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RECORDS FOR OU 1100 TA-53/VCA PLAN FOR TA-53 LEAD SHOT I AND II FU 2

Correction: (Y/N) N *Corrected No.* 0 *Corrected By Number:* 0

Administrative Record: (Y/N) Y

Refilmed: (Y/N) N *Old ER ID Number:* 0 *New ER ID Number:* 0

Miscellaneous Comments:

N/A

31607

THIS FORM IS SUBJECT TO CHANGE. CONTACT THE RPF FOR LATEST VERSION. (JUNE 1997)

28

Los Alamos National Laboratory

Voluntary Corrective Action Plan for TA-53 Lead Shot Sites I and II

Field Unit 2

ICF Kaiser Engineers, Inc.
September 6, 1995

Received by ER-RPF
APR 20 1998
TDW

1.0 INTRODUCTION

The hazardous waste sites at Los Alamos National Laboratory (LANL) addressed in this Voluntary Corrective Action (VCA) Plan are located in Technical Area (TA)-53, the location of the Los Alamos Meson Physics Facility (LAMPF) and are part of Field Unit 2 of the Environmental Restoration (ER) Project. Lead Shot Site I is located within adjoining secured storage and staging areas northeast of the accelerator building. Lead Shot Site II is located south of TA-53-365 and includes a paved storage area and continues down a channel joining the permitted outfall (EPA03A113).

These lead shot sites have not been identified in the LANL ER Solid Waste Management Unit Report nor in the Hazardous Solid Waste Amendments for LANL. These sites should be remediated quickly, because leaving the lead shot at the soil surface and in the path of the outfall would allow the lead contamination to be spread and possibly ingested by wildlife.

1.1 Lead Shot Site I

This site is located north of the east end of the accelerator building and includes two adjoining secured areas; the storage area (the small boneyard) and the staging area. Equipment, (some radioactive), has been stored here, particularly in the small boneyard. Assembly jobs have also taken place in the boneyard. The staging area has been used for staging components for beam experiments.

Lead shot, of sizes varying from approximately 1.5 mm to 4 mm, was used as grout in lead shielding devices. Shot was spilled at both sites from assembly activities and from defective lead storage containers. Although this was not verified, efforts were reported to have been made to retrieve the lead shot after the ban on burying lead went into effect (Memo from Jim Knudsen).

Figure 1-1 shows locations where lead is readily visible. The lead apparently works its way to the surface because of the size and density difference between the lead shot and the sand. In a number of areas, lead has been found by scooping a small amount of sand into a container and shaking it.

To confirm the presence of lead at the site, lead shot and sand were collected, sized, and analyzed using the Resource Conservation Recovery Act toxicity characteristic leaching procedure. The results indicated lead at 129 ppm in the unsieved material, 168 ppm for shot sized <1.7 mm, and 155 ppm for shot sized 1.7 mm to 4 mm. Total lead from the sample in the unsieved material was 110,000 ppm (e-mail from Brandy Duran of CST-18 to Bob Catherwood of ESA-DE). The entire site is not contaminated at this level; the sample source for this information was taken from an area of visible contamination.

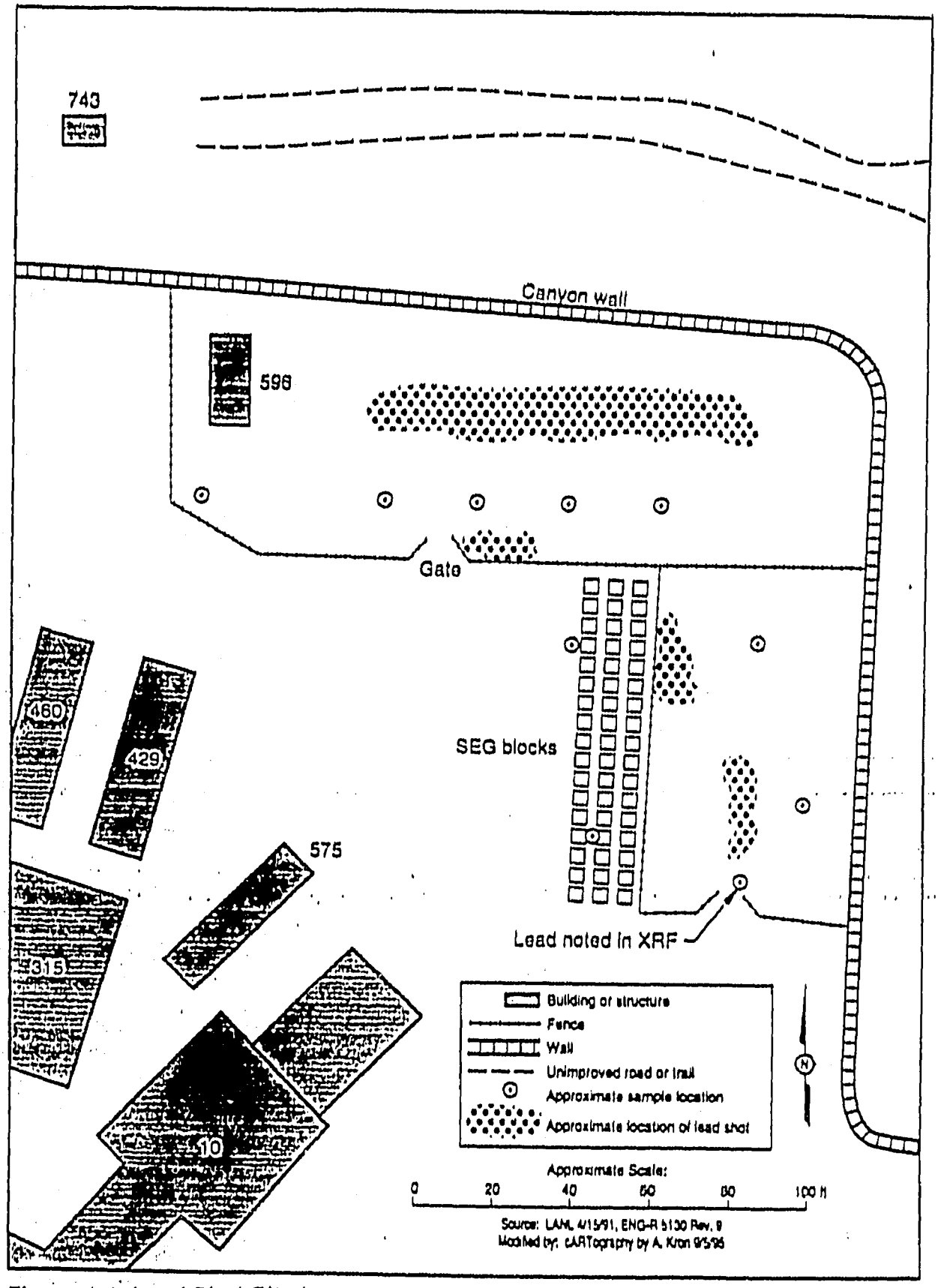

Figure 1-1 Lead Shot Site I

Tritium is not expected because the site is on the southwestern facing cliff cutout and is very warm and dry. Other samples reportedly indicated Co-60 at very low levels (Memo from John Roberts); however, these sample locations were never identified. Therefore, the area was field screened for radioactivity at the end of July, without positive results. On August 23, 1995, a number of samples were taken in the designated cleanup areas (areas of known presence of lead) to be analyzed for radioactivity. These samples were field screened, and there was no elevated radioactivity reading on any of them (Logsheets from C. Ehrsam, R. Baker, T. Lansford). Three samples were selected for offsite gamma spectroscopy analysis.

Outside the fenced area are several rows of SEG blocks made of low-level radioactive steel. Because lead has been noted between the blocks and the fence, a number of these SEG blocks will be removed by the responsible group.

The site continues to be used for storage miscellaneous items, including low-level radioactive equipment and containers.

1.2 Lead Shot Site II

This lead shot site is a paved storage area south of building TA-53-365. The lead shot was apparently spilled on the paved surface, and storm water washed the lead through a curb cut into an asphalt channel that joins an outfall at right angles.

Outfall (EPA 03A113) carries cooling tower water from buildings TA-53-293 and 294. The water flows from a culvert at the head of the canyon into a channel that was built up to prevent the water from cutting too deeply at the mouth of the canyon. It exits to a finger of Sandia Canyon carrying storm water runoff from the paved area.

The lead shot follows a path from the paved surface down the asphalt channel and joins the outfall. Storm and outfall water drop sharply across rocks and vegetation (evidenced by the appearance of the vegetation), and small sediment traps with pools of water occur in numerous places in the channel. Lead was visible in a number of locations down the canyon, as shown in Figure 1-2.

A careful visual examination of the sediment traps and the surrounding area resulted in finding lead shot near the rim of the canyon. However, no lead was visible in the large sediment trap where three samples were taken for x-ray fluorescence (XRF) analyses, nor was any lead noted beyond that point (Figure 1-2).

Radiation is not expected to be present at this site. The contents of the outfall are sampled in compliance with the National Pollution Discharge Elimination System and radioactivity is not reported, and the lead is not radioactive. However, since the area is heavily vegetated, a tritium sample was collected to meet tritium information demands by the waste management groups at LANL.

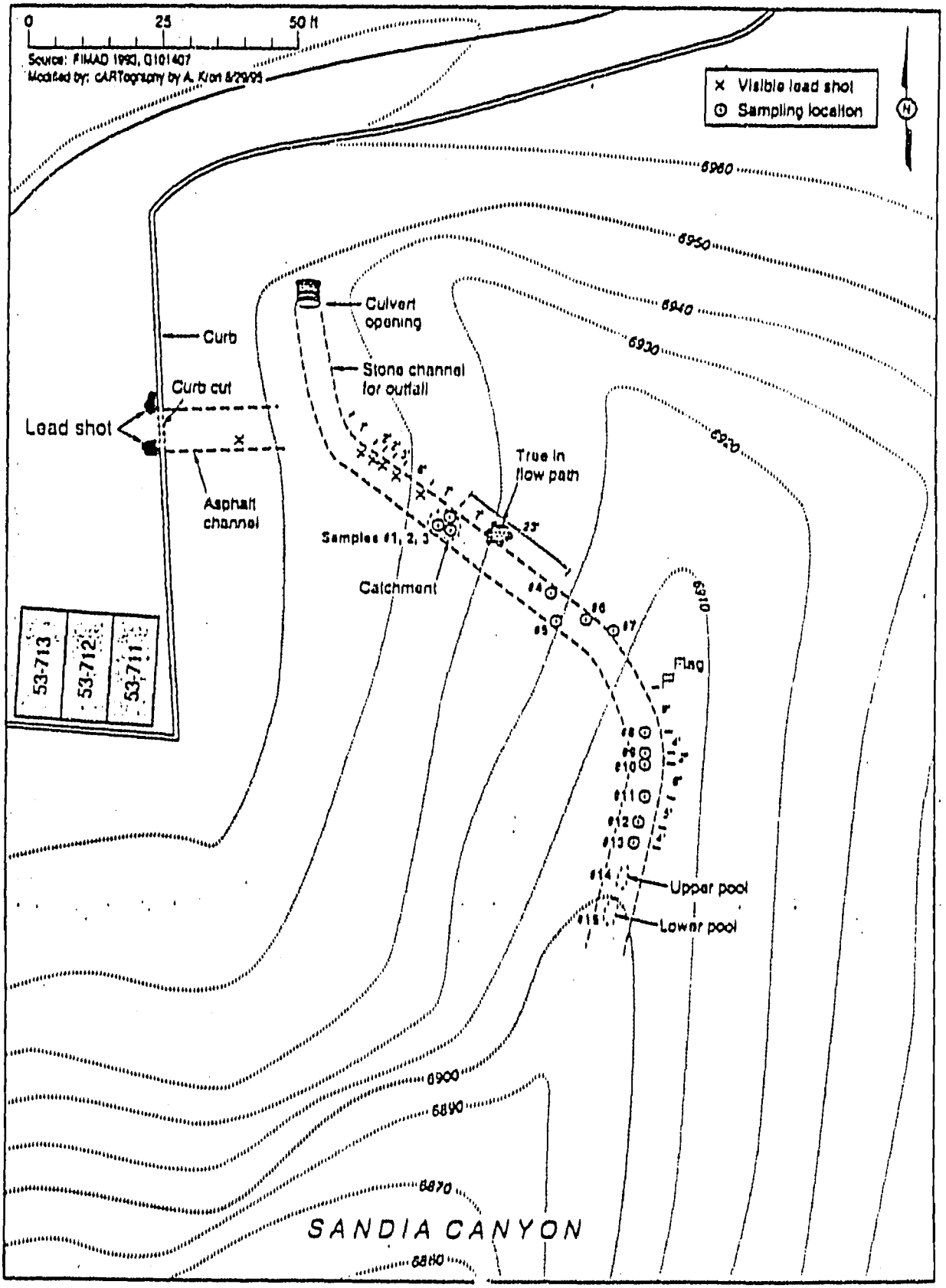

Figure 1-2 Lead Shot Site II

2.0 SITE TYPE AND DESCRIPTION

Table 2-1 identifies the contaminated areas along with corresponding location, type, potential waste type, and figure numbers.

Table 2-1
Lead Shot Sites with Locations, Descriptions and Type of Waste

Site	Location	Type/Description	Waste Type/Description	Figure Number
Lead Shot Site I	NE of Accelerator Building at TA-53 Storage/Boneyard	Lead Shot Spill Area	Sandy Soil Containing Lead Shot	1-1
Lead Shot Site II	Paved Area South of Building TA-53-365	Lead Shot Spill Area	Soil Containing Lead Shot	1-2

3.0 PROPOSED REMEDY

3.1 Lead Shot Site I

An initial bias sample was taken at the site and analyzed by a fixed laboratory. Analysis confirmed the presence of lead shot, which varied in size from <1.7 mm to 4.0 mm. Field screening was conducted to determine whether radiation was present at the site. If radioactivity had been noted, the waste taken from the site would be classified as mixed waste, and the site would not be remediated as a VCA during the summer of 1995. Elevated areas of radioactivity were not noted.

A field screening was conducted to bound the area of lead contamination. Areas of known contamination, based on visual evidence, are identified in Figure 1-1. Samples were taken outside areas of visible lead contamination for XRF analysis. The XRF showed lead to be present near the entrance of the boneyard. XRF will be used extensively during cleanup to determine whether cleanup is complete.

The TA-53 groups responsible for the storage and staging area have been requested to remove the larger pieces of equipment from both areas, as well as the SEG blocks outside the fence.

Cleanup will proceed using a vacuum system, which will package the contaminated sand in roll-off bins to about two-thirds full. The site will be kept wet to keep dust, possibly containing lead particulates, to an absolute minimum. (See the Lead Shot Site Health and Safety Plan.) Screening for radiation will be conducted on the waste as it is loaded into containers to satisfy the requirements of LANL waste management groups, even though the area has been screened and sampled for radioactivity and all results have been negative.

Efforts will be made to effect the cleanup without removing of the 150 linear ft of chain-link fencing. However, the fence may need to be removed in some areas. The site will be regraded after removal of the contaminated soil.

Areas of known and visible lead will be cleaned first under the direction of the Field Unit 2 Field Team Leader. After the known areas are vacuumed, the field team will use XRF sampling to ensure that lead is not present below the surface nor outside the known areas. If lead is still indicated in the XRF samples, the contaminated areas will be vacuumed again. This process will continue until the Field Team Leader is confident that the lead has been removed to the recommended cleanup level.

Equipment used on the site must be swiped for radiation and decontaminated before being allowed off the site. Decontamination water will be stored in 55-gal. drums and sampled for the presence of lead. If lead is not present, the water can be disposed of in LANL's sanitary waste system. If lead is present, LANL's waste management group will take custody of the drums and effect disposal. Decontaminated equipment and disposable personal protective equipment requiring disposal will be disposed of in the county landfill.

Wastes will be screened for radioactivity per LANL waste management group instructions. Waste containers will be labeled, stored, and inspected according to hazardous waste requirements while awaiting disposal by LANL waste management groups.

3.2 Lead Shot Site II

The paved storage area will be thoroughly vacuumed, starting with the curb cut and moving to the west. Then the paved asphalt channel will be vacuumed.

Arrangements will be made either to conduct the cleanup in the channel when the cooling towers are least likely to be discharging to the outfall (i.e., early morning), or to request that the facility manager prevent discharge during cleanup activities. The vacuum process will sweep the channel and the storm-water path down the canyon, paying special attention to all sediment traps. The length of the channel to be cleaned has been determined using the results of XRF analysis for the samples collected on August 25, 1995. No lead was indicated in the 15 samples (see Figure 1-2 for locations). The cleanup will include at least the first large catchment, where Samples 1, 2, and 3 were collected. The Field Team Leader may use discretion to clean up further along the channel.

Decontamination and waste disposal will be handled as described in Lead Shot I.

4.0 JUSTIFICATION/RATIONALE

These sites pose environmental hazards to wildlife, in particular to birds that could ingest the lead along with sand. Additionally, each precipitation event potentially

spreads the contaminants farther down the channel, making cleanup more difficult and expensive. With time, the lead shot could be broken down into smaller particles, increasing the potential spread of the lead.

5.0 ESTIMATED WASTE VOLUME

Table 5-1 identifies the waste type and description, estimated bulk volume, proposed container, and anticipated disposal destination.

Table 5-1
Waste Description

Site	Waste Type	Waste Description	Estimated Volume	Disposal Container	Anticipated Disposal
Lead Shot Site I	Hazardous	Sandy soil containing lead shot	42 yd^3	Roll-off bins	TA-54
Lead Shot Site II	Hazardous	Soil containing lead shot	6 yd^3	B-25 boxes	TA-54

6.0 CLEANUP LEVELS

Lead was the only contaminant of concern at the site. The lead showed a maximum concentration of 210,200 mg/kg for lead shot sized from 1.7 to 4.0 mm, and at 72,400 mg/kg for lead shot sized <1.7 mm. A site-specific lead soil cleanup level of 1000 mg/kg was based on preliminary comments received from Region VI EPA on expedited cleanup and voluntary corrective action plans. This lead soil cleanup level is based on an industrial exposure scenario and considers fetal effects when a pregnant worker is exposed. See Table 6-1 for cleanup goals.

Table 6-1
Cleanup Goals for Lead Shot Site

Analyte of Concern	Cleanup Goal (mg/kg) Based on Hazard Index of 1	Maximum Concentration of Chemical of Concern
Lead	1000	210,200 (1.7 to 4.0 mm) 72,400 (<1.7 mm) Total 282,600

7.0 DESCRIPTION OF CONFIRMATORY SAMPLING

7.1 Lead Shot Site I

During cleanup, the XRF will be used to help the Field Team Leader determine if the site cleanup is completed. Bias confirmatory sampling will be taken. From the upper staging area, two samples will be taken from two different areas where lead shot was

visible. From the boneyard, one sample will be taken near the fence, about 40 feet from the intersection with the other fence, and one sample will be taken from the area where the XRF analysis showed lead at over 5000 mg/kg. Analysis will be conducted for lead only.

7.2 Lead Shot Site II

This site was characterized visually and using XRF field screening techniques. Lead shot about 4 mm in size is visible at the curb cut to the asphalt drainage channel; in addition, there are isolated pieces of shot at various locations on the paved area. Lead was located in the asphalt channel in a depression, and lead was noted along the culvert and storm water drainages as shown in Figure 1-2. 15 samples were taken beyond the last sighting of lead in the storm water drainage. These samples were analyzed by XRF, and all 15 were negative; that is, no lead was noted in the samples.

Two biased confirmatory samples will be taken. The first sample will be taken at the large sediment pond where Samples 1, 2, and 3 were taken. The second sample will be taken at the Sample 14 location, the upper pool, at the discretion of the Field Team Leader. Analysis will be conducted for lead only.

8.0 ESTIMATED SCHEDULE AND COST

Table 8-1
Estimated Schedule and Cost

	Lead Shot I	Lead Shot II
Equipment Requirements	Industrial vacuum equipment and earthmoving equipment	Industrial vacuum equipment and earthmoving equipment
Storage Containers	3 Roll-off bins 2 55 gal. drums	2 B-25 boxes 1 55 gal. drum
Estimated Days of Work	4 days	1 day
Training Requirements	HAZWOPER, Radiation Worker II, Site Specific for TA-53	HAZWOPER, Radiation Worker I, Site Specific for TA-53
Number of Personnel	Equipment Operators, 1-2 laborers, Rad Tech, ER Field Team Members	Equipment Operators, 1-2 laborers, Rad Tech, ER Field Team Members
Confirmatory Samples (Lead)	4 at $200 each expedited at $600 each	3 at $200 each expedited at $600 each

9.0 REFERENCES

LANL (Los Alamos National Laboratory), November 1990, "Solid Waste Management Units Report," Los Alamos National Report, Los Alamos, New Mexico. (LANL 1990, 0145)

EPA (US Environmental Protection Agency, Region VI) 1991. Preliminary Draft Comments on Los Alamos National Laboratory Environmental Restoration Project Expedited Cleanup Plans. (EPA 1991)

APPENDIXES

Memo from Jim Knudsen

Memo from John Roberts

Lead analysis from CST

Characterization Strategy Forms

ACCELERATOR OPERATIONS & TECHNOLOGY DIVISION
Los Alamos National Laboratory
P.O. Box 1663
AOT-7/MS H840
Los Alamos, NM 87545
PHONE # (505)667-5680
FAX # 665-4049

Date: August 9, 1995 TIME: 4:15 PM MST

From: James N. Knudson, AOT-7 Fax: 665-4049
Confirmation: (505) 667-5680

To: Chris Ersham

Organization: Kaiser Engineers

Fax Number: 661-5222

Confirmation Number:

Number of Pages (excluding cover): 2

Comments:

Here are my notes concerning lead at our Boneyard.

Jim Knudson

Call if you have any more questions. JK

Cy: CRM-4 MS A150 (for external)
AOT-7, MS H840

Foreign Mail (check one): ☐ Correspondence ☐ GTDA (for Reports)

8/7/95

Lead in Boneyard

According to Weibeck:

Various devices filled with lead shot were stored and worked on in the Boneyard: A5 target inserts (concentric cylinders with cooling tubes, backfilled with shot), RDP (gizmo inserted just upstream of ~~EPICS~~ A-1 on EPICS Side 1), LD_2^- target inserts. These were cut open to retrieve lead after ban on bringing lead went into effect.

There was no earlier big remediation. We have gone through with OMTs and found stuff, but we are talking here about at most filling a few barrels, not dump trucks.

According to Abernathey

In the 1985-86 time period the neutrino shield was filled with lead grout (sand-like) from 55-gallon drums. Some drums arrived with punctures, others became punctured in the course of the work.

5 2/C

ACCELERATOR OPERATIONS & TECHNOLOGY DIVISION
Los Alamos National Laboratory
P.O. Box 1663
AOT-7/MS H840
Los Alamos, NM 87545
PHONE # (505)667-5680
FAX # 665-4049

Date: Thursday, August 03, 1995	TIME: 4:47 PM
From: John Roberts	Fax: 665-4049 FTS: Number COMM: (505) 667-3139
To: Pat Tillery	
Organization: ICF-Kaiser	
Fax Number: 661-5222	
Confirmation Number:	
Number of Pages (excluding cover): 1	

Comments:

Pat,
Samples referenced 95-3-P through 95-21-P were collected March 7, 1995 in AOT's Boneyard. The sample results show 4 samples with Co60 ranging from 2.1pCi/gram to 26pCi/gram.

I believe that this is far below limits. If you have any questions please call. Note however, after tomorrow I will not be back to work until 8/14/95.

John

Cy: CRM-4 MS A150 (for external)
AOT-7, MS H840

Foreign Mail (check one): ☐ Correspondence ☐ GTDA (for Reports)

Los Alamos
NATIONAL LABORATORY
memorandum

Health & Safety Division
ESH-4 Health Physics Measurements
Analytical Laboratories Section

To/MS: Scott Walker, ESH-1, MS H815 667-577
Analyst: Arthur A. Montoya, ESH-4, MS G757
Reviewer: Magdalena M. Vigil, ESH-4, MS G757
Phone/FAX: 5-8888/5-6071 MMV

Symbol: ESH-4-HPAL-REP-432
Date: March 17, 1995

ANALYSIS REPORTS FOR SAMPLES SUBMITTED TO THE HEALTH PHYSICS ANALYTICAL LABORATORY FROM TA-53, LAMPF (BC95005411)

The following samples were submitted to ESH-4's HPAL from TA-53, LAMPF, for analysis. The reported activities, in µCi/l, are the total activities on the samples and are decay corrected to the stop date and time indicated. The samples were analyzed utilizing a HpGe detector and ADCAM Multi-Channel Analyzer.

SAL Co^{60} = 0.9 pCi/g
Trans. > 2 nCi/g

The analysis results are shown in the table below:

Sample Id	Reference N	Collected Date	Collected Time	Analyzed Date	Analyzed Time	Nuclide(s)	nCi	Activity (µCi/g)	pCi/g	2σ (%)
Surface#1B	95-3-P	3/7/95	1000	3/13/95	1416	—		NDA		—
Surface#2B	95-4-P	3/7/95	1000	3/13/95	1441	—		NDA		—
Surface#3B	95-5-P	3/7/95	1000	3/15/95	1510	—		NDA		—
Surface#4B	95-6-P	3/7/95	1000	3/15/95	1556	—		NDA		—
Surface#5B	95-7-P	3/7/95	1000	3/16/95	0827	Co-60	0.016	2.6E-05	26	6
Surface#6B	95-8-P	3/7/95	1000	3/15/95	1330	Co-60	0.016	1.8E-05	16	8
Surface#7B	95-9-P	3/7/95	1000	3/15/95	1355	Co-60	0.002	2.1E-06	2.1	13
Surface#8B	95-10-P	3/7/95	1000	3/15/95	1020	Co-60	0.0026	2.6E-06	2.6	7
Surface#9B	95-11-P	3/7/95	1000	3/15/95	1111	—		NDA		—
Surface#10B	95-12-P	3/7/95	1000	3/14/95	1424	—		NDA		—
Surface#1B	95-13-P	3/7/95	1100	3/13/95	0955	—		NDA		—
Surface#2B	95-14-P	3/7/95	1100	3/16/95	1035	—		NDA		—
Surface#3B	95-15-P	3/7/95	1100	3/16/95	1015	—		NDA		—
Surface#4B	95-16-P	3/7/95	1100	3/16/95	0930	—		NDA		—
Surface#5B	95-17-P	3/7/95	1100	3/14/95	1452	Co-60		1.4E-05	14	12
Surface#6B	95-18-P	3/7/95	1100	3/16/95	1056	—		NDA		—
Surface#7B	95-19-P	3/7/95	1100	3/16/95	1116	—		NDA		—
Surface#8B	95-20-P	3/7/95	1100	3/16/95	1154	—		NDA		—
* Surface#9B	95-21-P	3/7/95	1000	3/16/95	0918	—		NDA		—

* AOT Boneyard

Date: Wed, 5 Jul 1995 10:06:31 -0600
X-Sender: 1080309INCDP6.LANL.GOV
Mimo-Version: 1.0
To: catherwood@lanl.gov
From: bduran@lanl.gov (Brandy Duran)
Subject: LAMPF Results

Hello,

Here are the results of the sample we took from Lampf

Total Pbs	4-1.7mm size	avg 210,200 ppm	
	<1.7mm		72,400
	Unsieved		110,000
TCLP	4-1.7mm size	155ppm	
	<1.7mm		168
	Unsieved		129

Let me know if you need anything else.

Brandy

Brandy L Duran
Los Alamos National Laboratory
Chemical Science & Technology Division
Los Alamos, New Mexico
(505) 667-5636

TA-53
Lead shot area

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To PAT TILLERY	From BOB CATHERWOOD
Co. ICF-KE	Co. ESA-DE
Dept.	Phone # 5-0546
Fax # 661-5222	Fax # 5-1976

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Name: Tom Fogg	Date: August 31, 1995
FPL: Gene Gould	WMC: Ted Norris
Type of Activity: Voluntary Correction Action	

Site Description: This TA-53 VCA site is located in two adjoining secured storage/staging areas northeast of the accelerator building. Equipment, including radioactive equipment, has been and is currently being stored particularly in the larger storage/staging area. This is used for staging components for beam experiments. The small storage/boneyard has stored various equipment and some assembly jobs have taken place. The lead shot, of varying sizes, was used as grout in lead shielding devices. Shot was spilled onto both sites from defective storage containers.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Decontamination liquid.

Waste Packaging: The decontamination water will be stored in 55-gal. drums for the duration of the cleanup. One or two drums will be needed.

Characterization Strategy: One sample will be taken per drum. The sample will be analyzed for lead content only. Tritium is not expected at this site. See enclosed letter from Gene Gould.

CHARACTERIZATION STRATEGY FORM (Continued)

OU Number	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Preliminary RCRA Determination:

☐	Non-RCRA: (No 90-Day Storage Requirement) Describe how waste will be stored/handled:
☒	RCRA: (90-Day Storage Requirement) Waste will be stored/handled in accordance with 20 NMAC Generator Requirements. If no lead is present in the analysis, this will revert to non-RCRA status and will be disposed of in LANL's sanitary system.

Analyte Suite:

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information		Data from Site Characterization
			Present	Absent	
Volatile Compounds		☐	☐	☒	☐
Semi-Volatile Compounds		☐	☐	☒	☐
Organic Pesticides and PCBs		☐	☐	☒	☐
High Explosive Compounds		☐	☐	☒	☐
Gross Alpha		☐	☐	☒	☐
Gross Beta		☐	☐	☒	☐
Gross Gamma		☐	☐	☒	☐
Tritium*		☐	☐	☒	☐
Asbestos		☐	☐	☒	☐
TCLP		☐	☐	☒	☐
Metals		☐	☒	☐	☐
Organics		☐	☐	☒	☐
Pesticides, herbicides, fungicides		☐	☐	☒	☐

*If "Absent" is checked under existing information for tritium, you must specify (in the "Characterization Strategy" box) the existing information supporting your contention that elevated tritium levels are not present.

Signatures:

ER Project Representative

Waste Management Representative

Form Author

J95364.YCA

P. Tillery

Los Alamos
NATIONAL LABORATORY
memorandum

Engineering Sciences and Applications Division
ESA-DE Design Engineering Support Group

To/MS: Memo To The File
From/MS: T. E. Gene Gould, G787
Phone/FAX: 7-0402/5-1976
Date: August 11, 1995

SUBJECT: CHARACTERIZATION STRATEGY FORM

Based on my review of available information and my professional judgment, it is not necessary to sample for tritium because it is not a potential contaminant at TA-53, Lead Shot Site.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Name: Tom Fogg	Date: August 31, 1995
FPL: Gene Gould	WMC: Ted Norris
Type of Activity: Voluntary Correction Action	

Site Description: This TA-53 VCA site is located in two adjoining secured storage/staging areas northeast of the accelerator building. Equipment, including radioactive equipment, has been and is currently being stored particularly in the larger storage/staging area. This is used for staging components for beam experiments. The small storage/boneyard has stored various equipment and some assembly jobs have taken place. The lead shot, of varying sizes, was used as grout in lead shielding devices. Shot was spilled onto both sites from defective storage containers.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Sandy soil containing lead shot sized from approximately 1.5 to 4 mm.

Waste Packaging: The soil and lead will be held in roll-off bins for disposal.

Characterization Strategy: Waste has been characterized based on sample data, which indicates lead, in the form of lead shot varying in size from approximately 1.5 to 4 mm. Concentration of lead in the soil overall is not known. Tritium is not expected at this site. See enclosed letter from Gene Gould.

CHARACTERIZATION STRATEGY FORM (Continued)

OU Number	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Preliminary RCRA Determination:

☐	Non-RCRA: (No 90-Day Storage Requirement) Describe how waste will be stored/handled:
☒	RCRA: (90-Day Storage Requirement) Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

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			Existing Information		Data from Site Characterization
			Present	Absent	
Volatile Compounds		☐	☐	☒	☐
Semi-Volatile Compounds		☐	☐	☒	☐
Organic Pesticides and PCBs		☐	☐	☒	☐
High Explosive Compounds		☐	☐	☒	☐
Gross Alpha		☐	☐	☒	☐
Gross Beta		☐	☐	☒	☐
Gross Gamma		☐	☐	☒	☐
Tritium*		☐	☐	☒	☐
Asbestos		☐	☐	☒	☐
TCLP		☐	☐	☒	☐
Metals		☐	☒	☐	☐
Organics		☐	☐	☒	☐
Pesticides, herbicides, fungicides		☐	☐	☒	☐

*If "Absent" is checked under existing information for tritium, you must specify (in the "Characterization Strategy" box) the existing information supporting your contention that elevated tritium levels are not present.

Signatures:

ER Project Representative

Waste Management Representative

Form Author

J95365.VCA

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Name: Tom Fogg	Date: August 31, 1995
FPL: Gene Gould	WMC: Ted Norris
Type of Activity: Voluntary Correction Action	

Site Description: This TA-53 VCA site is located in two adjoining secured storage/staging areas northeast of the accelerator building. Equipment, including radioactive equipment, has been and is currently being stored particularly in the larger storage/staging area. This is used for staging components for beam experiments. The small storage/boneyard has stored various equipment and some assembly jobs have taken place. The lead shot, of varying sizes, was used as grout in lead shielding devices. Shot was spilled onto both sites from defective storage containers.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Disposable personal protective equipment and equipment requiring disposal.

Waste Packaging: Waste can go into garbage bags, 55 gal. drums, or other appropriate container.

Characterization Strategy: These wastes will be decontaminated removing visible dust and will be released for landfill disposal. Tritium is not expected at this site. See enclosed memo from Gene Gould.

CHARACTERIZATION STRATEGY FORM (Continued)

OU Number	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Preliminary RCRA Determination:

☒	Non-RCRA: (No 90-Day Storage Requirement) Describe how waste will be stored/handled: The waste will be bagged and released for landfill disposal.
☐	RCRA: (90-Day Storage Requirement) Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Analyte Suite:

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information		Data from Site Characterization*
			Present	Absent	
Volatile Compounds		☐	☐	☒	☐
Semi-Volatile Compounds		☐	☐	☒	☐
Organic Pesticides and PCBs		☐	☐	☒	☐
High Explosive Compounds		☐	☐	☒	☐
Gross Alpha		☐	☐	☒	☐
Gross Beta		☐	☐	☒	☐
Gross Gamma		☐	☐	☒	☐
Tritium		☐	☐	☒	☐
Asbestos		☐	☐	☒	☐
TCLP		☐	☐	☒	☐
Metals		☐	☒	☐	☐
Organics		☐	☐	☒	☐
Pesticides, herbicides, fungicides		☐	☐	☒	☐

*If "Absent" is checked under existing information for tritium, you must specify (in the "Characterization Strategy" box) the existing information supporting your contention that elevated tritium levels are not present.

Signatures:

ER Project Representative

Waste Management Representative

Form Author

J93366.VCA

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site II - TA-53

Name: Tom Fogg	**Date:** August 31, 1995
FPL: Gene Gould	**WMC:** Ted Norris
Type of Activity: Voluntary Correction Action	

Site Description: This TA-53 VCA site is located in a paved storage area south of TA-53-365. Lead shot was spilled in the paved area, some of which has been washed into the canyon below joining an outfall course.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Decontamination liquid.

Waste Packaging: The decontamination water will be stored in 55-gal. drums for the duration of the cleanup. One or two drums will be needed.

Characterization Strategy: One sample will be taken per drum. The sample will be analyzed for lead content only. Tritium sample was collected and results indicate no tritium at the site.

CHARACTERIZATION STRATEGY FORM (Continued)

OU Number	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site II - TA-53

Preliminary RCRA Determination:

☐	Non-RCRA: (No 90-Day Storage Requirement) Describe how waste will be stored/handled:
☒	RCRA: (90-Day Storage Requirement) Waste will be stored/handled in accordance with 20 NMAC Generator Requirements. If no lead is present in the analysis, this will revert to non-RCRA status and will be disposed of in LANL's sanitary system.

Analyte Suite:

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information		Data from Site Characterization
			Present	Absent	
Volatile Compounds		☐	☐	■	☐
Semi-Volatile Compounds		☐	☐	■	☐
Organic Pesticides and PCBs		☐	☐	■	☐
High Explosive Compounds		☐	☐	■	☐
Gross Alpha		☐	☐	■	☐
Gross Beta		☐	☐	■	☐
Gross Gamma		☐	☐	■	☐
Tritium*		☐	☐	■	☐
Asbestos		☐	☐	■	☐
TCLP		☐	☐	■	☐
Metals		☐	■	☐	☐
Organics		☐	☐	■	☐
Pesticides, herbicides, fungicides		☐	☐	■	☐

*If "Absent" is checked under existing information for tritium, you must specify (in the "Characterization Strategy" box) the existing information supporting your contention that elevated tritium levels are not present.

Signatures:

ER Project Representative

Waste Management Representative

Form Author

J99367.VCA

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site II - TA-53

Name: Tom Fogg	Date: August 31, 1995
FPL: Gene Gould	WMC: Ted Norris
Type of Activity: Voluntary Correction Action	

Site Description: This TA-53 VCA site is located in a paved storage area south of TA-35-365. Lead shot was spilled in the paved area, some of which has been washed into the canyon below joining an outfall course.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Sandy soil containing lead.

Waste Packaging: The soil and lead will be held in roll-off bins for disposal.

Characterization Strategy: Waste has been characterized based on sample data, which, indicates lead in the form of lead shot varying in size from approximately 1.5 to 4 mm. Concentration of lead in the soil overall is not known. Tritium sample was collected and results indicate no tritium at the site.

CHARACTERIZATION STRATEGY FORM (Continued)

OU Number	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site II- TA-53

Preliminary RCRA Determination:

☐	Non-RCRA: (No 90-Day Storage Requirement) Describe how waste will be stored/handled:
☒	RCRA: (90-Day Storage Requirement) Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Analyte Suite:

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information		Data from Site Characterization
			Present	Absent	
Volatile Compounds		☐	☐	☒	☐
Semi-Volatile Compounds		☐	☐	☒	☐
Organic Pesticides and PCBs		☐	☐	☒	☐
High Explosive Compounds		☐	☐	☒	☐
Gross Alpha		☐	☐	☒	☐
Gross Beta		☐	☐	☒	☐
Gross Gamma		☐	☐	☒	☐
Tritium*		☐	☐	☒	☐
Asbestos		☐	☐	☒	☐
TCLP		☐	☐	☒	☐
Metals		☐	☒	☐	☐
Organics		☐	☐	☒	☐
Pesticides, herbicides, fungicides		☐	☐	☒	☐

*If "Absent" is checked under existing information for tritium, you must specify (in the "Characterization Strategy" box) the existing information supporting your contention that elevated tritium levels are not present.

Signatures:

ER Project Representative

Waste Management Representative

Form Author

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site II - TA-53

Name: Tom Fogg	Date: August 31, 1995
FPL: Gene Gould	WMC: Ted Norris
Type of Activity: Voluntary Correction Action	

Site Description: This VCA site is located in a paved storage area south of TA-53-365. Lead shot was spilled in the paved area, some of which has been washed into the canyon below joining an outfall course.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Disposable personal protective equipment and equipment requiring disposal.

Waste Packaging: Waste can go into garbage bags, 55 gal. drums, or other appropriate container.

Characterization Strategy: These wastes will be decontaminated removing visible dust and will be released for landfill disposal. Tritium sample was collected and results indicate no tritium at the site.

CHARACTERIZATION STRATEGY FORM (Continued)

OU Number	PRS/SWMU Number	Title
1100/FU2	N/A	Lead Shot Site I - TA-53

Preliminary RCRA Determination:

☒	Non-RCRA: (No 90-Day Storage Requirement) Describe how waste will be stored/handled: The waste will be bagged and released for landfill disposal.
☐	RCRA: (90-Day Storage Requirement) Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Analyte Suite:

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information		Data from Site Characterization
			Present	Absent	
Volatile Compounds		☐	☐	☒	☐
Semi-Volatile Compounds		☐	☐	☒	☐
Organic Pesticides and PCBs		☐	☐	☒	☐
High Explosive Compounds		☐	☐	☒	☐
Gross Alpha		☐	☐	☒	☐
Gross Beta		☐	☐	☒	☐
Gross Gamma		☐	☐	☒	☐
Tritium*		☐	☐	☒	☐
Asbestos		☐	☐	☒	☐
TCLP		☐	☐	☒	☐
Metals		☐	☒	☐	☐
Organics		☐	☐	☒	☐
Pesticides, herbicides, fungicides		☐	☐	☒	☐

*If "Absent" is checked under existing information for tritium, you must specify (in the "Characterization Strategy" box) the existing information supporting your contention that elevated tritium levels are not present.

Signatures:

ER Project Representative

Waste Management Representative

Form Author

J05300.VCA