PROJECT/ACTIVITY TITLE: Supplemental Environmental Projects: Ancho and Sandia Canyons Watershed Enhancement Proposals	**Accession No**: 22124,23059, and 22181 **PRID No:** 16P-0248 V1, 17P-0149, and 16P-0242	**Date**: 12/27/2017
PURPOSE: To be in compliance with the 2016 Settlement Agreement between New Mexico Environment Department (NMED) and the Department of Energy (DOE) that stipulated the identification and completion of Supplemental Environmental Projects (SEPs) at Los Alamos National Laboratory (LANL). Stormwater and/or watershed enhancement projects are one of the identified SEPs categories.[1] Implementation of the watershed enhancement projects in the North Ancho and lower Sandia watersheds is designed to reduce soil erosion, slow stormwater flow and improve water quality.		
Location: North Ancho Canyon (TA-39) and Lower Sandia Canyon (TA-72)	**Project Contact**: Terrill Lemke, ADESH-EPC-CP, 665-2397, tlemke@lanl.gov Karla Sartor, LANS EPC-ES, 505-667-8719, ksartor@lanl.gov	

[1] Settlement Agreement Number HWB-14-20. This is the agreement between the Hazardous Waste Bureau of the New Mexico Environmental Department and the U.S. Department of Energy and Los Alamos National Security, LLC. The agreement settles and completely resolves the alleged violations contained in the December 6, 2014 Los Alamos National Laboratory Order, and any future claims, penalties, fines, liabilities or other sanctions against the Respondents and their officers, directors, employees, agents, constituent agencies, contractors, subsidiaries, successors, assigns, trustees, receivers, and other affiliates arising from or related to the February 14, 2014 incident at the Waste Isolation Pilot Plant.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COVERAGE: Department of Energy National Environmental Policy Act Implementing Procedures 10 Code of Federal Regulations Part 1021, Appendix B to Subpart D of Part 1021—Categorical Exclusions Applicable to Specific Agency Actions [there are three categorical exclusions to the proposed actions]:

B1.3 Routine maintenance

Routine maintenance activities and custodial services for buildings, structures, rights-of-way, infrastructures (including, but not limited to, pathways, roads, and railroads), vehicles and equipment, and localized vegetation and pest control, during which operations may be suspended and resumed, provided that the activities would be conducted in a manner in accordance with applicable requirements. Custodial services are activities to preserve facility appearance, working conditions, and sanitation (such as cleaning, window washing, lawn mowing, trash collection, painting, and snow removal). Routine maintenance activities, corrective (that is, repair), preventive, and predictive, are required to maintain and preserve buildings, structures, infrastructures, and equipment in a condition suitable for a facility to be used for its designated purpose. Such maintenance may occur as a result of severe weather (such as hurricanes, floods, and tornados), wildfires, and other such events. Routine maintenance may result in replacement to the extent that replacement is in-kind and is not a substantial upgrade or improvement. In-kind replacement includes installation of new components to replace outmoded components, provided that the replacement does not result in a significant change in the expected useful life, design capacity, or function of the facility. Routine maintenance does not include replacement of a major component that significantly extends the originally intended useful life of a facility (for example, it does not include the replacement of a reactor vessel near the end of its useful life). Routine maintenance activities include, but are not limited to:
(k) Erosion control and soil stabilization measures (such as reseeding, gabions, grading, and revegetation).

B1.33 Stormwater runoff control

Design, construction, and operation of control practices to reduce stormwater runoff and maintain natural hydrology. Activities include, but are not limited to, those that reduce impervious surfaces (such as vegetative practices and use of porous pavements), best management practices[2] (such as silt fences, straw wattles, and fiber rolls), and use of green infrastructure or other low impact development practices (such as cisterns and green roofs).

B6.1 Cleanup activities

Small-scale, short-term cleanup actions, under RCRA, Atomic Energy Act, or other authorities, less than approximately 10 million dollars in cost (in 2011 dollars), to reduce risk to human health or the environment from the release or threat of release of a hazardous substance other than high-level radioactive waste and spent nuclear fuel, including treatment (such as incineration, encapsulation, physical or chemical separation, and compaction), recovery, storage, or disposal of wastes at existing facilities currently handling the type of waste involved in the action. These actions include, but are not limited to:
(i) Drainage controls (such as run-off or run-on diversion) if needed to reduce offsite migration of hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum or natural gas products or to prevent precipitation or run-off from other sources from entering the release area from other areas.

BACKGROUND

In 2014, the New Mexico Environment Department's (NMED) Hazardous Waste Bureau (HWB) issued compliance order HWB-14-20 for violations of the New Mexico Hazardous Waste Act. These violations stemmed from the improper packaging of transuranic waste at Los Alamos National Laboratory (LANL). The waste was transported to and disposed at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. The

resulting 2016 Settlement Agreement[3] between NMED and the U.S. Department of Energy (DOE) stipulates that Supplemental Environmental Projects shall be completed. Six stormwater and/or watershed enhancement subprojects at LANL comprise one part of the Watershed Enhancement Supplemental Environmental Projects. This review covers two of five subprojects.

The goal of the watershed enhancement Supplemental Environmental Project is to "slow stormwater flow and decrease sediment load to improve water quality in the area, allowing surface water management at a watershed scale."[2] Addressing sediment load would improve water quality because stormwater runoff high in sediments carries a number of pollutants off developed sites. Initial project locations were identified by a core team led by the NMED Oversight Bureau that included subject matter experts from DOE, NMED Surface Water Quality Bureau, NMED Hazardous Waste Bureau, Los Alamos County, the Pueblo de San Ildefonso, and Los Alamos National Security, LLC (LANS).

The North Ancho Canyon and Lower Sandia Canyon proposals are addressed in this NEPA determination as they are both proposed SEPs with similar goals, watershed enhancement controls, design and implementation schedule, environmental effects and are ripe for analysis.

DESCRIPTION OF PROPOSED ACTIONS

North Ancho Canyon

The first project is located in Technical Area (TA) 39 in the north Ancho Canyon watershed adjacent to Ancho Road. Ancho Road begins at New Mexico State Route 4 and runs northward up the canyon. Two sets of structures will be built in this area, an upper project site control and a lower project site control located approximately 0.5 miles (0.8 kilometers) downstream from the upper project site (Figure 1). Both project site controls will be located in the canyon bottom.

The work at the upper project site includes, but is not limited to, the installation of a Redi-Rock® block wall rip rap apron and associated improvements to slow water flow, and a pipe to allow low flows to pass through the structure (Figure 2). Approximately six trees will be removed in this action. The lower project site work includes, but is not limited to, the installation of an earthen berm covered with turf reinforcement mats across the channel and along the southeast channel bank, a pipe to allow low flows to pass through the structure, rip rap at the lower terminus, and a berm spillway (Figure 3).

Both sites will require short construction access roads built for these areas that will require minor grading and clearing. Each access road will be reseeded with an appropriate native seed mix at the completion of the project.

[3] Settlement Agreement and Stipulated Final Order resolving Compliance Order NO. HWB-14-20 (CO), the February 14, 2014, incident at the DOE-owned Waste Isolation Pilot Plant. Website accessed April 2017: https://www.env.nm.gov/OOTS/documents/LANLSASFOFINAL1_22_16.pdf.

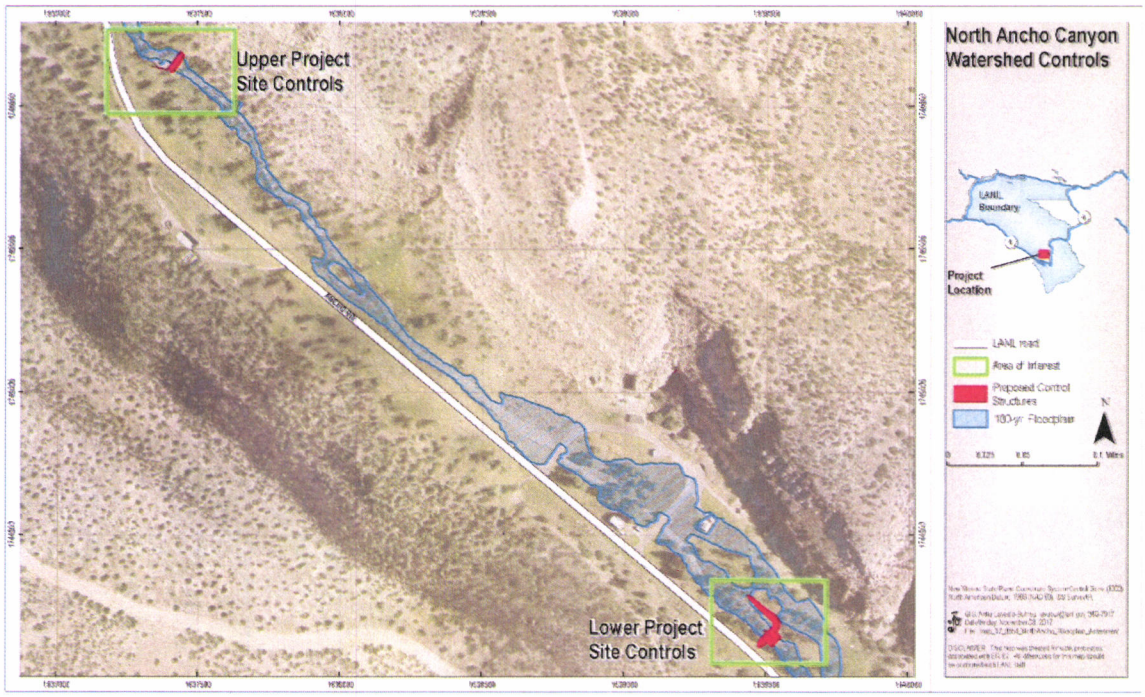

Figure 1. Proposed project areas in north Ancho Canyon watershed in TA-39

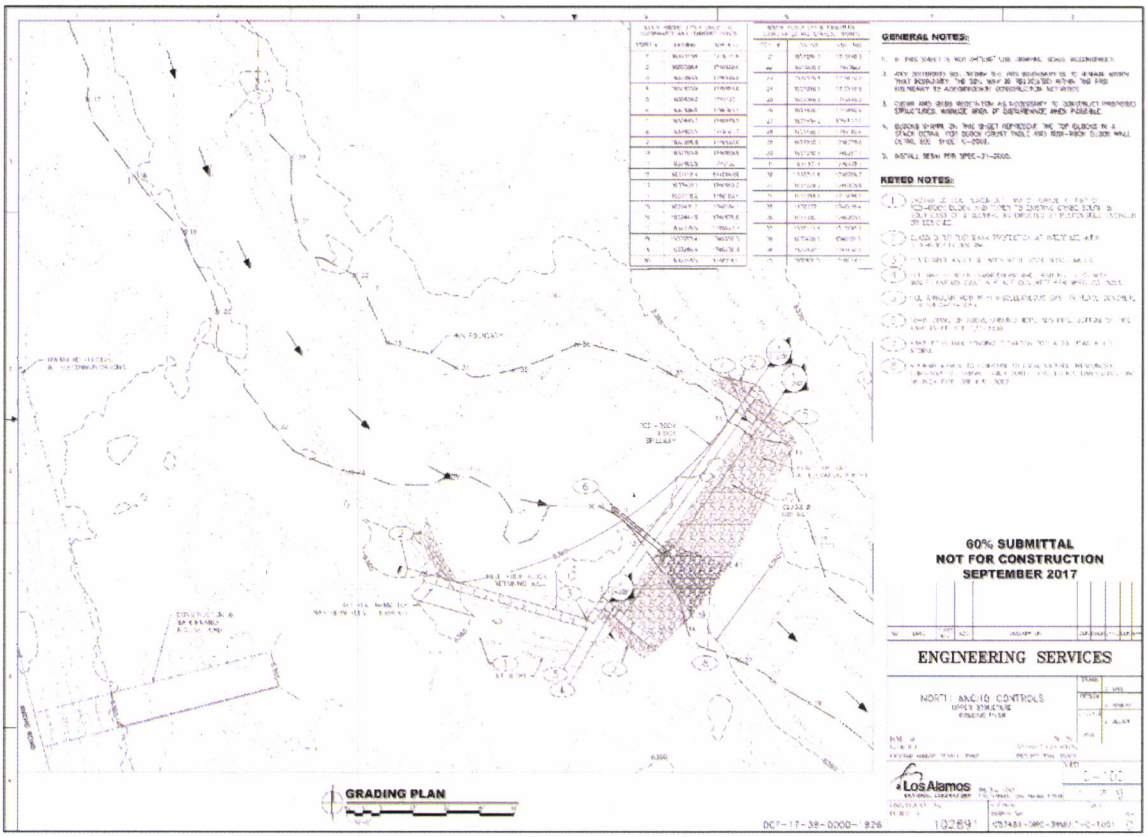

Figure 2. The 60% engineering design map for the upper site in north Ancho Canyon

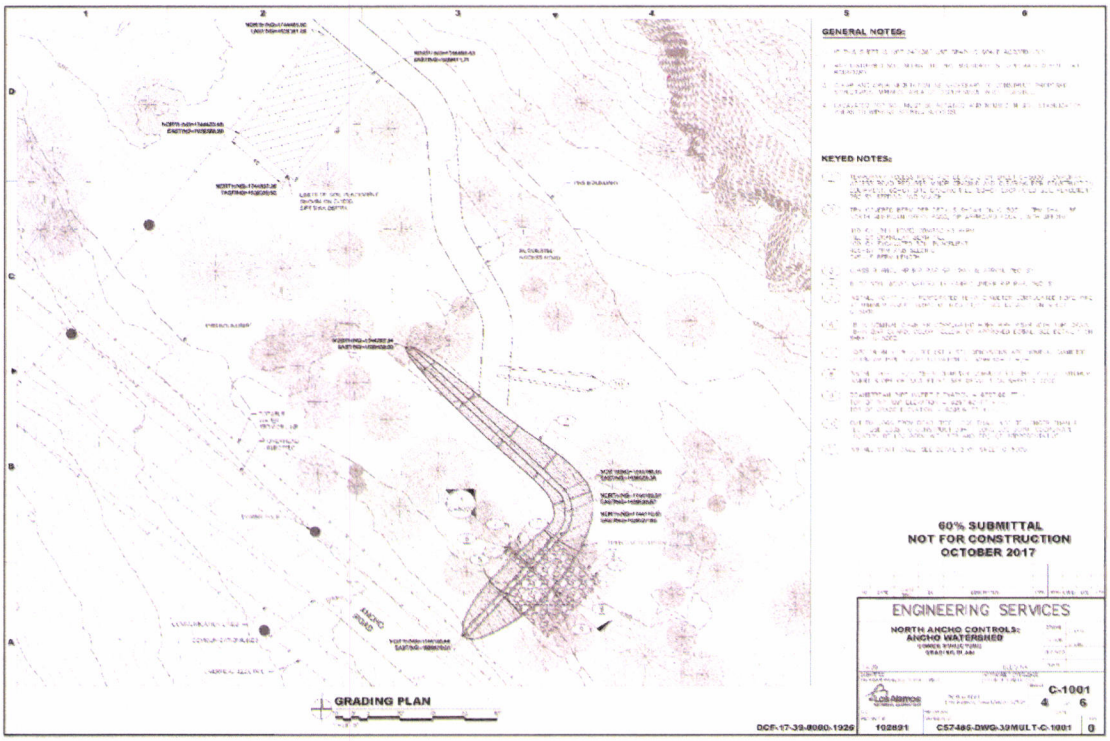

Figure 3. The 60% engineering design map for the lower site in north Ancho Canyon

Lower Sandia Canyon

The second project is located in TA-72 in the lower Sandia Canyon watershed on the north side of East Jemez Road. The objective of this project is to reduce peak flow velocities, and reduce channelization and sediment transport. There are upper and lower project areas (Figure 4) both of which are located in the canyon bottom.

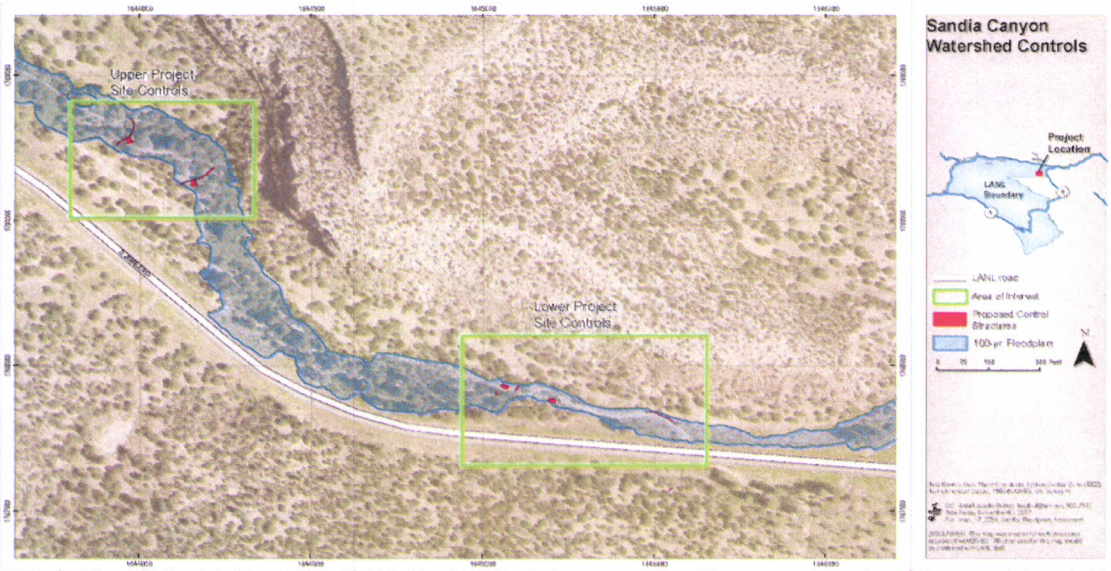

Figure 4. Proposed project areas in the lower Sandia Canyon watershed in TA-72

The objective at the upper project site is to slow stormwater runoff and mitigate the local channel incision by spreading flows into the well-vegetated floodplain. This will be achieved by installing two sets of grade control structures, curved upstream to spread flow, with a smaller energy dissipation structure below (Figure 5). The grade control structures and energy dissipation structures will be constructed of pre-cast concrete blocks with rip rap and earthen berms. There will be a short construction access road built for this area that will require minor grading and clearing and will be temporary in nature.

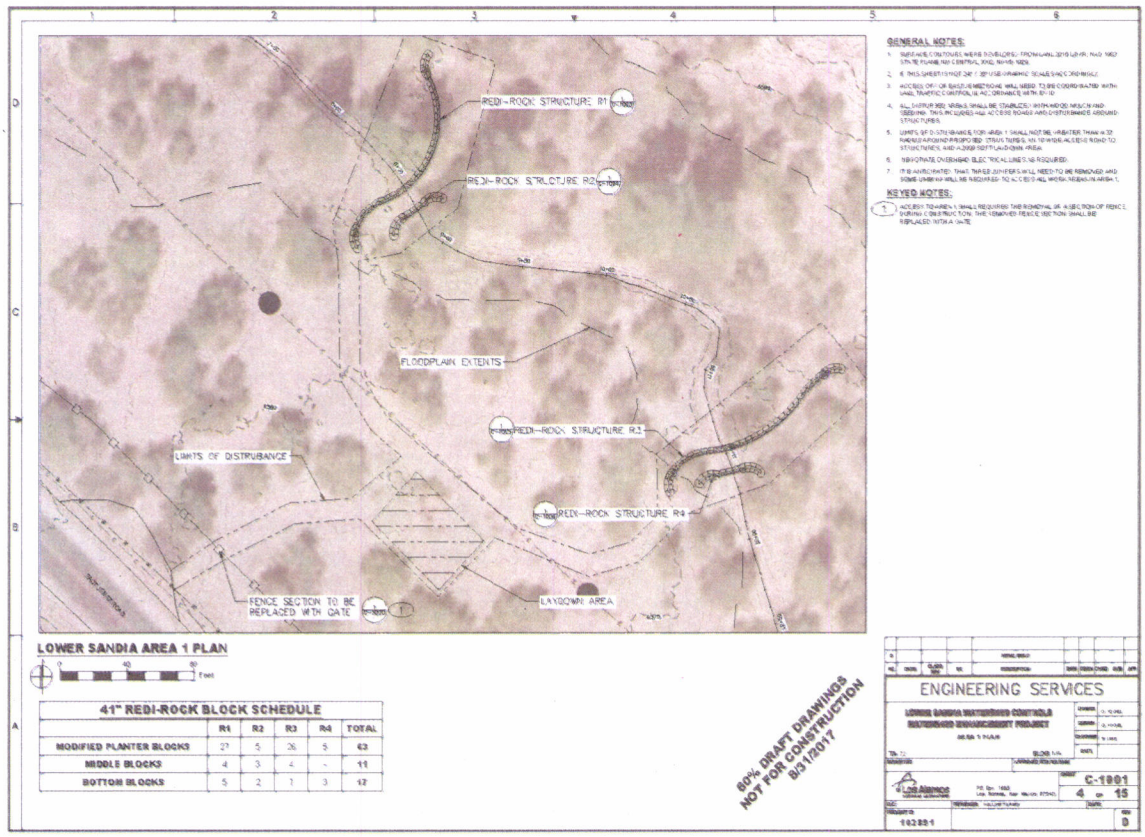

Figure 5. The 60% engineering design map for the upper site in lower Sandia Canyon

The lower project area is approximately 0.4 miles (0.6 kilometers) down-canyon from the upper project area. The vegetation cover at this site is similar to the upper site. The objective at the lower project site is to address advancing headcuts and stabilize a deteriorating channel bend, which would eliminate sources of runoff sediment load. Two small rock plunge pools will be installed at locations with headcuts to dissipate energy, and several rock check dams will be installed to supplement the functionality of the plunge pools (Figure 6). Concrete 24-inch A-Jacks® armoring units would be placed in a highly erodible channel section downstream of the structures described above. These units would provide bank stabilization for a 90-foot (27-meter) section. A-Jacks® are entrenched and assembled in a proprietary stacking and interlocking arrangement, then backfilled. Two rows of 24-inchA-Jacks® will be used. The bottom row may be partially buried in the channel bottom. There would be three short construction access roads built for this area that would require minor grading and clearing and will be temporary in nature.

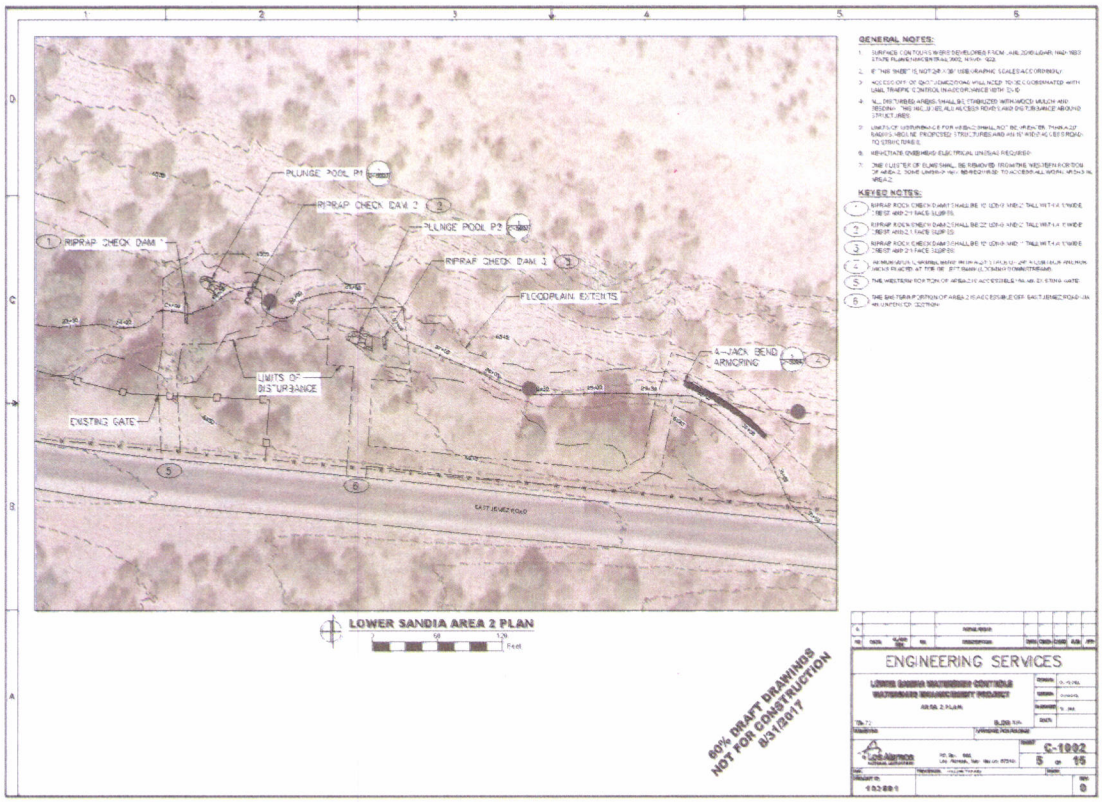

Figure 6. The 60% engineering design map for the lower site in lower Sandia Canyon

IMPACT ASSESSMENT

By design the Proposed Actions are to mitigate and prevent long-term adverse environmental impacts. See Table 1 below for an assessment of potential impacts.

Table 1. Environmental Factors Checklist

Environmental Factor	Analysis
Land Use	The Proposed Actions would be compatible with existing land use.
Visual	Natural rock materials will be used for many of the proposed structures. Redi-Rock® concrete blocks will also be used, but they are shaped to look like natural rock on the outer surface. The A-Jacks® concrete bank armoring may be partially buried and should partially fill with sediment and vegetation over time.
Geology and Soils (geologic hazards, soil productivity, capability, erodibility, and mass failure)	The Proposed Actions will not result in any adverse changes or disruptions to geology and soils. Both projects would result in soil stabilization, reduced sediment transport and improved water quality.

Environmental Factor	Analysis
Water (surface and groundwater quality and quantity, groundwater recharge, streamflow regimes)	Reducing erosion would lessen sediment load and improve surface water quality in Sandia and Ancho canyons. A New Mexico Section 401 Water Quality Certification and an Army Corps of Engineers 404 Dredge and Fill Permit will be required for this project. The Army Corps of Engineers would permit the structures to function as their intended purpose (reducing erosion). LANS may be required to conduct maintenance after large storm events to ensure proper functioning. Best management practices used at LANL for sediment control, run-on/run-off control, and erosion controls (including gabions) are described in the Los Alamos National Laboratory Storm Water Best Management Practices Manual, Los Alamos National Laboratory report LA-UR-11-10371, March 2011.
Non - radiological Air Quality	The Proposed Actions may result in very minor dust and equipment exhaust emission only during construction.
Radiological Air Quality	The Proposed Actions will not result in an increase in radiological air emissions.
Noise	Noise impacts would be temporary (only during construction activities- approximately two months) and there are no noise sensitive species in the area.
Ecological (floodplains, wetlands, threatened or endangered species and habitat, migratory birds, exotic organisms)	Potential impacts to the floodplain were evaluated in a floodplain assessment that covers both canyons[4]. The National Nuclear Security Administration Los Alamos Field Office determined that this project will not result in long-term adverse impacts to the beneficial values of the 100-year floodplain. The projects will conform to applicable floodplain protection standards. Temporary disturbance within the floodplain will cease following completion of construction activities. Best management practices will be implemented, including erosion and sediment control measures will be utilized during construction to minimize any potential harm. These proposed projects will not significantly modify existing elevations and flow paths within the floodplain upstream and downstream of the projects from pre-project conditions to post-project conditions or result in other long-term negative impacts to the floodplain and its functionality. No effects to lives and property associated with floodplain modifications are anticipated. There may be minor, temporary and highly localized disturbance to fauna during construction. The project is not within the habitat of any protected species. Compliance with the Migratory Bird Treaty Act requires that no vegetation removal occurs during the peak bird breeding season, May 15 through July 31, unless biological resources staff at LANL have conducted a nest check to ensure that there are no nesting birds present. If active nests are found, the nest tree or shrub will be left until the nesting is complete. The potential impacts to ecological resources are bounded by the 2008 SWEIS.
Human Health – Radiological Impacts on the Public	There would be no change in current conditions.
Human Health – Chemical Impacts on the Public	There would be no change in current conditions.
Human Health – Worker Health	The work areas are located within Consent Order[5] sites and all work would be conducted in accordance with Consent Order requirements. The potential impacts to worker health are bounded by the 2008 SWEIS.

[4] *Floodplain Assessment for the North Ancho and Lower Sandia Controls Supplemental Environmental Projects at Los Alamos National Laboratory*, Los Alamos National Laboratory report LA-UR-17-30209, November 2017.

[5] The Consent Order is an agreement between the New Mexico Environment Department and DOE to remediate contaminated sites at LANL. The Consent Order is issued pursuant to the New Mexico's Hazardous Waste Act and Solid Waste Acts. The original Consent Order was issued in 2005 and superseded by a new Consent Order in 2016.

Environmental Factor	Analysis
Cultural Resources (archeological and historical)	There are cultural resources adjacent to the proposed work area in Sandia and Ancho canyons. Prior to construction, cultural resources staff will mark these sites for avoidance. There will be no effect to cultural resources.
Socioeconomics	There would be no socioeconomic impacts.
Infrastructure (roads, utility corridors, communications systems, energy & fuels, distribution systems, and water)	Infrastructure is adequate to support the Proposed Actions.
Waste Management	No change to current conditions.
Transportation	Very minor temporary increase of vehicles during construction activities.
Facility Accidents	No change to current conditions.
Environmental Justice	No change to current conditions.

CONCLUSION

Based on this NEPA determination analysis, there are no extraordinary circumstances related to the proposed actions that may affect the significance of the environmental effects or threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders. Consequently, no further NEPA analysis is necessary or required.

NEPA Determination

Based on my review of the Proposed Actions, as the National Nuclear Security Administration's Los Alamos Field Office (NA-LA) NEPA Compliance Officer (as authorized under DOE Policy 451.1), I have determined that the Proposed Actions as described herein, falls within the DOE NEPA Implementing Procedures listed in 10 CFR Part 1021, Subpart D, Appendix B 10 CFR Part 1021, Appendix B to Subpart D of Part 1021—Categorical Exclusions Applicable to Specific Agency Actions: There are three categorical exclusions to the proposed actions: *B1.3 Routine maintenance (k), B1.33 Stormwater runoff control, and B6.1 Cleanup activities (i).*

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects or threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or executive orders. If changes are made to the scope of the actions so that it is no longer bounded by the enclosed description, or the projects change to encompass other actions, NEPA requirements for the actions will need to be reassessed at that time and further analysis may be required.

NA-LA NEPA Compliance Officer: Jane Summerson **Signature:** J Summerson, NCO	**Date:** 1/12/18