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

MAR 1998

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Benito Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo St., Building A
P. O. Box 26110
Santa Fe, NM 87505

RED LANL '98

Dear Mr. Garcia:

Subject: Hazardous Waste Treatability Study Reporting Requirements

The purpose of this letter is to submit hazardous waste treatability study reporting documents as required by the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), which incorporates 40 CFR Part 261.4(f)(9). Los Alamos National Laboratory (LANL) completed one treatability study in 1997. LANL also received treatability study samples from the Portsmouth Gaseous Diffusion Plant that currently remain in storage, and have not yet been treated, due to a stand-down at the Chemistry and Metallurgy Research (CMR) Facility in September 1997. In addition, LANL proposes to conduct 24 treatability studies for calendar year 1998.

The enclosed document entitled *Proposed Treatability Studies for 1998 at Los Alamos National Laboratory* contains estimates of the amount of waste expected to be used in each proposed treatability study. The enclosed document entitled *1997 Treatability Study Information for Los Alamos National Laboratory* contains specific information required for treatability studies conducted in 1997. Although LANL anticipates several treatability studies during 1998, some proposed projects may be postponed or canceled because of funding issues or programmatic changes.

If you have any questions regarding the hazardous waste treatability study reporting documents contained in this report, please contact me at (505) 665-5042.

Sincerely,

H. L. "Jody" Plum
Office of Environment

LAAME:6JP-050

Enclosures

13163

bcc w/enclosures:
H. Haynes, Office of Counsel, LAAO
J. Ellvinger, ESH-19, LANL, MS-K490
I. Triay, CST-7, LANL, MS-J514
J. Dziewinski, CST-7, LANL, MS-J514
J. Johnson, Benchmark, LANL, MS-C320

Los Alamos
NATIONAL LABORATORY

Hazardous & Solid Waste Group (ESH-19)
P.O. Box 1663, MS K490
Los Alamos, New Mexico 87545
(505) 665-9527 FAX (505) 667-5224

Proposed Treatability Studies for 1998 at Los Alamos National Laboratory (LANL) EPA I.D. No. NM0890010515

Treatability Study	Estimated Amount of Waste to be Treated	
1	5.9	kilograms (kg)*[1]
2	5.9	kg*[2]
3	5.9	kg*[3]
4	2.8	kg*
5	75.7	kg*[4]
6	75.7	kg*[5]
7	2.0	kg°
8	0.5	kg°
9	15.0	kg°
10	12.0	kg°
11	2.0	kg°
12	4.0	kg°
13	2.0	kg°
14	2.0	kg°
15	2.0	kg°
16	1.0	kg°
17	0.5	kg°

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* Notifications for these treatability studies were submitted to the New Mexico Environment Department (NMED), Hazardous and Radioactive Materials Bureau (HRMB) in calendar year 1996. Refer to *1997 Treatability Study Information for Los Alamos National Laboratory (LANL) EPA I.D. No. NM0890010515* for further information on the status of these treatability studies.

° Notifications for these treatability studies were submitted to NMED's HRMB in calendar year 1996 but have not been conducted to date. Therefore, these studies are proposed for calendar year 1998.

1 These treatability studies include a single waste stream. Therefore, the estimated amount of this waste stream to be treated will be counted only once for the estimated total.

2 Refer to footnote #1.

3 Refer to footnote #1.

4 Refer to footnote #1.

5 Refer to footnote #1.

	Treatability Study (Continued)	Estimated Amount of Waste to be Treated (Continued)	
	18	7.0	kg°
	19	6.0	kg°
	20	1.0	kg°
	21	2.0	kg°
	22	1.0	kg°
	23	1.0	kg°
	24	1.0	kg°
Total:	24	146.4	kg

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1997 Treatability Study Information for Los Alamos National Laboratory (LANL) EPA I.D. No. NM0890010515

Type (by process) of treatability study conducted:

Electrochemical Decontamination of the Surface of a Lead Alloy.

Person conducting the treatability study:

Jacek Dziewinski, Los Alamos National Laboratory, CST-7, MS J514.

Type of waste subjected to the treatability study:

Radioactive shrapnel containing lead generated during environmental restoration work at TA-33. The only radioactive material historically used at the location of the restoration work was uranium. The mixed waste was TCLP for lead (hazardous waste number D008).

Date the shipment of waste for the treatability study was received:

September 11, 1997.

Quantity of waste in storage and subjected to treatment each day:

	Amount in storage (kg)	Amount Treated (kg)
9/11/97	25.32	0
9/12/97	25.32	0
9/13/97	25.32	0
9/14/97	25.32	0
9/15/97	21.32	4
9/16/97	21.32	0
9/17/97	18.02	3.3
9/18/97	18.02	0
9/19/97	18.02	0
9/20/97	18.02	0
9/21/97	18.02	0
9/22/97	12.52	5.5
9/23/97	12.52	0
9/24/97	12.52	0
9/25/97	11.22	1.3

9/26/97	10.22	1
9/27/97	10.22	0
9/28/97	10.22	0
9/29/97	7.92	2.3
9/30/97	7.92	0
10/1/97	7.92	0
10/2/97	5.42	2.5
10/3/97	5.42	0
10/4/97	5.42	0
10/5/97	5.42	0
10/6/97	1.82	3.6
10/7/97	1.82	0
10/8/97	1.82	0
10/9/97	0.82	1
10/10/97	0	0.82

Date the treatability study was concluded:

October 11, 1997.

Final disposition of residues from each treatability study:

- 24.83 kilograms (kg) of non-radioactive shrapnel was sent for recycling.
- 0.49 kg of metals, mainly copper and zinc, were disposed of as low-level radioactive waste.
- 23 Liters of low-level liquid waste was discharged to the Radioactive Liquid Waste Treatment Facility at TA-50.

Type (by process) of treatability studies conducted:

Recovery and Recycling of Highly Enriched Uranium From Mixed Waste:

- Freon Degrader Residue (Group 1)
- Pyrohydrolysis of Freon Degrader Residue (Group 1)
- Fluorination of Freon Degrader Residue (Group 1)
- X-710 Gunk (Group 2)
- Oil Leak Gunk (Group 3)
- Fluorination of Oil Leak Gunk (Group 3)

Personnel conducting the treatability studies:

John FitzPatrick, Los Alamos National Laboratory, CST-7, MS G739
Mike West, Los Alamos National Laboratory, NMT-11 MAT, MS A140

Type of waste subjected to treatability studies:
Group 1: Freon Degrader Residue was generated during the degradation process applied to various Freon compounds used at the Portsmouth Gaseous Diffusion Plant (PORT). Fluorine gas reacted with Freon-114 to form carbon tetrafluoride (CF_4). Gaseous metal fluorides reacted with the degrader surface to form nonvolatile transition metal fluorides. The degrader waste consists of metal fluorides and nonvolatile uranium fluorides. The waste carries hazardous waste numbers D004, D007 and D008.

Group 2: X-710 Gunk is a solid physical form mixed waste generated during routine operations in the PORTS analytical chemistry laboratory. Routine operations included filtration and evaporation. The waste carries hazardous waste numbers D007 and D008.

Group 3: Oil Leak Gunk consists of lubrication oil that leaked into uranium hexafluoride (UF_6) process lines where their subsequent reaction generated a solid physical form mixed waste. The waste carries hazardous waste numbers D007 and D008.

Date the shipment of waste for the treatability studies were received:

Group 1: August 25, 1997
Group 2: August 25, 1997
Group 3: August 25, 1997

Quantity of waste in storage each day:

Group #	Date	Amount in Storage
1	8/25/97-12/31/97	5.861 kg
2	8/25/97-12/31/97	2.766 kg
3	8/25/97-12/31/97	7.727 kg

Quantity of waste subjected to treatment each day:

Not Applicable[1]

Date the treatability studies were concluded:

Not Applicable[2]

Final disposition of residues from each treatability study:

Not Applicable[3]

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1 The mixed waste samples have not been treated as the Chemistry Metallurgy Research (CMR) operations effecting the treatability studies have not resumed after a stand-down was initiated on September 2, 1997. On September 18, 1997, Los Alamos National Laboratory (LANL) submitted a letter to Mr. Benito Garcia, Bureau Chief of the New Mexico Environment Department's Hazardous and Radioactive Materials Bureau (HRMB) (refer to the attached letter). The letter proposed to store the mixed waste samples in an interim status container storage area until the CMR stand-down was over. At the point in time when the CMR operations start up again such that the treatability studies can begin, LANL proposed to start applying the treatability study time limit (i.e., concluding the studies within one year of the date CMR operations are back on-line or within 90 days from completion of treatment, which ever comes first).

2 The treatability studies have not been concluded. Please refer to Footnote 1 for information on the status of the treatability studies.

3 Refer to Footnotes 1 and 2.

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SEP 18 1997

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Mr. Benito J. Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo Street, Bldg. A
P. O. Box 26110
Santa Fe, New Mexico 87505

Dear Mr. Garcia:

Subject: Effect of CMR Stand-Down on Seven Treatability Studies

The purpose of this letter is to provide an update to the New Mexico Environment Department Hazardous and Radioactive Materials Bureau on recent developments at Los Alamos National Laboratory (LANL) impacting seven treatability studies on recovery and recycling of highly enriched uranium from mixed waste.

At noon on September 2, 1997, Alex Gancarz, Operations Manager for the Chemistry and Metallurgy Research (CMR) facility, placed the facility under a stand-down mode for operations because of safety concerns. While the exact duration of the stand-down is uncertain, it has been estimated to last four to six months.

On August 25, 1997, LANL accepted a total of 14.82 kilograms of mixed waste samples from the Department of Energy Portsmouth Gaseous Diffusion Plant (PORTS) for the purpose of conducting treatability studies. No treatment has been conducted on these samples to date. Due to the CMR stand-down, the samples will be required to be stored for an indeterminate period of time without testing the proposed treatment technologies.

Title 20 of the New Mexico Administrative Code, Chapter 4, Part 1 (20 NMAC 4.1), which incorporates Title 40 of the Code of Federal Regulations (40 CFR) §261.4(f)(5) by reference, specifies that laboratories or testing facilities must conclude each study no more than 90 days from the date the treatability study was completed for the sample, or no more than one year from the date the samples were shipped to the laboratory or testing facility (whichever date occurs first). It is LANL's concern that a stand-down period of four to six months would seriously affect its ability to meet this requirement, as the proposed treatment technologies for the specified samples are difficult and time consuming to perform.

Due to the uncertainty of the stand-down period and its effect on the proposed treatability studies, LANL would propose to store the mixed waste samples in the interim status container storage area located at TA-3, Building 29, Wing 9, Room 9020, until operations start back up. The samples would be managed in compliance with all interim status hazardous waste regulatory requirements during the stand-down period with the understanding that once operations

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commence, the samples would be removed from the mixed waste interim status container storage area and managed in accordance with the treatability study requirements specified in 20 NMAC 4.1, Subpart II, Section 200 [40 CFR 261.4(f)]. LANL's "Hazardous Waste Permit Application, Part A for Mixed Waste," dated January 25, 1991, allows for storage of mixed waste with the following EPA hazardous waste numbers: D004, D006, D007, D008, D009, and D011 in the proposed interim status container storage area. These hazardous waste numbers correspond to the samples proposed for use in the seven treatability studies.

At the point in time when the CMR operations start up again such that the treatability studies can begin, LANL would start applying the treatability study time limit (i.e., concluding the studies within one year of the date CMR operations are back on-line or within 90 days from completion of treatment, whichever comes first). What we are proposing, in effect, is a delay in the start date for the time frames specified in 40 CFR 261.4(f) until the treatability samples can undergo test treatment at the CMR facility.

The samples received on August 25, 1997, are included in PORTS' Site Treatment Plan. Because PORTS needs to pursue treatment options for its STP wastes, we would appreciate a response to this proposal if at all possible by the end of September, so as not to delay PORTS pursuit of other treatment options should this request be denied. If you have any questions regarding this letter, please contact me at (505) 665-5042.

Sincerely,

H. L. "Jody" Plum
Office of Environment

LAAMEP:9JP-066

cc:
Dr. Robert S. Dinwiddie
Hazardous and Radioactive Materials Bureau
New Mexcio Environment Department
2044 Galisteo Street, Bldg. A
P. O. Box 26110
Santa Fe, NM, 87505
John Tymkowych
Hazardous and Radioactive Materials Bureau
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SEP 18 1997

bcc:
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March 11, 1998

Mr. G. Thomas Todd
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

Dr. James C. Brown, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

RE: Receipt of TRU Waste Generated Off-Site

Dear Mr. Todd and Dr. Brown:

The New Mexico Environment Department has received information from both private sources and DOE Press Releases that Sandia National Laboratory-New Mexico will ship its TRU Waste to Los Alamos National Laboratory for the characterization necessary to meet WIPP Waste Acceptance Criteria.

NMED wishes to advise DOE/LANL that in order to receive waste from off-site a permit modification must be completed under the provisions of 20 NMAC 4.1 Subpart IX, § 270.42. The LANL Permit, Module II Condition II.B.2., states "Off-Site Wastes. This permit does not allow the Permittee to accept waste from an off-site source." Sandia National Laboratory is an off-site source under this condition of the LANL Permit. Any waste shipped to LANL from SNL must have undergone analysis to verify that it is TRU only and not a mixed waste or hazardous waste. LANL acceptance of off-site hazardous or mixed waste would be a violation of current permit conditions and would subject LANL to enforcement action.

Should you have any concerning this matter or the modification of the LANL Permit please contact me or Dr. Robert S. (Stu) Dinwiddie of my staff at the above address or by phone at (505) 827-1561.

Sincerely,

Ed Kelley, Ph.D., Director
Water and Waste Management Division

cc: Benito J. Garcia, HRMB
Robert S. (Stu) Dinwiddie, HRMB
Stephanie Kruse, HRMB
David Neleigh, EPA

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