Department of Energy
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

AUG 1 5 1994

0131
Permit

Russell F. Rhoades, Director
Environmental Services
U. S. Environmental Protection Agency
Region 6
1445 Ross Ave., Suite 1200
Dallas, TX 75202-2733

LIBRARY COPY

Dear Mr. Rhoades:

On June 14, 1994, I received a copy of the report from the Multi-Media Compliance Investigation conducted at the Los Alamos National Laboratory (LANL) in August 1993. The Los Alamos Area Office and LANL have conducted a preliminary review of the report and comments on some of the findings are enclosed. We are continuing to review the report and further comments will likely follow.

If you have any questions, please call me at (505) 665-5027, or Jon Mack of my staff at (505) 665-5026.

Sincerely,

Joseph C. Vozella
Acting Asst. Area Manager
Offide of Environment and Projects

LAAMEP:7JM-254

Enclosure

cc w/enclosure:
K. Sisneros
New Mexico Environment Dept.
P. O. Box 26110
Santa Fe, NM 87502
B. Blankenship
New Mexico Environment Dept.
P. O. Box 26110
Santa Fe, NM 87502

cc w/o enclosure:
D. Erickson, ESH-DO, LANL, MS-K491
J. White, ESH-8, LANL, MS-K498
M. Patterson, AA, LANL, MS-A115

15391

AREAS OF NONCOMPLIANCE - CAA

NMAQR Permit No. 634-M-1

Finding:

Pollution control equipment identified at TA-3 building 141 beryllium operations is not the same as the pollution control equipment outlined in the permit application.

Factual Accuracy:

Accurate. The permit identified Cambridge HEPA filters as the filter manufacturer. To the best of our knowledge, Flanders HEPA filters were installed during the operations set-up. It is Laboratory policy to purchase HEPA filters on a 5 year contractual basis. Contracts are awarded using cost and filtration specification considerations. All HEPA filters must have a manufacturer's filtration efficiency rating of 99.97 percent. Furthermore, we believe that the compliance stack test conducted on January, 1988 tested emissions filtered by the Flanders HEPA filters. Test results indicate beryllium emissions to be 3.9×10^{-8} lb/hr. The permitted emission limit is 3.0×10^{-6} lb/hr.

Corrective Action:

An updated permit application to correct the HEPA filter manufacture name is in final preparation for submittal. August 30, 1994 is the anticipated submittal date to NMED.

NMAQR 702

Finding:

LANL failed to permit a beryllium drilling operation at TA-35 building 213. One beryllium operation was identified in the permit application submitted to NMED for this building and two operations are performed.

Factual Accuracy:

Inaccurate. The permit application submitted to NMED for beryllium machining operations at TA-35 building 213 identified the lathe and the micro drill. These older applications were submitted on a standard form which did not require that equipment used during machining be mentioned. However, attached to the permit application was an exhaust system schematic showing the exhaust supply from the lathe and the drill.

Corrective Action:

An updated permit application which will more clearly identify the equipment used for machining is in final preparation for submittal. August 30, 1994 is the anticipated submittal date to NMED.

was the only chemical exceeding the emission level specified in Appendix A and was subsequently registered.

The seven operations mentioned above shown to be in excess of screening levels were identified during the EPA audit using LANL's 1990 air emissions inventory. EPA expressed concerns in the audit over the validity of possible operational changes which may have occurred since the inventory was completed.

Corrective Action:

In order to accurately determine the chemical emissions from the operations identified above, a review was done for each operation identified and emission estimates were performed. The results of that review follow:

Sulfuric Acid

The 1990 Air Emissions Report shows sulfuric acid emitted at 1.53 and 1 lb/hr from two operations. A review of the operations indicated that the acid solutions used varied in concentration ranging from 0.5 to 96.5 molar. Evaporative emissions ranged from 10% to 30% over 4 to 6 month periods. Emission estimates were performed for these operations from the information acquired during the review and were found to be on the order of 1.7×10^{-4}, well below the NMAQR 752 screening level of 0.0667 lb/hr. The discrepancy exists because LANL's 1990 air emissions inventory did not account for the acid solution concentrations or the time duration of any single test involved with these two operations. For both operations, solutions sat in a covered beaker or bath for approximately 4 to 6 months before disposal.

Osmium Tetroxide

The 1990 RAPS report shows osmium tetroxide as Os used and emitted at 0.002 lb/hr for an operation at TA-21-05-R500A. That operation is no longer in existence but notes from the operation indicate that 10% was disposed, 85% was consumed in the reactions, and 5% was emitted. Emission estimates for Os using this information were found to be 0.0001 lb/ hr without considering the stack height adjustment factor. This estimate is below the NMAQR 752 screening level of 0.000133 lb/hr. The discrepancy exists because LANL's 1990 air emissions inventory did not account for the consumption or disposal of Os during the tests:

The discrepancy exists because LANL's 1990 air emissions inventory did not use published emission factor data to estimate ammonia emissions from HE detonation operations

1 Emissions From The Open Burning Or Detonation Of Explosives. Roy V. Carter, U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, Maryland, 78-42.4

Concern

- A significant quantity of VOCs are emitted from painting operations within LANL. The laboratory is exploring the use of water-based paints to reduce this emission source and should be encouraged to pursue this and other waste minimization activities.

Factual Accuracy:

Not enough time to formulate a response.

Corrective Action:

Not enough time to formulate a response.

Concern

- LANL does not have a complete inventory of all emission sources. For example a listing of all degreasing and painting operations is not available. Additionally, a listing of all pollution control equipment for each stack or discharge exhaust is not available. This type of information will be needed to complete an operating permit application, as required in the CAAA.

Factual Accuracy:

Accurate.

Corrective Action:

Operational descriptions, emissions, and stack information will be gathered during the computerized emissions inventory planned for the end of 1994.

Concern

- Friable asbestos containing materials (ACM) identified by LANL are exposed to the atmosphere at several areas. The steam lines are insulated with ACM, and are damaged in several locations exposing the asbestos to the atmosphere.

Factual Accuracy:

The presence of exposed asbestos is not regulated. The asbestos standard requires that no visible emission occur during renovation or demolition operations (operations LANL does on a routine basis). Deteriorating lines insulated with asbestos are not regulated.

Corrective Action:

The Laboratory spent approximately $75,000 last year repairing many of these lines at TA-21 as a best management practice. Plans are to spend another $50,000 to repair lines at TA-16 this calendar year.

Title: Multi-Media Compliance Investigation **Date:** April, 1994

Volume: 2 of 4, RCRA

Page(s): 34 **Paragraph(s):** 1 **Line(s):** 3

FINDING (QUOTE FROM REPORT):
"The open burning site [TA-16 structures 387 (flash pad), 388 (Burn Pad), 399 (Burn Pad), and 401 (Burn vessel)] does not have interim status; the burn units were not specified in the Part A application or amendments."

ACTION/COMMENT:
LANL's hazardous waste Part A permit application (November 1988) includes all of the open burning and open detonation units located at Technical Area (TA) 16. On page 2a of 5, *Explanation Of Process Code Listings And/Or Design Capacity*, under process code T04, the following open burning units located at TA-16 are listed: Two burn pads (structures 388 and 399), two pressure vessels (structures 401 and 406), one burn pad, one flash pad, one burn cage. A copy of the Part A was most recently transmitted, via facsimile, to Mr. Craig Kubic (NEIC) on December 14, 1993 **(Enclosure 1)**. The transmittal was prompted by Mr. Kubic's telephone inquiry as to the status of the open burning units at the TA-16 burning ground. LANL believes that it met all of the requirements for submittal of a Part A permit application as established in the EPA document *Application for a Hazardous Waste Permit* (EPA Forms 3510-1 and 3510-3, June 1980). LANL's hazardous waste Part A and Part B permit applications were last modified in November 1988.

EPA confirmed that the Los Alamos National Laboratory had been granted interim status for its open burning units located at TA-16 in 1989 **(Enclosure 2)**. The EPA granted interim status after reviewing the 1988 Part B permit application. The letter states in part "This letter is to acknowledge receipt of your Part B application under the...RCRA for an open burning/open detonation explosive waste disposal area....In submitting your application by November 8, 1988, your Subpart X unit will have interim status until a final determination is made."

Title: Multi-Media Compliance Investigation **Date:** April, 1994

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Page(s): 27 **Paragraph(s):** 3 **Line(s):** 3

FINDING (QUOTE FROM REPORT):
"This unit [the TA-14 burn cage] is not included on LANL's Part A hazardous waste permit application for interim status."

ACTION/COMMENT:
LANL believes the TA-14 burn cage is erroneously listed under the heading of TA-16. On page 2a of 5, Explanation Of Process Code Listings And/Or Design Capacity, **(Enclosure 3)** under process code T04, the following unit is listed. "One burn cage for HE-contaminated paper. This unit has a capacity of 3.0 cubic feet per burn." This unit description matches the actual burn cage at TA-14.

Also on page 2a of 5, Explanation Of Process Code Listings And/Or Design Capacity, **(Enclosure 3)** under process code T04, the following open detonation units are listed: TA-14-35, TA-15, TA-36, TA-40, TA-39-6, TA-39-57. On page 1 of 5 in the Part A application **(Enclosure 4)**, Section III B, Lines 7 and 8 list process design capacities for process code T04 and are footnoted. The footnote,, located in Section III C **(Enclosure 5)**, states "Active units - See Part B Permit Application for descriptions."

The TA-14 open burning unit is described in LANL's Part B permit application (Revision 4.1 dated November, 1988), Section 2.1.1.1 *Technical Areas 14 and 16 Open Burning Units* **(Enclosure 6)**. Section 4.0 of the Part B, *Waste Management Practices And Units*, paragraph 4.7 **(Enclosure 7)**, describes the operation of the TA-14 and 16 open burning units.

See additional remarks under the above discussion of the TA-16 OB/OD units.

Title: Multi-Media Compliance Investigation **Date:** April, 1994

Volume: 2 of 4, RCRA

Page(s): 8 **Paragraph(s):** 3 **Line(s):** 6

Finding (Quote from report):
"Twelve samples contained lead and/or mercury above the 20-fold limit. LANL did not perform the [toxicity characteristic leaching procedure] TCLP analyses on 7 of these 12 samples."

ACTION/Comment:
A total of 77 separate analyses were conducted on the material excavated from the old Catholic church sump. The samples of material within the sump and immediately adjacent to it were analyzed as follows:

36 samples were analyzed for the metals target analyte list. 7 samples were collected and analyzed from the area around the sump to confirm all contaminants were removed.

25 samples were analyzed for a partial metals list. 10 samples were collected and analyzed from the area around the sump to confirm all contaminants were removed.

16 samples were analyzed for volatiles and semi-volatiles.

Analytical results for 10 samples identified mercury at 4 ppm or greater. This triggered the request for these samples to be analyzed via the TCLP. Under the TCLP, 9 of these samples were < 0.2 mg/l mercury. The tenth request for TCLP analysis was not performed by the analytical laboratory due to lack of adequate sample material.

Analytical results for 10 samples identified lead at 100 ppm or greater. LANL requested the analytical laboratory to analyze all 10 samples using the TCLP for lead. However, due to insufficient remaining sample, analysis was not performed on 5 of these 10 samples. The TCLP analytical results all reported lead at <5.0 mg/l. Therefore, there is no indication that total lead concentrations of 100 ppm or greater will result in the material having a hazardous concentration of lead based on the TCLP.

Based on the relationship between the total metal analyses and the TCLP results, the material removed from the septic tank did not contain RCRA hazardous waste. Comparison of the site specific TCLP data to the site specific total metals data indicates that the lead total metals concentration of the sample would have to have been 2500 ppm lead before the TCLP test would reach 5.0 mg/l. This same type of comparison, when applied to the mercury total metals analyses and mercury TCLP results, indicates that 4000 ppm mercury would have to be present in a sample for it to reach a TCLP value of 0.2 mg/l. Further discussion of this comparison can be found in the enclosed description and data spreadsheet **(Enclosure 8)**.

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Finding (Quote from report):
"An adequate waste determination had not been made for the following solid wastes generated at the facility: ... Metal-containing wastes being removed from a septic tank at the former Catholic Church [TA-0-030(g)] and disposed of at the LANL low-level, radioactive landfill."

ACTION/Comment:
The soil sampled from the interior of the septic tank was analyzed using the TCLP. The soil was not found to exceed the TCLP limits for lead and mercury. The samples selected for TCLP analyses were based on the results of total metal analyses which indicated that there was a possibility that the lead or mercury could exceed the TCLP limits. All samples for which sufficient sample material remained were analyzed and found to be below the TCLP values. The material disposed was not hazardous waste.

Title: Multi-Media Compliance Investigation **Date:** April, 1994

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FINDING (QUOTE FROM REPORT):
"...waste high explosives, in the rest house (TA-16, building 261), were accumulating in six containers that were not labeled or marked clearly with the words "hazardous waste."

ACTION/COMMENT:
LANL is not contesting this finding. However, this location is incorrectly identified as a less-than-ninety day storage area. The area has been managed as a satellite accumulation area for approximately three years.

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Page(s): 36 **Paragraph(s):** 4 **Line(s):** 1

FINDING (QUOTE FROM REPORT):
"At the [TA-21] building 427 less-than-90-day accumulation area, there was no emergency communications or alarm system, no grounding wires on the metal accumulation building to minimize the possibility of a fire, and the nearby fire extinguisher could only be used for trash/wood/paper, not flammable liquid fires. Flammable liquids were in storage during the NEIC inspection."

ACTION/COMMENT:
Building 427 is a free standing metal building with built-in secondary containment measuring approximately 6 feet by 6 feet. The nearest hydrant is approximately 135 feet away and the nearest telephone is approximately 100 feet away in building 14. The nearest fire alarm pull-box is about 86 feet away in building 14. LANL believes this provides adequate fire protection and communication equipment for this area. See enclosed map of TA-21 **(Enclosure 9)**. Additionally, the building was not grounded at the time of the inspection because the grounding strap had been cut in preparation for relocation; it is now grounded. The fire extinguisher has been replaced with the proper type, class ABC.

40 CFR §265.32 requires facilities be equipped with an internal communications or alarm system, telephone or radio, fire control equipment, and water at adequate volume and pressure for fire suppression equipment. These requirements exist to minimize the possibility of and effect of a release, fire, or explosion which could threaten human health or the environment. Employees must also have immediate access to internal and external alarm systems where required.

Placing telephones and water supplies in close proximity to a waste storage area would require employees and emergency response personnel to endanger themselves to use the equipment in the event of an occurrence requiring emergency response. Distances of about 100 feet can be traversed quickly and help encourage personnel to remove themselves from actual danger. The required equipment is immediately available within the meaning of the regulations. On-site personnel are not encouraged to participate in fire suppression but rather to clear the area and pull an alarm or call for emergency response personnel. As the building is constructed of steel and vented, property loss would be minimal and all wastes would likely be contained in the event of fire.

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Page(s): 15 **Paragraph(s):** 4 **Line(s):** 1

FINDING (QUOTE FROM REPORT):
"RCRA hazardous waste (ignitable and toxic) were being stored in the [TA-3] building 2133 less-than-90-day storage area. This area was not equipped with an internal communications or alarm system or devices capable of summoning emergency assistance."

ACTION/COMMENT:
Building 2133 is a free standing metal building with built-in secondary containment measuring approximately 6 feet by 10 feet. The nearest telephone, fire extinguisher, and alarm pull-box is approximately 25 feet away in building 1903. The second nearest telephone and fire extinguisher is approximately 35 feet away in building 322. Numerous other buildings within a radius of several hundred feet are also equipped with fire extinguishers, alarm pull-boxes, and telephones. Fire hydrants are distributed throughout TA-3. LANL believes this provides adequate fire protection and communication equipment for this area. See enclosed maps of TA-3 showing building 2133 **(Enclosure 10)**.

40 CFR §265.32 requires facilities be equipped with an internal communications or alarm system, telephone or radio, fire control equipment, and water at adequate volume and pressure for fire suppression equipment. These requirements exist to minimize the possibility of and effect of a release, fire, or explosion which could threaten human health or the environment. Employees must also have immediate access to internal and external alarm systems where required.

Placing telephones and water supplies in close proximity to a waste storage area would require employees and emergency response personnel to endanger themselves to use the equipment. The short distance to telephones can be traversed quickly and helps encourage personnel to remove themselves from actual danger. The required equipment is immediately available within the meaning of the regulations. On-site personnel are not encouraged to participate in fire suppression but rather to clear the area and pull an alarm or call for emergency response. As the building is constructed of steel and vented, property loss would be minimal and all wastes would likely be contained in the event of fire.

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FINDING (QUOTE FROM REPORT):
"[TA-22-91] The area outside the tank treatment area is used as a less-than-90-day accumulation area. There were no emergency alarms or internal communication system near this area."

ACTION/COMMENT:
During all operations and inspections in this area, personnel are required to carry a two-way radio capable of summoning emergency assistance. This policy was in effect at the time of the multi-media investigation. Additionally, telephones, fire alarms, fire extinguishers and fire hydrants, were available and immediately accessible as indicated on the enclosed map of TA-22 **(Enclosure 11)**. The nearest telephone was approximately 100 feet away. Please note the less-than-ninety-day storage area has been relocated since the inspection, previous and current locations are indicated on the map.

At the time of the audit, the requirement for two-way radios was in effect but had not yet been formalized in a written standard operating procedure (SOP). A draft SOP (Treatment of waste water from printed circuit shop, draft SOP 196) has since been developed which formalizes the requirement; a copy of the relevant pages is enclosed **(Enclosure 12)**. Also enclosed is a letter from the operating group, documenting their policies and guidance regarding this matter **(Enclosure 13)**.

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FINDING (QUOTE FROM REPORT):
"According to facility records, TA-11 has one satellite accumulation area and one rest house (less-than-90-day storage site). The satellite accumulation area was located outside building 24. There was one 55-gallon container partially filled with wipes with acetone generated from cleaning high explosive material. This site was not under direct control of the operator of the process that generated the waste. The rest house did not have any wastes accumulated at the time of inspection."

ACTION/COMMENT:
Wipes with acetone are used to clean D38 parts only, they are not used to clean high explosive material. The satellite accumulation area is outside under an awning, directly adjacent to the room where waste is initially generated. Access to this area (TA-11) requires that personnel have security clearances for passage through the perimeter security checkpoint. After passing the perimeter checkpoint, a second manned checkpoint limits access to the exclusion area and requires a badge exchange. The area is patrolled regularly by security personnel. Visitors must be cleared-in by TA-11 personnel.

Only one experiment is conducted at a time, and all personnel work to support that effort. Each individual (there are normally about 5 people on-site) is fully aware of the operation (the waste generating process) and the locations of the waste storage areas. These individuals are responsible for maintaining compliance at their waste storage areas and for ensuring that waste is managed in a safe manner. The area is under the control of the operators of the area as required by 40 CFR §262.34(c) which states in part "A generator may accumulate ... hazardous waste ... in containers at or near any point of generation where wastes initially accumulate, which is under control of the operator of the process generating the waste ...."

The rest house, TA-11-24, has never been considered a less-than-ninety day storage area.

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Page(s): 15 **Paragraph(s):** 2 **Line(s):** 1

FINDING (QUOTE FROM REPORT):
"Spent lithium and nickel-cadmium batteries, generated throughout [TA-3] building 40, were being accumulated at the main building 40 entrance corridor. This area was not in the control of the operator of the process generating the waste."

ACTION/COMMENT:
EPA has not issued clear formal guidance as to what constitutes "at or near any point of generation" nor has it defined measures deemed to provide adequate control. In the absence of such guidance, and in keeping with the spirit of the RCRA (to protect human health and the environment), LANL interprets the requirements for "at or near" and "under the control" to include administrative controls as well as, or in lieu of, physical controls.

To facilitate the accumulation of spent batteries in as practical a manner as possible, while adhering to the tenants of the RCRA, LANL issued guidance to generators of spent batteries on 12/23/91 **(Enclosure 14)**. In that guidance LANL recommended using established satellite accumulation points where available or establishing centrally located collection points to receive spent batteries from widely dispersed sources. The satellite accumulation area mentioned in the finding (TA-3-40, main corridor) was established in June, 1992, for the express purpose of collecting spent batteries for later disposal or recycling. The area is operated in accordance with the generator requirements for satellite accumulation.

On February 23, 1993, EPA provided guidance to another generator using an example directly relevant to the TA-3-40 satellite accumulation area practice **(Enclosure 15)**. In that letter, EPA discussed management of "universal wastes" and collection of those wastes at a single satellite accumulation area although the waste had been generated from diverse sources. The term universal waste is not defined; however, the example used in the letter is nickel-cadmium batteries. Regarding the requirement that waste be accumulated under control of the operator of the process generating the waste, the letter goes on to state "... we [EPA] would view this condition as being satisfied for certain 'universal wastes' provided the generator demonstrates that the personnel responsible for generating and/or accumulating the waste have adequate control over the temporary storage of these wastes." When establishing satellite accumulation areas, LANL's policy is to assign responsibility for management and oversite of the location to an individual. That individual is responsible for maintaining compliance at their waste storage area and for ensuring that waste is managed in a safe manner. This policy provides adequate control.

This satellite accumulation area has not been cited for noncompliance nor has LANL observed problems with the management of this location that would indicate inadequate control. The Laboratory therefore believes it is operating this location in compliance with the RCRA standards for hazardous waste generators.

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Page(s): 79 **Paragraph(s):** 3 **Line(s):** 1

FINDING (QUOTE FROM REPORT):
"Copies of LDR Notifications were not retained for 23 manifests."

ACTION/Comment:
As communicated by LANL personnel, NEIC personnel did not review all requested manifests while they were on-site but asked for copies of any manifest that the NMED had previously copied. Working from the list of manifests provided in the multi-media report, LANL personnel cross referenced all twenty-three manifest numbers to LDR notifications in their files, copies of which are enclosed **(Enclosure 16)**.

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FINDING (QUOTE FROM REPORT):
"The waste analysis plan in the permit has not been modified to specify procedures used to sample and analyze wastes for the Toxicity Characteristic Leaching Procedure (TCLP)."

ACTION/COMMENT:
LANL submitted a revised hazardous waste permit application (Parts A and B) in November, 1987. Included in the revisions of the Part B application was a revised waste analysis plan (WAP). Specifically, the WAP was revised to include the Toxicity Characteristic Leaching Procedure (TCLP). Transmittal of the revised permit application is documented in a letter from the Department of Energy to NMEID and dated November 25, 1987 **(Enclosure 17)**; distribution included EPA. LANL also submitted a modified WAP in October, 1993 that incorporated the TCLP **(Enclosure 18)**.

Title: Multi-Media Compliance Investigation **Date:** April, 1994

Volume: 2 of 4, RCRA

Page(s): 15 **Paragraph(s):** 2 **Line(s):** 4

FINDING (QUOTE FROM REPORT):
"Three separate laboratories were using the one accumulation area in building 40, room W112; this area was also not in control of the operator producing the hazardous waste."

ACTION/COMMENT:
EPA has not issued clear formal guidance as to what constitutes "at or near any point of generation" nor has it defined measures deemed to provide adequate control. In the absence of such guidance, and in keeping with the spirit of the RCRA (to protect human health and the environment), LANL interprets the requirements for "at or near" and "under the control" to include administrative controls as well as, or in lieu of, physical controls.

Waste generated in rooms N120, S104, and W112 are accumulated in room W112. Hazardous wastes are generated from similar operations in those three labs and consist of rags, cotton swabs, and gloves contaminated with trace quantities of spent solvents; there are no free liquids **(Enclosure 19)**. The farthest distance traveled to room W112 is approximately 100 feet, along the corridor of building 40. The waste and the satellite accumulation area in room W112 is managed by an individual who has primary responsibility for waste management. Access to each contributing laboratory is controlled by a cipher lock, and room W112 requires a limited access key, ensuring that only authorized individuals enter the area. The responsible individual classifies all waste, places it in the satellite accumulation area, and arranges pick-up by waste management personnel **(Enclosure 20)**.

At the TA-3-40-W112 satellite accumulation area, LANL personnel have operated under a combination of administrative controls and physical controls to ensure compliance with the standards in 40 CFR §262.34(c) which state in part "A generator may accumulate ... hazardous waste ... in containers at or near any point of generation where wastes initially accumulate, which is under control of the operator of the process generating the waste ...." This location is under the control of the operator of the process as defined by the regulations.

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Page(s): 38 **Paragraph(s):** 3 **Line(s):** 1

FINDING (QUOTE FROM REPORT):
"Building 3, room 361S[;] Wastes produced in TA-21, building 3, rooms 301A & 301B; not in control of the operator of the process generating the hazardous wastes."

ACTION/COMMENT:
There is no such location as TA-21-3-361S.

Title: Multi-Media Compliance Investigation **Date:** April, 1994

Volume: 2 of 4, UST

Page(s): 9 **Paragraph(s):** 3 **Line(s):** 1

FINDING (QUOTE FROM REPORT):
"TA-21-325 was temporarily closed on November 23, 1992 when the tank was emptied, but the piping is still intact. Temporary closure of a UST system for 3 months or more requires that vent lines be left open and all other lines, pumps, manways, and ancillary equipment be capped and secured."

ACTION/COMMENT:
This finding is incorrect. The piping from UST TA-21-325 appeared to be intact from outside building TA-21-2. However, the UST piping was capped inside building 2.

The TA-21-325 nitric acid UST was installed in 1974, and used by the Chemistry and Metallurgy Baker-11 Group (CMB-11), for the recovery of plutonium from scrap. In 1978, the plutonium processing operations at TA-21 ended. At this time all equipment used for the recovery of plutonium from scrap was disconnected from the TA-21-325 nitric acid UST and moved to TA-55 and the piping was capped inside building 2. UST TA-21-325 was then used as a nitric acid storage tank until November 1992. On November 23, 1992, UST TA-21-325 was temporarily closed. On, September 11, 1993, this UST was officially closed and removed. No nitric acid contamination was discover beneath the UST.

List of Enclosures

1 Copy of facsimile of LANL's Hazardous Waste Part A permit application, sent to Craig Kubic, NEIC, at his request.

2 Copy of letter to EPA transmitting LANL's Part B permit application revision to include LANL's OB/OD units. Includes copy of reply from EPA to DOE confirming LANL has interim status for its OB/OD units.

3 LANL Part A permit application, page 2a of 5, listing OB/OD units.

4 LANL Part A permit application, page 1 of 5, listing process code T04, and footnote.

5 LANL Part A permit application, page 2 of 5, Section III C, showing footnote reference to Part B for OB/OD unit descriptions.

6 LANL Part B permit application, page 2-2, Section 2.1.1.1, describing open burning units at Technical Areas 14 and 16.

7 LANL Part B permit application, page 4-26, Section 4.7 describing operation of open burning units at Technical Areas 14 and 16.

8 Data spreadsheet and discussion of comparison between total metals results and toxicity characteristic leaching procedure (TCLP) results. Includes letter from EPA establishing the "20 times rule" for comparing total metals data to toxicity characteristic leaching procedure data.

9 Map of TA-21 showing distance between the building 427 less-than-ninety-day storage area and the nearest telephones, fire alarms, water supplies, and fire extinguishers.

10 Map of TA-3 showing distance between the building 2133 less-than-ninety-day storage area and the nearest telephones, fire alarms, water supplies, and fire extinguishers.

11 Map of TA-22 showing distance between the building 91 less-than-ninety-day storage area and the nearest telephones, fire alarms, water supplies, and fire extinguishers.

12 Copy of relevant pages from draft SOP listing required equipment for TA-22 less-than-ninety-day operation.

13 Copy of letter from TA-22 operating personnel, stating their policies and history regarding the TA-22 less-than-ninety-day operation.

14 Copy of guidance issued to LANL waste generators regarding management of spent batteries.

15 Copy of letter from EPA providing guidance on the management of "universal wastes" (i.e., spent batteries).

16 Copies of alleged missing LDR notifications with discussion. Includes table cross referencing manifest numbers and LDR notifications.

17 Copy of letter from DOE to NMED and EPA transmitting modifications to LANL's hazardous waste permit application, Parts A and B). Revision number eight includes a modified waste analysis plan which incorporated the TCLP.

18 Copy of letter from NMED to DOE confirming their acceptance of the propose permit modifications. Includes copies of cover page of submittal and the relevant page of the Waste Analysis Plan.

19 Waste Profile 4274 describing hazardous waste accumulated in TA-3-40-W112.

20 Letter from TA-3-40 personnel stating their controls for management of hazardous waste in TA-3-40-W112.

ENCLOSURE
1

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL PROTECTION (EM-8)

HAZARDOUS AND SOLID WASTE SECTION

FAX TRANSMITTAL SHEET

FAX #: (505) 665-5224 VERIFICATION #: (505) 665-0792

DATE: 12/14/93 ID # ____ LOG NO: EM-8:93-FAX-

FROM: Tony Grieggs PHONE #: (505) 665-0451

TO: Craig Kubic FAX #: (303) 236-2395 VERIFY PHONE # (303) 236-5124

GRP/ORG: NETC

TO: _____ FAX #: (___) _____ VERIFY PHONE # (___) _____

GRP/ORG: _____

TO: _____ FAX #: (___) _____ VERIFY PHONE # (___) _____

GRP/ORG: _____

MESSAGE: As requested, hazardous waste Part A permit application. (Section 1.0 of hazardous waste Part B). See page 2a of 5

NUMBER OF PAGES TO FOLLOW: ~~31~~ 15-31

Cy: EM-8 Fax File
HSWS File 93-
CRM-4, MS A150

SECTION LEADER

GROUP OR DEPUTY GROUP LEADER

December 7, 1993

1.0 INTRODUCTION AND PART A APPLICATION

1.1 INTRODUCTION

This application was prepared for submittal to the Environmental Protection Agency (EPA) and the New Mexico Environmental Improvement Division (NMEID) in order to meet the requirements of the Resource Conservation and Recovery Act (RCRA) for a Part B Permit Application. The EPA authorization for Los Alamos to operate under interim status is included as Appendix A. The EPA formally requested the Part B permit application in a February 22, 1984 letter to the Los Alamos Laboratory Director. Subsequently, the New Mexico Environmental Improvement Division transmitted a joint call-in of the permit application to the Laboratory dated April 23, 1984. These two letters are given in Appendices B and C, respectively. More recently, in a letter of August 7, 1984, the EPA requested a Part B Permit Application from Los Alamos addressing radioactive/chemical mixed waste (Appendix D). This permit application addresses chemical waste only. As necessary, a separate permit application will be submitted to address radioactive/chemical mixed waste.

The format of the Part B application follows an outline provided in "A Guide for Preparing RCRA Permit Applications for Existing Storage Facilities", U.S. EPA, 1982. An outline of the permit application with citations of the regulations covered by each section is shown in Table 1-1.

Los Alamos National Laboratory (Los Alamos) is a multidisciplinary laboratory (RCRA No. NM0890010515). The principal mission of the Laboratory is the design and development of weapons for the nation's nuclear arsenal; however, considerable research and development (R&D) is directed toward the development of the peaceful uses of nuclear energy including research on controlled thermonuclear reactions, fission reactors, nuclear safeguards, laser fusion, and medium energy physics. Extensive basic research programs in physics, chemistry, metallurgy, mathematics and computers, earth sciences, and electronics support these efforts. Biomedical and environmental research includes programs in molecular biology, radiobiology, cancer therapy, radiology, and industrial hygiene. Expansion into nonnuclear areas is represented by applied technology development of solar and geothermal energy and superconducting power transmission lines.

Los Alamos is managed by the University of California for the U.S. Department of Energy (DOE) with substantial work performed for the Department of Defense and the Nuclear Regulatory Commission. The University is responsible to DOE's Los Alamos Area Office (LAAO) which reports to the DOE Albuquerque Operations Office (ALO). Although not a primary function, some hazardous waste management and storage occurs at Los Alamos. Los Alamos falls under Standard Industrial Classification (SIC) Code Number 9711, national defense organizations.

Much . this application was prepared from existing documentation at the Laboratory. In addition, new information was developed for this permit application.

1.2 REVISED PART A APPLICATION

The complete RCRA Part A Application Revision is included in the following pages. The original Part A Application was submitted to the EPA in November 1980.

TABLE 1-1

FORMAT OUTLINE AND REGULATION REFERENCES

REPORT SECTION	RCRA REGULATION REFERENCE[1]
1.0 INTRODUCTION AND REVISED PART A APPLICATION	
1.1 INTRODUCTION	
1.2 REVISED PART A APPLICATION	270.13
2.0 FACILITY DESCRIPTION	
2.1 GENERAL DESCRIPTION	270.14(b)((1)
2.2 LOCATION INFORMATION	270.14(b)(11), 270.14(b)(19), 264.18(a)(b)
2.3 TRAFFIC PATTERNS	270.14(b)(10)
3.0 WASTE CHARACTERISTICS AND ANALYSIS PLAN	
3.1 CHEMICAL AND PHYSICAL ANALYSES	270.14(b)(2), 264.13, 264.73(b)(3)
3.2 WASTE ANALYSIS PLAN	270.14(b)(3), 264.13, 261 App. I
3.3 WASTE SEGREGATION	264.13
3.4 RESTRICTED WASTES	268.7
4.0 WASTE MANAGEMENT PRACTICES AND UNITS	
4.1 TA-50 BATCH TREATMENT SYSTEM AND ASSOCIATED CONTAINER STORAGE UNITS	270.15, 264.171-173, 264.175, 264.191-192
4.2 TA-50 CHEMICAL WASTE INCINERATOR	270.19, 264.340-345
4.3 TA-54, AREA L WASTE TRANSFER, PACKAGING AND STORAGE UNITS	270.15, 264.171-173, 264.175
4.4 TA-54, AREA L TREATMENT TANKS	270.16, 264.191, 264.193-199
4.5 TA-50 STORAGE PAD	270.15, 264.171-177
4.6 TA-16 INDUSTRIAL INCINERATOR	270.19, 264.343, 264.345
4.7 TA-14 AND TA-16 OPEN BURNING UNITS	270.23, 264.601-602
4.8 TA-14, 15, 36, AND 39 OPEN DETONATION UNITS	270.23, 264.601-602
4.9 RELEASE PATHWAYS FOR OPEN DETONATION/ OPEN BURNING UNITS	270.23, 264.601
5.0 GROUNDWATER MONITORING	264.90(b)(4)
6.0 PROCEDURES TO PREVENT HAZARDS	
6.1 SECURITY	302.A.4.b(1), 206.B.4
6.2 WARNING SIGNS	264.14(c)
6.3 INSPECTION SCHEDULES AND REQUIREMENTS-	270.14(b)(5), 264.15, 264.33, 264.174, 264.194, 264.303, 264.347
6.4 PREPAREDNESS AND PREVENTION REQUIREMENTS	264.34-35
6.5 PREVENTIVE PROCEDURES, STRUCTURES AND EQUIPMENT	270.14(b)(8)

TABLE 1-1

FORMAT OUTLINE AND REGULATION REFERENCES
(CONTINUED)

REPORT SECTION	RCRA REGULATION REFERENCE[1]
6.6 PREVENTION OF ACCIDENTAL IGNITION OR REACTION OF IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE	270.14(b)(9), 270.15(d), 264.17, 264.176, 264.198, 264.312
7.0 HAZARDOUS WASTE FACILITY CONTINGENCY PLAN	
7.1 INTRODUCTION	
7.2 HAZARDOUS WASTE EMERGENCY RESPONSE RESOURCES	264.37, 264.52(c), 264.52(e)
7.3 NONSUDDEN RELEASES	264.51, 264.52(a)
7.4 SUDDEN RELEASES	270.14(b)(7), 264.56
7.5 SPECIFIC EMERGENCY RESPONSE PROCEDURES FOR HAZARDOUS WASTE UNITS	264.52(f)
7.6 EVACUATION	270.14(b)(7), 264.56
7.7 SALVAGE AND CLEANUP	
7.8 POST-EMERGENCY ASSESSMENT	
7.9 EMERGENCY RECORDS	270.14(b)(7), 264.56
7.10 EMERGENCY REPORTS	264.54
7.11 CONTINGENCY PLAN AMENDMENT	
8.0 PERSONNEL TRAINING	
8.1 OUTLINE OF TRAINING PROGRAM	264.16(d)(2)
8.2 TRAINING CONTENT, FREQUENCY, AND TECHNIQUES	270.14(b)(12), 264.16
8.3 EMERGENCY RESPONSE TRAINING	264.16(a)(3)
8.4 IMPLEMENTATION OF TRAINING PROGRAM	264.16(b), (c), & (e)
9.0 CLOSURE AND POST-CLOSURE PLAN	270.14(b)(13), 264.112
9.1 GENERAL CLOSURE/POST-CLOSURE INFORMATION	270.14, 270.19, 270.23, 264.351, 264.603
9.2 CLOSURE PLAN FOR OPEN DETONATION/OPEN BURNING UNITS AND THE INDUSTRIAL INCINERATOR	
9.3 CLOSURE PLAN FOR TA-50 STORAGE, BATCH TREATMENT, AND INCINERATION UNITS	270.14(b)(13), 270.21(e), 164. 112, 264.310(a) & (b), 264.117 & 118
9.4 CLOSURE AND POST-CLOSURE FOR TA-54, AREA L HAZARDOUS WASTE MANAGEMENT UNITS	270.14, 264.110-120, 264.178, 264.197, 264.351, 268.41
9.5 SAMPLING AND ANALYTICAL PROCEDURES	
10.0 OTHER FEDERAL LAWS	270.3, 270.14(b)(20)
11.0 CERTIFICATION	270.11

(1) From Code of Federal Regulations 40.

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: F N M 0 8 9 0 0 1 0 5

GENERAL INSTRUCTIONS

If a preprinted label has been applied in the designated space, review it carefully. If any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if the preprinted data is absent (blank) in the label area (but the label should appear), please provide it in the proper fill-in area(s) below. If the preprinted data is correct, you need not enter it. Items I, III, V, and VI (except VI-B) must be completed regardless. Complete item II if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

Department of Energy
Attn: Mr. Harold Valencia
Los Alamos Area Office
Los Alamos, NM 87544

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK "X" YES	NO
A. Is your facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility either existing or proposed include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		NO	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		YES	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4) Geothermal		
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X

III. NAME OF FACILITY

1 LOS ALAMOS NATIONAL LABORATORY

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 HAROLD VALENCIA	505 667 5105

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 LOS ALAMOS AREA OFFICE

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 LOS ALAMOS	NM	87544

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 LOS ALAMOS

B. COUNTY NAME

LOS ALAMOS

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 LOS ALAMOS	NM	87544	

CONTINUE ON

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST: NATIONAL SECURITY

B. SECOND:

C. THIRD:

D. FOURTH:

VIII. OPERATOR INFORMATION

A. NAME: LOS ALAMOS NATIONAL LABORATORY

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.): F (specify)

D. PHONE (area code & no.): A 505 667 5021

E. STREET OR P.O. BOX: PO Box 1663 MS K490

F. CITY OR TOWN: LOS ALAMOS

G. STATE: NM

H. ZIP CODE: 87545

IX. INDIAN LAND (Is the facility located on Indian lands?): ☐ YES ☐ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): N NM0028355

B. PSD (Air Emissions from Proposed Sources): P

C. UIC (Underground Injection of Fluids): U

D. OTHER (specify): NM0028576 (specify) NPDES

E. RCRA (Hazardous Wastes): R

F. OTHER (specify): (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

The mission of Los Alamos National Laboratory (LANL) is the application c science and technology to solve national problems including weapons development and energy supply and conservation programs, while basic science research complements and strengthens its fundamental technical capabilities. The LANL is owned by the US Department of Energy and operated under contract by the University of California.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Harold Valencia Los Alamos Area Manager		

COMMENTS FOR OFFICIAL USE ONLY

Please print or type in the unshaded areas only (Follow instructions carefully)

Form Approved OMB No. 158-R0004

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER: F N M 0 8 9 0 0 1 0 5 1 5

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr. mo. & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (*mark one box only*) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in item I above.

A. FIRST APPLICATION (*place an "X" below and provide the appropriate date*)

☐ 1. EXISTING FACILITY (*See instructions for definition of "existing" facility. Complete item below.*)

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (*see the boxes to the left*)

☐ 2. NEW FACILITY (*Complete item below*)

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION (*place an "X" below and complete item I above*)

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, describe the process (*including its design capacity*) in the space provided on the form (*item III-C*).

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (*barrel, drum, etc.*)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET (*the volume that would cover one acre to a depth of one foot*) OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR OR GALLONS PER HOUR OR LITERS PER HOUR
OTHER (*Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided: Item III-C.*)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	
LITERS	L	TONS PER HOUR	D	HECTARE-METER	
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III (*shown in line numbers X-1 and X-2 below*): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5	T02	500 (b)	L	
X-2	T03	20	E		6	T03	0.56 (a)	D	
1	S01	284,070 (a) +	G		7	T04	N/A (a)		
2	S02	6,600 (b)	G		8	T04	2,534 (a)	L	
3	S04	25,500 (b) +	G		9	D80	0.71 (b) +	A	
4	T01	7,680 (a)	U		10				

CONTINUE ON

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

(a) Active units - See Part B Permit application for descriptions
(b) Inactive units to be closed under interim status - See individual closure plans for descriptions

\+ Revised as of November, 1988

See Page 2a of 5 for explanations on process codes

IV. DESCRIPTION OF HAZARDOUS WASTES

A. **EPA HAZARDOUS WASTE NUMBER** – Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of these hazardous wastes.

B. **ESTIMATED ANNUAL QUANTITY** – For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** – For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**
   For listed hazardous wastes: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. **PROCESS DESCRIPTION:** If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: **HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER** – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				included with above

EXPLANATION OF PROCESS CODE LISTINGS AND/OR DESIGN CAPACITY

Line 1	S01	TA-54, Area L TA-50, Container Storage Units
Line 2	S02	TA-54, Area L Waste Oil Storage Tanks
Line 3	S04	TA-54, Area L Surface Impoundments B and D TA-35, TSL-85 and TSL-125 Surface Impoundments
Line 4	T01	TA-54, Area L TA-50, Batch Waste Treatment Unit
Line 5	T02	TA-16, Surface Impoundment
Line 6	T03	TA-16, Incinerator TA-50, Incinerator
Line 7	T04	The following open burning units are located at TA-16:

- Two burn pads (388, 399) for burning HE-contaminated solids. Each unit has a capacity of 1,000 pounds of solids per burn.
- Two pressure vessels (401, 406) for burning HE-contaminated sludges. Each unit has a capacity of 750 pounds of sludge per burn.
- One burn pad for HE-contaminated oil/solvent mixtures. This unit has a capacity of 100 gallons per burn.
- One flash pad for HE-contaminated equipment. This unit does not have a design capacity.
- One burn cage for HE-contaminated paper. This unit has a capacity of 3.0 cubic feet per burn.

The following waste detonation units are designed to open detonate explosives:

Unit	Design Capacity (pounds of HE per detonation)
TA-14-35	10
TA-15, Phermex	100
TA-36, Kappa 8	200

		TA-40, SDS	Inactive unit to be closed under interim status
		TA-39-6	100
		TA-39-57	250
Line 8	T04	Waste sludges from TA-54, Area L treatment tanks and the TA-50 Batch Waste Treatment unit are mixed with portland cement and/or Envirostone and placed in 55-gallon drums. The cement serves to bind any fluid remaining in the sludge. This process is performed at TA-54, Area L.	
Line 9	D80	TA-54, Area L TA-54, Area G TA-54, Area H TA-16, Area P	

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. [illegible]

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
NM0890010515	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	D001	100,000	P	S01	T03			
2	D002	300,000	P	S01	T01			
3	D003	7,500	P	S01	T01	T04		Reacted at TA-16 (See III C.)
4	D003	5,000	P	S01		T01		Lithium Hydride only +
5	D004	2,000	P	S01				
6	D005	60,000	P	S01		T01		Sand from cleanout of explos burn pads.
7	D006	1,000	P	S01	T01			
8	D007	1,500	P	S01	T01			
9	D008	50,000	P	S01				May contain other metals (D004-DO
10	D009	5,000	P	S01	T01			
11	D010	500*	P	S01				)
12	D011	1,250	P	S01	T01			
13	D012	500*	P	S01	T03			
14	D016	1,000	P	S01	T03			
15		END OF D DESIGNATOR						
16								
17								
18								
19								
20								
21								
22								
23								
24								)
25								
26								

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
NMD089001015	W1 DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	F001	*80,000	P	S01 S02 T03 T04	Solidified if treatment standards are met
2	F002	5,000	P	S01 S02 T03 T04	
3	F003	5,000	P	S01 S02 T03 T04	
4	F004	500*	P	S01 T03	
5	F005	5,000	P	S01 S02 T03 T04	
6	F006	500*	P	S01 T01	
7	F007	12,500	P	S01 T01	
8	F008	1,000	P	S01 T01	
9	F009	6,000	P	S01 T01	
10	F027	700	P	S01 T03	
11	F028	700	P	S01 T03	
12		END OF F DESIGNATOR			
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Continued from page 2.
NOTE: Photocopy this page before ... starting if you have more than 26 wastes to list.

Form Approved OMB No. 158-80-XXX

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W N M 0 8 9 0 0 1 0 5 1 5	W DUP 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1).)
1	K044	50,000	P	S01 T04	
2	K047	500*	P	S01 T04	
3	K045	2,000	P	S01 T04	
4		END. OF DESIGNATOR			
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NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. [illegible]

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
W N M 0 8 9 0 0 1 1 0 5 1 5	W DUP	DUP

D. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	P 0 0 1	500*	P	S 0 1 T 0 3	
2	P 0 0 2	500*	P	S 0 1 T 0 3	
3	P 0 0 3	500*	P	S 0 1 T 0 3	
4	P 0 0 4	500*	P	S 0 1 T 0 3	
5	P 0 0 5	500*	P	S 0 1 T 0 3	
6	P 0 0 6	500*	P	S 0 1 T 0 4	
7	P 0 0 7	500*	P	S 0 1 T 0 3	
8	P 0 0 8	500*	P	S 0 1 T 0 3	
9	P 0 0 9	500*	P	S 0 1 T 0 4	
10	P 0 1 0	500*	P	S 0 1	
11	P 0 1 1	500*	P	S 0 1	
12	P 0 1 2	500*	P	S 0 1	
13	P 0 1 3	500*	P	S 0 1 T 0 1	
14	P 0 1 4	500*	P	S 0 1 T 0 3	
15	P 0 1 5	500*	P	S 0 1	
16	P 0 1 6	500*	P	S 0 1 T 0 3	
17	P 0 1 7	500*	P	S 0 1 T 0 3	
18	P 0 1 8	500*	P	S 0 1 T 0 3	
19	P 0 2 0	500*	P	S 0 1 T 0 3	
20	P 0 2 1	500*	P	S 0 1 T 0 1	
21	P 0 2 2	500*	P	S 0 1 T 0 4	
22	P 0 2 3	500*	P	S 0 1 T 0 3	
23	P 0 2 4	500*	P	S 0 1 T 0 3	
24	P 0 2 6	500*	P	S 0 1 T 0 3	
25	P 0 2 7	500*	P	S 0 1 T 0 3	
26	P 0 2 8	500*	P	S 0 1 T 0 3	

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Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S30004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
N M D 8 9 0 0 1 1 0 5 1 1 5	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

No.	A. EPA Hazard. Waste No. (enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Processes 1. Process Codes (enter)	2. Process Description (if a code is not entered in D.1)
1	R029	500*	P	S01 T01	
2	R030	500*	P	S01 T01	
3	R031	500*	P	S01 T04 T03	
4	R033	500*	P	S01 T04 T03	
5	R034	500*	P	S01 T03	
6	R036	500*	P	S01 T03	
7	R037	500*	P	S01 T03	
8	R038	500*	P	S01 T03	
9	R039	500*	P	S01 T03	
10	R040	500*	P	S01 T03	
11	R041	500*	P	S01 T03	
12	R042	500*	P	S01 T03	
13	R043	500*	P	S01	
14	R044	500*	P	S01 T03	
15	R045	500*	P	S01 T03	
16	R046	500*	P	S01 T03	
17	R047	500*	P	S01 T03	
18	R048	500*	P	S01 T03	
19	R049	500*	P	S01 T03	
20	R050	500*	P	S01 T03	
21	R051	500*	P	S01 T03	
22	R054	500*	P	S01 T01 T04	
23	R056	500*	P	S01	
24	R057	500*	P	S01 T03	
25	R058	500*	P	S01	
26	R059	500*	P	S01 T03	

CONTINUE ON

Continued from page 2.

NOTE: Processes on page 2 before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80024

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
NM0890010515	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if not in table)
1	P060	500*	P	S01 T03	
2	P062	500*	P	S01 T03	
3	P063	500*	P	S01 T03 T04	
4	P064	500*	P	S01 T03 T04	
5	P065	500*	P	S01 T04	
6	P066	500*	P	S01 T03	
7	P067	500*	P	S01 T03	
8	P068	500*	P	S01 T03	
9	P069	500*	P	S01 T03 T04	
10	P070	500*	P	S01 T03	
11	P071	500*	P	S01 T03 T04	
12	P072	500*	P	S01 T03	
13	P073	500*	P	S01 T01 T04	
14	P074	500*	P	S01 T01	
15	P075	500*	P	S01 T03	
	P076	500*	P	S01 T01 T04	
17	P077	500*	P	S01 T03 T04	
18	P078	500*	P	S01 T01	
	P081	500*	P	S01 T04	
	P082	500*	P	S01 T03	
21	P084	500*	P	S01 T03	
22	P085	500*	P	S01 T03	
23	P087	500*	P	S01	
24	P088	500*	P	S01 T03	
25	P089	500*	P	S01 T03	
26	P092	500*	P	S01	

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Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 58-R0004

EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ONLY	
W N M 0 8 9 0 0 1 0 5 1 5		W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

Line No.	A. EPA Hazardous Waste No. (enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	D. Processes 1. Process Codes (enter)	2. Process Description (if a code is not entered in D(1))
1	P 1 2 1	500*	P	S 0 1 T 0 1	
2	P 1 2 2	500*	P	S 0 1 T 0 4	
3	P 1 2 3	500*	P	S 0 1 T 0 3	
4		END OF P DESIGNATOR			
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EPA Form 3510-3 (6-80)

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Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
W N M 0 8 9 0 0 1 1 0 5 1 1 5	W DUP	DUP

D. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	U 0 0 1	500*	P	S 0 1 T 0 3	
2	U 0 0 2	1000	P	S 0 1 T 0 3	
3	U 0 0 3	500*	P	S 0 1 T 0 3	
4	U 0 0 4	500*	P	S 0 1 T 0 3	
5	U 0 0 5	500*	P	S 0 1	
6	U 0 0 6	500*	P	S 0 1 T 0 4	
7	U 0 0 7	500*	P	S 0 1 T 0 3	
8	U 0 0 8	500*	P	S 0 1 T 0 3 T 0 4	
9	U 0 0 9	500*	P	S 0 1 T 0 3	
10	U 0 1 0	500*	P	S 0 1 T 0 3	
11	U 0 1 1	500*	P	S 0 1 T 0 3	
12	U 0 1 2	500*	P	S 0 1 T 0 3	
13	U 0 1 4	500*	P	S 0 1 T 0 3	
14	U 0 1 5	500*	P	S 0 1 T 0 3	
15	U 0 1 6	500*	P	S 0 1 T 0 3	
16	U 0 1 7	500*	P	S 0 1 T 0 3	
17	U 0 1 8	500*	P	S 0 1 T 0 3	
18	U 0 1 9	500*	P	S 0 1 T 0 3	
19	U 0 2 0	500*	P	S 0 1 T 0 3 T 0 4	
20	U 0 2 1	500*	P	S 0 1 T 0 3	
21	U 0 2 2	500*	P	S 0 1 T 0 3	
22	U 0 2 3	500*	P	S 0 1 T 0 3 T 0 4	
23	U 0 2 4	500*	P	S 0 1 T 0 3	
24	U 0 2 5	500*	P	S 0 1 T 0 3	
25	U 0 2 6	500*	P	S 0 1 T 0 3	
26	U 0 2 7	500*	P	S 0 1 T 0 3	

CONTINUE ON

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. [illegible]

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
N M 0 8 9 0 0 1 0 5 1 5	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if not covered in item 1 above)
1	U 0 2 8	500*	P	S 0 1 T 0 3	
	U 0 2 9	500*	P	S 0 1 T 0 3	
3	U 0 3 0	500*	P	S 0 1 T 0 3	
4	U 0 3 1	500*	P	S 0 1 T 0 3	
	U 0 3 2	500*	P	S 0 1 T 0 1	
	U 0 3 3	500*	P	S 0 1 T 0 4	
7	U 0 3 4	500*	P	S 0 1 T 0 3	
8	U 0 3 5	500*	P	S 0 1 T 0 3	
9	U 0 3 6	500*	P	S 0 1 T 0 3	
10	U 0 3 7	500*	P	S 0 1 T 0 3	
11	U 0 3 8	500*	P	S 0 1 T 0 3	
12	U 0 3 9	500*	P	S 0 1 T 0 3	
13	U 0 4 1	500*	P	S 0 1 T 0 3	
14	U 0 4 2	500*	P	S 0 1 T 0 3 T 0 4	
15	U 0 4 3	500*	P	S 0 1 T 0 3 T 0 4	
16	U 0 4 4	1000	P	S 0 1 T 0 3	
17	U 0 4 5	500*	P	S 0 1 T 0 3 T 0 4	
	U 0 4 6	500*	P	S 0 1 T 0 3	
	U 0 4 7	500*	P	S 0 1 T 0 3	
20	U 0 4 8	500*	P	S 0 1 T 0 3	
21	U 0 4 9	500*	P	S 0 1 T 0 3	
22	U 0 5 0	500*	P	S 0 1 T 0 3	
23	U 0 5 1	500*	P	S 0 1 T 0 3	
24	U 0 5 2	500*	P	S 0 1 T 0 3	
25	U 0 5 3	500*	P	S 0 1 T 0 3	
26	U 0 5 5	500*	P	S 0 1 T 0 3	

Continued from page 2.

NOTE: If necessary use page 3 before completing if you have more than 26 wastes to list.

Form Approved OMB No. [illegible]

FOR OFFICIAL USE ONLY

EPA I.D. NUMBER (enter from page 1)			
W	N M 0 8 9 0 0 1 1 0 5 1 1 5	W	DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	U056	500*	R	S01 T03	
2	U057	500*	R	S01 T03	
3	U058	500*	R	S01 T03	
4	U059	500*	R	S01 T03	
5	U060	500*	R	S01 T03	
6	U061	500*	R	S01 T03	
7	U062	500*	R	S01 T03	
8	U063	500*	R	S01 T03	
9	U064	500*	R	S01 T03	
10	U066	500*	R	S01 T03	
11	U067	500*	R	S01 T03	
12	U068	500*	R	S01 T03	
13	U069	500*	R	S01 T03	
14	U070	500*	R	S01 T03	
15	U071	500*	R	S01 T03	
16	U072	500*	R	S01 T03	
17	U073	500*	R	S01 T03	
18	U074	500*	R	S01 T03	
19	U075	500*	R	S01	
20	U076	500*	R	S01 T03	
21	U077	500*	R	S01 T03	
22	U078	500*	R	S01 T03	
23	U079	500*	R	S01 T03	
24	U080	500*	R	S01 T03	
25	U081	500*	R	S01 T03	
26	U082	500*	R	S01 T03	

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Continued from page 2.

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Form Approved OMB No. 158-S80024

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
N M 0 8 9 0 0 1 0 5 1 5	W1 DUP	T2 DUP

D. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	U 0 8 3	500*	P	S 0 1 T 0 3	
2	U 0 8 4	500*	P	S 0 1 T 0 3	
3	U 0 8 5	500*	P	S 0 1 T 0 3	
4	U 0 8 6	500*	P	S 0 1 T 0 3	
5	U 0 8 7	500*	P	S 0 1 T 0 3	
6	U 0 8 8	500*	P	S 0 1 T 0 3	
7	U 0 8 9	500*	P	S 0 1 T 0 3	
8	U 0 9 0	500*	P	S 0 1 T 0 3	
9	U 0 9 1	500*	P	S 0 1 T 0 3	
10	U 0 9 2	500*	P	S 0 1 T 0 4	
11	U 0 9 3	500*	P	S 0 1 T 0 3	
12	U 0 9 4	500*	P	S 0 1 T 0 3	
13	U 0 9 5	500*	P	S 0 1 T 0 3	
14	U 0 9 6	500*	P	S 0 1 T 0 3	
15	U 0 9 7	500*	P	S 0 1 T 0 3	
16	U 0 9 8	500*	P	S 0 1 T 0 3	
17	U 0 9 9	500*	P	S 0 1 T 0 3	
18	U 1 0 1	500*	P	S 0 1 T 0 3	
19	U 1 0 2	500*	P	S 0 1 T 0 3	
20	U 1 0 3	500*	P	S 0 1 T 0 3	
21	U 1 0 5	500*	P	S 0 1 T 0 3	
22	U 1 0 6	500*	P	S 0 1 T 0 3	
23	U 1 0 7	500*	P	S 0 1 T 0 3	
24	U 1 0 8	500*	P	S 0 1 T 0 3	
25	U 1 0 9	500*	P	S 0 1 T 0 3	
26	U 1 1 0	500*	P	S 0 1 T 0 3	

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EPA I.D. NUMBER (copy from page 1)	FOR OFFICIAL USE ONLY	
W N M 0 8 9 0 0 1 0 5 1 5	W DUP	2 DUP

V DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D.1.)
1	U 1 1 1	500*	P	S 0 1 T 0 3	
2	U 1 1 2	500*	P	S 0 1 T 0 3 T 0 4	
3	U 1 1 3	500*	P	S 0 1 T 0 3 T 0 4	
4	U 1 1 4	500*	P	S 0 1 T 0 3	
5	U 1 1 5	500*	P	S 0 1 T 0 3 T 0 4	
6	U 1 1 6	500*	P	S 0 1 T 0 3	
7	U 1 1 7	500*	P	S 0 1 T 0 3 T 0 4	
8	U 1 1 8	500*	P	S 0 1 T 0 3 T 0 4	
9	U 1 1 9	500*	P	S 0 1 T 0 3	
10	U 1 2 0	500*	P	S 0 1 T 0 3	
11	U 1 2 1	500*	P	S 0 1	
12	U 1 2 2	500*	P	S 0 1 T 0 3	
13	U 1 2 3	500*	P	S 0 1	
14	U 1 2 4	500*	P	S 0 1 T 0 3	
15	U 1 2 5	500*	P	S 0 1 T 0 3	
16	U 1 2 6	500*	P	S 0 1 T 0 3	
17	U 1 2 7	500*	P	S 0 1 T 0 3	
18	U 1 2 8	500*	P	S 0 1 T 0 3	
19	U 1 2 9	500*	P	S 0 1 T 0 3	
20	U 1 3 0	500*	P	S 0 1 T 0 3	
21	U 1 3 1	500*	P	S 0 1 T 0 3	
22	U 1 3 2	500*	P	S 0 1 T 0 3	
23	U 1 3 3	500*	P	S 0 1 T 0 3 T 0 4	
24	U 1 3 4	10,000	P	S 0 1 T 0 1	
25	U 1 3 5	500*	P	S 0 1 T 0 4 T 0 3	
26	U 1 3 6	500*	P	S 0 1	

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Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 waste lines.

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EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
N M 0 8 9 0 0 1 0 5 1 5	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	U137	500*	P	S01 T03	
2	U138	500*	P	S01 T03	
3	U139	500*	P	S01 T03	
4	U140	500*	P	S01 T03	
5	U141	500*	P	S01 T03	
6	U142	500*	P	S01 T03	
7	U143	500*	P	S01 T03	
8	U144	500*	P	S01	
9	U145	500*	P	S01	
10	U146	500*	P	S01	
11	U147	500*	P	S01 T03	
12	U148	500*	P	S01 T03	
13	U149	500*	P	S01 T03	
14	U150	500*	P	S01 T03	
15	U151	500*	P	S01	
16	U152	500*	P	S01 T03	
17	U153	500*	P	S01 T03	
18	U154	500*	P	S01 T03	
19	U155	500*	P	S01 T03	
20	U156	500*	P	S01 T03	
21	U157	1000	P	S01 T03	
22	U158	500*	P	S01 T03	
23	U159	1000	P	S01 T03	
24	U160	500*	P	S01 T03 T04	
25	U161	500*	P	S01 T03	
26	U162	500*	P	S01 T03	

Continued from page 2.

NOTE: If necessary, fill page before continuing. If you have more than 26 wastes to list, ...

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EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
W N M 0 8 9 0 0 1 0 5 1 5	W DUP	DUP

V. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	U163	500*	P	S01 T03	
2	U164	500*	P	S01 T03	
3	U165	500*	P	S01 T03	
4	U166	500*	P	S01 T03	
5	U167	500*	P	S01 T03	
6	U168	500*	P	S01 T03	
7	U169	500*	P	S01 T03	
8	U170	500*	P	S01 T03	
9	U171	500*	P	S01 T03	
10	U172	500*	P	S01 T03	
11	U173	500*	P	S01 T03	
12	U174	500*	P	S01 T03	
13	U176	500*	P	S01 T03	
14	U177	500*	P	S01 T03	
15	U178	500*	P	S01 T03	
16	U179	500*	P	S01 T03	
17	U180	500*	P	S01 T03	
18	U181	500*	P	S01 T93	
19	U182	500*	P	S01 T03	
20	U183	500*	P	S01 T03	
21	U184	500*	P	S01 T03	
22	U185	500*	P	S01 T03	
23	U186	500*	P	S01 T03	
24	U187	500*	P	S01 T03	
25	U188	500*	P	S01 T03	
26	U189	500*	P	S01 T04 T03	

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EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ONLY	
W	N M 0 8 9 0 0 1 0 5 1 1 5	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	U190	500*	P	S01 T03	
2	U191	500*	P	S01 T03	
3	U192	500*	P	S01 T03	
4	U193	500*	P	S01 T03	
5	U194	500*	P	S01 T03	
6	U196	500*	P	S01 T03	
7	U197	500*	P	S01 T03	
8	U200	500*	P	S01 T03	
9	U201	500*	P	S01 T03	
10	U202	500*	P	S01 T03	
11	U203	500*	P	S01 T03	
12	U204	500*	P	S01	
13	U205	500*	P	S01 T04	
14	U206	500*	P	S01 T03	
15	U207	500*	P	S01 T03	
16	U208	500*	P	S01 T03	
17	U209	500*	P	S01 T03	
18	U210	500*	P	S01 T03	
19	U211	500*	P	S01 T03	
20	U212	500*	P	S01 T03	
21	U213	500*	P	S01 T03 T04	
22	U214	500*	P	S01 T03	
23	U215	500*	P	S01	
24	U216	500*	P	S01	
25	U217	500*	P	S01 T04	
26	U218	500*	P	S01 T03	

CONTINUE ON

EPA Form 3510-3 (6-80)

Continued from page 2.

NOTE: If necessary, use page before con... if you have more than 26 wastes to list.

Form Approved OMB No. 158-S0000

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
W N M 0 8 9 0 0 1 0 5 1 5	W DUP	DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	2. PROCESS DESCRIPTION (if a code is not entered in D.1)
1	U 2 1 9	500*	P	S 0 1 T 0 3	
2	U 2 2 0	1000	P	S 0 1 T 0 3	
3	U 2 2 1	500*	P	S 0 1 T 0 3	
4	U 2 2 2	500*	P	S 0 1 T 0 3	
5	U 2 2 3	1000	P	S 0 1 T 0 3	
6	U 2 2 5	500*	P	S 0 1	
7	U 2 2 6	1500	P	S 0 1 T 0 3	
8	U 2 2 7	500*	P	S 0 1 T 0 3	
9	U 2 2 8	2000	P	S 0 1 T 0 3	
10	U 2 3 0	500*	P	S 0 1 T 0 3	
11	U 2 3 1	500*	P	S 0 1 T 0 3	
12	U 2 3 2	500*	P	S 0 1 T 0 3	
13	U 2 3 3	500*	P	S 0 1 T 0 3	
14	U 2 3 4	500*	P	S 0 1 T 0 4	
15	U 2 3 5	500*	P	S 0 1 T 0 3	
16	U 2 3 6	500*	P	S 0 1 T 0 3	
17	U 2 3 7	500*	P	S 0 1 T 0 3	
18	U 2 3 8	500*	P	S 0 1 T 0 3	
19	U 2 3 9	1000	P	S 0 1 T 0 3	
20	U 2 4 0	500*	P	S 0 1 T 0 3	
21	U 2 4 2	500*	P	S 0 1 T 0 3	
22	U 2 4 3	500*	P	S 0 1 T 0 3	
23	U 2 4 4	500*	P	S 0 1 T 0 3	
24	U 2 4 6	500*	P	S 0 1	
25	U 2 4 7	500*	P	S 0 1 T 0 3	
26		END OF U DESIGNATOR			

CONTINUE C

EPA Form 3510-3 (6-80)

Continued from the front

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

2. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM C(1) ON PAGE 3.

*All entries with an asterisk in column IV B on Page 3 are generated in small volumes only. If a new process or activity will cause more than the stated volume to be stored, treated, or disposed, a revised Part A will be submitted.

EPA I.D. NO. (enter from page 1)

NM 0 8 9 0 0 1 0 5 1 5 16

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)
35 49 051	106 14 015

VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

☑ B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & number)
United States Department of Energy	505-667-510

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
Los Alamos Area Office	Los Alamos	NM	87545

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
Harold Valencia Los Alamos Area Office		

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
Siegfried S. Hecker Director		

LIST OF FIGURES

1. Los Alamos Technical Areas.

2. Contour Map Showing the Location of the TA-54, Area L Treatment Tanks, Surface Impoundments, Waste packaging and Storage Pad, Shafts, and TA-54, Area G.

3. TA-54, Area L Waste Management Units.

4. TA-54, Area L Chemical Storage Facility Location Map.

5. TA-54, Area L Chemical Storage Facility Structural Drawing.

6. TA-54, Area L Waste Transfer, Packaging, and Storage Building.

7. Contour Map Showing the Location of TA-54, Area H, Shaft No. 9.

8. Contour Map Showing the Locations of the Batch Treatment System and Container Storage Area and the Waste Incinerator.

9. Locations of TA-50 Chemical Waste Incinerator and Container Storage Units.

10. Structural Diagram of the TA-50 Batch Waste Treatment Facility.

11. Treatment Development Facility Showing Locations of Chemical Waste Incinerator and Support Facilities.

12. Incinerator Process Diagram.

13. Chemical Storage TA-50.

14. Safety Storage Containers Brochure.

15. Contour Map Showing Location of TA-16 Open Burning Unit and TA-16-1150 Incinerator.

16. TA-16 Industrial Incinerator.

17. TA-16 Industrial Incinerator Structural Drawing.

18. TA-16 Pressure Vessel Structural Drawing.

19. TA-54, Area L Treatment Tanks Plan.

20. Contour Map Showing the Location of the TA-14 Firing Point and Burn Cage and the TA-40 Scrap Detonation Site.

21. Contour Map Showing the Location of the TA-15 abd TA-36 Firing Points.

22. Contour Map Showing the Location of the TA-39 Firing Points.

23. Contour Map Showing the Locations of the TA-35-125 and TA-35-85 Surface Impoundments.

24. TA-54, Area L Conceptual Drawing of Container Storage Pad.

Continuation of Page 5 of 5

LIST OF PHOTOGRAPHS

TA-14-23 and 35 - Building with firing point 35.

TA-15, Phermex - Firing point.

TA-16-387 - Burn Pad for Flashing Equipment.

TA-16-406 - Pressure Vessel for dried HE Sludge and Associated Storage Area.

TA-16-394 - Burn Pans for HE Contaminated Oil.

TA-16-401 - Pressure Vessel for Dried HE Sludge and Associated Storage Area.

TA-16-399 - Burn Pad.

TA-16-388 - Burn Pad.

TA-36- 8 - Kappa 8 - Firing Point.

TA-39-57 - Firing Point.

TA-39-6 - Firing Point.

TA-50-1 - Building Housing the Batch Waste Treatment Unit.

TA-50-1 - Batch Waste Treatment.

TA-50-1 - Batch Waste Treatment.

TA-50-114 - Hazardous Waste Storage Module.

TA-50-37 - Chemical Waste Incinerator Facility (east side).

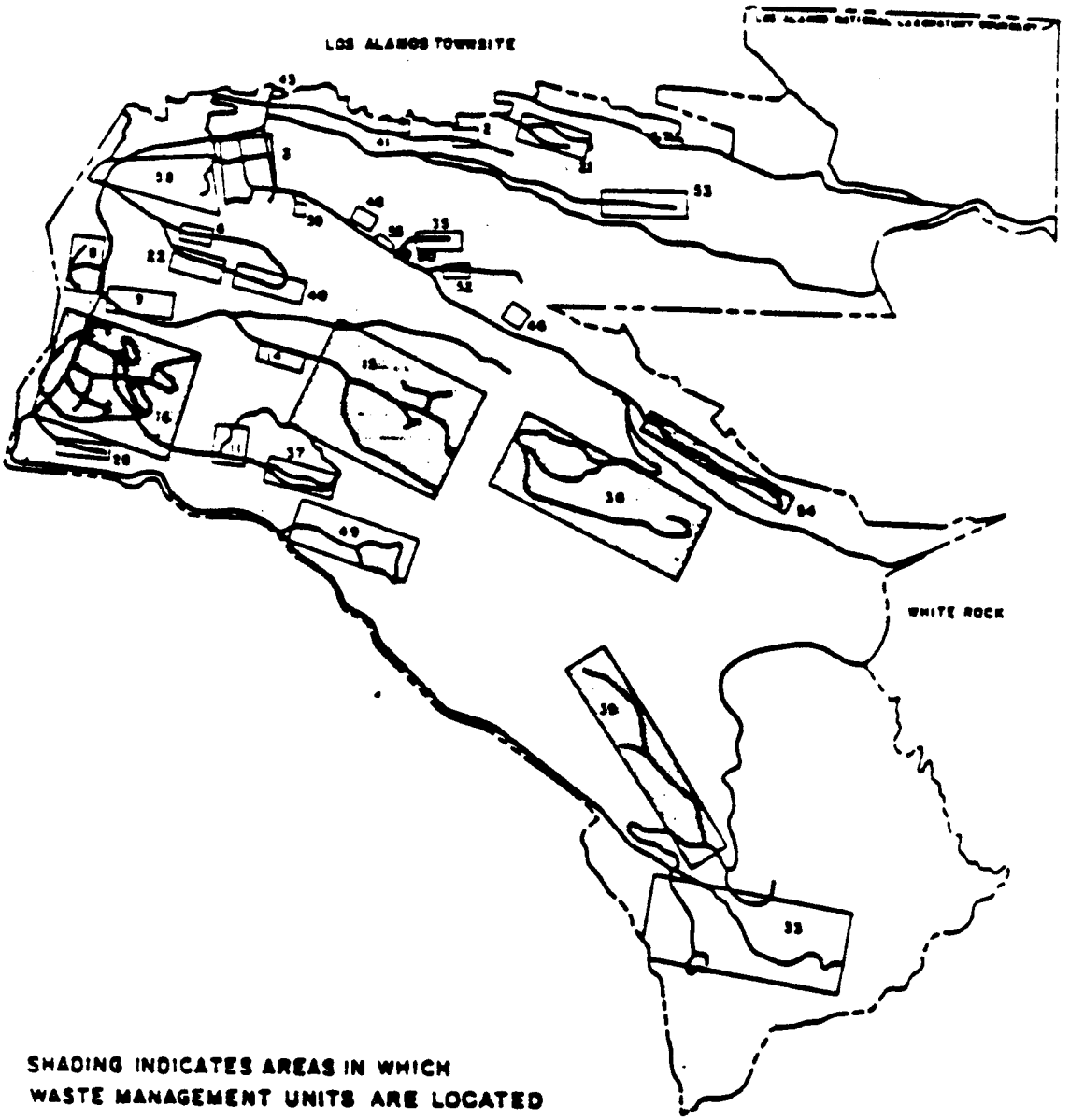
TA-54, Area L - Front Gate.

TA-54, Area L - Gas Cylinder Storage.

TA-54, Area L - Treatment Tanks.

TA-54, Area L - Nonliquid Hazardous Waste Storage Area.

TA-54, Area L - Hazardous Waste Storage Unit.



SHADING INDICATES AREAS IN WHICH WASTE MANAGEMENT UNITS ARE LOCATED

4000 0 4000
SCALE

FIGURE 1

LOS ALAMOS
TECHNICAL AREAS

PREPARED FOR

LOS ALAMOS
NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO

INTERNATIONAL TECHNOLOGY CORPORATION

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Do Not Scale This Drawing

DR. KCI 10/11/88 CHECKED BY APPROVED BY DRAWING NUMBER 3012

TRANSMISSION RESULT REPORT (DEC 14 '93 01:04PM)

HSWS WQT

(AUTO)

THE FOLLOWING FILE(S) ERASED

FILE	FILE TYPE	OPTION	TEL NO.	PAGE	RESULT
062	MEMORY TX	PERSONAL CODE ****	913032362395	01/01	OK

ERRORS

1) HANG UP OR LINE FAIL 2) BUSY 3) NO ANSWER 4) NO FACSIMILE CONNECTION

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL PROTECTION (EM-8)

HAZARDOUS AND SOLID WASTE SECTION

FAX TRANSMITTAL SHEET

FAX #: (505) 665-5224 VERIFICATION #: (505) 665-0792

DATE: 12/14/93 ID # ____ LOG NO: EM-8:93-FAX-

FROM: Tony Grieggs PHONE #: (505) 665-0451

TO: Craig Kubie FAX #: (303) 236-2395 VERIFY PHONE # (303) 236-51

GRP/ORG: NETC

TRANSMISSION RESULT REPORT (DEC 14 '93 01:23PM)

HSWS WQT

(AUTO)

THE FOLLOWING FILE(S) ERASED

FILE	FILE TYPE	OPTION	TEL. NO.	PAGE	RESULT
060	MEMORY TX	PERSONAL CODE ****	913032362395	17/17	OK

ERRORS

1) HANG UP OR LINE FAIL 2) BUSY 3) NO ANSWER 4) NO FACSIMILE CONNECTION

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL PROTECTION (EM-8)

HAZARDOUS AND SOLID WASTE SECTION

FAX TRANSMITTAL SHEET

FAX #: (505) 665-5224 VERIFICATION #: (505) 665-0792

DATE: 12/14/93 ID # ____ LOG NO: EM-8:93-FAX-

FROM: Tony Grieggs PHONE #: (505) 665-0451

TO: Craig Kubie FAX #: (303) 236-2395 VERIFY PHONE # (303) 236-51

GRP/ORG: NEIC

VERIFY

TRANSMISSION RESULT REPORT (DEC 14 '93 01:03PM)

HSWS WQT

(AUTO)

THE FOLLOWING FILE(S) ERASED

FILE	FILE TYPE	OPTION	TEL NO.	PAGE	RESULT
059	MEMORY TX	PERSONAL CODE ****	913032362395	22/22	OK

ERRORS

1) HANG UP OR LINE FAIL 2) BUSY 3) NO ANSWER 4) NO FACSIMILE CONNECTION

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL PROTECTION (EM-8)

HAZARDOUS AND SOLID WASTE SECTION

FAX TRANSMITTAL SHEET

FAX #: (505) 665-5224 VERIFICATION #: (505) 665-0792

DATE: 12/14/93 ID # ____ LOG NO: EM-8:93-FAX-

FROM: Tony Griegos PHONE #: (505) 665-0451

TO: Craig Kubie FAX #: (303) 236-2395 VERIFY PHONE # (303) 236-5124

GRP/ORG: NEIC

ENCLOSURE
2

Department of Energy
Albuquerque Operations
Los Alamos Area Office
Los Alamos, New Mexico 87544

NOV '88

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Allyn M. Davis
Director
Hazardous Waste Division, 6H
U. S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

Dear Mr. Davis:

Enclosed is a copy of the revision to the Department of Energy's (DOE) Los Alamos National Laboratory (the Laboratory) Part B Resource Conservation and Recovery Act (RCRA) permit application to include the Laboratory's open burning/open detonation units. The requirement for this revision is derived from new regulations promulgated at 40 Code of Regulations (CFR) Part 264, Subpart X, on December 10, 1987. These regulations set forth requirements for the operation of miscellaneous hazardous waste management units including units used for open burning or open detonation of explosive and reactive wastes. As you are aware, the State of New Mexico's Environmental Improvement Division (NMEID) has yet to adopt these regulations under its Hazardous Waste program, and the U.S. Environmental Protection Agency (EPA) has invoked its authority under 40 CFR 264.1(f)(2) to implement the requirements in all states at the same time, regardless of their authorization status.

Section 3005(c) of RCRA requires that facilities operating miscellaneous units under interim status submit Part B RCRA permit applications for these units by November 8, 1988. The Laboratory currently operates 12 open burning/open detonation units in several technical areas at the facility. These units have interim status authority and are currently managed as 40 CFR Part 265, Subpart P thermal treatment units. DOE has included these units in this Part B revision.

Although EPA has not finalized guidance on the preparation of Part B applications for miscellaneous units, the U.S. Department of the Army has prepared a draft permit writer's guidance manual for Department of Defense open burning/open detonation units. This guidance manual, in addition to draft written comments on the manual prepared in July 1988 by EPA's Office of Solid Waste, was used in part in revising the Laboratory's Part B application to include these Subpart X units.

The major revisions contained in this submittal are responsive to the Subpart X requirements; however, additional minor revisions were made, where necessary, to improve the quality of the permit application as a whole. Please note the following specific changes:

1. Part A of the permit application has been reprinted in total and no longer depends upon previous submittals. In addition, this revision addresses concerns delineated by NMEID in a September 16, 1988 transmittal to DOE regarding the Laboratory's Part A.

2. The waste analysis plan, Section 3.0, has been revised to include the "California List" and the "First Third" land disposal restrictions and to clarify procedures established to comply with 40 CFR 268. This revision serves as a formal response to the Warning Letter issued to DOE by EPA on October 11, 1988 regarding land disposal restrictions.

3. Housekeeping changes have been made to the Part B to ensure completeness and accuracy such as changing the word "facility" to "unit" where appropriate and identifying the change in designation of State Road 4 to 502.

If you should have any questions about this submission, please call Donna Lacombe of my staff at (FTS) 843-5288.

Sincerely,

Harold E. Valencia
Area Manager

2DL-010

Enclosure

cc:
C.K. Crossman, NMEID, Santa Fe, N.M.

bcc:
A. Tiedman, ADB, MS A120, LANL
J. Puckett, HSE-DO, MS K491, LANL
A. Valentine, (HSE-8-88-652-1) HSE-8, MS K490, LANL
S. Brown, LC General, MS A187, LANL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

December 21, 1989

Herald Valencia
Area Manager
U.S. DOE Los Alamos
Scientific Laboratory
Los Alamos, New Mexico 87544

Dear Mr. Valencia:

This letter is to acknowledge receipt of your Part B application under the Resource Conservation and Recovery Act (RCRA) for an open burning/open detonation explosive waste disposal area. The permitting authority for these units is under Subpart X of 40 CFR 264 entitled, "Miscellaneous Treatment Units". The Environmental Protection Agency (EPA) has permitting authority for Subpart X facilities until the State is authorized to issue these permits.

In submitting your application by November 8, 1988, your Subpart X unit will have interim status until a final permit determination is made. EPA's Headquarters in Washington D.C. and our own contractor are currently developing permit issuance guidance for Subpart X units. Your application will be processed as soon as appropriate guidance is available.

If you have questions about the status of your permit, please contact Jim Sales of my staff at (214) 655-6785.

Sincerely yours,

Bill Gallagher, Chief
ALONM Section
RCRA Permits Branch

ENCLOSURE
3

EXPLANATION OF PROCESS CODE LISTINGS AND/OR DESIGN CAPACITY

Line 1	S01	TA-54, Area L TA-50, Container Storage Units
Line 2	S02	TA-54, Area L Waste Oil Storage Tanks
Line 3	S04	TA-54, Area L Surface Impoundments B and D TA-35, TSL-85 and TSL-125 Surface Impoundments
Line 4	T01	TA-54, Area L TA-50, Batch Waste Treatment Unit
Line 5	T02	TA-16, Surface Impoundment
Line 6	T03	TA-16, Incinerator TA-50, Incinerator
Line 7	T04	The following open burning units are located at TA-16:

- Two burn pads (388, 399) for burning HE-contaminated solids. Each unit has a capacity of 1,000 pounds of solids per burn.
- Two pressure vessels (401, 406) for burning HE-contaminated sludges. Each unit has a capacity of 750 pounds of sludge per burn.
- One burn pad for HE-contaminated oil/solvent mixtures. This unit has a capacity of 100 gallons per burn.
- One flash pad for HE-contaminated equipment. This unit does not have a design capacity.
- One burn cage for HE-contaminated paper. This unit has a capacity of 3.0 cubic feet per burn.

The following waste detonation units are designed to open detonate explosives:

Unit	Design Capacity (pounds of HE per detonation)
TA-14-35	10
TA-15, Phermex	100
TA-36, Kappa 8	200

9/3/89

		TA-40, SDS	Inactive unit to be closed under interim status
		TA-39-6	100
		TA-39-57	250
Line 8	T04	Waste sludges from TA-54, Area L treatment tanks and the TA-50 Batch Waste Treatment unit are mixed with portland cement and/or Envirostone and placed in 55-gallon drums. The cement serves to bind any fluid remaining in the sludge. This process is performed at TA-54, Area L.	
Line 9	D80	TA-54, Area L TA-54, Area G TA-54, Area H TA-16, Area P	

ENCLOSURE
4

Please print or type in the unshaded areas only
(Fill-in areas are spaced for elite type, i.e. 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 RCRA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F N M 0 8 9 0 0 1 0 5 1 5

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in item I above.

A. FIRST APPLICATION *(Place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

☐ 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(Place an "X" below and complete item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided: Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	E
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	C
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5	T 0 2	500 (b)	U	
X-2	T 0 3	20	E		6	T 0 3	0.56 (a)	D	
1	S 0 1	284,070 (a) +	G		7	T 0 4	N/A (a)		
2	S 0 2	6,600 (b)	G		8	T 0 4	2,534 (a)	U	
3	S 0 4	25,500 (b) +	G		9	D 8 0	0.71 (b) +	A	
4	T 0 1	7,680 (a)	U		10				

CONTINUE ON REVERSE

ENCLOSURE
5

Continues from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

(a) Active units - See Part B Permit application for descriptions
(b) Inactive units to be closed under interim status - See individual closure plans for descriptions

\+ Revised as of November, 1988

See Page 2a of 5 for explanations on process codes

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If yo handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteri tics and/or the toxic contaminants of these hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annu basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handle which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropria codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking int account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item I to indicate how the waste will be stored, treated, and/or disposed of at the facility.
For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process cod contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that poss that characteristic or toxic contaminant.
Notes: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in t extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described more than one EPA Hazardous Waste Number shall be described on the form as follows:
1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annu quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line en "Included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pour per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two was are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimat 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
X-4	D002				included with above

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- Technical Area 54, Area L
  - Waste transfer, packaging and storage units, used for accumulation, packaging and storage of chemical wastes
  - Treatment tanks, used for the neutralization, precipitation, oxidation and evaporation of various wastes.

Most of the above units have interim authority status. These units are described in the following sections.

2.1.1 Miscellaneous Units

Miscellaneous units used for both the open burning and the detonation of reactive wastes and waste high explosives (HE) are located at several Technical Areas in the Laboratory. These units are described in the following sections.

2.1.1.1 Technical Areas 14 and 16 Open Burning Units

Four types of open burning units are located at the TA-16 burning ground: a flash pad, where any HE contamination is removed from excess equipment or scrap generated within the Technical Area; two burn pads for the destruction of solid HE material; a pad with trays where HE-contaminated waste oil is burned; and two pressure vessels for reacting HE-contaminated sludge.

A 100-foot square cyclone fence surrounds the flash pad area, which is covered with sand. Material to be flashed is placed on the pad with additional fuel, if necessary, to maintain the burn until all HE has been reacted. The scrap material is then handled as solid waste.

The two burn pads, each surrounded by a 100-foot square cyclone fence, are used to destroy solid chunks of excess or off-specification HE and machine turnings. The material is placed on a sand-filled steel table lined with refractory brick and ignited.

Used oil and/or solvent which may be contaminated with HE is poured into metal trays lined with fire brick. The trays are located within a sand-filled steel tray. The oil is ignited using a remotely-operated "electric match." Approximately 100 gallons of oil are burned each month.

TA-14 includes one open burning unit which consists of a small burn cage placed within a metal tray. Combustible materials potentially contaminated with experimental HE which cannot be safely transported to the TA-16 incinerator are burned in this cage.

HE-contaminated wash water is collected in sumps at HE fabrication facilities located in several Technical Areas. HE settles out of the wash water, is collected in a vacuum truck and is taken to TA-16 for treatment. When barium is used in the formulation process, it must be precipitated out of the waste water as insoluable barium sulfate, and is collected with the waste HE in a vacuum truck. The collected sludge is gravity fed from the vacuum truck to one of two pressure vessels buried in the ground. Up to 750 pounds of sludge, estimated by the depth of the sludge material in the pressure vessel, can be burned at one time. The vessels contain sand and gravel, and a fluid drain connects the base of the cone-shaped vessel to a carbon-filter wastewater treatment unit (TA-16-228) located nearby. Treated effluent is regulated by a NPDES permit (NM 0028355).

2.1.1.2 Technical Areas 14, 15, 36, and 39 Open Detonation Units

Open detonation sites used for the destruction of excess or waste HE are located at Los Alamos in Technical Areas 14, 15, 36, and 39. These sites are used routinely to detonate scrap HE, failed experimental detonations, unneeded classified explosives shapes, and small quantities of reactive chemicals. These sites consist of detonation points on the open ground, often located within a small canyon. Material to be detonated is placed on sand or on a wooden table at the firing point and is detonated with a remote firing mechanism. Associated facilities at these sites include bunkers which are occupied by technical personnel during detonations. Prior to all firings, nearby roads are checked and kept clear.

2.1.2 Technical Area 16 Industrial Incinerator

A baffled single chamber industrial incinerator, equipped for combustion of potentially HE-contaminated trash and machine oil, is located outdoors in the northeastern part of Technical Area 16 (Figure 2-22). The incinerator, which consists of primary and secondary combustion chambers is capable of burning 810 pounds of Type Zero trash (as defined by the Incinerator Institute of

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4.6.1 Current Management Practices

The TA-16 incinerator is located within a high security/controlled access area within TA-16. The area is patrolled by Los Alamos security personnel during unattended hours. The incinerator is used primarily to dispose of approximately 3,200 pounds per day (four loads) of potentially HE-contaminated, Type "Zero" trash and small amounts of waste oil. Only wastes described by NMHWMR Sections 206.D.8.a.(2)(a)(i), (ii), (iii), or (iv) [40 CFR§ 264.340(b)(1)(i), (ii), (iii), or (iv)], and that contain insignificant concentrations of hazardous constituents listed in 201 Appendix III [40 CFR Part 261, Appendix VIII], are disposed of in the TA-16 incinerator.

Trash is loaded into the primary chamber by a front-end loader. The burn cycle is then initiated. After the burn and cool-down cycles are complete, ash is removed from the settling chamber by shovels, hoes, and other common hand tools. Waste ash is placed into 55-gallon drums and transferred to the TA-54 Area L storage units.

The ash is then mixed with cement and disposed of in accordance with its hazard characteristics. Each 810-pound burn produces approximately four cubic feet of ash.

4.6.2 Secondary Containment Areas

Because only small amounts of liquid (less than 10 gallons per month) are to be handled at the TA-16 incinerator, secondary containment areas are not required for safe operation of the systems. The incinerator itself is situated on a concrete pad, and thus any small drips and spills of liquid will be retained in the area and cleaned up.

4.7 TA-14 AND TA-16 OPEN BURNING UNITS

[redacted] items potentially contaminated with experimental HE. These materials are not transported to TA-16 for incineration for any of the following reasons:

1. The HE may be very sensitive and considered unsafe for transport or treatment at TA-16.

2. Compatibility of the experimental HE with explosives or solvents present in TA-16 waste is unknown.

The cage is a small metal cylinder approximately two feet tall and two feet in diameter covered by a wire mesh screen. Approximately two cubic feet of contaminated combustibles are disposed of in the burn cage every two months. The cage sits within a steel tray on the soil surface. The cage and tray are covered when not in use.

HE contaminated combustible material generated at TA-14 is not sent to the TA-16 incinerator because of the nature of the experimental HE formulated at TA-14. [redacted] Often the HE waste is considered too sensitive to be transported to another Technical Area. The compatibility of the experimental HE with other explosives or solvents handled at TA-16 may not be known, and disposal in the TA-14 burn cage is considered appropriate for this HE contaminated waste.

The burning grounds at TA-16 contain six units in which HE-contaminated waste materials are burned to completely react the HE components. The six units fall into four different types of open burning pads; the "flashing" pad (TA-16-387), the open burn tables (TA-16-388 and -399), the liquid (oil/solvent) burn tray (TA-16-394), and the pressure vessels (TA-16-401 and -406). The construction of each type of unit is described below.

The flash pad (TA-16-387) and the two open burn pads tables (TA-16-388 and -399) are each located within a 100-foot by 100-foot cyclone fence. The flash pad consists of a layer of sand several inches thick over the soil surface. The excess equipment and noncombustible material to be flashed is placed in the center of the fenced area. The two open burn pads each contain a metal table which stands approximately two feet off the ground. Each table is approximately 21 feet long and 3 feet wide. A sloped steel cover can be wheeled into place over each table when it is not in use. The flashing pad does not include any trays or covers.

The liquid burn unit, designated TA-16-394, consists of a 12-foot by 12-foot by 1-foot metal tray filled with sand to a depth of six to eight inches. The tray contains four shallow steel pans lined with fire brick. The four smaller

pans each have a sloped steel cover which is moved into place when the trays are not in use. Waste HE-contaminated oil/solvent is poured into the four smaller pans and ignited.

The pressure vessels (TA-16-401 and -406) are cone-shaped, steel containers approximately eight feet in diameter and ten feet deep which are set into the ground. Each vessel narrows at the base and is connected to a fluid drain which transports liquid from the cone to the carbon filter wastewater treatment unit (TA-16-228) nearby. Each cone contains a surface layer of sand overlying layers of fine and then coarse gravel.

4.7.1 Current Waste Management Practices

The burning ground at TA-16 is managed by WX-3, the Service Organization of Division WX, responsible for the safe treatment and handling of HE-contaminated waste material generated by the WX HE production facilities at TA-16. The group is also responsible for the safe handling of some HE-contaminated materials generated by M Division, the group responsible for HE Research and Development. Several kinds of HE-contaminated waste materials are reacted at the burning ground and include the following:

- Inert - mock explosives, may contain oxidizers
- Solid chunk - includes consolidated turnings, reject parts, and excess HE
- Sludge - HE-contaminated sludge which settles out of contained wash water from research and fabrication laboratories
- Waste Oil/Solvents - assumed to be contaminated with HE
- Scrap - any machinery, equipment, or furniture used in the Area is considered contaminated with HE and is not allowed out of the Area until the HE has been removed.

Administrative controls within M and WX Divisions ensure that the chemical composition of every HE developed or routinely used at the Laboratory is known. In addition, the compatibility of each HE with other HE compounds and with any solvents or bonding agents with which it may be used is determined by the research group before the HE is routinely used at the laboratory. Experimental HE developed by M Division may not be totally characterized during development, but the management of that waste is controlled by M Division.

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MEMORANDUM

ERM/GOLDER FEDERAL SERVICES LOS ALAMOS PROJECT TEAM

To: P. Shanley

Fr: B. Russell

Date: 06 July 1994

Re: WASTE CHARACTERIZATION ANALYSES ASSOCIATED WITH SWMU 0 - 030(g) FIELD OPERATIONS FROM JUNE - AUGUST 1993

Pursuant to your request, I have prepared this memorandum to provide a brief response to an observation reported by the NEIC Multi-Media Team, from their surveillance of field operations last August, and transmit a copy of the SWMU 0-030(g) analytical sample data matrix prepared for internal tracking of laboratory results. Please do not hesitate to call me if you need additional information or further clarification.

As I understand the comments in the NEIC report, LANL has been requested to respond to the observation that several soil samples collected from SWMU 0-030(g) should have been submitted for TCLP analyses prior to disposal of the materials at TA-54. Specifically, seven samples were not submitted for TCLP analysis when the total value, for either lead or mercury, was equal to or greater than 20 times the TCLP threshold. In the case of TCLP analyses for lead, TCLP should have been conducted whenever the total lead concentration was equal to or greater than 100 ppm and 4 ppm for mercury..

In fact, LANL did request TCLP analyses on all seven of the subject samples, but due to limitation in sample size or loss of the sample by the analytical laboratory, the sample materials were not available to complete the requested analysis. Due to the unfortunate loss of the sample materials, LANL utilized the available data set for total lead and total mercury and the corresponding TCLP data to evaluate the potential for the excavated soils to represent a RCRA hazardous material.

The relationship between $lead_{TCLP}$ and $lead_{Total}$ was determined and found to range from 0.0011 to 0.002. These values were calculated from the following data:

$Lead_{Total}$	$Lead_{TCLP}$	$Lead_{TCLP}/Lead_{Total}$
200 ppm	0.11 ppm	0.00055
610 ppm	0.07 ppm	0.00011
15 ppm	0.03 ppm	0.002
16 ppm	0.03 ppm	0.002

17 ppm	0.03 ppm	0.002

Utilizing the 0.002 factor for lead$_{TCLP}$/lead$_{Total}$, it would have been necessary for the total lead content to be 2,500 ppm or greater before the lead TCLP threshold value (5.0 ppm) would be exceeded. The total lead content for the five samples missing the TCLP analyses were:

AAA 4349	300 ppm
AAA 4363	290 ppm
AAA 4364	110 ppm
AAA 4365	190 ppm
AAA 4366	490 ppm

Applying the lead$_{TCLP}$/lead$_{Total}$ factor to the above total values, the calculated TCLP test results would have been:

AAA 4349	0.6 ppm
AAA 4363	0.6 ppm
AAA 4364	0.2 ppm
AAA 4365	0.4 ppm
AAA 4366	1.0 ppm

As shown above, the TCLP threshold for lead (5.0 ppm) would not have been achieved. In all but one case, the results are approximately an order of magnitude below the threshold value.

A corresponding set of data was used to correlate total mercury with the mercury TCLP values. The corresponding range in mercury$_{TCLP}$/mercury $_{Total}$ ranged from 0.0001 to 0.0009. Utilizing the 0.0009 factor for mercury $_{TCLP}$/mercury$_{Total}$, it would be necessary for the total mercury content to be greater than 4,000 ppm. The total mercury in the sample AAA 4355 was 5.5 ppm. The corresponding calculated TCLP value would be 0.0050 ppm, two orders of magnitude below the TCLP threshold value.

A mercury TCLP analysis was performed on the aliquot sample of the sludge and did not exceed the TCLP threshold value for mercury.

The above process was used to assist with the disposition of the materials excavated from the SWMU for those samples that were missing the lead TCLP results..

The attached spread sheet, dated 19 October 1994, provides all the data, available at that time for the materials collected from SWMU 0 - 030(g). The spread sheet acknowledges, in the "TCLP Results" column those situations that involved TCLP analyses that were requested, but not performed.

Attachments: As Stated

ERM/GOLDER FEDERAL SERVICES LOS ALAMOS PROJECT TEAM

cc: J. Aldrich, LANL
A. Funk
J. Novak, LANL
Project File

OU 1071, SWMU 9-030(g)
SAMPLE INVENTORY

10/19/93

Septic Tank Samples

Sample ID	EM-9 Request Number	Sample Matrix	Analyses Requested	Date Collected	Sample Location	Date Data Validated	Radvan Results (pCi/g) Gross Analyses			Isotopes		Metals				SVOCs and VOCs Results	Pesticides Results
							α +/-43.1	β +/-23.8	γ +/-4.4	Isotope Results	LANL Screening Action Levels (Soil)	TAI Metals Results (Total)	Background Metals Concentration Ranges for Ow Los Alamos Area	LANL Screening Action Levels (Soil)	TCLP Results		
Rm south tank		Soil	Radvan, SV, V	6/21/93	Excavated soil, E chamber, S end	6/23/93-SV 6/23/93-V	<MDA	<MDA	<MDA							None above MDLs or LANL SALs, no total concentrations that require TCLP analysis	
Y south tank		Soil	Radvan, SV, V	6/22/93	E chamber, NE corner, south tank, 3 ft BGS	6/23/93-SV 6/23/93-V	5.60	20.10	<MDA							None above MDLs or LANL SALs, no total concentrations that require TCLP analysis	
AAA 1904	14930 M 14926 B 14928 V SV, PCB	Soil	Radvan, R, M, P, SV, V, PCB	6/22/93	Bottom of septic tank, E chamber, NE corner	8/19/93-R 7/1/93-M 9/8/93-SV 6/23/93-V	45.00	33.10	1.00	**Uranium Series** Am-241 = 10.19 pCi/g Cs-137 = 0.56 pCi/g Cesium = 0.0 pCi/g K-40 = 10.88 pCi/g Ra-226 = 1.03 pCi/g * Th-232 = 0.67 pCi/g * U-234 = 41.0 pCi/g U-235 = 3.90 pCi/g **H Pots** Total U = 13.2 mg/kg **RAS** Po-210 = 2.44 pCi/g Pb-210 = 391.00 pCi/g Am-241 = 0.53 pCi/g **TC** Sr-90 = 0.13 pCi/g	Am-241 = 22.0 pCi/g Cs-137 = 4.0 pCi/g None None Ra-226 = 0.73 pCi/g * Th-232 = 0.00 pCi/g * U-234 = 86.0 pCi/g U-235 = 10.0 pCi/g Total U = 240 mg/kg Po-210 = 37.0 pCi/g Pb-210 = 24.0 pCi/g Am-241 = 22.0 pCi/g Sr-90 = 0.9 pCi/g	Ag = 1.6 ppm Al = 3400 ppm Ba = 74 ppm Be = 0.79 ppm Ca = 9400 ppm Cd = 2 ppm Co = 1.0 ppm Cr = 0.5 ppm Cu = 33 ppm Fe = 6300 ppm K = 470 ppm Mg = 490 ppm Mn = 200 ppm Na = 130 ppm Ni = 0.5 ppm Pb = 330 ppm Sb = 41 ppb Tl = 42 ppb V = 5.0 ppm Zn = 110 ppm Hg = 2.3 ppm	Ag = 1.6 to 1.6 ppm Al = 40600 to 113000 ppm Ba = 124.0 to 820.9 ppm Be = 1.0 to 0.4 ppm Ca = 1912 to 80100 ppm Cd = 1.2 to 1.7 ppm Co = 0.4 to 23.4 ppm Cr = 2.03 to 71.1 ppm Cu = Not reported Fe = 10000 to 40640 ppm K = 10390 to 43000 ppm Mg = 1330 to 16790 ppm Mn = 103.7 to 1352 ppm Na = 2700 to 33560 ppm Ni = Not reported Pb = 10.0 to 56.0 ppm Sb = 0.27 to 1.99 ppm Tl = Not reported V = 11.3 to 113.1 ppm Zn = 19.9 to 146.2 ppm Hg = Not reported	Ag = 400 ppm Al = None Ba = 5600 ppm Be = 0 to ppm Co = None Cd = 80 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 31 ppm Tl = 6.4 ppm V = 500 ppm Zn = 24000 ppm Hg = 24 ppm	Pb and Hg below [illegible] Method results [illegible]	None above MDLs or LANL SALs, no total concentrations that require TCLP analysis	Pending [illegible]

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AAA 1905	14930 M 14936 B 14938 V SV, PCB	Soil	Redvan, R, M, P, SV, V, PCB	6/22/93	Bottom of septic tank, E chamber, SE corner	8/19/93-B 7/1/93-M 9/8/93-SV 6/24/93-V	20 10	34 90	7 00	**Gamma Scan:** Am-241 < 5 2 pCi/g Cs-137 0 51 pCi/g Uncan 0 0 pCi/g K-40 = 24 06 pCi/g Ra-226 = 1 73 pCi/g * Th 232 = 2 72 pCi/g * U 234 = 10 5 pCi/g U 235 = 1 09 pCi/g **K PHS** Total U 3 1 mg/kg **RAS** Pu 238 = 0 00 pCi/g Pu 239 = 23 65 pCi/g Am-241 = 0 37 pCi/g **PC** Sr 90 = 0 1 pCi/g	Am-241 = 22 0 pCi/g Cs-137 4 0 pCi/g None None Ra-226 = 0 73 pCi/g * Th 232 = 0 00 pCi/g * U 234 = 96 0 pCi/g U 235 = 10 0 pCi/g Total U = 240 mg/kg Pu 238 = 27 0 pCi/g Pu 239 = 24 0 pCi/g Am-241 22 0 pCi/g Sr 90 8 9 pCi/g	Ag = 1 0 ppm Al = 3000 ppm Ba = 43 ppm Be = 0 65 ppm Ca = 1300 ppm Cd = 0 4 ppm Co = 1 0 ppm Cr = 2 7 ppm Cu = 5 4 ppm Fe = 4900 ppm K = 570 ppm Mg = 640 ppm Mn = 210 ppm Na 130 ppm Ni = 2 7 ppm Pb = 9 ppm Sb 30 ppb Tl = 40 ppb V 7 1 ppm Zn = 30 ppm Hg = 0 19 ppm	Ag = 1 6 to 1 6 ppm Al = 49600 to 113000 ppm Ba = 124 0 to 820 0 ppm Be = 1 0 to 4 4 ppm Ca = 1911 to 80900 ppm Cd = 1 2 to 1 7 ppm Co = 0 4 to 23 4 ppm Cr = 2 03 to 71 1 ppm Cu = Not reported Fe = 10060 to 40640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16790 ppm Mn = 105 7 to 1992 ppm Na = 2700 to 32360 ppm Ni = Not reported Pb = 10 0 to 56 0 ppm Sb = 0 27 to 1 39 ppm Tl = Not reported V = 11 5 to 113 1 ppm Zn = 19 9 to 146 2 ppm Hg = Not reported	Ag = 400 ppm Al = None Ba = 3600 ppm Be = 0 16 ppm Ca = None Cd = 80 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Tl = 6 4 ppm V = 160 ppm Zn = 24000 ppm Hg = 24 ppm	No total metals concentrations that require TCLP analysis	None above MDL or LANL SAL, no total cons entrations that require TCLP analysis	Pe
AAA 1906	14930 M 14936 B 14938 V SV, PCB	Soil	Redvan, R, M, P, SV, V, PCB	6/22/93	Duplicate of AAA 1905	8/19/93 B 7/1/93 M 9/8/93 SV 6/24/93 V	22 50	35 00	6 50	**Gamma Scan** Am-241 = 7 23 pCi/g Cs-137 0 67 pCi/g Uncan 0 0 pCi/g K-40 = 22 31 pCi/g Ra-226 = 1 61 pCi/g * Th 232 2 60 pCi/g * U 234 = 40 1 pCi/g U 235 = 1 04 pCi/g **K PHS** Total U 2 5 mg/kg **RAS** Pu 238 = 0 03 pCi/g Pu 239 = 11 30 pCi/g Am-241 = 0 16 pCi/g **PC** Sr 90 = 0 17 pCi/g	Am-241 = 23 0 pCi/g Cs-137 4 0 pCi/g None None Ra-226 = 0 73 pCi/g * Th 232 = 0 00 pCi/g * U 234 = 96 0 pCi/g U 235 = 10 0 pCi/g Total U 240 mg/kg Pu 238 = 27 0 pCi/g Pu 239 = 24 0 pCi/g Am-241 = 23 0 pCi/g Sr 90 = 8 9 pCi/g	Ag = 1 0 ppm Al = 4100 ppm Ba 39 ppm Be = 0 65 ppm Ca = 1300 ppm Cd = 0 4 ppm Co = 0 9 ppm Cr = 2 1 ppm Cu = 4 0 ppm Fe 4600 ppm K = 530 ppm Mg = 560 ppm Mn = 160 ppm Na = 130 ppm Ni = 2 ppm Pb = 8 ppm Sb = 30 ppb Tl = 60 ppb V = 6 ppm Zn = 29 ppm Hg < 0 1 ppm	Ag = 1 6 to 1 6 ppm Al = 49600 to 113000 ppm Ba = 124 0 to 820 0 ppm Be = 1 0 to 4 4 ppm Ca = 1911 to 80900 ppm Cd = 1 2 to 1 7 ppm Co = 0 4 to 23 4 ppm Cr = 2 03 to 71 1 ppm Cu = Not reported Fe = 10060 to 40640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16790 ppm Mn = 105 7 to 1992 ppm Na = 2700 to 32360 ppm Ni = Not reported Pb = 10 0 to 56 0 ppm Sb = 0 27 to 1 39 ppm Tl = Not reported V = 11 5 to 113 1 ppm Zn = 19 9 to 146 2 ppm Hg = Not reported	Ag = 400 ppm Al None Ba = 3600 ppm Be = 0 16 ppm Ca = None Cd = 80 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Tl = 6 4 ppm V = 160 ppm Zn = 24000 ppm Hg = 24 ppm	No total metals concentrations that require TCLP analysis	None above MDL or LANL SAL, no total cons entrations that require TCLP analysis	Pe
E chamber, N, E		Soil	Redvan, SV, V	6/23/93	E chamber, N end, 6 8 BGS	6/24/93-SV 6/24/93-V	2 90	6 30	3 10							None above MDL or LANL SAL, no total concentrations that require TCLP analysis	
Bottom, outer E wall		Soil	Redvan, SV, V	6/23/93	Bottom of excavation, outer E wall	6/24/93-SV 6/24/93-V	20 10	36 30	3 70							None above MDL or LANL SAL, no total concentrations that require TCLP analysis	

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W wall, N end		Soil	Radvan, SV, V	6/23/93	Bottom of W wall, N end	6/24/93-SV 6/24/93-V	20 10	21 30	1 20							None above MDLs or LANL SALs, no total conc. extracts or that require TCLP analyses		
W wall		Soil	Radvan, SV, V	6/23/93	Bottom of W wall, center	6/24/93-SV 6/24/93-V	-20 10	10 00	-0 70							None above MDLs or LANL SALs, no total conc. extracts or that require TCLP analyses		
AAA 1907	10916 M 10929 B 10916 V, SV, PCB	Sludge	Radvan, R, M, P, SV, V, PCB	6/23/93	W chamber 50 center, approx. 5 0 BGS	8/19/93 B 7/1/93-M 9/8/93-SV 6/29/93-V	16 90	12 20	1 50	Uranium Series Am-241 - 54 35 pCi/g Co-60 - 0 43 pCi/g Cs-137 - 0 29 pCi/g Cesium - 0 0 pCi/g K-40 - 11 6 pCi/g Ra-226 - 2 1 pCi/g * Th-232 - 1 33 pCi/g * U-234 - 109 00 pCi/g U-235 - 11 73 pCi/g U-238 Total U - 307 mg/kg RAD Po-210 - 16 pCi/g Pb-210 - 16910 pCi/g LS H-3 - 800 pCi/l Pu Sr-90 - 0 65 pCi/g	Am-241 - 22 0 pCi/g Co-60 - 0 9 pCi/g Cs-137 - 4 0 pCi/g None None Ra-226 - 0 71 pCi/g * Th-232 - 0 88 pCi/g * U-234 - 86 0 pCi/g U-235 - 10 0 pCi/g Total U - 240 mg/kg Po-210 - 27 0 pCi/g Pb-210 - 24 0 pCi/g H-3 - 1 5 x 10^7 pCi/g Sr-90 - 0 9 pCi/g	Ag - 27 ppm Al - 5900 ppm As - 2 2 ppm Ba - 501 ppm Be - 0 0 ppm Ca - 12400 ppm Cd - 24 ppm Co - 12 ppm Cr - 20 ppm Cu - 1500 ppm Fe - 17000 ppm K - 900 ppm Mg - 1600 ppm Mn - 140 ppm Na - 410 ppm Ni - 19 ppm Pb - 520 ppm Sb - 2300 ppb Se - 0 77 ppm Tl - 30 ppb V - 9 4 ppm Zn - 1300 ppm Hg - 55 0 ppm	Ag - 1 6 to 1 6 ppm Al - 09600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80100 ppm Cd - 1 2 to 1 7 ppm Co - 0 4 to 21 4 ppm Cr - 2 01 to 71 1 ppm Cu - Not reported Fe - 10060 to 404 40 ppm K - 10390 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 36 0 ppm Sb - 0 27 to 1 30 ppm Se - Not reported Tl - Not reported V - 12 3 to 133 1 ppm Zn - 19 9 to 146 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm Co - None Cr (IV) - [illegible] ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1000 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 6 ppm V - 360 ppm Zn - 30000 ppm Hg - 24 ppm	[illegible] Hg below TCLP [illegible] (Metal [illegible]) No other semi-volatile [illegible] that require TCLP analyses	Benzo(a)pyrene - 1 3 ppm (SAL - 0 1 ppm) Not a RCRA waste No other Semi-vols exceed MDLs or LANL SALs, no total conc. extracts or that require TCLP analyses No volatiles above MDLs or LANL SALs, no total concentrations that require TCLP analyses	[illegible]	[illegible]
Aliquot	10972 M 10929 B	Sludge	Radvan M, SV, V	6/23/93	W chamber, center, approx 5 0 BGS, sludge showing 2000 cpm β/γ	6/29/93-SV 6/29/93-V	33 70	223 20	19 80			Hg = 50 ppm (Not Validated)	Hg - Not reported	Hg = 24 ppm	Hg below TCLP [illegible] (Metal [illegible])	1,4-Dichlorobenzene, 2-Methylnaphthalene, and 2-Butanone above MDLs, all below LANL SALs. No total concentrations that require TCLP analyses		
AAA 3950		Soil	Radvan	7/8/93	E chamber, W central hole, 0-90 in BGS		-33 70	-33 40	-2 80									
AAA 3990		Soil	Radvan	7/9/93	E chamber, W central hole, 3 0 BGS		-22 50	-17 90	-2 50									
AAA 3960		Soil	Radvan	7/9/93	E chamber, W central hole, 3 0 BGS		-20 10	-21 30	1 70									
AAA 3969		Soil	Radvan	7/9/93	W chamber, E central hole, 6 0 BGS		-33 70	-23 20	1 70									
AAA 3970		Soil	Radvan	7/9/93	W chamber, E central hole, 3 0 BGS		-20 10	29 10	-4 30									

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AAA 3370		Soil	Radvan	7/9/93	W chamber, S central hole, 50/2.0 INCHS		20.10	29.50	1.20										
AAA 3372		Swipe	Radvan	7/9/93	Swipe of concrete rubble removed from septic tank		0.00	1.20	0.00										
AAA 3373		Swipe	Radvan	7/9/93	Swipe of concrete rubble removed from septic tank		0.40	2.40	0.20										
AAA 3374		Soil	Radvan	7/12/93	W chamber, NW corner of S and, approx 3.0 INCHS		0.00	4.30	0.30										
AAA 3375		Soil	Radvan	7/12/93	W chamber SW corner of S and, approx 3.0 INCHS		16.90	11.10	1.10										
AAA 3376		Soil	Radvan	7/12/93	W chamber SE corner of S and, approx 3.0 INCHS		11.30	17.90	1.10										
AAA 3377		Soil	Radvan	7/12/93	W chamber, NE corner of S and, approx 3.0 INCHS		11.70	23.70	0.00										
AAA 3378		Soil	Radvan	7/12/93	W chamber, S central and, 4.0 INCHS		1.60	1.70	0.10										
AAA 3381		Soil	Radvan	7/9/93	E chamber W central hole, 4.0 INCHS		16.90	12.10	0.70										
AAA 3382		Soil	Radvan	7/9/93	E chamber, W central hole 3.0 INCHS		16.90	18.00	0.10										
AAA 3383		Soil	Radvan	7/9/93	W chamber, E central hole, 6.0 INCHS		22.50	21.00	1.00										
AAA 3384		Soil	Radvan	7/9/93	W chamber, E central hole 3.0 INCHS		22.50	8.20	1.00										
AAA 3385		Soil	Radvan	7/9/93	W chamber, E central hole, 3.0 INCHS		20.10	14.10	2.00										
AAA 3386		Soil	Radvan	7/9/93	W chamber, W central hole 3.0 INCHS		22.50	21.00	2.90										
AAA 3387		Soil	Radvan	7/9/93	W chamber, S central hole, 3.0 INCHS		1.60	5.10	1.00										
AAA 3388		Soil	Radvan	7/9/93	W chamber, S central hole, 3.0 INCHS		1.60	10.90	0.20										
AAA 4321		Soil	Radvan	7/13/93	W chamber, S central, 3.0 INCHS		16.90	6.30	2.10										
AAA 4328	15124-M	Soil	Radvan, M	7/14/93	Lab 1, composite, central 1/3 of tank	9/10/93 M	20.10	30.50	2.70			As - 0.2 ppm Hg - 1.3 ppm Se - 0.2 ppm	As - 1.3 to 90.0 ppm Hg - Not reported Se - Not reported	As - 0.40 ppm Hg - 24 ppm Se - 400 ppm	No metals above thresholds on TCLP analyses			
AAA 4329	15124-M	Soil	Radvan, M	7/14/93	Lab 2, central 1/3 of tank, NE corner of hill	9/10/93 M	16.90	20.30	3.00			Hg - 1.2 ppm	Hg - Not reported	Hg - 24 ppm	No metals above thresholds on TCLP analyses			

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AAA 4130	15124 M	Soil	Radvan, M	7/16/93	1 dB 2, central 1/3 of tank, NW corner of hill	9/10/93 M	33 70	17 00	1 90			Ag - 1 0 ppm Al - 1900 ppm As - 1 5 ppm Ba - 46 ppm Be - 0 73 ppm Ca - 1900 ppm Cd - 0 5 ppm Co - 1 1 ppm Cr - 12 ppm Cu - 4 7 ppm Fe - 5100 ppm K 450 ppm Mg - 550 ppm Mn - 200 ppm Na 70 ppm Ni 7 ppm Pb 21 ppm Sb - 70 ppb Se 0 1 ppm Tl 60 ppb V 1 ppm Zn - 41 ppm Hg - 0 1 ppm	Ag - 1 0 to 1 0 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 124 0 to 870 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80500 ppm Cd - 1 2 to 1 7 ppm Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 40640 ppm K 10990 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na 3700 to 32500 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 59 ppm Se Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 600 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm Co - None Cr (VI) - 600 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 6000 ppm Na - None Ni 1600 ppm Pb 500 ppm Sb - 32 ppm Se - 400 ppm Tl 6 4 ppm V 160 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analysis.			
AAA 4136	15127 M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 7, 2 B INGS	7/20/93-Hg	16 90	18 90	0 60			Pb - 80 ppm (Not validated) Hg < 0.1 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4137	15127 M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 6, 2 B INGS	7/20/93-Hg	13 00	17 00	1 50			Pb - 11 ppm (Not validated) Hg < 0.1 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4138	15127 M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 4, 2 B INGS	7/20/93-Hg	22 50	16 50	0 20			Pb - 13 ppm (Not validated) Hg < 0.1 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4139	15127 M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 3, 2 B INGS	7/20/93-Hg	20 10	11 00	1 00			Pb - 10 ppm (Not validated) Hg < 0.1 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4140	15127-M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 10, 6 B INGS	7/20/93-Hg	33 70	17 00	0 70			Pb - [illegible] [illegible]	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4141	15127-M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 2, 6 B INGS	7/20/93-Hg	-33 70	-30 00	0 10			[illegible]	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4144	15127-M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 3, 2 B INGS	7/20/93-Hg	-11 20	-22 30	0 70			[illegible]	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			

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AAA 4145	13127 M	Soil	Radvan, M (Hg & Pb only)	7/16/93	Section 9, 5 R INTB	7/20/93-Hg	-31 70	32 00	0 10			Pb = 80 ppm (Not detected) Hg = 0.1 ppm	Pb = 10 0 to 36 0 ppm Hg = Not reported	Pb = 500 ppm Hg = 24 ppm	Total Hg & Pb concentrations do not require TCLP analysis			
AAA 4146	13133 M	Concrete	Radvan, M	7/19/93	Bottom of W chamber, S side	8/18/93-TCLP Hg 8/9/93-M	-20 10	29 10	1 90			Ag = 1 5 ppm Al = 6000 ppm As = 3 3 ppm Ba = 240 ppm Be = 2 6 ppm Ca = 49000 ppm Cd = 4 5 ppm CN = 900 ppb Co = 6 6 ppm Cr = 15 ppm Cu = 110 ppm Fe = 9200 ppm K = 890 ppm Mg = 2100 ppm Mn = 230 ppm Na = 270 ppm Ni = 10 ppm Pb = 90 ppm Sb = 0 3 ppm Se = 0 9 ppm Tl = 0 3 ppm V = 14 ppm Zn = 590 ppm Hg = 4 5 ppm	Ag = 1 6 to 1 6 ppm Al = 49600 to 113000 ppm As = 1 2 to 10 8 ppm Ba = 134 0 to 820 9 ppm Be = 1 0 to 4 4 ppm Ca = 1911 to 80300 ppm Cd = 1 2 to 1 7 ppm CN = not reported Co = 0 4 to 33 4 ppm Cr = 2 01 to 71 1 ppm Cu = Not reported Fe = 10060 to 40640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16790 ppm Mn = 105 7 to 1572 ppm Na = 2700 to 32360 ppm Ni = Not reported Pb = 10 0 to 36 0 ppm Sb = 0 27 to 1 59 ppm Se = Not reported Tl = Not reported V = 11 5 to 113 1 ppm Zn = 19 9 to 146 2 ppm Hg = Not reported	Ag = 400 ppm Al = None As = 0 40 ppm Ba = 5600 ppm Be = 0 16 ppm Ca = None Cd = 80 ppm CN = 1600 ppm Co = None Cr (IV) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Se = 400 ppm Tl = 6 4 ppm V = 560 ppm Zn = 24000 ppm Hg = 24 ppm	Hg = 0 4 mg/L on TCLP analysis. No other total metals concentrations that require TCLP analysis.			
AAA 4149	13151 M	Soil	Radvan, M	7/20/93	Drum # 001	8/19/93 M	09 90	41 10	0 50			Ag = 0 2 ppm Al = 5100 ppm As = 2 7 ppm Ba = 230 ppm Be < 2 2 ppm Ca = 3300 ppm Cd = 10 6 ppm CN = 950 ppb Co = 7 3 ppm Cr = 11 1 ppm Cu = 440 ppm Fe = 9800 ppm K = 700 ppm Mg = 1100 ppm Mn = 180 ppm Na < 200 ppm Ni = 13 5 ppm Pb = 300 ppm Sb = 0 7 ppm Se = 0 7 ppm Tl = 0 2 ppm V = 9 0 ppm Zn = 500 ppm Hg = 1 79 ppm	Ag = 1 6 to 1 6 ppm Al = 49600 to 113000 ppm As = 1 2 to 10 8 ppm Ba = 134 0 to 820 9 ppm Be = 1 0 to 4 4 ppm Ca = 1911 to 80300 ppm Cd = 1 2 to 1 7 ppm CN = Not reported Co = 0 4 to 33 4 ppm Cr = 2 01 to 71 1 ppm Cu = Not reported Fe = 10060 to 40640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16790 ppm Mn = 105 7 to 1572 ppm Na = 2700 to 32360 ppm Ni = Not reported Pb = 10 0 to 36 0 ppm Sb = 0 27 to 1 59 ppm Se = Not reported Tl = Not reported V = 11 5 to 113 1 ppm Zn = 19 9 to 146 2 ppm Hg = Not reported	Ag = 400 ppm Al = None As = 0 40 ppm Ba = 5600 ppm Be = 0 16 ppm Ca = None Cd = 80 ppm CN = 1600 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Se = 400 ppm Tl = 6 4 ppm V = 560 ppm Zn = 24000 ppm Hg = 24 ppm	[illegible] TCLP [illegible] (Volatile [illegible], Pb total [illegible] [illegible] TCLP [illegible] [illegible]			

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SAMPLE INVENTORY

10/19/93

AAA 4190	11151-M	Soil	Radvan, M	7/20/91	Drum #070	9/19/93-M	11 20	1 90	1 70			Ag < 1 0 ppm Al - 3040 ppm As - 2 9 ppm Ba - 67 1 ppm Be - 0 67 ppm Ca - 5740 ppm Cd - 1 4 ppm CN - 1 1 ppm Co - 2 14 ppm Cr - 13 1 ppm Cu - 55 ppm Fe - 4090 ppm K - 315 ppm Mg - 100 ppm Mn - 169 ppm Na - 88 9 ppm Ni - 8 0 ppm Pb - 56 ppm Sb 300 ppb Se < 0 2 ppm Tl < 300 ppb V - 5 3 ppm Zn 113 ppm Hg - 10 1 ppm	Ag - 1 6 to 1 6 ppm Al - 40600 to 115000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 720 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 40600 ppm K - 10390 to 47000 ppm Mg - 1331 to 16790 ppm Mn - 101 7 to 1572 ppm Na - 2700 to 12360 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 99 ppm Se - Not reported Tl - Not reported V - 11 3 to 113 1 ppm Zn - 19 9 to 146 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	[redacted]			
AAA 4191	11151-M	Soil	Radvan, M	7/20/91	Drum #153	9/19/93-M	1 60	4 60	0 60			Ag - 1 7 ppm Al - 9040 ppm As - 2 2 ppm Ba - 119 ppm Be - 0 0 ppm Ca - 1360 ppm Cd - 2 0 ppm CN - 1 0 ppm Co - 2 2 ppm Cr - 11 6 ppm Cu - 70 ppm Fe - 5470 ppm K - 470 ppm Mg - 713 ppm Mn - 181 ppm Na - 136 ppm Ni - 9 ppm Pb - 69 ppm Sb < 300 ppb Se < 0 2 ppm Tl < 300 ppb V - 7 9 ppm Zn - 147 ppm Hg - 2 9 ppm	Ag - 1 6 to 1 6 ppm Al - 40600 to 115000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 720 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 40600 ppm K - 10390 to 47000 ppm Mg - 1331 to 16790 ppm Mn - 101 7 to 1572 ppm Na - 2700 to 12360 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 99 ppm Se - Not reported Tl - Not reported V - 11 3 to 113 1 ppm Zn - 19 9 to 146 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	[redacted]			

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SAMPLE INVENTORY

10/19/93

AAA 4193	13191 M	Soil	Radvan, M	7/20/93	Drum #171	8/19/93 M	20 10	2 00	2 10			Ag < 1 0 ppm Al - 4050 ppm As - 0 8 ppm Ba - 57 3 ppm Be - 0 72 ppm Ca - 2970 ppm Cd - 0 5 ppm CN 630 ppb Co - 1 17 ppm Cr - 10 6 ppm Cu - 25 4 ppm Fe - 6800 ppm K 424 ppm Mg - 643 ppm Mn 236 ppm Na 300 ppm Ni 7 ppm Pb 26 5 ppm Sb 70 ppb Se 0 2 ppm Tl 40 ppb V 6 0 ppm Zn 64 ppm Hg - 1 9 ppm	Ag - 1 6 to 3 6 ppm Al - 49600 to 113000 ppm As - 1 3 to 10 9 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80100 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10060 to 40640 ppm K 10390 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 3 to 113 1 ppm Zn - 19 9 to 146 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (IV) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb 32 ppm Se - 800 ppm Tl - 6 4 ppm V - 160 ppm Zn - 20400 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses			
AAA 4199	13177 M	Soil	Radvan, M	7/20/93	Drum #199	8/9/93 M	22 5	6 90	2 70			Ag - 4 3 ppm Al - 1400 ppm As - 2 7 ppm Ba - 140 ppm Be - 1 7 ppm Ca 1340 ppm Cd 2 3 ppm CN 1 25 ppm Co 2 6 ppm Cr - 16 ppm Cu - 60 ppm Fe - 6300 ppm K 390 ppm Mg - 800 ppm Mn - 200 ppm Na - 170 ppm Ni - 10 ppm Pb - 75 ppm Sb < 0 3 ppm Se - 0 4 ppm Tl < 0 3 ppm V - 0 6 ppm Zn - 200 ppm Hg - 5 3 ppm	Ag - 1 6 to 3 6 ppm Al - 49600 to 113000 ppm As - 1 3 to 10 9 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80100 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10060 to 40640 ppm K - 10390 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 3 to 113 1 ppm Zn - 19 9 to 146 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 800 ppm Tl - 6 4 ppm V - 160 ppm Zn - 20400 ppm Hg - 24 ppm	TCLP analysis for Hg required but sample ran out. No other metals concentrations requires TCLP analysis.			

DU 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 4196	13177 M	Soil	Radvan, M	7/20/93	E chamber, NE corner, 5 ft RMS (previous sample ID "5 sump tank" on 6/23)	8/9/93-M	11 20	-12 50	1 60			Ag - 1 0 ppm Al - 5100 ppm As - 2 6 ppm Ba - 40 ppm Be - 0 67 ppm Ca - 2400 ppm Cd - 0 87 ppm CN - 495 ppb Co - 1 4 ppm Cr - 11 ppm Cu - 14 ppm Fe - 7400 ppm K - 400 ppm Mg - 640 ppm Mn - 100 ppm Na - 100 ppm Ni - 7 ppm Pb - 26 ppm Sb - 0 3 ppm Se - 0 2 ppm Tl - 0 3 ppm V - 6 9 ppm Zn - 60 ppm Hg - 0 9 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 3 to 10 0 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10060 to 40640 ppm K - 10390 to 42000 ppm Mg - 1331 to 16700 ppm Mn - 185 7 to 1552 ppm Na - 2700 to 12560 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 106 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 640 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn 8000 ppm Na None Ni 1600 ppm Pb 500 ppm Sb 32 ppm Se 400 ppm Tl 6 4 ppm V 560 ppm Zn 24000 ppm Hg - 24 ppm	No total metals concentrations require TCLP analyses			
AAA 4197	13177 M	Soil	Radvan, M	7/20/93	E chamber, S end 5 ft RMS (previous sample ID "5 sump tank" on 6/23)	8/9/93-M	11 20	14 50	2 00			Ag - 1 0 ppm Al 5400 ppm As - 1 4 ppm Ba - 45 ppm Be - 0 67 ppm Ca 1400 ppm Cd 0 42 ppm CN 900 ppb Co - 1 5 ppm Cr - 12 ppm Cu - 8 3 ppm Fe - 5900 ppm K 180 ppm Mg - 770 ppm Mn - 240 ppm Na - 66 ppm Ni - 8 ppm Pb - 19 ppm Sb < 0 3 ppm Se < 0 3 ppm Tl < 0 3 ppm V - 7 ppm Zn - 30 ppm Hg - 0 3 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10060 to 40640 ppm K - 10390 to 42000 ppm Mg - 1331 to 16700 ppm Mn - 185 7 to 1552 ppm Na - 2700 to 12560 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 106 3 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5600 ppm Be - 0 16 ppm Ca - None Cd 80 ppm CN - 1600 ppm Co - None Cr (VI) - 640 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn 8000 ppm Na None Ni 1600 ppm Pb 500 ppm Sb 32 ppm Se 400 ppm Tl 6 4 ppm V 560 ppm Zn 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses			

[redacted]

OHI 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 4990	15177 M	Soil	Redvan, M	7/20/91	E chamber, W central hole, 3 ft INS (previous sample ID AAA 1982)	9/9/91 M	16 00	10 20	2 30			Ag - 1 0 ppm Al - 5900 ppm As - 2 4 ppm Ba - 64 ppm Be - 0 30 ppm Ca - 1000 ppm Cd - 0 00 1 ppm CN - 493 ppb Co - 1 7 ppm Cr - 12 ppm Cu - 2 3 ppm Fe - 8600 ppm K - 470 ppm Mg - 810 ppm Mn - 190 ppm Na - 110 ppm Ni - 8 ppm Pb - 10 ppm Sb - 0 3 ppm Se - 0 3 ppm Tl - 0 1 ppm V - 7 3 ppm Zn - 32 ppm Hg - 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 6 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1991 to 80500 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10000 to 40600 ppm K - 10390 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32500 ppm Ni - Not reported Pb - 10 0 to 36 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 36 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr(VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 30000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses			
AAA 4999	15177 M	Soil	Redvan, M	7/20/91	W chamber, E central hole, 3 ft INS (previous sample ID AAA 1981)	9/9/91 M	11 24	12 10	1 30			Ag - 1 0 ppm Al - 5000 ppm As - 1 3 ppm Ba - 41 ppm Be - 0 37 ppm Ca - 1 100 ppm Cd - 0 06 ppm CN - 750 ppb Co - 1 5 ppm Cr - 11 ppm Cu - 2 ppm Fe - 5600 ppm K - 530 ppm Mg - 760 ppm Mn - 160 ppm Na - 70 ppm Ni - 3 6 ppm Pb - 12 ppm Sb < 0 3 ppm Se < 0 3 ppm Tl < 0 3 ppm V - 7 0 ppm Zn - 30 ppm Hg - 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 6 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1991 to 80500 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71.1 ppm Cu - Not reported Fe - 10000 to 40600 ppm K - 10390 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32500 ppm Ni - Not reported Pb - 10 0 to 36 0 ppm Sb - 0.27 to 1.59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 36 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 30000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses			

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10/19/93

AAA 4160	15177 M	Soil	Radvan, M	7/20/91	W chamber, S central bulk, 91/2 B BKS (previous sample ID AAA 1971)	8/9/93-M	-20 10	20 60	-1 50			Ag < 1.0 ppm Al - 4900 ppm As = 3.4 ppm Ba - 57 ppm Be = 0.61 ppm Ca - 2000 ppm Cd - 0.4 ppm CN - 560 ppb Co - 1.5 ppm Cr - 14 ppm Cu - 8.9 ppm Fe - 4900 ppm K - 430 ppm Mg - 600 ppm Mn - 200 ppm Mo - 100 ppm Na - 0.4 ppm Pb - 11 ppm Sb - 20 ppm Se - 0.2 ppm Tl - 0.3 ppm V - 5.9 ppm Zn - 34 ppm Hg - 0.7 ppm	Ag - 1.0 to 1.6 ppm Al - 49600 to 113000 ppm As - 1.2 to 10.0 ppm Ba - 124.0 to 820.9 ppm Be - 1.0 to 4.4 ppm Ca - 1911 to 80900 ppm Cd - 1.2 to 1.7 ppm CN - Not reported Co - 0.4 to 23.4 ppm Cr - 2.03 to 71.1 ppm Cu - Not reported Fe - 10060 to 40640 ppm K - 10990 to 43000 ppm Mg - 1331 to 16790 ppm Mn - 105.7 to 1552 ppm Mo - 2700 to 32560 ppm Ni - Not reported Pb - 18.0 to 56.0 ppm Sb - 0.27 to 1.59 ppm Se - Not reported Tl - Not reported V - 11.5 to 113.1 ppm Zn - 19.9 to 106.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0.40 ppm Ba - 5400 ppm Be - 0.16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Mo - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6.4 ppm V - 500 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses			
AAA 4161	15177 M	Soil	Radvan, M	7/21/91	Soils associated with metal "T" pipe. W chamber N 1/3 of tank. 4 B BKS	8/9/91 M	1 60	-11 50	0 90			Ag - 1.0 ppm Al - 1700 ppm As = 1.9 ppm Ba - 61 ppm Be = 0.70 ppm Ca - 8000 ppm Cd - 1.2 ppm CN - 800 ppb Co - 2.2 ppm Cr - 12 ppm Cu - 20 ppm Fe - 7500 ppm K - 590 ppm Mg - 820 ppm Mn - 221 ppm Mo - 130 ppm Ni - 0 ppm Pb - 290 ppm Sb < 0.3 ppm Se < 0.2 ppm Tl < 0.3 ppm V - 0.0 ppm Zn - 96 ppm Hg - 1.9 ppm	Ag - 1.6 to 1.6 ppm Al - 49600 to 113000 ppm As - 1.2 to 10.0 ppm Ba - 124.0 to 820.9 ppm Be - 1.0 to 4.4 ppm Ca - 1911 to 80900 ppm Cd - 1.2 to 1.7 ppm CN - Not reported Co - 0.4 to 23.4 ppm Cr - 2.03 to 71.1 ppm Cu - Not reported Fe - 10060 to 40640 ppm K - 10990 to 43000 ppm Mg - 1331 to 16790 ppm Mn - 105.7 to 1552 ppm Mo - 2700 to 32560 ppm Ni - Not reported Pb - 18.0 to 56.0 ppm Sb - 0.27 to 1.59 ppm Se - Not reported Tl - Not reported V - 11.5 to 113.1 ppm Zn - 19.9 to 106.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0.40 ppm Ba - 5400 ppm Be - 0.16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Mo - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6.4 ppm V - 500 ppm Zn - 24000 ppm Hg - 24 ppm	TCLP analysis for Pb required but not run. Pb other total metals concentrations requires TCLP analyses.			

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SAMPLE INVENTORY

10/19/93

AAA 4364	11230-M	Soil	Radvan, M	7/27/93	E shoulder, 5 1/2 ft BGS, bucket	8/19/93-M	70.70	312.00	8.00			Ag - 4.0 ppm Al - 9000 ppm As - 2.0 ppm Ba - 304 ppm Be - 0.9 ppm Ca - 5150 ppm Cd - 3.3 ppm CN - 3.5 ppm Co - 4.0 ppm Cr - 11 ppm Cu - 210 ppm Fe - 11300 ppm K - 700 ppm Mg - 1100 ppm Mn - 160 ppm Na - 700 ppm Ni - 100 ppm Pb - 110 ppm Sb - 0.1 ppm Se - 0.1 ppm Tl - 0.1 ppm V - 13 ppm Zn - 500 ppm Hg - 10 ppm	Ag - 1.6 to 1.6 ppm Al - 49600 to 113000 ppm As - 1.2 to 10.0 ppm Ba - 124.0 to 820.9 ppm Be - 1.0 to 4.4 ppm Ca - 1911 to 80500 ppm Cd - 1.2 to 1.7 ppm CN - Not reported Co - 0.4 to 23.4 ppm Cr - 2.03 to 71.1 ppm Cu - Not reported Fe - 10060 to 406.40 ppm K - 10190 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 185.7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10.0 to 56.0 ppm Sb - 0.27 to 1.59 ppm Se - Not reported Tl - Not reported V - 11.3 to 113.1 ppm Zn - 19.9 to 146.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0.40 ppm Ba - 5400 ppm Be - 0.16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6.4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	[redacted]			
AAA 4365	11230-M	Soil	Radvan, M	7/27/93	E shoulder, 5 1/2 ft BGS, S center	8/19/93-M	5.60	1.90	4.30			Ag - 0.0 ppm Al - 5200 ppm As - 2.9 ppm Ba - 100 ppm Be - 1.2 ppm Ca - 30000 ppm Cd - 7.6 ppm CN - 1.3 ppm Co - 4.0 ppm Cr - 40 ppm Cu - 300 ppm Fe - 9000 ppm K - [illegible] Mg - [illegible] Mn - [illegible] [illegible]	Ag - 1.6 to 1.6 ppm Al - 49600 to 113000 ppm As - 1.2 to 10.0 ppm Ba - 124.0 to 820.9 ppm Be - 1.0 to 4.4 ppm Ca - 1911 to 80500 ppm Cd - 1.2 to 1.7 ppm CN - Not reported Co - 0.4 to 23.4 ppm Cr - 2.03 to 71.1 ppm Cu - Not reported Fe - 10060 to 406.40 ppm K - 10190 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 185.7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10.0 to 56.0 ppm Sb - 0.27 to 1.59 ppm Se - Not reported Tl - Not reported V - 11.3 to 113.1 ppm Zn - 19.9 to 146.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0.40 ppm Ba - 5400 ppm Be - 0.16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6.4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	[redacted]			

OU 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 4366	15290-M	Sed	Radvan, M	7/27/93	E chamber, 5 1/2 ft BKG, SW corner	8/19/93-M	30 60	27 70	5 30			Ag - 10 7 ppm Al - 6500 ppm As - 3 3 ppm Ba - 279 ppm Be - 0 0 ppm Ca - 6000 ppm Cd - 36 ppm CN - 7 5 ppm Co - 12 ppm Cr - 34 6 ppm Cu - 690 ppm Fe - 10500 ppm K 600 ppm Mg - 1400 ppm Mn - 140 ppm Na - 600 ppm Ni 100 ppm Pb - 490 ppm Sb - 5 5 ppm Se - 0 7 ppm Tl - 0 1 ppm V - 20 ppm Zn - 1150 ppm Hg - 23 3 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 620 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80900 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10000 to 40640 ppm K - 10190 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 37 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	[illegible]			
AAA 4370	15305-M	Sed	Radvan, M	7/29/93	W chamber, SE corner of tank, 6-8 in. below concrete	8/19/93-M	16 90	33 70	7 30			Ag - 1 0 ppm Al - 4600 ppm As - 0 8 ppm Ba - 33 ppm Be - 0 50 ppm Ca - 13000 ppm Cd - 0 4 ppm CN - 224 ppb Co - 1 6 ppm Cr - 37 ppm Cu - 7 6 ppm Fe - 5000 ppm K - 410 ppm Mg - 890 ppm Mn - 170 ppm Na - 140 ppm Ni - 3 0 ppm Pb - 5 0 ppm Sb < 80 ppb Se < 0.2 ppm Tl - 70 ppb V - 6.3 ppm Zn - 80 ppm Hg < 0.1 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 620 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80900 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10000 to 40640 ppm K - 10190 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 56.0 ppm Sb - 0.37 to 1.59 ppm Se - Not reported Tl - Not reported V - 11.5 to 113.1 ppm Zn - 19.9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses			

[redacted]

(911 1070, SWM11 0 030(g)
SAMPLE INVENTORY

10/19/93

AAA 4179	15301 M	Concrete	Radvan, M	7/29/93	W chamber, 8ft center of tank, 0-3 in. of concrete floor	8/19/93 M	-5 00	-31 30	4 30			Ag < 1 0 ppm Al - 5300 ppm As - 2 2 ppm Ba - 73 ppm Be - 0 82 ppm Ca - 32000 ppm Cd - 0 8 ppm CN - 851 ppb Co - 4 6 ppm Cr - 46 ppm Cu - 66 ppm Fe - 10000 ppm K - 510 ppm Mg - 1400 ppm Mn - 120 ppm Na - 190 ppm Ni - 20 ppm Pb - 27 ppm Sb - 100 ppb Se < 0 3 ppb Tl - 110 ppm V - 10 ppm Zn - 300 ppm Hg - 1 9 ppm	Ag - 1 6 to 1 6 ppm Al - 49000 to 113000 ppm As - 1 2 to 10 8 ppm Ba - 134 8 to 620 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80900 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 48040 ppm K - 10790 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1572 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 18 0 to 36 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 3600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses.			
AAA 4180	15301 M	Soil	Radvan, M	7/29/93	W chamber, N center, 10 in below concrete	8/19/93 M	-11 20	70 80	4 20			Ag < 1 0 ppm Al - 4300 ppm As - 1 6 ppm Ba - 67 ppm Be - 0 40 ppm Ca - 22000 ppm Cd - 0 4 ppm CN - 171 ppb Co - 1 2 ppm Cr - 39 ppm Cu - 9 5 ppm Fe - 4000 ppm K - 470 ppm Mg - 1000 ppm Mn - 160 ppm Na - 120 ppm Ni - 2 0 ppm Pb < 10 ppm Sb - 130 ppb Se < 0 3 ppm Tl - 120 ppb V - 6 9 ppm Zn - 130 ppm Hg < 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 49000 to 113000 ppm As - 1 2 to 10 8 ppm Ba - 134 8 to 620 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80900 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 48040 ppm K - 10790 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1572 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 18 0 to 36 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 3600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses.			

OU 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 4301	11305-M	Concrete	Radvan, M	7/29/93	W chamber, N corner, 0-6 in. of concrete floor	8/19/93-M	11 20	19 90	4 40			Ag < 1 0 ppm Al - 6400 ppm As - 3 4 ppm Ba - 100 ppm Be - 0 34 ppm Ca - 76000 ppm Cd - 0 4 ppm CN - 329 ppb Co - 2 9 ppm Cr - 35 ppm Cu - 10 ppm Fe - 7100 ppm K - 950 ppm Mg - 2500 ppm Mn - 260 ppm Na - 370 ppm Ni - 5 ppm Pb - 9 ppm Sb - 80 ppb Se - 0 8 ppm Tl - 90 ppb V - 14 ppm Zn - 230 ppm Hg - 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 670 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 40640 ppm K - 10700 to 42000 ppm Mg - 1331 to 16700 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32300 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 59 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 3600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 300 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analysis			
AAA 4302	11305-M	Soil	Radvan, M	7/29/93	W chamber, corner, 12 in. below concrete	8/19/93-M	1 60	18 40	4 90			Ag < 1 0 ppm Al - 5300 ppm As - 1 0 ppm Ba - 54 ppm Be - 0 64 ppm Ca - 4100 ppm Cd - 0 4 ppm CN - 100 ppb Co - 1 4 ppm Cr - 17 ppm Cu - 4 1 ppm Fe - 4900 ppm K - 610 ppm Mg - 730 ppm Mn - 400 ppm Na - 75 ppm Ni - 3 ppm Pb < 10 ppm Sb < 80 ppb Se < 0 2 ppm Tl - 110 ppb V - 6.1 ppm Zn - 39 ppm Hg < 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 670 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 40640 ppm K - 10700 to 42000 ppm Mg - 1331 to 16700 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32300 ppm Ni - Not reported Pb - 10.0 to 56.0 ppm Sb - 0.27 to 1.59 ppm Se - Not reported Tl - Not reported V - 11.5 to 113 1 ppm Zn - 19 9 to 146 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 3600 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 300 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analysis			

OU 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 4383	15305 M	Concrete	Radvan, M	7/29/93	W chamber, center, 0-6 in of concrete floor	8/19/93-M	16 90	21 20	1 30			Ag < 1 0 ppm Al - 6300 ppm As - 2 0 ppm Ba - 93 ppm Be - 0 33 ppm Ca - 50000 ppm Cd < 0 4 ppm CN - 356 ppb Co - 3 3 ppm Cr - 42 ppm Cu - 19 ppm Fe - 6100 ppm K - 610 ppm Mg - 2000 ppm Mn - 170 ppm Na - 200 ppm Ni - 3 ppm Pb < 10 ppm Sb - 80 ppb Se - 1 0 ppm Tl < 60 ppb V - 14 ppm Zn - 360 ppm Hg < 0 1 ppm	Ag - 1 0 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 3 to 10 0 ppm Ba - 124 0 to 670 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80900 ppm Cd - 1 2 to 1 9 ppm CN - Not reported Co - 0 4 to 21 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10800 to 40640 ppm K - 10300 to 42000 ppm Mg - 1331 to 16700 ppm Mn - 105 7 to 1552 ppm Na - 1700 to 12360 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 27 to 1 39 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 106 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analysis			
AAA 4401	15144 M	Soil	Radvan, M (Hg & Pb only)	8/4/93	E chamber, SE quadrant of center 1/3, 1 m below concrete floor	8/20/93-M	5 60	10 20	1 40			Pb - 300 ppm Hg - 21 5 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Pb - 0 11 mg/l Hg - 0 2 ug/l			
AAA 4402	15144 M	Soil	Radvan, M (Hg & Pb only)	8/4/93	E chamber, SW quadrant of center 1/3, 1 m below concrete floor	8 20/93 M	11 20	11 50	1 20			Pb - 410 ppm Hg - 34 0 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Pb - 0 07 mg/l Hg - 0 2 ug/l			
AAA 4403	15144 M	Soil	Radvan, M (Hg & Pb only)	8/4/93	E chamber, N central section, 1 m below concrete floor	8 20/93 M	11 20	6 50	0 10			Pb - 42 ppm Hg 1 4 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	TCLP not required for Pb Hg - 0 2 ug/l			

OU 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 1910	15964-R 15956-M 15963-P 15967-V, SV, PCB	Soil	Radiron, R, M, P, SV, V, PCB	8/5/93	01 / SW corner of tank, W chamber, 18 in. below concrete floor	8/26/93-R 8/19/93-M 8/17/93-P 8/17/93-SV 9/7/93-V	-11.20	-21.00	0.70	Am-241 = 0.02 pCi/g Pu-239+240 = 0.04 pCi/g Pu-238 = 0.00 pCi/g U-238 = 1.41 pCi/g U-235 = 0.11 pCi/g U-234 = 1.43 pCi/g	Am-241 = 22.0 pCi/g Pu-239 = 24.0 pCi/g Pu-238 = 27.0 pCi/g U-238 = 59.0 pCi/g U-235 = 10.0 pCi/g U-234 = 86.0 pCi/g	Ag < 1.0 ppm Al = 5400 ppm As = 0.3 ppm Ba = 30 ppm Be = 0.65 ppm Ca = 3700 ppm Cd < 0.4 ppm CN = 141 ppb Co = 1.1 ppm Cr = 55 ppm Cu = 4.7 ppm Fe = 6000 ppm K = 320 ppm Mg = 490 ppm Mn = 290 ppm Na = 91 ppm Ni = 30 ppm Pb = 7 ppm Sb = 80 ppb Se = 0.3 ppm Tl = 60 ppb V = 5.3 ppm Zn = 30 ppm Hg = 0.1 ppm	Ag = 1.6 to 3.6 ppm Al = 49000 to 113000 ppm As = 1.2 to 10.0 ppm Ba = 134.0 to 820.9 ppm Be = 1.0 to 4.4 ppm Ca = 1911 to 80300 ppm Cd = 1.2 to 1.7 ppm CN = Not reported Co = 0.4 to 23.4 ppm Cr = 2.03 to 71.1 ppm Cu = Not reported Fe = 10060 to 40640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16700 ppm Mn = 105.7 to 1572 ppm Na = 2700 to 32500 ppm Ni = Not reported Pb = 18.0 to 56.0 ppm Sb = 0.27 to 1.59 ppm Se = Not reported Tl = Not reported V = 11.5 to 113.1 ppm Zn = 19.9 to 146.2 ppm Hg = Not reported	Ag = 400 ppm Al = None As = 0.40 ppm Ba = 5000 ppm Be = 0.16 ppm Ca = None Cd = 80 ppm CN = 1600 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Se = 400 ppm Tl = 6.4 ppm V = 560 ppm Zn = 24000 ppm Hg = 24 ppm	No total metals concentrations require TCLP analyses	None above MDH a or LAMI, SAI a, no total concentrations that require TCLP analyses	None above LAMI, SALs	
AAA 1961	15964-R 15956-M 15963-P 15967-V, SV, PCB	Soil	Radiron, R, M, P, SV, V, PCB	8/5/93	04 / NE corner of E chamber, 18 in. below concrete floor	8/26/93-R 8/19/93-M 8/17/93-P 8/17/93-SV 9/7/93-V	16.90	-17.40	-0.60	Am-241 = 0.04 pCi/g Pu-239+240 = 2.47 pCi/g Pu-238 = 0.01 pCi/g U-238 = 2.11 pCi/g U-235 = 0.20 pCi/g U-234 = 3.01 pCi/g	Am-241 = 22.0 pCi/g Pu-239 = 24.0 pCi/g Pu-238 = 27.0 pCi/g U-238 = 59.0 pCi/g U-235 = 10.0 pCi/g U-234 = 86.0 pCi/g	Ag < 1.0 ppm Al = 4600 ppm As = 0.3 ppm Ba = 33 ppm Be = 0.67 ppm Ca = 7000 ppm Cd < 0.4 ppm CN = 164 ppb Co = 0.88 ppm Cr = 53 ppm Cu = 6.4 ppm Fe = 5100 ppm K = 490 ppm Mg = 700 ppm Mn = 360 ppm Na = 93 ppm Ni = 22 ppm Pb = 3 ppm Sb < 80 ppb Se = 0.9 ppm Tl < 60 ppb V = 6.4 ppm Zn = 33 ppm Hg < 0.1 ppm	Ag = 1.6 to 1.6 ppm Al = 49600 to 113000 ppm As = 1.2 to 10.0 ppm Ba = 134.0 to 820.9 ppm Be = 1.0 to 4.4 ppm Ca = 1911 to 80300 ppm Cd = 1.2 to 1.7 ppm CN = Not reported Co = 0.4 to 23.4 ppm Cr = 2.03 to 71.1 ppm Cu = Not reported Fe = 10060 to 40640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16700 ppm Mn = 105.7 to 1572 ppm Na = 2700 to 32500 ppm Ni = Not reported Pb = 18.0 to 56.0 ppm Sb = 0.27 to 1.59 ppm Se = Not reported Tl = Not reported V = 11.5 to 113.1 ppm Zn = 19.9 to 146.2 ppm Hg = Not reported	Ag = 400 ppm Al = None As = 0.40 ppm Ba = 5000 ppm Be = 0.16 ppm Ca = None Cd = 80 ppm CN = 1600 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Se = 400 ppm Tl = 6.4 ppm V = 560 ppm Zn = 24000 ppm Hg = 24 ppm	No total metals concentrations require TCLP analyses	None above MDH a or LAMI, SAI a, no total concentrations that require TCLP analyses	None above LAMI, SALs	
AAA 4406	15956-M	Soil	Radiron, M (Hg & Pb only)	9/3/93	02 / Center of tank, 18 in. below concrete floor	8/19/93-M	-16.90	-20.00	-0.40			Pb < 4 ppm Hg = 0.1 ppm	Pb = 18.0 to 56.0 ppm Hg = Not reported	Pb = 500 ppm Hg = 24 ppm	No total metals concentrations require TCLP analyses			

[redacted]

(DEI 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 6487	13356-M	Soil	Radvan, M (Hg & Pb only)	8/5/93	05 / E chamber, S 1/3, 10 in below concrete floor	8/19/93-M	5 60	-19 15	0 50			Pb - 12 ppm Hg - 0 1 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	No total metals concentrations require TCLP analyses			
AAA 6488	13356-M	Soil	Radvan, M (Hg & Pb only)	8/5/93	05 / E chamber, S1/3, 10 in below concrete floor	8/19/93-M	-11 20	3 90	1 60			Pb - 6 ppm Hg - 0 1 ppm	Pb - 10 0 to 56 0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	No total metals concentrations require TCLP analyses			

Clay Pipe Drainline Samples

Sample ID	EM-9 Request Number	Sample Matrix	Analyses Requested	Date Collected	Sample Location	Date Data Validated	Radvan Results (pCi/g) Gross Analyses α +/-(5) 1	β +/-21 8	γ - 4 6	Isotopes: Isotope Results	Isotopes: LANL Screening Action Levels (Soil)	Metals: Metals Results	Metals: Background Metals Concentrations Range for the Los Alamos Area	Metals: LANL Screening Action Levels (Soil)	Metals: TCLP Results	SVOCs and VOCs Results	Pesticides Results	PCB Resul
12" below asphalt		Soil	Radvan	6/18/93	Soil sample from 12 in below asphalt, valve box excavation		<MDA	<MDA	<MDA									
24" below asphalt		Soil	Radvan	6/21/93	Soil sample from 24 in below asphalt, valve box excavation		MDA	MDA	MDA									
4' below asphalt		Soil	Radvan	6/21/93	Soil sample from 4 ft below asphalt, valve box excavation		<MDA	MDA	MDA									
AAA 1903	14910-V, SV, PCB 14904-R 14895-M	Soil	Radvan, R, M, P, SV, V, PCB	6/21/93	Under clay pipe, valve box excavation	8/19/93-R 8/18/93-PCBs	113 40	25 10	1 00	Gamma Scan Am-241 - 7 27 pCi/g Cs-137 - 0 5 pCi/g Eu-152 - 0 0 pCi/g K-40 - 21 09 pCi/g Ra-226 - 1 02 pCi/g * Th-232 - 2 91 pCi/g * U-234 - 41 2 pCi/g U-235 - 3 03 pCi/g KPHS Total U - 3 9 mg/kg RAS Pu-238 - 1 047 pCi/g Pu-239 - 454 00 pCi/g Am-241 - 6 54 pCi/g FC Sr-90 - 0 16 pCi/g	Am-241 - 22 0 pCi/g Cs-137 - 4 0 pCi/g None None Ra-226 - 0 73 pCi/g * Th-232 - 0 00 pCi/g * U-234 - 86 0 pCi/g U-235 - 10 0 pCi/g Total U - 340 mg/kg Pu-238 - 27 0 pCi/g Pu-239 - 24 0 pCi/g Am-241 - 22 0 pCi/g Sr-90 - 0 9 pCi/g	No metals above LANL BAPs (Verbal report)	Ag - 1 6 to 1 6 ppm Al - 49600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 134 0 to 620 0 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80300 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 0 ppm Cr - 2 05 to 71 1 ppm Cu - Not reported Fe - 10800 to 48640 ppm K - 10390 to 49000 ppm Mg - 1331 to 16700 ppm Mn - 105 7 to 1970 ppm Na - 2700 to 32360 ppm Ni - Not reported Pb - 10 0 to 56 0 ppm Sb - 0 37 to 1.39 ppm Se - Not reported Tl - Not reported V - 11.5 to 113 1 ppm Zn - 19 9 to 146 1 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (IV) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 3000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 560 ppm Zn - 24000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses (Verbal report)	[redacted]	[redacted]	1 0 pp (MDL - m) LANL S for PCBs ppb)

OU 1071, SWMU 0-030(g)
SAMPLE INVENTORY

10/19/93

AAA 1912	14910-V, SV, PCB 14904-R 14091-M	Soil	Radvan, R, M, P, SV, V, PCB	6/21/93	W side of clay pipe, valve box excavation	6/10/93-R 6/10/93-PCBs	-5.00	9.20	-1.90	**Gamma Rays:** Am-241 <7.00 pCi/g; Cs-137 < 0.37 pCi/g; Co-60 - 0.0 pCi/g; K-40 - 27.00 pCi/g; Ra-226 < 2.01 pCi/g *; Th-232 < 3.9 pCi/g *; U-234 - 61.5 pCi/g; U-235 < 3.20 pCi/g; **ICP/MS:** Total U - 2.4 mg/kg; **BAS:** Pu-238 - 0.07 pCi/g; Pu-239 - 20.16 pCi/g; Am-241 - 0.31 pCi/g; **FS:** Sr-90 - 0.0 pCi/g	Am-241 - 22.0 pCi/g; Cs-137 - 4.0 pCi/g; None; None; Ra-226 - 0.73 pCi/g *; Th-232 - 0.00 pCi/g *; U-234 - 86.0 pCi/g; U-235 - 19.0 pCi/g; Total U - 240 mg/kg; Pu-238 - 27.0 pCi/g; Pu-239 - 24.0 pCi/g; Am-241 - 22.0 pCi/g; Sr-90 - 0.9 pCi/g	[illegible]	Ag - 1.6 to 1.6 ppm; Al - 49600 to 113000 ppm; As - 1.2 to 30.0 ppm; Ba - 124.0 to 830.9 ppm; Be - 1.0 to 4.4 ppm; Ca - 9911 to 80900 ppm; Cd - 1.2 to 1.7 ppm; CN - Not reported; Co - 9.4 to 23.4 ppm; Cr - 3.03 to 71.1 ppm; Cu - Not reported; Fe - 30060 to 48640 ppm; K - 10990 to 42000 ppm; Mg - 1331 to 16790 ppm; Mn - 105.7 to 1552 ppm; Na - 2700 to 32560 ppm; Ni - Not reported; Pb - 18.0 to 36.0 ppm; Sb - 0.27 to 1.39 ppm; Se - Not reported; Tl - Not reported; V - 11.5 to 113.1 ppm; Zn - 19.9 to 146.2 ppm; Hg - Not reported	Ag - 600 ppm; Al - None; As - 0.40 ppm; Ba - 5600 ppm; Be - 0.16 ppm; Ca - None; Cd - 50 ppm; CN - 1600 ppm; Co - None; Cr (IV) - 400 ppm; Cu - 3000 ppm; Fe - None; K - None; Mg - None; Mn - 9000 ppm; Na - None; Ni - 1600 ppm; Pb - 500 ppm; Sb - 32 ppm; Se - 400 ppm; Tl - 6.4 ppm; V - 160 ppm; Zn - 24000 ppm; Hg - 24 ppm	No total metals concentrations that require TCLP analysis (Verbal report)	[illegible]	[illegible]	<1.0 ppm (MDL - 1.0 [illegible] BAL [illegible] ppb)
S side of septic tank		Soil	Radvan, SV, V	7/1/93	Clay pipe, S of septic tank, soil from within pipe	7/1/93-SV, 7/7/93-V	-16.90	31.30	0.20								None above MDLs or LANL BALs, no total metals concentrations that require TCLP analysis		
N end of pipe		Swipe	Radvan	7/1/93	Swipe of clay pipe, S of tank, N end		0.00	1.00	1.70										
S end of pipe		Swipe	Radvan	7/1/93	Swipe of clay pipe S of tank, S end		0.40	2.10	2.60										

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SAMPLE INVENTORY

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AAA 1969	13276-V, P, PCB 13360 - 0	Soil	Radium, R, M, P, SV, V, PCB	7/28/93	Beneath clay pipe outfall, surface	9/20/93-M 9/19/93-SV 8/23/93-V 8/17/93-PCB	-11 20	-14 00	-3 70		U-3 = 1.5 x 10^{7} pCi/g Am-241 = 21 0 pCi/g Pu-239 = 34 0 pCi/g Pu-240 = 27 0 pCi/g U-238 = 30 0 pCi/g U-234 = 66 0 pCi/g U-235 = 10 0 pCi/g	Ag < 1 ppm Al = 4200 ppm As = 1 3 ppm Ba = 31 ppm Be = 0 30 ppm Ca = 900 ppm Cd < 0 4 ppm CN = 331 ppb Co = 1 2 ppm Cr = 40 ppm Cu = 5 4 ppm Fe = 4800 ppm K = 390 ppm Mg = 540 ppm Mn = 240 ppm Na = 61 ppm Ni = 24 ppm Pb = 15 ppm Sb < 60 ppb Se < 0 2 ppm Tl < 40 ppm V = 1 3 ppm Zn = 24 ppm Hg < 0 1 ppm	Ag = 1.6 to 1.6 ppm Al = 49000 to 113000 ppm As = 1.3 to 10 0 ppm Ba = 124.0 to 820.9 ppm Be = 1.0 to 4 4 ppm Ca = 1911 to 80300 ppm Cd = 1.2 to 1 7 ppm CN = Not reported Co = 0 4 to 23 4 ppm Cr = 2 05 to 71 1 ppm Cu = Not reported Fe = 10800 to 48640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16790 ppm Mn = 107 7 to 1552 ppm Na = 2700 to 32360 ppm Ni = Not reported Pb = 10 0 to 56 0 ppm Sb = 0 27 to 1 59 ppm Se = Not reported Tl = Not reported V = 11 5 to 113 1 ppm Zn = 19 9 to 146 2 ppm Hg = Not reported	Ag = 400 ppm Al = None As = 0 40 ppm Ba = 5000 ppm Be = 0 16 ppm Ca = None Cd = 80 ppm CN = 1600 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Se = 400 ppm Tl = 6 4 ppm V = 500 ppm Zn = 24000 ppm Hg = 24 ppm	Pb < 0 05 mg/L Hg < 0 2 mg/L No other metals concentrations require TCLP analysis.	None above MDL or LANL BALs or total concentrations that require TCLP analysis		<0.5 ppm (MDL = [illegible] ppm) (LANL B[illegible] for PCBs [illegible])
AAA 4371	13366-M	Soil	Radium, M	7/28/93	End of pipe outfall, 1 0 BGS	9/20/93-M	11 20	-23 20	0 20			Ag < 1 0 ppm Al = 2000 ppm As = 1 ppm Ba = 36 ppm Be = 0 05 ppm Ca = 340 ppm Cd < 0 4 ppm CN = 300 ppb Co < 0 5 ppm Cr = 13 ppm Cu = 0 6 ppm Fe = 4200 ppm K = 290 ppm Mg = 350 ppm Mn = 210 ppm Na = 69 ppm Ni = 5 8 ppm Pb = 16 ppm Sb < 60 ppb Se < 0.2 ppm Tl < 40 ppb V = 1.7 ppm Zn = 30 ppm Hg < 0 1 ppm	Ag = 1 6 to 1 6 ppm Al = 49000 to 113000 ppm As = 1 2 to 10 0 ppm Ba = 124 0 to 820 9 ppm Be = 1 0 to 4 4 ppm Ca = 1911 to 80300 ppm Cd = 1.2 to 1 7 ppm CN = Not reported Co = 0 4 to 23.4 ppm Cr = 2 05 to 71.1 ppm Cu = Not reported Fe = 10800 to 48640 ppm K = 10390 to 42000 ppm Mg = 1331 to 16790 ppm Mn = 107 7 to 1552 ppm Na = 2700 to 32360 ppm Ni = Not reported Pb = 10.0 to 56.0 ppm Sb = 0.27 to 1.59 ppm Se = Not reported Tl = Not reported V = 11 5 to 113.1 ppm Zn = 19 9 to 146.2 ppm Hg = Not reported	Ag = 400 ppm Al = None As = 0 40 ppm Ba = 5000 ppm Be = 0 16 ppm Ca = None Cd = 80 ppm CN = 1600 ppm Co = None Cr (VI) = 400 ppm Cu = 3000 ppm Fe = None K = None Mg = None Mn = 8000 ppm Na = None Ni = 1600 ppm Pb = 500 ppm Sb = 32 ppm Se = 400 ppm Tl = 6 4 ppm V = 500 ppm Zn = 24000 ppm Hg = 24 ppm	Pb < 0 05 mg/L Hg < 0 2 mg/L No other total metals concentrations require TCLP analysis			

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AAA 0372	15206-M	Soil	Radvan, M	7/28/93	10 0 0mm outfall, within pipe	8/20/93-M	-11 20	22 30	-0 80			Ag - 1 0 ppm Al - 2400 ppm As - 1 1 ppm Ba - 30 ppm Be - 0 6 ppm Ca - 1000 ppm Cd - 0 46 ppm CN - 335 ppb Co - 1 ppm Cr - 12 1 ppm Cu - 30 ppm Fe - 6000 ppm K - 470 ppm Mg - 370 ppm Mn - 240 ppm Na - 74 ppm Ni - 6 0 ppm Pb - 17 ppm Sb - 80 ppb Se 0 2 ppm Tl - 40 ppb V - 2 6 ppm Zn - 40 ppm Hg - 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 40600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80500 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10860 to 40640 ppm K - 10990 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 36 0 ppm Sb - 0 27 to 1 39 ppm Se - Not reported Tl - Not reported V - 11 5 to 113 1 ppm Zn - 19 9 to 106 2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 160 ppm Zn - 16000 ppm Hg - 24 ppm	Pb < 0 03 mg/L Hg < 0 3 ug/L No other total metals concentrations requires TCLP analysis			
AAA 0373	15305-M	Soil	Radvan, M	7/29/93	10 0mm outfall, 1 0 below pipe, verification sample	8/19/93-M	0 00	18 90	17 30			Ag - 1 0 ppm Al - 1700 ppm As - 1 9 ppm Ba - 19 ppm Be - 0 45 ppm Ca - 870 ppm Cd - 0 4 ppm CN - 267 ppb Co - 1 0 ppm Cr - 160 ppm Cu - 8 0 ppm Fe - 5400 ppm K 300 ppm Mg - 410 ppm Mn - 130 ppm Na - 72 ppm Ni - 110 ppm Pb - 9 ppm Sb < 80 ppb Se - 0 4 ppm Tl - 70 ppb V - 4 5 ppm Zn - 16 ppm Hg - 0 1 ppm	Ag - 1 6 to 1 6 ppm Al - 40600 to 113000 ppm As - 1 2 to 10 0 ppm Ba - 124 0 to 820 9 ppm Be - 1 0 to 4 4 ppm Ca - 1911 to 80500 ppm Cd - 1 2 to 1 7 ppm CN - Not reported Co - 0 4 to 23 4 ppm Cr - 2 03 to 71 1 ppm Cu - Not reported Fe - 10860 to 40640 ppm K - 10990 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105 7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10 0 to 36 0 ppm Sb - 0 27 to 1.39 ppm Se - Not reported Tl - Not reported V - 11.5 to 113.1 ppm Zn - 19 9 to 106.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0 40 ppm Ba - 5000 ppm Be - 0 16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6 4 ppm V - 500 ppm Zn - 16000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analysis			

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AAA 4176	11303-M	Soil	Radvan, M	7/29/93	30.0 from outfall, 1.0 below pipe, verification sample	8/19/93-M	16:00	21:30	8:00			Ag < 1.0 ppm Al - 9900 ppm As - 1.0 ppm Ba - 31 ppm Be - 0.64 ppm Ca - 790 ppm Cd < 0.4 ppm CN - 109 ppb Co - 0.9 ppm Cr - 30 ppm Cu - 3.1 ppm Fe - 4900 ppm K - 900 ppm Mg - 400 ppm Mn - 230 ppm Na - 100 ppm Ni - 2.0 ppm Pb - 5 ppm Sb - 90 ppb Se - 0.2 ppm Tl - 60 ppb V - 3.5 ppm Zn - 39 ppm Hg - 0.1 ppm	Ag - 1.6 to 1.6 ppm Al - 49600 to 113000 ppm As - 1.2 to 10.0 ppm Ba - 124.0 to 820.9 ppm Be - 1.0 to 4.4 ppm Ca - 1911 to 80900 ppm Cd - 1.2 to 1.7 ppm CN - Not reported Co - 0.4 to 23.4 ppm Cr - 2.03 to 71.1 ppm Cu - Not reported Fe - 10000 to 40040 ppm K - 10990 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105.7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10.0 to 56.0 ppm Sb - 0.27 to 1.39 ppm Se - Not reported Tl - Not reported V - 11.3 to 113.1 ppm Zn - 19.9 to 146.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0.40 ppm Ba - 5000 ppm Be - 0.16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6.4 ppm V - 560 ppm Zn - 10000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses.			
AAA 4177	11303-M	Soil	Radvan, M	7/29/93	15.0 from outfall, 1.0 below pipe, verification sample	8/19/93-M	11:20	21:30	7:20			Ag - 1.0 ppm Al - 9900 ppm As - 0.9 ppm Ba - 31 ppm Be - 0.56 ppm Ca - 1000 ppm Cd < 0.4 ppm CN - 266 ppb Co - 1.3 ppm Cr - 36 ppm Cu - 5.7 ppm Fe - 4200 ppm K - 400 ppm Mg - 540 ppm Mn - 230 ppm Na - 120 ppm Ni - 3 ppm Pb - 8 ppm Sb < 80 ppb Se < 0.3 ppm Tl - 113 ppb V - 4.6 ppm Zn - 32 ppm Hg - 0.2 ppm	Ag - 1.6 to 1.6 ppm Al - 49600 to 113000 ppm As - 1.2 to 10.0 ppm Ba - 124.0 to 820.9 ppm Be - 1.0 to 4.4 ppm Ca - 1911 to 80900 ppm Cd - 1.2 to 1.7 ppm CN - Not reported Co - 0.4 to 23.4 ppm Cr - 2.03 to 71.1 ppm Cu - Not reported Fe - 10000 to 40040 ppm K - 10990 to 42000 ppm Mg - 1331 to 16790 ppm Mn - 105.7 to 1552 ppm Na - 2700 to 32560 ppm Ni - Not reported Pb - 10.0 to 56.0 ppm Sb - 0.27 to 1.39 ppm Se - Not reported Tl - Not reported V - 11.3 to 113.1 ppm Zn - 19.9 to 146.2 ppm Hg - Not reported	Ag - 400 ppm Al - None As - 0.40 ppm Ba - 5000 ppm Be - 0.16 ppm Ca - None Cd - 80 ppm CN - 1600 ppm Co - None Cr (VI) - 400 ppm Cu - 3000 ppm Fe - None K - None Mg - None Mn - 8000 ppm Na - None Ni - 1600 ppm Pb - 500 ppm Sb - 32 ppm Se - 400 ppm Tl - 6.4 ppm V - 560 ppm Zn - 10000 ppm Hg - 24 ppm	No total metals concentrations that require TCLP analyses.			

AA 4186	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	6 ft N of center of tank, 18 in. BGS	8/19/93 M	0.00	20.30	0.60			Pb - 11 ppm Hg - 0.1 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg - 0.2 ug/L No other total metals concentrations requires TCLP analysis			
AA 4187	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	1 ft below AAA 4186, 50 ft from outfall, verification sample	8/19/93 M	0.00	21.30	1.00			Pb - 19 ppm Hg - 0.1 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg - 0.2 ug/L No other total metals concentrations requires TCLP analysis			
AA 4188	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	45 ft from outfall, 1 ft from NE edge of tank, 1 ft below clay pieces, verification sample	8/19/93 M	11.20	-19.90	0.60			Pb - 16 ppm Hg - 0.1 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg - 0.2 ug/L No other total metals concentrations requires TCLP analysis			
AA 4189	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	40 ft from outfall, 8 ft NE of NE corner of tank, 1 ft below pipe, verification sample	8/19/93 M	16.90	21.20	1.00			Pb - 17 ppm Hg - 0.1 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg - 0.2 ug/L No other total metals concentrations requires TCLP analysis			
AA 4190	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	30 ft from outfall, 1 ft below pipe, verification sample	8/19/93 M	1.60	-21.60	-3.30			Pb - 16 ppm Hg - 0.6 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg - 0.2 ug/L No other total metals concentrations requires TCLP analysis			
AA 4191	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	25 ft from outfall, 1 ft below pipe, verification sample	8/19/93 M	11.20	3.40	-4.50			Pb - 29 ppm Hg - 0.0 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg < 0.2 ug/L No other total metals concentrations requires TCLP analysis			
A 4192	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	10 ft from outfall, 1 ft below pipe, verification sample	8/19/93 M	11.20	-18.40	2.70			Pb - 18 ppm Hg - 0.4 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg < 0.2 ug/L No other total metals concentrations requires TCLP analysis			
A 4193	11101 M	Soil	Radvan, M (Hg & Pb only)	7/30/91	55 ft from outfall, 1 ft below pipe, verification sample	8/19/93 M	1.60	23.70	1.90			Pb - 26 ppm Hg - 0.6 ppm	Pb - 10.0 to 56.0 ppm Hg - Not reported	Pb - 500 ppm Hg - 24 ppm	Hg - 0.2 ug/L No other total metals concentrations requires TCLP analysis			

ch-Volume Air Sample Filters

ample ID	EM 9 Request Number	Sample Matrix	Analyses Requested	Date Collected	Sample Location	Date Data Validated	Radvan Results (pCi/g) Gross Analyses α +/-63.1	β +/-33.0	γ +/-4.6	Isotopes: Isotope Results	Isotopes: LANL Screening Action Levels (Soil)	Metals: Metals Results	Metals: Background Metals Concentration Ranges for the Los Alamos Area	Metals: LANL Screening Action Levels (Soil)	Metals: TCLP Results	SVOCs and VOCs Results	Pesticides Results	PCBs Results
-valed		Filter	Radvan	6/23/93	Downwind hi-vol air sample filter		0.40	-3.60	-0.70									
pated		Filter	Radvan	6/23/93	Upwind hi-vol air sample filter		0.40	2.80	0.60									

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AAA 0379		Filter	Radon	7/13/93	East hi-vol sample filter		6.90	12.00	0.30										
AAA 0380		Filter	Radon	7/13/93	West hi-vol sample filter		11.90	24.10	1.00										
AAA 0320		Filter	Radon	7/13/93	East hi-vol sample filter		10.00	16.90	0.00										
AAA 0327		Filter	Radon	7/13/93	West hi-vol sample filter		12.00	30.00	0.00										
AAA 0321		Filter	Radon	7/14/93	East hi-vol sample filter		-0.60	0.90	0.30										
AAA 0322		Filter	Radon	7/14/93	West hi-vol sample filter		7.30	11.90	-0.90										
AAA 0334		Filter	Radon	7/15/93	East hi-vol sample filter		0.00	0.30	-0.30										
AAA 0335		Filter	Radon	7/15/93	West hi-vol sample filter		1.00	0.30	0.00										
AAA 0340		Filter	Radon	7/16/93	East hi-vol sample filter		2.30	4.00	1.10										
AAA 0341		Filter	Radon	7/16/93	West hi-vol sample filter		-0.60	1.90	0.90										
AAA 0347		Filter	Radon	7/19/93	East hi-vol sample filter		0.70	-1.30	0.90										
AAA 0348		Filter	Radon	7/19/93	West hi-vol sample filter		1.00	1.70	1.40										
AAA 0353		Filter	Radon	7/20/93	East hi-vol sample filter		2.90	4.30	-0.10										
AAA 0354		Filter	Radon	7/20/93	West hi-vol sample filter		1.00	4.10	-0.30										
AAA 0361		Filter	Radon	7/21/93	East hi-vol sample filter		-0.60	-2.10	-0.30										
AAA 0362		Filter	Radon	7/21/93	West hi-vol sample filter		2.90	1.00	0.30										
AAA 0367		Filter	Radon	7/27/93	East hi-vol sample filter		2.30	16.30	13.30										
AAA 0368		Filter	Radon	7/27/93	West hi-vol sample filter		22.60	41.10	12.70										
AAA 0369		Filter	Radon	7/28/93	East hi-vol sample filter		0.60	-1.90	2.10										
AAA 0370		Filter	Radon	7/28/93	West hi-vol sample filter		0.00	-1.30	1.30										
AAA 0373		Filter	Radon	7/29/93	East hi-vol sample filter		-0.60	-1.30	1.30										
AAA 0374		Filter	Radon	7/29/93	West hi-vol sample filter		0.70	-0.00	1.10										
AAA 0384		Filter	Radon	7/30/93	East hi-vol sample filter		9.60	23.90	14.50										
AAA 0385		Filter	Radon	7/30/93	West hi-vol sample filter		24.90	40.30	27.70										
AAA 0394		Filter	Radon	8/2/93	East hi-vol sample filter		3.00	10.90	1.70										
AAA 0395		Filter	Radon	8/2/93	West hi-vol sample filter		0.00	7.90	-1.10										
AAA 0398		Filter	Radon	8/3/93	East hi-vol sample filter		0.60	1.10	4.60										
AAA 0399		Filter	Radon	8/3/93	West hi-vol sample filter		19.30	46.30	12.30										
AAA 0400		Filter	Radon	8/4/93	East hi-vol sample filter		-10.90	13.00	0.10										
AAA 0404		Filter	Radon	8/5/93	East hi-vol sample filter		4.30	2.40	5.40										
AAA 0405		Filter	Radon	8/5/93	West hi-vol sample filter		1.60	-0.00	2.30										
AAA 0411		Filter	Radon	8/6/93	East hi-vol sample filter		1.10	6.70	7.30										
AAA 0412		Filter	Radon	8/6/93	West hi-vol sample filter		7.30	13.23	4.60										

Equipment Swipe Samples

Sample ID	EM-9 Request Number	Sample Matrix	Analyses Requested	Date Collected	Sample Location	Date Data Validated	Radon Results (pCi/g) Gross Analyses			Isotopes		Metals				SVOCs and VOCs Results	Pesticides Results	PCB Resul
							α +/-62.1	β +/-32.8	γ +/-4.4	Isotope Results	LANL Screening Action Levels (Soil)	Metals Results	Background Metals Concentration Ranges for the Los Alamos Area	LANL Screening Action Levels (Soil)	TCLP Results			
Inside Floor		Swipe	Radon	6/18/93	Inside floor of backhoe #30790		<MDA	<MDA	<MDA									
Side of bucket		Swipe	Radon	6/18/93	Side of backhoe #30790 bucket		<MDA	<MDA	<MDA									
Inside of bucket		Swipe	Radon	6/18/93	Inside of backhoe #30790 bucket		<MDA	<MDA	<MDA									
Left rear wheelwell		Swipe	Radon	6/18/93	Left rear wheelwell of backhoe #30790		<MDA	<MDA	<MDA									
Loader bucket		Swipe	Radon	6/18/93	Front end loader bucket of backhoe #30790		<MDA	<MDA	<MDA									

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Outside basket		Swipe	Radeon	6/21/93	Outside basket of I-Jobbner		<MDA	<MDA	<MDA										
Inside basket		Swipe	Radeon	6/21/93	Inside basket of I-Jobbner		<MDA	<MDA	<MDA										
Right Track		Swipe	Radeon	6/21/93	Right track of I-Jobbner		<MDA	<MDA	<MDA										
Top Tamper		Swipe	Radeon	6/21/93	Top of tamper, buckhoe 010403		<MDA	<MDA	<MDA										
Bucket tamper		Swipe	Radeon	6/21/93	Front end bucket of buckhoe 010403		<MDA	<MDA	MDA										
I Beam Wheel well		Swipe	Radeon	6/21/93	Left rear wheelwell, buckhoe 010403		<MDA	<MDA	MDA										
AAA 1193		Swipe	Radeon	7/9/93	Buckhoe 010403, back bucket		0.40	1.60	0.30										
AAA 1194		Swipe	Radeon	7/9/93	Buckhoe 010403, left rear wheel well		0.40	1.60	1.50										
AAA 1195		Swipe	Radeon	7/9/93	Buckhoe 010403, front end loader bucket		0.40	1.40	0.70										

Water Samples

Sample ID	EM-9 Request Number	Sample Matrix	Analyses Requested	Date Collected	Sample Location	Date Data Validated	Radeon Results (pCi/g) Gross Analyses α +/-0.31	β +/-2.10	γ +/-4.4	Isotopes Isotope Results	LANL Screening Action Levels (Bq/l)	Metals Metals Results	Background Metals Concentration Range for the Los Alamos Area	LANL Screening Action Levels (Water)	TCLP Results	SVOCs and VOCs Results	Pesticides Results	PCBs Results
IA-0-(01) 071, waste water		Water	Gross rad (HS-1)	6/21/93	Drum water, hand and Beneath truck		MDA	MDA										
AA 4396	11921 M	Water	Radeon, M (Hg and Pb only)	8/1/93	Rainwater, west chamber (Resampled 8/5/93 using HNO3 preservative)	8/16/93 M	0.40	4.00	1.40			Pb - 2.1 ug/L Hg - 0.2 ug/L	N/A N/A	Pb - 50 ug/L Hg - 2 ug/L	Total metals concentrations do not require TCLP analysis			
AA 4397	11921 M	Water	Radeon, M (Hg and Pb only)	8/1/93	Rainwater, drum storage area (Resampled 8/5/93 using HNO3 preservative)	8/16/93 M	0.40	1.10	1.10			Pb - 2.0 ug/L Hg - 0.2 ug/L	N/A N/A	Pb - 50 ug/L Hg - 2 ug/L	Total metals concentrations do not require TCLP analysis			
AA 4400	11967 M	Water	Radeon, M (Hg and Pb only)	8/1/93	Culvert water	8/16/93 M	0.44	4.63	1.6			Pb - 200 ug/L Hg < 0.2 ug/L	N/A N/A	Pb - 50 ug/L Hg - 2 ug/L	[redacted]			
AA 4410	11967 M	Water	Radeon, M (Hg and Pb only)	8/1/93	Drum water	8/16/93 M	0.44	3.90	1.7			Pb < 40 ug/L Hg < 0.2 ug/L	N/A N/A	Pb - 50 ug/L Hg - 2 ug/L	[redacted]			

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Other

Sample ID	PM-9 Request Number	Sample Matrix	Analyses Requested	Date Collected	Sample Location	Data Validated	Radvan Results (pCi/g) Gross Analyses			Isotope Results		Metals Results				SVOC's and VOC's Results	Pesticides Results	PCB's
							α +/-6.1	β +/-2.1	γ +/-4.4	Isotope Results	LANL Screening Action Levels (Soil)	Metals Results	Background Metals Concentration Range for the Los Alamos Area	LANL Screening Action Levels (Soil)	TCLP Results			
AAA 0111	11126 M	Paint Chips	M (Pb only)	7/14/93	Paint Chips Down Old Cathedral Church Outside Paint	9/10/93 M						No total analyses done	N/A	N/A	Pb - 72 mg/L (Threshold - 5.0 mg/L)			

Key

Analyses Requested
Radvan = Gross alpha, beta, and gamma screening by the mobile radiological analysis laboratory
R = Radiochemical isotope analysis
M = Target Analyte List (TAL) metals analysis
P = Pesticides analysis
SV = Semivolatiles analysis
V = Volatiles analysis
PCB = Polychlorinated biphenyls analysis

Sample Location
N, S, E, W = cardinal directions
NE, NW, SE, SW = intercardinal directions

Radvan Results
Gross alpha, beta, and gamma analyses have uncertainty values of +/- 6.1, +/- 2.1, and +/- 4.4, respectively. Analyses which were greater than the positive uncertainty value (i.e. +6.1, +2.1, or +4.4 for alpha, beta, or gamma) were considered above background

Isotopes Results
SAL = Screening Action Level
Constituent concentrations in *bold and italics* are above the ER Program's SAL for that constituent
* Ra-226 and Th-232 method detection limits are above the ER Program's SALs for those constituents. Therefore, it is unknown if these constituents actually exceed the ER Program's SALs
FAA = flame atomic absorption
ETAA = electrothermal vaporization atomic absorption
MDA = minimum detectable activity
NDA = no detectable activity
ICPMS = inductively coupled plasma/mass spectrometry
PC = proportional counting
RAS = radiochemical alpha spectrometry

Metals Results
TAL = Target Analyte List
SAL = Screening Action Level
Constituent concentrations in *bold and italics* are above the ER Program's SAL for that constituent.
All arsenic and beryllium concentrations exceed the ER Program's SALs; however, sample concentrations fall within background concentrations for these constituents (SALs are below background concentrations for arsenic and beryllium)

TCLP = Toxicity Characteristic Leaching Procedure

TCLP Threshold values,

Arsenic = 5.0 ppm
Barium = 100.0 ppm
Cadmium = 1.0 ppm
Chromium = 5.0 ppm
Lead = 5.0 ppm
Mercury = 0.2 ppm
Nickel = 134.0 ppm
Selenium = 1.0 ppm
Silver = 5.0 ppm
Thallium = 130.0 ppm

If a total metal concentration exceeded 20x the TCLP threshold value, then TCLP analyses were required to be run on that metal constituent

SVOCs and VOCs Results

SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound
MDL = Method Detection Limit
SAL = Screening Action Level

Pesticides Results

SAL = Screening Action Level

PCBs Results

PCB = Polychlorinated biphenyl
MDL = Method Detection Limit
SAL = Screening Action Level

Constituent concentrations in *Bold and italics* are above the ER Program's SAL for that constituent

MDLs for PCBs analyses (1.0 ppm or 0.5 ppm) were above LANL SALs for PCBs of 90 ppb Therefore it is unknown if PCBs actually exceed LANL SALs

Shaded columns indicate validated data has not been received for this sample analysis

November 13, 1991

Memorandum

Subject: Twenty Times Rule-of-Thumb to Determine Waste Characteristic

To: WSMR File

From: Marc Sides,
Environmental Scientist

The following information was compiled at a request from WSMR to determine whether or not waste soil samples, drill cuttings and mud would be considered Toxic by running total analysis of metals (D wastes) in lieu of running the TCLP. Information was received from Margo at the EPA Test Methods Hotline (703) 734-4387.

1. If total concentrations of metals analysis (displayed in units of mg/100 gram sample) when divided by 20 is less than the TCLP regulatory limit for the metal analyzed, then the waste is not Toxic for that metal analyzed. This is simple mathematics because what is not present can not leach.

2. If a sample in the situation described above is at or above the TCLP regulatory limit, then the sample needs to be run for the TCLP, because it is possible that 100% of the metal could leach. This is a conservative estimate.

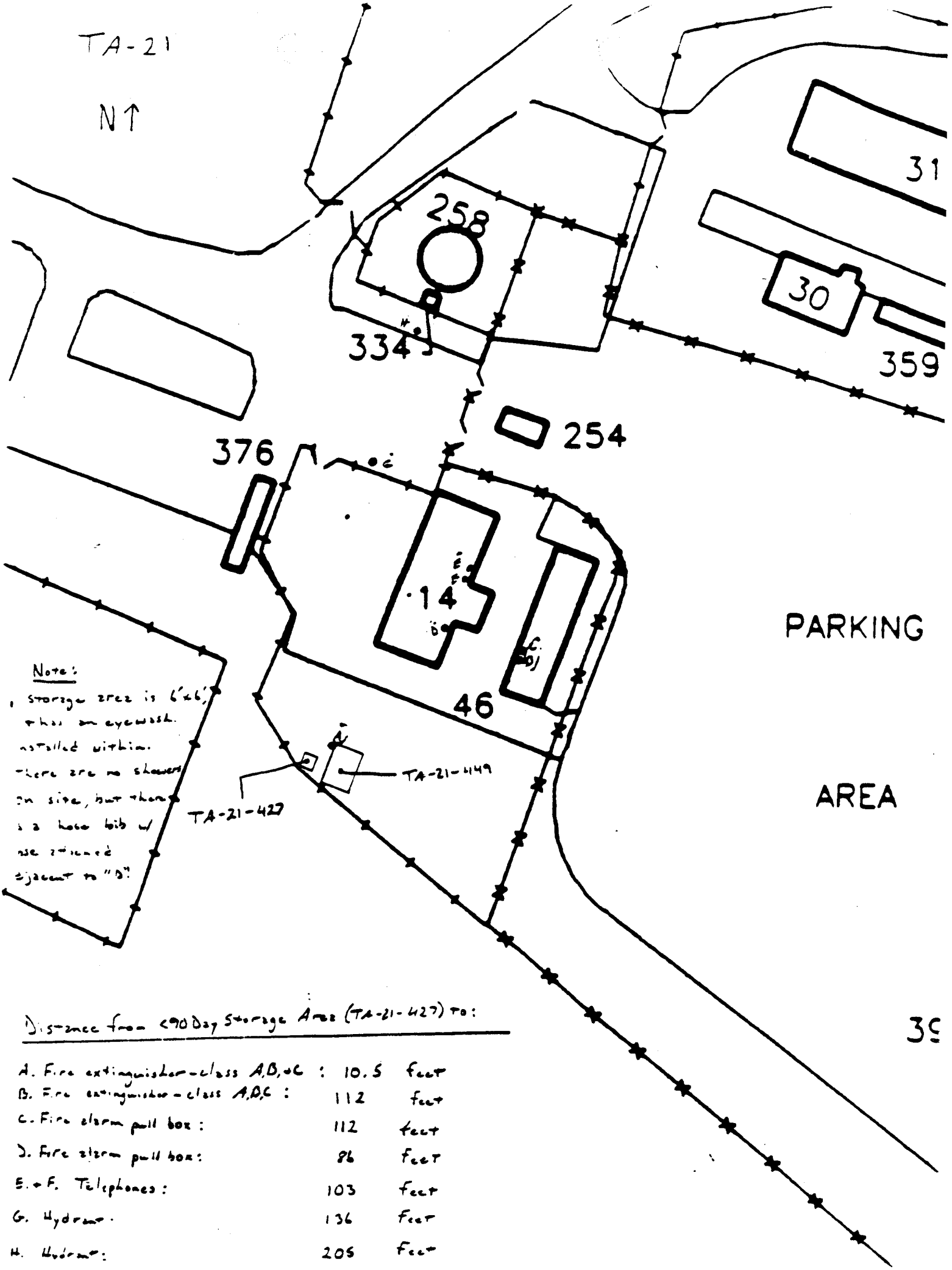
3. Background concentrations of metals can not be subtracted from the total metals analysis when applying the 20 times rule, because TCLP is looking for total leachability of metals from the sample, not just the portion that might result from anthropologic sources.

4. The sample for total metals analysis must be 100% solids for the criteria in #1 and #2 above to be valid. If the sample is part solids and part liquid then the 20 times rule can not be used, because the TCLP preparation and analytical methods for liquid portions of samples is different than those for solids.

5. The EP test is invalid and was superceded by the TCLP.

6. When applying the 20 times rule, a prudent question for the regulator to ask is, "What is the recovery on standards?" (i.e., If the matrix spike recovery is 50% to 80% then the sample results for total metals may need to be adjusted before the total concentrations are divided by 20 and compared to the TCLP regulatory threshold. See the Method in Section 8 of SW-846)

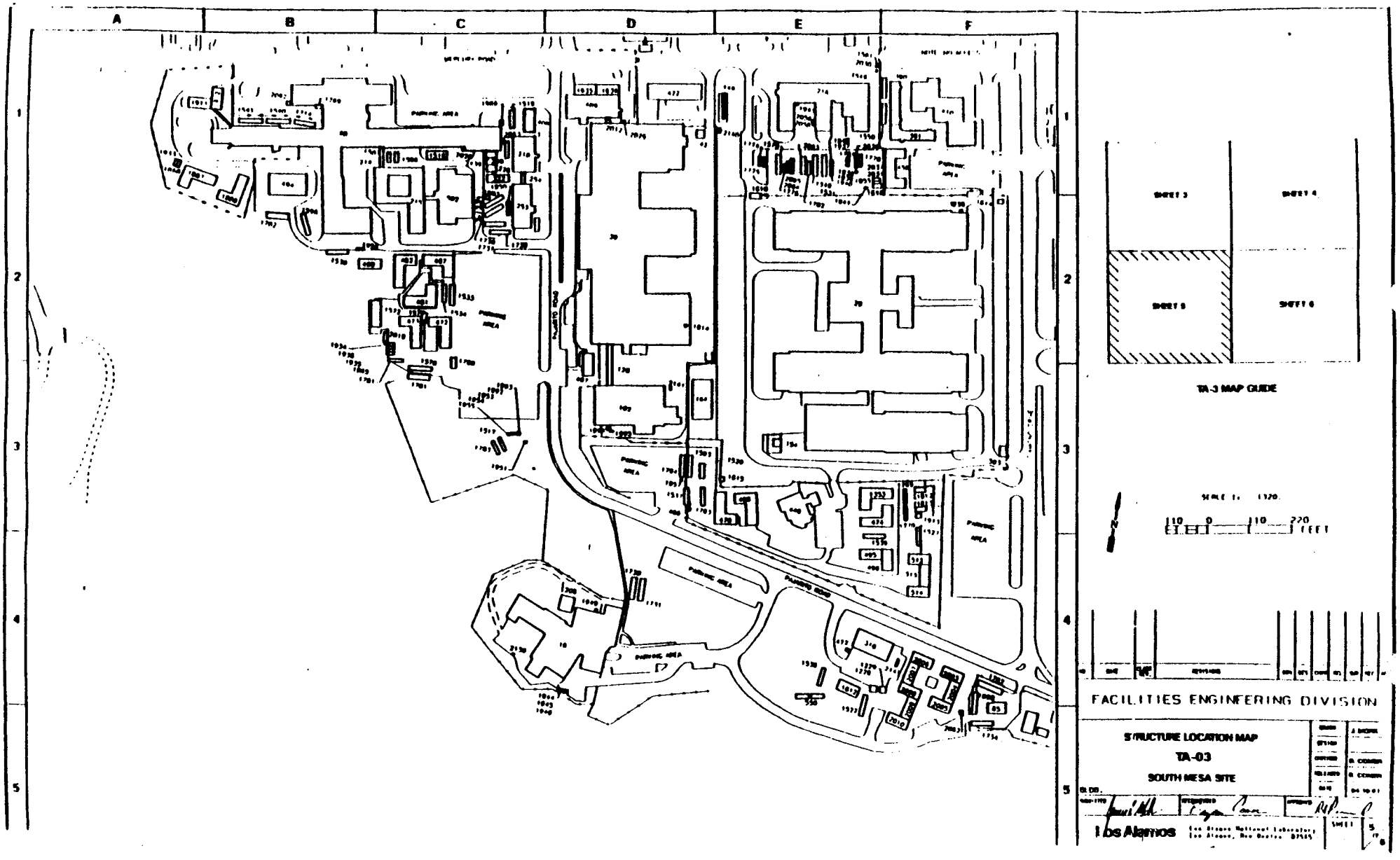
ENCLOSURE
9

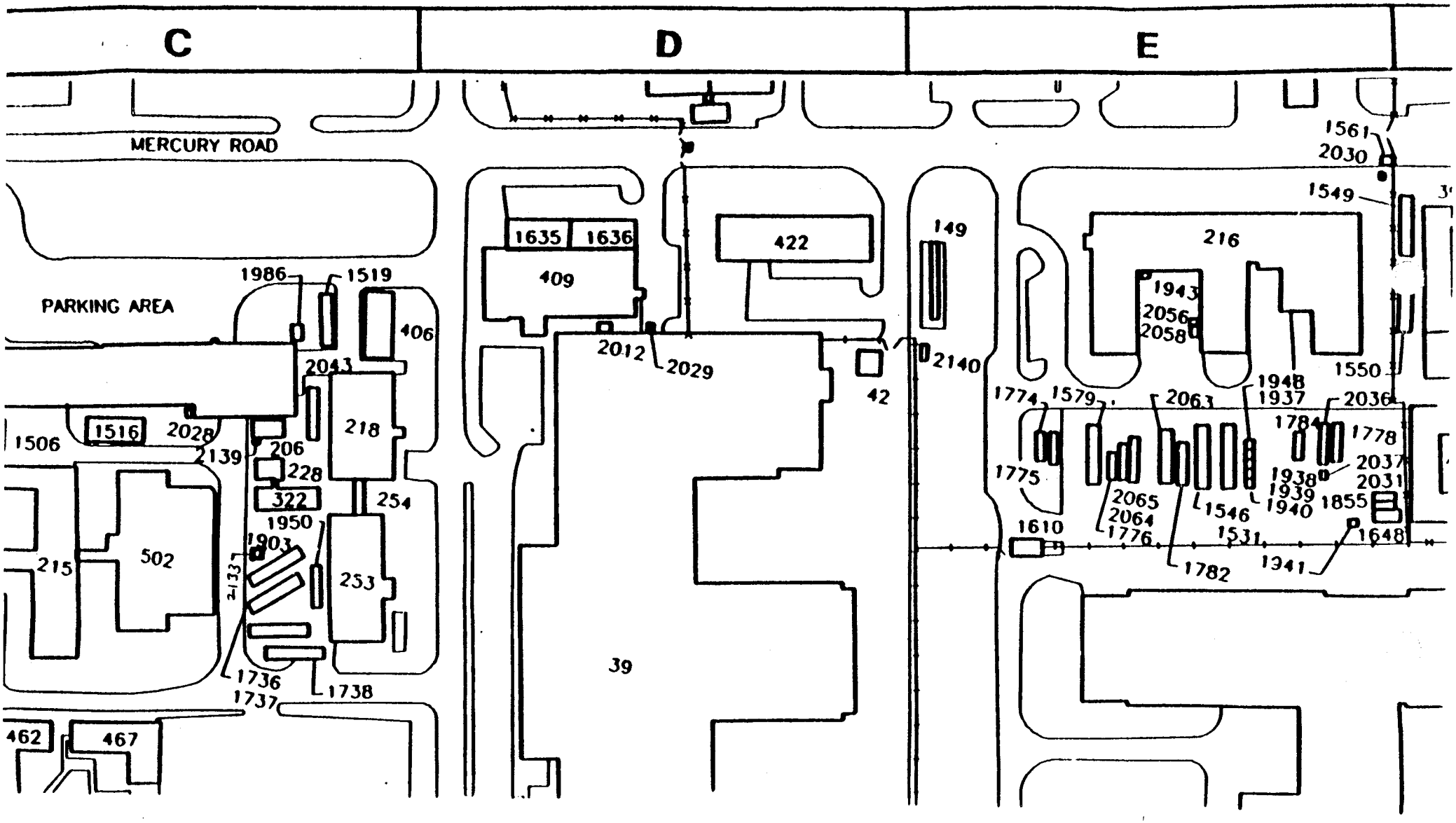


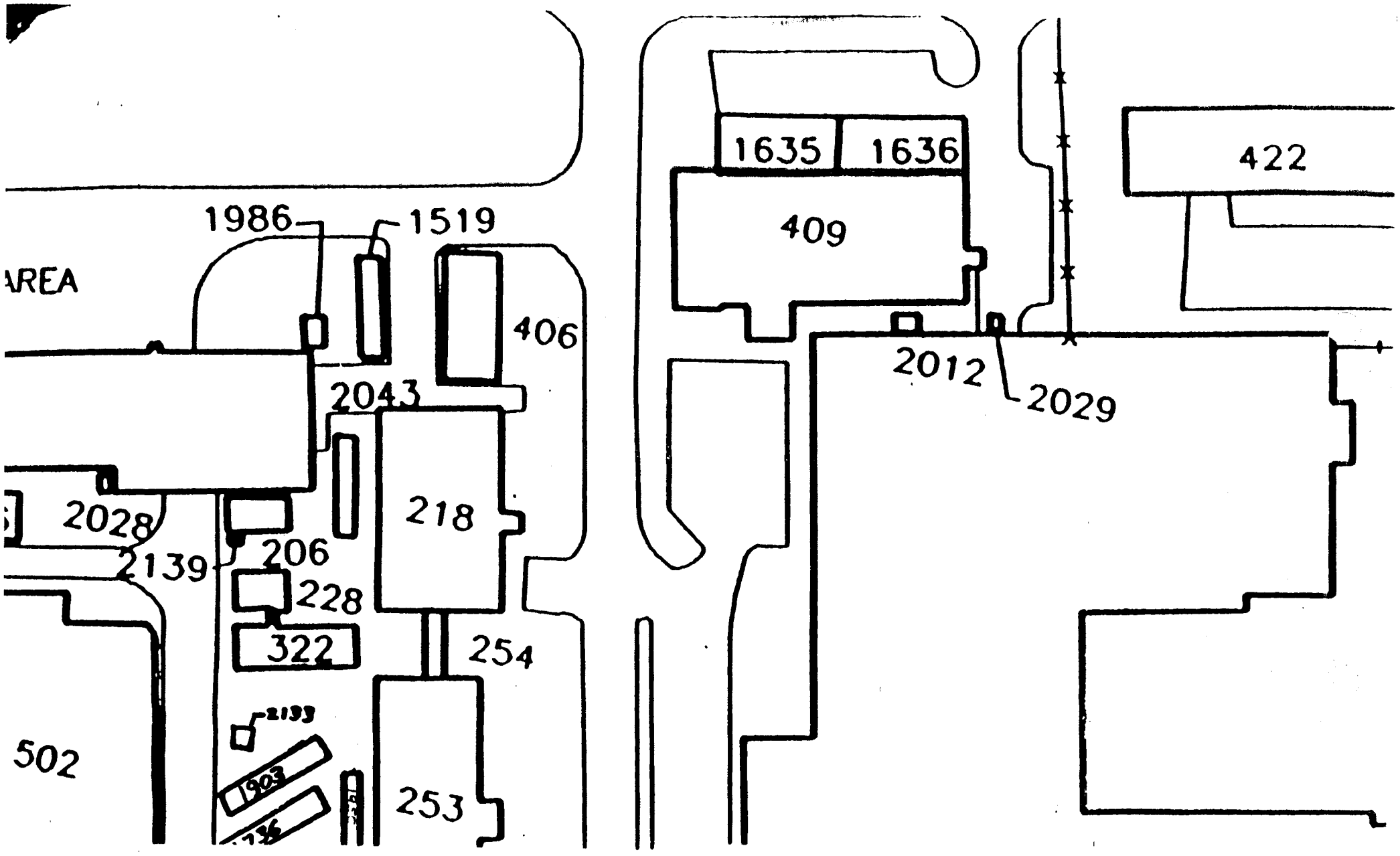
Distance from <90 Day Storage Area (TA-21-427) to:

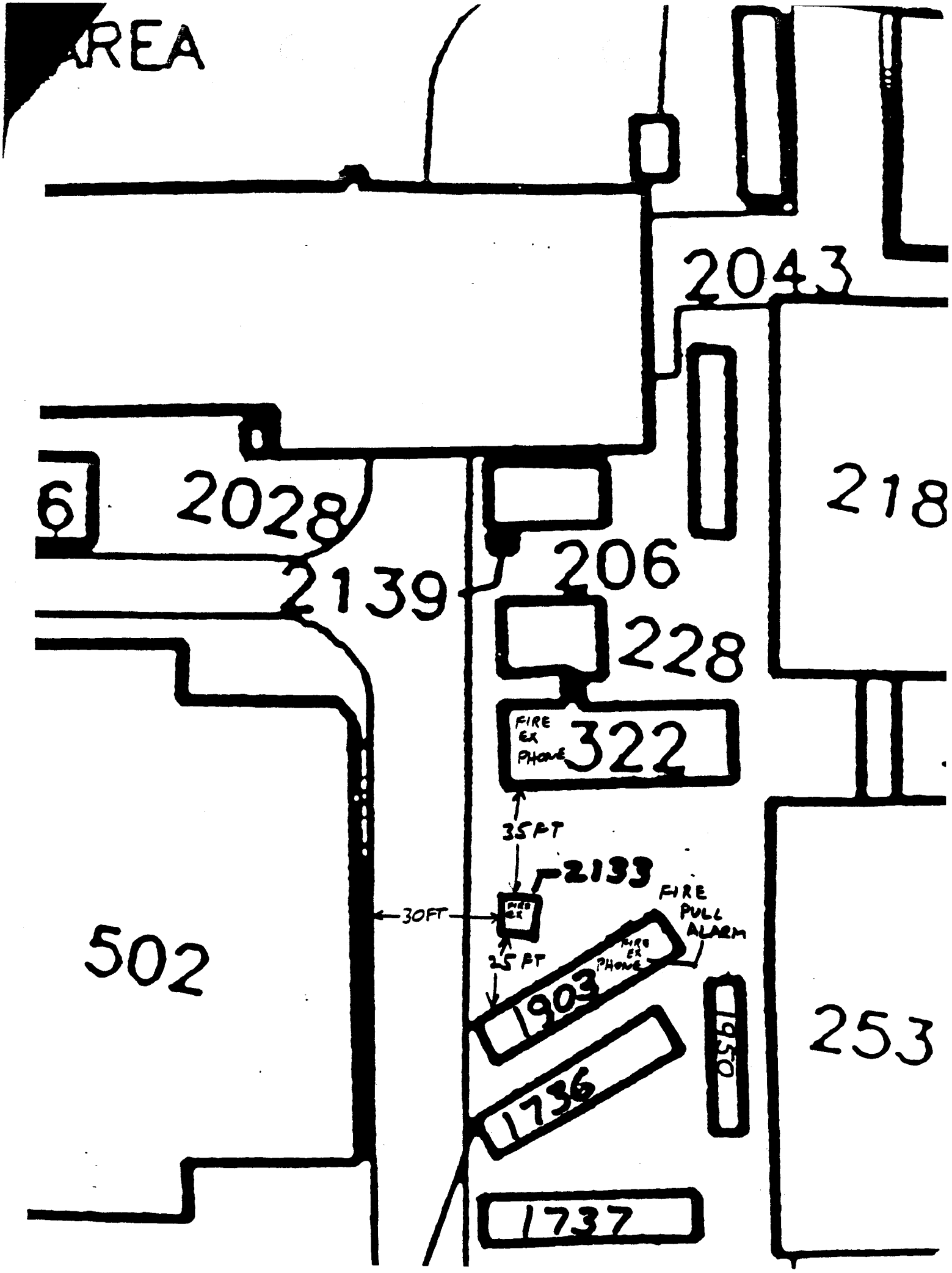
A. Fire extinguisher-class A,B,&C :	10.5	feet
B. Fire extinguisher-class A,B,C :	112	feet
C. Fire alarm pull box :	112	feet
D. Fire alarm pull box :	86	feet
E. & F. Telephones :	103	feet
G. Hydrant :	136	feet
H. Hydrant :	205	feet

ENCLOSURE
10


A
B
C
D
E
F
1
2
3
4
5
PARKING AREA
PARKING ROAD
SHEET 3
SHEET 4
SHEET 5
SHEET 6
TA-3 MAP GUIDE
SCALE 1: 1320
110 0 110 220 FEET
N
FACILITIES ENGINEERING DIVISION
STRUCTURE LOCATION MAP
TA-03
SOUTH MESA SITE
Los Alamos


C
D
E
MERCURY ROAD
PARKING AREA
1986
1519
406
2043
218
1506
1516
2028
2139
206
228
322
254
1950
1903
215
502
253
2133
1736
1737
1738
462
467
1635
1636
409
2012
2029
422
42
39
149
2140
1561
2030
1549
216
1943
2056
2058
1550
1948
1937
2036
1774
1579
2063
1784
1778
1775
2037
2031
1938
1939
1940
1855
2065
2064
1776
1546
1531
1610
1648
1782
1941


1986
1519
AREA
406
2043
218
2028
2139
206
228
322
254
2133
502
903
253
1635
1636
409
422
2012
2029

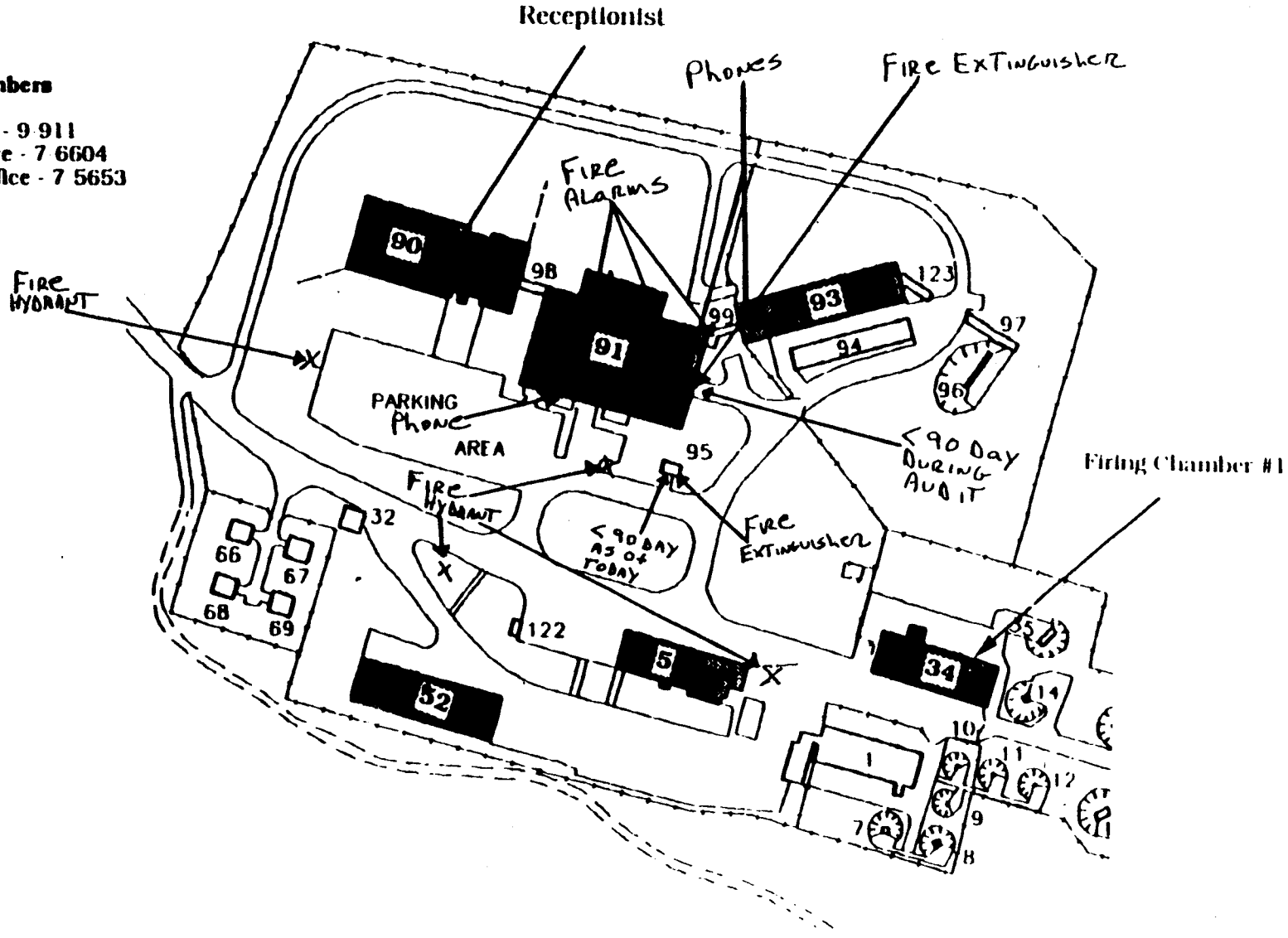

AREA
2043
218
6
2028
2139
206
228
FIRE EX PHONE
322
35 FT
2133
FIRE PULL ALARM
30FT
FIRE EX
25 FT
FIRE EX PHONE
1903
1950
253
502
1736
1737

ENCLOSURE
11

Map of TA-22 (TD Site)

Phone Numbers

Emergency - 9 911
Group Office - 7 6604
Division Office - 7 5653



ENCLOSURE
12

DX-10

STANDARD OPERATING PROCEDURE

ROUGH DRAFT

FOR

TREATMENT OF WASTE WATER FROM PRINTED CIRCUIT SHOP

SOP 196

Prepared by: _____ Date: _____
Robert Fresquez

Approved by: _____ Date: _____
DX-10 Group Leader

Approved by: _____ Date: _____
DX-DO

Approved by: _____ Date: _____
ESH-5

Final Approval: _____ Date: _____
DX-10 ES&H Officer

ROUGH DRAFT

This SOP has been approved by DX-10 and DX-Division Office. If within 30 days we have not heard from ESH-5 and other reviewing Groups as determined by ESH-5, this SOP will be considered approved and will be used as written.

- Exposure to strong acids that could: cause skin, eye, mucous membrane and respiratory tract irritation; attack clothing; damage equipment.
- The release of waste matter into the environment through spillage.

6.2 Emergency Procedures

ROUGH DRAFT

6.2.1 In the event of an emergency, the Building/Site Emergency Plan will be followed. The Building/Site Emergency Plan shall be available in the building and operators shall be familiar with its contents.

6.2.2 In all emergencies, first call 911, then notify group management as soon as possible.

6.2.3 If a spill occurs, notify the Group Spill Control Coordinator.

7.0 PROCEDURAL STEPS

7.1 Necessary Equipment

ROUGH DRAFT

Required safety gear and equipment must be present and in use before any part of the operation my proceed. Group management shall provide the required equipment to safely perform the operation and insure all safety requirements are met. This equipment will be:

- Drum pump, modified version, with handle extension on the pump used for reaching the bottom of the tank
- Empty plastic drums
- Spill kits
- Chemical absorbent pillows and socks (for creating secondary containment area where drums will be filled)
- Drum-handling hand truck (dolly and drum wrench)
- Personal protective equipment
- Radio - used as a means of instant communication to the group office should an unexpected situation occur
- **EMERGENCY EYEWASH AND SHOWER** (These are located in the same room, B160)
- Equipment for handling calcium hydroxide (large scoop)
- pH measuring equipment (pH meter or pH paper)

7.2 Tank #1

The purpose of tank #1 is to be used as a holding tank for the waste water.

ENCLOSURE
13

Los Alamos
NATIONAL LABORATORY
memorandum

Dynamic Experimentation Division
DX-10 Detonation Systems

To/MS: M. Cash, ESH-8 MS K498
Thru: D. Griechen, DX-DO MS P942
From/MS: G. Vasilik, DX-10 MS P950
Phone/FAX: 7-9293/7-6301
Symbol: DX-10-94330-
Date: July 19, 1994

SUBJECT: Response to EPA on Multi Media Audit Finding

This memo serves as documentation for answering the finding from the EPA Multi Media Compliance Investigation Report (page 33 RCRA-Hazardous Waste Management, Area of Noncompliance - TA-22-91 40CFR 265.32/262.34(a)). No internal communications or alarm system equipment was available which was capable of providing immediate emergency instruction to facility personnel.

Radios were issued on March 16, 1993 to the section that operates/inspects the treatment area and the <90 day storage area at TA-22-91. At this time, I instructed the operators/inspectors that they must have communication equipment with them whenever they are performing an operation or inspection at the treatment area and the <90 day storage area. The operators/inspectors were also instructed to have communication equipment with them during operations/inspections at the LANL-required RCRA training (received 4/29/93, and updated annually). These same requirements are reinforced in the draft SOP governing the printed circuit shop operations at TA-22-91 (DX-10-SOP-196, final approval expected in August or September 1994). The LANL ES&H Manual (AR-10-3 Appendix B Revision Dec. 7, 1992, Generator Requirements For Temporary On Site Storage Of Hazardous Waste) also states that communication equipment is required.

Anytime operators/inspectors are performing an operation or inspection at the treatment area or <90 day storage area, they carry a radio with them for instant communication with facility personnel. These radios provide direct communication to the Group Office as well as direct communication to the LANL Emergency Network.

Attached to this memo you will find the maps showing the location of the safety equipment you requested. I have listed the location of the closest phones, fire hydrants, fire alarms, and fire extinguishers to the <90 day storage area.

If you have any questions, please contact me at 667-9293 or 667-6604.

Cy: DX-10 Files
DX-10 Files(ES&H)
D. Griechen, DX-DO, MS P942
J. McAfee, DX-10, MS P950

ENCLOSURE
14

1 — Battery

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Group Waste Coordinators

DATE: December 23, 1991

THRU: Tom Gunderson, EM-DO, MS K491

MAIL STOP/TELEPHONE: E517/7-7391
K490/5-0455

Anthony Drypolcher, EM-7
FROM: Juan Corpion, EM-8

SYMBOL: EM-8:91-874

SUBJECT: **MANAGEMENT OF LITHIUM, MERCURY, SILVER, NICKEL-CADMIUM AND GEL-CELL BATTERIES**

Lithium, mercury, silver, nickel-cadmium and gel-cell batteries used for small electronics have been found to contain heavy metals such as mercury, cadmium and silver above regulatory levels for hazardous waste. While the disposal of a few of these batteries as nonhazardous refuse is unlikely to lead to significant amounts of heavy metals leaching into the environment, the combined generation of this waste at the Laboratory may represent a substantial volume. Therefore, effective immediately, the disposal of lithium, mercury, silver, nickel-cadmium and gel-cell batteries into trash cans and dumpsters (radioactive or nonradioactive) is controlled.

Alkaline and carbon batteries have not been found to contain regulated amounts of heavy metals or other constituents and may continue to be disposed as trash (i.e. nonhazardous solid waste). Furthermore, this guidance does not apply to lead-acid batteries which are hazardous waste and recycled through Johnson Controls, Incorporated (JCI) under a contractual agreement.

In order to facilitate removal of lithium, mercury, silver, nickel-cadmium and gel-cell batteries, we recommend that a small DOT-approved, steel or polyethylene container (for example, Lab Safety Supply nos. RC-4310 or RC-8934 on page 292 in the 1991 Catalog) with a volume no greater than 5 gallons be used. The container should be placed in the nearest designated satellite accumulation area, in accordance with Administrative Requirement (AR) 10-3 (contact EM-8 for assistance) [illegible] HAZARDOUS WASTE - SPENT BATTERIES and, [illegible] accessible to all employees.

If you have any questions regarding this matter, feel free to call or drop Juan Corpion a note in INFORM.

TCG/JCC:[illegible]

Cy: K. Hargis, EM-8, MS K490
J. Carmichael, EM-8, MS K490
A. Grieggs, EM-8, MS K490
A. Gustavsson, EM-7, MS J593
CRM-4, MS A150
Circ. File

ENCLOSURE
15

To Jeff Farr
Fax 505-672-9595

From Hot line
Fax 703-412-3333

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FILE CO

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONS

FEB 23 1993

Mr. D. B. Redington
Director, Regulatory Management
Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167

Dear Mr. Redington,

Thank you for your letter dated December 15, 1992, concerning the hazardous waste storage regulations under the Resource Conservation and Recovery Act (RCRA). In your letter, you requested a clarification of the satellite accumulation provisions for hazardous waste generators (40 CFR 262.34(c)(1)), particularly for the types of wastes you described as being "generated from diverse sources throughout a facility."

We have a policy of allowing EPA Regions, and states authorized to implement the RCRA hazardous waste program, to answer site-specific inquiries about the hazardous waste regulations. However, the types of wastes you described in your letter (e.g., post-consumer items such as used nickel-cadmium batteries that exhibit a characteristic of hazardous waste), are the same types of wastes that are under consideration in an ongoing rulemaking effort within the Office of Solid Waste (OSW). Therefore, we feel it would be appropriate for us to provide you with some clarification regarding these "universal wastes" and the satellite accumulation provision under the existing generator requirements.

Based on your description of how and where these waste types are generated, it is evident that the phrase "at or near the point of generation where wastes initially accumulate"[1] requires clarification. We agree that there may be circumstances where certain hazardous wastes, which by their mode of use are generated in small amounts throughout a facility or part of a facility, could be accumulated under the reduced requirements described at §262.34(c)(1), provided that the conditions of this regulation are met. For like wastes generated from many individual locations (e.g., nickel-cadmium batteries), we would interpret the "at or near the point of generation..." language to include a specific satellite area designated by the generator that facilitates the

[1]Defines the satellite accumulation "area".

accumulation of this material prior to moving it to a designated hazardous waste storage area. A generator should be able to define the locations of waste generation being served by a satellite accumulation area (within a generator facility or part of a facility). This is to ensure that a determination can be made as to when the 55-gallon limit has been reached for a particular satellite area.

The condition that wastes accumulated under the satellite provision "be under the control of the operator of the process generating the waste" is still applicable. However, we would view this condition as being satisfied for certain "universal wastes" provided the generator demonstrates that the personnel responsible for generating and/or accumulating the waste have adequate control over the temporary storage of these wastes. The EPA recognizes that for many of these "universal wastes," the person who first takes an item out of service (e.g., an employee who replaces a dead battery used in a calculator) may not be the same person responsible for the accumulation of all of these wastes; rather, another worker may have the responsibility of overseeing the temporary storage of maintenance-related wastes. Alternatively, a maintenance worker who replaces mercury thermostats throughout a factory might also be assigned responsibility for the location at which the accumulated used thermostats are temporarily stored.

I would like to emphasize that the satellite accumulation provision was intended to accommodate situations where relatively small amounts of hazardous waste are unavoidably accumulated throughout a facility prior to placing them in designated hazardous waste storage areas; the goal is that this temporary accumulation is performed responsibly and safely, with adequate oversight and control. I would also note that we have not defined the term "universal waste" in this letter[2], but have instead used some examples of these wastes to clarify the satellite accumulation provision. The applicability of the satellite accumulation provision will always depend upon a generator's particular set of circumstances, which are site-specific; therefore, any questions regarding specific wastes at specific facilities are best answered by the agency implementing the RCRA program for that particular facility.

Lastly, as was mentioned above, EPA is developing standards to streamline the regulatory requirements for some of these types of "universal wastes," to facilitate the separation of these materials from the municipal waste stream, and to encourage proper treatment and/or recycling. This rule was recently published, and we have enclosed a

[2]The term is at this point, as you described, an "emerging term."

copy of it for your convenience. We would encourage you to read it and submit to us any comments you may have. If you have any questions on this rulemaking effort, or on any other issue discussed in this letter, please call Charlotte Mooney or Ross Elliott of my staff at (202) 260-8551. Thank you for your interest in the responsible management of hazardous waste.

Sincerely,

Sylvia K. Lowrance
Director
Office of Solid Waste

Enclosure

cc: EPA Regional Waste Management
Division Directors, I-X

Sal,
What's up?
Give me a call
Hope you well
CHRIS

ENCLOSURE
16

Los Alamos
NATIONAL LABORATORY
memorandum
Chemical Science and Technology
Responsible Chemistry for America
CST-7L Chemical, Mixed Waste and
Decontamination Operations
Los Alamos, New Mexico 87545

To/MS: Tony Grieggs, ESH-8, K498
From/MS: John Kelly, CST-7, J593
Phone/FAX: 667-7579/665-3961
Symbol: CST-7L-94-271
Date: July 22, 1994

SUBJECT: RESPONSE TO NEIC FINDINGS REPORT

In response to finding 94-06 of the NEIC report dated June 28, 1994, I have attached copies of the Land Disposal Restriction Notification forms that were alleged to be missing from the Waste Management file storage. For the shipment on July 30, 1992, the LDR notification can be found in attachment 1. For the shipment of May 5, 1992, the LDR notifications are present in attachment 2. For the shipment originating on August 4, 1992, the LDR notifications are given in attachment 3. And lastly, for the shipment on September 24, 1992, the LDR notifications can be found in attachment 4.

There are two reasons why I believe there was a discrepancy on whether or not the notifications were present. First, the auditors did not realize that we keep dual storage for these files. Had they come to me with the manifests numbers at the time of the audit, I could have produced these records. In fact, several of the records have a red stamp indicating that they were entered into our backup file storage system (for example, see LDR notifications from August 4, 1992 shipment). Second, some of the LDR notifications did not have the manifest numbers on them (this goes along with Finding 94-06-08 which we do not contest). Therefore, it was difficult for the auditors to correlate which LDR notification went with which manifest. They needed to compare each waste code on the manifest to the corresponding waste code indicated on the LDR form. They simply did not have ample time during the audit to do this.

If you have any questions or need further clarification, please contact me at the above phone number.

JCK:sc
attachments

Cy: Paul Schumann, CST-7, w/o att., E539
CST-7 Group Office Files, w/o att., E517
CST-7L Office Files, w/att., J593

FAX

CST-7L

Chemical and Mixed Waste Operations

Date: 7/25/94

To: Tony Grieggs

Fax No: 7-5224

Phone No.:

SUBJECT: LDR reference number table for NEIC Finding #10

From: John Kelly

Fax No.: (505) 665-3961

Phone No.: (505) 667-7579

No. of Pages (Inc. Cover): 2

Modified Table 19
LDR Reference Information

Manifest Number	Date	Existing LDR		
		RES Reference	Manifest Number	Comments
00130116 11a	7/30/92	HO 55548-18	Blank	
00130116 11b	7/30/92	HO 55548-18	Blank	Waste Codes - D001, D008
00130116 11c	7/30/92	HO 55548-18	Blank	Waste Code - None
00130117	7/30/92	HO 58742	00130017, 00130018, 00130019	
00130118	7/30/92	HO 58742	00130017, 00130018, 00130019	
00130119 11a,11b,11c	7/30/92	HO 58742	00130017, 00130018, 00130019	
00130119 11d	7/30/92	HO 58743-60	Blank	
00130121 11a	7/30/92	HO 59361-49	00130021	
00130121 11b	7/30/92	HO 59080-40	-7001	Original number crossed out.
00130121 11c,11d	7/30/92	HO 59082-39	00130021 -	
00103304	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130049	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130050	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130051	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130052	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130053	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130054	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130056	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130057	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130058	5/5/92	HO 51626-60.	Blank	Appendix IV/V
00130059	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130060	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130061	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130062	5/5/92	HO 51626-60	Blank	Appendix IV/V
00130063	5/5/92	HO 51626-60	Blank	Appendix IV/V
LA A 6026570	8/4/92	BR 33400	LA A 6026565, 67, 69	
LA A 6026571	8/4/92	BR 33400	LA A 6026565, 67, 69	
00103374	9/24/92	HO 58742-60	00103370-73	

Attachment 1

ROLLINS
ENVIRONMENTAL SERVICES

LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. Generator Name: Los Alamos National Laboratory EPA I.D. #: NM0890010
2. Address: P.O. Box 1663 MS J593
3. City: Los Alamos State: NM Zip: 8754
4. RES Reference # (BR/HO/L/W/MO/OP): 55548-18 Manifest #: _____
5. EPA Waste Codes (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories)

D001 ignitable compressed gas, D003 other

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that under the RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ F004; ____ F005; ____ F039.

X 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technol Attachment 3, is ____ INCIN; X DEACT; ____ ADGAS fb NEUTR; ____ DMERC; ____ STABL; or, for ____ Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have sig required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

X 6. A D001-D011 waste which (a) ____ does (b) X does not meet the definition of a "California List" wr definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclos

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment 3, as I have checked on the Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" w: definition below). If (a), I have also checked the "California List section of Attachment 1, which I am encic

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" se Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of At 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of A 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

____Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that, under reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste cod in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists on or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91. K117-18, K125-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew J. Montoya Date 7-30-92

Print or Type Name Andrew T. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 1 Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

F

TREATMENT STANDARD REFERENCE TABLE
Nonwastewaters Only

ATTACHMENT

TABLE LEGEND

EPA WASTE CODE SUFFIX:

A	: Asbestos	LB	: Low Mercury (<260 ug/kg) Subcategory
ALK	: Alkalies	LZ	: Low Zinc (<15%)
C	: Carbonate	NAGH	: No Acid Subcategory
CB	: Calcium Battery	NCS	: Non-Calcium Sulfate Subcategory
CS	: Calcium Sulfate Subcategory	NWM	: Nonmetalloxides
E	: Explosives	OX	: Oxidizer
H	: Hydrated	R	: Reactive
HG	: High Mercury (>260 ug/kg)	RC	: Reactive Cyanides Subcategory
HZ	: High Zn (>15%) Subcategory	RS	: Reactive Sulfides Subcategory
LB	: Lead Acid Battery	S	: Solid
LA	: Low Arsenic (<1%) Subcategory	WR	: Water Reactive
LIQ	: Liquid	X	: Nonspecific Treatment Standard

TECHNOLOGY CODES AND DEFINITIONS OF TECHNOLOGY BASED STANDARDS:

ABBAS or MEWTR : Testing of Compressed Gases following BT specification. (IMEIN Acceptable Technology)
DEACT : Deactivation of Hazardous Characteristics (IMEIN Acceptable Technology)
IMERC : Incineration of Organics and Mercury Contaminated Waste
IMEIN : Incineration
STABL : Stabilization

COLUMN HEADING DESCRIPTIONS

COLUMN 1 : EPA Waste Code Number and Suffix (if applicable)
COLUMN 2 : Waste Non Wastewater Treatment Standards Expressed as Concentrations in Waste Extract
COLUMN 3 : Recycled Technology Based Standards
COLUMN 4 : Waste Non Wastewater Treatment Standards Expressed as Waste Concentrations
COLUMN 5 : Deferred Effective Dates of Surface Disposed Waste Regulated in the Land Disposal Regulations (LDR)

NOTES:
1. Refer to last page of Attachment 2 for "capacity variance date" as well and special wastes.
2. Radioactive Hazardous mixed waste not referenced (RHS not permitted).
3. Waste newly listed since November 8, 1990 and not in the table below are currently not regulated under LDR.
4. Some nonspecific wastes which are marked "Do not Accept" below may be acceptable at some RCRA sites in the years or very small quantities. Check with Plant Technical Manager.

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CCWE)	40 CFR 268.42 TECH	40 CFR 268.43 (CCW)	CAPACITY VARIANCE DEFERRED EFF. DATE
D001 GAS		DEACT		
D001LIQ (<10% TOC)		DEACT		
D001LIQ (>10% TOC)		IMEIN		
D001HZ		DEACT		
D001R		DEACT		
D001RCIQ		DEACT		
D001RLS		DEACT		
D001RC		DEACT		
D002HZ		DO NOT ACCEPT		
D002R		DEACT		
D002RC			X	
D003R		DEACT		

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CCWE)	40 CFR 268.42 TECH	40 CFR 268.43 (CCW)	CAPACITY VARIANCE DEFERRED EFF. DATE
D003RH		DEACT		
D004	X		X	5/8/92
D005	X			
D006	X			
D006HCD		DO NOT ACCEPT		
D007	X			
D008LS		DO NOT ACCEPT		
D009				
D009HG		DO NOT ACCEPT		
D009LS	X			5/8/92
D010	X			
D011	X			
D012			X	

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CCWE)	40 CFR 268.42 TECH	40 CFR 268.43 (CCW)	CAPACITY VARIANCE DEFERRED EFF. DATE
D013			X	
D014			X	
D015			X	
D016			X	
D017			X	
D018	X		X	
D019	X		X	
D020	X		X	
D021	X		X	
D022	X		X	
D023	X		X	
D024	X		X	
D025	X		X	
D026	X		X	
D027	X		X	
D028	X		X	
D029	X		X	
D030			X	
D031	X		X	
D032	X		X	
D033	X		X	
D034	X		X	
D035	X		X	
D036	X		X	
D037	X		X	
D038	X		X	
D039			X	
D040			X	
D041			X	
D042			X	
D043			X	

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CCWE)	40 CFR 268.42 TECH	40 CFR 268.43 (CCW)	CAPACITY VARIANCE DEFERRED EFF. DATE
D043	X			
D044	X			
D045	X			
D046	X			
D047	X			
D048	X			
D049	X			
D050	X			
D051	X			
D052	X			
D053	X			
D054	X			
D055	X			
D056	X			
D057	X			
D058	X			
D059	X			
D060	X			
D061	X			
D062	X			
D063	X			
D064	X			
D065	X			
D066	X			
D067	X			
D068	X			
D069	X			
D070	X			
D071	X			
D072	X			
D073	X			
D074	X			
D075	X			
D076	X			
D077	X			
D078	X			
D079	X			
D080	X			
D081	X			
D082	X			
D083	X			
D084	X			
D085	X			
D086	X			
D087	X			
D088	X			
D089	X			
D090	X			
D091	X			
D092	X			
D093	X			
D094	X			
D095	X			
D096	X			
D097	X			
D098	X			
D099	X			
D100	X			
D101	X		X	5/8/92

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CCWE)	40 CFR 268.42 TECH	40 CFR 268.43 (CCW)	CAPACITY VARIANCE DEFERRED EFF. DATE
D102	X		X	
D103			X	
D104			X	
D105			X	
D106AW		DO NOT ACCEPT		
D106LH	X			5/
D113		IMEIN		
D114		IMEIN		
D115	X	IMEIN		
D116		IMEIN		
P001		IMEIN		
P002		IMEIN		
P003		IMEIN		
P004			X	
P005		IMEIN		
P006		IMEIN		
P007		IMEIN		
P008		IMEIN		
P009			X	
P010	X			5/
P011	X			5/
P012	X			5/
P013	X		X	
P014		IMEIN		
P015		DO NOT ACCEPT		
P016		IMEIN		
P017		IMEIN		
P018		IMEIN		
P020			X	
P021			X	
P022		IMEIN		
P023		IMEIN		
P024			X	
P026		IMEIN		
P027		IMEIN		

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CCWE)	40 CFR 268.42 TECH	40 CFR 268.43 (CCW)	CAPACITY VARIANCE DEFERRED EFF. DATE
P028		IMEIN		
P029		IMEIN		
P030		IMEIN		
P031		IMEIN		
P033		IMEIN		
P034		IMEIN		
P036		IMEIN		
P037		IMEIN		
P038		IMEIN		
P039		IMEIN		
P040		IMEIN		
P041		IMEIN		
P042		IMEIN		
P043		IMEIN		
P044		IMEIN		
P045		IMEIN		
P046		IMEIN		
P047		IMEIN		
P048		IMEIN		
P049		IMEIN	X	
P050		IMEIN		
P051		IMEIN		
P054		IMEIN		
P056		IMEIN		
P057		IMEIN		
P058		IMEIN		
P059		IMEIN		
P060		IMEIN		
P062		IMEIN		
P063		IMEIN		
P064		IMEIN		
P065		IMEIN		
P066		IMEIN		
P067		IMEIN		
P068		IMEIN		
P069		IMEIN		
P070		IMEIN		
P071			X	
P072		IMEIN		
P073	X			
P074	X		X	
P075		IMEIN		
P076		ABBAS		
P077			X	
P078		ABBAS		
P081		IMEIN		
P082		IMEIN		
P084		IMEIN		
P085		IMEIN		
P087	DO NOT ACCEPT			AFTER 5/8/
P088		IMEIN		
P089			X	
P092HG		DO NOT ACCEPT		
P092LS	X	IMERC		5
P093		IMEIN		
P094			X	
P095		IMEIN		
P096		IMEIN		
P097			X	
P098			X	
P099	X		X	
P101			X	
P102		IMEIN		
P103	X			
P104	X		X	
P105		IMEIN		
P106			X	
P108		IMEIN		
P109		IMEIN		

ROLLINS
ENVIRONMENTAL SERVICES

LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. ***Generator Name:*** Los Alamos National Laboratory ***EPA I.D. #:*** NM 0890010
2. ***Address:*** P.O. Box 1663 MS J593
3. ***City:*** Los Alamos ***State:*** NM ***Zip:*** 87544
4. ***RES Reference # (BR/HO/L/W/MO/OP):*** 55546-18 ***Manifest #:***
5. ***EPA Waste Codes*** (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories):

D001 ignitable compressed gas

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative.

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified i III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that under the a RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I a which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ ____ F004; ____ F005; ____ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technolog Attachment 3, is ____ INCIN; X DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, for ____ Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have signe required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

X 6. A D001-D011 waste which (a) ____ does (b) X does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclosing

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment 3, as I have checked on the enc Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclosin

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" sectio Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Attac 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of Atta 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that, under the reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code(s) in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists only c or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K1(K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew J. Montoya Date 7-30-92

Print or Type Name Andrew J. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg. mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing any following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 100; C Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

Rev.

REATMENT STANDARD REFERE E TABLE
Nonwastewaters Only

ATTACHMEN

TABLE LEGEND

EPA WASTE CODE SUFFIX:

A : [illegible]
ALK : Alkaline
C : Corrosive
CD : Cadmium Battery
CS : Calcium Sulfate Subcategory
E : Explosives
H : Hydrated
HG : High Mercury (>=260 mg/kg)
HZ : High Zn (>=15%) Subcategory
LB : Lead Acid Battery
LA : Low Arsenic (<1%) Subcategory
LIQ : Liquid
LG : Low Mercury (<260 mg/kg) Subcategory
LZ : Low Zinc (<15%)
NASH : No Ash Subcategory
NCS : Non-Calcium Sulfate Subcategory
NWW : Nonwastewater
OX : Oxidizer
R : Reactive
RC : Reactive Cyanides Subcategory
RS : Reactive Sulfides Subcategory
S : Solid
WR : Water Reactive
X : Numerical Treatment Standard

TECHNOLOGY CODES AND DEFINITIONS OF TECHNOLOGY BASED STANDARDS:

ADGAS fb NEUTR : Venting of Compressed Gases followed by neutralization. (INCIN Acceptable Technology)
DEACT : Deactivation of Hazardous Characteristics (INCIN Acceptable Technology)
IMERC : Incineration of Organics and Mercury Contaminated Wastes
INCIN : Incineration
STABL : Stabilization

COLUMN HEADING DESCRIPTIONS:

COLUMN 1 : EPA Waste Code Number and Suffix (if applicable)
COLUMN 2 : Waste and Numerical Treatment Standards Expressed as Concentrations in Waste Extract
COLUMN 3 : Specified Technology Based Standards
COLUMN 4 : Waste and Numerical Treatment Standards Expressed as Waste Concentrations
COLUMN 5 : Deferred Effective Dates of Surface Disposed Wastes Regulated in the Land Disposal Regulations (LDR)

NOTES:
1. Refer to last page of Attachment 3 for "capacity variance date" on soil and debris wastes.
2. Radioactive hazardous mixed wastes not referenced ([illegible] not permitted).
3. Waste newly listed since November 8, 1984 and not in the table below are currently not regulated under LDR.
4. Some [illegible] wastes which are marked "Do Not Accept" below may be acceptable at some [illegible] plants in lab packs or very small quantities. Check with Plant Technical Manager.

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5) CAPACITY VARIANCE DEFERRED EFF. DATE
[illegible]		DEACT		
[illegible] (<10% TOC		DEACT		
D001LIQ >10% TOC		INCIN		
[illegible]		DEACT		
[illegible]		DEACT		
[illegible]		DEACT		
[illegible]		DEACT		
[illegible]		DEACT		
[illegible]	DO NOT ACCEPT			
[illegible]		DEACT		
[illegible]			X	
[illegible]		DEACT		

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5) CAPACITY VARIANCE DEFERRED EFF. DATE
[illegible]		DEACT		
D004	X		X	5/8/92
D005	X			
D006	X			
D006CS	DO NOT ACCEPT			
D007	X			
D008LA	DO NOT ACCEPT			
D008	X			
D009HG	DO NOT ACCEPT			
D009LG	X			5/8/92
D010	X			
D011	X			
D012			X	

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5) CAPACITY VARIANCE DEFERRED EFF. DATE
K041			X	
K042			X	
K043	DO NOT ACCEPT			
K044		DEACT		
K045		DEACT		
K046	X			
K047		DEACT		
K048	X		X	
K049	X		X	
K050	X		X	
K051	X		X	
K052	X		X	
K060			X	
K061HZ	DO NOT ACCEPT			
K061LZ	X			
K062	X			
K069CS	X			
K069NCS	DO NOT ACCEPT			
K071HG	DO NOT ACCEPT			
K071LG	X			
K073			X	
K083	X		X	
K084	X			5/8/92
K085			X	
K086	X		X	
K087	X		X	
K093			X	
K094			X	
K095			X	
K096			X	
K097			X	
K098			X	
K099	DO NOT ACCEPT			
K100	X			
K101	X		X	5/8/92

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5)
K102	X		X	
K103			X	
K104			X	
K105			X	
K106HG	DO NOT ACCEPT			
K106LG	X			
K113		INCIN		
K114		INCIN		
K115	X	INCIN		
K116		INCIN		
P001		INCIN		
P002		INCIN		
P003		INCIN		
P004			X	
P005		INCIN		
P006		INCIN		
P007		INCIN		
P008		INCIN		
P009		INCIN		
P010	X			
P011	X			
P012	X			
P013	X		X	
P014		INCIN		
P015	DO NOT ACCEPT			
P016		INCIN		
P017		INCIN		
P018		INCIN		
P020			X	
P021			X	
P022		INCIN		
P023		INCIN		
P024			X	
P026		INCIN		
P027		INCIN		

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5) CAPACITY VARIANCE DEFERRED EFF. DATE
D013			X	
D014			X	
D015			X	
D016			X	
D017			X	
F001	X		X	
F002	X		X	
F003	X		X	
F004	X		X	
F005	X	INCIN	X	
F006	X		X	
F007	X		X	
F008	X		X	
F009	X		X	
F010			X	
F011	X		X	
F012	X		X	
F019	X		X	
F020	DO NOT ACCEPT			
F021	DO NOT ACCEPT			
F022	DO NOT ACCEPT			
F023	DO NOT ACCEPT			
F024	X	INCIN	X	
F025			X	
F026	DO NOT ACCEPT			
F027	DO NOT ACCEPT			
F028	DO NOT ACCEPT			
F039	X		X	5/8/92
K001	X		X	
K002	X			
K003	X			
K004	X			
K005	X			
K006A	X			

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5) CAPACITY VARIANCE DEFERRED EFF. DATE
K006NA	X			
K007	X			
K008	X			
K009			X	
K010			X	
K011			X	
K013			X	
K014			X	
K015	X		X	
K016			X	
K017			X	
K018			X	
K019			X	
K020			X	
K021	X		X	
K022	X		X	
K023			X	
K024			X	
K025		INCIN		
K026		INCIN		
K027		INCIN		
K028	X		X	
K029			X	
K030			X	
K031	X			5/8/92
K032			X	
K033			X	
K034			X	
K035			X	
K036			X	
K037			X	
K038			X	
K039		INCIN		
K040			X	

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5) CAPACITY VARIANCE DEFERRED EFF. DATE
P028		INCIN		
P029			X	
P030			X	
P031		INCIN		
P033		INCIN		
P034		INCIN		
P036	X			5/8/92
P037			X	
P038	X			5/8/92
P039			X	
P040		INCIN		
P041		INCIN		
P042		INCIN		
P043		INCIN		
P044		INCIN		
P046		INCIN		
P047		INCIN	X	
P048			X	
P049		INCIN		
P050			X	
P051			X	
P054		INCIN		
P056		ADGAS		
P057		INCIN		
P058		INCIN		
P059			X	
P060			X	
P062		INCIN		
P063			X	
P064		INCIN		
P065HG	DO NOT ACCEPT			
P065LG	X	IMERC		5/8/92
P066		INCIN		
P067		INCIN		

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCWE)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCW)	(5)
P068		INCIN		
P069		INCIN		
P070		INCIN		
P071			X	
P072		INCIN		
P073	X			
P074	X		X	
P075		INCIN		
P076		ADGAS		
P077			X	
P078		ADGAS		
P081		INCIN		
P082		INCIN		
P084		INCIN		
P085		INCIN		
P087	DO NOT ACCEPT AFTER 5/			
P088		INCIN		
P089			X	
P092HG	DO NOT ACCEPT			
P092LG	X	IMERC		
P093		INCIN		
P094			X	
P095		INCIN		
P096		INCIN		
P097			X	
P098			X	
P099	X		X	
P101			X	
P102		INCIN		
P103	X			
P104	X		X	
P105		INCIN		
P106			X	
P108		INCIN		
P109		INCIN		

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ENVIRONMENTAL SERVICES

LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. *Generator Name:* Los Alamos National laboratory *EPA I.D. #:* NM0890
2. *Address:* P.O. Box 1663 MS J593
3. *City:* Los Alamos *State:* NM *Zip:* 875
4. *RES Reference # (BR/HO/L/W/MO/OP):* 55548-18 *Manifest #:* _____
5. *EPA Waste Codes* (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories)

None

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or ✓ nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified III below, complete Part III rather than Part II.)

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that under the RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5 as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ___ ____ F004; ____ F005; ___ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

_____ 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technolo Attachment 3, is ____ INCIN; ____ DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, for ____ Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have sig required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

_____ 6. A D001-D011 waste which (a) ____ does (b) ____ does not meet the definition of a "California List" wa definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclos

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment3, as I have checked on the Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" wa definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclos

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" sec Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Att 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of At 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that, under th reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists onl or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew T. Montoya Date 7-30-92

Print or Type Name Andrew T. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing an following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 10 Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

Re

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LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. *Generator Name:* Los Alamos National laboratory *EPA I.D. #:* UNOSA001
2. *Address:* P.O. Box 1663 MS J593
3. *City:* Los Alamos *State:* NM *Zip:* 875
4. *RES Reference # (BR/HO/L/W/MO/OP):* 59082-39 *Manifest #:* 00130021
5. *EPA Waste Codes* (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories)
   None

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representativ

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identifie III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that under the RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ F004; ____ F005; ____ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required techno Attachment 3, is ____ INCIN; ____ DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, fo X Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have si required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

_____ 6. A D001-D011 waste which (a) ____ does (b) ____ does not meet the definition of a "California List" w definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclo

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment3, as I have checked on the Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" w definition below). If (a), I have also checked the "California List section of Attachment 1, which I am encl

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" s Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of A 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that, under reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste co in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists o or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-9 K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew J. Montoya Date 7-30-92

Print or Type Name Andrew J. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 100 mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd,

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LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. *Generator Name:* Los Alamos National Laboratory *EPA I.D. #:* NM0890010
2. *Address:* P.O. Box 1663 MS J593
3. *City:* Los Alamos *State:* NM *Zip:* 87544
4. *RES Reference # (BR/HO/L/W/MO/OP):* 59083-48 *Manifest #:* 00130002
5. *EPA Waste Codes* (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories):

None

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative.

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified in III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that under the RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ F004; ____ F005; ____ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technolog Attachment 3, is ____ INCIN; ____ DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, for X Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) _____ an "Appendix IV lab pack" or an _____ "Appendix V lab pack". I have signe required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

_____ 6. A D001-D011 waste which (a) _____ does (b) _____ does not meet the definition of a "California List" wast definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclosin

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment 3, as I have checked on the en Attachment 2. The waste (a) _____ does (b) _____ does not meet the definition of a "California List" wast definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclosin

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" secti Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Attac 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of Atta 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that, under the reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code(s) in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists only or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K1 K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew J. Montoya Date 7-30-92

Print or Type Name Andrew J. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing any following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 100; Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

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LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. Generator Name: Los Alamos National laboratory EPA I.D. #: NM0890010
2. Address: P.O. Box 1663 MS J593
3. City: Los Alamos State: NM Zip: 87545
4. RES Reference # (BR/HO/L/W/MO/OP): 59080-40 Manifest #: [redacted]-70
5. EPA Waste Codes (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories):
   None

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative.

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified in III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that under the al RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I a which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ ____ F004; ____ F005; ____ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technolog Attachment 3, is ____ INCIN; ____ DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, for l X Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have signe required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

_____ 6. A D001-D011 waste which (a) ____ does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclosing

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment3, as I have checked on the en Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclosin

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" sectic Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Attac 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of Atta 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that, under the reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code(s) in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists only or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K1 K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew J. Montoya Date 7-30-92

Print or Type Name Andrew J. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing any following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 100; Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

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ENVIRONMENTAL SERVICES

LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. *Generator Name:* Los Alamos national laboratory *EPA I.D. #:* NM[illegible]001
2. *Address:* PO Box 1663 MS J593
3. *City:* Los Alamos *State:* NM *Zip:* 87545
4. *RES Reference # (BR/HO/L/W/MO/OP):* 58743-60 *Manifest #:* _____
5. *EPA Waste Codes* (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories): None

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative.

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified in III below, complete Part III rather than Part II.)

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that under the ab RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I ab which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ I ____ F004; ____ F005; ____ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

_____ 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technology Attachment 3, is ____ INCIN; ____ DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, for F ____ Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have signec required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

_____ 6. A D001-D011 waste which (a) ____ does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclosing.

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment 3, as I have checked on the enc Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclosing

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" sectio Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Attach 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of Attac 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that, under the reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code(s) in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists only o or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K1C K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew J. Montoya Date 7-30-92

Print or Type Name Andrew J. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg/ mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing any following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 100; C Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

Rev.

ROLLINS
ENVIRONMENTAL SERVICES

LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. *Generator Name:* Los Alamos national laboratory *EPA I.D. #:* NM0890010
2. *Address:* P.O. Box 1663 MS 1593
3. *City:* Los Alamos *State:* NM *Zip:* 87545
4. *RES Reference # (BR/HD/L/W/MO/OP):* 59361-49 *Manifest #:* 00130020
5. *EPA Waste Codes* (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories):
D001 ignitable liquid 10% TOC 0.7

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative.

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified in III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); X RES(TX); ___RES of LA; ___OPC; ___TET that under the ab RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I ab which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ F ____ F004; ____ F005; ____ F039.

_____ 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technology Attachment 3, is X INCIN; ____ DEACT; ____ ADGAS fb NEUTR; ____ DMERC; ____ STABL; or, for P ____ Incineration in a TOSCA-permitted incinerator (RES(TX) only).

_____ 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have signed required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

X 6. A D001-D011 waste which (a) X does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclosing.

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment 3, as I have checked on the encl Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" waste definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclosing

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" sectior Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Attach 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of Attach 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

_____ Pursuant to 40 CFR 268.7, I am notifying ___RES(LA); ___RES(NJ); ___RES(TX); ___RES of LA; ___OPC; ___TET that, under the a reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code(s) in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists only of or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K10 K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature Andrew T. Montoya Date 7-30-92

Print or Type Name Andrew T. Montoya

Title Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg/ mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing any o following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 100; C Pb, 500; Hg, 20; Ni, 134; Se, 100; Tl, 130.

Rev. 6

TREATMENT STANDARD REFERENCE TABLE
Nonwastewaters Only

ATTACHMENT

TABLE LEGEND

EPA WASTE CODE SUFFIX:

A : Aqueous
ALK : Alkaline
C : Corrosive
CB : Cadmium Battery
CS : Calcium Sulfate Subcategory
E : Explosive
H : Reactive
HW : High Mercury (>260 mg/kg)
HZ : High Zn (>15%) Subcategory
LB : Lead Acid Battery
LS : Low Arsenic (<1%) Subcategory
LIQ : Liquid
LM : Low Mercury (<260 mg/kg) Subcategory
LZ : Low Zinc (<15%)
NAMW : No Amb Subcategory
NCS : Non-Calcium Sulfate Subcategory
NON : Nonmetallic
OX : Oxidizer
R : Reactive
RC : Reactive Cyanide Subcategory
RS : Reactive Sulfide Subcategory
S : Solid
WR : Water Reactive
X : Nonspecific Treatment Standard

TECHNOLOGY CODES AND DEFINITIONS OF TECHNOLOGY BASED STANDARDS:

ADGAS : Venting of Compressed Gases followed by condensation.
(NON Recognized Technology)
DEACT : Deactivation of Hazardous Characteristics (NON Recognized Technology)
INSRC : Incineration of Organics and Mercury Contaminated Waste
INCIN : Incineration
STABL : Stabilization

COLUMN HEADING DESCRIPTIONS

COLUMN 1 : EPA Waste Code Number and Suffix (if applicable)
COLUMN 2 : Waste and Nonwaste Treatment Standards Expressed as Concentrations in Waste Extract
COLUMN 3 : Specified Technology Based Standards
COLUMN 4 : Waste and Nonwaste Treatment Standards Expressed as Waste Concentrations
COLUMN 5 : Deferred Effective Date of Surface Disposed Waste Regulated in the Land Disposal Regulations (LDR)

NOTES:
1. Refer to last page of Attachment 2 for "capacity variance date" on soil and debris wastes.
2. Radioactive hazardous mixed waste not referenced (RCRA not permitted).
3. Waste codes listed since November 8, 1989 and not in the table below are currently not regulated under LDR.
4. Some nonwaste wastes which are marked "Do Not Accept" below may be acceptable if some RCRA plants in lab scale or very small quantities. Check with Plant Technical Manager.

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CONC)	40 CFR 268.42 TECH	40 CFR 268.43 (CONC)	CAPACITY VARIANCE DEFERRED EFF. DATE
D001 GAS		DEACT		
D001LIQ (<10% TOC)		DEACT		
D001LIQ (>10% TOC)		INCIN		
D001HX		DEACT		
D001R		DEACT		
D002RCIO		DEACT		
D002RLX		DEACT		
D002C		DEACT		
D002E	DO NOT ACCEPT			
D002R		DEACT		
D002RC			X	
D002RS		DEACT		

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CONC)	40 CFR 268.42 TECH	40 CFR 268.43 (CONC)	CAPACITY VARIANCE DEFERRED EFF. DATE
D003R		DEACT		
D004	X		X	3/8/92
D005	X			
D006	X			
D006RCS	DO NOT ACCEPT			
D007	X			
D008LS	DO NOT ACCEPT			
D009	X			
D009RS	DO NOT ACCEPT *			
D009LS	X			3/8/92
D010	X			
D011	X			
D012			X	

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CONC)	40 CFR 268.42 TECH	40 CFR 268.43 (CONC)	CAPACITY VARIANCE DEFERRED EFF. DATE
K091			X	
K092			X	
K093	DO NOT ACCEPT			
K094	DEACT			
K095	DEACT			
K096	X			
K097		DEACT		
K098	X		X	
K099	X		X	
K100	X		X	
K101	X		X	
K102	X		X	
K103			X	
K104			X	
K105			X	
K106HW	DO NOT ACCEPT			
K106LW	X			
K107			X	
K108			X	
K109			X	
K110			X	
K111			X	
K112			X	
K113			X	
K114			X	
K115			X	
K116			X	
K117			X	
K118			X	
K119			X	
K120			X	
K121			X	
K122			X	
K123			X	
K124			X	
K125			X	
K126			X	
K127			X	
K128			X	
K129			X	
K130			X	
K131			X	
K132			X	
K133			X	
K134			X	
K135			X	
K136			X	
K137			X	
K138			X	
K139			X	
K140			X	
K141			X	
K142			X	
K143			X	
K144			X	
K145			X	
K146			X	
K147			X	
K148			X	
K149			X	
K150			X	
K151			X	
K152			X	
K153			X	
K154			X	
K155			X	
K156			X	
K157			X	
K158			X	
K159			X	
K160			X	
K161			X	3/8/92

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CONC)	40 CFR 268.42 TECH	40 CFR 268.43 (CONC)	CAPACITY VARIANCE DEFERRED EFF. DATE
P001		INCIN		
P002		INCIN		
P003		INCIN		
P004		INCIN		
P005		INCIN		
P006		INCIN		
P007		INCIN		
P008		INCIN		
P009		INCIN		
P010	X			
P011	X			
P012	X			
P013	X		X	
P014		INCIN		
P015	DO NOT ACCEPT			
P016		INCIN		
P017		INCIN		
P018		INCIN		
P020			X	
P021			X	
P022		INCIN		
P023		INCIN		
P024			X	
P026		INCIN		
P027		INCIN		

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CONC)	40 CFR 268.42 TECH	40 CFR 268.43 (CONC)	CAPACITY VARIANCE DEFERRED EFF. DATE
P028		INCIN		
P029			X	
P030			X	
P031		INCIN		
P033		INCIN		
P036	X			3/8/92
P037			X	
P038	X			3/8/92
P039			X	
P040		INCIN		
P041		INCIN		
P042		INCIN		
P043		INCIN		
P044		INCIN		
P045		INCIN		
P046		INCIN		
P047		INCIN	X	
P048			X	
P049		INCIN		
P050			X	
P051			X	
P054		INCIN		
P055		ADGAS		
P057		INCIN		
P058		INCIN		
P059			X	
P060			X	
P062		INCIN		
P063			X	
P064		INCIN		
P066HW	DO NOT ACCEPT			
P066LW	X	INSRC		3/8/92
P067		INCIN		

(1)	(2)	(3)	(4)	(5)
EPA CODE NUMBER	40 CFR 268.41 (CONC)	40 CFR 268.42 TECH	40 CFR 268.43 (CONC)	CAPACITY VARIANCE DEFERRED EFF. DATE
P068		INCIN		
P069		INCIN		
P070		INCIN		
P071			X	
P072		INCIN		
P073	X			
P074	X		X	
P075		INCIN		
P076		ADGAS		
P077			X	
P078		ADGAS		
P081		INCIN		
P082		INCIN		
P084		INCIN		
P085		INCIN		
P087	DO NOT ACCEPT AFTER 3/8/			
P088		INCIN		
P089			X	
P092HW	DO NOT ACCEPT			
P092LW	X	INSRC		3
P093		INCIN		
P094			X	
P095		INCIN		
P096		INCIN		
P097			X	
P098			X	
P099	X			
P101			X	
P102		INCIN		
P103	X			
P104	X		X	
P105		INCIN		
P106			X	
P108		INCIN		
P109		INCIN		

NOTIFICATION per 40 CFR 268.7 for APPENDIX IV/V LAB PACKS ONLY

PART I: Generator and Manifest Information

Generator Name: LOS ALAMOS NATIONAL LABORATORY

Address: LOS ALAMOS NATIONAL LABS
PO BOX 1663, MS J593
LOS ALAMOS, NM 87545

Telephone: (505)667-7579 EPA ID#: NM0890010515

State Manifest #(s): 00120017 00120018 RES Stream #: H058742
00120019

PART II: Waste Subject to Land Disposal Restrictions:

Pursuant to 40 CFR 268.7 I am notifying the following facility(check one):

( ) Rollins Environmental Services(LA) (X) Rollins Environmental Services(TX)
( ) Rollins Environmental Services(NJ) ( ) OPC ( ) TET;

that under the above RES stream number and State Manifest Number(s), I am shipping to you a waste identified by the EPA was numbers (listed on page 2) which are subject to the EPA Land Disposal Restrictions. These wastes were prepared in accordanc to 40 cfr 268.42 and are (check 1a,1b or both)

( ) 1a. Lab packs containing only waste listed in 40 CFR 268, Appendix IV, and may contain appropriate non-RCRA solid was (Check statement 2-Part III). These lab packs must be treated in accordance with 268.42(b) by INCIN*, followed by tre of D004-008, D010, D011 metals per 268.41(a). These lab packs contain the below checked metals:

(X) D004 ( ) D005 ( ) D006 (X) D007 (X) D008 ( ) D010 (X) D011

( ) 1b. Lab packs containing only organic wastes listed in 40 CFR 268, Appendix V, and may contain appropriated non-RCRA s waste. (Check statement 3-Part III) These lab packs must be treated in accordance with 268.42(b) by INCIN.*

PART III: Authorized Representative (Check 2,3 or both as indicated above and sign

(X) 2. I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only the wastes specified in Appendix IV to Part 268 or solid waste not subject to regulations under Part 261 I am aware that there are significant penalties for submitting a false certification, including the possibility of fi or imprisonment.

( ) 3. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and or through knowledge of the waste and that the lab pack contains only organic wastes specified in Appendix V to Part 2 solid waste not subject to regulation under Part 261. I am aware that there are significant penalties for submitting certification, including the possibility of fine or imprisonment.

Signature: Andrew J. Montoya Date: 7-30-92

Print or Type Name: Andrew J. Montoya

Title: Staff Member

INCIN=Incineration in a RCRA subpart O facility

All information must be completed and signed by generator.

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ROLLINS CHEMPAK INC.

NOTIFICATION per 40 CFR 268.7 for APPENDIX IV/V LAB PACKS ONLY

State Manifest #(s): 1 2 3 RES Stream #: HO58742

APPENDIX IV WASTE CODES

D001	D002	[redacted]	D007	D008	D011	F001	F003
F005	D022	D038	D035	U007	D003	D004	P104
P098							

Attachment 2 M285

OCT 01 1992

ROLLINS **CHEMPAK** INC.

NOTIFICATION per 40 CFR 268.7 for APPENDIX IV/V LAB PACKS ONLY

PART I: Generator and Manifest Information

Generator Name: Los Alamos National Laboratory

Address: P.O Box 1663 MS J 593

City: Los Alamos State: NM Zip Code: 87545

Telephone: area code (505)- 667-7579 EPA ID#: NM0890010575

STATE Manifest #(s): _____ RES Stream (one only) # H057626-60

PART II: Waste Subject to Land Disposal Restrictions:

Pursuant to 40 CFR 268.7 I am notifying the following facility (check one):

~~X Rollins Environmental Services (LA)~~ X Rollins Environmental Services (TX)
o Rollins Environmental Services (NJ) o OPC o TET;

that under the above RES stream number and State Manifest Number(s), I am shipping to you a waste identified by the EPA waste numbers circled on attached page 2-list of applicable waste codes-, which are subject to the EPA Land Disposal Restrictions. These wastes were prepared in accordance to 40 CFR 268.42 and are:(Check 1a,1b or both)

X 1a. Lab packs containing only waste listed in 40 CFR 268, Appendix IV, and may contain appropriate non-RCRA solid waste. (Check statement 2-Part III). These lab packs must be treated in accordance with 268.42(b) by INCIN*, followed by treatment of D004-008, D010,D011 metals per 268.41(a). These lab packs contain the below checked metals:

X D004 X D005 X D006 X D007 X D008 X D010 X D011

o 1b. Lab packs containing only organic wastes listed in 40 CFR 268, Appendix V, and may contain appropriate non-RCRA solid waste. (Check statement 3-Part III) These lab packs must be treated in accordance with 268.42(b) by INCIN.*

PART III: Authorized Representative (Check 2,3 or both as indicated above and sign)

X 2. I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only the wastes specified in Appendix IV to Part 268 or solid waste not subject to regulations under Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

o 3. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the lab pack contains only organic wastes specified in Appendix V to Part 268 or solid waste not subject to regulations under Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

Signature: Andrew J. Montoya Date: 5-5-92

Print or Type Name: Andrew J. Montoya

Title: Staff Member

* *INCIN=Incineration in a RCRA subpart O facility*

All information must be completed and signed by generator.

Copyright by Rollins CHEMPAK, Inc.

APPENDIX IV/V LAB PACKS ONLY

Generator:
Stream number (one only):

Date:

APPENDIX IV WASTE CODES (Circle all that apply)

P001, P002, P003, P004, P005, P006, P007, P008, P009, P013, P014, P015, P016, P017, P018, P020, P021, P022, P023, P024, P026, P027, P028, P029, P030, P031, P033, P034, P036, P037, P038, P039, P040, P041, P042, P043, P044, P045, P046, P047, P048, P049, P050, P051, P054, P056, P057, P058, P059, P060, P062, P063, P064, P065, P066, P067, P068, P069, P070, P071, P072, P073, P074, P075, P077, P081, P082, P084, P085, P087, P088, P089, P092, P093, P094, P095, P096, P097, P098, P099, P101, P102, P103, P104, P105, P106, P108, P109, P110, P111, P112, P113, P114, P115, P116, P118, P119, P120, P121, P122, P123

U001, U002, U003, U004, U005, U006, U007, U008, U009, U010, U011, U012, U014, U015, U016, U017, U018, U019, U020, U021, U022, U023, U024, U025, U026, U027, U028, U029, U030, U031, U032, U033, U034, U035, U036, U037, U038, U039, U041, U042, U043, U044, U045, U046, U047, U048, U049, U050, U051, U052, U053, U055, U056, U057, U058, U059, U060, U061, U062, U063, U064, U066, U067, U068, U069, U070, U071, U072, U073, U074, U075, U076, U077, U078, U079, U080, U081, U082, U083, U084, U085, U086, U087, U088, U089, U090, U091, U092, U093, U094, U095, U096, U097, U098, U099, U101, U102, U103, U105, U106, U107, U108, U109, U110, U111, U112, U113, U114, U115, U116, U117, U118, U119, U120, U121, U122, U123, U124, U125, U126, U127, U128, U129, U130, U131, U132, U133, U136, U137, U138, U140, U141, U142, U143, U144, U145, U146, U147, U148, U149, U150, U152, U153, U154, U155, U156, U157, U158, U159, U160, U161, U162, U163, U164, U165, U166, U167, U168, U169, U170, U171, U172, U173, U174, U176, U177, U178, U179, U180, U181, U182, U183, U184, U185, U186, U187, U188, U189, U190, U191, U192, U193, U194, U196, U197, U200, U201, U202, U203, U204, U205, U206, U207, U208, U209, U210, U211, U213, U214, U215, U216, U217, U218, U219, U220, U221, U222, U223, U225, U226, U227, U228, U234, U235, U236, U237, U238, U239, U240, U243, U244, U246, U247, U248, U249

F001, F002, F003, F004, F005, F006, F010,

K001, K002, K008, K009, K010, K011, K013, K014, K015, K016, K017, K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028, K029, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040, K041, K042, K043, K044, K045, K046, K047, K048, K049, K050, K051, K052, K060, K061, K069, K071, K073, K083, K084, K085, K086, K087, K093, K094, K095, K096, K097, K098, K099, K101, K102, K103, K104, K105, K113, K114, K115, K116

D001, D002, D003, D004, D005, D006, D007, D008, D010, D011, D012, D013, D014, D015, D016, D017
D022 D028 D029 D040

APPENDIX V Waste Codes (Circle all that apply)

P001, P002, P003, P004, P005, P007, P008, P009, P014, P015, P016, P017, P018, P020, P021, P022, P023, P024, P026, P027, P028, P030, P031, P033, P034, P037, P038, P039, P040, P041, P042, P043, P044, P045, P046, P047, P048, P049, P050, P051, P054, P057, P058, P059, P060, P062, P063, P064, P065, P066, P067, P068, P069, P070, P071, P072, P075, P077, P081, P082, P084, P085, P088, P089, P093, P094, P095, P097, P098, P101, P102, P105, P106, P108, P109, P111, P112, P116, P118, P123

U001, U002, U003, U004, U005, U006, U007, U008, U009, U010, U011, U012, U014, U015, U016, U017, U018, U019, U020, U021, U022, U023, U024, U025, U026, U027, U028, U029, U030, U031, U033, U034, U035, U036, U037, U038, U039, U041, U042, U043, U044, U045, U046, U047, U048, U049, U050, U052, U053, U055, U056, U057, U058, U059, U060, U061, U062, U063, U064, U066, U067, U068, U069, U070, U071, U072, U073, U074, U075, U076, U077, U078, U079, U080, U081, U082, U083, U084, U085, U086, U087, U088, U089, U090, U091, U092, U093, U094, U095, U096, U097, U098, U099, U101, U102, U103, U105, U106, U107, U108, U109, U110, U111, U112, U113, U114, U115, U116, U117, U118, U119, U120, U121, U122, U123, U124, U125, U126, U127, U128, U129, U130, U131, U132, U133, U135, U137, U138, U140, U141, U142, U143, U147, U148, U149, U150, U152, U153, U154, U155, U156, U157, U158, U159, U160, U161, U162, U163, U164, U165, U166, U167, U168, U169, U170, U171, U172, U173, U174, U176, U177, U178, U179, U180, U181, U182, U183, U184, U185, U186, U187, U188, U189, U190, U191, U192, U193, U194, U196, U197, U200, U201, U202, U203, U206, U207, U208, U209, U210, U211, U213, U218, U219, U220, U221, U222, U223, U225, U226, U227, U228, U234, U235, U236, U237, U238, U239, U240, U243, U244, U246, U247, U248, U249

F001, F002, F003, F004, F005, F010, S/S44

K001, K009, K010, K011, K013, K014, K015, K016, K017, K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K029, K030, K031, K032, K033, K034, K035, K036, K037, K038, K039, K040, K041, K042, K043, K044, K045, K046, K047, K048, K049, K050, K051, K052, K054, K060, K065, K073, K083, K084, K085, K086, K087, K093, K094, K095, K096, K097, K098, K099, K101, K102, K103, K104, K105, K111, K112, K113, K114, K115, K116, K117, K118, K123, K124, K125, K126, K136,

D001, D012, D013, D014, D015, D016, D017

Attachment 3

BR / NON AE

7.18.1 M299

ROLLINS
ENVIRONMENTAL SERVICES

LAND DISPOSAL RESTRICTION NOTIFICATION (per 40 CFR 268.7)

INSTRUCTION: Complete Part I. Check and complete Part II or Part III. Complete and sign Part IV.

PART I: Generator, Reference and Manifest Information

1. Generator Name: LOS ALAMOS NATIONAL LABORATORY EPA I.D. #: NM0890010515
2. Address: PO BOX 1663, MS J593
3. City: LOS ALAMOS State: NM Zip: 87545
4. RES Reference # (BR) HO/L/W/MO/OP): 33400 Manifest #: LAA6026565 67, 6
5. EPA Waste Codes (list ALL applicable codes and subcategories for this stream--see reverse side for subcategories): D001/D002/D004/D005/D006/D007/D008/D009/D010/D011

6. This stream is a _____ wastewater (<1% total organic carbon and <1% total suspended solids for most wastes) or X nonwastewater. If wastewater, obtain Wastewater Attachments 1, 2, and 3 from your Sales or Customer Service Representative.

PART II: Wastes Subject to Land Disposal Restrictions (If the waste is non-hazardous or a "newly listed waste" identified in Part III below, complete Part III rather than Part II.)

X Pursuant to 40 CFR 268.7, I am notifying X RES(LA); ___ RES(NJ); ___ RES(TX); ___ RES of LA; ___ OPC; ___ TET that under the above RES Reference and manifest numbers, I am shipping to you a waste identified by the EPA waste code(s) and subcategory(ies) listed in Part I above, which is subject to the EPA Land Disposal Restrictions, as checked below.

A. Check line 1, 2, 3, 4 and/or 5, as applicable

_____ 1. Treatment standard, as checked by me in Attachment 1, which I am enclosing, for ____ F001; ____ F002; ____ F003; ____ F004; ____ F005; ____ F039.

X 2. Numerical treatment standard(s) specified in 40 CFR 268.41(a) (Table CCWE), per Attachment 3.

X 3. Treatment standard(s) expressed as specified technology(ies) in 40 CFR 268.42(a), for which the required technology, per Attachment 3, is X INCIN; X DEACT; ____ ADGAS fb NEUTR; ____ IMERC; ____ STABL; or, for PCBs, ____ Incineration in a TOSCA-permitted incinerator (RES(TX) only).

X 4. Numerical treatment standard(s) specified in 40 CFR 268.43(a) (Table CCW), per Attachment 3.

_____ 5. This waste is (check one) ____ an "Appendix IV lab pack" or an ____ "Appendix V lab pack". I have signed the required certification on page 2 of Attachment 2, which I am enclosing.

B. Also check one or more of the following lines if applicable

_____ 6. A D001-D011 waste which (a) ____ does (b) ____ does not meet the definition of a "California List" waste (see definition below). If (a), I have also checked the "California List" section of Attachment 1, which I am enclosing.

_____ 7. Treatment standard(s) with a "capacity variance" until May 8, 1992, per Attachment 3, as I have checked on the enclosed Attachment 2. The waste (a) ____ does (b) ____ does not meet the definition of a "California List" waste (see definition below). If (a), I have also checked the "California List section of Attachment 1, which I am enclosing.

_____ 8. A nickel or thallium "California List" waste (see definition below). I have checked the "California List" section of Attachment 1, which I am enclosing.

_____ 9. A specific extension or variance (other than a "capacity variance"), as I have checked on Line C or D of Attachment 2, which I am enclosing.

_____ 10. The waste already meets relevant treatment standards. I have signed the required certification on page 2 of Attachment 2, which I am enclosing.

PART III: Wastes NOT Subject to Land Disposal Restrictions

_____ Pursuant to 40 CFR 268.7, I am notifying ___ RES(LA); ___ RES(NJ); ___ RES(TX); ___ RES of LA; ___ OPC; ___ TET that, under the above reference and manifest numbers, I am shipping to you a waste which is non-hazardous and/or identified by the EPA waste code(s) listed in Part I above. The waste is not subject to the Land Disposal Restrictions because the waste is non-hazardous and/or consists only of one or more of the following EPA waste codes listed since November 8, 1984: D018-43, F032, F034-35, F037-38, K064-66, K088, K090-91, K107-112, K117-18, K123-26, K131-32, K136, U328, U353, U359 or other codes listed since 5/15/91.

PART IV: Authorized Representative

Signature: Andrew T. Montoya Date: 8-4-92

Print or Type Name: Andrew T. Montoya

Title: Staff Member

NOTE: A "California List" waste is (a) a hazardous waste containing Halogenated Organic Compounds at a concentration of 1000 mg/kg or mg/l, or greater; or (b) a liquid hazardous waste (including free liquids) having a pH equal to or less than 2.0 or containing any of the following materials at a concentration equal to or greater than specified: PCB's, 50 ppm; or (in mg/l) free cyanides, 1000; As, 500; Cd, 100; Cr, 500;

ATMENT STANDARD REFERENCE ABLE
Nonwastewaters Only

7.18.1M299
ATTACHMENT 3

TABLE LEGEND

EPA WASTE CODE SUFFIX

A	: Acetones	LW	: Low Mercury (<260 mg/kg) Subcategory
ALK	: Alkalines	[illegible]	: [illegible]
C	: Corrosive	NRGN	: No Gas Subcategory
CB	: Cadmium Batteries	NCS	: Non-Cd [illegible] Sulfide Subcategory
CS	: Cadmium Sulfide Subcategory	NWW	: Nonwastewater
E	: Explosives	[illegible]	: Used Oil
[illegible]	: Reactive	R	: Reactive
HG	: High Mercury (>260 mg/kg)	RC	: Reactive Cyanide Subcategory
HZ	: High Zn (>10% Subcategory	RS	: Reactive Sulfide Subcategory
LB	: Lead Acid Battery	S	: Sulfide
LA	: Low Arsenic (<1%) Subcategory	W	: Water Reactive
LIQ	: Liquid	X	: Numerical Treatment Standards

TECHNOLOGY CODES AND DEFINITIONS OF TECHNOLOGY BASED STANDARDS

ADGAS or NEUTR : Venting or Compressed Gases followed by neutralization. (NCIN Acceptable Technology)
DEACT : Deactivation of Hazardous Characteristic (NCIN Acceptable Technology)
INCRC : Incineration of Organics and Mercury Contaminated Wastes
INCIN : Incineration
STABL : Stabilization

COLUMN HEADING DESCRIPTIONS

COLUMN 1 : EPA Waste Code Number and Suffix (if applicable)
COLUMN 2 : Waste Non Numerical Treatment Standards Expressed as Concentrations in Waste Extract
COLUMN 3 : Specified Technology Based Standards
COLUMN 4 : Waste Non Numerical Treatment Standards Expressed as Waste Concentrations
COLUMN 5 : Deferred Effective Date of Surface Disposed Wastes Regulated in the Land Disposal Regulations (LDR)

NOTES: 1. Refer to last page of Attachment 3 for "capacity variance date" on soil and debris wastes
2. Radioactive hazardous mixed wastes not referenced (RES not permitted)
3. Waste codes listed since November 8, 1989 and not in the table below are currently not regulated under LDR
4. Some non-debris wastes which are marked "Do not Accept" below can be acceptable at some RES plants in low peaks or very small quantities. Check with Plant Technical Manager.

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
D001 CAR		DEACT		
D001LIQ (<10% TOC)		DEACT		
D001LIQ (>10% TOC)		INCIN		
D001O2		DEACT		
D001R		DEACT		
D002ACID		DEACT		
D002ALK		DEACT		
D002C		DEACT		
D002E	DO NOT ACCEPT			
D002R		DEACT		
D002RC			X	
D002RS		DEACT		

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
D002WR		DEACT		
D003	X		X	5/8/92
D003	X			
D003	X			
D003CS	DO NOT ACCEPT			
D003	X			
D003CS	DO NOT ACCEPT			
D003	X			
D003WR	DO NOT ACCEPT			*
D004LB	X			5/8/92
D004	X			
D004	X			
D005	X			
D006	X			
D007	X			
D008	X			
D009	X			
D009LB	X			5/8/92
D010	X			
D011	X			
D012			X	

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
D013			X	
D014			X	
D015			X	
D016			X	
D017			X	
F001	X		X	
F002	X		X	
F003	X		X	
F004	X		X	
F005	X	INCIN	X	
F006	X		X	
F007	X		X	
F008	X		X	
F009	X		X	
F010			X	
F011	X		X	
F012	X		X	
F019	X		X	
F020	DO NOT ACCEPT			
F021	DO NOT ACCEPT			
F022	DO NOT ACCEPT			
F023	DO NOT ACCEPT			
F024	X	INCIN	X	
F028			X	
F026	DO NOT ACCEPT			
F027	DO NOT ACCEPT			
F028	DO NOT ACCEPT			
F039	X		X	5/8/92
K001	X		X	
K002	X			
K003	X			
K004	X			
K005	X			
K006A	X			

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
K006A	X			
K007	X			
K008	X			
K009			X	
K010			X	
K011			X	
K013			X	
K014			X	
K015	X		X	
K016			X	
K017			X	
K018			X	
K019			X	
K020			X	
K021	X		X	
K022	X		X	
K023			X	
K024			X	
K025		INCIN		
K026		INCIN		
K027		INCIN		
K028	X		X	
K029			X	
K030			X	
K031	X			5/8/92
K032			X	
K033			X	
K034			X	
K035			X	
K036			X	
K037			X	
K038			X	
K039		INCIN		
K040			X	

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
K041			X	
K042			X	
K043	DO NOT ACCEPT			
K044	DEACT			
K045	DEACT			
K046	X			
K047	DEACT			
K048	X		X	
K049	X		X	
K050	X		X	
K051	X		X	
K052	X		X	
K060			X	
K061HZ	DO NOT ACCEPT			
K061LZ	X			
K062	X			
K069CB	X			
K069NCS	DO NOT ACCEPT			
K071HG	DO NOT ACCEPT			
K071LG	X			
K073			X	
K083	X		X	
K084	X			5/8/92
K085			X	
K086	X		X	
K087	X		X	
K093			X	
K094			X	
K095			X	
K096			X	
K097			X	
K098			X	
K099	DO NOT ACCEPT			
K100	X			
K101	X		X	5/8/92

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
K102	X		X	
K103			X	
K104			X	
K105			X	
K106HG	DO NOT ACCEPT			
K106LG	X			5/8/92
K111		INCIN		
K112		INCIN		
K113	X	INCIN		
K116		INCIN		
P001		INCIN		
P002		INCIN		
P003		INCIN		
P004			X	
P005		INCIN		
P006		INCIN		
P007		INCIN		
P008		INCIN		
P009		INCIN		
P010	X			5/8/92
P011	X			5/8/92
P012	X			5/8/92
P013	X		X	
P014		INCIN		
P015	DO NOT ACCEPT			
P016		INCIN		
P017		INCIN		
P018		INCIN		
P020			X	
P021			X	
P022		INCIN		
P023		INCIN		
P024			X	
P026		INCIN		
P027		INCIN		

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
P028		INCIN		
P029			X	
P030			X	
P031		INCIN		
P033		INCIN		
P034		INCIN		
P036	X			5/8/92
P037			X	
P038	X			5/8/92
P039			X	
P040		INCIN		
P041		INCIN		
P042		INCIN		
P043		INCIN		
P044		INCIN		
P045		INCIN		
P046		INCIN		
P047		INCIN	X	
P048			X	
P049		INCIN		
P050			X	
P051			X	
P054		INCIN		
P056		ADGAS		
P057		INCIN		
P058		INCIN		
P059			X	
P060HG	DO NOT ACCEPT			
P060LG	X	INCRC		5/8/92
P062		INCIN		
P063			X	
P064		INCIN		
P065HG	DO NOT ACCEPT			
P065LG	X	INCRC		5/8/92
P066		INCIN		
P067		INCIN		

(1) EPA CODE NUMBER	(2) 40 CFR 268.41 (CCME)	(3) 40 CFR 268.42 TECH	(4) 40 CFR 268.43 (CCM)	(5) CAPACITY VARIANCE DEFERRED EFF DATE
P068		INCIN		
P069		INCIN		
P070		INCIN		
P071			X	
P072		INCIN		
P073	X			
P074	X		X	
P075		INCIN		
P076		ADGAS		
P077			X	
P078		ADGAS		
P081		INCIN		
P082		INCIN		
P084		INCIN		
P085		INCIN		
P087	DO NOT ACCEPT AFTER 5/8/92			
P088		INCIN		
P089			X	
P092HG	DO NOT ACCEPT			
P092LG	X	INCRC		5/8/92
P093		INCIN		
P094			X	
P095		INCIN		
P096		INCIN		
P097			X	
P098			X	
P099	X		X	
P101			X	
P102		INCIN		
P103	X			
P104	X		X	
P105		INCIN		
P106			X	
P108		INCIN		
P109		INCIN		

* Technology Only For 2-Nitropropane, 2-Ethoxyethanol

Attachment 4

ROLLINS CHEMPAK INC.

NOTIFICATION per 40 CFR 268.7 for APPENDIX IV/V LAB PACKS ONLY

PART I: Generator and Manifest Information

Generator Name: LOS ALAMOS NATIONAL LABORATORY

Address: LOS ALAMOS NATIONAL LABS
PO BOX 1663, MS J593
LOS ALAMOS, NM 87545

Telephone: (505) 667-7579 EPA ID#: NM0890010515

State Manifest #(s): 00103370-73 RPT RES Stream #: H058743-60

PART II: Waste Subject to Land Disposal Restrictions:

Pursuant to 40 CFR 268.7 I am notifying the following facility (check one):

( ) Rollins Environmental Services (LA) (X) Rollins Environmental Services (TX)
( ) Rollins Environmental Services (NJ) ( ) OPC ( ) TET;

that under the above RES stream number and State Manifest Number(s), I am shipping to you a waste identified by the EPA waste numbers (listed on page 2) which are subject to the EPA Land Disposal Restrictions. These wastes were prepared in accordance to 40 cfr 268.42 and are (check 1a, 1b or both)

(X) 1a. Lab packs containing only waste listed in 40 CFR 268, Appendix IV, and may contain appropriate non-RCRA solid waste. (Check statement 2-Part III). These lab packs must be treated in accordance with 268.42(b) by INCIN*, followed by treatment of D004-008, D010, D011 metals per 268.41(a). These lab packs contain the below checked metals:

( ) D004 (X) D005 (X) D006 (X) D007 (X) D008 ( ) D010 (X) D011

( ) 1b. Lab packs containing only organic wastes listed in 40 CFR 268, Appendix V, and may contain appropriated non-RCRA solid waste. (Check statement 3-Part III) These lab packs must be treated in accordance with 268.42(b) by INCIN.*

PART III: Authorized Representative (Check 2,3 or both as indicated above and sign)

(X) 2. I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only the wastes specified in Appendix IV to Part 268 or solid waste not subject to regulations under Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

( ) 3. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the lab pack contains only organic wastes specified in Appendix V to Part 268 or solid waste not subject to regulation under Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

Signature: Andrew J. Montoya Date: 9-24-92

Print or Type Name: Andrew J. Montoya

Title: Staff Member

INCIN=Incineration in a RCRA subpart O facility

All information must be completed and signed by generator.

ROLLINS CHEMPAK INC.

NOTIFICATION per 40 CFR 268.7 for APPENDIX IV/V LAB PACKS ONLY

State Manifest #(s):

RES Stream #: HO58742

APPENDIX IV WASTE CODES

D001	D002	D003	D005	D006	D007	D008	D011
F001	F002	F003	F005	U002	U003	U080	U188
D022	D040						

ENCLOSURE
17

Department of Energy
Albuquerque Operations
Los Alamos Area Office
Los Alamos, New Mexico 87544

NOV 25 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Michael Burkhart, Director
N. M. Environmental Improvement Division
P. O. Box 968
Santa Fe, New Mexico 87504-0968

Dear Mr. Burkhart:

Enclosed is a revised hazardous waste permit application (Parts A and B) as was discussed in a meeting between Mr. Kelley Crossman and Los Alamos National Laboratory's staff, on September 22, 1987. This revised application supersedes all previously submitted applications. The questions raised in your letter of September 9, 1987, regarding entries in the Part A (EPA Form 3510-1) are resolved in this submittal.

Changes in the Part B are indicated by a vertical line in the margin of the affected pages. These changes, as well as those made in the Part A are summarized below.

1. Modification of the Part A for increased storage/treatment.

   A. Correction of the Part A forms to reflect which wastes will be incinerated. As the result if the trial burn, it was demonstrated that a number of wastes could be incinerated that were not previously listed in the Part A of the November 1986 permit application. This revision adds those chemicals to the enclosed Part A in accordance with HWMR-3, 302.C.3.a.

   B. Modifications to Section III.C., Page 1 of 5, in accordance with HWMR-3, 302.C.3.b. EID and the Laboratory have discussed on several occasions the need for additional storage capacity over and above that currently allowed at TA-54, Area L. Efforts to comply are exacerbated by several related factors:

      - The Laboratory is continuing to make a concerted and successful effort to comply with current waste regulations. This effort has resulted in a large increase in the on-site shipment of waste to permitted storage areas (principally, Area L) and treatment locations. As an example of this increase in years past the movement of 200 drums a year was normal. Last year we moved about 2,200 drums to Area L.

- The effort in sampling and analysis of this waste has grown commensurately with the increase in waste volume and analytical requirements. To relieve this pressure, the Laboratory has been operating its analytical capability at capacity and contracting for the overload at expensive outside laboratories. Minimum turn-around time for proper sampling, packaging, radioactive and chemical analyses, and reporting is about four weeks.

- On-site treatment is possible for some waste forms, but a large volume must be sent off-site for disposal. This means that the Laboratory must identify qualified commercial treatment, storage or disposal facilities (TSDFs) and meet their waste acceptance criteria. To ensure that a TSDF is qualified, Laboratory personnel must inspect the operation of each bidder. TSDF waste acceptance criteria usually require specialized packaging, additional sampling for their analytical needs, and accumulation of minimum volumes of similar waste forms. It is taking several months to ensure that off-site operations are conducted in accordance with Federal, State, and TSDF regulations.

- Associated with the last item, delays have lately been caused by the TSDFs reaching their individual storage and throughput capacity. As an example, shipments to our current off-site contractor for incineration have been suspended until sometime in January because of a back-log caused by a nation-wide shortage in approved incineration capacity.

The net balance between increased input to on-site storage, a minimum hold-up for analyses and packaging, and a throttled output to TSDFs has been a stored volume that continues to exceed our current permit. It is clear that this situation reflects changes in regulations that are long-term. Therefore, the current shortage will continue to be a problem until input is reduced, storage is increased, or TSDF options are expanded. The most logical option for addressing the problem is to provide adequate overall Laboratory storage (including an increase at Laboratory treatment locations). The volumes we recommend are the following:

S01 (storage in containers) has been increased from 17880 gal to 237,990 gal. Two 250 gal. storage containers (tuff tanks) were included in the original 17880 figure. These two storage containers do not exist.

Nonliquid waste storage - 198,000 gal (3600 drums). This volume was discussed at a meeting with Mr. Kelley Crossman, on September 9, 1987, and agreed to as a legitimate and reasonable expansion. This involves a dirt-bermed area that is being used to store, on pallets, 55-gal. drums of nonliquid waste. Because no liquids are involved, a secondary containment structure is not needed.

TA-50 Storage Pad - 17,000 gal. See Item 6 below.

Batch Waste Treatment Plant Storage - 1980 gal. See Item 6 below.

TA-50 Incinerator Storage Unit - 3630 gal. See Item 5 below.

S02 (Storage in tanks) has been increased from 0 gal. to 6600 gal.

Area L Treatment Tanks - 4 tanks @ 1665 gal. These tanks have been used for nonhazardous and hazardous waste treatment. While their primary purpose will continue to be for treatment, there is a need to use these tanks for storage in the event the waste cannot be removed in a timely manner after treatment or in the event bulk storage is necessary.

S04 (Storage in a surface impoundment) is the inactive surface impoundment (SI) at Area L that the Laboratory intends to close in accordance with an NMED/EPA approved closure plan. This SI is not now being used nor will it be used in the future.

T02 (Treatment in a surface impoundment) is the inactive surface impoundment at the TA-16 burning ground. Same explanation as under S04 above.

T03 (Treatment in an incinerator) has been increased from 0.15 to 0.56 tons per hour. This increase of 0.41 tons per hour is explained in Item 9. below.

T04 (Other treatment) has been increased by 2534 gal. per day because of the cementation processes planned at Area L and the TA-50 Batch Waste Treatment Facility. This process is intended to assure that no free liquids are left in the waste and to immobilize hazardous constituents. This process will render the waste less hazardous and in some cases render it nonhazardous in accordance with waste minimization requirements of the Hazardous and Solid Waste Amendments of 1984.

2. The system upgrade of the TA-50 Controlled Air Incinerator. The incinerator, in addition to disposing of hazardous waste, has burned transuranic (TRU) waste as a research and development operation. In converting to a production mode for TRU disposal it was decided the facility needed to be modified to accommodate an increased radioactivity. Because this impacts hazardous waste operations, the permit application is modified to reflect these changes. The Department of Energy (DOE) is making these changes in the application and requests the EID's approval under interim status in accordance with HWMR-3, 302.C.3.b. The trial burn results have also been added to Appendix J.

3. The system upgrade of the TA-50 Batch Waste Treatment Facility (BWTF). Before the system was put into operation it was determined that it had to be modified for safety and operational purposes. For example, the electrical components had to be made explosion proof. No wastes are intended to be treated that have not previously been identified nor has the design capacity been increased or the process changed. These modifications are detailed in this submittal.

4. The addition of hazardous waste treatment processes at TA-54, Area L. Since the previous application, Area L has been receiving barium-contaminated sand resulting from the burning of waste explosives. This sand is presently being stored at Area L in 55-gal. drums. Because of the potential of the sand being contaminated with explosives, the DOE and the Laboratory do not wish to send it off-site for treatment or disposal. The application is being modified to address the treatment of this sand. The DOE also requests that this additional treatment process be granted interim status under HWMR-3, 302.C.3.c.

Treatment at the Laboratory is necessary because, due to the source of this waste (i.e. explosive activity), it cannot be sent off-site for treatment or disposal.

5. The addition of a hazardous waste storage area for the TA-50 Controlled Air Incinerator. When the incinerator is operating it will run 24 hours per day for 7 days per week. A staging area will be constructed at the Incinerator (TA-50, Building 37) so a sufficient quantity can be accumulated to facilitate orderly processing of the waste for incineration.

6. Increase storage at TA-54, Area L and the TA-50 BWTF. Storage at Area L is increased to accommodate an area for storage of non-liquid hazardous waste. An additional storage pad, originally planned for Area L, will be placed at TA-50 instead. This pad is identical to the one at Area L and will combine some of the storage capability planned at both TA-50 and Area L. In addition, small storage modules will be located near the BWTF to support this unit. Interim status is also requested for this increased storage in accordance with HWMR-3, 302.C.3.b. The additional storage at Area L and TA-50 is necessary to house the waste that cannot be adequately handled at the present Area L storage pad. Because Area L storage and treatment is intended to be phased out in the next 5-6 years, the DOE and the Laboratory feel it more appropriate to place the new storage pad, as well as future expansions/replacements, at TA-50 to consolidate these activities near other on-site treatment and storage operations.

7. Relisting of the TA-14 Burn Cage. The reference to this burn cage that burns explosive contaminated combustibles was inadvertently deleted from a previous application. This submittal re-inserts this activity into the Part B.

8. Revisions of the Part B Contingency Plan, Waste Analysis Plan and Training Plan. These three sections of the application have been updated to reflect the current status at the Laboratory and to meet additional regulatory requirements. The contingency plan has been modified to be consistent with the DOE's Spill Prevention Control and Countermeasures Plan for the Laboratory and the Laboratory's Emergency Management Office Charter. The waste analysis plan has been revised to include the Toxicity Characteristic Leaching Procedure (TCLP) as required by the land ban regulations. The training section has been revised to address different personnel needing training, as well as different job descriptions for these people (Appendix S).

9. Addition of an incinerator at TA-16 Burning Ground. This incinerator will replace the burn cage at TA-16 and burn the same type of waste, i.e. potentially explosives contaminated burnable trash. The DOE is requesting interim status for this incinerator in accordance with HWMR-3, 302.C.3.c. The Laboratory intends to operate this incinerator in compliance with HWMR-3, 206.D.8.a (2). These hazardous wastes (i.e. ignitable and reactive) as well as nonhazardous, controlled solid waste are presently being open burned. The open burning permit issued by the EID (Air Quality Bureau) will expire in May 1988 with little likelihood of renewal. Because there is the possibility of explosives unintentionally entering this waste, it cannot leave the immediate site for disposal. This unit will be much more environmentally acceptable by greatly reducing particulate emissions into the environment.

I would appreciate it if you will return or destroy the previous copies of this document to avoid any confusion as to which one is the predominate issue.

If you have any questions regarding this revised application or need further information, please call Mr. Jim Phoenix of my staff at 667-5288.

Sincerely,

Harold E. Valencia
Area Manager

Enclosures

cc w/enclosures:
A. Davis, USEPA, Dallas, TX
J. Themelis, KHD, AL

LTP:JAP:000064

ENCLOSURE
18

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2850

BRUCE KING
GOVERNOR

JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 11, 1994

Mr. Jerry Bellows, Area Manager
Department of Energy
Los Alamos Area Office
528 35th Street
Los Alamos, NM 87544

Dear Mr. Bellows:

RE: Conditional approval of RCRA Hazardous Waste Permit modifications.
EPA ID No. NM 0890010515-1

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has reviewed DOE/LANL's response to the NOD concerning the Technical Completeness Review of Area G TRU Storage Units. Following discussions between Jack Elvinger of your staff and Steve Zappe of HRMB concerning the intent of our March 15, 1994 letter, the NMED approves your permit modification request with the following conditions:

1. Because NMED does not accept knowledge of process (KOP) as a substitute for actual sampling and chemical/physical analysis required under the New Mexico Hazardous Waste Management Regulations (HWMR-7), 40 CFR 264.13, you must submit a revised waste analysis plan, containing a schedule for characterization of this mixed waste through sampling and analysis, for NMED approval by March 31, 1995.

2. Because revision pages to the contingency plan, closure plan, and waste management practices (Sections 4, 7, and 9) submitted January 28, 1994, do not allow simple insertion to update the original documents, you must submit complete copies of these three documents. Include a revised copy of Table 7-2 containing complete information for all emergency managers. While HWMR-7, 40 CFR 270.12(b) denies claims of confidentiality for the name and address of any permit applicant or permittee, you may include an additional copy of Table 7-2 requesting confidentiality.

DOE/LANL may now proceed with relocation of mixed waste presently stored on pads 1, 2, and 4 in TA-54, Area G, to the new storage pads authorized by this permit modification.

Please contact Mr. Steve Zappe at (505) 827-4308 if you have any questions.

Sincerely,

Kathleen M. Sisneros
Director, Water and Waste Management Division

cc: Benito Garcia, HRMB
Barbara Hoditschek, HRMB
Susan McMichael, NMED
Jon Mack, DOE LAAO
Joyce Laeser, Counsel, LAAO
File: LANL Red 94

Project No. 301608.07
Revision 0.0
September 1993

RCRA Part B Permit Application
Volume I

Storage Pads 1, 2, and 4; Storage Domes A-D
Technical Area 54, Area G

Chemical Plating Waste Treatment Skid;
Treated Liquid Storage Tanks
Technical Area 63, Hazardous Waste Treatment Facility

Prepared for:

Los Alamos National Laboratory
Environmental Protection Group EM-8
Los Alamos, New Mexico 87545

Controlled Copy No. 6

Table 3-4

Transuranic Mixed Waste Analytical Parameters and Proposed Test Methods[a]

Parameter	Test Method	SW-846 Method
Corrosivity/pH	Electrometric	9040
Toxicity characteristic for metals	Toxicity Characteristic Leaching Procedure (TCLP) Extraction followed by Atomic Absorption (AA) Spectrometry or Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP)	1311
Arsenic	Graphite Furnace AA, Gaseous Hydride AA	7060, 7061
Barium	ICP, Direct Aspiration AA, Graphite Furnace AA	6010, 7080, 7081
Cadmium	ICP, Direct Aspiration AA, Graphite Furnace AA	6010, 7130, 7131
Chromium	ICP, Direct Aspiration AA, Graphite Furnace AA	6010, 7190, 7191
Lead	ICP, Direct Aspiration AA, Graphite Furnace AA	6010, 7420, 7421
Selenium	Graphite Furnace AA, Gaseous Hydride AA	7740, 7741
Silver	ICP, Direct Aspiration AA, Graphite Furnace AA	6010, 7760, 7761
Mercury	Cold-Vapor AA	7470
Volatile organics	TCLP Extraction followed by	
	Gas Chromatography/Mass Spectrometry (GC/MS)	8240
	Capillary Column Technique	8260
Semivolatile organics	TCLP Extraction followed by GC/MS	
	Packed Column Technique	8250
	Capillary Column Technique	8270
Metals	Acid Digestion followed by ICP	3020 6010
Arsenic	ICP, GFAA	6010, 7060
Barium	ICP	6010
Beryllium	ICP	6010
Cadmium	ICP	6010
Chromium	ICP	6010
Lead	ICP	6010
Nickel	ICP	6010
Selenium	ICP, GFAA	6010, 7740
Silver	ICP	6010
Thallium	ICP, GFAA	6010, 7841
Zinc	ICP	6010

[a] U.S. Environmental Protection Agency, "Test Methods for Evaluating Solid Waste" *(SW-846)*, 4th Edition (EPA, 1992).

ENCLOSURE
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LOS ALAMOS

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Redo on computer

WASTE PROFILE FORM

EM-8 USE ONLY
Reference Number

Complete both sides of this form using a black or blue pen. Incomplete forms will be rejected. Send form to ATTN WPF MS K490

Division/Group	Telephone	Mail Stop	Technical Area	Building	Room
SST-8	5-3823	D435	3	40	5104

Method of Characterization
- [x] Knowledge of Process (KOP)
- [ ] MSDS attached (optional)
- - OR -
- [ ] Chemical/Physical Analysis (specify below)
- [ ] Request for analysis
- [ ] Analysis attached

Waste Category (Choose one or more of the categories below that most accurately describe your waste)

[x] Flammable	[ ] Pesticide	[ ] Photographic	[ ] Spent coolant	[ ] Plastics
[x] Combustible	[ ] Beryllium	[ ] Sanitary	[ ] Aerosol cans	[ ] Filter media
[ ] High explosive	[ ] Asbestos	[ ] Radiochemistry	[ ] Motor oil	[ ] Vacuum filter media
[ ] DOT oxidizer	[x] Solvent	[ ] Paint waste	[ ] Pump oil	[ ] Cement paste
[ ] Pyrophoric	[ ] Waste rags	[x] Laboratory trash	[ ] Capacitor oil	[ ] Nonsalvageable
[ ] Cyanide	[ ] Glass	[ ] Metallurgic	[ ] UST remediation	[ ] Nonrecyclable
[ ] Heavy metal	[ ] Plating solution	[ ] Scrap metal	[ ] Contaminated soils	[ ] Building debris
[ ] Corrosive	[ ] Etchant	[ ] Medical/Biological	[ ] Environmental/SWMU	[ ] Firing site debris

General Description (provide a general description of the waste and/or waste-generating process below)

Our hazardous waste consists of Kimwipes, Q-tips and some latex gloves. All used with 111 Trichloroethane (propanol, sometimes acetone) ~~[illegible]~~ 8.27.92

Waste Description

Form	Ignitability (F)	Corrosivity (pH)	Reactivity	PCBs
[x] Solid	[x] < 100°	[ ] 2.0 or less	[ ] Unstable	[ ] < 50 ppm
[ ] Semisolid/sludge	[ ] 100° to 139°	[ ] 2.1 to 12.4	[ ] Water reactive	[ ] 50 to 500 ppm
[x] Absorbed liquid	[x] 140° to 200°	[ ] 12.5 or greater	[ ] Cyanides	[ ] > 500 ppm
[ ] Liquid	[ ] > 200°	[x] Not aqueous	[ ] Sulfides	[x] None
[ ] Gas cylinder or vessel	[ ] Not ignitable		[ ] Shock sensitive	
[ ] Multilayered			[ ] Class A or B explosive	
[ ] Suspended solids			[x] Nonreactive	
[ ] Powder or ash				

Waste Origination

A. Is this waste generated in a radiation controlled area? [ ] Yes [x] No

B. If yes, is the waste generated or accumulated in a properly defined, registered radioactive materials management area (RMMA)? (RMMA # _____) [ ] Yes [ ] No

C. If A is yes and you have determined that your waste is nonradioactive, provide justification in the additional comments section on the reverse side of this form.

Radioactivity

[x] Nonradioactive [ ] Suspect [ ] Radioactive

Activity Measure	Radiation Type	Half-life
[ ] ≤ 2.0 nC/g	[ ] alpha	[ ] T½ < 20 yr
[ ] > 2.0 nC/g	[ ] beta	[ ] T½ ≥ 20 yr
[ ] > 10.0 nC/g	[ ] gamma	
[ ] > 100 nC/g	[ ] tritium	

WASTE GENERATOR CERTIFICATION: *Based on my knowledge of the waste and/or chemical/physical analysis, I certify that the information on this form is correct. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.*

Waste Generator's Name (last, first, middle)	Z Number	Signature	Date
Baldonado, Juan R.	077713	Juan R. Baldonado	8-19-92

If your waste management coordinator is the custodian of your waste management documentation, provide the name and mail stop of this person (optional). --->	Name (last, first, middle)	Mail Stop
	Baldonado, Juan R.	D435

Form 1346 (8/92) Complete Reverse Side → Page 1 of 2

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ENCLOSURE
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Los Alamos
NATIONAL LABORATORY

memorandum

NONPROLIFERATION AND INTERNATIONAL SECURITY
Space & Atmospheric Sciences, NIS-1

To/MS: Liz English, ICF Kaiser Engineers, Inc.
From/MS: Juan Baldonado, NIS-1, MS D466 JB
Phone/FAX: 5-3823/FAX 5-7395
Symbol: NIS-1:94-652
Date: July 28, 1994

Subject: RESPONSE TO REPORTED FINDING

This memorandum is in response to a "finding" reported to me in a report dated July 21, 1994 concerning an EPA multi-media investigation that took place August 2 through 12, 1993.

The finding states: "Three separate laboratories were using one accumulation area in Building 40, Room W112; this area was also not in control of the operator producing the hazardous waste."

My understanding as to the content of the finding is the distance between the satellite storage area in Room W112 and the other two contributing laboratories, N120 and S104, is too great as explained by Liz English.

I have questioned EM-8, as well as Liz English, as to the "legal distance" for waste accumulation in a case like this and got no solid answer. This was also brought up during the time we were establishing our satellite storage in W112 and planning to use this as our central collection point for our three laboratories within SM 40.

I will simply state facts as to the way our hazardous waste stream is controlled.

1) our waste is generated and handled in accordance with WPRF 4274.

2) we were allowed to use one point of satellite storage for three laboratories within SM40 west and south wings, we chose Room W112. This room has a limited access key.

3) the laboratories N120 and S104 have cipher locks on them to prevent any nondescribed waste as per WPRF 4274 from entering our waste management stream.

4) I am the waste generator as well as the person in charge of waste collection and transport to the satellite storage container in Room W112.

All of these conditions have been in effect since day one of our satellite storage area and waste management system and were being followed at the time of the EPA multi-media investigation! We were also commended for doing a good job with out satellite storage recently, as per a memorandum from DOE, AOO, LAAO dated June 14, 1994 signed by Jon Mack, Waste Management, ES&H Branch.

JRB:ko