LMS/BAA/S27944

Bayo Canyon Aggregate Area, Los Alamos, New Mexico, Site Visit September 2019

November 2019

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Abbreviations

BCAA	Bayo Canyon Aggregate Area
DOE	U.S. Department of Energy
EM	Office of Environmental Management
EM-LA	EM Los Alamos Field Office
FUSRAP	Formerly Utilized Sites Remedial Action Program
IA	Interim Action
JSA	job safety analysis
LANL	Los Alamos National Laboratory
LM	Office of Legacy Management
LMS	Legacy Management Support
NMED	New Mexico Environment Department
POW	plan of the week
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SWMU	Solid Waste Management Unit
TA	Technical Area

1.0 Introduction

A team representing the U.S. Department of Energy (DOE) Office of Legacy Management (LM) and its Legacy Management Support (LMS) contractor visited the Bayo Canyon Aggregate Area (BCAA) site near Los Alamos, New Mexico, on September 9 and 18, 2019. The purpose of the visit was twofold. First, the team conducted the fence removal project on the Bayo Canyon Formerly Utilized Sites Remedial Action Program (FUSRAP) remediated site. Second, the team conducted a site condition assessment of the BCAA, specifically the site conditions at the Bayo Canyon FUSRAP site. The DOE Office of Environmental Management (EM) Los Alamos Field Office (EM-LA) is primarily responsible for site stewardship at the BCAA site. It is expected that the BCAA site will be transitioned from EM to LM in 2019.

The LM and LMS participants in the September 9, 2019, site visit were as follows:

- Ms. Darina Castillo, LM site manager
- Ms. Michele Miller, LMS site lead
- Mr. Tom Maveal, LMS health physicist
- Construction subcontractor Ralph W. Miller Inc. (four members)

This document summarizes the information gathered during the September 2019 site visit. Appendix A provides a copy of the Master Access Agreement and the associated Exhibit Number A1 authorizing the removal of the fence. The fence removal project documents known as Construction Field Inspection Logs (CFILs) are provided as Appendix B. The photographs taken during the site condition assessment are included in Appendix C.

This report has four sections. Section 1 highlights key planning materials to include safety and health documents (job safety analysis [JSA] and plan of the week [POW]). Section 2 includes a summary of the visit, including the goals and outcome of the fence removal project and condition assessment information that was compiled during the site walkdown. Section 3 conveys that no potential long-term stewardship adverse impacts were observed based on information gathered from the site visit. Lastly, Section 4 states no new site risks were identified during the September 2019 site visit.

1.1 Itinerary

Table 1 presents the final itinerary used for the site visit.

Table 1. September 2019 BCAA Site Visit Itinerary

Monday, September 9, 2019			
Time	**Activity**	**Attendees**	**Comments**
8:00–8:30 a.m.	Plan of the Day/JSA discussion	LM/LMS Team	Tour and safety briefing
8:30–9:00 a.m.	LM site driving tour of BCAA and FUSRAP Area	LM/LMS Team	Discuss approach to conduct removal of fencing
9:00 a.m.–12:45 p.m.	Fence removal/site condition assessment	LM/LMS Team	Ralph W. Miller contractor fence removal; LM site lead site condition assessment

Table 1. September 2019 BCAA Site Visit Itinerary (continued)

12:45–2:00 p.m.	Lunch break (if needed)	LM/LMS Team	Not taken; in-field break only
2:00–3:00 pm.	Discussion and lesson learned post-field work. Then closing remarks.	LM/LMS Team	Scheduling a second field day required to removal free-standing fence post holders
Wednesday, September 18, 2019			
8:00–8:30 a.m.	Plan of the Day/JSA discussion	LM/LMS Team	Tour and safety briefing
8:30 a.m.–12:45 p.m.	Free-standing fence post hole removal from field	LM/LMS Team	Ralph W. Miller contractor conducts free-standing fence post holder removal
12:45–2:00 p.m.	Lunch break (if needed)	LM/LMS Team	Not taken; in-field break only
2:00–3:00 p.m.	Discussion and lesson learned post-field work. Then closing remarks.	LM/LMS Team	Project completed

1.2 Safety and Health

As with every LMS project visit, a JSA and a POW were prepared in advance. The JSA and POW are provided in Attachments 1 and 2, respectively. Participants were briefed on the safety requirements in the JSA in advance of the site visit. Following the field discussion, all participants signed the JSA to acknowledge their understanding of the potential hazards at the site. Similarly, the POW was discussed, and then participants signed an acknowledgment of their understanding of activities planned for the visit.

1.3 Master Access Agreement and Project and Property-Specific Work Plan Summary

In support of long-term stewardship, an access agreement between LM and the County of Los Alamos for conducting program activities at the Sites on County Property in Bayo Canyon, Former Technical Area 10 (TA-10) was successfully negotiated and executed on September 6, 2019.

In addition, the project and property-specific work plan summary, Exhibit A, Number 1 covers the Bayo Canyon fence removal project and was also executed on September 6, 2019, in advance of the September 9, 2019, field work. A copy of both documents can be found in Appendix A.

2.0 Site Summary

This section includes a summary of the BCAA site history, the highlights of the fence removal project, and notations of site condition observations.

BCAA Site Brief History

The BCAA site, consisting of approximately 350 acres, was used as a weapons-firing test site from 1943 to 1961. The site at that time was known as TA-10. Structures were constructed to test

assemblies that contained conventional high explosives, including some components made from depleted or natural uranium. The principal structures associated with the area at that time were a radiochemistry laboratory, an assembly building, inspection buildings, a personnel building, structures at two detonation-control complexes, and adjacent firing pads. The TA-10 area also included various ancillary facilities associated with waste disposal, particularly for the radiochemistry laboratory. Associated facilities included (1) sewage lines, manholes, septic tanks, and seepage pits for sanitary and radioactive liquid waste, and (2) disposal pits for solid radioactive waste (Mayfield et al. 1979). The site was remediated in 1957 and again from 1960 through 1963. Most of the buildings were burned in place, and the ash and debris was removed and disposed of at the main disposal area for the Los Alamos complex. More than 550 dump-truck loads of contaminated waste was excavated and removed. The excavations were backfilled, and the site was regraded (Mayfield et al. 1979). After those remediation efforts, the site was transferred via a quitclaim deed to Los Alamos County in 1967.

A Comprehensive Environmental Assessment and Response Program field survey was conducted around the firing sites, in an area now known as Consolidated Unit 10-001(a)-99, that identified the presence of metal cable and small pieces of shrapnel. The shrapnel consisted of aluminum and steel with small amounts of lead, wood, and other shot residue (DOE 1986). During the survey, six survey monuments and associated guard posts were installed in an area that roughly encompasses the old liquid waste disposal complex, the radiochemistry laboratory, and the area of the waste disposal pit. The monuments are marked "buried radioactive material; no excavation prior to 2142 AD; see county records" (DOE 1986).

In 1993, geomorphic mapping identified various types of radioactively contaminated shrapnel in the TA-10 area (Drake and Inoué 1993). These results prompted an Interim Action (IA) to remove shrapnel from Bayo Canyon (LANL 1997). Shrapnel removal began in September 1994 and was completed by January 1995. More than 19,000 pieces of shrapnel were collected during the surface shrapnel removal operation. A total of 458 pieces (2.4%) were found to emit radioactivity levels that exceeded local background levels.

In 1994, surface and subsurface sampling was conducted in accordance with a Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI), to determine if residual RCRA chemicals—particularly barium, beryllium, or lead—existed in surficial deposits near the firing pads (i.e., at Solid Waste Management Units [SWMUs] 10-001(a)–(d)) and to confirm no human health or ecological risks were associated with the radiological constituents identified in previous investigations (LANL 1995). The objective of the RFI was "to characterize the nature, concentration, and lateral and vertical extent of potential subsurface contamination related to historic activities at the site" (LANL 1996). Radionuclides were retained as contaminants of potential concern at SWMUs 10-003(a)–(o), 10-007, and 10-002(b), and an IA was recommended to remove chamisa plants containing elevated levels of strontium-90 (LANL 1996). To control access to the area, a fenced exclusion zone was constructed and the area was posted as a radiation control area. Storm-water control measures, including silt fences and straw waddles, were put in place along the northern and eastern parts of the site to capture runoff. Straw bales were placed along the edge of a channel that emerges from a culvert along the western part of the site to prevent run-on (LANL 1997). After a final inspection on July 5, 2001, the Los Alamos National Laboratory's (LANL) Water Quality and Hydrology Group determined the area was stabilized and no further inspections were necessary (Veenis 2005).

On March 1, 2005, LANL, EM, and the New Mexico Environment Department (NMED) entered into an Order of Consent to remediate LANL (25,600 acres), which includes the BCAA site (NMED 2005). In 2007, an RFI was conducted (1) to address specific requirements for the Bayo Canyon contained in the Section IV.C.5.c, "Technical Area 10 Investigation," in the Order of Consent; and (2) to complete the characterization of the site as specified in the approved Bayo Canyon Aggregate Area Investigation Work Plan (LANL 2005).

On January 31, 2017, NMED issued a Certificate of Completion for the BCAA site, since all areas were determined to meet applicable standards and could be released for recreational or residential use. Today, the BCAA site, owned by Los Alamos County, is open to the public for recreational activities such as hiking, mountain biking, and horseback riding.

2.1 Fence Removal Project

Several discussions transpired in 2018 between LM, EM, and Los Alamos County, the property owner on the existing chainlink fence located within the Bayo Canyon FUSRAP site that was no longer required following the EM remediation project completion of January 2017. During the September 2018 site visit, LM confirmed with Los Alamos County that the County had no use for the fence and would like it removed. In turn, LM through its LMS contractor, Navarro Research and Engineering, Inc., planned for its removal in 2019.

The 2019 fence removal project was planned and successfully executed on September 9. The initial effort in the field was to conduct a radiological survey that reaffirmed the fence and miscellaneous filed debris were radiologically clean (refer to Attachment 3). The fence, consisting of 49 10 × 12 fence panels and 49 12-foot poles, was safely loaded onto the 18-foot flatbed truck and securely fastened to be removed from the site for reuse at the Ralph W. Miller company construction yard. Once the fence was ready for transport, the miscellaneous debris found within the fence and in the surrounding area was collected following the radiological survey and loaded for disposal. On the follow-on field day of September 18, forty (40) metal free-standing fence post holders weighing 175 pounds each were removed from the field, safely loaded, and transported for reuse at Ralph W. Miller.

The field activities and photographs for these 2 days were documented on the CFILs found in Appendix B. Once the project was completed the afternoon of September 18, both LM and Los Alamos County were notified.

2.2 BCAA Site Observations

The BCAA contains approximately 350 acres of a parklike forest setting that is open to the public for recreational use. The site provides ample recreational venues for bike riding, walking on trails, and horseback riding. The FUSRAP Bayo Canyon site is in the central portion of the BCAA and was one of the focus areas to be observed during this visit. The LM team inspected this 1.5-acre LM site and surrounding area, and the following observations were made:

- There are numerous signs posted throughout Bayo Canyon, including along the road at the entrance to this dawn-to-dusk public park. As LM moves towards long-term stewardship responsibility at BCAA, a property access chain and lock were added to the main entrance gate (see photo 1 in Appendix C).

- Los Alamos County, as the property owner, continues to do an excellent job maintaining the hundreds of acres for public use (see photos 2, 3, 4, and 5 in Appendix C).
- At the request of LM to the New Mexico Public Utilities Department, it was observed and confirmed that the utility poles with electric service no longer required from previous EM remediation activities or desired to be kept by Los Alamos County were successfully removed.
- Overall, the six sets of three bollards and six markers installed in 1982 were found to be in good condition. However, one bollard that protects a marker near the downgradient edge of the site has been adversely affected by an ephemeral stream eroding the soil around the base of that bollard (see photo 6 in Appendix C). LM will continue to monitor the stability of this bollard; no maintenance action is required at this time.

3.0 Long-Term Stewardship Impacts

There are no new issues identified that could affect the long-term stewardship of the BCAA site.

4.0 BCAA Risk Inputs

On the basis of the September 2019 visit, there were no new risks observed that warranted new inputs in the life-cycle baseline Risk Register for the BCAA site.

5.0 References

DOE (U.S. Department of Energy), 1986. Excerpted pages and notes from *Phase I: Installation Assessment, Los Alamos National Laboratory*, final, Volume 1 of 2, Comprehensive Environmental Assessment and Response Program, Environment and Health Division, Environmental Programs Branch, Albuquerque Operations Office, Albuquerque, New Mexico, October.

Drake, P., and C. Inoué, 1993. *Geomorphic Characterization of Operable Unit 1079 (OU-1079), Formerly Technical Area 10, Los Alamos National Laboratory, New Mexico*, report prepared for Los Alamos National Laboratory by Glorieta Geoscience Inc., Santa Fe, New Mexico, September.

LANL (Los Alamos National Laboratory), 1995. *RFI Report for Solid Waste Management Units 10-001(a–d)*, Los Alamos National Laboratory, Los Alamos, New Mexico, September 5.

LANL (Los Alamos National Laboratory), 1996. *RFI Report for Potential Release Sites 10-002(a–b), 10-003(a–o), 10-004(a–b), 10-005, 10-007*, Los Alamos National Laboratory document LA-UR-96-1284, Los Alamos, New Mexico, April; and LANL (Los Alamos National Laboratory), 1996. *Radiological Addendum to the RFI Report for Potential Release Sites 10-002(a,b), 10-003(a–o), 10-004(a,b), 10-005, 10-007, TA-10 Subsurface*, Los Alamos National Laboratory document LA-UR-96-1748, Los Alamos, New Mexico, June.

LANL (Los Alamos National Laboratory), 1997. *Interim Action Report for Potential Release Sites 10-002(a,b), 10-003(a-o), 10-004(a,b), and 10-007*, Los Alamos National Laboratory, Los Alamos, New Mexico, April.

LANL (Los Alamos National Laboratory), 2005. *Historical Investigation Report for Technical Area 10*, Los Alamos National Laboratory document LA-UR-05-3955, Los Alamos, New Mexico, July.

Mayfield, D.L., A.K. Stoker, and A.J. Ahlquist, 1979. *Formerly Utilized MED/AEC Sites, Remedial Action Program: Radiological Survey of the Bayo Canyon, Los Alamos, New Mexico*, U.S. Department of Energy Report No. DOE/EV-0005/15, Los Alamos, New Mexico, June.

NMED (New Mexico Environment Department), 2005. *Compliance Order on Consent*, Los Alamos National Laboratory, Los Alamos County, New Mexico, March 5 (revised June 18, 2008).

Veenis, S., 2005. Bayo Canyon BMPs [and attachment], email message to D. Stevens (Terranear PMC), from S. Veenis (LANL), Los Alamos, New Mexico, June 24.

Appendix A

Master Access Agreement and Project and Property-Specific Work Plan Summary

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MASTER ACCESS AGREEMENT

BETWEEN

LOS ALAMOS COUNTY, NEW MEXICO

AND

THE U.S. DEPARTMENT OF ENERGY
Office of Legacy Management

FOR THE BAYO CANYON AGGREGATE AREA, A PROPERTY CONTAINED WITHIN:

The Counties of Los Alamos and Santa Fe:

Property Description:
Former Technical Area 10 Site
Contained within the Counties of Los Alamos and Santa Fe: Lying and situated within and near County Property in Bayo Canyon, Los Alamos, New Mexico
(See Exhibit B)

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ACCESS AGREEMENT

This Master Access Agreement ("Agreement") is entered into between the County of Los Alamos (hereinafter, the "Grantor") and the UNITED STATES OF AMERICA, acting by and through the U.S. Department of Energy, Office of Legacy Management, (hereinafter, the "Grantee"), pursuant to the authority of the Resource Conservation and Recovery Act (RCRA) (Title 42 *United States Code,* ch. 82 Section 6901 [42 6901], et seq.) and Formerly Utilized Sites Remedial Action Program (FUSRAP) is hereby stated as follows:

Background and Purpose.

The purpose of this Agreement is to allow Grantee and their authorized representatives to enter and perform project activities on the Grantor's property (hereinafter, the "Property") related to; inspections, sample gathering, erosion control measures, surface water monitoring, site maintenance, and installation of markers or signs. (the "Work"). The interest granted herein shall be a non-exclusive right of use of the Property by Grantee and their authorized representatives for the purposes described herein. Project activities will be provided through the submittal of sequentially numbered amendments to Exhibit A to this Access Agreement. The Exhibit A amendments will provide more specifics for the Grantee's project activities and schedule that will be performed on the Grantor's property that is subject to the terms and conditions of this Agreement.

Location of the Property: The Property is located in former Technical Area 10 Site contained within the counties of Los Alamos County and Santa Fe: lying and situated within and near Los Alamos County property in Bayo Canyon, New Mexico as shown on Exhibit B (map) which is the limit of the work area and attached hereto and made a part hereof.

On the basis of the considerations stated in this Agreement, the parties agree as follows:

1. **Right of Entry, Inspection, Maintenance, and Sample Gathering**. The Grantor owns and controls portions of the Property contained within the Former Technical Area 10 Site contained within the Counties of Los Alamos and Santa Fe: lying and situated within and near county property in Bayo Canyon, New Mexico and referred to as the "Property" (See Exhibit B). From the date of this agreement to September 5, 2029, DOE LM and their authorized representatives, contractors, and subcontractors shall have the right, at their own cost, expense, liability, and risk, to enter the Property to inspect, monitor, and collect samples, subject to the terms and limitations of this Agreement, unless earlier modified or terminated by Grantor or Grantee (hereinafter, the "Parties") upon ninety (90) days written notice. Should Grantee abandon and subsequently terminate this Agreement, Grantee's non-exclusive right of ingress and egress and all other rights set forth herein shall revert to Grantor.
2. **Work to Be Performed.** Grantee and its authorized representatives will implement "the Work" as described herein and approved pursuant to Exhibit A's, which may be amended from time to time pursuant to Paragraph 13 of this Agreement and will be incorporated into this Agreement. Grantee shall provide all equipment and materials necessary to perform and complete the Work. Grantee shall have sole responsibility for the Work performed and shall be responsible for directing and controlling their employees and subcontractors as to the manner and means of accomplishing the Work.

3. **Non-Confidentiality and Notification of Results.** Grantee will maintain documentation of all Work performed on the Property. Grantee will treat all quality assured, validated data, reports, and information relating to field Work activities as public information. The results of any work performed on Los Alamos County land will be made available to the Grantor upon the Grantor's request. Two copies of all reports generated as a result of the activities performed under this Agreement shall be provided to the Grantor upon their completion on electronic media. Hard copies will be provided upon Grantor's request.

4. **Notice to Grantor.** Grantee shall give reasonable notice to Grantor before entering the Property for the first time to perform Work under an approved Exhibit A. Reasonable notice, post-approval, includes written notice by email at least 2 days before initial entry on the Property. Notice shall reference the applicable Exhibit A, which includes the provision of a detailed plan of work to be performed, a description of any necessary impacts to other uses of the Property, and provides an estimate of the time period necessary to complete the Work. After this initial notification, Grantor and Grantee shall agree whether further notice is required. The Grantor has the right to refuse entry or to be present as Grantee or its contractors enter the Property at any time.

5. **Handling, Transportation, and Disposition of Materials.** Grantee shall perform all activities necessitated by the Work and as otherwise required by any applicable law, regulation, ordinance, or directive from any regulatory agency having the requisite authority. Upon completion of the Work, Grantee shall be solely responsible for any and all materials gathered or collected in Work activities and shall be the owner thereof, unless alternate direction is provided by the Grantor. The Grantee will, as required by any applicable law, regulation, ordinance, or directive, appropriately handle, transport, and dispose of any and all materials related to the Work and any and all equipment and supplies used in conducting the Work.

6. **Applicable Law and Regulations.** Grantee will comply with all applicable health, safety, environmental laws, directives, ordinances, regulations, or statutes applicable to the Work.

7. **Notice of Co-Located Work.** Upon receipt of notice from Grantee in accordance with the provisions of Paragraph 4 above, the Grantor shall give Grantee notice of any work by Los Alamos County staff or other parties for which the Grantor has awareness that are co-located in the subject area during the noticed timeframes. Notice shall include disclosure of any hazards from the co-located work that has the potential to impact Grantee or its authorized representatives. Grantee will similarly disclose to the Grantor any hazards from the co-located work that have the potential to impact Los Alamos County or others. If unsafe conditions are encountered on the Property as the Work is being performed, Grantee shall notify Grantor immediately regarding the nature of the unsafe condition and actions that were taken, or are planned, to render the condition safe. In the event of the identification of an unsafe condition, either static or arising from the co-located workers, Grantor may refuse entry to the Property.

8. **Restoration.** Grantee shall use their best efforts to avoid interfering with the Grantor's use of the Property and shall disturb or remove the Grantor's property only to the extent necessary to perform the Work. Upon completion of any and all activities related to the Work, Grantee shall repair and restore damage to the Property

arising from the Work. Grantee shall further clean up and remove all debris and materials related to the Work at Grantee's sole cost and expense.

9. **Release of Liability.** Grantee shall be responsible for all claims, liabilities, losses, and damages in favor of third parties arising out of Grantees performance of failure to perform their obligations under this Access Agreement. The Grantor shall not be liable for any damage, injury, theft, claim, or other basis for liability to third parties in connection with the Work, except to the extent that such damage, injury, or theft arises from the negligence or willful acts or omissions of the Grantor or those acting at the Grantor's direction.

10. **Sale of Grantor's Property.** In the event that Grantor determines to sell or otherwise transfer Property containing materials, equipment, or structures relating to the Work, Grantor shall notify Grantee a minimum of 30 days prior to transfer.

11. **Notices.**

    a. Notice to Grantor and Designee. Any notice from Grantee to Grantor shall be given to:

    County Manager
    Los Alamos County
    1000 Central Avenue, Suite 350
    Los Alamos, New Mexico 87544
    Telephone: (505) 663-1750
    Email: lacmanager@lacnm.us

    b. Notice to Grantee. Any notice from Grantor to Grantee shall be given to:

    Realty Officer
    U.S. Department of Energy
    2597 Legacy Way
    Grand Junction, CO 81503
    Telephone: (303) 410-4827
    Email: LMrealproperty@lm.doe.gov

12. **Entire Understanding.** This Agreement sets forth the entire understanding between the Parties with respect to the subject matter of this Agreement and supersedes all prior negotiations and dealings pertaining to this Agreement.

13. **Modification.** No change in, addition to, or waiver of any of the provisions of this Agreement shall be binding upon any party unless in writing and signed by each Party.

14. **Agreement Headings.** All headings of the Articles of this Agreement have been inserted for convenience of reference only, are not to be considered a part of this Agreement, and shall in no way affect the interpretation of any of the provisions of this Agreement.

15. **Effective Date.** The effective date of this agreement shall be the date of execution by the Grantee, or the Grantor, whichever is latest.

16. **Term of the Agreement.** The term of this Agreement shall commence on the effective date and continue until September 5, 2029, unless earlier modified or terminated by Grantor or Grantee upon ninety (90) days written notice.

17. **Executed** this 6th day of September, 2019.

For the Incorporated County of Los Alamos:

Harry Burgess, County Manager

9/6/19
Date

For the U.S. Department of Energy, Office of Legacy Management:

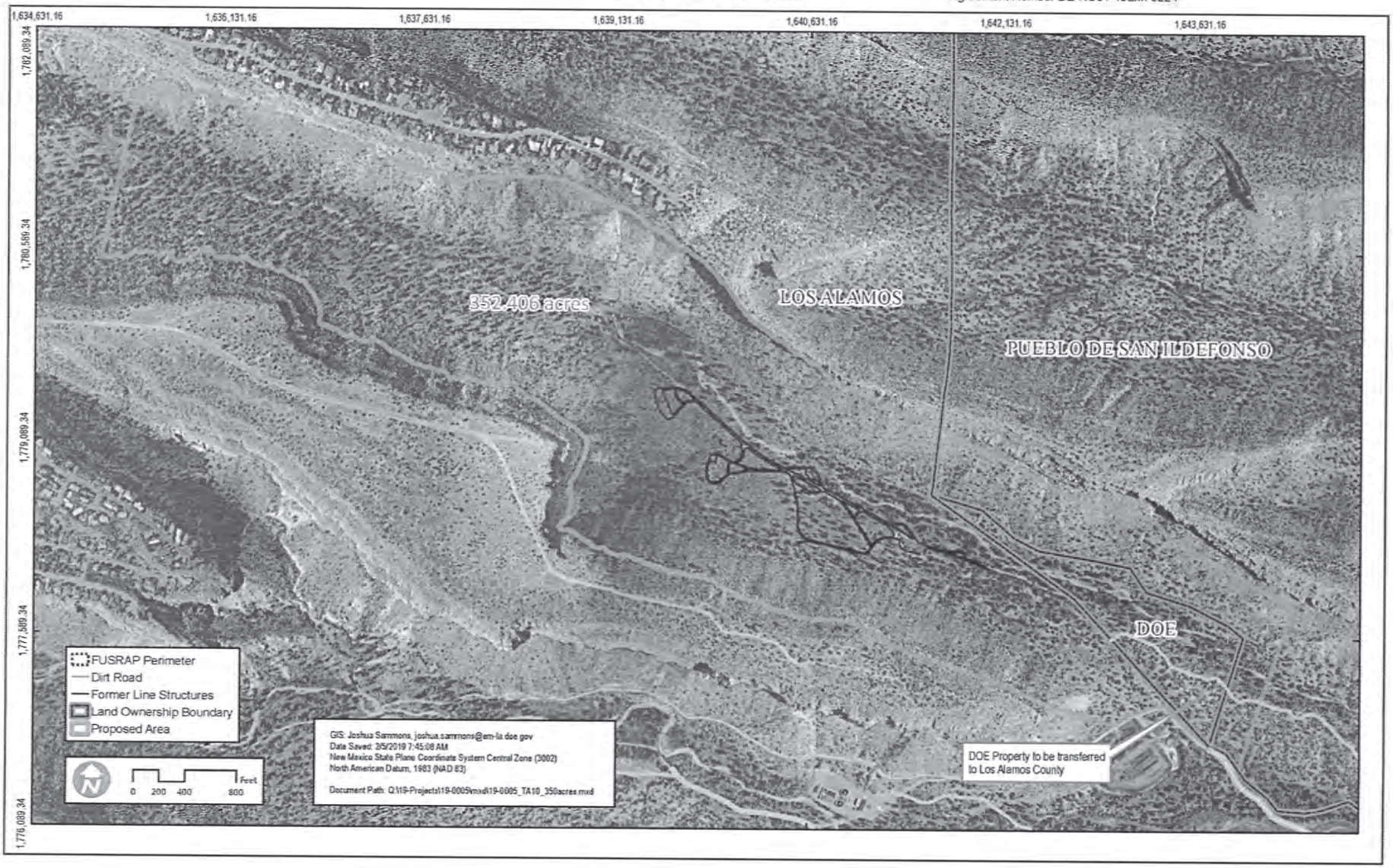
David P. McNeil, Senior Realty Officer

Digitally signed by David P. McNeil
Date: 2019.09.06 12:09:15 -06'00'

Date

Former TA-10 Site

Exhibit B
Agreement Number DE-RO01-19LM70224



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Access Agreement
with the County of Los Alamos for
Conducting Program Activities at the Sites on
County Property in Bayo Canyon,
Former Technical Area 10 Site contained within
the Counties of Los Alamos and Santa Fe: Lying and situated
Within and near County Property in Bayo Canyon,
Los Alamos, New Mexico 87544

EXHIBIT A, NUMBER 1

For the Incorporated County of Los Alamos:

Approved _____ 9/6/19
Harry Burgess, County Manager (or Designee) Date

For the U.S. Department of Energy, Office of Legacy Management:

Approved _____ Digitally signed by David P. McNeil Date: 2019.09.06 12:06:32 -06'00'
David P. McNeil, Senior Realty Officer Date

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EXHIBIT A, NUMBER 1

Access Agreement
with the County of Los Alamos for
Conducting Program Activities at the Sites on
County Property in Bayo Canyon,
Former Technical Area 10 Site, within the Counties of
Los Alamos and Santa Fe,
Los Alamos, New Mexico 87544

PROJECT AND PROPERTY-SPECIFIC WORK PLAN SUMMARY

DOE LM Program:	DOE LM Office of Site Operations, CERCLA, RCRA, FUSRAP Team
DOE Team Member:	Darina Castillo (720) 377-3824
Contractor Team Member:	Michele Miller, (513) 648-7544
Property Description:	Former Technical Area 10 Site contained within the Counties of Los Alamos and Santa Fe: Lying and situated within and near County Property in Bayo Canyon, Los Alamos, New Mexico (See Exhibit B)
Property Owner:	Los Alamos County
Termination Date of this Agreement:	December 9, 2019

Planned Work:

Planned work for this access agreement will be performed by the U.S. Department of Energy, Office of Legacy Management contractor, Navarro Research and Engineering, Inc., and Navarro's subcontractors beginning on September 9, 2019.

General Description of Work Site:

The area of work is limited to the 1.5-acre +/- FUSRAP remediated area outlined in Figure 1 accessed through any part of the Bayo Canyon Aggregate Area necessary to safely complete the task. Figure 1 is made a part of this (Exhibit A, Number 1) to further identify the work site.

The Grantee requires access to the general FUSRAP area on the Los Alamos County property for the purpose of site maintenance in the form of fence and debris removal.

Scheduling and Coordination:

The site lead (or designee) for LM's Contractor, Navarro Research and Engineering, shall provide the Los Alamos County representative with a monitoring/work schedule for any activities planned that are located on Los Alamos County property. These schedules shall be provided before the start of any activities. Additionally, written notice shall be provided 2 days before the start of any above-mentioned activities.

Fieldwork to be performed:

The objective of the proposed fence removal and site maintenance is to remove the fence and perform site maintenance in the form of debris removal on the Bayo Canyon FUSRAP Site.

Fence removal and site maintenance activities shall include:

1. Removal and stacking of the temporary fence panels surrounding the Bayo Canyon Site landfill area for recycle/reuse or disposal.
2. Removal of fence panel support posts and stacking for recycle/reuse or disposal.
3. Collecting and gathering various construction and miscellaneous debris within the fenced area considered disposable, including loose pieces of barbed wire, metal containers, wood pallet, erosion control materials, and other miscellaneous items.
4. Conducting a radiological survey to release the fence, post and debris for recycle/reuse or disposal.
5. Hauling released material (clean material as determined by radiological survey) via truck for transfer to 18ft flatbed trailer staged at entrance road (near transportation building). If radiological survey results find contamination on any item listed above for removal, item(s) to remain in place/onsite pending Low Level Waste (LLW) shipping arrangement (1 to 3 month process). Any materials required to remain onsite shall be neatly stacked and arranged in the same location where the fence existed until removed and shipped.

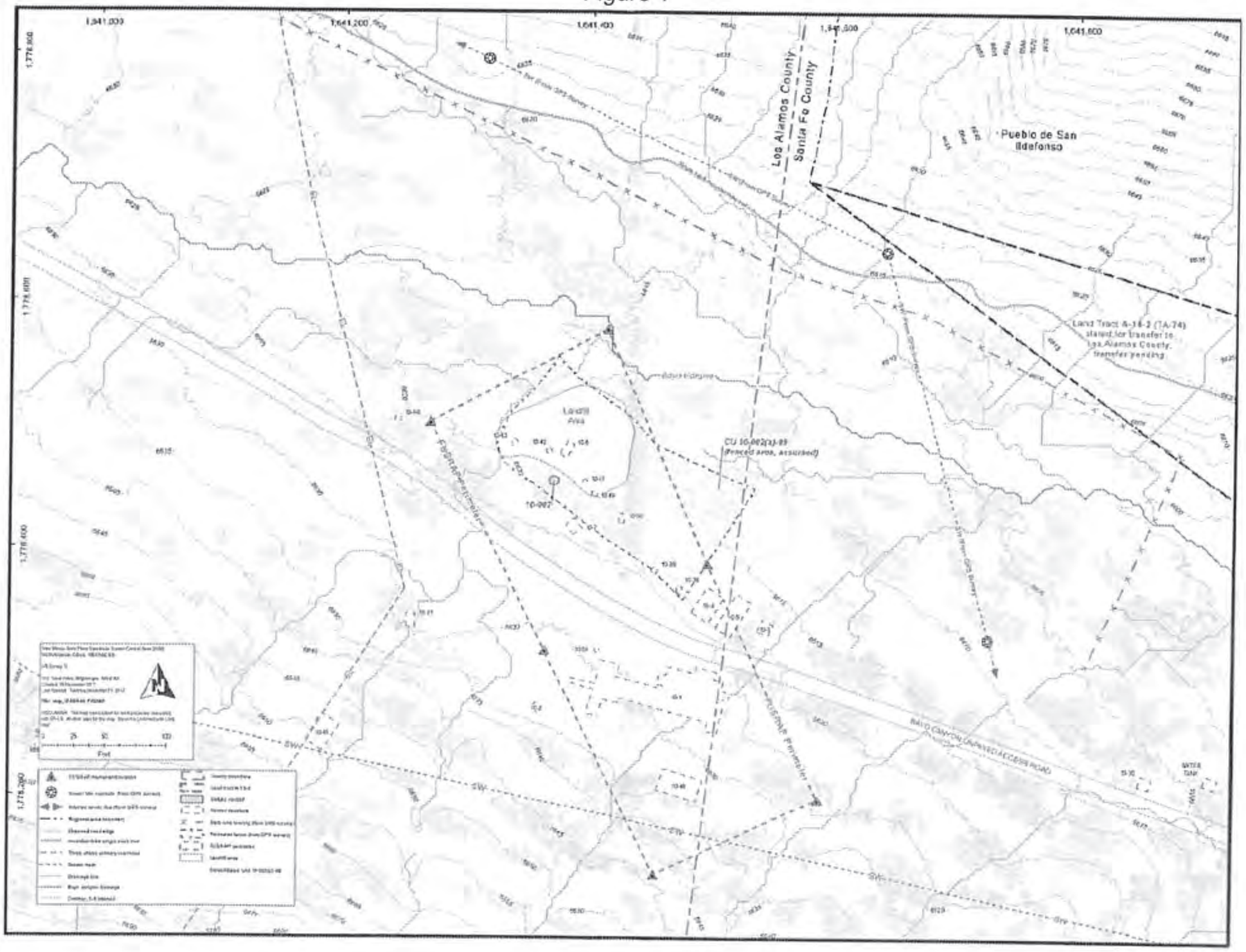
Site Access:

The Grantee shall have access to the FUSRAP remediated area (Figure 1) from necessary portions of the site (See Master Agreement - Exhibit B) to perform necessary activities. Vehicles will be used to access the site using the existing Bayo Canyon unpaved access road. The vehicles shall be used to transport equipment and materials necessary to perform the planned work to and from the site and shall include a standard sized pickup, and support vehicles used to transport contractor and subcontractor personnel.

Reporting

A 2019 Inspection Report shall be issued within 45 days of completion of field activities and a copy provided to LAC. The report will include the results from the radiation survey and daily Construction Field Inspection Log (CFIL) for the removal work.

Figure 1


Los Alamos County
Santa Fe County
Pueblo de San Ildefonso
Landfill Area
Los Alamos County,
transfer pending
BAYO CANYON UNPAVED ACCESS ROAD

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Appendix B

Construction Field Inspection Logs (CFILs) for Bayo Canyon Fence Removal Project

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NAVARRO
Contractor to the U.S. Department of Energy Office of Legacy Management

Construction Field Inspection Log

Site: Bayo Canyon, New Mexico **Project:** Fence Removal Project

Legacy Management Support Services Contract

Date: 9/09/2019

Project Identification	Personnel
Subcontractor(s): Ralph W. Miller, Inc. (RWM)	Subcontractor on Site: 4
Subcontract or Purchase Order No.: LMCP6854	Lower Tier Subcontractor on Site: 0
Subcontractor Supervisor and OSHA Competent Person: Bill Sullivan	Additional LMS Subcontractor Support (affiliation only) N/A
Lower Tier OSHA Competent Person: N/A	Visitors (affiliation only) 1
LMS Contract Construction Site Supervisor: Michele Miller	LM Client was present- Darina Castillo, Site Manager
LMS Contract Health and Safety Technician: Tom Maveal	Note: If required, track personnel by name and the number of hours worked on a separate tracking form.
Subcontractor Time on Project: 07:00 to 13:15 hrs	

Weather	Health and Safety
Temperature: a.m. 55 F + (-) p.m. 75 F + (-)	Type of Training/Briefing:
Weather: AM: Partly Cloudy PM: sunny	Routine Site Maintenance General JSA# LMS-260319-001with authorized field changes for fence/debris removal.
Forecast: Mild and partly cloudy	

Work in Progress/Comments (To Include documentation of today's conditions, activities, events, changes, incidents, near miss, etc.; quantity and type of material and supplies delivered; additional information on Health and Safety, weather, personnel; planning for upcoming events—days, weeks, changes, etc.; equipment mobilized/demobilized; contacts today by phone or in person that affected the project; photographs taken to correlate with the Digital Photograph and Video Log form; etc.)

Documentation

7:00 AM: LM.LMS team arrival at front entrance gate to the Bayo Canyon Site

7:30 AM Conduct Pre-Job Safety Meeting to include review of Plan of the Day(POD), Job Safety Analysis (JSA) and then discuss tasks sequencing for the project.

08:00 AM: radiological survey was initiated on the Bayo Canyon Fence and debris per survey plan. As fence several fence panels were surveyed and acceptable for release towards reuse, RWM laborers began dismantling the fence panel using hand tools and lying the panel on the ground to be collected once the entire fence was dismantled.

08:30AM: As the fence panels were being dismantled, the LMS site lead began to conduct the 2019 site inspection. The focus of the inspection was the FUSRAP 1.5 site condition, the 6 set of bollards and markers as well as to ascertain the status of utility pole removal to be conducted by the Public Utility department. The utility poles and lighting that were deemed no longer necessary were confirmed to be removed.

Construction Field Inspection Log

12:00 PM The 49 10X12 fence panels and 49 12 ft poles were safely loaded onto the 18 ft flatbed truck and securely fastened to be removed from the Site for reuse at the RWM company construction yard.

12:30 PM the debris was collected following the radiological survey and loaded for disposal.

12:45 PM Field debrief occurred which focused on the follow-up visit to pick up the remaining 40 post holders weighing well over 175 lbs each. The plan is to pick up following the Shiprock project work and before the end of September. Need to obtain approval from the Property owner before the follow-up visit date can be set.

1:15 PM Departed the Site

Lessons learned:

1) Development of Exhibits as addendums to the master access agreement requires a level of detail to satisfy the property owner. Need to plan for time to discuss exhibits for future work to ensure we meet the property owner expectations
2) WRM project supervisor took the initiative upon arriving to the site at 7 am to evaluate the road condition to determine if the 18ft flatbed track could get closer to site where the work was being performed. RWM was able to successfully drive the truck to the site without issue.
3) LM.LMS team held excellent communication throughout the day on the project. At the onset, openly discussed at the morning brief the sequencing of work, several discussions held as the fence panels were being dismantled through the end on the handling of the fence post holders.
4) LM/LMS team could have done a better job understanding the fence configuration prior to field implementation. Specifically the design of the fence post holders.

Vendor/Quantity and Type of Material/Supplies Delivered

N/A

Planning – Include Days, Weeks, Changes

LMS to schedule follow-up day to pick up free standing fence post holders from the field after obtaining Property owner approval. The post holder s weigh well over 175 lbs. each and will require equipment to load for reuse.

Equipment Utilization Mobilized/Demobilized (Note: Only equipment mobilized and demobilized will be documented. If required, track equipment by the hour, day, week, or month on a separate tracking form.)

Mobilized: N/A

Demobilized: N/A

Significant Contacts Today

Contact: N/A Issue: N/A Result: N/A

End of Day

Subcontractor employees' departure from site: 13:15

LMS Contract employees' departure from site: 13:15

End of Construction Field Inspection Log date: 9/09/2019

Signature: Digitally signed by MICHELE MILLER (Affiliate) Date: 2019.09.10 01:05:06 -04'00'

Construction Field Inspection Log

Michele Miller	Print and sign/date

Distribution: Darina Castillo (LM); Rebecca Roberts (LMS), Don Lambert(LMS), Michee Miller (LMS) Bayo Canyon Project File

Construction Field Inspection Log

NAVARRO
Contractor to the U.S. Department of Energy Office of Legacy Management

Construction Field Inspection Log

Site: Bayo Canyon, New Mexico **Project:** Fence Removal Project- Day 2

Legacy Management Support Services Contract

Date: 9/18/2019

Project Identification	Personnel
Subcontractor(s): Ralph W. Miller, Inc. (RWM)	Subcontractor on Site: 4
Subcontract or Purchase Order No.: LMCP6854	Lower Tier Subcontractor on Site: 0
Subcontractor Supervisor and OSHA Competent Person: Bill Sullivan	Additional LMS Subcontractor Support (affiliation only) N/A
Lower Tier OSHA Competent Person: N/A	Visitors (affiliation only) 0
LMS Contract Construction Site Supervisor: Michele Miller	
LMS Contract Health and Safety Technician: Tom Maveal	Note: If required, track personnel by name and the number of hours worked on a separate tracking form.
Subcontractor Time on Project: 07:00 to 15:04 hrs	

Weather	Health and Safety
Temperature: a.m. 60 F + (-) p.m. 75 F + (-)	Type of Training/Briefing:
Weather: AM: Partly Cloudy PM: sunny	Routine Site Maintenance General JSA# LMS-260319-001with authorized field changes for fence/debris removal.
Forecast: Mild and partly cloudy	

Work in Progress/Comments (To Include documentation of today's conditions, activities, events, changes, incidents, near miss, etc.; quantity and type of material and supplies delivered; additional information on Health and Safety, weather, personnel; planning for upcoming events—days, weeks, changes, etc.; equipment mobilized/demobilized; contacts today by phone or in person that affected the project; photographs taken to correlate with the Digital Photograph and Video Log form; etc.)

Documentation

7:00 AM: LM.LMS team arrival at front entrance gate to the Bayo Canyon Site

7:30 AM Conduct Pre-Job Safety Meeting to include review of Plan of the Day(POD), Job Safety Analysis (JSA) and then discuss tasks sequencing for the project.

08:00 AM: Inspected then mobilize Equipment- mini excavator. RWM laborers began picking up the 180lb free standing fence post holders via the use of the mini excavator. One by one each of the holders were placed onto a 18 ft flatbed truck, the load secured to be transported to RWM construction yard to be recycled/reused (Note- on day one, 9/9/19, a fence post holder representing the 41 in the field was radiologically surveyed and released).

3:04 PM Departed the Site

Lessons learned:

Taking one freestanding fence post holder to obtain the weight ensured RWM brought the proper equipment to the field for removal.

Construction Field Inspection Log

Vendor/Quantity and Type of Material/Supplies Delivered

N/A

Planning – Include Days, Weeks, Changes

No additional field work required. Upon departure, the property owner(Los Alamos County) and LM Client were was notified via email that the work had been successfully completed without issue and the LMS team departed the site at 15:00 hrs.

Equipment Utilization Mobilized/Demobilized (Note: Only equipment mobilized and demobilized will be documented. If required, track equipment by the hour, day, week, or month on a separate tracking form.)

Mobilized: Mini excavator

Demobilized: Mini excavator

Significant Contacts Today

Contact: N/A Issue: N/A Result: N/A

End of Day

Subcontractor employees' departure from site: 15:04

LMS Contract employees' departure from site: 15:04

End of Construction Field Inspection Log date: 9/18/2019

Signature:  Digitally signed by MICHELE MILLER (Affiliate)
Date: 2019.09.19 10:46:20 -04'00'

Michele Miller Print and sign/date

Distribution: Darina Castillo (LM); Rebecca Roberts (LMS), Don Lambert(LMS), Michele Miller (LMS) Bayo Canyon Project File

Construction Field Inspection Log

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Appendix C

Site Condition Photographs

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Photo 1. BCAA Entrance Gate and Signage (DOE sign to left)

Photo 2. Well Maintained Entry Road into Bayon Canyon Aggregate Area

Photo 3. Newly Established Gate Near Bayo Cayon FUSRAP Site

Photo 4. One Set of Six Bollard Groups Protecting Site Boundary Marker within Pristine Bayo Canyon Aggregate Area

Photo 5. LM/LMS Inspection Team Members Assessing Site Conditions

Photo 6. Soil Erosion Occurring at Base of Protective Bollards

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Attachment 1

Job Safety Analysis

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NAVARRO

Contractor to the U.S. Department of Energy Office of Legacy Management

Job Safety Analysis (JSA)

Descriptive title: Routine Site Maintenance **JSA Number:** LMS-260319-001

General LMS ☒ or **Specific site:** _____ **Issuance date:** 4/1/19 **Expiration date:** 4/1/20

Work Scope (The scope statement must address the following five questions.)	
1.	This work includes visits to conduct site inspections, vegetation monitoring and control, fence installation and repair, and minor site maintenance as needed at LM sites that do not have a site-specific JSA for such activities. "Minor site maintenance" includes those tasks in column 1, below.
2.	The work is performed at all western, LM sites and at sites that will become LM sites throughout the country. The work is performed outside.
3.	Work may be performed at any time during the year; however, schedules will accommodate seasonal weather hazards.
4.	Tools include non-powered hand tools and cordless hand drills and/or screw drivers. Gas powered tools such as chainsaws, brush trimmers, weed whackers, brush mowers and wood chippers. The work includes towing trailers and using ATVs or UTVs when needed to perform required tasks.
5.	The work may be performed by employees of the LMS contractor team or subcontractor employees.

(Use a separate sheet if more space is necessary)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	**Analyze the Safety and Environmental Hazards** (ISMS Core Function #2)	**Develop and Implement Controls** (ISMS Core Function #3)
General hazards	Extreme temperatures, leading to heat or cold stress	• Watch for signs of heat or cold stress in self and others. These include unusual redness or profuse sweating, or uncontrollable shivering. • Take breaks as necessary to cool down or warm up. • Drink sufficient amounts of fluids, approximately 8 ounces every hour.
	Work area vegetation and equipment, causing cuts or abrasions through casual contact	• Wear full-length pants in good condition, and shirts that cover the shoulders with sleeves at least t-shirt length.
	Inclement weather, such as wind or flash flooding, leading to personnel injury or property	• Seek shelter when weather conditions present a threat to safe working conditions. • Cease field activities when winds are strong enough to move equipment or

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
	damage	materials unexpectedly and in an unsafe manner. • Be aware of the potential for flash flooding. Know the topography around the site and plan an escape route. • Avoid streams, gullies, arroyos, or other drainage features when storms are occurring in the drainage basin upgradient of the site. • Do not drive through moving water that is more than 6 inches deep.
General hazards (continued)	Lightning, leading to electrocution or shock	• Use the 30/30 rule to assess threat. • Cease field activities and seek shelter in a building or rubber-tired vehicle when lightning is within 6 miles (30 seconds between flash and bang). • Field activities can resume 30 minutes after the last audible thunder or after the storm visibly passes the work area.
	Wildfire, leading to personnel injury or property damage	• Be aware of wildfire danger. Designate an alternate route out of the site and a meeting place. • Avoid contact between vehicle exhaust systems and dry vegetation. Do not park a vehicle such that vegetation contacts the exhaust system. • Drive on existing roads or tracks when possible. • Use discretion when traveling off road in grassy areas. If grass is determined to be dry, and is tall enough to contact the bottom of the vehicle and/or dense enough to sustain a fire, then use an ATV or walk. • Do not dispose of cigarette butts, matches, or any lighted material on the ground. • If trained, workers may fight incipient fires using an extinguisher or other means.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
General hazards (continued)	Insect bites and stings, leading to allergic reactions or disease	• To avoid insect bites, wear appropriate clothing to reduce skin exposure, and wear insect repellant as desired. • Check for ticks after daily activities if necessary. • If it is necessary to open well covers or vaults, be aware of bees, wasps, and spiders; an insecticide spray may be used in such circumstances. • Wear gloves when reaching into dark or obscured places. • Persons allergic to stings should carry appropriate medical equipment and alert coworkers to their condition.
	Snakebites, leading to illness, injury, or death	• Caution and awareness shall be used while working in areas with potential snake habitat—many sites have venomous snakes. • Wearing snake chaps/gaiters is recommended at sites with tall grass or shrubs if venomous snakes are known or suspected to be present. • If a snake is spotted, warn others of its location and avoid it. Do not attempt to move the snake. To care for someone bitten by a venomous snake, the wound should be immediately washed, immobilized, and kept lower than the heart if possible. Remove any jewelry, and remove footwear if the leg or foot was bitten. Minimize the victim's movement and seek immediate medical attention.
	Poisonous plants, leading to allergic reactions or rash	• Avoid contact with poisonous plants (poison ivy, poison oak, poison hemlock, etc.) and unknown plants. • Protective clothing such as long sleeves, pants, and gloves, will reduce the probability of such exposure. • After contact, clean the skin thoroughly with soap and water to reduce the risk of severe symptoms. • Seek immediate medical attention if symptoms are severe.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
General hazards (continued)	Personnel incident, leading to medical emergency or injury	• Carry a first aid kit that meets the requirements of ANSI Z308.1-2015. • At least one person in the group shall have been trained in first aid/CPR. • Comply with "*Table 1. Two-Person, Three-Tiered Approach" of the HASP* • Some form of external communication should be present. This may be a cell phone, personal locator beacon, or other device. Verify that radios work before taking them to a site. Cell phones may require a booster to get reception at remote sites.
	Ladder use, leading to falls	• Use only ladders that are rated for the weight and work situation. • Inspect ladder before use and use three points of contact when using a ladder. • Place the ladder on firm footing and/or extend the ladder a proper distance above the upper resting surface. Ensure the base is placed 1 foot away from the structure for every 4 feet of the ladder's height.
	Hazardous atmosphere in confined spaces, leading to personnel exposures	• Do not, under any circumstances, enter or place one's head into a crawl space, well vault, open pit, cave, or any other area that has limited ventilation without approval from S&H. • If entry is approved, follow confined space entry procedures. • Confined space entry training is required.
	Elevated work surfaces, leading to falls to lower level	• Be very careful when working near escarpments that are more than 4 feet directly above a lower surface. Stay at least 6 feet from the edge if standing and at least 1 foot from the edge if sitting. • When working on slopes where the lowest level is 4 feet or more below the work level, work in pairs, ensure footing is secure, and practice good housekeeping. • Mark the edge as necessary to warn others.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
General hazards (continued)	Working over moving and deep water, leading to drowning	• Drowning hazard exists if still water is more than 2 feet deep at the edge, or the water is more than 1 foot deep and is moving rapidly. • Use the buddy system, wear a life vest, and have a ring buoy with a minimum of 90 feet of line for emergency rescue when working within 5 feet of water where a drowning hazard exists.
	Hunting activities, leading to gunshot injury	• Wear high-visibility clothing or vests when conducting field work in remote areas during hunting season if hunting activities are expected in the area. • Notify or alert hunters that you are working in the area, if possible. • Leave the site or work area if the situation is considered unsafe.
	Unexpected discharge of firearms in or near the work area, leading to gunshot injury	• Be alert in areas where unplanned community actions could occur (e.g., residents within the area may be uninformed of site activity occurring; the area is known to have trespassing or vandalism concerns). • If the shooting of any gun within the site or close proximity to the site is witnessed by site workers, all work shall immediately stop and workers must seek immediate shelter. As soon as workers believe it is safe to access their vehicle they shall immediately leave the site. • Any close-proximity shooting activity must be immediately reported to the site management from an off-site location. Workers shall not return to the site until approval to resume work is provided by LMS Safety & Health.
	Roaming or aggressive dogs or wild animals, leading to personnel injury	• The site or work area shall be visually assessed upon arrival to look for the presence of potentially aggressive animals. If aggressive animals are in the work area, work will be suspended at that location until the animals have moved out of the area. • If aggessive animals enter the work area, workers shall stop all work, attempt to leave the area immediately without disturbing the animals, and notify site management immediately.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
General hazards (continued)	Roaming or aggressive dogs or wild animals, leading to personnel injury. (continued)	• The use of a deterrent spray (pepper spray) is authorized in the event of workers being unable to leave the area of the aggressive animal or if there is an imminent threat. • The use of deterrent sprays shall follow all manufacturer instructions.
	Inadvertently working in sensitive areas, leading to destruction of threatened and endangered species or their habitat, disturbing wetlands, or destroying/disturbing cultural or archeological artifacts	Contact the Ecology Group to determine if threatened or endangered species, wetlands, or protected artifacts exist at the site prior to the site visit or work activities.
Walking on site	Walking on undeveloped land, leading to slips, trips, falls, sprains, ankle injury, injury from cactus needles	• Avoid slips, trips, and falls by being vigilant on uneven terrain. Concentrate on each step and do not carry items that obscure vision. • Discuss all known site-specific hazards associated with the terrain (steep terrain, gullies, surface conditions, etc.). • Follow existing routes/trails when possible. • Watch for and avoid animal burrows. • Watch for and avoid cactus. • To the extent possible, minimize the amount of walking on rock-armored features (disposal cell, drainage, and erosion protection features). • When it is necessary to cross rock-armored features, be aware of the potential for the rock to move—concentrate on each step and avoid distractions. • Do not jump from elevated surfaces (e.g., back of pick-up trucks). • Wear appropriate shoes with good tread (sturdy, puncture-resistant)work boots or hiking boots with ankle support.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Crossing fences	Inappropriately crossing fences, leading to falls, cuts, abrasions	• When possible, use existing gates to enter and leave sites. • Open gate instead of climbing over gate. • Avoid crossing barbed-wire fences if possible. When it is necessary to cross a fence, use buddy to help get across or through ensuring no contact with barbs, and/or use protective material (e.g., matting) as a barrier between the person and the barbs.
Driving on rough roads or off road	Exceeding the capability of a vehicle or not paying attention to surroundings while driving, leading to accidents, rollovers, getting stuck/stranded, damaging road surfaces, damaging well heads	• Use high-clearance 4WD vehicles as necessary on the site access roads or tracks. • Avoid rough road conditions including ruts, rocks, brush, tight spaces, etc. • Use a spotter when backing up into tight or obscured areas. • Be aware of the potential for well heads to be obscured by vegetation. • Use caution or avoid traversing rough terrain; do not attempt to cross extreme surfaces. • Drive vehicles only on established roads or 2-track routes. Do not travel on roads that are extremely muddy or sandy. Reschedule the inspection if necessary.
Driving to and from sites; driving on-site	Driving an unsafe vehicle or in an unsafe manner, leading to vehicle accidents or malfunction	• Successful completion of the approved defensive driver training course is required for all employees who drive GSA vehicles. • Inspect vehicle before use, ensuring lights, wipers, and tires are in good condition and there are no oil or fluid leaks. • All people shall use a seat belt while vehicle is in motion. • Employ defensive driving techniques and comply with driving regulations. • The driver shall not use any form of two-way communication device while the vehicle is in motion.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Driving to and from sites; driving on-site(continued)	Driving while fatigued, leading to accident	• Do not work more than 12 consecutive hours in a single day, driving and on-site time combined. • Alternate driving duties to prevent driving while fatigued.
	Hot exhaust system, leading to wildfire	Do not stop or park over dry vegetation that is tall enough to contact hot parts of the vehicle.
Towing a trailer	Towing a defective trailer or in an unsafe manner, leading to vehicle accidents, damage to property	• Drivers must successfully complete Trailer Towing Safety training. • Complete Pre-Trip Towing Checklist form (LMS 2164) prior to towing a trailer to document load assessment and inspection requirements. • Check hitch attachment (ensure hitch ball is correct size), trailer coupling (tow chain, clasp pin, and light plug secure), and trailer tire condition and pressure. • Ensure all items on trailer are securely fastened during transport. • Ensure trailer lights are functioning properly (brake, turn signals). • Check trailer integrity and stability periodically during travel. • Prior to driving in tight, congested, or unknown areas, assess the area to ensure that there is sufficient room to turn around or to back out safely. • Use spotter for backing into an area other than an open field or other unobstructed area.
Jump starting a vehicle	Incorrectly using jumper cables, leading to chemical exposure, battery explosion, electrical burns	• Wear safety glasses. • Do not allow vehicles to touch. • Ensure both vehicles' electrical systems are the same voltage. • Cover battery caps with a damp cloth if available.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Jump starting a vehicle (continued)	Incorrectly using jumper cables, leading to chemical exposure, battery explosion, electrical burns. (continued)	• Jump start as follows: 1. Clamp one end of red cable to "+" terminal of dead battery. 2. Clamp other end of red cable to "+" terminal of good battery. 3. Clamp one end of black cable to "-" terminal of good battery. 4. Clamp other end of black cable to metal on vehicle with dead battery (any metal away from battery, carburetor, fuel line, tubing, or moving parts). 5. Observers stand back from both vehicles. 6. Start vehicle with good battery, then start vehicle with dead battery. 7. Remove clamps in reverse order, beginning with the metallic ground.
ATV or UTV use	Exceeding the capability of the vehicle or incorrect transportation of the vehicle, leading to rollovers, cuts, abrasions, scratches, head/bodily injury	• Operators must successfully complete ATV or UTV Safe Operations training. • Trailer must be attached to the tow vehicle when loading/unloading ATV/UTV. • If ATV/UTV is hauled in truck bed, approved ramps shall be secured to the truck to avoid slippage. • Riders must wear a DOT-approved safety helmet for ATVs/UTVs without roll protection, in accordance with the manufacturer's instructions. • Inspect ATV/UTV prior to operating. • Use caution when riding on hillsides and uneven terrain; avoid steep terrain and do not attempt to cross extreme surfaces.
	Hot exhaust system, leading to wildfire	Do not stop or park over dry vegetation that is tall enough to contact hot parts of the ATV/UTV.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Moving small obstructions such as rocks or tree branches	Lifting in an inappropriate manner or without gloves, leading to hand and back injury, slips/trips/falls	• Wear leather or cut/puncture resistant work gloves to protect hands from cuts, abrasions, blisters, etc. • Keep hands and fingers out of pinch points and crush areas. • Use proper lifting techniques (lift with legs, keep loads close to body, keep back straight). • Maintain good footing and grip. • Maximum lift per person shall be 50 lbs. If load is over 50 lbs., use buddy system, a mechanical device, or defer to a maintenance subcontract.
Redirecting minor erosion paths away from surveillance features (e.g., monuments, sign posts, fence posts)	Inappropriate use of hand tools, leading to hand and back injury, slips/trips/falls	• Wear leather or cut/puncture resistant work gloves to protect hands from cuts, abrasions, blisters, etc. • Use proper tools for the job (shovel, pick, etc.) and do not alter the tools. • Maintain good footing and grip. • Take breaks as necessary.
	Incorrect use of storm water controls, leading to excessive erosion or release	Consult the EC POC if erosion becomes significant (cumulatively >1 acre on site) or if sediment is transported off site.
Repairing and maintaining wire, wire mesh, or chain link fencing	Cutting wires, use of defective tools or using tools in an unsafe manner, leading to hand or eye injury	• Use appropriate hand tools designed for repairing fences (fence stretcher, fence pliers, wire/bolt cutters, splicing accessories, etc.). • Inspect hand tools before using them. Tag out or dispose of defective or damaged items. • Wear safety glasses when using tools or when in the area of use. • Wear leather or cut/puncture resistant work gloves to protect hands from cuts, abrasions, blisters, etc.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Repairing and maintaining wire, wire mesh, or chain link fencing. (continued)	Use of tensioning tool (cable come-along, chain pull, nylon ratchet strap), leading to personnel injury Use of tensioning tool (cable come-along, chain pull, nylon ratchet strap), leading to personnel injury (continued)	• Make sure that the tensioning tool(s) is firmly attached to the fence fabric at the anchor point. • Keep the distance between anchor points as short as possible. Apply only enough tension needed to tighten the fabric and not stretch it. • Use a down line post as an anchor point when possible. • For end of line tensioning, vehicles or construction equipment can be used as an anchor point only, not to apply tension to the fence fabric. A tensioning tool must be used to tension the fabric.
Installing metal t-posts and rebar	Installing posts into ground, use of inappropriate tools, lack of PPE, leading to hand, eye, back, foot injury; hearing damage; contact with underground utilities	• A penetration permit is required prior to installation of t-posts and rebar. • Use appropriate t-post driver when installing metal t-posts. • Ensure proper footing and lifting techniques. • Keep hands and fingers out of pinch points and crush areas. • Wear leather or cut/puncture resistant work gloves to protect hands from cuts, abrasions, blisters, etc. • When driving metal rebar for establishing monitoring locations or points of reference, use appropriate weight hand sledgehammer. • Wear safety glasses when using tools or when in the area of use. • Wear hearing protection when installing t-posts or rebar, or when in the area of installation. • Wear safety-toe boots meeting ANSI Z41 specifications when installing posts and rebar.
	Use of concrete, leading to eye injury or skin irritation	• Wear safety glasses when mixing, pouring, or working with concrete. • Carry water and rinse concrete off skin as soon as possible.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Cutting shrubs	Use of defective tools, using tools in an unsafe manner, leading to cuts, abrasions, hand injury, eye injury, ear injury	• Inspect hand tools. Tag out or dispose of defective or damaged items. • Use hand clippers, loppers, or pruning saws to cut plants at the base. • Wear safety glasses when using tools or when in the area of use. • Wear leather or cut/puncture resistant work gloves to protect hands from cuts, abrasions, blisters, etc. • Wear ear protection or covering (hat or muffs) when cutting tamarisk.
Herbicide spraying	Application by unqualified personnel, incorrect application, leading to chemical exposure, release or spill into the environment	• Contact Marilyn Kastens (970-248-6781) prior to project planning that involves weed control work involving application of herbicides. • Use the Procedure for Handling Herbicides at Western Legacy Management Sites "**LMS/PRO/S12853-0.1**"
Spray painting posts and other surfaces	Not wearing PPE, inhaling paint mist or spray, leading to chemical exposure or eye injury	• Follow manufacturer's directions and warnings on the spray can. • Wear safety glasses and protective (e.g., nitrile) gloves. • Stand upwind while applying spray paint.
Equipment/tool usage, including cordless drills and/or screw drivers to perform minor maintenance or installations	Use of defective tools, lack of hazard analysis for power tools, using tools in an unsafe manner, leading to cuts, abrasions, hand injury, eye injury	• Ensure equipment being used is safe to use. Inspect before use and tag out or dispose of defective or damaged items. • Use equipment in a safe manner and only for its designed function. • Wear leather or cut/puncture resistant work gloves to protect from cuts, scrapes, etc. • Keep hands and fingers out of pinch points. • Wear safety glasses when using tools or when in the area of use.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Gas powered equipment usage, including chainsaws, brush trimmers, weed whackers, brush mowers and wood chippers to perform minor work tasks	Use of defective tools, lack of hazard analysis for power tools, using tools in an unsafe manner, leading to cuts, abrasions, hand injury, eye injury, hearing injury or loss to extremities	• Ensure equipment being used is safe to use. Inspect before use and tag out or dispose of defective or damaged items. • Operate the equipment in accordance with equipment owner's manual, heeding all safety information posted on equipment. • Wear hearing protection at all times while in operation • Wear steel-toed boots, cut and puncture resistant work gloves, safety screen, sawyer chaps and long sleeved shirt while in operation. • Wear hardhat if potential for head injury exists (i.e. getting hit by falling branches.
	Environmental Damage • Possible contamination of soils with petrochemicals • Fuel Spills Vegetation disturbance by equipment and vehicles	• If refueling onsite, follow the approved LM fueling plan. • Inspect equipment/vehicles for leaks upon arrival and before leaving site. Correct any leaks prior to use on site. • If leaks occur during work, turn off equipment, stop leak, notify others in area, contain leaked material, and prevent it from entering waterways. • Carry appropriate spill or leak clean-up materials (absorbent materials, shovel, container, etc.) and immediately contain spill. Photo document spill. (Pre and Post clean-up if greater than a few gallons.) Immediately report leak to Site Lead who will report leak to Environmental Compliance and Safety & Health. • Do not drive vehicles or equipment on undisturbed areas. Stay on roads and in designated staging areas. • Keep fuel containers closed and in designated fuel storage area when not in use. • Minimize volume of fuel stored to job requirements. • Regularly inspect fuel storage areas. • Replace damaged fuel containers. • Keep appropriate spill kit in vicinity of fuel containers.

Job Safety Analysis (JSA)

Define the Scope of Work by Individual Tasks (ISMS Core Function #1)	Analyze the Safety and Environmental Hazards (ISMS Core Function #2)	Develop and Implement Controls (ISMS Core Function #3)
Gas powered equipment usage, including chainsaws, brush trimmers, weed whackers, brush mowers and wood chippers to perform minor work tasks	Environmental Damage • Possible contamination of soils with petrochemicals • Fuel Spills Vegetation disturbance by equipment and vehicles	• In transporting fuel, make sure containers are secure prior to departure. • If practical, use a plastic tub or plastic drop cloth for secondary containment when fueling. • If possible, avoid fueling over natural surface or near water. • Do not fuel in a radiologically contaminated area unless approved by the Radiological Control Technician. • In the event of a spill, Stop spill, warn others in area, isolate spill area and prevent from spreading onto ground or into water. Estimate the quantity of material spilled, immediately contact S&H and EC groups, collect and properly manage spilled materials and associated wastes as directed by supervisor, EC, and in accordance with applicable regulations. If directed, report the spill on the Incident Reporting form.
	Fire Hazards: Potential fire resulting from fueling operations/range fires.	• Only authorized personnel shall be in the fueling area. • Maintain an organized supply and staging area with appropriate fuel containment, spill response/clean-up equipment, absorptive materials, and fire protection equipment. • Smoking is allowed in only designated areas. Cigarettes shall be disposed of only in approved containers. • Do not overfill when fueling equipment. • Shut off equipment prior to fueling. • Vehicles shall remain on existing roads as much as possible and equipment shall be operated in clear areas. • Fueling of equipment shall be conducted in accordance with the approved LM fueling plan. • Fire extinguishers shall be available with all equipment and vehicles when operating off road.

Job Safety Analysis (JSA)

JSA Review/Approval

Line Supervisor (Print Name)	MARILYN KASTENS (Affiliate) 2019.03.26 15:24:30 -06'00' Signature	Date
S&H Representative (Print Name) SCOTT FICKLIN (Affiliate)	Digitally signed by SCOTT FICKLIN (Affiliate) Date: 2019.03.28 06:27:58 -06'00' Signature	Date
Environmental Compliance Representative (Print Name)	Sara J. Woods 2019.03.27 09:31:29 -06'00' Signature	Date
Subcontractor/Worker Representative (Print Name)	Signature	Date

Job Safety Analysis (JSA)

I have reviewed, understand the hazards present at the worksite, and will comply with the Integrated Work Planning and Control document to perform work, as acknowledged by my signature below. I understand the JSA does not authorize work.

Print Name	Signature	Company	Date

Job Safety Analysis (JSA)

Field Change Authorization and Review

Field Management Changes (use a separate sheet if more space is necessary)

Define New or Changed Scope of Work by Tasks (ISMS Core Function #1)	Analyze the New or Changed Hazards (ISMS Core Function #2)	Develop and Implement New Controls (ISMS Core Function #3)	Date
Removal of Temporary Fencing	Pinch Points	Be Aware of Pinch Points when Removing Fencing Panels, Wear ~~to~~ Work Gloves for fencing Removal	8-27-19
	Lifting Fence Panels	Use Proper Lifting Techniques, Maximum Lift Per Person is 50 lbs	8-27-19
		Use 2 People To Lift each Fencing Panel	
Loading Fence Panels on Trailer		Be aware of uneven load as Fence Panels are Loaded on Trailer & Stack Panels carefully To avoid Tipping Hazard	

Thomas Maveal
ESH Representative (Print Name)

Thomas Maveal
Signature

8/27/19
Date

Line Supervisor (Print Name)

Digitally signed by MICHELE MILLER (Affiliate)
Date: 2019.09.03 11:30:53 -04'00'
Signature

Date

Worker or Subcontractor Representative (Print Name)

Signature

Date

Job Safety Analysis (JSA)

I acknowledge I have had the opportunity to provide input to the field change and am aware of the scope change, new or changed hazards, and associated work controls.

Print Name	Signature	Company	Date

Provide Feedback and Improvement Suggestions

Provide Feedback and Improvement Suggestions (ISMS Core Function #5)

Attachment 2

Plan of the Week

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Plan of the Day

Site name: Bayo Canyon Aggregate Area and Bayo Canyon, New Mexico,

Date(s) Work Authorized: September 8 – 10, 2019 and 16-18,2019

Work authorized by: Michele Miller

Site manager or site lead (print name)

Digitally signed by MICHELE MILLER (Affiliate) Date: 2019.09.16 17:00:06 -04'00'

Site manager or site lead (signature)

1. Authorized Activities

Item No.	Work Type	Activity Description or Work Control Reference[1]	Applicable JSA	PIC[2]
1	☒ SBA ☐ PBA ☐ MWT ☐ PAE	Bayo Canyon Aggregate Area and Bayo Canyon Sites Travel Bayo Canyon, New Mexico on Sunday, September 8 for the purpose of conducting the annual site inspection, radiological survey and fence/debris removal. travel 9/16	N/A	Michele Miller
2 Inspection, Rad Survey and Fence/Debris Removal	☒ SBA ☐ PBA ☐ MWT ☐ PAE	Monday, September 9 and Wednesday, September 18 First, LM/LMS Team to review and sign the Plan of the Week (POW). Next, review and sign the 2019 Job Safety analysis (JSA). Once the POW and JSA are signed, the prime contractor , Navarro, and its subcontractor, Ralph W. Miller, Inc are authorized to Conduct the Annual Site Inspection, perform Radiological Survey and Perform the Removal of Fence and Debris. The fence and debris removal effort will follow the outcome of the radiological survey and performed per work scope and requirements set forth in Master access agreement, Exhibit A1. Immediately following the Field work, a debrief will occur to summarize discoveries and discuss the inspection results. The LM/LMS Team will depart the Bayo Canyon Site Inspection report to follow within 90 days.	Routine Site Maintenance LMS-260319-001 Issued 4/1/19. Set Expires 4/1/20	Michele Miller

[1] A description of the authorized work scope that is sufficient to define the operational envelope. This may be a brief verbal description, an MWT reference number, a procedure title or number (and step reference, if needed to define the work scope), or a PAE title (and step reference, if needed to define the work scope).
[2] The LMS Person in Charge of the activity and directing the work/workers at the activity level. Example PICs include: field work supervisor, CSS, or first-level line manager.
SBA = Skill-Based Activity, MWT = Minor Work Task, PBA = Procedure Based Activity, PAE = Project/Activity Evaluation

Plan of the Day/Plan of the Week (continued)

2. Safety, Radiological, and Environmental Precautions

a) This section is used to document the dissemination of information to site personnel. This section may contain safety share topics; discussion of prior day/week lessons learned; formal lessons-learned review; timely orders, new or revised site-wide procedures, or JSAs (specify by listing or as a full brief of the document); review of field changes made to procedures or JSAs; required-reading list updates; or other general briefings the site manager/site lead deem appropriate. Note relevant changes in site conditions (e.g., weather extremes, visitors, abnormal conditions, new employees, new or non-routine activities).

*b) All workers have, and are expected to use, **step back** and **stop work authority**.*

c) All workers should notify their supervisor or Health and Safety representative of abnormal events, such as changed site conditions, vandalism, or discovery of cultural resources in the work area, etc.

d) Employees must notify their supervisor immediately of any injury or potential injury, regardless of how minor it may appear at the time.

*e) Health and Safety must be contacted prior to entry into **any** confined space.*

3. Site and Project Contact Information—Names and Phone Numbers

This section should contain pertinent contact information and job assignments deemed necessary by the site manager/site lead. Examples of contact information include: site managers, project leads, operations leads, construction inspector, technical monitor, and site safety supervisor. If multiple projects/activities are being conducted, the site manager/site lead may determine that each project/activity include the respective positions. In this case, the site manager/site lead may elect to specify contact information for each project.

Michele Miller, Project Manager, Navarro, (513) 648-7544, Cell Number (412) 818-7015 (24/7)

Plan of the Day/Plan of the Week (continued)

4. Emergent Work

Emergent work is new or additional work activities that are identified for performance. Emergent work requires the same level of planning and authorization as normally approved activities. Emergent work cannot be performed unless it is authorized by the site manager/site lead.

Item No.	Work Type/Activity Description/Applicable JSA/ Roles and Responsibilities	Authorization (site manager or site lead Signature)
	☐ SBA ☐ PBA ☐ MWT ☐ PAE	
	☐ SBA ☐ PBA ☐ MWT ☐ PAE	
	☐ SBA ☐ PBA ☐ MWT ☐ PAE	
	☐ SBA ☐ PBA ☐ MWT ☐ PAE	
	☐ SBA ☐ PBA ☐ MWT ☐ PAE	

Plan of the Day/Plan of the Week Signature Sheet

Site Name: Bayo Canyon Aggregate Area and Bayo Canyon, New Mexico **Date(s) Work Authorized:** September 8-10, 2019

Name (print)	Job Title	Company Name	Worker's Initials	Date

Signatures obtained prior to field work are not being provided.

Attachment 3

2019 Bayo Canyon Radiological Survey

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NAVARRO
Contractor to the U.S. Department of Energy Office of Legacy Management

Radiological Survey Map

Radiological Survey Number: 190916-001 **Page** 1 **of** 3

Purpose: Radiological Survey of Parameters Fencing (Chain Link) Truck #: N/A Trailer #: N/A

RWP number: N/A Time: 8:00 AM Date: 9/9/2019

Site name: Las Alamos Location: Bayo Canyon

RCT (printed): Tom Maveal Reviewer signature: Scott A. Newsom / Judy A. Maxwell Date: 09/16/2019

Counting Instruments:	Instrument 1		Instrument 2		Instrument 3		Radiation Instruments:	Instrument 4
Instrument/probe model:					26		Instrument/probe model:	
Instrument serial number:					PF008797		Instrument serial number:	
Probe serial number:							Probe serial number:	
Calibration due:					1/8/2020		Calibration due:	
Efficiency:	α	β	α	β	α	β 0.45	Background (dose rate):	
Background (cpm):	α	β	α	β	α	β 105	Other info (as needed):	
S_C (dpm/100cm^2):	α	β	α	β	α	β 369		
Area probe correction factor:					6.5			

Surface Contamination and Radiation Survey Results

Item Surveyed / Map Location	Counting Inst. No. Used	Smear Survey (Instrument 1 or 2)						Direct Survey (Instrument 3)						Exposure Rate Survey
		Gross Counts		Net Counts		Activity		Gross Counts		Net Counts		Activity		
		Alpha cpm	Beta/gamma cpm	Alpha cpm	Beta/gamma cpm	Alpha dpm/100cm^2	Beta/gamma dpm/100cm^2	Alpha cpm	Beta/gamma cpm	Alpha cpm	Beta/gamma cpm	Alpha dpm/100cm^2	Beta/gamma dpm/100cm^2	
1	3								92		-13.0		< Sc	
2	3								110		5.0		< Sc	
3	3								108		3.0		< Sc	
4	3								77		-28.0		< Sc	
5	3								75		-30.0		< Sc	
6	3								69		-36.0		< Sc	
7	3								85		-20.0		< Sc	
8	3								82		-23.0		< Sc	
9	3								87		-18.0		< Sc	
10	3								74		-31.0		< Sc	
11	3								74		-31.0		< Sc	
12	3								93		-12.0		< Sc	
13	3								79		-26.0		< Sc	
14	3								77		-28.0		< Sc	
15	3								73		-32.0		< Sc	
16	3								103		-2.0		< Sc	

RCT signature: Thomas Maveal File index number: LMS-0370.10

NAVARRO
Contractor to the U.S. Department of Energy Office of Legacy Management

Radiological Survey Map

Radiological Survey Number: 190916-001 **Page** 2 **of** 3

Surface Contamination and Radiation Survey Results

Item Surveyed / Map Location	Counting Inst. No. Used	Smear Survey (Instrument 1 or 2)						Direct Survey (Instrument 3)						Exposure Rate Survey
		Gross Counts		Net Counts		Activity		Gross Counts		Net Counts		Activity		
		Alpha cpm	Beta/gamma cpm	Alpha cpm	Beta/gamma cpm	Alpha dpm/100cm^2	Beta/gamma dpm/100cm^2	Alpha cpm	Beta/gamma cpm	Alpha cpm	Beta/gamma cpm	Alpha dpm/100cm^2	Beta/gamma dpm/100cm^2	
Debris Pile 1	3								109		4.0		< Sc	
Debris Pile 2	3								93		-12.0		< Sc	
Debris Pile 3	3								68		-37.0		< Sc	
Debris Pile 4	3								87		-18.0		< Sc	
Debris Pile 5	3								75		-30.0		< Sc	

Applicable Surface Contamination Limits

Check one for alpha, one for beta.

Alpha (removable/total)	☐	1000/5000	☐	200/1000	☐	20/50
Beta (removable/total)	☐	1000/5000	☑	200/1000		

Activity Equation

Gross count minus BKGD count = Net count

Net count/Eff = dpm

Dpm x Area Probe Correction Factor (APCF) = dpm/100cm^2

APCE

44-9 = 6.5

FHZ 732 (GM) = 6.5

43-10-1 = 1

Remarks:

NAVARRO
Contractor to the U.S. Department of Energy Office of Legacy Management

Radiological Survey Map

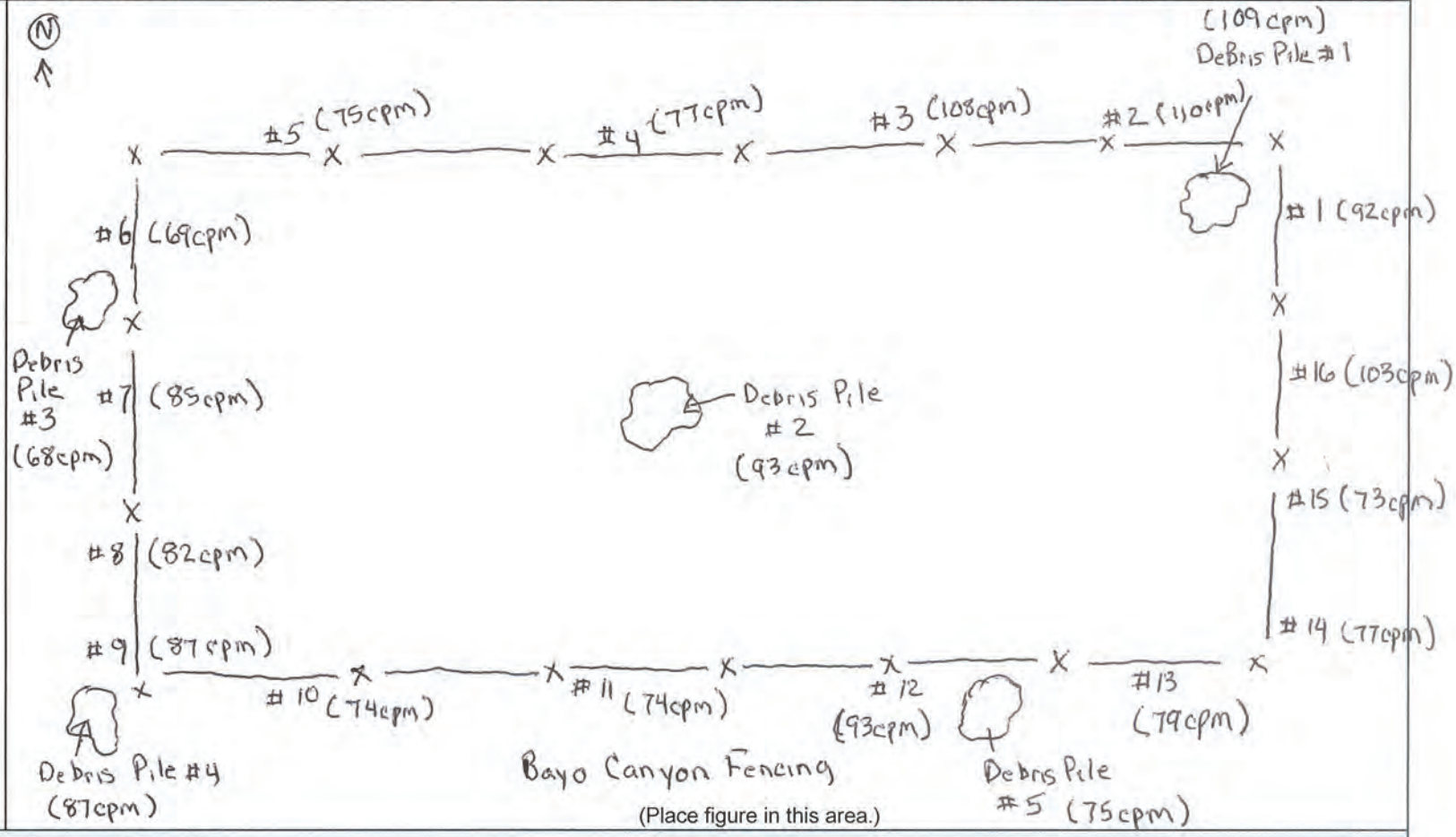
Radiological Survey Number: 190916-001 Page 3 of 3 ~~9-9-19~~ 9-9-19

Contamination and Radiation Survey Figure

Standardized Map Symbols

- ○ = Smear/wipe (no. inside)
- △ = Air sample (no. inside)
- 6.3 = General area exposure rate (result in µR/hr)
- ✱ = Contact exposure rate (result beside, in µR/hr)
- # = Direct frisk (count rate) (result beside)
- ☆ = Direct gamma (count rate) (e.g., 2"x2" NaI) (result beside)

Note: Note units used if not identified above.



Remarks: X— = Fenced Area Boundry

~~Background~~ ~~9-9-19~~ 9-9-19

Background = 105cpm

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