to be more resilient to damage from storm water.</p> <p>Inspect fire roads and propose and prioritize improvements to reduce storm water erosion. Prioritized projects would be incorporated into existing storm water work planning. If necessary, recommend the closure or replacement of fire and other unimproved roads.</p> <p>Develop a procedure for monitoring cultural resource sites near fire roads and firebreaks. Include additional monitoring requirements and treatments as needed.</p>	Wildfire Supplemental Environmental Assessment (SEA; DOE/EA-1329-S1) (DOE 2019a)	<p>Fire roads were driven and inspected for wildland fire response standards in FY24 to determine if improvements were necessary. No fire roads were identified for repairs beyond maintenance grading/blading.</p> <p>Additional archeological monitor observation of mowing operations was added in FY2024 to limit potential impacts of mowers entering archeological sites.</p>	Ongoing	Continue implementation.	<p>Standards for new unpaved roads - Utilities and Institutional Facilities</p> <p>Fire road stormwater inspection – Stormwater Program (EPC-Stormwater) EMD-)</p> <p>Cultural Resource site monitoring – Cultural Resources Program (EPC)</p>

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ¹	Recommendation	Responsible Party
Wildland Fire/Forest Health (cont.)	Develop and implement an annual operating plan for fuels mitigation and forest health actions.	Wildfire Supplemental Environmental Assessment (SEA; DOE/EA-1329-S1) (DOE 2019a)	EMD-PLAN-201, R4, Los Alamos National Laboratory Wildland Fire and Forest Management Annual Operating Plan for Fiscal Year 2024 was published 5/9/2024.	Ongoing	Continue implementing, review process adequacy.	LANL Emergency Management Lead Division with EPC input
	Jemez Mountains Salamander Habitat Protection: Update the LANL Pesticide Discharge Management Plan to prohibit broadcast herbicide use in floodplains or Jemez Mountains salamander habitat.		The LANL Pesticide Discharge Management Plan requires consultation with stormwater and biological resources subject matter experts prior to herbicide applications. No additional revisions to the plan are necessary.	Ongoing	Recommend closure of mitigation.	LANL EPC-Lead
	Fuels Mastication Adaptive Management		Fuel loading is collected for wildland fire pre- and post-treatment mitigation inventory for EMD wildland fire fuels treatment reduction all open space wildland fire mitigation thinning treatments per “Monitoring and Documentation of Forest Management Activities” (EPC-TP-01-2022) and includes understory shrubs and masticated fuel depth. Identified opportunities to use this data for more accurate representation of ground fuels in models to understand how thinning treatments affect fire risk.	Ongoing	Continue implementation.	NA-LA LANL EPC/EMD
Wildland Fire/Forest Health (cont.)	Development or adoption of a LANL invasive species best management practices document	Wildfire Supplemental Environmental Assessment (SEA; DOE/EA-1329-S1) (DOE 2019a)	<ul style="list-style-type: none"> Revised Invasive Plant Species Management Plan (LA-UR-22-32639, R3), published May 2024 is being implemented. 	Ongoing	Continue implementation of Plan.	LANL EPC

Table 3-2. “Indefinite Hold” Mitigation Tracking Log for FY 2024

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ²	Recommendation	Responsible Party
Construction and Operation of a Second Fiber-Optic Line to LANL	Transportation: <ul style="list-style-type: none"> Develop traffic safety plan for use during construction activities. Restore Forest Service Road 24 to preconstruction conditions. Maintain Forest Service Road 24 to protect from erosion and vehicle impacts. 	Fiber-Optic EA (DOE/EA-2122) (DOE 2020)	No actions taken in FY2024.	Mitigation is on indefinite hold.	The construction of the second fiber-optic to LANL is unlikely to happen. San Ildefonso Services has received funding to place a fiber-optic line from White Rock down Hwy 4/NM 503. LANL is likely to use this line instead of building a second line. Mitigation on indefinite hold.	Not applicable
	Erosion and Sediment Control <ul style="list-style-type: none"> Use erosion and sediment control best management practices during construction activities. 		No actions taken in FY2024.	Mitigation is on indefinite hold.		Not applicable
	Site Restoration <ul style="list-style-type: none"> Restore disturbed areas to a natural appearance and revegetate. 		No actions taken in FY2024.	Mitigation is on indefinite hold.		Not applicable
	Special Wildlife Considerations <ul style="list-style-type: none"> Conduct construction operations to minimize potential disturbance to wildlife. Design structures to reduce visual impact, reflection and glare. 		No actions taken in FY2024.	Mitigation is on indefinite hold.		Not applicable

² Green is an annual completed action; yellow is an ongoing action; red is a closed or on-hold mitigation.

Topic	Mitigation Action Commitment	NEPA Driver	Action Taken	Mitigation Status ²	Recommendation	Responsible Party
	Housekeeping <ul style="list-style-type: none"> Keep construction sites and access roads in an orderly condition. 		No actions taken in FY2024.	Mitigation is on indefinite hold.		Not applicable
Proposed Construction and Operation of a Solar Photovoltaic (PV) Array	Long-term avian monitoring study at the proposed PV array site and adjacent habitat	Final EA for the Proposed Construction and Operation of a Solar Photovoltaic Array (DOE 2019b)	No actions taken in FY 2024.	Mitigation on hold.	Project cancelled - Mitigation on indefinite hold.	NA-LA LANL EPC



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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
ASER	Annual Site Environmental Report
DOE	(U.S.) Department of Energy
EA	Environmental Assessment
EPC	Environmental Protection and Compliance (Division)
FRS	flood retention structure
FY	fiscal year
LANL	Los Alamos National Laboratory
MAP	mitigation action plan
MAPAR	mitigation action plan annual report
N3B	Newport News Nuclear BWXT Los Alamos
NA-LA	NNSA Los Alamos Field Office
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
PV	photovoltaic array
ROD	record of decision
SWEIS	site-wide environmental impact statement
WIPP	Waste Isolation Pilot Plant