ESHID-600513

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Date: JUN 26 2015
Refer To: ADESH-15-093
LAUR: 15-24400; 15-24404
Locates Action No.: U1500872

RECEIVED
JUN 26 2015
NMED
Hazardous Waste Bureau

John Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Submittal of the Response to the Disapproval for the 2013 Excavation of the Los Alamos Canyon Low-Head Weir and Revision 1 of the Report

Dear Mr. Kieling:

Enclosed please find two hard copies with electronic files of the response to the disapproval for the 2013 Excavation of the Los Alamos Canyon Low-Head Weir and Revision 1 of the Report.

If you have any questions, please contact Steve Veenis at (505) 667-0013 (veenis@lanl.gov) or Cheryl Rodriguez at (505) 665-5330 (cheryl.rodriguez@em.doe.gov).

Sincerely,

Alison M. Dorries, Division Leader
Environmental Protection Division
Los Alamos National Laboratory

Sincerely,

Christine Gelles, Acting Manager
Environmental Management
Los Alamos Field Office

AD/CG/SV/DK:sm

Enclosures: Two hard copies with electronic files:
(1) Response to the Notice of Disapproval for the 2013 Excavation of the Los Alamos Canyon Low-Head Weir (EP2015-0101)
(2) 2013 Excavation of the Los Alamos Canyon Low-Head Weir, Revision 1 (EP2015-0102)
(3) An electronic copy of the redline-strikeout version of the report that includes all changes and edits to the document

Cy: (w/enc.)
Cheryl Rodriguez, DOE-EM-LA, MS A316
Steve Veenis, ADEP ER Program, MS M997
Public Reading Room (EPRR)
ADESH Records

Cy: (Letter and CD and/or DVD)
Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo
Dino Chavarria, Santa Clara Pueblo
Steve Yanicak, NMED-DOE-OB, MS M894
Danny Katzman (w/ MS Word files on CD)
PRS Database

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James Hogan, NMED-SWQB
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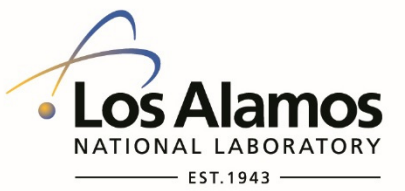
Annette Russell, DOE-EM-LA
David Rhodes, DOE-EM-LA
Dave McInroy, ADEP ER Program
Randy Erickson, ADEP
Jocelyn Buckley, ADESH-ENV-CP
Mike Saladen, ADESH-ENV-CP
Tony Grieggs, ADESH-ENV-CP
Alison Dorries, ADESH-ENV-DO
Michael Brandt, ADESH
Amy De Palma, PADOPS
Michael Lansing, PADOPS

LA-UR-15-24404
June 2015
EP2015-0102

2013 Excavation of the Los Alamos Canyon Low-Head Weir, Revision 1



Prepared by the Environmental Programs Directorate

EP2015-0102

2013 Excavation of the Los Alamos Canyon Low-Head Weir, Revision 1

June 2015

Responsible project manager:

Printed Name	Signature	Title	Organization	Date
Steve Veenis	Steve Veenis	Project Manager	Environmental Remediation Program	6-19-15

Responsible LANS representative:

Printed Name	Signature	Title	Organization	Date
Randall Erickson		Acting Associate Director	Environmental Programs	6/19/15

Responsible DOE representative:

Printed Name	Signature	Title	Organization	Date
Christine Gelles	Duff Mathes for	Acting Manager	DOE-EM-LA	6/25/15

This revision to the 2013 excavation of the Los Alamos low-head weir report incorporates changes required by the New Mexico Environment Department's (NMED's) notice of disapproval, dated March 3, 2015 (NMED 2015, 600271). Excavation of the basins behind the Los Alamos Canyon low-head weir began on April 1, 2013, and was completed on May 6, 2013. The basins were excavated to maximize the sediment-retention capacity for the 2013 summer monsoon season. Much of the total available capacity had been lost as a result of sediment accumulation that followed the Las Conchas fire. An estimated 6000 yd^3 (including postexcavation expansion) of sediment was removed from the three basins, transported approximately 0.5 mi up Los Alamos Canyon, and stockpiled at a former borrow pit (Figures 1 and 2). The borrow pit provides an ideal location for the disposition of the excavated sediment because of its available capacity and its isolation from potential storm water runoff. A layer of sediment approximately 6 in. thick was retained in the bottom of each basin to mitigate against potential infiltration into underlying bedrock (Figures 3 through 5).

Excavated sediment was removed from the basins using a front-end loader and transported in tandem wheel dump trucks upcanyon approximately 0.5 mi to a former borrow-pit basin. The borrow pit is bounded on three sides by elevated slopes. The sediment was placed on a plastic liner, compacted and contoured to match existing grade on the north and east sides, and hydroseeded with wood-fiber mulch and Los Alamos National Laboratory– (LANL-) approved native plant seed mix. In addition, a 3-ft-high runoff containment berm was constructed at the base of the open slope, tying in with the existing slope walls. Figures 6 through 9 are photographs taken on June 18, 2015, that show the current grade, vegetation established in the area, and the containment berm located along the west side. Vegetation cover and diversity are exceptional, and a substantial amount of the original hydromulch remains on the soil surface. There is virtually no evidence of soil erosion at the site.

Before excavation, samples were collected to characterize the material planned for excavation (Figure 10). Samples were collected for polychlorinated biphenyls, pesticides, herbicides, dioxins/furans, general chemistry, inorganics, and radionuclides. Four depth-integrated subsamples were collected for analysis from each of six areas within the lower basin to represent the mixed condition of excavated sediment. This approach ensured that finer-grained deposits, with typically higher constituent concentrations and most prevalent in the lower basin, were included in the samples. Table 1 provides information on the samples collected to characterize the material in the basins. The data are provided on the CD included with this report (Appendix A).

A screening comparison was conducted to support decisions regarding disposition of the excavated sediment. The approach used for the analysis is consistent with the approach taken to evaluate the same type of sediment deposits behind the low-head weir structure in 2009 (LANL 2009, 105294).

The data were first compared with sediment background values (BVs) (LANL 1998, 059730) or detection limits (for organic chemicals), and those values that exceeded BVs and detected organic chemicals (chemicals of potential concern [COPCs]) were compared with the residential soil screening levels (SSLs)/screening action levels (SALs) (LANL 2012, 228852; NMED 2012, 219971) and minimum ecological screening levels (ESLs) (LANL 2012, 226667) (Table 2). The following is a summary of the assessment:

- 51 analytes were detected.
    - ❖ For the 13 detected dioxin and furan congeners, the 2,3,7,8-tetrachlorodibenzodioxin– (TCDD-) equivalent concentration for mammals was calculated from the toxic equivalency factors referenced in NMED guidance (2012, 219971).
- 22 detected analytes were identified as COPCs based on comparisons to background for inorganic compounds and radionuclides and detection status for organic compounds.

- Maximum COPC concentrations were not greater than residential SSLs/SALs, and therefore no potential unacceptable human health risks are present for the materials behind the low-head weir.
- Maximum concentrations of barium, copper, cyanide, lead, manganese, nickel, zinc, and TCDD were greater than the respective minimum ESLs.

COPCs with concentrations greater than the minimum ESLs were further evaluated to determine if they have the potential for causing ecological risk (chemicals of potential ecological concern [COPECs]). The approach taken in this assessment was to compare measured concentrations for a given COPEC with the lowest-effect level ESLs (L-ESLs).

Table 3 lists the maximum concentrations of barium, copper, cyanide, lead, manganese, nickel, zinc, and TCDD. For comparison, the sediment and soil BVs as well as the minimum ESLs and L-ESLs are provided. In addition, the maximum concentrations measured in 2009 from the weir are presented as well as the maximum concentrations measured in postfire ash (samples collected after the Cerro Grande fire) (LANL 2004, 087390) because of the high ash content in the weir sediment.

The hazard quotient (HQ) is calculated by dividing the maximum concentration of each COPEC measured in 2013 by the minimum ESL or L-ESL.

The HQs for the minimum ESLs are all greater than 1; the HQs for the minimum L-ESLs are less than 1 for copper, nickel, zinc, and TCDD; and the HQs for the minimum L-ESLs are slightly above 1 for barium, cyanide, lead, and manganese. The latter COPECs are discussed below. The maximum concentrations for barium, lead, and manganese came from sample CALA-13-28430 at location LA-27, and the maximum concentration for cyanide came from sample CALA-13-28425 at location LA-22 (Figure 10).

- **Barium**: All detected concentrations are above the sediment BV but below the soil BV. The minimum ESL is below the sediment and soil BVs, and the L-ESL is below the soil BV. The maximum HQ based on the L-ESL is 1.1, and the mean HQ is 0.9. Higher concentrations were measured in postfire ash after the Cerro Grande fire (LANL 2004, 087390), indicating the ash is a source of barium in the weir.
- **Cyanide**: Five of six detected concentrations are above the sediment BV, and all are above the soil BV. The minimum ESL is below the sediment and soil BVs, and the L-ESL is 0.18 mg/kg above the sediment BV. Elevated concentrations for cyanide are also probably related to ash from the Las Conchas fire. The maximum HQ based on the L-ESL is 1.4, and the mean HQ is 1.1.; both are equivalent to 1.
- **Lead**: All detected concentrations are above the sediment and soil BVs, but five of six concentrations are below the maximum soil background concentration. The minimum ESL is below the sediment and soil BVs, and the L-ESL is 8.3 mg/kg above the sediment BV and 5.7 mg/kg above the soil BV but the same as the maximum soil background concentration. The maximum HQ based on the L-ESL is 1.3, and the mean HQ is 1. Higher concentrations were measured in postfire ash after the Cerro Grande fire (LANL 2004, 087390), indicating the ash is a source of lead in the weir.
- **Manganese:** All detected concentrations are above the sediment and soil BVs, but three of six concentrations are below the maximum soil background concentration. The minimum ESL is below the sediment and soil BVs, and the L-ESL is above the sediment and soil BVs but the same as the maximum soil background concentration. The maximum HQ based on the L-ESL is 1.2, and the mean HQ is 1. Higher concentrations were measured in postfire ash after the Cerro Grande fire (LANL 2004, 087390), indicating the ash is a source of manganese in the weir.

REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID or ESH ID. This information is also included in text citations. ER IDs were assigned by the Environmental Programs Directorate's Records Processing Facility (IDs through 599999), and ESH IDs are assigned by the Environment, Safety, and Health (ESH) Directorate (IDs 600000 and above). IDs are used to locate documents in the Laboratory's Electronic Document Management System and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the ESH Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included

LANL (Los Alamos National Laboratory), September 22, 1998. "Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory," Los Alamos National Laboratory document LA-UR-98-4847, Los Alamos, New Mexico. (LANL 1998, 059730)

LANL (Los Alamos National Laboratory), April 2004. "Los Alamos and Pueblo Canyons Investigation Report," Los Alamos National Laboratory document LA-UR-04-2714, Los Alamos, New Mexico. (LANL 2004, 087390)

LANL (Los Alamos National Laboratory), February 20, 2009. "Submittal of the Los Alamos Canyon Low-Head Weir Ecological Risk Screening," Los Alamos National Laboratory letter (EP2009-0107) to J.P. Bearzi (NMED-HWB) from M.J. Graham (LANL) and D.R. Gregory (DOE-LASO), Los Alamos, New Mexico. (LANL 2009, 105294)

LANL (Los Alamos National Laboratory), October 2012. "Derivation and Use of Radionuclide Screening Action Levels, Revision 2," Los Alamos National Laboratory document LA-UR-12-23292, Los Alamos, New Mexico. (LANL 2012, 228852)

LANL (Los Alamos National Laboratory), October 2012. "ECORISK Database (Release 3.1)," on CD, LA-UR-12-24548, Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2012, 226667)

NMED (New Mexico Environment Department), February 2012 (updated June 2012). "Risk Assessment Guidance for Site Investigations and Remediation," Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, Santa Fe, New Mexico. (NMED 2012, 219971)

NMED (New Mexico Environment Department), March 3, 2015. "Disapproval, 2013 Excavation of the Los Alamos Canyon Low-Head Weir," New Mexico Environment Department letter to P. Maggiore (DOE-NA-LA) and M. Brandt (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2015, 600271)

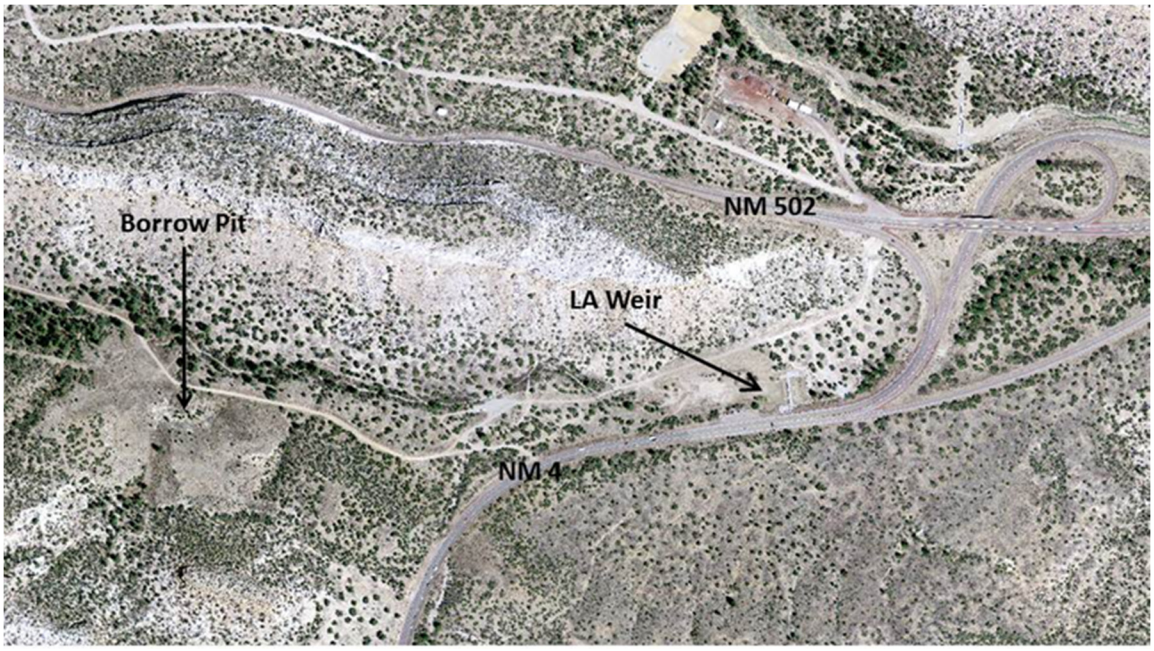


Figure 1 **Orthophoto map showing locations of the Los Alamos Canyon weir and borrow pit near the intersection of NM 502 and NM 4**

Figure 2 **Excavated sediment being placed in former borrow pit in Los Alamos Canyon**

Figure 3 Sediment removal activities in basin 3

Figure 4 Postexcavation view upcanyon from weir. Basin 3 is in the foreground.

Figure 5 **Postexcavation view downcanyon into basin 3**

Figure 6 **Sediment placement in the borrow pit. Sediment was compacted and contoured to a gradual slope and then hydromulched. Berm is located in foreground of photo.**

Figure 7 **Looking NW at sediment placement within the former borrow pit. Stream channel is located in the ponderosas at the top of the photo.**

Figure 8 **Looking northeast at sediment placement within the former borrow pit. Run-off berm is located at base of slope, just right of vehicle.**

Figure 9 Looking west at sediment placement within the former borrow pit

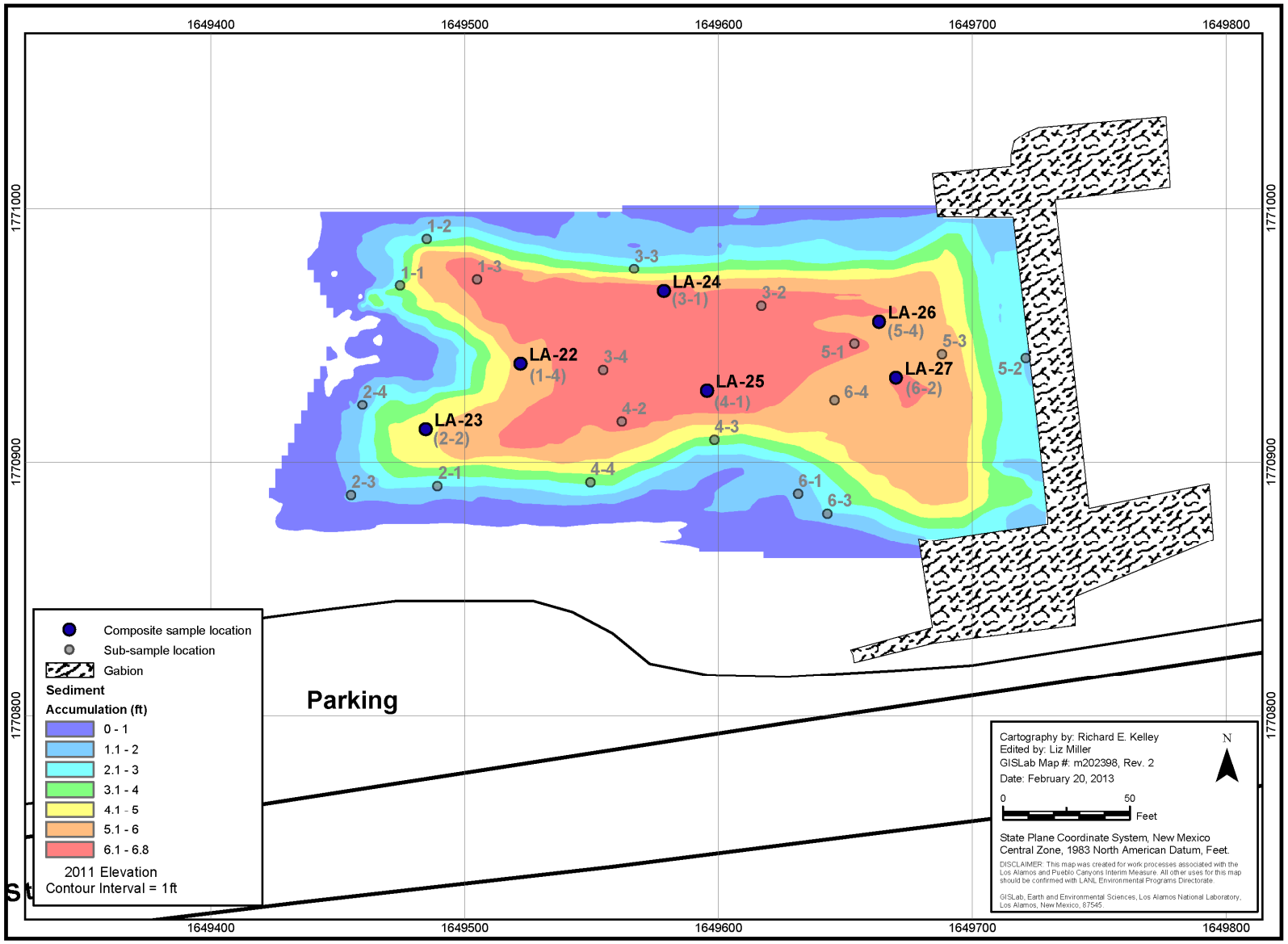


Figure 10 Sampling locations of material collected before excavation

Table 1
Samples Collected and Analyses Requested for the Los Alamos Weir Excavation

Sample ID	Location ID	Sample Depth (ft)	Media	Sample Date	Gamma Spec	Strontium-90	Tritium	Americium-241	Isotopic Plutonium	Metals	Pesticides/PCBs	Herbicides	Dioxan/Furans	Total Cyanide
CALA-13-28425	LA-22	0.0–5.6	SED	01/31/2013	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-505	2013-504
CALA-13-28426	LA-23	0.0–4.85	SED	01/31/2013	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-505	2013-504
CALA-13-28427	LA-24	0.0–6.5	SED	01/31/2013	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-505	2013-504
CALA-13-28428	LA-25	0.0–6.7	SED	01/31/2013	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-505	2013-504
CALA-13-28429	LA-26	0.0–6.25	SED	01/31/2013	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-505	2013-504
CALA-13-28430	LA-27	0.0–6.1	SED	01/31/2013	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-504	2013-505	2013-504

Table 2
Comparison of Maximum Detected Concentrations in Depth-Integrated Samples to Sediment BVs, Residential SSLs/SALs, and Minimum ESLs

Analyte	Analyte Code	Units	Maximum Concentration	Canyon Sediment BVs[a]	Residential SSL[b] or SAL[c]	Minimum ESL[d]
Aluminum	Al	mg/kg	14,500	15,400	n/a[e]	n/a
Arsenic	As	mg/kg	2.8	3.98	n/a	n/a
Barium	Ba	mg/kg	275	127	15,600	110
Beryllium	Be	mg/kg	1.82	1.31	156	2.5
Cadmium	Cd	mg/kg	0.207	0.4	n/a	n/a
Chromium	Cr	mg/kg	9.81	10.5	n/a	n/a
Cobalt	Co	mg/kg	6.06	4.73	23[f]	13
Copper	Cu	mg/kg	17.3	11.2	3130	15
Cyanide (Total)	Cn(total)	mg/kg	1.35	0.82	46.9	0.1
Iron	Fe	mg/kg	14,700	13,800	54,800	n/a
Lead	Pb	mg/kg	35.2	19.7	400	14
Manganese	Mn	mg/kg	1270	543	1860	220
Mercury	Hg	mg/kg	0.0398	0.1	n/a	n/a
Nickel	Ni	mg/kg	12.3	9.38	1560	9.7
Silver	Ag	mg/kg	0.222	1	n/a	n/a
Thallium	Tl	mg/kg	0.438	0.73	n/a	n/a
Vanadium	V	mg/kg	19	19.7	n/a	n/a
Zinc	Zn	mg/kg	84.8	60.2	23,500	48
Americium-241	Am-241	pCi/g	0.0993	0.04	30	44
Cesium-137	Cs-137	pCi/g	1.48	0.9	5.6	680

Table 2 (continued)

Analyte	Analyte Code	Units	Maximum Concentration	Canyon Sediment BVs[a]	Residential SSL[b] or SAL[c]	Minimum ESL[d]
Plutonium-239/240	Pu-239/240	pCi/g	0.177	0.068	33	47
Dichlorodiphenyltrichloroethane [4,4'-]	50-29-3	mg/kg	0.000823	na[g]	17.2	0.044
Dichlorodiphenyldichloroethane [4,4'-]	72-55-9	mg/kg	0.00299	na	14.3	0.11
Methyl-4-chlorophenoxypropionic(2-) acid	93-65-2	mg/kg	1.32	na	61f	na
4-(2,4-Dichlorophenoxy)butyric acid	94-82-6	mg/kg	0.0234	na	490f	na
TCDD-equivalent concentration	1746-01-6	mg/kg	3.88E-07	na	4.50E-05	2.90E-07

[a] Sediment BVs from LANL (1998, 059730).

[b] Residential SSLs from NMED (2012, 219971), unless otherwise noted.

[c] Residential SALs from LANL (2012, 228852).

[d] Minimum ESLs from LANL (2012, 226667).

[e] n/a = Not applicable; maximum concentration less than the sediment BV.

[f] Residential SSLs from EPA regional screening table(http://www.epa.gov/region06/6pd/rcra_c/pd-n/screen.htm).

[g] na = Not available.

Table 3
Summary of COPECs with Maximum Detected Concentrations Greater than Minimum ESLs

COPECs	Maximum Concentration in 2013 (mg/kg)	Maximum Concentration in 2009[a] (mg/kg)	Canyon Sediment BV[b] (mg/kg)	Soil BV[b] (mg/kg)	Maximum Concentration in Ash (mg/kg)	Minimum ESL[c] (mg/kg)	HQ	Minimum L-ESL[c] (mg/kg)	HQ
Barium	275	57.6	127	295	1300	110	2.5	260	1.1
Copper	17.3	32.6	11.2	14.7	45	15	1.2	46	0.4
Cyanide (Total)	1.35	2.21	0.82	0.5	n/a	0.1	13.5	1	1.4
Lead	35.2	22	19.7	22.3	84	14	2.5	28	1.3
Manganese	1270	301	543	671	8200	220	5.8	1100	1.2
Nickel	12.3	3.24	9.38	15.4	15	9.7	1.3	19	0.6
Zinc	84.8	52.7	60.2	48.8	180	48	1.8	480	0.2
TCDD-equivalent concentration	3.88E-07	na[d]	n/a[e]	n/a	n/a	2.90E-07	1.3	1.90E-06	0.2

Note: Grey shading indicates an HQ >1.

[a] From LANL (2009, 105294).

[b] Sediment and soil BVs from LANL (1998, 059730).

[c] Minimum ESLs and L-ESLs from LANL (2012, 226667).

[d] na = Not available.

[e] n/a = Not applicable.

Appendix A

Analytical Suites and Results
(on CD included with this document)

Response to the Disapproval for the 2013 Excavation of the Los Alamos Canyon Low-Head Weir, Los Alamos National Laboratory, EPA ID No. NM0890010515, HWB-LANL-13-068, Dated March 3, 2015

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. Los Alamos National Laboratory's (LANL's or the Laboratory's) responses follow each NMED comment. This response contains data on radioactive materials, including source, special nuclear, and byproduct material. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with U.S. Department of Energy policy.

COMMENTS

NMED Comment

1. *The Permittees did not provide sufficient information regarding the total number of samples collected, the locations within the excavation area where samples were collected, or the concentration ranges of detected constituents. It is also unclear if the maximum detections are from a single sample location or are uniform throughout the excavated area. Provide a map depicting the sampling locations and depths, as well as a table of all sampling locations and their respective analytical results. In addition, provide an electronic copy of the analytical laboratory report.*

LANL Response

1. A map showing sampling locations is included in the revised report. Text has also been added to the report to explain the sample-collection approach. Most of the maximum concentrations are from a single composite location. An explanation of the distribution of maximum detections for constituents is also provided in the revised report. Table 1 of the revised report presents the samples collected and the analyses requested for the Los Alamos weir excavation.

   An electronic copy of all of the analytical data and the analytical reports is included on a CD in the revised report.

NMED Comment

2. *In the Report, the Permittees state that hazard quotients (HQ) for barium, cyanide, lead and manganese all exceed the threshold value of 1. The information provided in the Report does not support the Permittees statement that there is no potential ecological risk from barium, cyanide, lead, or manganese when the list L-ESL HQ is greater than 1. Either remove the statements from the Report or provide an explanation to support the statements.*

LANL Response

2. The statement "Therefore, there are no potential ecological risks from…" has been removed from the revised report. However, concentrations of barium, cyanide, lead, and manganese are similar to background concentrations, as are the minimum ecological screening levels (ESLs) and the lowest-effect ecological screening levels (L-ESLs). In addition, both ESLs and L-ESLs are conservative in

nature and are designed to overestimate potential risk. Therefore, because the maximum hazard quotient (HQ) based on the L-ESL is near 1 for barium, cyanide, lead, and manganese, and the mean HQs based on the L-ESLs are equal to or less than 1, it is unlikely ecological risks exist from any of these constituents.

NMED Comment

3. *NMED is concerned with the final disposition of the excavated and stockpiled material since the soil stockpile was assumed to be temporary. The Permittees appear to have stockpiled the excavated material into an area both sloped and upstream of the sediment retention basin above the weir. Document in the Report the erosion controls that were implemented to prevent the sediment from being eroded and mobilized downstream and specify the type of flood event the erosion controls are designed to withstand. Describe practices that would be implemented in the event of a significant rainfall event. Provide information regarding whether or not the location of the stockpiled material is intended to be permanent. If the location is intended as a disposal site, provide the proposed plan to construct permanent storm water flow and erosion controls and prevent infiltration of rainwater and snowmelt into the soil stockpile.*

LANL Response

3. The report has been revised to include information to address NMED's comment. The Laboratory is currently inspecting the Los Alamos weir using EP-DIV-GUIDE-20211, R.0, Inspection Guidance for Environmental Programs Watershed, Retention, and No Exposure Controls, under the Watershed Controls section. An inspection is required biennially (in spring and fall) and following significant flow events (flow >50 cubic feet per second measured at the gage station nearest to the structure). The Laboratory will add the borrow pit to the weir inspection form because placement of the excavated sediment at this location is intended to be permanent. Existing controls to inspect will include the runoff control berm, vegetative cover over spoils, and run-on vegetative cover. In addition, the inspection will look for and note any rilling, erosion channels, and so forth that may impact the spoils within the borrow pit. The borrow pit should not be impacted by flooding events because it is located out of the flood plain. Preventive maintenance will be completed as needed.

   The Laboratory has been in communication with the NMED Hazardous Waste Bureau (HWB) since early 2008 with regards to the management and disposition of the Los Alamos Canyon low-head weir sediment. In January 2009, the Laboratory received approval from the NMED-HWB to excavate the accumulated sediment and spread it along the hillslope next to the low-head weir, as long as the sediment passes ecological screening levels (HWB-LANL-08-004). In February 2009, the Laboratory prepared and submitted an ecological risk screening report to the NMED-HWB for its review and approval before the excavation and permanent placement of the sediment (LANL 2009, 105294). In May 2009, NMED-HWB granted the Laboratory approval to excavate the sediment and spread it along the existing berm on the north side of the basin and upstream of the weir, provided the following conditions were met: (1) stabilize the sediments to ensure they do not return to the stream channel and (2) establish a vegetative cover on the sediments to reduce the potential for erosion and dust generation. On March 3, 2013, during a phone conversation between Laboratory personnel (Danny Katzman, ADEP-ER) and NMED staff (Dave Cobrain, NMED-HWB), David Cobrain agreed that NMED did not need to approve the excavation of the newly generated low-head weir sediment, and instead, an agreement was made to provide NMED with a post-excavation summary report that describes the field activities, volumes removed, a final grading configuration in the borrow pit, and information on the final condition left in the weir (e.g., layer of sediment on the floor of the basin, etc.). As a result of this communication, the sediment was excavated and placed in the nearby borrow pit,

the Laboratory submitted the report, 2013 Excavation of the Los Alamos Canyon Low-Head Weir Report (LANL 2013, 251741), to NMED in December 2013.

REFERENCES

LANL (Los Alamos National Laboratory), February 20, 2009. "Submittal of the Los Alamos Canyon Low-Head Weir Ecological Risk Screening," Los Alamos National Laboratory letter (EP2009-0107) to J.P. Bearzi (NMED-HWB) from M.J. Graham (LANL) and D.R. Gregory (DOE-LASO), Los Alamos, New Mexico. (LANL 2009, 105294)

LANL (Los Alamos National Laboratory), December 2013. "2013 Excavation of the Los Alamos Canyon Low-Head Weir," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2013, 251741)