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Request for Permit Modification

Units Proposed for NFA

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A Department of Energy
environmental clean-up program

Los Alamos
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building TA-16-101 (a guard house), had a drain field associated with it, Engineering drawing ENG-C 2674. There is no information that suggests handling or storage of hazardous substances in TA-16-101.

There is no documentation to indicate that this septic tank received anything other than sanitary waste from its associated guard house and, in the absence of hazardous constituents, there is no potential for a release to the environment. Septic tanks that manage only domestic waste are excluded from being SWMUs under 40 CFR 261.4(a)(1)(i).

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.27 PRS 16-006(b)—Septic System (OU 1082)

SWMU 16-006(b) is a reinforced concrete septic tank with a capacity of 380 gal., designated TA-16-178, and built in 1952. This septic tank serves TA-16-210, an inactive guard house. The tank overflows to a leach field. Its NMED number is LA-39 (LANL 1990, 0145).

There is no documentation that would indicate that this septic tank received anything other than sanitary waste from its associated guard house.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.28 PRS 16-006(f)—Septic System (OU 1082)

This SWMU is a 1 000 gal. septic tank, TA-16-1153, that was constructed in 1987 (LANL 1990, 0145). This tank was installed to service new toilet facilities on the first floor of TA-16-370. An absorption field with a double branch, each approximately 45 ft long, is located 20 ft southwest of the septic tank. The tank is connected to a lavatory and water closets (Palmer 1992, 15-16-373).

This septic tank was placed in service after March 1987, receives only sanitary waste, and has been covered under the authority of the Clean Water Act.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.29 PRS 21-012(a)—Dry Well (OU 1106)

The SWMU Report (LANL 1990) states that "there is a dry well inside the steam plant (TA-21-357) that receives liquids from the steam plant."

The former steam plant (TA-21-9) was constructed in 1945 and was removed in 1985. A dry well associated with this steam plant is identified as SWMU 21-012(b) and is addressed in Sec. 17.4. The new steam plant, TA-21-357, was put on line in 1985.

Two site visits on May 11, 1990, and August 8, 1990 (Roy F. Weston 1990a, 1990b), verified that there is not a dry well associated with the new steam plant.

It is recommended that no further action be taken in the investigation of a dry well at the new steam plant because no dry well exists.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

2.1.1.30 PRS 22-011—Disposal Pit (OU 1111)

The SWMU Report (LANL 1990, 0145) describes 22-011 as a pit prepared in 1946 for the disposal of discarded objects and shapes and associates this pit with a disturbed area south of Building TA-22-1. The disturbed area is posted with signs warning of explosives. The documentation referred to for this SWMU in the SWMU Report appears to be a 1946 memorandum from Norris Bradbury (Bradbury 1946, 19-0048). The memorandum refers to TD

The location of this PRS is not shown on the map of TA-16 in Appendix A of this document.

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.1.72 PRS 18-010(a)—Outfall (OU 1093)

This storm sewer system drains water from the roof of Building TA-18-30 through a series of roof drains located on the west side of the building. It outfalls south of the southwest corner of the building (Figure 2-7). This site is designated as an AOC because there is no evidence to suggest that any waste materials or contaminants are present in the discharge.

According to an engineering drawing (LASL 1955, 16-0002), the only sources of water handled by this AOC are rainwater or melting snow from the roof of Building TA-18-30. This AOC, along with other storm sewer outfalls, was apparently included in the SWMU Report because of its presumed potential for draining areas where radioactive or hazardous materials had been stored. However, the drain serves only the roof of Building TA-18-30, where no storage has occurred. Because no contaminants could have been introduced into this outfall, NFA is proposed.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.1.73 PRS 18-012(d)—Drain Line (OU 1093)

The SWMU Report (LANL 1990, 0145) indicates that "drains of unknown origin and purpose are located behind Building TA-18-129 and are marked with a cement post." These drains satisfy the definition of a SWMU (Section 1.1) and are so designated.

A June 1992 site inspection did not locate the drains or the post. An engineering drawing (LASL 1969, 16-0045) does not show any drains in Building TA-18-129. It is possible that the posts marking the drains [AOC 18-012(c)] from nearby Building TA-18-141 were mistakenly identified as a separate drain. Because this drain does not appear to exist as a separate drain from those drains already identified, NFA is proposed.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.1.74 PRS C-21-013—Disposal Pit (OU 1106)

The third subdivision includes a possible waste storage pit, TA-21-331, adjacent to Building TA-21-212. This area of concern is numbered C-21-013. This unit was intended to be a plywood test pit with an earthen floor and covered access, but engineering records indicate that construction of this pit was cancelled, and it is probable that this pit was never built. Subsequent reconnaissance investigations have failed to locate this pit. Therefore, this unit does not merit further investigation.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.1.75 PRS C-21-014—Warehouse (OU 1106)

A currently operational equipment warehouse used by HSE-1, -6, -7.

Records show that either no documented release has occurred or that a release has occurred but cleanup has been conducted and documented (Table 19 II).

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.1.76 PRS 22-014(c)— Unit Does Not Exist (OU 1111)

The SWMU Report states, under "Notes" for 22-014, that "SWMU Nos. 22-014(a) and (b) were formerly SWMU Nos. 22-004(a) and (b), respectively. SWMU No. 22-014(c) was formerly SWMU

2.2.2.19 PRS C-18-002—Building (OU 1093)

This assembly building (TA-18-10) was located north of Pajarito Road on the mesa above the present location of TA-18. It was used for the assembly of explosive devices tested at either TAs-18 or -27. Material handled inside the building would probably have included high explosives, uranium, and thorium. There is no documented evidence to suggest that any systematic or even occasional releases occurred from this building. The building was moved to TA-5 between 1947 and 1948 (DOE 1987, 0264). The former location of this building is presently within TA-54, which is outside the boundary of OU 1093 (Figure 1-3).

The building and contained operations were not related to waste management; it served only to house assembly operations. Because the site area has been cleared and regraded, the exact location of the former building is not evident. The source of potential contamination no longer exists and there is no evidence that radioactive or hazardous releases occurred from this building. For these reasons the site was designated as an AOC in Appendix C of the SWMU Report (LANL 1990, 0145) rather than as a SWMU. NFA is proposed for this AOC.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.2.20 PRS 21-025(a, and b)—Operational Facility (OU 1106)

This section addresses two off-gas systems that have been identified as SWMU 21-025(a) and -025(b) at TA-21. These SWMUs are active systems that are monitored under routine operations at the Tritium Systems Test Assembly (TSTA) facility.

The first off-gas system is located in Building TA-21-155 (SWMU 21-025a), the TSTA facility, and the second is located in Building TA-21-209 (SWMU 21-025b), the high-temperature chemistry research facility. Building TA-21-155 was completed in 1982, and the first tritium operations began in 1984. Building TA-21-209 was built in 1965. The off-gas systems in both buildings are connected to exhaust stacks that are used to vent gas containing small amounts of tritiated water after treatment. The exhaust stack releases are identified as SWMU 21-019 and are discussed in Chapter 13.

The following is a description of the basic operating principle of the two off-gas systems (LANL 1990). They are designed to remove tritium from gaseous effluents prior to release to the environment. A tritium treatment train is in operation in both the TSTA facility (TA-21-155) and the high-temperature chemistry research facility (TA-21-209). On each train, gases that may contain tritium are stored in a tank until a given pressure is exceeded. When the pressure is exceeded, the gases are released from the tank and are passed through a catalyst bed operated at high temperatures in order to oxidize the tritium to tritiated water. The tritiated water is then collected in a series of molecular sieves. When a sieve is near breakthrough it is removed and hot nitrogen gas is used to strip the tritiated water from the sieve. The now-concentrated, tritiated water vapor is collected on a second series of molecular sieves. Just before breakthrough occurs in the second series of sieves, the sieves are removed and placed in asphalt-lined, 55-gal. drums for collection and disposal. After the off-gas streams are sufficiently detritiated, as determined by radiation monitoring, they are released to the exhaust stacks (see Chapter 13, SWMU 21-019). The entire off-gas treatment trains, including the tanks, are located entirely within the confines of Buildings TA-21-155 and TA-21-209.

No known releases or contamination to the inside of the buildings that could have reached the environment as a result of the off-gas treatment trains have been documented.

It has been concluded that the two off-gas systems pose no threat to the environment and should not be investigated under field activities. It appears that the two off-gas systems have been incorrectly identified and should no longer be considered SWMUs. It has been recommended that no further action be taken in the investigation of the off-gas systems based on the following:

1. The two off-gas systems are considered to be separate from the building exhaust stacks. Any environmental contamination resulting from stack releases is not considered to be associated with the off-gas systems, but is associated with the stacks, and thus will be investigated under the TA-21 site-wide sampling plan (Chapter 12) and in relation to stack emissions, SWMU 21-019 (Chapter 13).
2. The two off-gas treatment trains, including the storage tanks, are located entirely within the confines of Buildings TA-21-155 and TA-21-209.
3. The two off-gas systems are currently in operation and are covered under routine Laboratory operations.
4. No environmental releases from inside of buildings to the environment have been documented from either TA-21-155 or TA-21-209.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.2.21 PRS 21-028(b)—Container Storage (OU 1106)

TA-21 contains five active container storage areas listed under SWMU 21-028(a)-(e) shown in Fig. 20.2-1. SWMU 21-028(a) is covered in Sec. 16.3 because it is located within MDA T. SWMU 21-028(c) is covered in Sec. 18.4 because it is an active container storage area located in a part of TA-21 that is scheduled for D&D. SWMU 21-028(d) and a portion of SWMU 21-028(e) are addressed in Chapter 14, Surface Units, because they are associated with buildings not currently planned for D&D. This section discusses SWMU 21-028(b), and the next section discusses the interior portions of SWMU 21-028(e). These are recommended for no further action.

SWMU 21-028(b) consists of three satellite container storage areas located inside of Building TA-21-150 (Fig. 20.2-2). Generators at satellite storage sites may accumulate a total of 55 gal. of hazardous or mixed waste or up to one quart of acutely hazardous waste.

The three satellite container storage areas are located under hoods within Rooms 603, 605, and 607. It is assumed that chemical waste storage at Building TA-21-150 began in 1963 when the building went into operation (Nyhan 1990).

No information regarding sampling and analysis in or around SWMU 21-028(b) is available.

The types of materials that are stored under the hood in the chemistry research lab, Room 603, include

- halogenated organic chemicals--chloroform, methylene chloride, carbon tetrachloride, and alkyl halides; and
- nonhalogenated organic chemicals--acetone, toluene, tetrahydrofuran, benzene, ethanol, methanol, butanol, diethyl ether, and isopropanol.

These chemicals may be contaminated with thorium, depleted uranium, technetium, and other metals (LANL no date).

The types of materials being stored in Room 605, the general chemistry lab, are

- liquids--acetone, dichloromethane, ether, tetrahydrofuran, hexane ethyl acetate, xylene, phenol, acetonitrile, n-butyl alcohol, benzyl alcohol, formalin, chloroform, methanol, ethanol, benzene, isopropanol, toluene, acetic anhydride, acetaldehyde, o-toluidine, pyridine, dioxane, propyl ether, t-butyl alcohol, dimethylformamide, and dimethylsulfoxide; and

- solid wastes--pipets, kimwipes, and gloves contaminated with the above-listed chemicals.

The ethers (propyl ether, ethyl ether, and tetrahydrofuran) are stored separately in a chemical safety cabinet.

Mercury is also being temporarily stored under a hood in the room (LANL no date).

The types of materials being stored in Room 607, glassware cleaning room, are

- liquids -- acetone, ethyl acetate, methanol, benzene, hexane, and n-butyl alcohol; and
- solid wastes -- kimwipes, gloves, and pipets are contaminated with the above-listed chemicals.

Acetone and methanol are the primary reagents used (LANL no date).

It is recommended that no further action be taken in the investigation of the three satellite container storage areas located inside Building TA-21-150, based on the following:

1. These storage areas exhibit no evidence of routine releases.
2. No environmental releases from inside Building TA-21-150 to the environment have been documented.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.2.22 PRS 21-028(e)—Container Storage (OU 1106)

This section addresses those parts of SWMU 21-028(e) inside Building 210. A portion of SWMU 21-028(e) is outside of the building, the north loading dock, and is covered in Sec. 14.4.

SWMU 21-028(e) consists of three satellite container storage areas located at TA-21-210. The areas are inside Room 128, inside the south lab in Room 120, and outside on the north loading dock. Only the areas inside Rooms 120 and 128 are considered here (see Fig. 20.2-1).

TA-21-210, Room 128, has been used periodically to store alcohol and solvents. Room 120 in Building 210 has been used to store waste oil from machines and wipes that have been used to absorb freon (LANL no date).

No information regarding sampling and analysis in or around SWMU 21-028(e), Rooms 120 and 128, is available.

It is recommended that no further action be taken in the investigation of the satellite storage areas located inside Building TA-21-210, Rooms 120 and 128, based on the following:

1. These storage areas exhibit no evidence of routine releases.
2. No environmental releases from inside Building TA-21-210 to the environment have been documented.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.2.23 PRS C-32-001—Buildings (OU 1079)

AOC C-32-001 consists of the soil beneath the former structure locations at TA-32, and is considered an AOC based on the potential for surface spills during past operation of TA-32 (Figure 4.3-1). The structures at TA-32 included three laboratories, four warehouses, an office

On September 19, 1990, Harry T. Season, Jr., Acting Area Manager, Department of Energy, Los Alamos Area Office, submitted the closure documentation for the TA-16 Surface Impoundment to Ms. Kathleen Sisneros, Director Hazardous Waste Bureau, NMEID. This transmittal read in part, "Los Alamos National Laboratory (LANL) received an approved Resource Conservation and Recovery Act (RCRA) closure plan for the TA-16 Surface Impoundment on February 12, 1990. Upon the receipt of this document, LANL proceeded with the closure of this unit. This closure was completed on June 12, 1990" (Ellvinger 1990, 15-16-372).

EPA Review: OU 1082 NOD dated 7/13/94.

2.2.4.26 PRS 18-009(a)—Transformer (OU 1093)

According to the SWMU Report, a transformer [AOC 18-009(a)] located at Structure TA-18-136 (Figure 1-2) leaked PCB-contaminated oil in 1982. This PRS has been designated as an AOC because PCBs are not contaminants regulated by RCRA or HSWA. No data were located on PCB concentrations in the transformer. According to a Laboratory employee (Emelity 1982, 16-0050), approximately 50 cubic yards of PCB-contaminated soil was removed the same year. The memo gave no indication regarding the levels of PCB concentrations in the removed soil.

A site visit to the former location of this AOC was made in July 1992. The only evidence of the past transformer was a capped-off conduit in which electrical cables ran underground to Kiva 3. The concrete pad on which the transformer sat and the contaminated soil have been removed. Because the area was cleaned up and the transformer was removed, NFA is proposed.

EPA Review: OU 1093 RFI review letter dated 9/23/94.

2.2.4.27 PRS C-18-001—Laboratory (OU 1093)

This AOC, identified in Appendix C of the SWMU Report (LANL 1990, 0145), was associated, as such, with former portions of Building TA-18-1. It was not a waste management unit; therefore, it is designated as an AOC in this work plan.

The portion of Building TA-18-1 that contained the photochemical laboratory has been dismantled. The liquid waste discharges from that portion of the building were routed through the drain lines and septic system associated with SWMUs 18-003(g) and (h) (Sections 5.1.1.2.7 and 5.1.1.2.8). The sampling plans for these SWMUs acknowledge the possible presence of silver from photochemical waste discharges. Therefore, this AOC is proposed for NFA.

EPA Review: OU 1093 RFI review letter dated 9/23/94.

2.2.4.28 PRSs C-21-002, -003, -004, -008, -010, -011, -015 through -026, and -028 through -030 (OU 1106)

Records show that either no documented releases have occurred or that releases have occurred, but cleanup has been conducted and documented for these PRSs (Table 19-II).

PRS C-21-002—Non-intentional Release Area (OU 1106)

Leak of radionuclides from a waste storage tank to surrounding soil; soil was removed.

EPA Review: OU 1106 RFI approval letter dated 1/9/92.

PRS C-21-003—Non-intentional Release Area (OU 1106)

Unknown releases to paved area between these two structures; area has been repaired.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-004—Non-intentional Release Area (OU 1106)

Possible radionuclide and hazardous waste release to asphalt driveways. Soil was removed and area was repaved.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-008—One-Time Spill (OU 1106)

Release of radioactive material from a process exhaust line; soil was excavated.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-010—Systematic Leak (OU 1106)

Leak of ²⁴¹Am and plutonium from drums; area was decontaminated.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-011—One-Time Spill (OU 1106)

In 1963, a plugged scrubber on the roof of Building 155 backed up and spilled material containing Uranium-235; area was cleaned.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-015—Building (OU 1106)

A safety training building; building and soil were removed down to tuff.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-016—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-017—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-018—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-019—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-020—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-021—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-022—Laboratory (OU 1106)

A laboratory that was demolished and disposed of in TA-54, Area G.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-023—Laboratory (OU 1106)

Former location of a laboratory building and associated soil. Structure was demolished and disposed of in TA-54, Area G.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-024—Warehouse (OU 1106)

Former location of a warehouse and associated soil. Structure was demolished and disposed of in TA-54, Area G, Pit No. 4.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-025—Building (OU 1106)

Former location of a corridor contaminated with radionuclides; structure demolished in 1965.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-026—Building (OU 1106)

Former location of an administrative building with shops; removed in 1968.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-028—Tank (OU 1106)

A 12,788 gal. aboveground fuel tank that was removed.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-029—Aboveground Tank (OU 1106)

An aboveground 3,000 gal. steel oil tank that was removed.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-030—Aboveground Tank (OU 1106)

A 320 gal. propane tank that was removed.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

2.2.4.29 PRS 27-004—Control Building (OU 1093)

Control Building TA-27-2 was a small subsurface concrete firing site bunker covered with earthen fill that was used at TA-18. It was transferred to and reconstructed at the northwest end of TA-27 about 1945 (Figure 1-4). Demolished when the site was decommissioned in mid-1960, it was the only building at TA-27 reported to have any radioactive contamination (DOE 1987, 0264). The site is designated as an AOC because only radioactive contaminants, which are not regulated by RCRA or HSWA, were present.

Beta and gamma contamination were identified on the concrete floor of Building TA-27-2 in 1958 (DOE 1987, 0264). Decontamination efforts in 1959 were unsuccessful. A 1960 survey (DOE 1987, 0264) conducted before the structure was removed showed thorium (a low-energy gamma emitter) contamination remaining inside the concrete structure. Radiation levels were reported as 1,500 counts per minute (presumably alpha) and 2 millirad/hour thorium (DOE 1987, 0264). A 1988 beta and gamma screening of the remaining building rubble did not reveal gamma exposure rates above background levels (LANL 1990, 0145).

The general area where Building TA-27-2 was located has undergone extensive alteration with the construction of the TA-18 sewage lagoons and the realignment of Pajarito Road (Figure 1-4). The actual former location, as provided by a site map (LASL 1955, 16-0063), cannot be verified. A small quantity of concrete rubble is evident near the presumed location of the building. The radiation monitoring of this rubble done in 1988 did not reveal beta or gamma exposure rates above background levels (LANL 1990, 0145). (The original contamination on the building floor was identified as beta-gamma radiation.) Because the exact location of the building cannot be determined and current evidence indicates no contamination is present, NFA is proposed.

EPA Review: OU 1093 NOD dated 3/7/94.

2.2.4.30 PRS 35-005(a and b)—Surface Impoundments (OU 1129)

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.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.31 PRS 35-011(d)—Underground Storage Tank (OU 1129)

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