LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL RESTORATION PROGRAM
OPERABLE UNIT 1071

VOLUNTARY CORRECTIVE ACTION PLAN
SWMU 0-016, FORMER SMALL-ARMS RANGE

Revision 3
7 February 1994

6743

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1. INTRODUCTION

The United States Forest Service (USFS) and the County of Los Alamos have requested the cleanup of Solid Waste Management Unit (SWMU) 0-016, the former small arms range immediately west of Guaje Pines Cemetery, so that the land can be transferred from the USFS to a local developer as part of a larger public-private land exchange. This Voluntary Corrective Action (VCA) plan is being proposed, instead of following the Resource Conservation and Recovery Act Facility Investigation (RFI) / Corrective Measures Study (CMS) process as presented in the Operable Unit (OU) 1071 RFI Work Plan (LANL, May 1992), because of the time constraints placed on the Environmental Restoration (ER) Program by the pending land exchange. This plan will provide the basis for the implementation of the VCA in a manner that is consistent with the process outlined in the Installation Work Plan for Environmental Restoration (LANL, Nov 1993).

2. SITE BACKGROUND AND ENVIRONMENTAL SETTING

2.1. Detailed Description of SWMU 0-016

SWMU 0-016 is a former small-arms range located in the Santa Fe National Forest west of Guaje Pines Cemetery in Los Alamos, New Mexico (Figure 1). The site, which occupies nearly three acres, consisted of several small buildings and several earthen berms. At present, only concrete steps, pads, and the earthen berms remain.

2.1.1. Operational History

The small-arms range was constructed for use by security forces for the Atomic Energy Commission (AEC). Construction was done after January, 1947, when control of all Manhattan Project sites was transferred to the Atomic Energy Commission (AEC). The range was used by security forces for small-arms target practice until the present firing range in Sandia Canyon was built in the early 1960s. The site has been used unofficially by the general public in the intervening years. The Department of Energy (DOE) released the range and adjacent area to the USFS in 1976.

2.1.2. Physical Setting

The former range is located on a ridge lying between two small valleys which converge about one-quarter mile to the east (Figure 1). The ephemeral streams in these valleys feed into the upper end of Rendija Canyon. The terrain at the site varies from relatively flat on the ridge top to steep grades at the edges of the site which are associated with the valley walls.

With the exception of the areas with soil berms, the site is covered by a thin veneer of soil overlying the Bandelier Tuff. In places, weathered Bandelier Tuff crops out. Soil thickness increases in the colluvial soils on the adjacent valley slopes and is thickest in the alluvial deposits in the valley bottoms.

Ephemeral surface-water conditions occur in the adjacent drainages and are associated with snow melt runoff in the spring and localized thunderstorms during the period of July through September. The main aquifer beneath the site is approximately 1300 feet below the land surface and occurs within the Puye Formation and Santa Fe Group sediments.

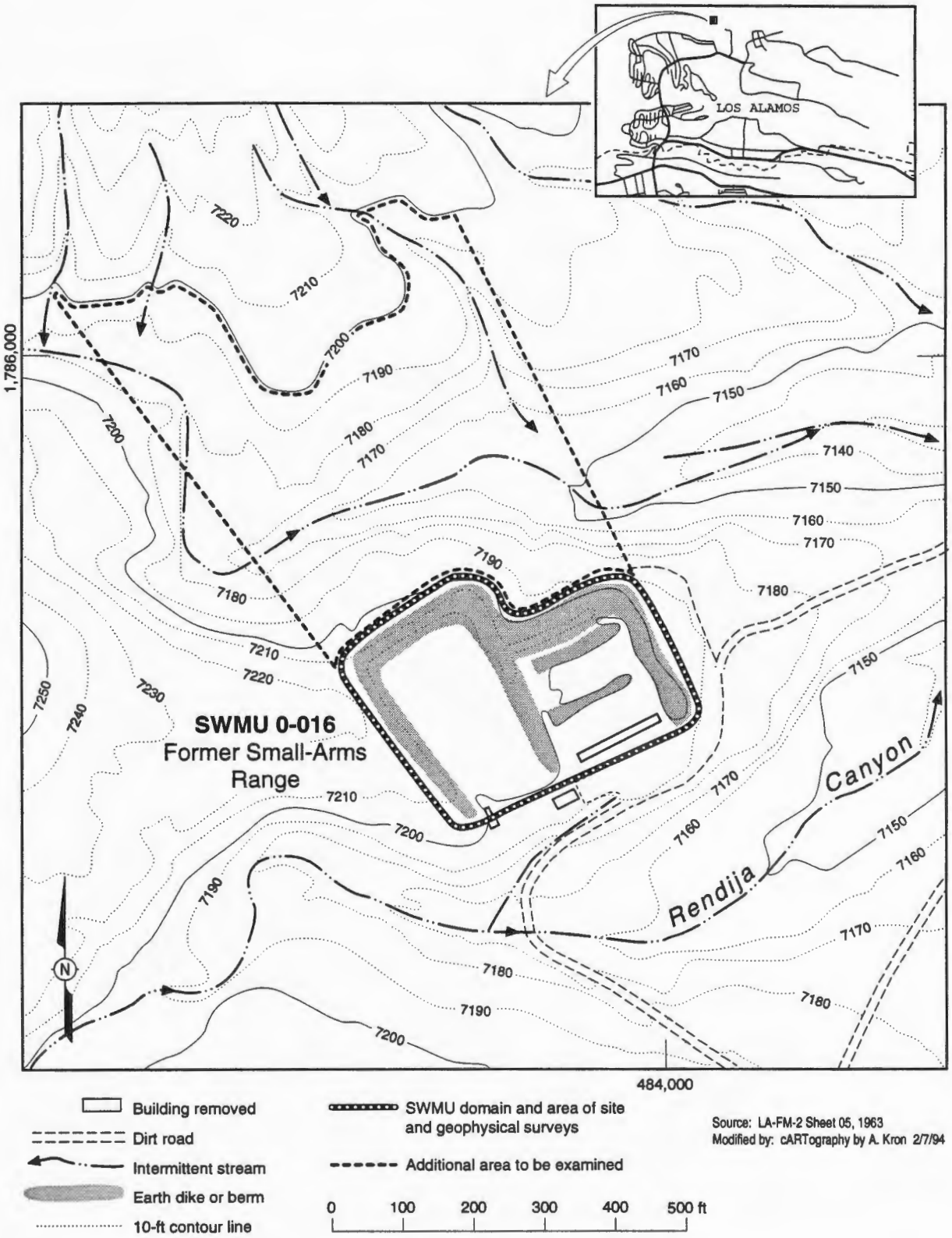

Figure 1. Location and site map of SWMU 0-016 (Former Small-Arms Range).

2.1.3 Regulatory Status of Unit

The site is a Hazardous and Solid Waste Amendments (HSWA) SWMU. This SWMU was not included in Table A of the original HSWA permit. This unit was identified in a permit modification request and new SWMU notification submitted to EPA in February 1993. This permit modification is currently under EPA review.

2.2. Summary of Previous Investigations

The USFS conducted a study of the area in 1991 in which 11 of 21 samples taken from the SWMU failed the TCLP test for heavy metals. (The data are not available, but a summary is given in Memorandum 7400, USFS, 1992, attached). This was attributed to the presence of lead bullets and fragments within the earthen berms. USFS Memorandum 7400 concludes that, because the TCLP test did not reproduce the essentially pH-neutral soil conditions at the site, the lead-contaminated soil does not constitute a release of a hazardous substance under the Comprehensive Environmental Response, Liability, and Compensation Act. The Forest Service further maintains in the memorandum that the lead in the earthen berms does not constitute a threat to the ground water in the area due to the great depth to water (approximately 1300 feet below ground surface).

Studies conducted by the Naval Engineering Laboratory indicate that metallic (elemental) lead (Pb) is the prime contaminant in small-arms firing ranges, but copper (Cu) and zinc (Zn) may also be found (Heath, *et. al.*, 1991). Other forms of lead, such as oxidized lead, are not commonly found in small-arms ranges and would not be expected to be present in the arid environment found in Los Alamos.

2.3. Types and Volumes of Waste Present

Given the purpose of the range, it is reasonable to assume that common military small-arms of the period were fired there. A variety of bullets, both bare lead and lead covered with metal jackets, in several rifle and pistol calibers have been found. Some of the bullets have shattered on impact, so that the material found varies from intact bullets to grain-sized fragments.

The SWMU domain is coincident with the boundaries of the former small-arms range and encloses nearly 3 acres (Figure 1). The target berms and part of the floor of the range covered by soil contain lead bullets, lead fragments, and particulate lead. The berms are estimated to contain about 3000 cubic yards of soil. The heaviest concentrations of bullets and lead fragments are in the target berms, but they are also present in reduced concentration in the side berms. The quantity of lead is unknown, but is expected to be no more than the volume of ten drums.

2.4. Potential Pathways of Contamination Migration

Contaminants associated with spent bullets, primarily lead, may have been released to the environment through infiltration, water entrainment and/or leaching/dispersion from the former small-arms range. As a result, contaminants that may be present in the soil can leach/ disperse through the vadose zone or be entrained by surface water and transported downstream by run-off. Unexploded cartridges may also be present at the site and may eventually be exposed by erosion.

Figure 2 presents the conceptual model for potential releases of contaminants from the former small-arms range and subsequent exposure of humans and terrestrial animals.

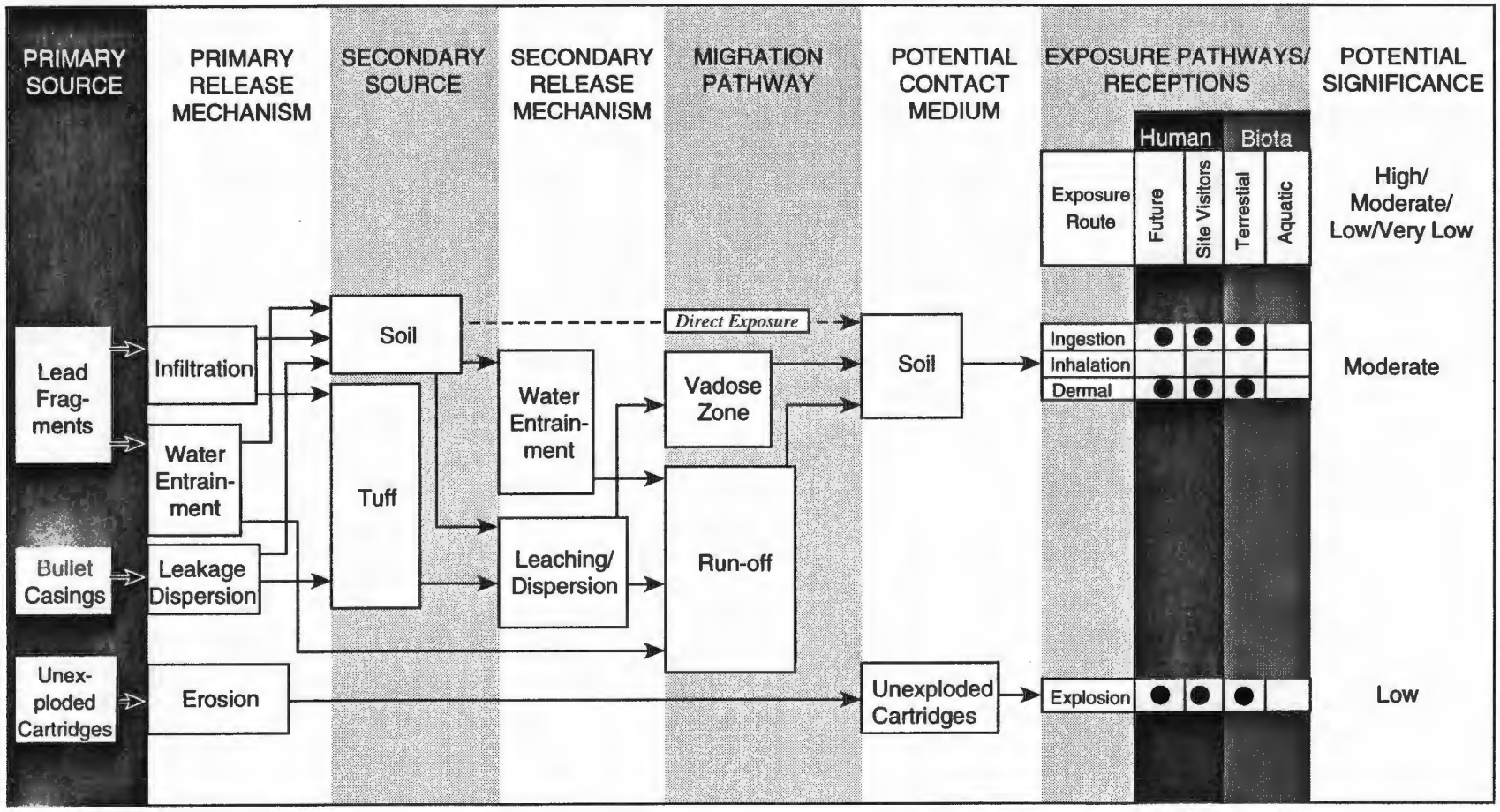

Figure 2. Conceptual model of SWMU 0-016.

In Figure 2, "future residents" refers to people who may live on the site some time in the future, and "site visitors" refers to people who walk through the site under current conditions. Terrestrial animals in the vicinity of the firing range may also be impacted.

2.5. Potential Impacts on Public Health and Environment

Based on the migration pathways described in Subsection 2.4, it is possible that contaminants are currently present in or will migrate to the soil. As a result, human exposure to contaminants from this SWMU may occur through incidental ingestion or dermal contact with soil. Unexploded cartridges present at the site would pose a potential explosion hazard should they be struck by a heavy object. Additionally, terrestrial animals may be exposed to site contaminants via incidental ingestion or dermal contact with soil.

3. VCA PLAN RATIONALE

The sampling plan for SWMU 0-016 presented in the OU-1071 RFI Work Plan calls for characterization of the site, not remediation. Since the sampling plan was completed, the USFS and a private developer have reached an agreement on a land exchange that includes the former small-arms range. To date, only the land adjacent to the range has been exchanged. The agreement calls for the range to be exchanged also, if it can be cleaned up within two years of the initial exchange. The USFS, the private developer, and the County of Los Alamos want the cleanup to be done in order to open the entire area for development, and have requested DOE to remediate the site immediately. Therefore, this VCA plan is being proposed, instead of following the RFI/CMS process as stated in the Operable Unit (OU) 1071 RFI Work Plan (LANL, May 1992).

3.1. Extent of Contamination

The nature of small-arms ranges dictates that lead bullets and lead fragments be largely restricted to the range itself, with the majority of the lead in the target berms. At SWMU 0-016, some bullets are also present in the area immediately behind the target berms. Thus, the extent of significant contamination is very limited.

Undoubtedly some shots were fired above the tops of the target berms, sending bullets miles beyond the small-arms range, but the number of bullets involved is most likely very small. Given the complete impracticality of addressing the issue of stray bullets scattered over tens of square miles, the domain of this VCA is limited to the range itself and the area immediately adjacent to it on the down-range side (area enclosed by dashed line on Figure 1)..

3.2. Remedy

Given the nature of the site, two remedies were considered: 1) Relocate the soil containing lead bullets and lead fragments to the berms on a currently active small-arms range, 2) Remove any bullets and lead particles from the soil to bring the lead concentration down to the level required for residential use. The first remedy was rejected as an option by Region 6 of the EPA, leaving the second remedy as the only option available.

The LANL screening action level (SAL) for lead in soils is 500 ppm. This SAL is derived from a generic facility risk assessment based on the assumption that sites will be designated for residential use. This is also the lower cleanup level for lead in soils in residential settings established by the U.S. Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response Directive 9355.4-02 (September, 1989) and the New Mexico Environment Department. The level of 500 ppm will be used as an upper limit for lead in soils for this VCA.

The only known, reasonably priced method of removing lead from soil is a soil washing process that has been successfully used at similar small-arms firing range sites in California and elsewhere. This process has been shown to reduce the lead concentration in soils to well below the 500 ppm screening action level (LANL, Nov 1993).

3.3. Site for Waste Treatment, Storage and Disposal

All of the equipment and the two ponds required for storing the water used in the treatment process will be located within the SWMU boundaries.

Waste storage/disposal is not required. Upon conclusion of the VCA, the site will contain approximately 3000 cubic yards of cleaned soil. The processed soil will be used by the new owner to raise the grade of the access road into the site. The new road will be finished with an asphalt surface.

The lead removed from the soil will be placed into 55-gallon drums and sent to a recycling center by Johnson Controls, Inc. Therefore, the quantity of removed lead is not a problem.

3.4. Permit Requirements

A discharge permit has been obtained for the process water that will be recirculated through two ponds from the New Mexico Environment Department, Ground Water Protection and Remediation Bureau. The water will be allowed to evaporate after the site is cleaned as a further safeguard for the environment.

An excavation permit is required for site operations. It was issued on 6 October 1993.

3.5. Impacts on Human Health and Environment, Cost, and Cleanup Schedule

Lead concentrations will be reduced below 500 ppm, thus bringing the soil within the required level for residential land use. This will ensure that there is no health risk to the future site residents or to the environment.

The total cost of environmental restoration of the site will be reduced by implementing the VCA because the cost of characterization has been eliminated. The funds originally designated for characterization can now be used to pay for part of the cleanup.

The remediation of SWMU 0-016 accelerates the final remedy for the site by about 8 years.

4. VOLUNTARY CORRECTIVE ACTION TASKS

4.1. Detailed Description of Corrective Action Activities

All of the earthen berms at the site and the top 2 feet of soil from the floor of the firing range will be processed to remove lead. The majority of lead is expected to be concentrated in the target berms located at the north end of the small-arms range. Although the berms that parallel the firing lines are presumed to contain only minor amounts of lead, they will also be processed to ensure that no lead-contaminated soil remains at the site.

Lead will be removed from the soil by a soil washing process that uses a modified sand and gravel plant to separate lead from the soil. The plant for treating the soil and the two ponds for storing the water used in the treatment process will be located within the SWMU domain (Figure 1). Soil will be transferred from the berms to the soil washing plant using front-end loaders. The soil will be sprayed with water, as necessary, to minimize the amount of lofted dust.

This soil washing process operates on the principle that most soil particles have average densities of 3 to 4 grams per cubic centimeter (g/cc), while particulate lead has an average density of 11.4 g/cc. This difference in average densities is used to physically separate, concentrate, and remove the fine particulate lead from the soil. Larger lead fragments and bullets will be separated from the coarse fraction of the soil by automated sieves.

The soil washing plant consists of a hopper feeder above a jigging box that is used to sort out coarser material from the soil and to retain larger lead fragments and bullets. After the larger lead fragments and bullets are removed, the remaining soil is fed into two sand screws which, in turn, feed the soil into a series of stacked power hydro-screens with 3/4", 1/4", and 1/8" openings. High-pressure water sprays are used to force the soil through these screens. The finer material that passes through these screens is then sent through a 3-foot diameter centrifugal separator. The centrifugal separator uses water and the greater density of lead to separate out the fine particulate lead.

The washed soil and associated water then flows along a drag tank where most of the soil is removed. Next, the water flows into two large recirculating ponds (200 ft. by 50 ft. each) that are used to separate out the fine soil suspended in the water and to act as reservoirs to recirculate the water used during the soil washing process. The recirculating ponds will be excavated during site preparation. The two recirculating ponds will be lined to prevent the release of any water used in the soil washing process.

Airborne lead will be monitored at the site for health and safety reasons and to gauge and prevent any release of airborne lead to the environment. High-volume air samplers will be positioned both upwind and downwind of the site. Samples from these air samplers will be gathered and analyzed for lead by XRF twice per day. If detectable amounts of lead are found to be released during the soil washing process, engineering controls will be undertaken to prevent further airborne release of lead. Since the soil is wetted during the washing process and dry soil will be sprayed with water before handling, it is unlikely that significant amounts of lead will be released to the air. It is expected that approximately 60 to 90 samples will be gathered from the high-volume air samplers and analyzed in the field during the soil washing process.

A Phase Report documenting the VCA, including all data and results, will be submitted to the EPA when the project is completed. Copies will be provided to the USFS and the future site owner.

4.2. Characterization of Materials for Disposal

The composition of the lead bullets and fragments is predominantly lead with minor amounts of other elements (Heath, *et. al.*, 1991). No characterization of the lead is either necessary or appropriate given the nature of the VCA. The extracted lead will be sent to a recycling center.

4.3. Criteria to Determine Effectiveness of VCA

Sampling and analysis will consist of a comprehensive series of field and laboratory analytical techniques. The soil will be sampled as it is processed throughout the course of the project to ensure that the soil washing procedure is effective and that no contaminants are released to the environment during or after the soil washing process. The soil analyses are summarized in Table 1. Chemical analyses for metals will be done using analytical method SW7421 for Pb and method SW6010 for Cu and Zn.

Field analyses for lead will be conducted using a Spectrace 9000 field portable X-ray fluorescence (XRF) instrument configured to detect lead in soils at low levels (below 100 ppm). The XRF and associated equipment will be housed in a portable field trailer set up at the site. A

120-volt power line will be run to the field laboratory to ensure a consistent and reliable source of electricity for the instrumentation.

Soil samples gathered for analyses in an approved environmental laboratory will be sent to the LANL ER Program Sample Coordination Facility for shipment and analysis, as established in the approved procedures published by the ER Program. The five background soil samples analyzed by a laboratory will also be analyzed by XRF to verify that field screening techniques yield comparable lead level results.

All samples will be analyzed for total lead. Confirmation samples will also be analyzed for copper and zinc, two other metals that commonly occur in above-background levels at small-arms ranges. These additional analyses will serve to provide further evidence that any soil contamination from the small-arms range has been remediated during the soil washing process.

Samples will be gathered from soils outside the SWMU boundary that are similar in composition to those found in the earthen berms. A minimum of 5 background soil samples will be collected from the top 6 inches of soil, following LANL-ER-SOP-6.09, "Spade and Scoop Method for Collection of Soil Samples". These background samples will be analyzed in the field for lead content and by an approved environmental laboratory for lead, copper, and zinc. The background samples will provide information on natural levels of lead in the area of SWMU 0-016.

Samples will be gathered from the soils processed by the washing apparatus on a regular basis. Depending on the rate at which soil is processed by the apparatus, samples will be taken at regular intervals ranging from 30 to 90 minutes. These soil samples will be used to represent a given batch of washed soil and will be analyzed for lead by XRF in the field. If any of these soil samples are above the cleanup level of 500 ppm, that batch of soil will be reprocessed until the lead levels are within satisfactory limits. Based upon initial contractor estimates of soil processing rates, it is expected that approximately 150 to 200 soil samples will be analyzed in the field during the soil washing process.

Soil from the recirculating ponds will be gathered daily and analyzed in the field by XRF to ensure that lead levels are below the cleanup levels. Previous experience with this plant has shown that little, if any, lead is released into the recirculating ponds.

4.4. VCA Verification Plan

The numerous discrete samples that will be analyzed during the soil washing process will provide more than adequate data to confirm that the processed soil meets the cleanup level. Post-processing samples will also be taken to increase the certainty that the cleaned soil meets the cleanup level. One sample will be taken from each pile of about 100 cubic yards of processed soil by running a sampling scoop from the bottom to the top of the pile. Since the expected volume of processed soil is around 3000 cubic yards, approximately 20 confirmation samples will be gathered. These samples will be analyzed for Pb, Cu, and Zn by an approved off-site analytical laboratory.

Additionally, 20 judgmentally selected soil samples will be taken from the top six inches of soil, following LANL-ER-SOP-6.09, "Spade and Scoop Method for Collection of Soil Samples". Seventeen sample locations will be randomly selected from the range floor and areas covered by the berms, and 3 samples will be taken from first-order drainages that capture the bulk of the surface water from the site. These samples will also be analyzed for Pb, Cu, and Zn by an approved off-site analytical laboratory (see Table 1).

TABLE 1
SUMMARY — SOIL ANALYSES FOR SWMU 0-016 VCA

Sample Type	Analytical Method	Quantity	Analytes	Text Section
Background	XRF (field)	20	Pb	4.3.
Background	Lab	5	Pb, Cu, Zn	4.3.
Pond soil	XRF (field)	80	Pb	4.3.
Washed Soil	XRF (field)	150-200	Pb	4.3.
Airborne Lead	XRF (field)	60-90	Pb	4.1.
Confirmation	Lab	40	Pb, Cu, Zn	4.4.

Notes:
All sample quantities are approximate and may vary slightly due to unforeseen field conditions.

A Spectrace 9000 field portable X-ray fluorescence (XRF) instrument will be used to analyze for lead in soils.

"Lab" denotes samples to be analyzed by an approved environmental laboratory.

4.5. Site Restoration Plan

The recirculating ponds will be filled and the site contoured to harmonize with the surroundings.

5. PROJECT MANAGEMENT

5.1. Staffing

Implementation of this VCA will be managed by James Aldrich, the Operable Unit Project Leader (OUPL), with assistance from Jan Novak, Assistant OUPL. Cyndy Kruger (ERM/Golder), will serve as the Field Manager. An outside contractor, Sierra Rock, Inc., is under contract to perform the soil washing.

5.2. DOE Approval

Implementation of this VCA was approved by the DOE on 23 September 1993. See FIELD WORK APPROVAL FORM, attached.

5.3. Regulatory Notification/Permit Modifications

The NMED and EPA have been notified of the planned VCA. A Class III permit modification will be submitted on completion of the project to remove the SWMU from the HSWA permit.

5.4. Stakeholder Notifications

A public tour of the site will be held prior to the start of soil processing activities. Public notifications will be placed in appropriate media and the tour will be conducted by the LANL ER Program Public Involvement Office.

The USFS and prospective future site owner have been notified of this VCA plan .

A public meeting will be held after the cleanup is completed to allow public comment on the VCA. A HSWA Class III permit modification will be submitted after the meeting.

5.5. Resource Requirements

The total cost of the VCA is estimated to be $333,000. This includes approximately $62,000 for site preparation, $105,500 for soil processing, $12,200 for sample analysis, $25,000 for site restoration, $5,100 for surveying, and $122,600 for site management.

5.6. Schedule

Site preparation was begun in the fall of 1993. Soil washing activities are expected to start in mid-March, 1994 and to require approximately 6 to 10 weeks to complete. All analytical results are expected within 40 days of the end of sample collection. Site restoration will be completed within 2 weeks of the time the last water has evaporated from the ponds. early April?

6. REFERENCES

LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1071 - Environmental Restoration Program," Los Alamos National Laboratory Report LA-UR-92-810.

LANL (Los Alamos National Laboratory), Nov 1993, "Installation Work Plan for Environmental Restoration", Los Alamos National Laboratory Report LAUR-93-3987.

Heath, J.C., L. Karr, V. Novstrup, and B. Nelson, 1991. "Environmental Effects of Small Arms Ranges", NCEL Technical Note N-1836, Naval Civil Engineering Laboratory, Port Hueneme, California.

7. ANNEXES

7.1. Implementation SOPs

See ENVIRONMENTAL RESTORATION STANDARD OPERATING PROCEDURES, Volumes I and II, November 17, 1993, Los Alamos National Laboratory

7.2. Quality Assurance Plan

See QUALITY PROGRAM PLAN AND QUALITY ASSURANCE PROJECT PLAN FOR ENVIRONMENTAL RESTORATION, May 1991, Los Alamos National Laboratory

7.3. Health and Safety Plan

See LANL, Nov 1993, Annex III, Health and Safety Program Plan.

7.4. Records Management Plan

See LANL, Nov 1993, Annex IV, Records Management Program Plan.

7.5. Public Involvement Plan

See LANL, Nov 1993, Annex V, Public Involvement Program Plan.

7.6. Field Work Approval

FIELD WORK APPROVAL FORM, signed 23 September 1993 (attached).

7.7. Other Documents

Memorandum no. 7400, dated 13 April 1992, USFS, Santa Fe National Forest, to the U.S. Coast Guard National Response Center (attached).

FIELD WORK APPROVAL FORM

This form must be completed prior to starting site characterization field work in Operable Units that do not have an Environmental Protection Agency-approved work plan.

I T. J. Taylor, DOE-LAAO, hereby APPROVE the field work as proposed in the accompanying memorandum for Operable Unit 1071 and as described in the DOE-approved voluntary corrective action plan for SWMU 0-016.

I _____, DOE/LAAO, DO NOT APPROVE the field work as proposed for Operable Unit 1071.

The reasons for disapproval are:

Signed: T. J. Taylor

Date: 9-23-93

United States Department of Agriculture
Forest Service
Santa Fe National Forest
P.O. Box 1689
Santa Fe, NM 87504
505 988-6940

Reply To: 7400

Date: April 13, 1992

National Response Center
United States Coast Guard Headquarters
Rm 2611
2100 2nd St. SW
Washington, DC 20593

To Whom it May Concern,

The Santa Fe National Forest is writing to advise you of a situation occurring on lands currently being administered by the Santa Fe National Forest. These lands were previously withdrawn from the Santa Fe National Forest by the Department of War in connection with the Manhattan Project, and were most recently managed by the Department of Energy as a shooting range. These lands are currently under consideration for exchange. The future use of the site could potentially be a residential area.

The Forest Service is providing this information pursuant to 42 U.S.C. 9663. As suggested by 40 CFR 300.405(d), the following information is being provided:

a) The site is referred to as the Cemetery Tract Shooting Range. It is located on Santa Fe National Forest administered lands. The site is adjacent to the City of Los Alamos, in Los Alamos County, New Mexico. The legal description is T19N, R6E, SE 1/4 of Section 4.

b) The type of material present on the site is lead slugs from small arms ammunition.

c) The size of the material ranges from large caliber bullets to grain size fragments. It is estimated that there are several tons of lead slugs in approximately 870 Cubic Yards of potentially contaminated material.

d) The shooting range has been in use since the early 1940's when the site was withdrawn from the Santa Fe National Forest by the Department of War for the Manhattan Project.

e) The DOE released the shooting area and adjacent land back to the National Forest in 1976, after it had been out of service for a while. The site has been used unofficially by the general public in the intervening years. Since that release to the National Forest the DOE declared this site a Solid Waste Management Unit (SWMU).

Since this site was declared a SWMU, it was required that we run a Total Concentrate Leaching Procedure (TCLP) test on soil samples from the site. We question how well this test replicates the natural conditions of the Cemetary Tract since no other waste was apparent, and the site has not been used as a landfill or dump to the best of our knowledge. Preliminary tests of soil samples collected from the site resulted in 11 out of 21 samples failing the TCLP test for leachability of heavy metals. This process is EPA's litmus test for contaminated soil to indicate if enough heavy metal is present to be leached under certain acidic conditions. The acidic level used in the test ranges from a pH of 2.83 to 2.92. In this instance, the samples that failed the test were from backstop berms in the old shooting range.

The TCLP test may be valid for sites that are located in areas or regions that have acid rains, acid dry deposition, or naturally high acid soil conditions, within close proximity to water. However, this is not the case for the old shooting range at Los Alamos. There is a deposit of lead slugs at the site that will leach sufficient amounts of lead to fail the TCLP test when subjected to an artificial acidic condition. The on-site soils at the old shooting range vary in pH from 6.4 to 7.4, with the average pH being 6.97 which is essentially neutral. Therefore, leaching of the lead shot is not likely unless some drastic change occurs at the site.

Possible ground water contamination is an issue raised by the New Mexico Environmental Department and the Environmental Protection Agency. The shooting range is located on top of a small ridge that is composed of the top member of the Bandelier Tuff (Tshirege Member), with associated soils. The thickness of this volcanic unit is about 600 feet. The Bandelier overlies the Puye Formation which is lithic tuff and lahar (mud flow) unit, which is about 700 feet thick. Both of these units overlie the Santa Fe Formation that is an arkosic sediment. The Santa Fe Formation would be the unit that would be the ground water bearing unit. It is unlikely that this unit would ever be adversely effected by the lead shot deposit setting about 1,300 feet above. It is possible, but unlikely, that a stratified water table would exist between the shooting range and the Santa Fe Formation.

The Forest Service, however, takes the position that a Comprehensive Environmental Response Liability and Compensation Act (CERCLA) release of a reportable quantity of a hazardous substance has not occurred at the site for the following reasons:

1) The ammunition is exempt from CERCLA requirements due to the consumer product exemption (42 USC 9601(a)).

2) The lead particles of the size found at the site are not required to be reported by 40 CFR 302.6(d).

3) The TCLP test does not replicate leachability found under the natural conditions occurring at this site.

Until we are advised otherwise, we will assume that we have complied with any possible 42 USC 9603 reporting requirements. We will also assume that until otherwise notified, the Cemetery Tract Shooting Range site will not be registered with the NRC or listed on the Federal Agency Hazardous Waste Compliance Docket. The national ramifications of this situation would be extraordinary since every formal and informal shooting range would be required to be reported under 42 USC. 9603.

Recognizing the potential use of the site, and it's current designation as a SWMU, it is the intention of the Forest Service to work with the Department of Energy to address how to best contain the material prior to the land being exchanged. Final disposition of this matter can not be resolved until there is an official resolution to CERCLA concerns.

If EPA does not agree with the position outlined in this notice, please notify me within 30 days.

Al Defler
FOREST SUPERVISOR

cc: OGC (Pitt)
DOE
RO ENG (H.Kringler)
Espanola Ranger District
EPA Region 6 (J. Burleson)
City of Los Alamos