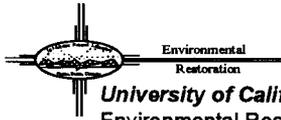


TA-18

Handwritten signatures and initials: "Zhu", "Teri", "RH"

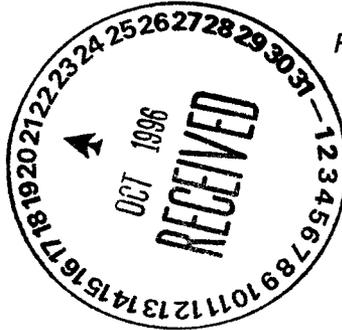


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Date: October 17, 1996
Refer to: EM/ER:96-544



Mr. Benito Garcia
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: INTERIM ACTION REPORT FOR TA-18, PRSs 18-003(a-d, g) ACTIVITIES

Dear Mr. Garcia:

Enclosed please find two copies of the Interim Action Completion Report for Technical Area 18, Potential Release Sites 18-003(a-d, g) cleanup activities completed in Fiscal Year 1996.

The Department of Energy has reviewed and approved this report. The approval form is attached to the report.

If you have any questions, please call Gene Gould at (505) 667-0402 or Everett Trollinger at (505) 667-5801.

Sincerely,

Handwritten signature of Jorg Jansen

Jorg Jansen, Program Manager
LANL/ER Project

Sincerely,

Handwritten signature of Theodore J. Taylor

Theodore J. Taylor, Program Manager
DOE/LAO

JJ/TT/bp

- Enclosures: (1) Interim Action Report for TA-18, PRSs 18-003(a-d, g)
(2) DOE Approval Form



1505

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Interim Action Completion Report for

**Potential Release Sites
18-003(a-d, g)
Holding Tank and Septic Tanks**

Field Unit 2

**Environmental
Restoration
Project**

September 1996

A Department of Energy
Environmental Cleanup Program

Los Alamos
NATIONAL LABORATORY

LA-UR-96-3340

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**INTERIM ACTION COMPLETION REPORT
POTENTIAL RELEASE SITES 18-003(a, b, c, d, and g)
HOLDING TANK AND SEPTIC TANKS**

1.0 INTRODUCTION

This interim action (IA) addressed potential release sites (PRSs) 18-003(a, b, c, d, and g) (a holding tank and four septic tanks located at TA-18). These five PRSs are listed in Table A of the Hazardous and Solid Waste Amendments Module of the Laboratory's RCRA operating permit. The IA consisted of removing the liquid and sludge contained in each tank, pressure rinsing the interior of each tank, and disposing of the contents of the tank and associated decontamination water. The contents of each tank were removed because of the continuing potential for release of radioactive and hazardous contaminants in the tanks to the environment. This was of particular concern because of the shallow groundwater body underlying these PRSs. In addition to removing the contents of each tank, the sanitary facilities served by the tanks were either disconnected or physically removed from the associated buildings by the site operating group. This further mitigates any future release of contaminants. This IA contributes significantly to the final remedy for these sites. The tanks were not filled or removed pending final determination of the status of these PRSs by the New Mexico Environment Department (NMED). A corrective action report for PRS 18-003(d), which proposes additional soil and groundwater sampling at this PRS, was recently submitted to the Groundwater Protection and Remediation Bureau. During this IA, samples were collected from the bottom of the concrete vault housing the holding tank [PRS 18-003(a)]. The results of the soil sampling at PRS 18-003(a) and of the planned soil and groundwater sampling at PRS 18-003(d) will be reviewed with NMED and presented in a subsequent no further action (NFA) report.

Before the IAs were started, there was some uncertainty as to the eventual disposition of the waste generated. However, it was determined by the Laboratory and DOE that it was in the best interest of the Laboratory to remove the contents of the tanks and to then complete negotiations for the disposition of the waste. A portion of the waste was treated at the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF), some will be shipped to Envirocare of Utah (Envirocare), and the remainder is expected to be shipped to the Toxic Substance Control Act Incinerator (TSCAI) operated by Lockheed Martin in Oak Ridge, Tennessee.

2.0 INTERIM ACTION

Samples collected during the RFI indicated the presence of hazardous and radioactive contaminants in all five of the tanks associated with these PRSs. The IA at each of the five PRSs consisted of the following steps:

- Placement of a spill containment area around the opening of the tank. This consisted of plastic sheeting with bermed edges.
- Removal of the liquid fraction in the upper portion of the tank. The liquid from some tanks was taken to the RLWTF. The remainder was placed in drums for offsite disposal (see Section 5).
- Removal of the sludge fraction from the bottom of the tank. This sludge was placed in drums and initially stored onsite in a less-than-90-day storage area at TA-18.
- Pressure rinsing of the interior of the tank, using three successive rinses. The decontamination water was placed in drums and segregated by rinse stage. This decontamination water was also placed in the less-than-90-day storage area.

- Decontamination of equipment and supplies. The equipment and all waste were screened for radioactivity to allow uncontrolled release. The decontamination water was combined with that from the second- and third-stage rinse water from the tank.
- Solidification of liquid wastes that do not require treatment prior to disposal (see Section 5).
- Dismantlement of the spill containment system.

The waste resulting from these IAs is discussed in Section 5.

3.0 MONITORING AND CONFIRMATORY SAMPLING

No additional monitoring is planned at PRSs 18-003(a, b, c, or g). The RFI indicated the presence of 1-2 dichloroethane (EDC) in groundwater beneath the drainfield at PRS 18-003(d) at a concentration in excess of the New Mexico Water Quality Control Commission (NMWQCC) regulations. In accordance with NMWQCC regulations, a corrective action report was submitted to NMED's Groundwater Protection and Remediation Bureau proposing additional sampling and monitoring of groundwater at this PRS (Environmental Restoration Project 1996, 1349).

No confirmatory samples were collected from the tanks. The interiors of the tanks were considered clean because they were decontaminated.

4.0 INSPECTION AND MAINTENANCE

No inspection or maintenance is planned.

5.0 WASTE MANAGEMENT

The waste types, volumes, and expected disposition are summarized in Table 5-1. Because of differences in the type and concentration of contaminants in the various wastes, a variety of treatment and disposal options were necessary, as described in the following sections.

5.1 PRS 18-003(a)

The liquid and sludge fraction from this tank, as well as the decontamination water, contained radionuclides and spent organic solvents. The concentration of trichloroethene (TCE) in all these wastes exceeded the land disposal restriction (LDR) standards. Either chemical treatment or incineration was required before these wastes (or the residues) could be sent to a land disposal facility. Envirocare was the preferred disposal option because the cost of disposal (including treatment) was considerably less than that quoted by Diversified Scientific Services, Inc. (DSSI), an incinerator, which was the only other alternative identified when the IA plan was written.

Envirocare can provide chemical treatment to meet the LDR standards, but because of the size of their treatment unit, Envirocare requires a minimum of 600 gallons. The total volume of waste requiring treatment from this PRS, including PRS 18-003(b), was considerably less than 600 gallons. Envirocare recommended that we contact Fluid Tech, a firm that distributes treatment chemicals and provides recommendations on their use. Fluid Tech could provide us with the same chemicals it provides Envirocare, and we would do the treatment onsite. Accordingly, a sample of the combined wastes from this PRS [as well as some of those from PRS 18-003(b)] was provided to Fluid Tech for a treatability study. However, the concentration of TCE in these wastes was too high to allow treatment using Fluid Tech's technology. Instead, it was decided to contact personnel at the DOE-supported TSCAI (Oak Ridge Tennessee), which we were unaware of when the IA plan was written. Some additional analyses may be required to satisfy their waste acceptance criteria, but no direct cost is incurred for treatment. However, it was not possible to complete negotiations with TSCAI before expiration of the 90-day storage

TABLE 5-1
NATURE AND DISPOSITION OF GENERATED WASTES

PRS	Waste Type	Waste Form	Volume (gal)	Treatment Required?	Probable Disposition
18-003(a)	Liquid	Aqueous	24	Yes	TSCAI
	Sludge	Sludge/aqueous	4	Yes	TSCAI
	Decon Water	Aqueous	110	Yes	TSCAI
18-003(b)	Liquid	Aqueous	215	Yes	TA-50, RLWTF
	Sludge	Sludge/aqueous	23	Yes	TSCAI
	Decon Water	Aqueous	75	Yes	TSCAI
18-003(c)	Liquid	Aqueous	210	Yes	TA-50, RLWTF
	Sludge	Absorbed	25	No	Envirocare
	Decon Water	Absorbed	200	No	Envirocare
18-003(d)	Liquid	Aqueous	190	Yes	TA-50, RLWTF
	Sludge	Absorbed	8	No	Envirocare
	Decon Water	Aqueous	185	Possible	Envirocare/TSCAI
18-003(g)	Liquid	Aqueous	440	Yes	TSCAI/TA-50, RLWTF
	Sludge	Sludge/aqueous	110	Yes	TSCAI
	Decon Water	Aqueous	220	Yes	TSCAI/TA-50, RLWTF
Total Volume			2,039		
All sites	PPE and other sampling waste	Solid	15 cubic ft.	No	Envirocare/TA-54, Area G

limit. These wastes have been moved to TA-54, Area L for temporary storage until a final treatment/disposal option is selected.

5.2 PRS 18-003(b)

The concentration of organic solvents in the liquid fraction from this tank was sufficiently low to allow treatment and disposal at the RLWTF. As for PRS 18-003(a), the concentration of these contaminants in the sludge fraction and in the decontamination water required either chemical treatment before disposal at Envirocare or incineration. Because these wastes were quite similar to those from PRS 18-003(a), they will eventually be combined for treatment and disposal. Currently, the wastes are segregated by PRS. A sample of the sludge and decontamination water was combined with the samples from PRS 18-003(a) and provided to Fluid Tech for a treatability study (see Section 5.1). Because the waste could not be treated using the Fluid Tech process, the waste has been moved to TA-54, Area L for temporary storage until a final treatment/disposal option is selected.

5.3 PRS 18-003(c)

The concentration of solvents in the liquid fraction from this tank was sufficiently low that the TA-50 treatment facility could accept the waste for disposal. The TA-50 RLWTF does not treat sludge. The concentration of solvents was sufficiently low in the sludge that treatment was not required to satisfy LDR standards before disposal by Envirocare. This waste was solidified using an acrylic anionic polymer and will be disposed of at Envirocare. The concentration of solvents in the decontamination water precluded treatment at the RLWTF. Instead, this waste was absorbed using the polymer and will be disposed of at Envirocare.

5.4 PRS 18-003(d)

The concentration of contaminants in the sludge, liquid, and decontamination water from this tank were quite similar to that from PRS 18-003(c). The wastes were managed in a similar fashion. The liquid fraction was treated at TA-50. The sludge and first-stage decontamination water were absorbed with a polymer and will be disposed of at Envirocare. However, the second- and third-stage decontamination water contains considerably less sludge than the first stage and is considered to be a wastewater, as defined in 40 CFR 268.2(f) (EPA 1991, 0886). (The sludge and first-stage decontamination water can be classified as non-wastewater because of the suspended solids in excess of 1%.) As wastewater, the third-stage rinse water must satisfy different LDR standards than the sludge. The estimated concentration of TCE is at a level indicating that the waste might need treatment. A sample was collected and analyzed for VOCs. If results indicate no treatment is needed, the waste will be solidified with the polymer used for liquids from PRS 18-003(c) and disposed of at Envirocare. If treatment is required, the waste will be sent to TSCAI (see Section 5.1).

5.5 PRS 18-003(g)

This tank was different from the other four tanks because it is part of an active sanitary waste system. The tank is actually a settling tank connected to the central sanitary sewer line at TA-18, which is connected to the Laboratory's sanitary waste collection system (SWSC). The sludge and liquid in the tank contained low (parts per billion range) concentrations of organic solvents and were classified as radioactive because of the presence of low (parts per million range) concentrations of enriched uranium. However, because it was an active system, the waste in the tank contained high fecal coliform concentrations. Envirocare's permit with the state of Utah does not address the disposal of wastes with high fecal coliform, and the company was unable to provide any waste acceptance criteria for that waste. The waste will be temporarily stored at TA-54, Area L pending negotiations with TSCAI (see Section 5.1). The waste was sanitized, using calcium hypochlorite, before being placed in drums and transported to TA-54, Area L. Pending review of the waste characterization data, there is some possibility that the liquid fraction can be treated at the RLWTF, which would be a less expensive treatment/disposal option than TSCAI.

5.6 PPE and Other Sampling Waste

As proposed in the IA plan, the majority of the personal protective equipment (PPE) and other sampling waste was successfully decontaminated. However, the decontaminated waste cannot be disposed of at the Los Alamos County Landfill until free-release procedures are approved for the ER Project per Laboratory Standard 105-05. Visible contamination could not be removed from some waste. In addition, no attempt was made to decontaminate the large sheets of plastic used for spill containment, and the plastic would be difficult to certify as free of radiological contamination. These nondecontaminated wastes will be disposed of at Envirocare.

6.0 SCHEDULE AND COST

6.1 Schedule

The IA schedule for 1996 was as follows:

March 11-13	Collect waste characterization samples
May 6	Submit approved IA plan
May 28-June 4	Remove contents of PRSs 18-003(a, b, c, and d)

- August 19-20 Remove contents of PRS 18-003(g)
- September 9 Transfer waste to TA-54, Area L for temporary storage
- TBD Ship waste from PRSs 18-003(c and d) to Envirocare
- TBD Ship waste from PRSs 18-003(a, b, and g) to TSCAI or DSSI

6.2 Cost

The expected cost of the IAs at these five PRSs is summarized in Table 6.2-1 and discussed in the following sections.

**TABLE 6.2-1
COST OF INTERIM ACTION
AT PRSs18-003(a, b, c, d, and g)**

Activity	Estimated Cost	Actual Cost
Waste treatment	\$ 6,000	\$ 3,000
Waste disposal	\$ 64,000	\$ 20,000
Sample analysis	\$ 6,000	\$ 22,000
Equipment and materials	\$ 11,500	\$ 4,000
Waste transportation	\$ 3,000	\$ 6,000
Personnel	\$ 38,500	\$ 60,000
Total	\$ 129,000	\$115,000

6.2.1 Waste Treatment

The cost estimate in the IA plan assumed that nearly all liquid waste would be treated at TA-50 and that the remaining waste (with some treatment costs) would be disposed of at Envirocare. As discussed in Section 5; however, a large portion of the waste will require treatment at TSCAI. The actual cost in Table 6-1 represents the cost of treating the waste delivered to TA-50 (actually a labor charge from the RLWTF). There is no charge to the ER Project for treatment of waste at TSCAI; however, additional analyses and personnel costs will be incurred.

6.2.2 Waste Disposal

The actual volume that will be shipped to Envirocare is significantly less than originally estimated, resulting in a commensurate reduction in cost.

6.2.3 Sample Analysis

As presented in the IA plan, some additional sample analyses were anticipated to cover the cost of treatability studies and the collection of data needed for Envirocare's waste acceptance criteria. Treatment of the waste at the TSCAI will require additional analyses beyond the original estimate.

6.2.4 Equipment and Materials

The original estimate assumed it would be necessary to purchase special equipment for pumping the waste. Instead, we were able to use existing equipment. Identified costs are for disposable materials and supplies.

6.2.5 Waste Transportation

The original estimate assumed that all wastes would be shipped as one shipment to Envirocare. In fact, two shipments will be needed—one to Envirocare and the other to the TSCAI.

6.3 Personnel

The operations required to remove materials from these PRSs and to clean the tanks progressed as originally estimated. However, as discussed in Section 5.1, additional effort was needed for sampling, to identify alternative treatment options, and to process required documentation.

6.4 Total Cost

Because of the use of the TSCAI and because we were able to use existing equipment, the total cost will be less than originally estimated.

7.0 REFERENCES

Environmental Restoration Project, June 21, 1996. "Corrective Action Report for TA-18 (located in former Operable Unit 1093), Field Unit 2," Los Alamos National Laboratory report, Los Alamos, New Mexico. (Environmental Restoration Project 1996, 1349)

EPA (US Environmental Protection Agency), July 1991. "Land Disposal Restrictions," Code of Federal Regulations, Title 40, Parts 260 to 299, Washington, DC. (EPA 1991, 0886)

**INTERIM ACTION REPORT
APPROVAL/DISAPPROVAL FORM**

PRS(s) 18-003(a-d, g)

The undersigned have reviewed the Interim Action Report and believe that the intent and goals of the Interim Action Plan have been met.

FPL 

Date 9/20/96

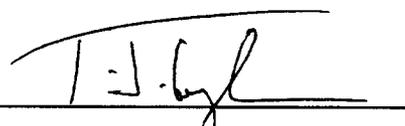
FPC Everett Hollinger

Date 9-30-96

.....

I, Theodore J. Taylor, DOE-LAAO, **APPROVE** , **DISAPPROVE** the accompanying Interim Action Report for PRS(s) 18-003(a-d, g), TA- 18.

The following reasons reflect the decision for disapproval:

Signed: 

Date: 9/30/96