TA 04

Los Alamos
NATIONAL LABORATORY

memorandum

Earth & Environmental Sciences Division
EES-13 • Nuclear Waste Management R&D

To/MS: Tracy Glatzmaier, EES-5, M992
From/MS: Allyn Pratt, EES-13, J521
Phone/FAX: 7-4308/7-1934
Symbol: EES-13-ER-05-94-011
Date: June 2, 1994

Addendum to the OU 1129 RFI Work Plan

The enclosed package contains the final addendum to the *RFI Work Plan for Operable Unit 1129*. The addendum has undergone Laboratory and DOE comment resolution and is ready for submittal to the EPA for approval. The package includes the following items.

- Table 6-1 in Chapter 6, "AOCs and SWMUs Recommended for NFA at Decision Point 1." The table lists all the sites that are recommended for no further action (NFA). New sites proposed for NFA are printed in boldface type; those previously approved by the EPA are printed in italic type.

- Pages 7-1 through 7-17 in Chapter 7. These pages have been revised based on Laboratory and DOE comments after the Work Plan was approved by EPA.

- Pages 7-129 through 7-199 in Chapter 7. These pages contain the sampling and analysis plans for Aggregates Q through Z.

If you have any problems or questions regarding this addendum, please call Gabriela Gainer of my staff at 662-1817.

Enclosures: a/s

Cy:
Gabriela Gainer, LATA, M321
Curt Thomson, LATA, M321
Records-Processing Facility, EM-13, M707
EES-13 ER file, J521
OU 1129 file, M321


2722

TABLE 6-1

AOCS AND SWMUS RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
C-4-001 Former Building Locations				•	Area of concern (AOC) No. C-4-001 consists of potential soil contamination beneath several former structures at Technical Area (TA) -4. TA-4-1, TA-4-2, and TA-4-8 were explosives magazines; TA-4-4 was used to store batteries; TA-4-5 was used as a storage building; TA-4-6 was used as a trimming building; and TA-4-13 is described as a hutment. These structures were built in 1945. TA-4-1 was demolished in 1985, and the other buildings were demolished in 1956. All the sites were monitored for radioactivity, and the surface was reclaimed during the Los Alamos Site Characterization Program (LASCP) decontamination and decommissioning (D&D) project in 1985. According to archival information, no known Resource Conservation and Recovery Act (RCRA) hazardous wastes or radioactive wastes were released to the environment at this site; therefore, this AOC is recommended for no further action (NFA).	LASL 1943–1993, 31437; Scholl 1989, 11740.
C-5-001 Former Building Locations				•	AOC NO. C-5-001 consists of two potential soil contamination areas associated with former TA-5-8 and TA-5-21. TA-5-8 was a storage building built adjacent to steel barricade Firing Pit No. 1 (TA-5-7) in 1944 and removed in 1950. Hazardous materials were not known to be stored in the building. Because it was located adjacent to the firing pit, the area of the building may have been contaminated with high explosives (HE) and depleted uranium. The site was decontaminated and decommissioned during the LASCP project in 1985. The site is included in the area to be studied during the Phase I sampling of SWMU No. 5-001(a) in Aggregate B, which is discussed in Section 7.6; therefore, a separate sampling program is unnecessary. This AOC is also addressed in the discussion of Aggregate R in Section 7.22. TA-5-21 was a maintenance building located west of the calibration chamber (TA-5-20). Its location suggests that the building was used to house equipment associated with work conducted in the calibration chamber. It was reported to be free of detectable radioactivity in 1976. According to archival information, no known RCRA hazardous materials were stored in TA-5-21, and it is recommended for NFA.	Blackwell 1976, 762; LASL 1943–1993, 31437.
5-006(a) Former Building Location				•	Solid waste management unit (SWMU) No. 5-006(a) is the site of TA-5-1. The building was used as a trim shack at TA-18 and was moved to TA-5 in 1948 or 1949 to be used as a laboratory. During an Industrial Hygiene Group survey in 1959, the building was found to be free of radioactive and toxic material contamination, but it was found to be contaminated with HE. The site and building were monitored in 1973 and found to be free of detectable radioactive contamination. The building was destroyed by fire sometime between 1973 and 1985. During the LASCP D&D project in 1985, the site was monitored with a Harshaw Model 301 Phoswich, and no radiological contamination was detected. The site was cleaned of surface debris left from the burning, recontoured, and reclaimed. On the basis of archival evidence, this SWMU is recommended for NFA.	Blackwell 1959, 760; LANL 1990, 7511; Martin 1973, 868; Scholl Fritz 1985, 891; Schulte 1959, 894.
5-006(d) Former Building Location				•	SWMU No. 5-006(d) is the site of a former laboratory (TA-5-6) built in 1944. In 1959 the building was found to be free of radioactive contamination and toxic materials, but it was found to be contaminated with HE. The building was burned. Surface debris was removed, and the site was recontoured in 1985. According to archival information, no known RCRA hazardous wastes or radioactive wastes were released to the environment; therefore, this SWMU is recommended for NFA.	Blackwell 1959, 760; LANL 1990, 7511; Schulte 1959, 894; Wingfield 1960, 915.

TABLE 6-1 (continued)

AOCs and SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
5-006(f) 5-006(g) Former Building Locations				•	SWMU Nos. 5-006(f and g) are the sites of former magazines TA-5-2 and TA-5-3. The buildings were built in 1945; they were burned in 1960 because they were found to be contaminated with HE. Miscellaneous building debris was removed during the D&D efforts of the LASCP project in 1985, and no radioactive contamination was found in the area. After the area was scanned using portable instruments, samples were collected, and depleted uranium was not found. Soil from TA-5-3 was then used to backfill the areas of TA-5-5, TA-5-7, TA-5-9, and TA-5-15. Soil from TA-5-2 was used to backfill TA-5-7, TA-5-9, and TA-5-15. After the areas were cleared of debris, they were contoured to existing terrain and reclaimed. According to archival information, no known RCRA hazardous wastes or radioactive wastes were released to the environment at this site; therefore, these SWMUs are recommended for NFA.	Dubois and Baytos 1972, 4867; LANL 1990, 7511; Wingfield 1960, 915.
C-35-001 C-35-002 C-35-003 Former UST Locations	•	•			AOC No. C-35-001, AOC No. C-35-002, and AOC No. C-35-003 are the sites of former underground storage tanks (USTs) that were used to store fuel oil. AOC No. C-35-001 (TA-35-18) was located north of the south wing of TA-35-2; AOC No. C-35-002 (TA-35-19) and AOC No. C-35-003 (TA-35-20) were located southeast of TA-35-2. The tanks were removed in 1988 and were reportedly in good condition. Contamination was not visible in the surrounding soils; however, soil samples were not collected when the tanks were excavated. According to archival information, no known source term or contaminants of concern (COCs) were released from the tanks; therefore, these AOCs are recommended for NFA.	LANL 1990, 7511; McInroy 1991, 21571.
C-35-004 Operational Release	•			•	AOC No. C-35-004 is the site of a 1000-gal. Shell Dela Oil spill south of TA-35-125 that discharged into Ten Site Canyon through the storm sewer in 1986. The spill reached the canyon and extended 30 ft downstream. Analyses of the oil indicated that the polychlorinated biphenyl (PCB) content was below the detection limit of 0.01mg/L. The spill was cleaned up using absorbent materials. This AOC is recommended for NFA because this was a one-time spill event, COCs were not found, and efforts have been made to clean up the spill.	Bohn 1986, 764; LANL 1990, 7511; LANL 1993, 31793; LANL 1993, 31794; LANL 1993, 31795; LANL 1993, 31796; Umphres 1986, 906.
C-35-005 *C-35-006* *Operational Releases*	• •				*AOC No. C-35-005 is the site of a spill of 100 gal. of non-PCB-contaminated dielectric oil; AOC No. C-35-006 is the site of a spill of 5 gal. of organic waste solvent (see Section 3.3.2.1). Spills at these two sites were cleaned up immediately following the incidents (in 1986 and 1988, respectively). Trace amounts of the dielectric oil and organic waste solvent remained. These AOCs are recommended for NFA because they involved one-time spills that were immediately cleaned up and the amounts of spilled materials remaining after cleanup do not pose a threat to human health or the environment.*	*Bailey 1986, 757;* *LANL 1990, 7511.*
C-35-008 *Leaking PCB Transformer*		•	•	•	*AOC No. C-35-008 is the site of a leaking PCB transformer (PCB ID No. 5618) located in the basement of TA-35-2 (see Section 3.3.2.1). The oil/water mixture that leaked from the transformer was cleaned up under the Toxic Substance Control Act (TSCA). This AOC is recommended for NFA because site design and conditions preclude a potential release to the environment and the transformer has been removed.*	*LANL 1990, 7511.*
35-001 *Material Disposal Area W (MDA-W)*		•			*SWMU No. 35-001 consists of two 4-in.-diameter, 125-ft-long stainless steel tubes suspended vertically inside 8-in.-diameter carbon-steel-cased wells (see Section 3.3.2.1). Each tube, which is backfilled under pressure with nitrogen and is sealed, contains 150 L of liquid sodium reactor coolant contaminated with ^{239}Pu and associated fission products. Gross-gamma activity emitted from the site is monitored. Sodium and radionuclides cannot* *(continued on next page)*	*LANL circa 1981, 849;* *LASL 1977, 1761;* *Warren 1974, 910.*

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
35-001 *Material Disposal Area W (MDA-W)* *(continued)*					*be released from the tubes unless the steel tubes are cracked. If the tubes were breached, the sodium would be expected to react explosively with moisture in the soil or tuff. However, because the tubes have not shown signs of cracking, no releases of sodium are believed to have occurred. Furthermore, potential contamination of the surrounding tuff cannot be assessed without drilling deep wells adjacent to the tubes. Such drilling activity would greatly increase the likelihood of breaching the containment tubes and could cause a potentially dangerous release.* *This SWMU is recommended for NFA because no evidence of a release exists; the engineered controls presently in place preclude any migration of contaminants to the environment; assessment and remediation options pose a greater threat to human health and the environment than not investigating the site; and this site is designated as an MDA-W, which will be maintained under perpetual institutional control.*	
35-002 *Material Disposal Area X (MDA-X)*				•	*SWMU No. 35-002, MDA-X, is the site of the Los Alamos Power Reactor Experiment No. 2 (LAPRE-II) reactor, which was buried in place after it was decommissioned in 1959 (see Section 3.3.2.1). This site was remediated in 1991 as an Environmental Restoration Interim Action (ERIA). This SWMU is recommended for NFA because all reactor-related equipment and contaminated soils were removed. Confirmatory soil sampling was conducted to verify the removal of all COCs including radionuclides and hazardous chemicals.*	*Fresquez 1991, 822; Montoya 1990, 877; Montoya 1991, 878; Montoya 1993, 31451; Roberson 1991, 21577; Waren 1974, 910.*
35-003(i) *Storage Tanks*	•				*SWMU No. 35-003(i) is the site of two steel surge tanks that were used to accommodate gas pressure excursions from the gas laser facility in TA-35-29 (see Section 3.3.2.1). Helium and nitrogen gases were the only substances handled by these tanks. In 1974 the tanks were moved from inside TA-35-27. (The surge tanks were never associated with the wastewater treatment plant, which is implied by their designation as a subunit of SWMU No. 35-003.) This SWMU is recommended for NFA because the tanks never handled RCRA hazardous wastes or radioactive wastes.*	*DOE 1987, 8663; DOE 1987, 8664; LASL 1943–1993, 31437.*
35-003(p) *Former Building Location*		•		•	*SWMU No. 35-003(p) is the site of the former air filter building (TA-35-7). This building was decontaminated and decommissioned in 1979 and 1980. The building housed air-filtering equipment for treating contaminated air from the original laboratory/office building (TA-35-2) that was completed in 1951. The removal of the building along with the material associated with the phase separator pit has been requested. This SWMU is recommended for NFA because the building previously underwent D&D activity, no evidence of a release exists following the 1980 D&D activity, and the building is currently scheduled for D&D and removal.*	*Hansen and Umphreys 1992, 21536; LANL circa 1981, 849.*
35-004(c) *Container Storage Area*		•			*SWMU No. 35-004(c) is an outdoor container storage area located on the south side of TA-35-125 (see Section 3.3.2.1). It is used to store drums of dielectric oil. The area is associated with the waste-oil treatment system (AOC No. 35-007) and is located in a covered, bermed area that is equipped with sumps and pumps for spill containment. Oil stains were observed within this bermed area, but the berm is designed to prevent spills from reaching the environment. This SWMU is recommended for NFA because site design precludes COCs from migrating to the environment.*	*LANL 1990, 7511; Roberson 1991, 21576.*

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
35-004(d) *35-004(e)* *35-004(f)* *35-004(k)* *35-004(l)* *35-004(n)* *Container Storage Areas*		•			*SWMU Nos. 35-004(d and e) and AOC Nos. 35-004 (f, k, l, and n) are container storage areas located inside buildings throughout TA-35 (see Section 3.3.2.1). In August 1991 a site inspection revealed no evidence of spills. These SWMUs and AOCs are recommended for NFA because even if spills have occurred at these storage areas, site design precludes COCs from migrating to the environment. In addition, AOC No. 35-004(n) is a RCRA-permitted waste storage area.*	*LANL 1990, 7511;* *Roberson 1991, 21576.*
35-004(i) **Container Storage Area**		•			**AOC No. 35-004(i) is the site of an inactive container storage area, which is located west of TA-35-244, where oils, capacitors, solvents, and Freon have been stored. The paved area shows no evidence of spills or stains. It is not known if the asphalt was present when the area was used for storage. According to archival information, spills or releases did not occur; therefore, this AOC is recommended for NFA.**	**LANL 1990, 7511.**
35-004(j) **Container Storage Area**		•			**AOC No. 35-004(j) is an active container storage area, which is located on a loading dock on the southwest side of TA-35-128, where oils, capacitors, solvents, and Freon have been stored. Stained soils were noted during an Environmental Restoration (ER) Program site reconnaissance in 1988. Since then, the entire area around the south and west sides of TA-35-128 has been covered with asphalt, and the backfill material at the edge of the parking area has been covered with concrete. The asphalt isolates any present spills from the environment, and the asphalt and concrete prevent the infiltration of water into the surface where possible contamination may be present. This AOC is recommended for NFA because any contamination at the site is considered to be under institutional control.**	**LANL 1990, 7511;** **Koch 1994, 34769.**
35-004(o) **Container Storage Area**		•			**AOC No. 35-004(o) is a container storage area at the north dock of TA-35-213. Materials that have been stored in this area include solvents, chemicals, and Kimwipes. This container storage area is located on a concrete and asphalt pad inside a security fence. No evidence of staining or spills exists; therefore, this AOC is recommended for NFA.**	**LANL 1990, 7511.**
*35-005(a)** *35-005(b)** *35-006* *Inactive Surface Impoundments*				•	*AOC Nos. 35-005(a and b) are the sites of former gunite-lined waste-oil impoundments that were removed and closed in 1989 as Laboratory voluntary corrective actions (see Section 3.3.2.1). SWMU No. 35-006 is an unlined waste-oil impoundment that was replaced by AOC No. 35-005(a) in 1985. (Because SWMU No. 35-006 and AOC No. 35-005[a] occupied the same site, all remedial actions undertaken for AOC No. 35-005[a] also pertain to SWMU No. 35-006.) In 1989 the contents of both impoundments, the concrete liners, and contaminated soils were removed; and the excavated pits were backfilled following verbal approval of a closure plan by the New Mexico Environment Department (NMED). However, post-closure verification samples collected in 1990 revealed that above regulatory threshold concentrations of total petroleum hydrocarbons (TPH) were present in surface samples at AOC No. 35-005(a); and above regulatory threshold concentrations of volatile organic compounds (VOCs), TPH, and alpha activity were present in the subsurface at AOC No. 35-005(b). In January 1992 final closure reports for these sites were submitted to the Environmental Protection Agency (EPA) and the NMED. This SWMU and these AOCs are currently awaiting resolution of an NMED notice of deficiency regarding sampling sufficiency.*	*Fresquez 1990, 816;* *Fresquez 1991, 818;* *Fresquez 1991, 823;* *LANL 1991, 7678;* *LANL 1991, 7679.*

* Designated as a RCRA unit

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
35-007 *Waste-Oil Treatment System*	•	•			*AOC No. 35-007 is a closed-loop system used for reprocessing non-PCB dielectric oil, which is not a RCRA hazardous waste (see Section 3.3.2.1). The system is located within a curbed spill-retention area designed to contain oil spills. A container storage area (SWMU No. 35-004[c]) and a storage tank (AOC No. 35-011[c]) are also located inside this bermed area. This AOC is recommended for NFA because the materials managed are not hazardous wastes and site design precludes spilled oil from migrating to the environment.*	*LANL 1990, 7511;* *Roberson 1991, 21576.*
35-011(a) *Storage Tanks*		•			*SWMU No. 35-011(a) consists of two active aboveground fiberglass tanks located in the basement of TA-35-2 (see Section 3.3.2.1). The tanks receive potentially contaminated wastewater. The tanks and the surrounding floor were inspected in August 1991, and no evidence of spills was observed. If a spill were to occur, the wastewater would flow into the floor drains that are tied in to the sanitary waste lagoons east of TA-35 (SWMU No. 35-010). This SWMU is recommended for NFA because a direct release to the environment is precluded by containment within the basement or by diversion through floor drains to the sanitary-waste lagoons.*	*LANL 1990, 7511;* *Roberson 1991, 21578.*
*35-011(b)** *Underground Storage Tank*				•	*AOC No. 35-011(b) consists of an inactive UST (TA-35-159) that formerly stored contaminated waste dielectric oil, which may have contained PCBs and other COCs (see Section 3.3.2.1). The UST has been emptied and abandoned in place, and the ground above the tank has been covered with concrete; therefore, little potential for off-site migration of COCs currently exists. This AOC is scheduled to be investigated and remediated in accordance with NMED UST regulations. No further investigation is recommended as part of the Operable Unit (OU) 1129 RCRA Facility Investigation because the Laboratory must close the site to comply with state UST regulations.*	*McInroy 1992, 21572;* *Roberson 1991, 21576.*
*35-011(c)** *Storage Tanks*		•		•	*AOC No. 35-011(c) consists of an active UST (TA-35-197) and an aboveground tank. These tanks are associated with the oil-reprocessing facility (AOC No. 35-007) (see Section 3.3.2.1). Currently this system handles only non-PCB dielectric oil, but in the past the tanks may have received oils contaminated with water. The aboveground tank is located within a bermed area that precludes COCs from migrating to the environment. The UST was leak-tested in 1991 and found to be tight; therefore, it is assumed that the tank has not leaked in the past. This AOC is recommended for NFA because leakage from the UST is not suspected and site design precludes potential releases from the aboveground tank to the environment.*	*International Technology Corporation 1991, 21541;* *LANL 1990, 7511.*
*35-011(d)** *Underground Storage Tanks*				•	*AOC No. 35-011(d) is the site of two USTs (TA-35-TSL-188[1&2]) that were formerly used to store dielectric oils (see Section 3.3.2.1). The tanks were removed and inspected in 1991 and found to have no leaks. However, the area around the tanks is contaminated with oil because of leakage from an aboveground oil-handling facility formerly located at the area. That spill area is designated as SWMU No. 35-014(f). This AOC is recommended for NFA because the USTs have been removed, and it has been determined that they were not the source of the spilled oil. The oil-contaminated area, which includes the former UST locations, will be investigated as SWMU No. 35-014(f).*	*Carmichael 1991, 14618;* *McInroy 1991, 21571.*

* Designated as a RCRA unit

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria				Description/Justification	References
	A	B	C	D		
35-012(a) *Inactive Storage Tank*				•	*AOC No. 35-012(a) is the site of one UST (TA-35-158) that received materials such as dielectric oils and solvents from spills that occurred inside TA-35-85 (see Section 3.3.2.1). The tank was leak-tested before it was removed, and no leaks were found. The tank was removed in 1990 as a RCRA interim status closure, and the pit was backfilled and covered with asphalt. This AOC is recommended for NFA because remediation is complete, and the results of confirmatory sampling were submitted to the EPA and the NMED in the final closure report (estimated date of submittal was December 1, 1991).*	*McInroy 1991, 21571.*
35-012(b) *Inactive Storage Tanks*	•				*AOC No. 35-012(b) consists of two aboveground siege tanks (TA-35-278 and TA-35-279) located near the canyon edge southwest of TA-35-207. The tanks were installed but reportedly were never used. This AOC is recommended for NFA because the tanks were never used for the management of hazardous constituents.*	*Roberson 1991, 21576.*
35-013(a) *35-013(b)* *35-013(c)* *35-013(d)* *Sumps and Drains*	• 	• • • •			*SWMU Nos. 35-013(a through d) consist of several sumps, drains, and catch basins that are located within TA-35-2, TA-35-27, TA-35-85, and TA-35-213 (see Section 3.3.2.1). The sumps and drains receive contaminated sanitary and industrial wastewater. Catch basins included in SWMU No. 35-013(a) and one pair of floor drains included in SWMU No. 35-013(d) reportedly have never been used. Potential contamination cannot be adequately addressed without removing the floors, and no potential exists for this contamination to migrate to the environment. Any contamination beneath the buildings is considered to be under institutional control until the buildings undergo D&D. These SWMUs are recommended for NFA because site design precludes COCs from migrating to the environment.*	*LANL 1990, 7511;* *Roberson 1991, 21576.*
35-014(c) **Operational Release**	•	•			**SWMU No. 35-014(c) is a 10-ft-wide by 20-ft-long stained area observed on a sloping surface near the southeast corner of TA-35-29. This stained area may be the result of a past dielectric oil spill from nearby aboveground storage tanks. The tanks are labeled as PCB-free. In 1992 the site of SWMU No. 35-014(c) was excavated, backfilled, and covered with asphalt. This SWMU is recommended for NFA because it has not been used for the management of RCRA hazardous wastes.**	**LANL 1990, 7511.**
35-014(e_1) *Operational Release*		•			*SWMU No. 35-014(e_1) is the site of a dielectric oil spill located on the west side of TA-35-85 between TA-35-85 and TA-35-222. The site has since been covered with concrete and new construction (see Section 3.3.2.1). Because the concrete acts as a cap, essentially no mechanism exists for physically transporting potentially hazardous materials from the site. Contamination can be considered to be under institutional control until the buildings and concrete undergo D&D. This SWMU is recommended for NFA because site conditions and institutional controls preclude any releases that might pose a threat to human health or the environment.*	*LANL 1990, 7511;* *Roberson 1991, 21576.*
35-017 *Potential Soil Contamination*		•		•	*AOC No. 35-017 is the site of potential soil contamination from the operations of the Los Alamos Power Reactor Experiment No. 1 (LAPRE-I), LAPRE-II, and Los Alamos Molten Plutonium Reactor Experiment (LAMPRE) reactors. LAPRE-I and LAMPRE were operated in Cell J (Room 203) in the basement of TA-35-2. LAPRE-II was located in an underground steel-lined pit on the southeast exterior of TA-35-2. LAPRE-I was disassembled in 1956; LAMPRE was built in the same location in 1960. Portions of LAPRE-I were used in the construction of LAMPRE. Complete decommissioning of LAMPRE was accomplished in 1980. Documentation shows no* *(continued on next page)*	*H-Division 1957, 21532;* *Harper and Garde 1981, 6286;* *LANL 1990, 7511;* *Montoya 1993, 31451;* *Peterson 1959, 12000.*

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
35-017 *Potential Soil Contamination* *(continued)*					*evidence of releases or spills outside the reactor cell (Cell J). All areas associated with the operations of LAPRE-I and LAMPRE, except Cell J, have been released for unrestricted use; Cell J is considered to be under institutional control. LAPRE-II underwent D&D in 1991 and was released for unrestricted use in January 1992; the final D&D report was issued in February 1993. All contaminated soils at the LAPRE-II site were removed and disposed of at the radioactive waste disposal site (TA-54, Area G). After D&D was completed, Group EM-8 (now Group ESH-8) conducted confirmatory soil sampling. Results indicate that no COCs exist. This AOC is recommended for NFA.*	
35-018(b) **Leaking PCB Transformer**		•			**AOC No. 35-018(b) is a transformer (PCB ID No. 5547) located in the basement of TA-35-2. A leak from the transformer was discovered and cleaned up in 1985. This release was assessed to be a moderately active leak with no spill containment. Swipe samples taken from the concrete floor in the vicinity of the transformer after the spill cleanup contained up to 164 µg/100 cm² PCBs. It is believed that the transformer has had no releases outside the basement. This AOC is recommended for NFA because no pathways to the environment exist and the area is under institutional control.**	**Atencio 1985, 755.**
42-004 *(C-42-001)* *Canyon Disposal Site*				•	*SWMU No. 42-004, a canyon disposal site, was used for dumping building debris (see Section 3.4.2.1). (Note: SWMU No. 42-004 is the same as AOC No. C-42-001.) Soil samples collected and analyzed in 1991 as part of an ERIA contained gross-alpha, -beta, and -gamma at background levels. No VOCs, semivolatile organic compounds (SVOCs), or PCBs were detected. Toxicity characteristic leaching procedure (TCLP) metals (Ag, As, Ba, Cd, Cr, Hg, Pb, and Se) were below the regulatory levels in 40 CFR 261.24, Table 1.* *In July 1992 OU 1129 personnel collected samples at TA-42. None of the samples collected contained concentrations of COCs above screening action levels (SALs). In fact, all COCs were at least one order of magnitude below the SALs. On the basis of the D&D effort, the reconnaissance survey, and OU 1129 sampling, this SWMU is recommended for NFA because COCs are not present in concentrations that would pose a threat to human health or the environment.*	*Fresquez 1991, 817; Pratt 1993, 22213; Pratt 1993, 22214.*
48-002(c) **Container Storage Area**	•				**AOC No. 48-002(c) is the site of an inactive container storage area located east of TA-48-1 on an asphalt pad between TA-48-91 and the security fence. Drums, lead pigs, and batteries were stored here in 1988 and 1989. Archival information indicates that this area has had no releases or spills. Runoff from this AOC flows toward a proposed parking lot 30 ft due east. The proposed parking lot was sampled in 1991 by personnel from Group EM-8 (now Group ESH-8) for surface and subsurface contamination. The levels of all organic, inorganic, and radiological constituents were below EPA regulatory guidelines. According to archival information, spills or releases did not occur and sampling results were below EPA regulatory thresholds; therefore, this AOC is recommended for NFA.**	**Fresquez 1991, 819; LANL 1990, 7511.**
48-002(d) *Container Storage Area*		•			*AOC No. 48-002(d) is an active container storage area located on the northwest side of TA-48-1 that is currently used only for temporary storage of boxes of solid radioactive waste (see Section 3.5.2.1). A site inspection in 1991 revealed no visible evidence of past releases. This AOC is recommended for NFA because site conditions preclude COCs from migrating to the environment.*	*LANL 1990, 7511; Roberson 1991, 884.*

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
48-004(a) *48-004(b)* *48-004(c)* *Sumps and Tanks*		•			*SWMU Nos. 48-004(a, b, and c) consist of several sumps and tanks that were abandoned in place in TA-48-1. The sumps and tanks are considered to be under institutional control. No mechanism for release of COCs to the environment can be determined. Archival information documents no spills or releases. The sumps and tanks have been inspected, and no physical evidence exists of releases or external contamination. These SWMUs are recommended for NFA because site design and conditions preclude COCs from migrating to the environment.*	*LANL 1990, 7511.*
48-004(d) *Tank*	•	•			*SWMU No. 48-004(d) is a small tank that was installed below the hot cell in the basement of TA-48-1 but has never been used (see Section 3.5.2.1). This SWMU is recommended for NFA because the tank was never used and site design and conditions preclude COCs from migrating to the environment.*	*LANL 1990, 7511;* *Roberson 1991, 884.*
48-006 *Active Septic System*	•				*AOC No. 48-006 is an active septic system that was installed in the early 1980s and has served only office buildings in which hazardous or radioactive materials have never been managed (see Section 3.5.2.1). This AOC is recommended for NFA because no contaminant source term exists and there is no reason to suspect releases of COCs from this septic system.*	*LANL 1990, 7511.*
48-007(e) **Outfall**	•				**SWMU No. 48-007(e), an outfall, was submitted to the EPA in May 1985 for inclusion under the National Pollutant Discharge Elimination System permit but was dropped from the permit in 1991. The outfall discharged a maximum of 500 gal./h as noncontact cooling water used to cool an electromagnet in the northwest corner of TA-48-8. The outfall has been used since 1984. The water discharged in the outfall was used for once-through cooling, and chemicals or solvents did not have access to the cooling water system. In 1991 samples were collected in the area to determine if COCs (including acetone, alcohol, and benzene) had been discharged. The analysis revealed background levels of gross-alpha, -beta, and -gamma and indicated that all TCLP metals were below the regulatory levels in 40 CFR 261.24. No SVOCs or PCB compounds were detected, but trace amounts (<52 ppb) of p-isopropyl toluene (p-Cymene), isopropylbenzene (cumene), and trichlorotrifluroethane (Freon) were detected in the samples collected. This SWMU is recommended for NFA because the outfall has not been used for the management of hazardous materials, which has been verified through sampling.**	**Chamberlin 1991, 31452;** **Fresquez 1991, 820;** **Fresquez 1991, 821;** **LANL 1990, 7511;** **LANL 1991, 21556.**
48-008 *Leaking PCB Transformers*	•	•			*AOC No. 48-008 consists of two PCB transformers that are located inside the basement of TA-48-1 (see Section 3.5.2.1). Oil that leaked from these transformers was cleaned up in accordance with TSCA guidelines, and no visible signs of oil stains were observed during a site inspection in July 1991. This AOC is recommended for NFA because site design and conditions preclude a potential release to the environment and the leakage represents a nonsystematic release that was immediately cleaned up.*	*LANL 1990, 7511;* *Roberson 1991, 884.*
48-009 **Soil Contamination**	•				**AOC No. 48-009 is the site of two air compressors located on a loading dock east of TA-48-1. Since 1989 the main compressor has periodically broken down and sprayed crankcase oil on the ground. The oil was sampled in 1989 and does not contain PCBs. This AOC is recommended for NFA because it has never been used for the management of RCRA hazardous wastes or radioactive wastes.**	**LANL 1990, 7511.**

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
C-52-001 **C-52-002** **Potential Soil Contamination**		•			**AOC No. C-52-001 and AOC No. C-52-002 are sites of possible soil contamination from TA-52-9, which is located on the north side of the Ultra-High-Temperature Reactor Experiment (UHTREX) (TA-52-1). In the past, dielectric oil stains have been observed on a transformer pad, and the transformers present at the site in June 1992 are labeled as containing PCBs. These transformers are situated on a concrete pad that is surrounded by asphalt. These AOCs are recommended for NFA because at present no stains or evidence of leakage from the transformers exist. The transformers are scheduled for removal, and samples of PCBs will be collected from the soils beneath the transformers.**	LANL 1990, 7511.
52-001(a) *Filter Pit* *52-001(b)* *Heat Dump Building* *52-001(c)* *Heat Dump Pad*				• • •	*SWMU Nos. 52-001(a through c) consist of equipment that was associated with the filter and cooling systems of the UHTREX reactor (see Section 3.6.2.1). These sites underwent D&D in 1989 and were decontaminated to levels below DOE guidelines for radioactivity. No process-related source for nonradioactive hazardous constituents exists at these sites; therefore, no hazardous contaminant source term exists. These SWMUs are recommended for NFA because the sites have undergone remediation and COCs are not present at levels that pose a threat to human health or the environment.*	*Elder 1991, 2665;* *Salazar and Elder 1992, 12021;* *Soholt 1988, 901.*
52-001(d) *Sump Pump Room, Hot Cells, Duct Work*		•		•	*SWMU No. 52-001(d) is the site of contaminated equipment inside TA-52-1 that was associated with the UHTREX reactor (see Sections 3.6.2.1 and 3.6.2.4). The contaminated equipment was removed in 1989, and the building was decontaminated to levels below DOE guidelines for radioactivity. This SWMU is recommended for NFA because the site has undergone remediation and COCs are not present at levels that pose a threat to human health or the environment. In addition, site conditions preclude a release of COCs to the environment.*	*Elder 1991, 2665;* *Salazar and Elder 1992, 12021;* *Soholt 1988, 901.*
52-002(b) *52-002(f)* *Active Septic Systems*	• •				*SWMU Nos. 52-002(b and f) are active septic systems that were installed in the early 1980s and have served only office buildings in which hazardous or radioactive materials have never been managed (see Section 3.6.2.1). These SWMUs are recommended for NFA because no contaminant source term exists and there is no reason to suspect releases of COCs from these septic systems.*	*LANL 1990, 7511;* *Smithour 1991, 21581.*
52-002(c) *52-002(d)* *Septic Systems*	• •				*SWMU Nos. 52-002(c and d) represent septic systems that apparently were planned but never constructed (see Section 3.6.2.1). These SWMUs are recommended for NFA because the septic systems do not exist and were never used for the management of hazardous or radioactive materials.*	*LANL 1990, 7511;* *Smithour 1991, 21581.*
52-002(g) *Holding Tank*	•				*SWMU No. 52-002(g) is not an active septic system as designated in the 1990 SWMU report but simply a sewage holding tank that was installed in 1989 or 1990 (see Section 3.6.2.1). The holding tank serves offices in a new building in which hazardous and radioactive materials have never been managed. This SWMU is recommended for NFA because it has never been used for the management of hazardous or radioactive materials.*	*Smithour 1991, 21581.*
52-003(b) *Industrial Wastelines*				•	*SWMU No. 52-003(b) is the site of two 3-in.-diameter cast-iron industrial wastelines (lines 65 and 66) that transported liquid wastes from the UHTREX reactor to a waste-treatment facility (SWMU No. 52-003[a]) and then to TA-50 (see Section 3.6.2.1). These wastelines were removed in 1988 during the UHTREX D&D project, and 173 soil samples were collected at 2-ft intervals along the route of the wastelines. Sample depths ranged from 5 ft to 7 ft. Beta activity was nondetectable, alpha and gamma activity were far below the site-specific RESRAD computer code model, all metals were within background levels, and organics were below detection limits. This SWMU is recommended for NFA because the site has undergone D&D and confirmatory sampling indicates that COCs are not present in concentrations that exceed natural background levels.*	*Elder 1991, 2665;* *LANL 1990, 7511;* *Salazar and Elder 1992, 12021;* *Soholt 1988, 901.*

TABLE 6-1 (continued)

AOCs AND SWMUs RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
52-004 Inactive Outfall	•				*SWMU No. 52-004 is an inactive outfall from which only noncontact cooling water associated with a simulated fuel rod cooling process was discharged (see Section 3.6.2.1). A radiological survey conducted in the area of the outfall during a 1988 ER Program site reconnaissance did not detect levels above background. This SWMU is recommended for NFA because the outfall was never used for the management of hazardous or radioactive materials.*	*DOE 1987, 8663; DOE 1987, 8664; LANL 1990, 7511; Roberson 1991, 7405.*
55-001 Cementing Process *55-004 Evaporator* *55-005 Filtration Unit*		• • •			*AOC No. 55-001, AOC No. 55-004, and AOC No. 55-005 consist of a cementing process, an evaporator, and a filtration unit, which are situated together inside a series of negative-pressure glove boxes in TA-55-4 (see Section 3.7.2.1). The AOCs are part of the TA-55 waste minimization process that operates under RCRA Mixed-Waste Interim Status. These AOCs are recommended for NFA because site design precludes a release of hazardous materials to the environment and the AOCs are part of a process permitted under RCRA Mixed-Waste Interim Status at the Laboratory.*	*LANL 1990, 7511; Roberson 1991, 883.*
55-002(a) *55-002(b)* *Radioactive Waste Container Storage Areas*		• •			*AOC Nos. 55-002(a and b) are container storage areas for radioactive solid waste (see Section 3.7.2.1). AOC No. 55-002(a) consists of several separate storage areas located inside TA-55-4; AOC No. 55-002(b) includes dumpsters outside TA-55-4 that are used only for temporary storage of radioactively contaminated solid waste. These AOCs are recommended for NFA because site design and conditions preclude a release of COCs to the environment.*	*LANL 1990, 7511; Roberson 1991, 883.*
55-002(c) Container Storage Area		•			**AOC No. 55-002(c) is an outdoor waste container storage area (asphalt pad) located on the west side of TA-55-4. This area is an interim storage area for wooden crates containing radioactive and mixed waste that are awaiting transport to TA-54 (see Section 3.7.2.1). This AOC is recommended for NFA because there is no evidence that any RCRA wastes have been released at this site.**	**Pratt 1994, 34768.**
55-003 Storage Tank and Containment Area	•	•			*AOC No. 55-003 consists of an aboveground storage tank and the surrounding containment structure (see Section 3.7.2.1). Currently the tank is used to store pure nitric acid, which is a product not a waste. The surrounding secondary containment structure is capable of holding the contents of the entire tank and is designed to prevent a release of hazardous materials to the environment. This AOC is recommended for NFA because the tank is not used to store hazardous waste and site design precludes a release to the environment.*	*LANL 1990, 7511; Roberson 1991, 883.*
55-006 Glass Breaker		•			*AOC No. 55-006 is a glass breaker designed to break radionuclide-contaminated glassware (see Section 3.7.2.1). The unit is located within a glove box in TA-55-4. This AOC is recommended for NFA because site design precludes a release to the environment.*	*Kaal 1991, 844; LANL 1990, 7511.*
55-007 Thermal Combustion Units		•			*AOC No. 55-007 consists of two currently inactive thermal combustion units that are located inside glove boxes in TA-55-4 (see Section 3.7.2.1). The units are now awaiting a RCRA mixed-waste operating permit. The units are designed so that emissions are passed through scrubbing solutions and high-efficiency particulate air filters. This AOC is recommended for NFA because site design precludes releases of hazardous materials to the environment and the units will not be operational until the appropriate RCRA permits are obtained.*	*Roberson 1991, 883.*

TABLE 6-1 (concluded)

AOCS AND SWMUS RECOMMENDED FOR NFA AT DECISION POINT 1

Boldface type—AOCs and SWMUs proposed for NFA as of March 31, 1994
Italic type—AOCs and SWMUs approved for NFA by the EPA as of November 3, 1993

AOC/SWMU	NFA Criteria A	B	C	D	Description/Justification	References
55-008 *Sumps and Tanks*		•			*SWMU No. 55-008 consists of several sumps and tanks that are located in the basement of TA-55-4 (see Section 3.7.2.1). If COCs have seeped through the floors of the building, contamination cannot be adequately addressed without removing the floors, and no potential exists for this contamination to migrate. Any contamination beneath the building is considered to be under institutional control and will be addressed when the building undergoes D&D. This SWMU is recommended for NFA because even if primary releases from the sumps and tanks would occur, site design would preclude COCs from migrating to the environment.*	*LANL 1990, 7511; Roberson 1991, 883.*
55-009 *Sump*	•				*SWMU No. 55-009 is an inactive monitoring sump located outside TA-55-6 (see Section 3.7.2.1). The sump was used to monitor sanitary waste liquids from TA-55 for radioactivity before they are discharged to the TA-35 sewage treatment lagoons. Radioactivity was never detected, but the waste stream may have contained small quantities of hazardous wastes. The sump is no longer used and has been abandoned in place. This SWMU is recommended for NFA because hazardous wastes were not generated, treated, stored, or disposed of at the site and radioactivity was never detected in the waste stream.*	*LANL 1990, 7511; Roberson 1991, 883.*
55-010 **Solvent Spill**		•			**AOC No. 55-010 is the site of a one-time spill of solvent that contained methyl ethyl ketone with smaller quantities of toluene and methyl isobutyl ketone. The mixture was an organic solvent for plasite paint. During the construction of the basement of TA-55-4, the painting contractor for TA-55 cleaned painting materials in the area. The area was backfilled with approximately 18 ft of fill and capped with asphalt after TA-55-4 was completed. This AOC is recommended for NFA because the spill was a one-time event and site design precludes releases that would pose a threat to human health or the environment.**	**LANL 1990, 7511; Roy F. Weston, Inc. 1989, 11907; Schmidt 1984, 893.**
55-012 **Inactive Hazardous Waste Container Storage Area**		•			**AOC No. 55-012 is the site of a bottle containing waste acid and heavy metals that was stored on a shelf in a laboratory in TA-55-4 (see Section 3.7.2.1). The bottle was removed and the contents disposed of before a site visit in November 1990. This AOC is recommended for NFA because there is no evidence that any RCRA wastes have been released at this site.**	**LANL 1990, 7511.**
55-013(a) *55-013(b)* *Hazardous Waste Container Storage Areas*		• •			*AOC Nos. 55-013(a and b) consist of two active hazardous waste container storage areas (see Section 3.7.2.1). For health and safety reasons, containers of hazardous chemicals (that is, products not waste materials) are located under fume hoods. The storage areas are located in TA-55-3 and TA-55-4. These AOCs are recommended for NFA because site design and conditions preclude a release that would pose a threat to human health or the environment.*	*LANL 1990, 7511; Roberson 1991, 883.*
63-002 **Container Storage Area**		•			**AOC No. 63-002 is a container storage area in a fenced yard that is east of the north parking lot at TA-63. During a 1991 ER Program inspection, several drums of solvent were observed in the bermed part of the storage area (see Section 3.8.2.1). No staining or traces of waste were observed during a site visit in 1992. This AOC is recommended for NFA because there is no reason to believe that any RCRA wastes have been released; additionally, site design precludes spills from migrating to the environment.**	**Roberson 1991, 7405.**