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33914



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Los Alamos

NATIONAL LABORATORY
Environmental Restoration Project
EMER, MS 1002
Los Alamos, New Mexico 87545
(505) 666-4557, FAX 666-4747

Date: September 28, 1995
Refer to: EM/ER:95-536

Mr. Ted Taylor
Los Alamos Area Office
US Department of Energy
Los Alamos, NM 87544

SUBJECT: ACCELERATED CLEANUP FINAL REPORTS

Dear Ted:

Enclosed for your review and approval are the Final Reports and Certifications of Completion for Potential Release Site (PRS) 8-C05, Former Waste Storage Vessel; PRS 16-011, Former Incinerator; PRS 18-001(a), Sewage Lagoons; PRS 33-016, Sump with Outfall; and PRS 57-006, Buried Chemical Waste Vessel. These reports contain our request for no further action (NFA) at these PRSs. Upon your approval of these reports, we will submit them to the Environmental Protection Agency requesting their approval for NFA for those PRSs listed in the Hazardous and Solid Waste Amendments Module. Please provide me with documentation of the US Department of Energy's approval of this cleanup for our records as soon as possible.

If you have any questions, please feel free to call me at 667-0808. Thanks for your timely attention to this matter.

Sincerely,



Jorg Jansen, Program Manager
Environmental Restoration Project

JJ/bp

Enclosures: Final Reports for: PRS 8-005, Former Waste Storage Vessel
PRS 16-011, Former Incinerator
PRS 18-001(a), Sewage Lagoons
PRS 33-016, Sump with Outfall
PRS 57-006, Buried Chemical Waste Vessel
Certifications of Completion

Received by ER-RIPF
OCT 03 1995


11-00000000-1-536

Mr. Taylor
EM/ER:95-536

-2-

September 28, 1995

Cy (w/enc.):
D. Bradbury, EM/ER, MS M992
EM/ER File, MS M992
RPF, MS M707

Cy(w/o enc.):
T. Glatzmaier, DDEES/ER, MS M992
D. Griswold, ERD. AL, MS A906
E. Merrill, DOE-HQ, EM-453

**FINAL REPORTS
AND
CERTIFICATIONS OF COMPLETION**

for

PRS 8-005, Former Waste Storage Vessel

PRS 16-011, Former Incinerator

PRS 18-001(a), Sewage Lagoons

PRS 33-016, Sump with Outfall

PRS 57-006, Buried Chemical Waste Vessel

19-000000-555

Voluntary Corrective Action Plan Completion Report
Potential Release Site 8-005
Former Waste Storage Vessel

Environmental Restoration Project
Field Unit Five
Los Alamos National Laboratory

September 15, 1995

A Department of Energy
Environmental Cleanup Project

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CERTIFICATION OF COMPLETION

I certify that all the work pertaining to the voluntary corrective action (VCA) 8-005 has been completed in accordance with the Environmental Protection Agency approved RFI Work Plan for Operable Unit 1157. Based on my personal involvement or inquiry of the person or persons who managed the cleanup at PRS 8-005, a review of all data gathered and a visit to the site, to the best of my knowledge and belief, all criteria of the plan have been met or exceeded. I believe that the completion of this VCA is both protective to human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.


Cheryl Rofar
Field Unit Five Project Leader
Environmental Restoration Project
Los Alamos National Laboratory


Date Signed

**Voluntary Corrective Action Plan Completion Report
Potential Release Site 8-005
Former Waste Storage Vessel**

DESCRIPTION

Potential Release Site 8-005, a 4 ft. by 4 ft. metal vessel, was an abandoned oven used in the 1950s for crystal growth experiments. The inside of the vessel was contaminated with naphthalene and asbestos was found on the gasket and strap on the vessel. This site is included in the Hazardous and Solid Waste Amendments module to the Los Alamos National Laboratory, Resource Conservation and Recovery Act, EPA I.D. NM0890010515.

This square-shaped storage vessel was located on the ground outside the west end of Building TA-8-2, a machine shop and storage building (see Potential Release Site Area 08-005 map). Group J-16 used the vessel to conduct crystal-growth experiments in the now-abandoned bunker buildings (TA-8-1, TA-8-2, and TA-8-3). Crystal growth residue from photographic equipment crystal experiments at Building TA-8-1 (next to TA-8-2) was contained in this storage vessel. Other chemicals used were terphenyl, alpha naphthyl oxazole, styrene, methyl chloroform, and thallos iodide. Residue with a strong camphor-like odor was found at the bottom of the vessel, and sample analysis indicated the presence of naphthalene. There were no visible signs of stained ground around the vessel.

The Johnson Controls Asbestos Abatement team confirmed the presence of asbestos in the form of a gasket and strap on the vessel (LANL 1995, EES-5:95-290). There was also a cord under the vessel which was found to contain asbestos. Field screening indicated that radioactive contaminants and high explosives were not present in or on the vessel.

The information provided in the RFI Work Plan and this report serves as the formal request for regulator concurrence to remove PRS 8-G05 from the HSWA Module.

REFERENCES

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1157", Final Report, Los Alamos National Laboratory Report LA-UR-93-1230, Los Alamos, New Mexico. (LANL 1993, 1092)

LANL (Los Alamos National Laboratory), June 1995. "Removal of Storage Vessel from TA-8", Los Alamos National Laboratory Memorandum EES-5:95-290, Los Alamos, New Mexico. (LANL 1995, EES-5:95-290)

U.S. DEPARTMENT OF ENERGY

Potential Release Site Area 08-005

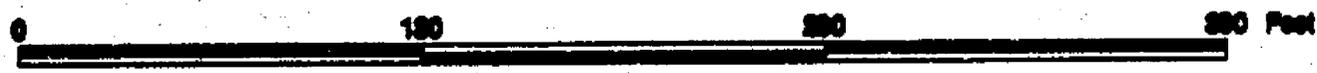


Table 1.							
PRS 08-005 Metals and Semi-Volatile Surface Soil Sampling Data for Sample ID 0508-95-0006							
Analyte	Sample Value	Sample Units	Screening Action Level	Screening Action Units	Detection Limit	Detection Limit Units	Analyte ** Disposition
Percent Solids					1	% wt.	
Aluminum, Total		MG/KG			43	MG/KG	
Antimony, Total		MG/KG			13	MG/KG	No concern
Arsenic, Total		MG/KG			2.1	MG/KG	
Barium, Total		MG/KG		5000	43	MG/KG	No concern
Beryllium, Total		MG/KG			1.1	MG/KG	
Cadmium, Total		MG/KG		180	1.1	MG/KG	No concern
Calcium, Total		MG/KG			1100	MG/KG	
Chromium, Total		MG/KG			2.1	MG/KG	
Cobalt, Total		MG/KG			11	MG/KG	
Copper, Total		MG/KG		3000	5.3	MG/KG	No concern
Iron, Total		MG/KG			21	MG/KG	
Lead, Total		MG/KG		400	5.3	MG/KG	No concern
Magnesium, Total		MG/KG			1100	MG/KG	
Manganese, Total		MG/KG		1000	3.2	MG/KG	No concern
Mercury, Total		MG/KG		24	0.11	MG/KG	No concern
Nickel, Total		MG/KG		1800	8.5	MG/KG	No concern
Potassium, Total		MG/KG			1100	MG/KG	
Selenium, Total		MG/KG		400	1.1	MG/KG	No concern
Silver, Total		MG/KG		400	2.1	MG/KG	No concern
Sodium, Total		MG/KG			1100	MG/KG	
Thallium, Total		MG/KG		54	2.1	MG/KG	No concern
Vanadium, Total		MG/KG		580	11	MG/KG	No concern
Zinc, Total		MG/KG		24000	4.3	MG/KG	No concern
bis (2-Ethylhexyl) phthalate	0.33	MG/KG		50	0.17	MG/KG	No concern

* This column gives the screening action level for each analyte, if available. Blanks indicate that no value was available.

** "No concern" indicates that the analyte value is less than the screening action level.

KEMRON ENVIRONMENTAL SERVICES
RESULTS BY SAMPLE

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: 01 0508-95-0008/02 Collected: 07/26/95 Category: SOIL

TEST DESCRIPTION	RESULT	DETECTION LIMIT	UNITS	DATE ANALYZED BY METHOD
Percent Solids	94	1	% wt.	07/28/95 PJH SW2540-G

SAMPLE ID: 02 0508-95-0008/01 Collected: 07/26/95 Category: SOIL

TEST DESCRIPTION	RESULT	DETECTION LIMIT	UNITS	DATE ANALYZED BY METHOD
Percent Solids	94	1	% wt.	07/28/95 PJH SW2540-G
Aluminum, Total	7800	43	mg/kg Al	07/31/95 JYH 6010A
Antimony, Total	<13	13	mg/kg Sb	07/31/95 JYH 6010A
Arsenic, Total	<2.1	2.1	mg/kg As	08/02/95 TNO 7060A
Barium, Total	180	43	mg/kg Ba	07/31/95 JYH 6010A
Beryllium, Total	<1.1	1.1	mg/kg Be	07/31/95 JYH 6010A
Cadmium, Total	<1.1	1.1	mg/kg Cd	07/31/95 JYH 6010A
Calcium, Total	1800	1100	mg/kg Ca	07/31/95 JYH 6010A
Chromium, Total	7.4	2.1	mg/kg Cr	07/31/95 JYH 6010
Cobalt, Total	<11	11	mg/kg Co	07/31/95 JYH 6010A
Copper, Total	8.5	5.3	mg/kg Cu	07/31/95 JYH 6010
Iron, Total	10000	21	mg/kg Fe	07/31/95 JYH 6010A
Lead, Total	29	5.3	mg/kg Pb	07/31/95 JYH 6010A
Magnesium, Total	1500	1100	mg/kg Mg	07/31/95 JYH 6010
Manganese, Total	310	3.2	mg/kg Mn	07/31/95 JYH 6010
Mercury, Total	<0.11	0.11	mg/kg Hg	08/02/95 KPA 7471
Nickel, Total	<8.5	8.5	mg/kg Ni	07/31/95 JYH 6010
Potassium, Total	1400	1100	mg/kg K	07/31/95 JYH 6010A
Selenium, Total	<1.1	1.1	mg/kg Se	07/31/95 TNO 7740
Silver, Total	<2.1	2.1	mg/kg Ag	07/31/95 JYH 6010A
Sodium, Total	<1100	1100	mg/kg Na	07/31/95 JYH 6010
Thallium, Total	<2.1	2.1	mg/kg Tl	07/31/95 AJS 7841
Vanadium, Total	16	11	mg/kg V	07/31/95 JYH 6010A
Zinc, Total	170	4.3	mg/kg Zn	07/31/95 JYH 6010A

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: LA8270
Sample Description: 0508-95-0008/02
Test Description: Semivolatile Compounds

Lab No: 01A

Collected: 07/26/95
Category: SOIL
Method: 8270

Analyst: MDC
Instrument: HPMS_3

Extracted: 07/27/95
Injected: 08/01/95

File #: LA03056
Factor: 33

Units: ug/kg

Verified: SDT

CAS#	COMPOUND	RESULT	DETECTION LIMIT
108-95-2	Phenol	ND	170
111-44-4	bis(2-Chloroethyl) ether	ND	170
95-57-8	2-Chlorophenol	ND	170
541-73-1	1,3-Dichlorobenzene	ND	170
106-46-7	1,4-Dichlorobenzene	ND	170
100-51-6	Benzyl alcohol	ND	350
95-50-1	1,2-Dichlorobenzene	ND	170
95-48-7	2-Methylphenol	ND	170
106-44-5	4-Methylphenol	ND	170
621-64-7	N-Nitroso-di-n-propylamine	ND	170
67-72-1	Hexachloroethane	ND	170
98-95-3	Nitrobenzene	ND	170
78-59-1	Isophorone	ND	170
88-75-5	2-Nitrophenol	ND	170
105-67-0	2,4-Dimethylphenol	ND	170
65-85-0	Benzoic acid	ND	870
121-91-1	bis(2-Chloroethoxy)methane	ND	170
120-83-2	2,4-Dichlorophenol	ND	170
120-82-1	1,2,4-Trichlorobenzene	ND	170
91-20-3	Naphthalene	ND	170
106-47-8	4-Chloroaniline	ND	350
87-68-3	Hexachlorobutadiene	ND	170
59-50-7	4-Chloro-3-methylphenol	ND	350
91-57-6	2-Methylnaphthalene	ND	170
77-47-4	Hexachlorocyclopentadiene	ND	170
88-06-2	2,4,6-Trichlorophenol	ND	170
95-95-4	2,4,5-Trichlorophenol	ND	870
91-58-7	2-Chloronaphthalene	ND	170
88-74-4	2-Nitroaniline	ND	870
131-11-3	Dimethylphthalate	ND	170
208-96-8	Acenaphthylene	ND	170
606-20-2	2,6-Dinitrotoluene	ND	170
99-09-2	3-Nitroaniline	ND	870
83-32-9	Acenaphthene	ND	170
51-28-5	2,4-Dinitrophenol	ND	870
100-02-7	4-Nitrophenol	ND	870
132-64-9	Dibenzofuran	ND	170
121-14-2	2,4-Dinitrotoluene	ND	170
84-66-2	Diethylphthalate	ND	170
7005-72-3	4-Chlorophenyl-phenyl ether	ND	170
86-73-7	Fluorene	ND	170
100-01-6	4-Nitroaniline	ND	350
534-52-1	4,6-Dinitro-2-methylphenol	ND	870
86-30-6	N-Nitrosodiphenylamine	ND	170
101-55-3	4-Bromophenyl-phenylether	ND	170
118-74-1	Hexachlorobenzene	ND	170
87-86-5	Pentachlorophenol	ND	870
85-01-8	Phenanthrene	ND	170
120-12-7	Anthracene	ND	170
84-74-2	Di-n-butylphthalate	ND	170
206-44-0	Fluoranthene	ND	170
129-00-0	Pyrene	ND	170
85-68-7	Butylbenzylphthalate	ND	170
91-94-1	1,3'-Dichlorobenzidine	ND	350
56-55-3	Benzo(a)anthracene	ND	170
218-01-9	Chrysene	ND	170
117-81-7	bis(2-Ethylhexyl) phthalate	310	170
117-94-0	Di-n-octylphthalate	ND	170
103-33-3	Azobenzene	ND	170
205-99-2	Benzo(b)fluoranthene	ND	170
207-08-9	Benzo(k)fluoranthene	ND	170

117-94-0

Test Code: LA8270
Sample Description: 0508-95-0008/02
Test Description: Semivolatile Compounds

Lab No: 01A

Collected: 07/26/95
Category: SOIL
Method: 8270

Analyst: MDC
Instrument: HPMS_3

Extracted: 07/27/95
Injected: 08/01/95

File #: LA03056
Factor: 33

Units: ug/kg

Verified: SDT

CAS#	COMPOUND	RESULT	DETECTION LIMIT
50-32-8	Benzo (a) pyrene	ND	170
193-39-5	Indeno (1,2,3-cd) pyrene	ND	170
53-70-3	Dibenzo (a, h) anthracene	ND	170
191-24-2	Benzo (g, h, i) perylene	ND	170
62-53-3	Aniline	ND	170
62-75-9	N-Nitrosodimethylamine	ND	170

LIBRARY SEARCH COMPOUNDS:

CAS#	COMPOUND	RESULT
108-60-1	2,2'-Oxybis (1-Chloropropane)	NF

SURROGATES:

2-Fluorophenol	46	↓ Recovery	(25% - 121%)
2-Fluorobiphenyl	44	↓ Recovery	(30% - 125%)
Phenol-d6	54	↓ Recovery	(24% - 123%)
2,4,6-Tribromophenol	21	↓ Recovery	(19% - 122%)
Nitrobenzene-d5	42	↓ Recovery	(23% - 120%)
p-Terphenyl-d14	85	↓ Recovery	(18% - 117%)

NOTES AND DEFINITIONS FOR THIS SAMPLE
 ND = NOT DETECTED AT OR ABOVE THE METHOD
 DETECTION LIMIT (MDL)
 NA = NOT ANALYZED
 DL = DILUTED OUT
 NF = NOT FOUND

0508-95-0008/02
 01A
 8270

**Voluntary Corrective Action Plan Completion Report
Potential Release Site 16-011
Former Incinerator**

**Environmental Restoration Project
Field Unit Three
Los Alamos National Laboratory**

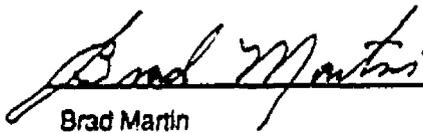
September 19, 1995

**A Department of Energy
Environmental Cleanup Project**

113 • 700000 • 423

CERTIFICATION OF COMPLETION

I certify that all work pertaining to the voluntary corrective action (VCA) 16-011 has been completed in accordance with the Department of Energy approved VCA plan entitled **VCA Plan for PRS 16-011, Incinerator Cage**. Based on my personal involvement or inquiry of the person or persons who managed this clean up, a review of all data gathered and a visit to the site, to the best of my knowledge and belief, all criteria of the plan have been met except as noted in the final report pertaining to number of samples for fixed laboratory analysis and verification sampling. I believe that the completion of the VCA is both protective to human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

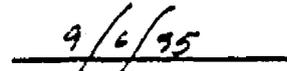


Brad Martin

Field Unit 3 Project leader

Environmental Restoration Program

Los Alamos National Laboratory



Date Signed

16-011-000000-0000

Voluntary Corrective Action Plan Completion Report
Potential Release Site 16-011
Former Incinerator

DESCRIPTION

Potential Release Site 16-011 was a former incinerator in TA-16 located near the west-central boundary of Los Alamos National Laboratory (Fig.1). The site included a steel incinerator cage, metal debris, ash, and soil. This PRS is not included in the Hazardous and Solid Waste Amendments module to the Los Alamos National Laboratory, Resource Conservation and Recovery Act EPA I.D. NM0890010515.

The PRS consists of an incinerator, TA-16-412, that was placed over the utility basement of building TA-16-41 in 1960 when the aboveground structure was removed. The incinerator was used to burn administrative trash from offices in the high explosive (HE) corridor. The administrative trash was predominately paper but also included cloth and metal debris. There is no history of solvent use at this site. The utility basement is constructed of reinforced concrete and is 28 by 15 by 12 ft in size.

CORRECTIVE ACTION

The cleanup activities started on July 17, 1995, and ended on August 25, 1995. The cleanup followed the VCA Plan except in the number of direct and confirmatory samples. Because the incinerated material was only suspected of being HE contaminated, only two composited samples were collected instead of six. After the soil and ash were removed from the pit, the floor was found to be intact except for one 18 in. diameter hole on the northeast side of the floor. The soil from the drain hole was sampled at the surface and 1 ft below the surface to provide information on PRS 16-034(p) which comprises the foundation and the soil beneath. In the VCA plan, four confirmatory samples were to be collected from boreholes in the foundation with locations biased by cracks in the floor. However, because all the soil, ash, and metal debris were removed and the floor was intact, no confirmatory samples were collected for 16-011.

16-011-000.DOC, 8-8-95

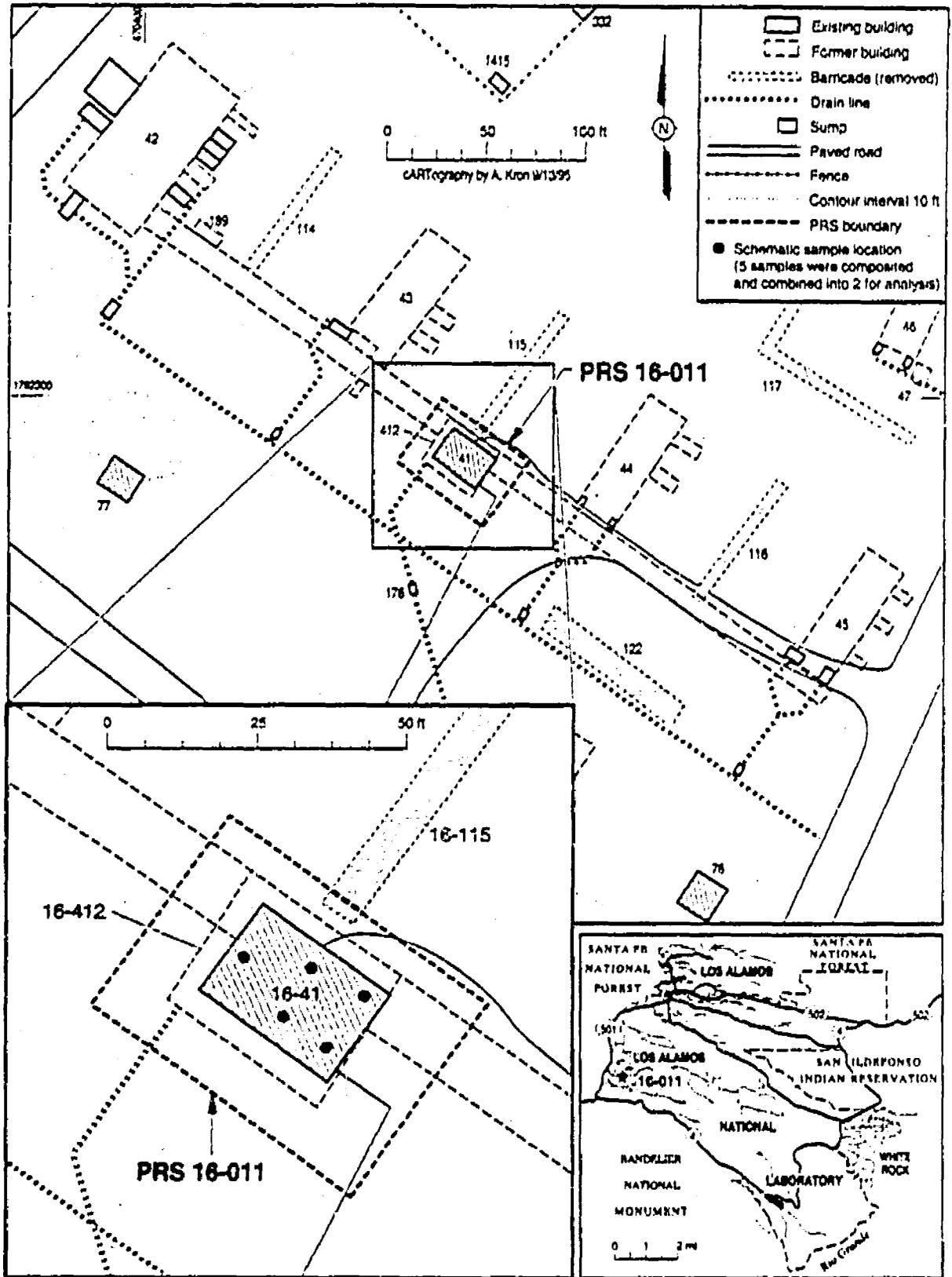
Two samples were collected from the incinerator pit at five different locations at various depths (Fig. 1). The samples were analyzed for metals, VOCs, and SVOCs using EPA methods 6010, 8260, and 8270, respectively. The analytical results indicated that one sample had a lead concentration of 5.4 ppm. The other sample showed only 3.28 ppm of lead. No other contaminants were detected. Analytical results are presented in Table 1.

Preliminary screening for high explosives and radioactivity were negative. The initial cleanup consisted of removing all the ash, soil, and metal debris from inside the incinerator pit and placing it in 12 lined, 20 yd³ roll off containers. The estimated volume of waste is 4,800 ft³. This activity was done by Johnson Controls International using a backhoe, front loader, and laborers. The tarped roll offs were placed in a less-than 90 day storage area adjacent to the site pending analysis by Rollins CHEMPAK for off-site shipment. One sample composited from three roll offs was collected by Rollins CHEMPAK. Analytical data are provided in Table 2.

All samples were collected for waste characterization and are compared to RCRA limits; any data associated with this PRS will be made available upon request.

According to the Rollins data, the TCLP level for lead was 2.07 ppm. The RCRA land disposal restriction (LDR) for lead is 5 ppm. There are no organics present in the waste. Because the lead levels detected in the three samples taken from the site were 2.07, 3.28, and 5.4 ppm, the waste from PRS 16-011 is currently determined to be non RCRA. If further characterization of this waste is required, the classification of may change.

This VCA was a final remedy for PRS 16-011; this report serves as the formal request for DOE concurrence to approve no further action (NFA) for this PRS.



U.S. GOVERNMENT PRINTING OFFICE: 1995

Fig. 1. Location of PRS 16-011, proposed for VCA.

**TABLE 1
ANALYTICAL RESULTS**

ANALYTE	0316-95-9000 (mg/kg)	0316-95-9000 (µg/L)	RCRA LIMIT ^a (mg/L)
Acetone	0.053	-	-
Mercury	-	<0.0200 (mg/l)	0.2
Silver	-	<10.0	5.0
Arsenic	-	10.2	5.0
Barium	-	295	100.0
Cadmium	-	107	1.0
Chromium	-	<10.0	5.0
Lead	-	5400	5.0
Selenium	-	5.24	1.0

ANALYTE	0316-95-9001 (mg/kg)	0316-95-9001 (µg/L)	RCRA LIMIT ^a (mg/L)
Acetone	0.055	-	-
Mercury	-	<0.0200 (mg/l)	0.2
Silver	-	<10.0	5.0
Arsenic	-	10.0	5.0
Barium	-	756	100.0
Cadmium	-	403	1.0
Chromium	-	<10.0	5.0
Lead	-	3280	5.0
Selenium	-	5.08	1.0

0316-95-9001-10

TABLE 2
ROLLINS CHEMPAK ANALYTICAL RESULTS

ANALYTE	P-19400 mg/L	RCRA LIMIT ^a (mg/L)
Mercury	<0.008	0.2
Silver	<0.005	5.0
Arsenic	<0.030	5.0
Barium	2.22	100.0
Cadmium	0.095	1.0
Chromium	<0.005	5.0
Lead	2.07	5.0
Selenium	<0.050	1.0
Antimony	<0.030	-
Beryllium	<0.005	-
Nickel	0.066	-
Thallium	<0.070	-
Vanadium	<0.005	-
Zinc	8.12	-

a. Maximum Concentration of Contaminants for the Toxicity Characteristic, 40 CFR 261.24.

DIP - 000.0.0.5 - 5.5.5.5

ATTACHMENT A

Analytical Data

010-000000-0000

Highway 36 Land Development Company
 Treatment, Storage and Disposal Facility
 ANALYSIS REPORT

Generator: Los Alamos National Labs (R)
 EPA ID: NM0890010515 Waste Profile: 11970 Date: 9/13/95
 Description: P: Hazardous Waste Solid Lab#: P-19400

ANALYSIS	Method	Units	MDL	Result
Radioactivity	Meter	microR/Hr	14	<5
Reactivity	WAP	Y/N	---	Air N Water N
Color	Visual	---	---	Brown
Free Liquids	9095	Y/N	---	N
& Solids	WAP	Solid	1*	100*
& Aqueous Liquids	WAP	Liquid	1*	0*
& Organics	WAP	Organic	1*	0*
pH	9045	pH	0.5	8.55
Density	ASTM	Lb/Yd3	25	2292.00
Load Bearing	WAP	Ton/Ft2	0.1	0.5
Flash Point	MOD 1010	degree C	21	>60c
Reactive Sulfide	WAP	ppm	5	<5
Reactive Cyanide	WAP	ppm	2	<2
Reactive Ammonia	WAP	ppm	10	<10
TOC (TCLP)	9060	mg/L	250	<250
TOX (TCLP)	9020	mg/L	5.00	<5.00
TOC (Liq)	9060	mg/L	-----	-----
TOX (Liq)	9020	mg/L	-----	-----
Screening	ASTM	Y/N	---	Oxid - Shock -

[Signature] 9-13-95 *[Signature]* 9-13-95
 Fingerprint Analyst Date TOC/TOX Analyst Date

Lab#: P-19400 Run Date: 9/12/95					Mix # 0*	
TCLP METALS	Method	Units	MDL	As Recd	MDL	After Mix
Antimony	6010	mg/L	0.030	<0.030		
Arsenic	6010	mg/L	0.030	<0.030		
Barium	6010	mg/L	0.010	2.22		
Beryllium	6010	mg/L	0.005	<0.005		
Cadmium	6010	mg/L	0.005	0.095		
Chromium	6010	mg/L	0.005	<0.005		
Lead	6010	mg/L	0.030	2.07		
Nickel	6010	mg/L	0.010	0.066		
Selenium	6010	mg/L	0.050	<0.050		
Silver	6010	mg/L	0.005	<0.005		
Thallium	6010	mg/L	0.070	<0.070		
Vanadium	6010	mg/L	0.005	<0.005		
Zinc	6010	mg/L	0.010	8.12		
Mercury	7470	mg/L	0.008	<0.008	0.008	-----
Mercury (Total)	7471	mg/Kg	-----	-----	-----	-----

[Signature] 9-13-95
 Metals Analyst Date
[Signature] 9/13/95
 Lab Manager Date
 9/13/95
 Date

HIGHWAY 36 LAND DEVELOPMENT COMPANY

WCD Control Number	11970
Public Code	
State Code	
County Code	
City Code	
Zip Code	
Other WCD Number	
Other Agency	

WASTE CHARACTERIZATION DATA SHEET

Please Refer To Instructions While Completing This Form

Highway 36 Land Development Company
10855 E. Highway 36
Dear Trail, CO 80105

P-19400

1. GENERAL INFORMATION

- a) Generator's Name: Los Alamos National Laboratories EPA Generator No. AL 46 D-890-010-515
- b) Facility Address: TA 54 Area 1 MS J593 State Registration No.: _____
- Los Alamos NM SIC Code: _____
- c) Zip Code: 87545
- d) Technical Contact: Paul Newberry
- e) Title: Project Manager
- f) Telephone Number: 505-665-8829 or 505-667-7579
- g) After Hours Telephone: _____
- h) Teletype (FAX) Number: 505-665-3961

2. BILLING ADDRESS

- a) Mail Highway 36 Land Development Company Invoices To: Generating Facility (to allow O/R)
- b) Company Name: Rollins Chemtek Inc Telephone: 302-426-3476
- c) Address: 1 ROLLINS PLAZA
- Wilmington DE Zip Code: 19803 Attention: Barbara DiCarlo

3. GENERAL WASTE INFORMATION

- a) Name of Waste: Hazardous Waste Liquid, SOLID
- b) Process Generating Waste: Septic Tank Cleanup Remediation Site
- c) Is this a U.S. EPA "Hazardous Waste" as defined by 40 CFR 261? NO YES
- d) If yes, U.S. EPA Hazardous Waste Code(s) are: 0008
- e) Is this waste a "Solid Hazardous Waste"? NO YES
- f) If yes, indicate the "Solid Hazardous Waste Code(s)" _____

1090-000-000-000

4. LAND DISPOSAL RESTRICTION INFORMATION - 40 CFR 268

(Complete this Section only if item 3c is answered YES.)

- | | | | |
|----|-------------------------------------|-------------------------------------|---|
| | NO | YES | |
| a) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Is the waste exemptly impacted by any land disposal restrictions/prohibitions under 40 CFR 268.11 (if yes, complete and attach LDR shipment notice, if no, go to section 5.) |
| b) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Is the waste generated by a conditionally exempt small quantity generator as defined by 40 CFR 261.51 (if yes, complete and attach LDR shipment notice indicating the exemption.) |
| c) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Is the waste a "hull or dunnage" per Federal Register, 31197, August 12, 1988? |
| d) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Does the waste material result from a section 104 or 106 CERCLA response action or a RCRA corrective action? |

California Site Restrictions

- | | | | |
|----|-------------------------------------|--------------------------|---|
| e) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Does the waste contain free liquids as defined by the paint filter (fluids test in 40 CFR 268.120); SW846 method 9095? |
| f) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Is the waste impacted by California Site Restrictions? If yes, indicate the applicable restrictions below.
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Metals <input type="checkbox"/> Cyanides <input type="checkbox"/> HOCs <input type="checkbox"/> PCBs
(If yes, indicate actual concentration in section 7.) |

5. REACTIVITY CHARACTERISTICS

Indicate if the waste is any of the following.

- | | | | | | | | |
|---|-------------------|---|-------------------|---|-----------------|---|---------------------|
| <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Water Reactive | <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Air Reactive | <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Acid Reactive | <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Explosive |
| <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Alkaline Reactive | <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Autopolymerizable | <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Stark Sensitive | <input checked="" type="checkbox"/> NO / <input type="checkbox"/> YES | Thermally Sensitive |

6. WASTE PROPERTIES AT AMBIENT TEMPERATURES (i.e. 25° C)

- | | | | | | | |
|--------------------|---|------------------|---|---|--|--|
| a) Physical State: | <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid | b) Free Liquids: | <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES | c) Density (Range): | Units: | d) Vapor Pressure: |
| | <input type="checkbox"/> Liquid <input type="checkbox"/> Powder | | | OR: <input type="checkbox"/> Specific Gravity (Range) | <input type="checkbox"/> lb/cu yd.
<input type="checkbox"/> lb/gallon | <input type="checkbox"/> < 76 mm Hg
<input type="checkbox"/> ≥ 76 mm Hg |
| | <input type="checkbox"/> Other _____ | | | | <input type="checkbox"/> Other _____ | |

- | | | | |
|--|------------------------|-------------|--------------|
| e) Layers: | Description of Layers: | Range | f) Color(s): |
| <input type="checkbox"/> Single Phase | Top _____ | and % _____ | _____ |
| <input type="checkbox"/> U-Layered | Middle _____ | and % _____ | _____ |
| <input type="checkbox"/> Multi-Layered | Bottom _____ | and % _____ | _____ |
| Increase Number _____ | | | |

- | | | | | | |
|------------------------|---|-------------------------------|---|----|---|
| g) Liquid Flash Point: | <input type="checkbox"/> < 75°F <input type="checkbox"/> 75-99°F <input type="checkbox"/> 100-124°F <input type="checkbox"/> 140-199°F <input type="checkbox"/> ≥ 200°F | <input type="checkbox"/> None | <input type="checkbox"/> Closed Cup Method (as per ASTM Method D) | OR | <input type="checkbox"/> Open Cup Method (as per ASTM Method D) |
|------------------------|---|-------------------------------|---|----|---|

- | | | | | | |
|--------|--|----------------|---|----------------|--|
| h) pH: | <input type="checkbox"/> ≤ 2 <input type="checkbox"/> 2.1-4 <input type="checkbox"/> 4-7 <input type="checkbox"/> 7.1-12.4 <input type="checkbox"/> ≥ 12.5 <input type="checkbox"/> Range _____ <input type="checkbox"/> N/A | i) BTU Values: | _____ BTU/lb
Percent of Ash: _____ %
Contains Solvent: <input type="checkbox"/> NO / <input type="checkbox"/> YES
Contains Halogen: <input type="checkbox"/> NO / <input type="checkbox"/> YES | j) Volatility: | <input type="checkbox"/> Low < 200 cup
<input type="checkbox"/> Moderate 200-400 cup
<input type="checkbox"/> High > 400 cup |
| | | | "NON-LANDFILLABLE"
FRUIT FTS FOR
ON-SOLVENT ONLY | | "NON-LANDFILLABLE"
COMPLETE FOR
ON-SOLVENT ONLY |

7. COMPLETE WASTE COMPOSITION - Total in the maximum column must be greater than or equal to 100 percent

Components	Range		Components	Range	
	Min.	Max.		Min.	Max.
Soil	95	100		10	2
Asbestos	2	2		10	2
				10	2
				20	2

b) Indicate if this waste contains any of the following metals, organic compounds, herbicides, pesticides or insecticides.

Concentration	Less Than (Parts Per Million)	Or Actual	Compound	Less Than (Parts Per Million)	Or Actual
Antic	X < 1		Benzene	[] < 0.5	0.1 ppm
Barium	X < 100		Carbon tetrachloride	[] < 0.5	0.1 ppm
Cadmium	X < 1		Chloroacetic acid	[] < 0.01	0.1 ppm
Chromium - Hex	X < 3		Chlorobenzene	[] < 100.0	0.1 ppm
Chromium - Tri	X < 5		Chloroform	[] < 6.0	0.1 ppm
Lead	[] < 5	5.4 ppm	Tetrachloroethylene	[] < 0.7	0.1 ppm
Mercury	X < 0.2		Trichloroethylene	[] < 0.5	0.1 ppm
Selenium	X < 1		Cresol	[] < 2000	3.32 ppm
Silver	X < 5		o-Cresol	[] < 2000	3.32 ppm
Heptachlor	[] < 0.008	3.29 ppm	m-Cresol	[] < 2000	3.32 ppm
Heptachlorobenzene	[] < 0.13	3.29 ppm	p-Cresol	[] < 2000	3.32 ppm
Heptachlorocyclopentadiene	[] < 0.5	3.29 ppm	1,4-Dichlorobenzene	[] < 7.5	0.1 ppm
Heptachloroethane	[] < 1.0	3.29 ppm	1,2-Dichloroethane	[] < 0.5	0.1 ppm
Methyl Ethyl Ketone	[] < 2000		1,1-Dichloroethylene	[] < 0.7	0.1 ppm
Nitrobenzene	[] < 2.0	3.32 ppm	2,4-Dinitrotoluene	[] < 0.13	
Pentachlorophenol	[] < 100.0	3.32 ppm	Endrin	[] < 0.02	3.32 ppm
Pyridine	[] < 5.0	3.32 ppm	Lindane	[] < 0.4	
2,4,5-Trichlorophenol	[] < 4000	3.32 ppm	Methoxychlor	[] < 10.0	
2,4,6-Trichlorophenol	[] < 1.0	3.32 ppm	Toxaphene	[] < 0.5	
Vinyl Chloride	[] < 0.2	0.1 ppm	2A-D	[] < 10.0	
Heptachlor Epoxide	[] < 0.008		2,4,5 TP (Silver)	[] < 1.0	

c) Indicate if waste contains any of the following and if YES, indicate type and concentration in Section 7d of this WCO.

	NO	YES		NO	YES
Free Cyanide	[X] []		Free Ammonia	[X] []	
Free Sulfide	[X] []		Pesticides	[X] []	
Dioxins	[X] []		Oil	[X] []	
Infectious	[X] []		Absorbents	[X] []	
Hexachlorocyclopentadiene	[X] []		Radioactive Material	[X] []	

Poly Chlorinated Biphenyls: NO YES
 Is the waste PCB regulated under 40 CFR 761, or is PCB concentration \geq 50 ppm?

8. MANIFEST INFORMATION

a) Is this a U.S. DOT Hazardous Material? NO YES

b) Proper U.S. DOT Shipping Name: Hazardous Waste Solid U.O.S.

c) U.S. DOT Hazard Class: 9

d) UN or NA Number: UN _____ or NA 3077

e) CERCLA Reportable Quantity (RQ): _____ [] lb. [] kg.

f) To be transported in: Bulk [] Drum (specify) _____ [] Other (specify) _____

g) Anticipated Shipping Volume: 170 in Units: Cubic yards [] Tons [] Per Month [] Gallons [] Other _____ [] Per Year

h) Special handling instructions: _____

Required Personal Protective Equipment: _____

11970 - 00000000 - 0000

AUG 18 1995

3. REPRESENTATIVE SAMPLE AND SAMPLE CERTIFICATION:

Sample Included: NO YES

ALL REPRESENTATIVE SAMPLES MUST BE ACCOMPANIED BY A COPY OF THE WCD

a) Sample is to be obtained by the person representing the Company. DO NOT COLLECT (OR FORWARD) SAMPLES THAT ARE RADIOACTIVE, SHOCK SENSITIVE, EXPLOSIVE, OR PYROPHORIC

b) Location of Sampling:

1) Drum 2) Pail 3) Pit 4) Tank 5) Other Roll off Bin

Date Sampled: 8-14-95 Time Sampled: 2:00 am pm

c) Sampling Method:

- 1. I have obtained a representative sample of the waste material described in the above Waste Characterization Data Sheet, and have sampled such waste from the location described above and in accordance with sampling methods described in 40 CFR 261 - Appendix I.
- 2. I have obtained a representative sample of the waste material described in the above Waste Characterization Data Sheet, and have sampled such waste from the location described above and using methods equivalent to sampling methods described in 40 CFR 261 - Appendix I.

4. SAMPLE LABEL - COMPLETE LABEL BEFORE REMOVING

REMOVE TOP LABEL AND AFFIX TO SAMPLE CONTAINER

- 1) 11970
WCD Control Number
- 2) _____
Generator's Company Name
- 3) _____
Description of Sample
- 4) _____
Print Sampler's Name

5) [Signature]
Sampler's Signature

6) Project Manager
Sampler's Title

7) 505 665 9829
Telephone Number

8) Rollins Chevrolet
Sampler's Employer
Off Highway 36 LOC or third party,
Complete Withhold Information

5. SAMPLING AUTHORIZATION (Complete only if sample is not obtained by the generator)

I (the Generator) have authorized Highway 36 Land Development Company, or another third party, to perform the sample event described above and I was personally present to ensure that the appropriate waste source was sampled. I also verify that the information provided above is accurate.

1) [Signature] 2) TERRY RUST 3) _____
Generator's Signature Private Generator's Name Generator's Title

6. SUPPLEMENTAL INFORMATION ATTACHED

NO YES Number of Pages _____

7. GENERATOR CERTIFICATION:

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability (in determining that no deliberate or willful omissions or concealment or preparation exist) and that all knowledge of suspected hazards have been disclosed.

* 8/17/95 [Signature] WASTE GENERATOR _____
DATE SIGNATURE TITLE INITIALS

8. THIS SECTION IS FOR REGULATORY AGENCY DOCUMENTATION:

a) Approval Status: Acceptable Approval Withheld Disapproved

b) Reasons or Special Conditions for Approval Status:



ENVIRONMENTAL PHYSICS, INC.
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Laboratory Certification

STATE	DEL	SP
PL	20715607204	20741297431
NC	333	
SC	10128	10083
TN	00284	
VA	00151	
WV	0000779	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Regiment
1900 Diamond Drive
Los Alamos, New Mexico 87544

Client: Mr Fred Shore

Project Description: Routine Analysis

cc: ICFK00289

Report Date: July 21, 1999

Page 2 of 6

Sample ID : 0016-99-9000

Parameter	Qualifier	Result	Date	Method	Analyst	Date	Time	Batch
Chloroethane	<	10.0	UOECO	EPA 8260				
Chloroform	<	10.0	UOECO	EPA 8260	TLD	07/19/99	11:54	69364
Dibromomethane	<	10.0	UOECO	EPA 8260				
Dichlorodifluoromethane	<	10.0	UOECO	EPA 8260				
Dichlorodifluoroethane	<	10.0	UOECO	EPA 8260				
Ethylbenzene	<	10.0	UOECO	EPA 8260				
Isopropyl benzene	<	10.0	UOECO	EPA 8260				
Methyl bromide	<	10.0	UOECO	EPA 8260				
Methyl chloride	<	10.0	UOECO	EPA 8260				
Methylene chloride	<	25.0	UOECO	EPA 8260				
Styrene	<	10.0	UOECO	EPA 8260				
Tetrahydrofuran	<	10.0	UOECO	EPA 8260				
Toluene	<	10.0	UOECO	EPA 8260				
Trichloroethylene	<	10.0	UOECO	EPA 8260				
Trichlorofluoroethane	<	10.0	UOECO	EPA 8260				
Vinyl acetate	<	10.0	UOECO	EPA 8260				
Vinyl chloride	<	10.0	UOECO	EPA 8260				
1,2-Dichlorobenzene	<	30.0	UOECO	EPA 8260				
o-1,3-Dichloropropylene	<	10.0	UOECO	EPA 8260				
meta- and para-Xylene	<	10.0	UOECO	EPA 8260				
ortho-Xylene	<	10.0	UOECO	EPA 8260				
para-1,3-Dichloropropylene	<	10.0	UOECO	EPA 8260				
GCMS Library Search-YCA		Yes		EPA 8260 extended	TLD	07/19/99	11:54	69364
Retene-like Compounds								
LAL-Sedimentation, Short Run - 80 Runs								
1,2,4-Trichlorobenzene	<	3320	UOECO	EPA 8270	JCB	07/20/99	15:53	69108
1,3-Dichlorobenzene	<	3320	UOECO	EPA 8270				
1,3-Dichlorobenzene	<	3320	UOECO	EPA 8270				
1,3-Dichlorobenzene	<	3320	UOECO	EPA 8270				
1,4-Dichlorobenzene	<	3320	UOECO	EPA 8270				
2,4,5-Trichlorophenol	<	3320	UOECO	EPA 8270				
2,4,6-Trichlorophenol	<	3320	UOECO	EPA 8270				
2,4-Dichlorophenol	<	3320	UOECO	EPA 8270				
2,4-Dimethylphenol	<	3320	UOECO	EPA 8270				
2,4-Dibromophenol	<	6640	UOECO	EPA 8270				



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STATE	DEL.	091
PL	007156/07204	007412/07431
NC	257	
SC	10020	10043
TN	00004	
VA	00001	
WI	0000175	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87544

Contact: Mr Fred Ebers

Project Description: Routine Analysis

on: ICFK00285

Report Date: July 31, 1993

Page 4 of 6

Sample ID : 0016-93-9000

Parameter	Qualifier	Result	Unit	Method	Analyst	Date	Time	Batch
Dibenzofuran	<	3320	UO/KO	EPA 8270	JCB	07/30/93	1553	09103
Dibenzidole	<	3320	UO/KO	EPA 8270				
Ethyl phenol	<	3320	UO/KO	EPA 8270				
Ethyl phenol	<	3320	UO/KO	EPA 8270				
Hexachloro I	<	3320	UO/KO	EPA 8270				
Hexachloro II	<	3320	UO/KO	EPA 8270				
Hexachloro acetic	<	3320	UO/KO	EPA 8270				
Hepta	<	3320	UO/KO	EPA 8270				
Hepta acetyls	<	3320	UO/KO	EPA 8270				
Fluorophenol	<	3320	UO/KO	EPA 8270				
Fluorene	<	3320	UO/KO	EPA 8270				
Heptachlor	<	3320	UO/KO	EPA 8270				
Heptachlor epoxide	<	3320	UO/KO	EPA 8270				
Hexachlorobenzene	<	3320	UO/KO	EPA 8270				
Hexachlorocyclopentadiene	<	3320	UO/KO	EPA 8270				
Hexachlorocyclohexene	<	3320	UO/KO	EPA 8270				
Indene(1,2,3-d)pyrene	<	3320	UO/KO	EPA 8270				
Isoflurone	<	3320	UO/KO	EPA 8270				
N-Nitrosodimethylamine	<	3320	UO/KO	EPA 8270				
N-Nitrosodiphenylamine	<	3320	UO/KO	EPA 8270				
N-Nitrosodipropylamine	<	3320	UO/KO	EPA 8270				
Naphthalene	<	3320	UO/KO	EPA 8270				
Nitrobenzene	<	3320	UO/KO	EPA 8270				
Perchlorophenol	<	3320	UO/KO	EPA 8270				
Phenanthrene	<	3320	UO/KO	EPA 8270				
Phenol	<	3320	UO/KO	EPA 8270				
Pyrene	<	3320	UO/KO	EPA 8270				
Pyridine	<	3320	UO/KO	EPA 8270				
Triethylphosphor	<	3320	UO/KO	EPA 8270				
alpha-BHC	<	3320	UO/KO	EPA 8270				
iso-BHC	<	3320	UO/KO	EPA 8270				
tri(2-Chloroethoxy)methane	<	3320	UO/KO	EPA 8270				
tri(2-Chloroethyl) ether	<	3320	UO/KO	EPA 8270				
tri(2-Chloropropyl) ether	<	3320	UO/KO	EPA 8270				

0016-93-9000-0004



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Laboratory Certification

STATE	CON.	REF.
PA	887126/6726	887423/6743
PC	710	
SC	18126	1083
TX	82734	
VA	08121	
WV	998779	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87544

Contact: Mr Paul Shore

Project Description: Routine Analysis

on ICFR00395

Report Date: July 21, 1995

Page 5 of 6

Sample ID : Q316-95-9000

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
bioCl-Bis(2-ethylhexyl)phthalate	<	3320	UG/KG	EPA 8270				
dibp-BHC	<	3320	UG/KG	EPA 8270	JCB	07/20/95	1553	09103
gamma-BHC	<	3320	UG/KG	EPA 8270				
m,p-Crudeol	<	3320	UG/KG	EPA 8270				
m-Picromethine	<	3320	UG/KG	EPA 8270				
o-Crudeol	<	3320	UG/KG	EPA 8270				
o-Picromethine	<	3320	UG/KG	EPA 8270				
p-Picromethine	<	3320	UG/KG	EPA 8270				
OCMS Library Search ACID		yes		EPA 8270				
OCMS Library Search B/M		yes		EPA 8270				

The following prep procedures were performed:

OCMS Extractable

EPA 3500/3520

TBD 07/14/95 1640 09105

Comments:

Volatils Organics Internal and surrogate standard failed due to matrix interferences.

A dilution was required for Extractable Organics due to matrix interferences. As a result, the detection limits are elevated.

010 • 000.000 • 010



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CERTIFICATE OF ANALYSIS

STATE: **GA**
 COUNTY: **DEKALB**
 CITY: **ALPHARETTA**
 ADDRESS: **1000 Diamond Drive**
 Phone: **(770) 271-1100**
 Fax: **(770) 271-1101**

Client: ICF Kaiser Engineers
Address: 1900 Diamond Drive
 Las Alamos, New Mexico 87544
Project Description: Mr. Fred Stone
 Routine Analysis

Report Date: July 21, 1993

Page 1 of 1

Sample ID

0318-95-000

Lab ID

9307244-02

Matrix

TCLP

Days Collected

07/13/93

Days Received

07/14/93

Priority

Basic

Quantity

Batch#

Units

Method

Analyte Date Time Batch

Meets Analyte

Heavy

<

MDL EPA 7470

ADP 07/21/93 1056 69259
 NRM 07/18/93 2013 69151

Arson

10.2

UCL EPA 6010A

ADP 07/20/93 1900 69259
 NRM 07/18/93 2013 69151

Chromium

<

UCL EPA 6010A

ADP 07/20/93 1900 69259
 NRM 07/18/93 2013 69151

Lead

5.24

UCL EPA 6010A

The following test procedures were performed:

EPA 7470

ADP 07/20/93 1900 69259

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Nancy Stone or (800) 556-8171.

Nancy Stone

Analytical Report Signature



ENCLOSURE



ENVIRONMENTAL PHYSICS, INC.
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LABORATORY CONDITIONS
 DATE: 07/21/93
 BY: [Signature]
 ANALYST: [Signature]
 INSTRUMENT: [Signature]
 METHOD: [Signature]
 REFERENCE: [Signature]

CERTIFICATE OF ANALYSIS

Client: KCP Labor Eng'g
 1900 DIXIE DR
 LOS ALAMOS, NEW MEXICO 87544
Contact: Mr Fred Stone
 Bureau Analyst:

Report Date: July 21, 1993

Page 1 of 6

Sample ID	Lab ID	Matrix	Element	Qualifier	Result	Units	Method	Analyt Date	Time Range
0316-95-1001	9907146-03	Water	As						
			Ca						
			Fe						
			Mn						
			Ni						
			Pb						
			Se						
			Si						
			Sr						
			V						
			Zn						
			Al						
			Cd						
			Cu						
			Hg						
			Co						
			Pb						
			Mn						
			Fe						
			Ca						
			As						

Units: mg/L

7LD 07/19/93 1438 69364

Sample ID	Lab ID	Matrix	Element	Qualifier	Result	Units	Method	Analyt Date	Time Range
0316-95-1001	9907146-03	Water	As		10.0	ug/L			
			Ca		10.0	ug/L			
			Fe		10.0	ug/L			
			Mn		10.0	ug/L			
			Ni		10.0	ug/L			
			Pb		10.0	ug/L			
			Se		10.0	ug/L			
			Si		10.0	ug/L			
			Sr		10.0	ug/L			
			V		10.0	ug/L			
			Zn		10.0	ug/L			
			Al		10.0	ug/L			
			Cd		10.0	ug/L			
			Cu		10.0	ug/L			
			Hg		10.0	ug/L			
			Co		10.0	ug/L			
			Pb		10.0	ug/L			
			Mn		10.0	ug/L			
			Fe		10.0	ug/L			
			Ca		10.0	ug/L			
			As		10.0	ug/L			



ENVIRONMENTAL PHYSICS, INC.



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Laboratory Certifications

STATE	QCL	QPI
PL	287120/7204	287472/7124
NC	283	
SC	19720	10001
TN	28204	
VA	28131	
WI	280774	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87544

Contact: Mr Fred Stone

Project Description: Routine Analysis

ref: ICFE00083

Report Date: July 31, 1995

Page 3 of 6

Sample ID : 0316-85-1001

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch	
Chloroethane	<	10.0	UG/G	EPA 8240					
Chlorobenzene	<	10.0	UG/G	EPA 8240	TLD	07/18/95	1438	69364	
Dibromomethane	<	10.0	UG/G	EPA 8240					
Dichlorodifluoromethane	<	10.0	UG/G	EPA 8240					
Dichloroethane	<	10.0	UG/G	EPA 8240					
Ethylbenzene	<	10.0	UG/G	EPA 8240					
Isopropyl benzene	<	10.0	UG/G	EPA 8240					
Methyl Bromide	<	10.0	UG/G	EPA 8240					
Methyl Chloride	<	10.0	UG/G	EPA 8240					
Methylene Chloride	<	25.0	UG/G	EPA 8240					
Styrene	<	10.0	UG/G	EPA 8240					
Tetrahydrofuran	<	10.0	UG/G	EPA 8240					
Toluene	<	10.0	UG/G	EPA 8240					
Trichloroethylene	<	10.0	UG/G	EPA 8240					
Trichlorofluoromethane	<	10.0	UG/G	EPA 8240					
Vinyl Acetate	<	10.0	UG/G	EPA 8240					
Vinyl chloride	<	10.0	UG/G	EPA 8240					
1,2-Dichloroethane	<	30.0	UG/G	EPA 8240					
o-1,3-Dichloropropylene	<	10.0	UG/G	EPA 8240					
meta- and para-Xylenes	<	10.0	UG/G	EPA 8240					
ortho-Xylene	<	10.0	UG/G	EPA 8240					
trans-1,3-Dichloropropylene	<	10.0	UG/G	EPA 8240					
GCMS Library Search-VOA		Yes		EPA 8240 extended	TLD	07/18/95	1438	69364	
Estrogenic Organics									
LANE Search/Initials, Short list - 28 items									
1,2,4-Trichlorobenzene	<	3200	UG/G	EPA 8270	JCB	07/20/95	1658	69108	
1,3-Dichlorobenzene	<	3200	UG/G	EPA 8270					
1,3-Diphenylhydrazine	<	3200	UG/G	EPA 8270					
1,3-Dichlorobenzene	<	3200	UG/G	EPA 8270					
1,4-Dichlorobenzene	<	3200	UG/G	EPA 8270					
2,4,5-Trichlorophenol	<	3200	UG/G	EPA 8270					
2,4,6-Trichlorophenol	<	3200	UG/G	EPA 8270					
2,4-Dichlorophenol	<	3200	UG/G	EPA 8270					
2,4-Dimethylphenol	<	3200	UG/G	EPA 8270					
2,4-Dichlorophenol	<	6580	UG/G	EPA 8270					

11-11-95 10:00 AM



ENVIRONMENTAL PHYSICS, INC.
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Laboratory Certification

STATE	OIL	SP
FL	88713487384	88747387438
NC	223	
DC	18120	18503
TN	88934	
VA	38121	
WV	888834	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87544

Contact: Mr. Fred Shure

Project Description: Routine Analysis

ac: KCFK00385

Report Date: July 21, 1995

Page 3 of 6

Sample ID : 0216-95-9001

Parameter	Qualifier	Result	Date	Method	Analyst	Date	Time	Batch
2,4-Dichlorobenzoic	<	3290	UOJKO	EPA 8270				
2,6-Dichlorobenzoic	<	3290	UOJKO	EPA 8270	JCB	07/20/95	1638	69103
2-Chloronaphthalene	<	3290	UOJKO	EPA 8270				
2-Chlorophenol	<	3290	UOJKO	EPA 8270				
2-Methylnaphthalene	<	3290	UOJKO	EPA 8270				
2-Naphthol	<	3290	UOJKO	EPA 8270				
2-methyl-4,6-dinitrophenol	<	3290	UOJKO	EPA 8270				
3,3'-Dichlorobenzidine	<	16300	UOJKO	EPA 8270				
4,4'-DDB	<	3290	UOJKO	EPA 8270				
4,4'-DDB	<	3290	UOJKO	EPA 8270				
4,4'-DDT	<	3290	UOJKO	EPA 8270				
4-Bromophenyl phenyl ether	<	3290	UOJKO	EPA 8270				
4-Chloroaniline	<	3290	UOJKO	EPA 8270				
4-Chlorophenyl phenyl ether	<	3290	UOJKO	EPA 8270				
4-Nitrophenol	<	6580	UOJKO	EPA 8270				
4-ortho-T-methyl phenol	<	3290	UOJKO	EPA 8270				
Azomethane	<	3290	UOJKO	EPA 8270				
Azomethylenes	<	3290	UOJKO	EPA 8270				
Azobenzene	<	3290	UOJKO	EPA 8270				
Alkyls	<	3290	UOJKO	EPA 8270				
Aniline	<	3290	UOJKO	EPA 8270				
Anthracene	<	3290	UOJKO	EPA 8270				
Benzidiazole	<	16300	UOJKO	EPA 8270				
Benzobenzofuran	<	3290	UOJKO	EPA 8270				
Benzodipyrone	<	3290	UOJKO	EPA 8270				
Benzodifuranone	<	3290	UOJKO	EPA 8270				
Benzodipyrone	<	3290	UOJKO	EPA 8270				
Benzodifuranone	<	3290	UOJKO	EPA 8270				
Benzoic Acid	<	6580	UOJKO	EPA 8270				
Benzyl Alcohol	<	3290	UOJKO	EPA 8270				
Butyl benzyl phthalate	<	3290	UOJKO	EPA 8270				
Chrysene	<	3290	UOJKO	EPA 8270				
Di-n-butyl phthalate	<	3290	UOJKO	EPA 8270				
Di-n-butyl phthalate	<	3290	UOJKO	EPA 8270				
Dibenz(a,h)anthracene	<	3290	UOJKO	EPA 8270				



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Laboratory Certification

STATE	QEL	377
PL	0012007204	00147207456
NC	233	
SC	10138	10003
TN	00736	
VA	00431	
WV	0000770	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87344

Contact: Mr Fred Shere

Project Description: Routine Analysis

cc: IC79000000 Report Date: July 21, 1995 Page 4 of 6

Sample ID : 0316-95-9001

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Dibenzofuran	<	3200	UG/KG	EPA 8270	JCB	07/20/95	1650	60103
Dibenzidole	<	3200	UG/KG	EPA 8270				
Dibenzyl phthalate	<	3200	UG/KG	EPA 8270				
Dibenzyl phthalate	<	3200	UG/KG	EPA 8270				
Endosulfan I	<	3200	UG/KG	EPA 8270				
Endosulfan II	<	3200	UG/KG	EPA 8270				
Endosulfan sulfate	<	3200	UG/KG	EPA 8270				
Endrin	<	3200	UG/KG	EPA 8270				
Endrin aldehyde	<	3200	UG/KG	EPA 8270				
Fluorenone	<	3200	UG/KG	EPA 8270				
Fluorene	<	3200	UG/KG	EPA 8270				
Heptachlor	<	3200	UG/KG	EPA 8270				
Heptachlor epoxide	<	3200	UG/KG	EPA 8270				
Hexachlorobenzene	<	3200	UG/KG	EPA 8270				
Hexachlorobenzene	<	3200	UG/KG	EPA 8270				
Hexachlorocyclopentadiene	<	3200	UG/KG	EPA 8270				
Hexachlorocyclopentadiene	<	3200	UG/KG	EPA 8270				
Indeno(1,2,3-c)pyrene	<	3200	UG/KG	EPA 8270				
Isophthalate	<	3200	UG/KG	EPA 8270				
N-Nitrosodimethylaniline	<	3200	UG/KG	EPA 8270				
N-Nitrosodiphenylamine	<	3200	UG/KG	EPA 8270				
N-Nitrosodipropylamine	<	3200	UG/KG	EPA 8270				
Nightshades	<	3200	UG/KG	EPA 8270				
Nitrobenzene	<	3200	UG/KG	EPA 8270				
Polychlorophenyl	<	3200	UG/KG	EPA 8270				
Polychlorophenyl	<	3200	UG/KG	EPA 8270				
Picral	<	3200	UG/KG	EPA 8270				
Pyrene	<	3200	UG/KG	EPA 8270				
Pyridine	<	3200	UG/KG	EPA 8270				
Tributylphosphane	<	3200	UG/KG	EPA 8270				
alpha-BHC	<	3200	UG/KG	EPA 8270				
beta-BHC	<	3200	UG/KG	EPA 8270				
1-(2-Chloroethoxy)ethane	<	3200	UG/KG	EPA 8270				
1-(2-Chloroethyl) ether	<	3200	UG/KG	EPA 8270				
1-(2-Chloropropyl) ether	<	3200	UG/KG	EPA 8270				

1507248-03*



ENVIRONMENTAL PHYSICS, INC.
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Laboratory Certification

STATE	DEL.	SP
PL	287126/07284	8834728743
NC	231	
SC	10120	10502
TN	02804	
VA	07151	
WI	2402779	

CERTIFICATE OF ANALYSIS

Client: ICF Labor Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87544

Contact: Mr Fred Stone

Project Description: Routine Analysis

no: ICFE00095

Report Date: July 31, 1995

Page 3 of 8

Sample ID : 0316-95-001

Parameter	Qualifier	Result	Units	Method	Analyst	Date	Time	Batch
Meta-Bisphenol A	<	3200	UJRG	EPA 8270				
ortho-BHC	<	3200	UJRG	EPA 8270	JCB	07/20/95	1658	09103
gamma-BHC	<	3200	UJRG	EPA 8270				
isop-Cresol	<	3200	UJRG	EPA 8270				
m-Nitroanisole	<	3200	UJRG	EPA 8270				
o-Cresol	<	3200	UJRG	EPA 8270				
o-Nitroanisole	<	3200	UJRG	EPA 8270				
p-Nitroanisole	<	3200	UJRG	EPA 8270				
OCMS Library Search-ACID		yes		EPA 8270				
OCMS Library Search-B/N		yes		EPA 8270				

The following prep procedures were performed:

OCMS Extraction

EPA 3500/3320

TSD 07/14/95 1540 09103

Comments:

Volatiles Organics Internal and surrogate standard failed due to matrix interferences.

A dilution was required for Extractable Organics due to matrix interferences. As a result, the detection limits are elevated.

Extractable Organics Internal standard failed for this sample and its duplicate due to matrix interferences.



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Laboratory Certifications

STATE	OR	571
FL	887126/77234	887472/7438
NC	223	
SC	10128	10882
TN	02884	
VA	08151	
WI	0008778	

CERTIFICATE OF ANALYSIS

Client: ICF Kaiser Engineers
1900 Diamond Drive
Los Alamos, New Mexico 87544

Contact: Mr Fred Stone

Project Description: Reaction Analysis

no: ICF000286

Report Date: July 21, 1995

Page 8 of 8

Sample ID : 0516-93-9001

Parameter	Qualifier	Result	Units	Method	Analysis Date	Time	Batch
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This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Henry Sims at (803) 556-8171.

Henry Sims

Analytical Report Specialist

100 - 1000.D.D.P.F. 4.15.95



ENVIRONMENTAL PHYSICS, INC.
 A General Engineering Laboratories, Inc. Affiliate.

LABORATORY CERTIFICATION
 STATE OF VA
 PL 20715A0720A 00720715A
 NC 20
 SC 10420
 VA 00151
 WESTVA 00000

CERTIFICATE OF ANALYSIS

Client:
 XCF Kaiser Engineers
 1900 Diamond Drive
 Lee's Summit, New Mexico 87344

Project Description:
 Mt Ford Basin
 Radon Analysis

Report Date: July 21, 1993

Page 1 of 1

Sample ID

0216-95-9001

Lab ID

9307348-01

Method

TCLP

Data Channel

071295

Data Sampled

0711495

Priority

Batch

Category

Chem

Parameter	Quantity	Result	Units	Method	Analyst Data	Time	Date
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Mercury

<

MDL EPA 7470

ADP 0712193 1058 09259

Methyl

<

UCL EPA 8010A

NLM 0711893 2318 09151

Aroclor

<

UCL EPA 8010A

Butane

756

UCL EPA 8010A

Chloroform

403

UCL EPA 8010A

Chlorobenzene

<

10.0

UCL EPA 8010A

Lead

3200

UCL EPA 8010A

Mercury

1.06

UCL EPA 8010A

The following prep procedures were performed:

Mercury

EPA 7470

ADP 0712093 1900 09259

The data report has been prepared and analyzed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Nancy Slater at (505) 566-8171.

Nancy Slater

Analyst Report Signature



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**Voluntary Corrective Action Plan Completion Report
Potential Release Site PRS 18-001(a)
Former TA-18 Sewage Lagoons**

**Environmental Restoration Project
Field Unit Two
Los Alamos National Laboratory**

September 20, 1995

**A Department of Energy
Environmental Cleanup Project**

18-001(a) - PRS - 18-001(a)

**Voluntary Corrective Action Plan Completion Report
Potential Release Site PRS 18-001(a)
Former TA-18 Sewage Lagoons**

DESCRIPTION

Potential Release Site (PRS) 18-001(a) is the site of former sanitary sewage lagoons. The lagoons served the sanitary sewer system for TA-18. The sewage lagoons were taken out of service when the sanitary sewage waste from TA-18 was redirected to the new TA-46 Waste Treatment Facility. This PRS is included in the Hazardous and Solid Waste Amendments module to the Los Alamos National Laboratory, Resource Conservation and Recovery Act, EPA I.D. NM0890010515.

PRS 18-001(a) consisted of two lagoons 60-ft-wide by 120-ft-long by approximately 12-ft-deep. The two lagoons were separated by a berm which contained two concrete distribution boxes directing the sewage flow into the lagoons. The lagoon side walls were concrete lined from the floor of the lagoons to approximately one-third up the wall height, the rest of the two-thirds was lined with an asphalt-aggregate mixture. Sewage effluent from TA-18 was transported to the lagoons via an associated sanitary sewer line [PRS 18-001(b)]. This PRS also included an outfall which emptied into a stream channel in Pajarito Canyon. The stream channel meanders along Pajarito Road eastward crossing it from the north side to the south side about a half mile down-stream from the outfall and empties into a wetland. The outfall drain line still remains in place and runs northward underneath Pajarito Road to the stream channel, however, the outlet portion of the pipe was plugged with concrete when the lagoons were taken out of service.

The lagoons and associated sanitary sewer line was placed in service before 1969 and remained in service until October of 1992. Liquid waste discharged into this PRS consisted of sanitary sewage, wash water from industrial drains and sinks in laboratories, and photochemical wastes.

CORRECTIVE ACTION

The cleanup for 18-001(a) followed the actions proposed in the RCRA Facilities Investigation (RFI) Report that addressed this site (LANL, 1995, 1255). Activities began on 29 August and were completed on 15 September, 1995.

During the RFI, samples were collected at five locations in both the north and south lagoons. Water and sediment samples were collected from a shallow pond that received outflow from the sewage lagoons.

The collected samples were analyzed for the chemicals of potential concern (COPCs) identified for the sanitary sewer line. As presented in the RFI Report (LANL, 1995, 1255), the reported concentrations for all COPCs were below

18-001(a) 18-001(a) 18-001(a)

SALs with the exception of ^{232}Th for which the SAL is below the UTL background concentration level. The measured concentration of ^{232}Th was in the range of measured background concentrations. As a result of the RFI sampling, it was concluded that no corrective action was required for control of RCRA hazardous materials in the lagoons. The accelerated cleanup at the lagoons was carried out as a Voluntary Corrective Action, because no health risk was presented by RCRA regulated COPCs. The purpose for the action was to decommission the site, and eliminate any safety or health hazard from non-RCRA constituents present by the lagoons. However, some uncertainty existed regarding ground water quality near the lagoons. Verification sampling was done by the installation of a monitoring well at the northeast corner of the lagoons, see Figure 1.

A water sample from the well was analyzed for VOCs, SVOCs, target analyte list metals, isotopic uranium, plutonium, nitrites/nitrates, chlorides, and total suspended solids. Analytical results for all detected COPCs are presented in Table 1. For comparison, data are also presented for a non-filtered water sample from a background well (Location ID 18-1060) located approximately 1 mile west of the lagoons. This background well is upgradient from all activities at TA-18. The data indicate that, with the exception of manganese, all detected constituents in the water sample from the well at the lagoons are below the screening action level (SAL). The SALs for groundwater are equivalent to the New Mexico State Water Quality Standards. Manganese has been reported at concentrations in excess of the SAL at numerous locations throughout Pajarito Canyon, and the concentrations tend to increase eastward from TA-18. For example, measured concentrations in monitoring wells PCO-1, PCO-2, and PCO-3 are 91,1460, and 8800 ug/L, respectively. Well PCO-1 is located approximately 0.5 mi west (upgradient) of the lagoons, PCO-2 1/4 mi east, and PCO-3 1.5 mi east of the lagoons. Concentrations well in excess of the SAL have also been measured at the background well. Data for all monitoring wells will be presented in the RFI report for OU 1093 scheduled for release on October 31, 1995, and will be made available upon request. A manganese concentration of 8050 ug/L was measured in a non-filtered sample from temporary well 18-01684, located near the abandoned sanitary sewer line 0.25 mi west of the lagoons. The measured concentration in a filtered sample from the same well was less than 50 ug/L. A filtered sample was not collected from the temporary well at the lagoons. It is believed that the measured manganese concentrations in these various wells is a function of overall water chemistry, rather than of some pollution source. All cation and ion concentrations tend to increase eastward in the three PCO-series wells. In summary, although manganese concentrations in the temporary well at the lagoon are elevated above the SAL, it is not believed that this is the result of contamination derived from the lagoons, but is rather the result of water chemistry variations within the shallow aquifer.

The concrete distribution boxes (two) were removed from the lagoons as well as the 8" cast iron pipes associated with them. This material was transferred to the Los Alamos County Landfill for Disposal. Prior to disposal, both the distribution

18-001(a) - 5-514

boxes and the 8" cast iron pipes were checked for radioactive contamination. The concrete portion of the berms were left intact and the asphalt portion of the berms were bulldozed into the lagoons as fill material. Clean fill dirt was trucked in from another location and used to complete filling in the lagoons. After all grading was accomplished to match the surrounding terrain, the area was then seeded with natural grasses as a soil conservation measure.

This report serves as the formal request for regulatory concurrence to remove PRS 18-001(a) from the HSWA module.

Reference List

"RFI Report for Potential Release Sites 18-001(a), 18-001(b), 18-001(c), 18-007, 27-001, 27-003 (Located in Former Operable Unit 1093), Field Unit 2," Los Alamos National Laboratory Report LA-UR-95-295, Los Alamos, New Mexico. (Environmental Restoration Project 1995, 1255)

105-000000-0000

CERTIFICATION OF COMPLETION

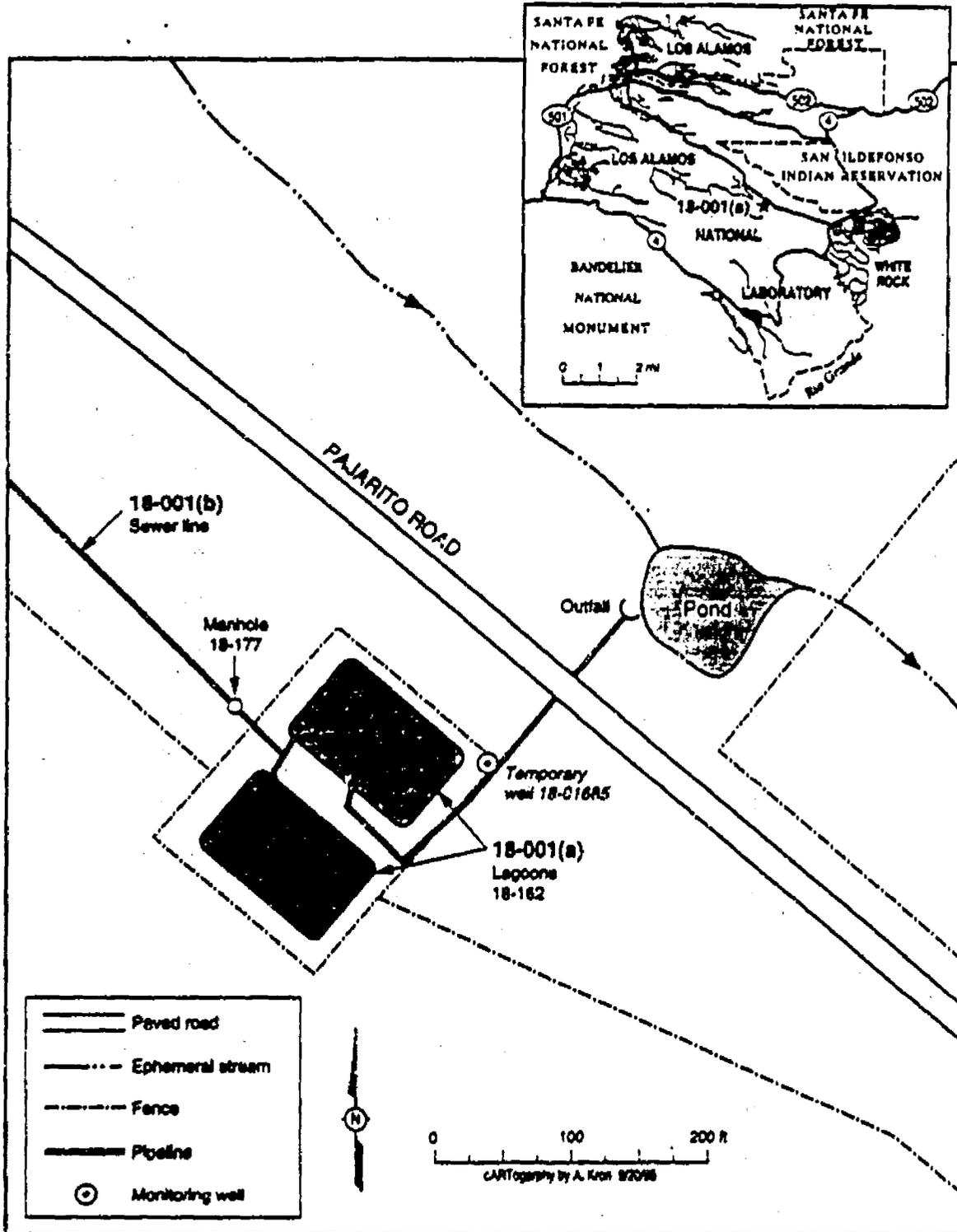
I certify that all the work pertaining to the voluntary corrective action (VCA) 18-001(a) has been completed in accordance with the actions proposed in the **RFI Report for Operable Unit 1093** (January 1995) that addressed this site. Based on my personal involvement or inquiry of the person or persons who managed this clean up, a review of all data gathered and a visit to the site, to the best of my knowledge and belief, all criteria of the plan have been met or exceeded. I believe that the completion of this VCA is both protective to human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



Gene Gould
Field Unit Two Project Leader
Environmental Restoration Project
Los Alamos National Laboratory

9/28/95
Date Signed

10.5 - 000.0.0.0 - 4.0.0



11-11-95 10:00 AM

Figure 1. Location of verification sampling at PRS 18-001(a).

Table 1. Analytical Data
PRS 18-001(a)

Analyte	Loc Id	Sample ID	Matrix	Sample Value	SAL Level	Units	Analysis Qualifier	Suite
Aluminum	18-01060	0218-95-0251	Ground Water-NF	5720		UGL		INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	12300		UGL		INORGANIC
Barium	18-01685	ECXX-95-0302	Ground Water-NF	276	2000	UGL	V	INORGANIC
Calcium	18-01060	0218-95-0251	Ground Water-NF	10300		UGL	V	INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	20000		UGL	V	INORGANIC
Chlorides	18-01685	ECXX-95-0302	Ground Water-NF	28.9		MGL		INORGANIC
Copper	18-01685	ECXX-95-0302	Ground Water-NF	12.3	1300	UGL		INORGANIC
Iron	18-01060	0218-95-0251	Ground Water-NF	4680		UGL		INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	12100		UGL		INORGANIC
Lead	18-01685	ECXX-95-0302	Ground Water-NF	13	50	UGL		INORGANIC
Magnesium	18-01060	0218-95-0251	Ground Water-NF	3660		UGL		INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	7030		UGL		INORGANIC
Manganese	18-01060	0218-95-0251	Ground Water-NF	117	180	UGL		INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	684	180	UGL		INORGANIC
Nitrogen, Nitrate/Nitrite	18-01685	ECXX-95-0302	Ground Water-NF	0.9		MGL		INORGANIC
Potassium	18-01060	0218-95-0251	Ground Water-NF	3310		UGL		INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	5420		UGL		INORGANIC
Sodium	18-01060	0218-95-0251	Ground Water-NF	13100		UGL		INORGANIC
	18-01685	ECXX-95-0302	Ground Water-NF	24900		UGL		INORGANIC
Solids, Total Suspended	18-01685	ECXX-95-0302	Ground Water-NF	808		MGL		INORGANIC
Vanadium	18-01685	ECXX-95-0302	Ground Water-NF	19.2	240	UGL		INORGANIC
Zinc	18-01685	ECXX-95-0302	Ground Water-NF	58.4	10000	UGL		INORGANIC
Uranium-233/234	18-01685	ECXX-95-0302	Ground Water-NF	0.304		PCL		RAD
Uranium-238	18-01685	ECXX-95-0302	Ground Water-NF	0.184		PCL		RAD

**Voluntary Corrective Action Plan Completion Report
Potential Release Site 33-016
Sump with Outfall**

**Environmental Restoration Project
Field Unit Three
Los Alamos National Laboratory**

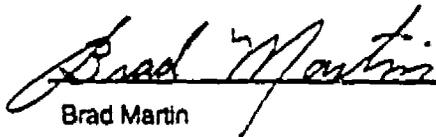
September 19, 1995

**A Department of Energy
Environmental Cleanup Project**

01-8 - 00000000 - 1-1-14

CERTIFICATION OF COMPLETION

I certify that all work pertaining to the voluntary corrective action (VCA) 33-016 has been completed in accordance with the Department of Energy approved VCA plan entitled VCA Plan for PRS 33-016, Sump with Outfall. Based on my personal involvement or inquiry of the person or persons who managed this clean up, a review of all data gathered and a visit to the site, to the best of my knowledge and belief, all criteria of the plan have been met or exceeded. I believe that the completion of the VCA is both protective to human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

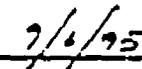


Brad Martin

Field Unit 3 Project leader

Environmental Restoration Program

Los Alamos National Laboratory



Date Signed

100-00000-45

Voluntary Corrective Action Plan Completion Report
Potential Release Site 33-016
Sump with Outfall

DESCRIPTION

Potential Release Site 33-016 is a sump that once served the sink and floor drain in a bunker located south of main site, building TA-33-23 (Fig. 1). The bunker was used to prepare propellant charges for use at South Site in the 1950's and then as storage for EES-1. PRS 33-016 is listed in the Hazardous and Solid Waste Amendments (HSWA) Module of the Los Alamos National Laboratory's (LANL's) Resource Conservation and Recovery Act (RCRA) Permit.

The sump is on the west side of the building and is approximately 5 ft long by 2.5 ft wide by 7 ft deep. The sludge was analyzed during RFI sampling in 1993. This analysis indicated the presence of HE by-products, PAHs, and SVOCs above health-based levels. Analytical results are presented in Table 1. The soil at the outfall was sampled but revealed no contamination. The sludge was sampled again during the VCA cleanup and is addressed below.

CORRECTIVE ACTION

The proposed treatment for the site was to remove the sludge, abandon the concrete sump in-place, and backfill with gravel and sand. The cleanup followed the VCA Plan except in sampling. During sludge removal, there were elevated readings on the photolization detector (PID). Because of the 10 to 20 ppm PID readings, additional sludge and liquid samples were collected and analyzed for lead, volatile, and semivolatile organics using EPA methods 8010, 8260 and 8270, respectively.

The initial cleanup involved pumping water from the sump into seven lined 55-gal barrels. During sludge removal it was decided to sample the sludge to examine the factor(s) contributing to the elevated PID readings. The analytical results were reviewed and determined to be non-RCRA by the ESH-19 hazardous waste regulator and

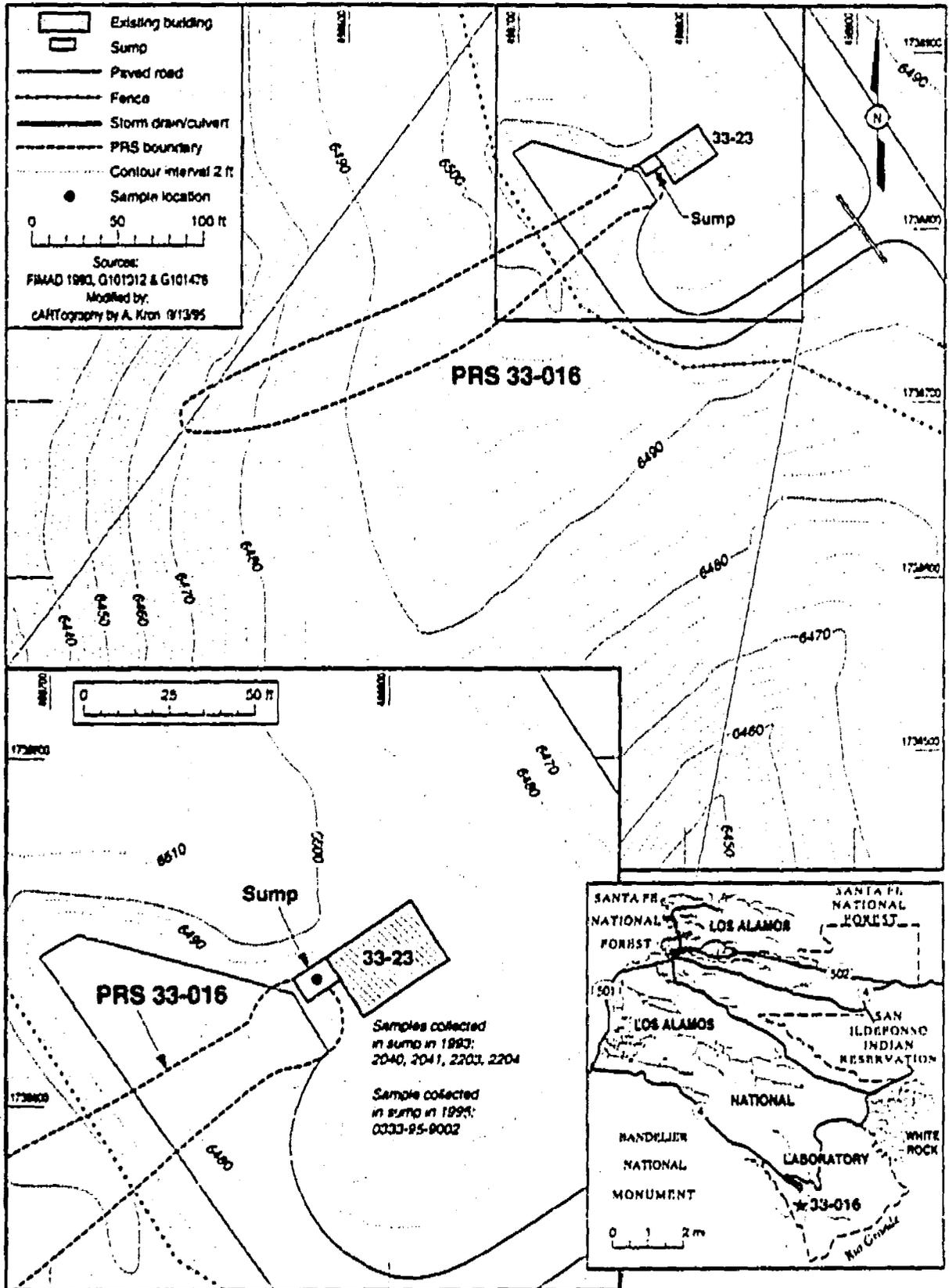
10-2-000005-1-01

the Field Team leader. Analytical results are presented in Table 2 and are provided in Attachment A. The sludge was removed and placed in one, lined 55-gal. barrel. The sump was filled with gravel and sand and capped with 1 ft of concrete. The non-hazardous waste generated at this site is scheduled to be disposed of at the Liquid Waste Facility and a clean landfill.

All samples were collected for waste characterization and are compared to RCRA limits; any data associated with this PFS will be made available upon request.

This VCA was considered a final remedy to PFS 33-016, and this report serves as the formal request for regulator concurrence to remove PFS 33-016 from the HSWA module.

05-000000-001



OUT - 000000000 - 5-31-

Figure 1. Location of PRS 33-016, proposed for VCA.

TABLE 2
SAMPLE RESULTS FOR SLUDGE AND LIQUID SAMPLES ^a

ANALYTE	0333-95-0002 (µg/g)	0333-95-0001 (µg/l)	0333-95-0003 (µg/l)	RCRA LIMIT ^c (mg/L)
1,1-Dichloroethylene	210			0.7
1,1-Dichloroethane		3.84	3.45	
Acetone		18.9	142	-
Methyl chloride			2.34	-
2-Methylnaphthalene	73.5			-
Di-n-butyl phthalate			15.2	-
Phenathrene	70.2			-
bis(2-Ethylhexyl)phthalate	244		24.6	-
Mercury	0.291			0.2
Silver	20.1			5.0
Aluminum	5 010	102	293	-
Arsenic	7.06			5.0
Barium	94.3	186	105	100.0
Calcium	4 750	68 600	73 300	-
Cadmium	1.76			1.0
Cobalt	4.47			-
Chromium	52.4			5.0
Copper	285		18.8	-
Iron	12 600	802	1310	-
Potassium	768	12 300	12 700	-
Magnesium	2 970	2 580	2 660	-
Manganese	112	199	114	-
Sodium	414	34 300	24 500	-
Nickel	88.5	29.9	35.2	-
Lead	293 ^b	14.5	17	5.0
Antimony	1.49			-
Selenium	0.972			1.0

10/11/95 10:00:00 AM

TABLE 2 (CONTINUED)
SAMPLE RESULTS FOR SLUDGE AND LIQUID SAMPLES ^a

ANALYTE	0333-95-0002 ($\mu\text{g/g}$)	0333-95-0001 ($\mu\text{g/l}$)	0333-95-0003 ($\mu\text{g/l}$)	RCRA LIMIT
Vanadium	28.2			-
Zinc	458	69.3	87.6	-

^a Only sample results above detection limits are reported.

^b Lead was the only sludge component that resulted in a detectable value ($245\mu\text{g/l}$) during TCLP analysis.

^c Maximum Concentration of Contaminants for the Toxicity Characteristic, 40 CFR 261.24.

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ATTACHMENT A

Analytical Data

451-960005-5214

Las Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)
 CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

9508068-

17166

Date: 9/15/95	Destination: General Engineering Laboratory, Inc.
LAB Contact: Fred Shaw	200 Shingo Road
LAB Ship: KCPD 1082	Chattanooga, SC 29414
Phone: (803) 681-2300	Contact: Fred Shaw
	(803) 681-1171
	Contact No: 11250-SC-01
	Non-RAD Treatment 2 days
	RAD Treatment 2 days

Analyzed by: <i>[Signature]</i> (Signature): Date: 9/15/95 Time: 8:45	Analyzed by: <i>[Signature]</i> (Signature): Date: 9/15/95 Time: 8:45
--	--

Comments: Radioactivity is a background level. Analyze for TCLP for all samples which have concentrations greater than 20 times the TCLP value. SCREENING METHOD: none SAMPLE DISPOSAL: Return to CM
--

Field Study Cost Data & Time Considerations (See Worksheet)
 Sample and ID Collected (See Worksheet)
 Matrix Property (Order Codes)
 ANALYSIS REQUESTER: (Conditions of receipt, etc.)

0013-05-002	01	0013-05-002	125 ml Glass	Styge	Ice	HEP
0013-05-002	02	0013-05-002	125 ml Glass	Styge	Ice	HEP
0013-05-002	03	0013-05-002	125 ml Polyethylene	Styge	Ice	TAL METALS
0013-05-002	04	0013-05-002	125 ml High Density Polyethylene	Styge	Ice	WAX METALS

2



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Laboratory Certifications

STATE	DEL.	DC
FL	88712467284	88747247461
NC	885	
SC	18120	1882
TX	8894	
VA	88131	
WI	8888779	

CERTIFICATE OF ANALYSIS

Client: ECF Kaiser Engineers
 1900 Diamond Drive
 Los Alamos, New Mexico 87544

Customer: Mr Paul Elmer

Project Description: Routine Analysis

on KCFK00295

Report Date August 10, 1995

Page 3 of 6

Sample ID : 0875-89-0028

Parameter	Qualifier	Result	Units	Method	Analysis Date	Time	Batch
2,4-Dichlorobenzene	<	69000	UG/GG	EPA 8270	WAM0808/95	1610	70384
2,6-Dichlorobenzene	<	69000	UG/GG	EPA 8270			
2-Chlorophenol	<	69000	UG/GG	EPA 8270			
2-Chlorophenol	<	69000	UG/GG	EPA 8270			
2-Methylphenol	<	73000	UG/GG	EPA 8270			
2-Nitrophenol	<	69000	UG/GG	EPA 8270			
2-methyl-4,6-dinitrophenol	<	69000	UG/GG	EPA 8270			
3,5-Dichlorobenzidine	<	329000	UG/GG	EPA 8270			
4,4'-DDT	<	69000	UG/GG	EPA 8270			
4,4'-DDE	<	69000	UG/GG	EPA 8270			
4,4'-DDT	<	69000	UG/GG	EPA 8270			
4-Bromophenyl phenyl ether	<	69000	UG/GG	EPA 8270			
4-Chlorophenol	<	69000	UG/GG	EPA 8270			
4-Chlorophenyl phenyl ether	<	69000	UG/GG	EPA 8270			
4-Nitrophenol	<	130000	UG/GG	EPA 8270			
4-ethyl-3-methyl phenol	<	69000	UG/GG	EPA 8270			
Acephenanthrene	<	69000	UG/GG	EPA 8270			
Acephenanthrene	<	69000	UG/GG	EPA 8270			
Acephenanthrene	<	69000	UG/GG	EPA 8270			
Albin	<	69000	UG/GG	EPA 8270			
Aniline	<	69000	UG/GG	EPA 8270			
Anilines	<	69000	UG/GG	EPA 8270			
Benzidine	<	329000	UG/GG	EPA 8270			
Benz(a)anthracene	<	69000	UG/GG	EPA 8270			
Benz(a)pyrene	<	69000	UG/GG	EPA 8270			
Benz(b)fluoranthene	<	69000	UG/GG	EPA 8270			
Benz(g)fluoranthene	<	69000	UG/GG	EPA 8270			
Benz(k)fluoranthene	<	69000	UG/GG	EPA 8270			
Benzoic Acid	<	130000	UG/GG	EPA 8270			
Benzyl Alcohol	<	69000	UG/GG	EPA 8270			
Benzyl isopropyl phenol	<	69000	UG/GG	EPA 8270			
Chrysen	<	69000	UG/GG	EPA 8270			
Di-n-butyl phthalate	<	69000	UG/GG	EPA 8270			
Di-n-octyl phthalate	<	69000	UG/GG	EPA 8270			
Dibenz(a,h)anthracene	<	69000	UG/GG	EPA 8270			



GENERAL ENGINEERING LABORATORIES

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STATE	OH	EPA
FL	28712/28728	28712/28728
NC	287	
SC	10128	10128
TN	28724	
VA	28731	
WI	287279	

CERTIFICATE OF ANALYSIS

Client: KCF Kolor Engineers
 1908 Diamond Drive
 Los Alamos, New Mexico 87544

Contract: Mr Fred Stone
 Project Description: Routine Analysis

cc: KCFK0004

Report Date: August 10, 1995

Page 4 of 6

Sample ID: 0825-04-8082

Parameter	Qualifier	Result	Date	Method	Analysis Date	Time	Batch
Dibenzofuran	<	65000	UOGL	EPA 8270	WAM 08/04/95	1830	70384
Dibutyltin	<	65000	UOGL	EPA 8270			
Dibutyl phthalate	<	65000	UOGL	EPA 8270			
Dibutyl phthalate	<	65000	UOGL	EPA 8270			
Endosulfan I	<	65000	UOGL	EPA 8270			
Endosulfan II	<	65000	UOGL	EPA 8270			
Endosulfan sulfate	<	65000	UOGL	EPA 8270			
Endrin	<	65000	UOGL	EPA 8270			
Endrin aldehyde	<	65000	UOGL	EPA 8270			
Fenanthrene	<	65000	UOGL	EPA 8270			
Fluorene	<	65000	UOGL	EPA 8270			
Heptachlor	<	65000	UOGL	EPA 8270			
Heptachlor epoxide	<	65000	UOGL	EPA 8270			
Hexachlorobenzene	<	65000	UOGL	EPA 8270			
Hexachlorocyclopentadiene	<	65000	UOGL	EPA 8270			
Hexachlorobenzene	<	65000	UOGL	EPA 8270			
Isobutyl 2,2,3,3-tetrafluorobutanoate	<	65000	UOGL	EPA 8270			
Isophorone	<	65000	UOGL	EPA 8270			
N-Nitrosodimethylamine	<	65000	UOGL	EPA 8270			
N-Nitrosodiphenylamine	<	65000	UOGL	EPA 8270			
N-Nitrosodipropylamine	<	65000	UOGL	EPA 8270			
Naphthalene	<	65000	UOGL	EPA 8270			
Nitrobenzene	<	65000	UOGL	EPA 8270			
Nonachlor	<	65000	UOGL	EPA 8270			
Phenanthrene	<	70000	UOGL	EPA 8270			
Phenol	<	65000	UOGL	EPA 8270			
Pyrene	<	65000	UOGL	EPA 8270			
Pyridine	<	65000	UOGL	EPA 8270			
Tributyltin	<	65000	UOGL	EPA 8270			
alpha-BHC	<	65000	UOGL	EPA 8270			
gamma-BHC	<	65000	UOGL	EPA 8270			
Methyl Chloroformylmethane	<	65000	UOGL	EPA 8270			
Methyl Chloroformyl ether	<	65000	UOGL	EPA 8270			
Methyl Chloroformyl ether	<	65000	UOGL	EPA 8270			

0825-04-8082-1004



GENERAL ENGINEERING LABORATORIES

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Laboratory Certification

STATE	001	001
FL	001/001/001	001/001/001
NC	001	
SC	001	LABS
TN	001	
VA	001	
WI	001/001	

CERTIFICATE OF ANALYSIS

Client: ECF Kahn Engineers
 1908 Diamond Drive
 Los Alamos, New Mexico 87544

Project Description: Air Part Data
 Routine Analysis

on XCFE0004

Report Date August 14, 1995

Page 6 of 6

Sample ID : 003-05-002

Parameter	Qualifier	Result	Units	Method	Analysis Date	Time	Batch
Chromium		7300	UGMS	EPA 8210A			
Copper		20000	UGMS	EPA 8210A	WCC 08/08/95	13:52	70425
Iron		1200000	UGMS	EPA 8210A			
Fluoride		70000	UGMS	EPA 8210A			
Magnesium		207000	UGMS	EPA 8210A			
Manganese		11000	UGMS	EPA 8210A			
Sulfur		41000	UGMS	EPA 8210A			
Nitrate		8000	UGMS	EPA 8210A			
Lead		20000	UGMS	EPA 8210A			
Antimony		100	UGMS	EPA 8210A			
Selenium		972	UGMS	EPA 8210A			
Thallium		00	UGMS	EPA 8210A			
Vanadium		2000	UGMS	EPA 8210A			
Zinc		40000	UGMS	EPA 8210A			

The following prep procedures were performed:

GCACI Resuspension

Mixing

TRACE

EPA 800-9038

EPA 7-07

EPA 309

DET 08/08/95 0010 70364

DYW 08/07/95 2000 70368

PCD 08/04/95 1330 70425

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Nancy Lane at (505) 256-6171.

Analyst Report Specialist

1401-0000-004-0014

Voluntary Corrective Action Plan Completion Report
Potential Release Site 57-006
A Buried Chemical Waste Vessel

DESCRIPTION

Potential Release Site 57-006 is a buried chemical waste vessel that contained elevated levels of lead, mercury, and a variety of spent organic solvents. It was used to collect chemical waste from a Los Alamos National Laboratory (LANL) chemistry laboratory site from about 1976 to 1989 to provide real-time data analysis for drilling. The vessel is inactive, and no longer serves as a chemical waste storage vessel. This site is not included in the Hazardous and Solid Waste Amendment module to the Los Alamos National Laboratory, Resource Conservation and Recovery Act.

This PRS is located on Fenton Hill on the west side of the Jemez Mountains, 37 miles west of the Los Alamos national Laboratory (Figures 1, 2). The vessel was located within PRS Group 4, shown on Figure 3. The Fenton Hill Site is not owned by the Department of Energy, but is leased by DOE from the US Forest Service and operates under EPA identification number (ID # NMD986676807). The DOE submitted a notification of regulated waste activity and identified Fenton Hill as a small generator to the NMED in February 1992.

CORRECTIVE ACTION

The cleanup was performed as a voluntary corrective action as referenced in the RFI Work Plan for OU 1154. Prior to the Phase I RCRA facility investigation, sampling of the vessel contents was performed by the Environmental Protection Group to properly characterize the waste. The results of the analysis indicated that the liquid contained high levels of lead, mercury, and a variety of spent organic solvents. The results are available upon request. The vessel contents were removed on November 1993 and disposed of as hazardous waste. By January of 1994, the vessel had accumulated some rain water and snow melt which was pumped out of the vessel as a precursor to removing the vessel under the VCA plan. The waste water was placed in plastic containers, picked up by the Laboratory's Waste Management Group, and disposed of as non-hazardous chemical waste [waste profile form (WPF) # 9756]. In September 1994, the vessel was removed, as a VCA in

WCI • 000.0.D.F • 444

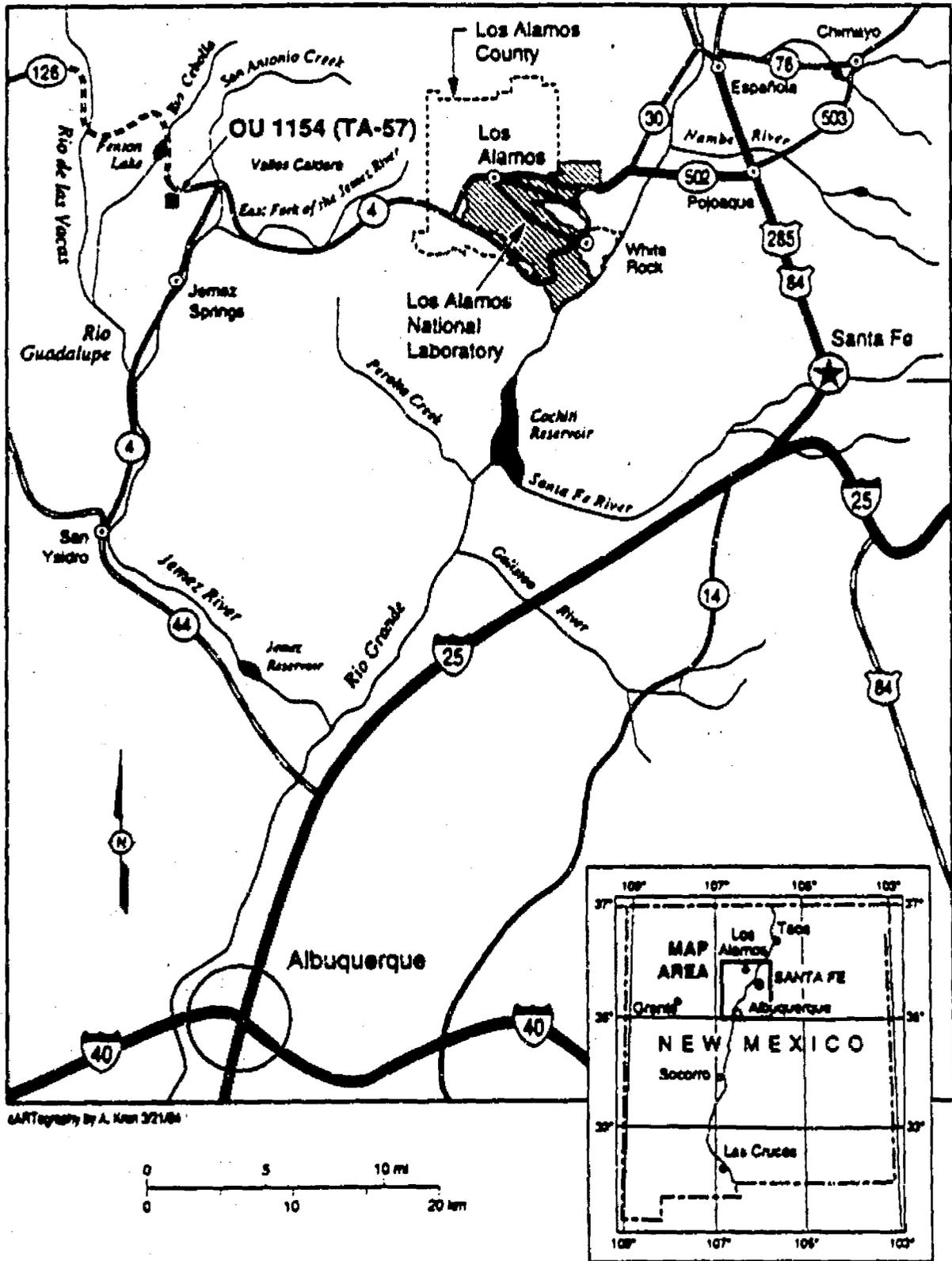
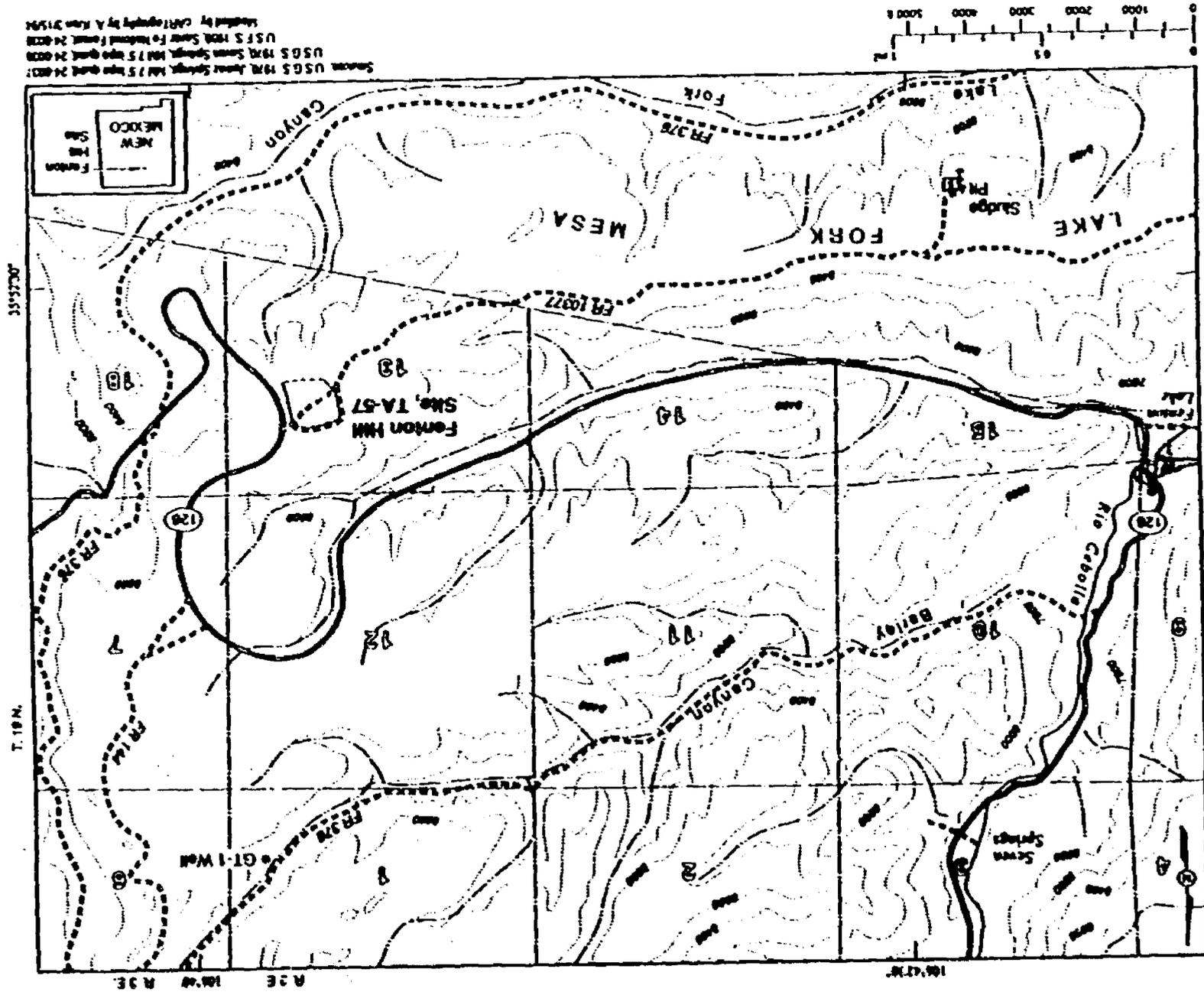


Figure 1. Location of TA-57 (Fenton Hill Site) in New Mexico



Source: USGS 1978, Aerial Photography, 1:50,000 scale, 24-40317
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40318
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40319
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40320
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40321
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40322
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40323
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40324
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40325
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 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40398
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40399
 USGS 1978, Aerial Photography, 1:50,000 scale, 24-40400

Figure 2. Location Map of OU 1154 sites

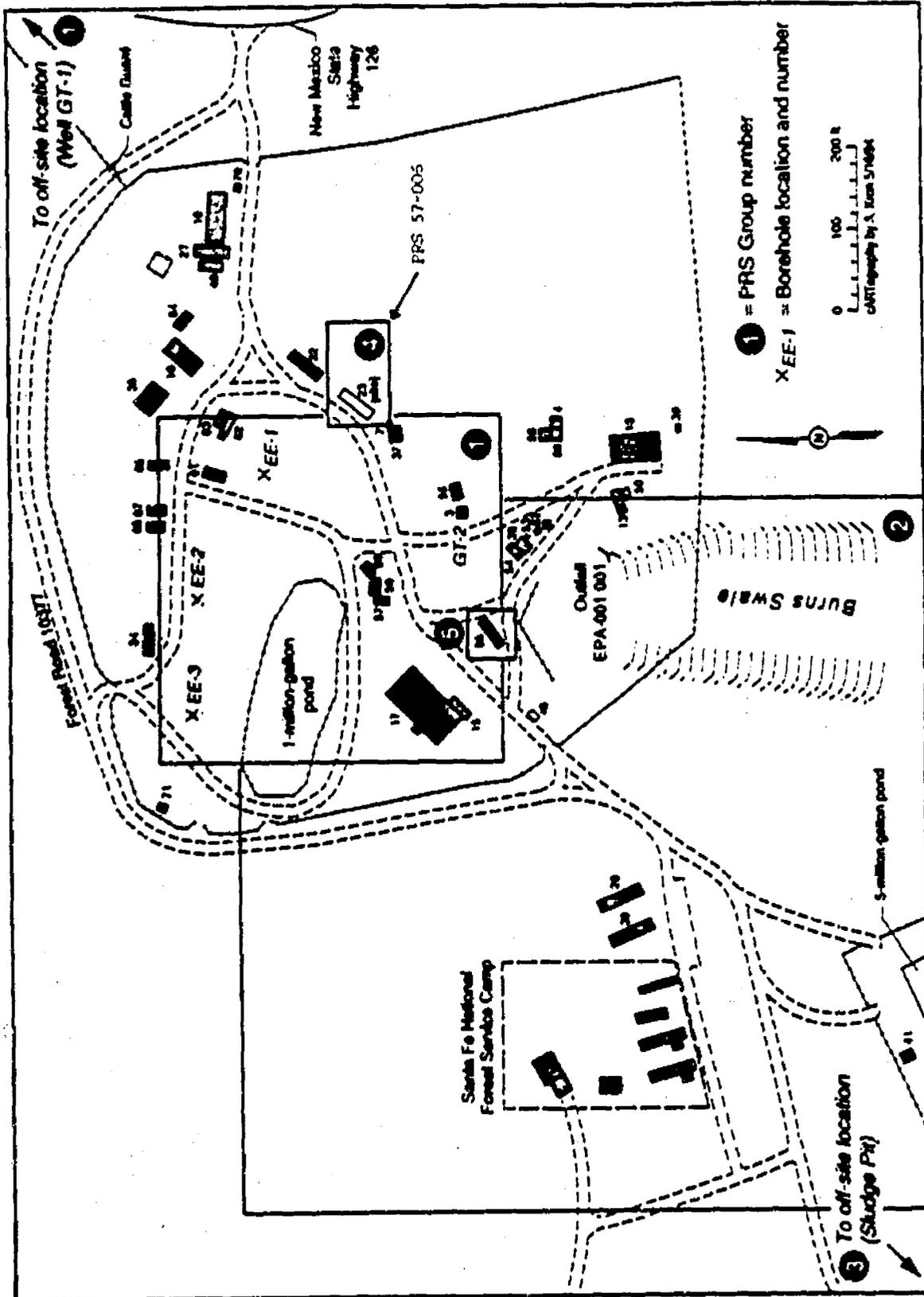


Figure 3. Location of structures and PRS Groups at TA-57

C101 - DEED.DOE - 4.5.95

accordance with the RFI Work Plan for OU 1154, and to facilitate sampling underneath the vessel. The 55-gallon vessel was disposed of as RCRA-regulated solid non-hazardous waste (ref. WPF 9633). The area under the vessel was visually inspected for signs of leakage. One sample was taken from the bottom of the excavation and analyzed for metals and volatile organic compounds (FIMAD ID# 57-4010). The data from the soil beneath the vessel indicates that all analytes detected are well below the screening action levels adopted by the ER Project. The results from the metal analysis are presented in Table 1. The results of the volatile organic analysis are attached as appendix A. No volatile organics were detected. After confirming the results of the analysis, on July 19, 1995, the excavation site was restored by backfilling with soil and re-vegetating.

Table 1 PRS 57-006 Metals - Analytical Results (mg/kg)										
Sample I.D.	AAB8397		Location I.D.	57-4010		Depth (0-6")				
Analyte	Ag	Al	As	Ba	Be	Ca	Cd	Cn	Co	Cr
Result	<.74	4930	<1.4	78.1	<.64	1370	<.48	<.38	<1.6	3.1
SAL	400	n/a	n/a	5600	n/a	n/a	80	1600	n/a	n/a
Analyte	Cu	Fe	Hg	K	Mg	Mn	Na	Ni	Pb	Sb
Result	<4.8	6080	.43	<791	<501	249	<252	<2.7	90.4	<4.2
SAL	3000	n/a	24	n/a	n/a	11000	n/a	1600	500	32
Analyte	Se	Ti	V	Zn	Total U (ug/g)					
Result	<.93	<.26	<5.1	41.7	.494					
SAL	400	6.4	560	24000						

This report serves as a formal request for DOE concurrence to approve no further action (NFA) for this PRS.

150-2000-003-5-51

Certification of Completion

I certify that all the work pertaining to the voluntary corrective action (VCA) 57-006 has been completed in accordance with the information provided in this report and the RFI Work Plan for OU 1154. Based on my personal involvement or inquiry of the person or persons who managed this cleanup, a review of all the data gathered, and a visit to this site, to the best of my knowledge and belief, all criteria have been met or exceeded. I believe that the completion of this VCA is protective to both human health and the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



Cheryl Rofes
Field Unit 5 Field Project Leader
Environmental Restoration Project
Los Alamos National Laboratory

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Appendix A
Volatile Organics
Analytical Results for PRS 57-006
FIMAD # 57-4010

100-100000-1-1-1

Location ID	Depth of Sample	Sample ID	Analyte	Results	Units	SAL
57-4010	0 - 0.5 ft.	AAB8397	Acetone	<0.02	MG/KG	8000
57-4010	0 - 0.5 ft.	AAB8397	Benzene	<0.005	MG/KG	0.67
57-4010	0 - 0.5 ft.	AAB8397	Bromobenzene	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Bromochloromethane	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Bromodichloromethane	<0.005	MG/KG	11
57-4010	0 - 0.5 ft.	AAB8397	Bromoform	<0.005	MG/KG	89
57-4010	0 - 0.5 ft.	AAB8397	Bromomethane	<0.01	MG/KG	0.43
57-4010	0 - 0.5 ft.	AAB8397	Butanone [2-]	<0.02	MG/KG	4000
57-4010	0 - 0.5 ft.	AAB8397	Butylbenzene [n-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Butylbenzene [sec-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Butylbenzene [tert-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Carbon disulfide	<0.005	MG/KG	7.4
57-4010	0 - 0.5 ft.	AAB8397	Carbon tetrachloride	<0.005	MG/KG	0.21
57-4010	0 - 0.5 ft.	AAB8397	Chlorobenzene	<0.005	MG/KG	67
57-4010	0 - 0.5 ft.	AAB8397	Chlorodibromomethane	<0.005	MG/KG	83
57-4010	0 - 0.5 ft.	AAB8397	Chloroethane	<0.01	MG/KG	2900
57-4010	0 - 0.5 ft.	AAB8397	Chloroform	<0.005	MG/KG	0.21
57-4010	0 - 0.5 ft.	AAB8397	Chloromethane	<0.01	MG/KG	6.4
57-4010	0 - 0.5 ft.	AAB8397	Chlorotoluene [o-]	<0.005	MG/KG	1600
57-4010	0 - 0.5 ft.	AAB8397	Chlorotoluene [p-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Dibromo-3-chloropropane [1,2-]	<0.01	MG/KG	0.5
57-4010	0 - 0.5 ft.	AAB8397	Dibromoethane [1,2-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Dibromomethane	<0.005	MG/KG	0.0082
57-4010	0 - 0.5 ft.	AAB8397	Dichlorobenzene [1,2] [o-]	<0.005	MG/KG	1600
57-4010	0 - 0.5 ft.	AAB8397	Dichlorobenzene [1,3] [m-]	<0.005	MG/KG	7200
57-4010	0 - 0.5 ft.	AAB8397	Dichlorobenzene [1,4] [p-]	<0.005	MG/KG	29
57-4010	0 - 0.5 ft.	AAB8397	Dichlorodifluoromethane	<0.01	MG/KG	16000
57-4010	0 - 0.5 ft.	AAB8397	Dichloroethane [1,1-]	<0.005	MG/KG	410
57-4010	0 - 0.5 ft.	AAB8397	Dichloroethane [1,2-]	<0.005	MG/KG	0.2
57-4010	0 - 0.5 ft.	AAB8397	Dichloroethane [1,1-]	<0.005	MG/KG	0.4
57-4010	0 - 0.5 ft.	AAB8397	Dichloroethane [trans-1,2-]	<0.005	MG/KG	1600
57-4010	0 - 0.5 ft.	AAB8397	Dichloroethylene [cis-1,2-]	<0.005	MG/KG	800
57-4010	0 - 0.5 ft.	AAB8397	Dichloropropane [1,2-]	<0.005	MG/KG	6.5
57-4010	0 - 0.5 ft.	AAB8397	Dichloropropane [1,3-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Dichloropropane [2,2-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Dichloropropane [1,1-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Dichloropropane [cis-1,3-]	<0.005	MG/KG	0.17
57-4010	0 - 0.5 ft.	AAB8397	Dichloropropene [trans-1,3-]	<0.005	MG/KG	0.17
57-4010	0 - 0.5 ft.	AAB8397	Ethylbenzene	<0.005	MG/KG	3100
57-4010	0 - 0.5 ft.	AAB8397	Hexanone [2-]	<0.02	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Isopropylbenzene	<0.005	MG/KG	3200
57-4010	0 - 0.5 ft.	AAB8397	Isopropyltoluene [4-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Methyl iodide	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Methyl-2-pentanone [4-]	<0.02	MG/KG	510
57-4010	0 - 0.5 ft.	AAB8397	Methylene chloride	<0.005	MG/KG	5.6
57-4010	0 - 0.5 ft.	AAB8397	Propylbenzene	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Styrene	<0.005	MG/KG	3300
57-4010	0 - 0.5 ft.	AAB8397	Tetrachloroethane [1,1,1,2-]	<0.005	MG/KG	270
57-4010	0 - 0.5 ft.	AAB8397	Tetrachloroethane [1,1,2,2-]	<0.005	MG/KG	3.9
57-4010	0 - 0.5 ft.	AAB8397	Tetrachloroethylene	<0.005	MG/KG	5.9
57-4010	0 - 0.5 ft.	AAB8397	Toluene	<0.005	MG/KG	910
57-4010	0 - 0.5 ft.	AAB8397	Trichloro-1,2,2-trifluoroethane [1,1,2-]	<0.005	MG/KG	n/a
57-4010	0 - 0.5 ft.	AAB8397	Trichloroethane [1,1,1-]	<0.005	MG/KG	1000
57-4010	0 - 0.5 ft.	AAB8397	Trichloroethane [1,1,2-]	<0.005	MG/KG	6.3
57-4010	0 - 0.5 ft.	AAB8397	Trichloromethane	<0.005	MG/KG	3.2
57-4010	0 - 0.5 ft.	AAB8397	Trichlorofluoromethane	<0.005	MG/KG	24000
57-4010	0 - 0.5 ft.	AAB8397	Trichloropropane [1,2,3-]	<0.005	MG/KG	480
57-4010	0 - 0.5 ft.	AAB8397	Trimethylbenzene [1,2,4-]	<0.005	MG/KG	40
57-4010	0 - 0.5 ft.	AAB8397	Trimethylbenzene [1,3,5-]	<0.005	MG/KG	32
57-4010	0 - 0.5 ft.	AAB8397	Vinyl chloride	<0.01	MG/KG	0.013
57-4010	0 - 0.5 ft.	AAB8397	Xylenes (o + m + p) [Mixed-]	<0.005	MG/KG	160000
n/a Not available.						