



Department of Energy

Albuquerque Operations Office
Los Alamos Area Office
Los Alamos, New Mexico 87544

AUG 14 1997



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

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

Dear Mr. Garcia:

Subject: FY 1997 Third Quarterly Progress Report, Consent Agreement for Compliance Orders NMHWA 93-01, 93-02, 93-03, 93-04

The purpose of this letter is to submit the FY 1997 third quarterly progress report for the Transuranic Waste Inspectable Storage Project (TWISP) at the Los Alamos National Laboratory (LANL). The report is required by Section IX.C of the referenced December 10, 1993 Consent Agreement. It is being submitted by the Department of Energy (DOE) and the University of California (UC).

The enclosed report addresses the activities related to the TWISP during the reporting period of May 1, 1997 through July 31, 1997. The following elements, as required by the referenced Consent Agreement, are addressed in the enclosed report.

- I. A brief description of activities completed during the reporting period to implement the requirements of the Consent Agreement.
- II. A brief description of activities scheduled for the following reporting period.
- III. A description of any change in key project personnel which occurred during the reporting period.
- IV. A description of problems encountered during the reporting period and mechanisms used or proposed for resolving the problems.
- V. Tables and figures summarizing all data, sampling and test results for the period.

Supporting documents will be retained at LAAO, and will be made available to your staff upon request. As you can see, there has been significant progress. We will continue to



16711

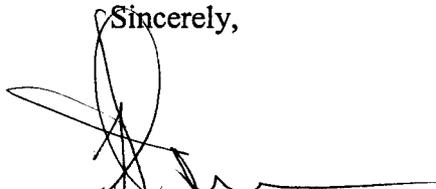
Benito Garcia

2

AUG 14 1997

keep you apprised of the progress as per our agreement. If you have any questions, please contact me at (505) 665-5042.

Sincerely,

A handwritten signature in black ink, appearing to be 'H.L. Plum', written over a horizontal line.

H.L. "Jody" Plum

Office of Environment and Projects

LAAMEP:2JP-083

Enclosure

cc w/enclosure:

R. Dinwiddie

Permits Program Manager

Hazardous Radioactive Materials Bureau

New Mexico Environment Department

2044 Galisteo St., Bldg. A

P. O. Box 26110

Santa Fe, New Mexico 87505

**TRANSURANIC WASTE INSPECTABLE STORAGE PROJECT
QUARTERLY PROGRESS REPORT
MAY 1, 1997 - JULY 31, 1997**

The transuranic (TRU) Waste Inspectable Storage Project (TWISP) was initiated in February 1993 in response to the New Mexico Environment Department's (NMED's) Consent Agreement for Compliance Order NMHWA 93-03. The TWISP involves the recovery of approximately 16,865 TRU and TRU-mixed waste containers currently under earthen cover on Pads 1, 2, and 4 at Technical Area (TA)-54 Area G, and placement of that waste into inspectable storage. All waste will be moved into inspectable storage by September 30, 2003. Waste recovery and storage operations will emphasize protection of worker safety, public health, and the environment.

I. Activities accomplished during the period May 1, 1997 - July 31, 1997

1. Summary

- The Drum Venting System became fully operational. The Detailed Operating Procedure for the Drum Venting System (DVS) was completed, approved, and implemented. A training program for the operation of the DVS was established. DVS operators have been trained. All training requirements were met. Six hundred 55-gallon drums were successfully vented.
- The systems maintenance procedure for the DVS was completed and approved. Training to this procedure was completed. The DVS is operational, thus, maintenance of the system is ongoing per the applicable procedure.
- 2,300 55-gallon drums have been retrieved.
- Two bulging 55-gallon drums were remotely vented using the Laboratory's HAZMAT team.
- Storage domes 231 and 232 were completed.

2. TWISP Facility Construction

The dry pipe fire suppression system was completed. Testing and fine-tuning of the system continue. The dry pipe fire suppression system installed in Domes 226, 229, 230 & 33 continues to experience significant problems. Due to the flexibility of the structures themselves, the piping system has experienced movement at the joints which is allowing the nitrogen gas to escape, and as designed, when the gas escapes the system charges with water. This movement has also resulted in pipes resting at a negative slope which causes pipes to become frozen, requiring shut down of the system while repairs are made and the system is drained, re-pressure tested and refilled with nitrogen. Depending on the outcome of these corrective measures, an estimate will be produced and a BCP submitted to cover the increase cost.

Corrective Actions:

Alliance Fire Protection Company (installation contractor) has corrected the slope in the piping so positive sloping can be maintained for adequate drainage. The pipes will be spot checked (after a wind storm) to verify proper sloping. Flexible joints had previously been proposed by the engineer of record and rejected by the Facilities Fire Protection group (FSS-21) due to lack of approval by Underwriters Laboratory (UL).

4. Drum Vent System

The Drum Vent System (DVS) is complete. Because this DVS was not able to be used at Rocky Flats as originally planned, LANL incorporated the DVS into TWISP operations. The DVS is fully operational.

5. Equipment Purchasing

No major procurements.

6. Update on Waste Verification Facilities

Development of new waste characterization processes to supplement existing process knowledge is ongoing. A brief description of planned facilities and equipment is provided below:

- **Drum Prep Facility:** Upgrades to the Drum Prep Facility (DPF) have been completed. The dry pipe fire suppression system has been completed. Testing and validation is ongoing. The DPF is fully operational and being used for drum washing, painting, and venting.
- **Waste Characterization Glovebox, Phases I (sorting), II (coring), and III (head space analysis):** A glovebox is now on site for use in Phase I activities. Ancillary equipment design for the Phase II glovebox has been completed.
- **Waste Characterization, Reduction and Repackaging Facility (WCRRF) upgrades for verification of hazardous constituents:** The Safety Analysis Report has been approved, and is in the process of being implemented.
- **Real-time Radiography (RTR) for non-intrusive inspection of drum contents:** The mobile RTR was delivered in January of 1996. The mobile RTR system has been used successfully to inspect 630 drums currently stored in TA-54, Dome 48.
- **Segmented Tomographic Gamma Scanner (S/TGS) to quantity isotopic content of drums:** The Laboratory now has an operational mobile S/TGS that has been used at a

variety of Laboratory sites. The S/TGS was augmented with additional software to give it tomographic gamma scanning capabilities.

- **Passive active Neutron Assay (PAN):** The PAN is fully operational for assaying Pu-239 and U-235.

7. RCRA Permit Application Activities

NMED final approval of RCRA permit modifications for TWISP and supporting operations remains on the critical path for the project. The TWISP permit modification is currently being reviewed by NMED legal staff. No date has been provided by NMED for completion of that review. Additional waste characterization capacity has also been requested in the TA-50 Radioactive Materials Research, Operations, and Demonstration Facility RCRA permit modification request submitted to NMED in December, 1996.

II. Activities scheduled for the period August 1, 1997, through October 31, 1997

1. Retrieval of waste from Pad I will continue.
2. Drum venting operations will continue.
3. The enhanced environmental surveillance of the TRU Pad area will continue.
4. Work will continue at the waste verification facilities.
5. Reliability of fire suppression system will continue to be evaluated.

III. Changes in key personnel during the period May 1, 1997 - July 31, 1997

No changes occurred.

IV. Problems encountered during the period May 1, 1997 - July 31, 1997

The dry pipe fire suppression systems installed in Domes 226, 230 & 33 have experienced significant problems. Due to the flexibility of the structures themselves, the piping system has experienced movement at the joints which is allowing the nitrogen gas to escape, and as designed, when the gas escapes, the system charges with water. This movement has resulted in pipes resting at a negative slope which has caused pipes to become frozen, requiring shut down of the system while repairs are made and the system is drained, re-pressure tested and refilled with nitrogen. Depending on the outcome of these corrective measures, an estimate will be produced and a Baseline Change Proposal (BCP) submitted to cover the increase cost.

Corrective Actions:

A meeting was held to address the problems with the system. Alliance Fire Protection Company (installation contractor) is working at correcting the slope in the piping so positive sloping can be maintained for adequate drainage. Upon resloping, the pipes will be spot

checked (after a wind storm) to verify proper sloping. Flexible joints have been proposed to correct leakage of gas from the system, however, this type of joint had previously been proposed by the engineer of record, and rejected by FSS-21, Facilities Fire Protection due to its lack of Underwriters Laboratory (UL) approval.

V. Summary of monitoring during the period May 1, 1997 - July 31, 1997

Continuous air monitoring is on going in dome 226 (retrieval dome), domes 229 and 230 (storage domes) and, dome 33 (drum prep facility). No elevated readings have been detected.

Facility Management Unit 64
Facility Name

3:30 PM August 15, 1997
Date and Time

Technical Area 54, Building 1050
Place of Interview

I, Stephen D. Francis am employed by Los Alamos National Laboratory, P.O. Box 1663, MS J595. I have been employed by LANL from April, 1982 until the present time, and have worked at my present job for about 1 ½ years.

Name: Stephen D. Francis *S. D. Francis*

Work Phone: (505) 665-6158

My occupation is Facility Manager Designee.

STATEMENT:

This statement is made in reference to the asphalt that was moved from TA-54, Area L to TA-54, Area G.

During the summer of 1995, a Mixed Waste Storage Dome was constructed at TA-54, Area L. At that time, there were two groups located within TA-54, CST-5 and CST-14. CST-5 was responsible for coordinating the dome construction. During this time frame, the contractor removed the asphalt, base course, and some dirt to grade where the pad was to be constructed and the dome erected. To the best of my knowledge, the asphalt was used to construct the pad upon which the dome was to be installed.

After the dome was erected, a change order was submitted to remove a strip of asphalt adjacent to the Northern most ringwall. The strip of asphalt was approximately .5 feet deep, 10 feet wide, and 550 feet long. It was agreed upon at one of the weekly construction meetings that the pile of asphalt that was removed under the conditions of the change order would be moved into Area G from Area L. I do not remember if I gave permission to move the asphalt, or if permission was given by agreement between the CST-5 and CST-14 Group Leaders. However, I was aware that the asphalt was to be moved into Area G. At that time, I was not aware that the asphalt might contain hazardous constituents.

The pile of asphalt (approximately 100 cubic yards) was moved to Area G about August of 1995. The asphalt was stockpiled at the location of the current compactor dome, and

the intention was to use the asphalt for fill purposes to construct the pad for the Compactor Dome.

From August, 1995, until the spring of 1996, concrete rubble, additional dirt and asphalt, etc., was added to the asphalt.

Before construction began on the Compactor Dome, the pile of asphalt from Area L was moved 50 to 100 feet to the East. This occurred around March or April of 1996, and was done so work could begin on the pad for the dome. As stated above, the original intent was to utilize the asphalt for fill to construct the pad for the compactor dome. This was not done as the contractor indicated that the pieces of asphalt were too large, and could not be compacted properly for use in the fill for the pad for the compactor dome. Therefore, the asphalt was not used. During this time frame, 3 to 4 dump truck loads of dirt and asphalt was brought into Pit 37 to use for fill, and an additional 3 to 4 dump truck loads of dirt and asphalt was trucked to the Los Alamos County Landfill for disposal.

In February of 1997, Sean French inquired where the pile of debris at Area G (containing the asphalt from Area L) came from. He was told that the debris was left over from some asphalt work done within Area L. Sean stated that this debris should not be removed from Area G, as there was a possibility the asphalt within the pile could contain some hazardous constituents.

It was during this time (February/March 1997) that I learned about the letter from NMED (dated July 22, 1994) to LAAO outlining the requirements for managing the construction debris left over from the construction of Dome 215.

Released

Not Released


Michael Le Scouarnec

HRMB INSPECTION
PERSONAL INTERVIEW STATEMENT

TA-54

Facility Name

8-15-77

Date and Time

EMSO Bld 1050

Place of Interview

I, LARMAN EVERETT of

Complete Home Address

Telephone (365-2609) Soc. Sec. No. / / Age

() am () was employed by _____, whose address is
Complete Name of Employer

LANL

Complete Address of Employer

from JAN 1974 to present

My occupation is FSS-6 in Non Nuclear project ^{TEAM} Dept.

Statement:

in Summer '75 I was ^{construction} ~~construction~~'s inspector for the project.
State Nmed stated that we could use the asphalt as back fill
material, so it won't leave the controlled area. We wound up
w/ more asphalt than we could use. \approx 8 truck single axle dump
truck \approx 20 y³. I asked Ed Lopez and Steve Francis
what to do ~~it~~ with this excess asphalt. I mentioned
to both of 'em "there's a pile of rubble inside area 6"
(which is still a controlled area). "Could I take this pile
and shove up to area 6." 2 or 3 days later both Steve and Ed
come back at me and it was OK to move the material
to one controlled area to the other controlled area.

I instructed the contractor (Marcon) to do that. And they did it. We added the asphalt to an existing rubble pile in area G, located just east of 54-281. the rubble pile ^{Before} was ≈ 10 or $15 y^3$ of materials. after this, I have no idea of what happened to the material. Total $\approx 30 y^3$

This statement is being given in the presence of _____

PLEASE INDICATE EMPLOYEE'S DESIRE: Does not wish this statement be released.

This statement may be released.

I have read the above and it is true and accurate.

Larman E. [Signature]
Employee Signature

Michael J. [Signature]
Inspector Signature

ANY CHANGES IN THIS INTERVIEW MUST BE INITIALED BY THE WITNESS AND THE INSPECTOR

HRMB INSPECTION
PERSONAL INTERVIEW STATEMENT

Juan Corpion, Team Leader
CMR Upgrades Group CST-10
University of California
Los Alamos National Laboratory
P.O. Box 1663, MS G571
Los Alamos, New Mexico 87544
505-665-5873

Interview: August 14, 1997, 13:30

Interview Location: TA-54, Area G

Statement

I became Group Leader of the Chemical and Mixed Waste Science Group (CST-5) in mid-October 1994. My responsibilities included the management of buildings and wastes stored at Technical Area (TA) 54, Areas J and L, and the management of waste containers located within building 49 of Technical Area (TA) 54, Area G, and building 61 at TA-21. I stepped down as Group Leader on December 22, 1996 shortly before the CST waste management groups were transferred to the Environmental Management Program Office.

Shortly after becoming the Group Leader, the issue regarding the management of asphalt resulting from the placement of a dome in Area L for the storage of mixed waste was brought to my attention by Mr. Tim Sloan of my staff. A contract had been let before I became Group Leader to construct a dome over the existing low-level mixed waste storage pad to improve the quality of long-term storage, and to bring the unit up to current RCRA standards. To perform this construction, the existing asphalt pad needed to be scoured and the surface leveled and compacted. The plan included the continued use of the scoured asphalt as it was determined to be useful construction material.

Mr. Sloan also brought a letter to my attention directing us to manage asphalt destined for disposal as hazardous waste (see attachment). Although the letter encompassed the construction activities within Area L only, I understood that any asphalt remaining after the pad had been reconstructed needed to be handled as hazardous waste if it were destined for disposal. In discussions with Mr. Sloan, I understood that that no hazardous waste contamination resulting from a spill was known to exist on the pad, and that analyses in 1994 showed no apparent radioactive contamination resulting from the storage of the drums on the pad. Nevertheless, the NMED required LANL to handle any asphalt destined for disposal as hazardous waste because the pad lay atop an old solid waste management unit and a vapor plume had been detected in the 1980s. While I did

not believe the asphalt should be classified as hazardous waste even if discarded, I felt it was important to comply with its requirements should we need to dispose any asphalt. Prior to becoming Group Leader, however, it was my understanding that some asphalt was removed from Area L as a result of an electrical upgrade and managed as hazardous waste in accordance to the NMED requirement (see attachment). Mr. Sloan and Mr. Ed Lopez nevertheless believed that the remaining asphalt was needed to level and stabilize the flooring of the new dome and used it to do such per our agreement with NMED.

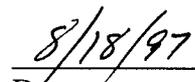
The construction began in the spring of 1995. In July 1995, after the pad had been reconstructed, Mr. Lopez informed me that a small amount of asphalt remained unused. My recollection is that the volume was about 28-30 cubic meters. Mr. Lopez asked me what to do with the asphalt. I contacted Tony Stanford, then Group Leader of the Solid Radioactive Waste Group (CST-14) to inquire as to whether he could use the remaining asphalt. At the time, I was aware that CST-14 was constructing a pad and a building at TA-54 Area G for a waste compactor, and that the floor around the building required asphalt.

Because the asphalt was not found to contain measurable radioactivity, I offered it to CST-14 with the understanding that it was to be used to build a floor in and/or around the compactor building. I judged that sending the asphalt to Area G did not constitute disposal and was within the scope of the understanding between NMED, DOE, and LANL.

I did not seek a re-interpretation of this matter from the Hazardous and Solid Waste Group (ESH-19) in July 1995 because I believed that I was acting properly and not offering CST-14 a solid waste or contaminated media. In retrospect, having not been part of the discussions with the NMED, I should have consulted with ESH-19 to ensure that my decision was sound. Nevertheless, in no time did I believe the transaction of the asphalt to CST-14 involved a hazardous waste, let alone a solid waste.



Juan Corpron



Date

TEXAS WATER COMMISSION
P.O. Box 13087, Capitol Station
Austin, Texas 78711-3087



Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039, expires 09/30/94

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NM0890010515	Manifest Document No. 94304	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address LOS ALAMOS NATIONAL LABORATORY P.O. BOX 1663 MS J593 LOS ALAMOS, NM 87545- In Emergency see box # 15			A. State Manifest Document Number 00395497		B. State Generator's ID 99935
4. Generator's Phone (505)667-7579 ATTN: DAN OAKLEY			C. State Transporter's ID 40756		D. Transporter's Phone (713)930-4500
5. Transporter 1 Company Name CUSTOM ENVIRONMENTAL TRANSPORT		6. US EPA ID Number DED980918858		E. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		F. Transporter's Phone	
9. Designated Facility Name and Site Address ROLLINS ENVIRONMENTAL SERVICES (TX), INC. 2027 BATTLEGROUND ROAD DEER PARK, TX 77536			10. US EPA ID Number LTXD055141378		G. State Facility's ID HW-50089-001
					H. Facility's Phone (713)930-2300
11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
X	a. Hazardous waste, solid, n.o.s., (111-1-TRICHLOROETHANE), 9, NA3077, PG III	001	CM	35840 30160 36500	P
	b.			02/3/94	
	c.				
	d.				
J. Additional Descriptions for Materials Listed Above 11a) NO79283-22, FINE, ROLL-OFF BINS WITH ASPHALT AND SOIL			K. Handling Codes for Wastes Listed Above M043		
15. Special Handling Instructions and Additional Information Use protective gear when handling waste. Avoid inhalation, ingestion, and skin contact. In emergency call Chemtrec at 1-800-224-1300, mention 'Labpack' if undeliverable return to generator. B.O.L.# D.O. Emergency Response # 11a. 31 LANL EMERGENCY # 505-667-6211					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name Dan Oakley			Signature Dan Oakley		Month Day Year 8/30/94
17. Transporter 1 Acknowledgement of Receipt of Materials			Signature Ed Deinger		Date 8/30/94
Printed/Typed Name ED DEINGER			Signature		Date
18. Transporter 2 Acknowledgement of Receipt of Materials			Signature		Date
Printed/Typed Name			Signature		Date
19. Discrepancy Indication Space PER MY TELEPHONE CONVERSATION WITH DAN OAKLEY THE ABOVE QUANTITY HAS BEEN CHANGED TO REFLECT THE ACTUAL AMOUNT RECEIVED AT RES (TX) INC. RECEIVED SEP 13 1994 9/6/94 Kum Mayo					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. RES (TX) INC					
Printed/Typed Name Ed Baca			Signature Ed Baca		Date 9/10/94



UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NM0890010515		Manifest Document No. 94327		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address LOS ALAMOS NATIONAL LABORATORY P.O. BOX 1663 MS J593 LOS ALAMOS, NM 87545- 4. Generator's Phone (505)667-7579 ATTN: DAN OAKLEY						A. State Manifest Document Number 00395498			
5. Transporter 1 Company Name CUSTOM ENVIRONMENTAL TRANSPORT						6. US EPA ID Number DED980918858		C. State Transporter's ID 40756	
7. Transporter 2 Company Name						8. US EPA ID Number		D. Transporter's Phone (713)930-4500	
9. Designated Facility Name and Site Address ROLLINS ENVIRONMENTAL SERVICES (TX), INC. 2027 BATTLEGROUND ROAD DEER PARK, TX 77536						10. US EPA ID Number TXD055141378		E. State Transporter's ID	
								F. Transporter's Phone	
								G. State Facility's ID HW-50089-001	
								H. Facility's Phone (713)930-2300	
11A. HM Number	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID)				12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
X	a. Hazardous waste, solid, D.O.S., (11) 1-TRICHLOROETHANE, 9, NA3077, PG III				001	C	36520	P	OUTS301H
	b.						9/15/94		
	c.								
	d.								
J. Additional Descriptions for Materials Listed Above 11a) 1079283-22, 1002, ROLL-OFF BINS FILLED WITH ASPHALT AND SOIL 11b) 11c) 11d)						K. Handling Codes for Wastes Listed Above M043			
15. Special Handling Instructions and Additional Information Use protective gear when handling waste. Avoid inhalation, ingestion, and skin contact. In emergency call Chemtrec at 1-800-424-9300, mention Labpack, if undeliverable return to generator. B.O.L.# DOT Emergency Response # 15 11a. 31 LANL EMERGENCY # 505-667-6211									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name Dan Oakley					Signature Dan Oakley			Month Day Year 9/15/94	
17. Transporter 1 Acknowledgement of Receipt of Materials									
Printed/Typed Name HARRY JONES					Signature Harry Jones			Month Day Year 09/15/94	
18. Transporter 2 Acknowledgement of Receipt of Materials									
Printed/Typed Name					Signature			Month Day Year	
19. Discrepancy Indication Space RECEIVED SEP 27 1994									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name GERARDO V. ALVARADO					Signature Gerardo V. Alvarado			Month Day Year 10/17/94	



Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039, expires 09/30/94

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NM089001051554390		Manifest Document No. 00395505		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address LOS ALAMOS NATIONAL LABORATORY P.O. BOX 1663 MS J593 LOS ALAMOS, NM 87545-						A. State Manifest Document Number 00395505			
4. Generator's Phone (505)667-7579 ATTN: DAN OAKLEY						B. State Generator's ID 99935			
5. Transporter 1 Company Name CUSTOM ENVIRONMENTAL TRANSPORT						C. State Transporter's ID 40810			
7. Transporter 2 Company Name CUSTOM ENVIRONMENTAL						D. Transporter's Phone (302)426-2955			
8. US EPA ID Number DE0980918858						E. State Transporter's ID 40786			
9. Designated Facility Name and Site Address ROLLINS ENVIRONMENTAL SERVICE (TX), INC 2027 BATTLEGROUND ROAD DEER PARK, TX 77536						F. Transporter's Phone (713)930-4500			
10. US EPA ID Number T X D 0 5 5 1 4 1 3 7 8						G. State Facility's ID NM50089001			
						H. Facility's Phone 713-930-2300			
11A. HM Number	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.			
X	Hazardous waste, solid, U.S.S., (1, 1-trichloroethane), 9, NA3077, PG III	001	CM	01000	P	OUTS301H			
	NON-REGULATED WASTE, SOLID	001	CM	11720	P	OUTS301I			
c.				04000	P				
d.									
J. Additional Descriptions for Materials Listed Above 11a) HO-079283-21, Fuel 11b) HO-079283-21, soil 11c) 11d)						K. Handling Codes for Wastes Listed Above MD43			
15. Special Handling Instructions and Additional Information Use protective gear when handling waste. Avoid inhalation, ingestion, and skin contact. In emergency, call Chemtrec at 1-800-424-9300, mention Labpack, if undeliverable return to generator. B.O.L.# D.O.T. Emergency Response #1, 1a. 31 11b. LAN EMERGENCY # 505-667-6211									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. (X)									
Printed/Typed Name DAN OAKLEY				Signature <i>Dan Oakley</i>		Month Day Year 11 8 94			
17. Transporter 1 Acknowledgement of Receipt of Materials				Printed/Typed Name Bill M Geaslin		Signature <i>Bill M Geaslin</i>		Month Day Year 11 9 94	
18. Transporter 2 Acknowledgement of Receipt of Materials				Printed/Typed Name CHARLES ALMAND		Signature <i>Charles Almand</i>		Month Day Year 11 10 94	
19. Discrepancy Indication Space									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name TOMMY WALDO				Signature <i>Tommy Waldo</i>		Date 11 14 94			

WASTE DATA FORM

COPY

Container # : C94043968 WDR # : 1007119 DIS/TRE # : 94390	WMC : PREWETT KERRY Z # : 099185 Phone : 57020 TA : 54 Building : 70 Room : OUTSIDE
---	--

NON RCRA STORAGE ONLY
 WASTE GENERATED OR ACCUMULATED IN A RADIOACTIVE MATERIALS MANAGEMENT AREA: NO

Shipping Name : HAZARDOUS WASTE, SOLID, N.O.S. (1,1,1-TRICHLOROETHANE)

Hazard Class : 9 DOT ID# : NA3077 Packing Group : III

Secondary Label :
 Technical Name :
 Additional Desc :

Haz Substance : ERG# : 31
 LSA/SCO Group :

Waste Code : C0 - CHEMICAL WASTE Storage Code : UNSTOR RGN # : 17	Other Con # : LAN-3968-94 Container Type : OT Volume : 21M Container Gross Wgt: Net Wgt: 10002p
Treat/Disp Loc : DP Transported By : CET Other Document : 00395505 AreaG/J Loc : Treat/Disp By: RES Treat/Disp Date: 09-NOV-94 TSDF Date : 14-NOV-94 Destruction # : Destruction Date :	Reviewed By : 095169 Data Entry By : 107695 DOT Check By : Picked Up By/Date&Time: 112056 / 09-NOV-94 09:00 Load Check By/Date : Pickup Update Check By : Off-Site Check By/Date : Update By/Date : 107695 / 02-DEC-94 Final Update Check By :

Item 47603 : ASPHALT & SOIL FROM AREA L ELECTRIC UPGRADE
 Generator : GONZALES JOSEPH A Group : CST7 Phone : 77579
 WPN : 9334 Phy_state: S Volume : 21 M Weight : 10000 P
 EPA Code : F002 1,1,1-TRICHLOROETHANE



Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039. expires 09/30/94

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. N M 0 8 9 0 0 1 0 5 1 5		Manifest Document No. 9 4 2 9 4		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address LOS ALAMOS NATIONAL LABORATORY P.O. BOX 1663 MS J593 LOS ALAMOS, NM 87545-						A. State Manifest Document Number 00395496			
4. Generator's Phone ((505)667-7579) ATTN: DAN OAKLEY						B. State Generator's ID 99935			
5. Transporter 1 Company Name CUSTOM ENVIRONMENTAL TRANSPORT			6. US EPA ID Number D E D 9 8 0 9 1 8 8 5 8			C. State Transporter's ID 4 0 7 5 6		D. Transporter's Phone (713)930-4500	
7. Transporter 2 Company Name			8. US EPA ID Number			E. State Transporter's ID		F. Transporter's Phone	
9. Designated Facility Name and Site Address ROLLINS ENVIRONMENTAL SERVICES (TX), INC. 2027 BATTLEGROUND ROAD DEER PARK, TX 77536						10. US EPA ID Number T X D 0 5 5 1 4 1 3 7 8			
G. State Facility's ID HW-50889-001						H. Facility's Phone (713)930-2300			
11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	Waste No.	
X	a. Hazardous waste, solid, n.o.s., (1) 1-trichloroethane), 9, NA3077, PG III				0 0 1	CN 33120	P	OUTS301H	
	b.								
	c.								
	d.								
J. Additional Descriptions for Materials Listed Above 11a) NO79EBS 22, FIVE, ROLL OFF BINS WITH ASPHALT AND SOIL						K. Handling Codes for Wastes Listed Above M043			
15. Special Handling Instructions and Additional Information Use protective gear when handling waste. Avoid ingestion, injection, and skin contact. In emergency call Chemtrec at 1-800-424-9300, mention Labpack, if undeliverable return to generator. B.O.L.# 101. EMERGENCY Response # 11a. 31 LANL EMERGENCY # 505-667-6211									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name Dan Oakley				Signature <i>Dan Oakley</i>			Month Day Year 8/30/94		
17. Transporter 1 Acknowledgement of Receipt of Materials									
Printed/Typed Name L. JONES				Signature <i>L. Jones</i>			Month Day Year 8/30/94		
18. Transporter 2 Acknowledgement of Receipt of Materials									
Printed/Typed Name				Signature			Month Day Year		
19. Discrepancy Indication Space RECEIVED SEP 13 1994									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name Paul Mann				Signature <i>Paul Mann</i>			Month Day Year 9/10/94		



BRUCE KING
GOVERNOR

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

Alice
F4I - I sent it
to Paul S. Thanks
JUDITH M. ESPINOSA
SECRETARY *Jack*

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

RON CURRY
DEPUTY SECRETARY

July 22, 1994

COPY

Mr. Joseph C. Vozella, Chief
Environment, Safety, and Health Branch
Department of Energy
Los Alamos Area Office
528 35th Street
Los Alamos, New Mexico 87544

Dear Mr. Vozella:

RE: Conditional approval of mixed waste storage dome
construction at TA-54, Area L
EPA ID No. NM 0890010515

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has reviewed DOE/LANL's request dated June 14, 1994, to construct a storage dome for mixed wastes stored at TA-54 Area L and the enclosure providing additional project information. The approval of this request is intended to improve hazardous waste management and upgrade to meet standards set forth in HWMR-7, Part V, (40 CFR 264). After considering all factors related to this request, NMED hereby approves commencement of activities associated with construction of the storage dome as described in the June 14, 1994, enclosure, under the following conditions:

1. Construction of the storage dome shall minimize disturbance of the underlying Solid Waste Management Unit (SWMU) identified as TA-54 MDA-L Pit A.
2. The construction or presence of the mixed waste storage dome shall not relieve or impede LANL from conducting corrective action activities at TA-54 MDA-L Pit A as required by Module VIII of LANL's RCRA permit. HRMB considers the dome a semi-permanent structure, and LANL may be required to remove it to facilitate investigation or remediation of this area.
3. Removal of the north facility fence is authorized only for the duration of those construction activities which would be impeded by the presence of the fence.

Post-It™ brand fax transmittal memo 7671 # of pages >

To <i>Jack Ellvinger</i>	From <i>B. Haditschek</i>
Co. <i>LANL</i>	Co. <i>NMED</i>
Dept.	Phone # <i>827-4308</i>
Fax # <i>667-5224</i>	Fax # <i>827-4361</i>

Mr. Joseph C. Vozella
Page 2
July 22, 1994

COPY

4. Because the asphalt pad has been contaminated with Volatile Organic Compounds (VOC's) from the underlying SWMU, all waste asphalt removed from the existing pad must be treated and/or disposed of as a hazardous waste.
5. Temporary container storage for mixed waste is authorized at the following areas described in Table B and Figure 18 of the September 1993 Revised Part A Application.

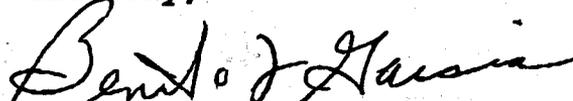
Container Storage	Temporary Capacity (gallons)
Area 4	11,000
Area 5	42,000

These temporary storage areas and capacities, combined with Container Storage Area 2 (current capacity 50,000 gallons), may be used to store mixed waste containers from Container Storage Area 1 (current capacity 100,000 gallons) during construction of the storage dome. Upon completion of construction, all temporary storage capacities shall revert to capacities described in Attachment 1 and Figure 20 of the January 1991 Part A Application.

6. No increase in storage capacity is authorized at this time.

Please contact Ms. Barbara Hoditschek or Mr. Steve Zappee at (505) 827-4308 if you have any questions.

Sincerely,


Benito J. Garcia
Chief, HRMB Bureau

cc:

Barbara Driscoll, EPA
Robert S. Dinwiddie, HRMB
Steve Zappee, HRMB
Susan McMichael, NMED
Jon Mack, DOE LAO
File: LANL Red 94



GARY E. JOHNSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Surface Water Quality Bureau
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-0187



MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

TO: John Tymkowych, Prog. Mgr., HRMB

THRU:  Glenn Saums, Mgr., NMED-SWQB-PSRS

FROM:  Barbara Hoditschek, Env. Spec., SWQB

DATE: December 18, 1997

SUBJECT: Rubble Pile Located Above Sandia Wetland

The NMED-SWQB, based on information obtained from the NMED-HRMB concerning the illegal disposal of hazardous waste in the rubble pile located above the Sandia Wetlands, considers DOE/LANL in violation of the New Mexico Water Quality Control Commission (WQCC) Regulations (20 NMAC 6.2) Section 2201 (Disposal of Refuse in a Watercourse) and possibly Section 1203.

Removal of the hazardous material at this late date is not feasible due to the extensive amount of material that has been moved to the site since the discovery of the illegal disposal. However, the NMED-SWQB requests the DOE/LANL provide appropriate measures to assure that the hazardous materials disposed of in the rubble pile will not migrate during stormwater events, leach, move due to erosion, or with any reasonable probability threaten, injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property.

The NMED-SWQB further requires DOE/LANL to provide evidence of construction of the preventative measures required in the above paragraph, quarterly maintenance reports on these preventative measures, and biannual monitoring reports of the watercourse to assure that the hazardous waste has not been released to the environment.

**INVESTIGATION REPORT
DISPOSAL OF HAZARDOUS WASTE CONTAMINATED ASPHALT
FROM TA-54, AREA L
LOS ALAMOS NATIONAL LABORATORY**

By: Michael C. Le Scouarnec, RCRA Inspection/Enforcement Group Supervisor
Hazardous and Radioactive Materials Bureau, NMED

Date: December 17, 1997

INTRODUCTION

This investigation was conducted to determine the course of events leading to the removal and disposal of hazardous waste contaminated asphalt from TA-54 to the Los Alamos County Landfill. Interviews were conducted with, and statements obtained from, personnel of Areas L and G, and the Los Alamos County Landfill. Internal documents from DOE/LOAA were also obtained regarding this incident.

COURSE OF EVENTS

In 1993, DOE/LANL decided that a storage dome was needed at TA-54, Area L for mixed waste storage. The dome would be situated over an existing solid waste management unit, SWMU #TA-54 MDA-L Pit A. In early 1994, LANL began discussing this project with NMED/HRMB staff. Apparently during this time period, samples of soil and asphalt were taken and analyzed by LANL which revealed that listed hazardous constituents were indeed contained in these materials. (See attachment) On July 22, 1994, the New Mexico Environment Department (NMED), Hazardous and Radioactive Materials Bureau (HRMB), issued a letter of response granting conditional approval to DOE/LANL's June 14, 1994 letter which requested approval for the construction of the storage dome. NMED stipulated that LANL's construction project cause minimal disturbance of the underlying SWMU. Condition #4 goes as follows: "Because the asphalt pad has been contaminated with Volatile Organic Compounds (VOC's) from the underlying SWMU, all waste asphalt removed from the existing pad must be treated and/or disposed of as a hazardous waste." (See attachment)

A utility up-grade project was done during July and August of 1994 in Area L which involved the removal of asphalt from the existing pad and trenching through the SWMU. Over 100,000 pounds of asphalt and soil contaminated with listed hazardous waste were manifested offsite and disposed of at Rollins Environmental Services facility in Deer Park, Texas at an estimated cost of nearly \$500,000. (See attachments)

In May and June of 1995, the old asphalt pad in Area L was broken up to prepare the site for a new pad. Much of the broken up asphalt and soil was reused as backfill. Approximately 30 cubic yards of the broken up asphalt was not reused as backfill and was, at the direction of the Area L & G manager, transported to Area G. The broken asphalt was supposed to be reused as backfill material for another project and was placed on a debris pile. Soil/asphalt materials were added to the pile in Area G, such that it reached a volume of approximately 300 cubic yards thus mixing the contaminated asphalt with other debris.

During the construction of a compactor pad in Area G, the 300 cubic yard pile was moved 80 feet to the east, where it remained undisturbed until April of 1996. During the second week of April 1996, a decision was made to dispose of some of this asphalt/soil debris. Approximately 60 cubic yards was taken to a rubble pile at the head of Sandia Canyon in the Los Alamos County Landfill. During the third week of the same month, approximately 225 cubic yards were taken from the pile and disposed of into Pit 37 at Area G. The balance of the debris/soil pile remains at Area G and has had approximately 30 cubic yards of soil added to it.

On May 28, 1997, James White, ESH-19 Group Leader sent a letter informing HRMB that some of the asphalt from Area L was disposed of at the Los Alamos County Landfill, into Pit 37, and that some asphalt still remained in a pile in area G. The letter stipulates the NMED's recommendations pertaining to the dome construction and the proper disposal of the excess asphalt. Mr. White rebuts NMED's interpretation and disagrees with NMED's regulatory position.

(See Attachment)

The following is a synopsis of the statements obtained during the investigation.

PERSONAL INTERVIEW STATEMENTS - CHRONOLOGICAL EVENTS

Juan Corpion

Mr. Corpion's statement indicates that:

- He was in charge of Area L and G at the time and was aware of the NMED/HRMB's letter issued to Mr. Vozella with regards to the project.
- He understood that any asphalt remaining after the dome was constructed needed to be handled as hazardous waste.
- He shipped the asphalt from an earlier utility project contaminated with hazardous waste constituents to a TSD via hazardous waste manifests.

- He did not agree with the proposed management of the asphalt by the NMED, because he did not believe the asphalt should be classified as hazardous waste even if discarded.
- After the construction, he authorized the unused asphalt at Area L to be transported to Area G.
- That he should have consulted with ESH-19 to ensure that his decision was sound.

Tony Stanford

Mr. Stanford's statement indicates that:

- He was asked by Mr. Corpion if he could use some asphalt from Area L.
- He accepted the asphalt into Area G for the purpose of backfilling a construction project and authorized Steve Francis to bring the asphalt to Area G.
- He later found out that the asphalt was never used as backfill material.
- He was unaware of the letter issued to Mr. Vozella until the spring of 1997, and never knew that the asphalt in area G was in fact considered hazardous waste by NMED.

Steve Francis

Mr. Francis's statement indicates that:

- He was responsible for coordinating the dome construction.
- A work order was submitted to remove a strip of asphalt along the north ring wall.
- 100 cubic yards constituted the pile of asphalt to be removed to Area G.
- From August '95 until the spring of '96, concrete rubble, additional dirt and asphalt was added to the pile.
- The asphalt pile was never used for backfilling in Area G.
- Three to four dump truck loads of dirt and asphalt were brought to pit 37 to use for fill, and an additional three to four dump truck loads of dirt and asphalt were brought to the Los Alamos County Landfill for disposal.
- He was not aware that the asphalt was considered a hazardous waste by NMED.

Larman Everett

Mr. Everett's statement indicates that:

- In '95 he was the construction inspector for the project.
- That he was aware that NMED stipulated that the asphalt could be used as backfill material so long as it doesn't leave the controlled area.
- He asked Steve Francis and Ed Lopez what to do with the asphalt suggesting to move the asphalt from Area L to Area G.
- Two to three days later both Steve and Ed came back at him and told him that it was "ok" to move the asphalt from Area L to Area G, and he instructed the contractor (Marcon) to

move the asphalt.

- He added the asphalt to an existing rubble pile (10 to 15 cubic yards) in Area G, located just east of building 54-281; the total of the pile was 30 cubic yards.
- After this, he had no idea of what happened to the materials, and that he wound up with more asphalt than he could use.

Edward Lopez

Mr. Lopez's statement indicates that:

- He was the liaison between the mixed waste dome contractor, the Contract Administrator (Jim Bell), and the Contract Inspector (Larman Everett).
- He was well aware since the beginning of the project that any asphalt pertaining to the construction of the dome, had to be processed and reused in this construction project.
- A combination of two issues lead to the additional asphalt that he was unable to reuse: (1) the designers received erroneous elevation data in order to calculate the amount of backfill. (2) additional work in area L was requested under a contract supplement which included some asphalt repairs to additional areas inside area L, but not under the existing pad.
- when the excess asphalt was accumulated, Jim Bell and Larman Everett asked him what to do with it. He felt that it was not his decision and that he would check with his group leader, Juan Corpion and the Area L Storage Manager, Tim Sloan.
- When he brought the issue to Juan Corpion's attention, Mr. Corpion said that he would check with Tony Stanford, after doing so, Juan Corpion came back and told him "you can take it into Area G".
- He then informed Jim Bell and Larman Everett about Juan's decision.
- The contract supplement requesting additional asphalt repair was performed after the pad for the mixed waste dome was built.

Timothy Sloan

Mr. Sloan's statement indicates that:

- The asphalt pad was sampled in April of '94, and low-level hits were present at Area L.
- He was aware, at that time, of the letter issued by NMED to Mr. Vozella.
- He was aware that NMED concurred with the re-utilization of the asphalt as backfill material.
- Most of the backfill material was reused in the construction; however, it was determined that there was excess asphalt (approximately 30 cubic yards) that could not be placed in the foundation due to a compaction issue.
- He notified his group leader (Juan Corpion) regarding the excess of asphalt.
- Mr. Corpion spoke with the Area group leader (Tony Standford) to determine if he could use the excess asphalt because of the construction of a similar building in Area G.

- At this point, he notified Edward Lopez of Area L that Tony Standford could use the excess asphalt, and that Juan Corpion and Tony Standford had agreed to the material transfer.

Carlos Padilla

Mr. Padilla's statement indicates that:

- He was told by Larman Everett of "Kaiser" to move the pile.
- He loaded the pile of debris from Area G east of building 11 during the summer of '95.
- The pile consisted of rocks, asphalt pieces, slabs of concrete, dirt, and pieces of lumber.
- He loaded 10 to 15 trucks on a Friday from 10:00 a.m. - 2:30 p.m. and the following Saturday for half a day during the summer of '95.

Michael Tomlinson

Mr. Tomlinson's statement indicates that:

- He had no knowledge that LANL inserted contaminated asphalt into the landfill rubble pile, and he has no idea of where, in the pile, the asphalt would be.
- In June of '97, he was called by LANL, "Holly," who told of a "contamination" problem in the rubble pile and that some people would be looking at the rubble pile.

CONCLUSION

Based on a review of my notes and compilation of personal interview statements, I have concluded that a willful disregard for HRMB's May 1994 directive, the New Mexico Hazardous Waste Management Regulations (20 NMAC 4.1), and the New Mexico Hazardous Waste Act has occurred. Therefore, I believe that there is cause for referral to the Attorney General for criminal investigation. NMED/HRMB should issue a compliance order to LANL delineating the violations noted below:

1. LANL has transported hazardous waste to the Los Alamos County Landfill that was not accompanied by a hazardous waste manifest. This is a violation of 20 NMAC 4.1.300, which incorporates 40 CFR §262.20.
2. LANL has offered hazardous waste to a disposal facility that has not notified and obtained an EPA identification number. This is a violation of 20 NMAC 4.1.300, which incorporates 40 CFR §262.12(c).
3. LANL has disposed of hazardous waste in the Los Alamos County Landfill. This is a violation of 20 NMAC 4.1.800, which incorporates 40 CFR §268.



Los Alamos Los Alamos National Laboratory
of the University of California
Los Alamos, New Mexico 87545

December 8, 1997

Secretary Mark E. Weidler
New Mexico Environment Department
State of New Mexico
1190 St. Francis Drive
PO Box 26110
Santa Fe, NM 87502

Dear Secretary Weidler,

Thank you for meeting with Tom Todd (Department of Energy—Los Alamos Area Office Manager) and me on November 17. The frank discussion that we had lays a very good foundation for positive relationships among our respective organizations and for developing the best methods for conducting business with one another in the future.

In the one-month period that I have been the Laboratory Director, I've become aware of three situations involving the Laboratory and the New Mexico Environment Department (NMED) where I believe communication between us may be useful. In the spirit of openness and cooperation and with the desire to assist in bringing these situations to closure, let me briefly summarize the current status of these situations and what we have been doing to seek resolution.

The three situations at issue are: (1) the NMED request for a copy of the hazardous waste self-assessment inspections conducted by UC/LANL; (2) self-inspection issues associated with our TA-54 Area G waste storage facilities; and (3) off-site transport of asphalt from TA-54 to the Los Alamos County Landfill. I have described each of these situations, as I understand them, in the attachment to this letter. We believe we are proceeding on a reasonable course of action for each of these situations and would appreciate any feedback you can provide.

In addition to the three issues noted above, I have been briefed about the presence of potential legacy materials at various locations at the Laboratory, which need to be properly identified, characterized, and appropriately managed. I have directed my staff to prepare an expedited plan for dealing with these materials. I want to assure you that I consider this matter of great importance and will work with DOE to identify the necessary resources to accomplish the task in as short a time as practicable.

Additionally, I would appreciate your advice on how the Laboratory should interact with NMED in the future when similar situations arise. Naturally, any information which we are required to report by law or regulation has been and will continue to be reported. There are, on the other hand, situations that we discover through self-assessment, which we are not required to report and for which we undertake immediate corrective action. It has been our practice to internally document these situations including corrective actions taken, using sound judgment as to whether or not

Secretary Mark E. Weidler

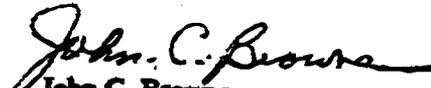
Page 2

December 8, 1997

NMED notification is necessary. An extreme alternative would be to formally notify NMED of each and every occurrence like this (e.g., a mislabeled waste barrel). Based upon our recent meeting, I believe our current practice is sound and consistent with your expectations. However, I would very much appreciate your feedback on this issue so that we can assure ourselves that we have an understanding of NMED's expectations as we go forward.

Again, thank you for meeting with Tom and me. I look forward to a constructive relationship with you and the New Mexico Environment Department, as well as any feedback or requests you may have for me regarding the topics covered in this letter.

Sincerely,


John C. Browne
Director

JCB:dl

Attachment: a/s

Cy: G. T. Todd, DOE/LAAO, A316

ATTACHMENT

I. RCRA Compliance Inspection and Laboratory Self-Assessment Documents

NMED initiated its annual RCRA compliance inspection of the Laboratory on July 8, 1997. In conjunction with this inspection, NMED requested the internal hazardous waste self-assessment inspections conducted by UC/LANL. The Laboratory respectfully declined that request, but in the spirit of openness and a positive relationship with NMED, the Laboratory is willing to provide this self-inspection data to you if you feel that course of action is warranted.

Since October of 1995, our Environment, Safety and Health Division has been conducting periodic inspections of satellite and less than 90-day accumulation areas. Our self-assessment program was instituted as one component of a multi-part approach to improving the Laboratory's overall performance in RCRA compliance. The program was intended as an internal management tool to focus attention and improvement on recurrent weaknesses in hazardous waste management practices. It was our intention to identify problem areas and bring them to the attention of Laboratory senior managers for corrective action; the benefits of this program have been positive. Because of the intended internal purpose of the self-assessment program, we have been reluctant to disclose this information; the concern is not for the data in the documents but rather maintaining internal credibility with Laboratory line managers so they will always feel comfortable in bringing problems to the attention of Laboratory senior management.

We believe that our self-assessment program is consistent with NMED's draft Voluntary Environmental Self-Evaluation Policy, which we understand NMED is currently considering. That policy recognizes the value in having the regulated community conduct self-audits and states that NMED will not request such audits in routine inspections. Nonetheless, if you so desire, we are willing to provide you with the requested self-inspection data.

II. Inspection of TA-54, Area G and L Storage Areas

Last spring a situation arose regarding accurate completion of inspection logs at certain TA-54, Area G and L container storage facilities. We would like to bring you up to date on events that occurred last spring and summer regarding the inspection of these facilities. The hazardous waste regulations require that inspections occur on a weekly basis for such interim status facilities.

We had in place at the time a proactive inspection approach requiring, as a matter of Laboratory policy, inspections on a daily basis in accordance with an established protocol. This approach included use of an inspection logbook requiring entry of date and time of inspection and the inspector's initials. In early 1997, the local facility management at

TA-54 discovered that in a few cases the inspection logs were initialed by individuals who may not have performed the actual inspections. The local manager contacted our Internal Evaluation Office and asked for an independent investigation of the matter. That investigation was conducted and a report of the findings was issued to Laboratory senior management in April. The report was also provided to the DOE Office of the Inspector General.

The report did indeed conclude that two Laboratory employees had, on some occasions, not performed the inspections for which they had initialed the logbooks. The employees claimed that other employees had performed the actual inspections for which either of the two employees had provided the initialing. Since this was contrary to Laboratory policy, the two employees were disciplined in accordance with Laboratory policy and given alternative assignments. Different site personnel were assigned the responsibility of performing the inspections. Based on the results of the investigation, the inspection protocol has been revised and specific training for storage facility inspectors is being developed. Local management contacted Laboratory legal counsel to determine if NMEED notification was necessary. The determination by legal counsel at the time of the incident in question was that NMEED notification was not required, but that notations should be placed in the logbooks indicating that for the identified dates, accuracy of the initialed inspections was not verifiable.

We believe that we self-identified an operational problem, investigated the problem, and have taken (and are taking) appropriate corrective actions.

III. Disposal of Asphalt from TA-54

In July, 1994, the NMEED approved the Laboratory's construction of a mixed waste dome at Area L in TA-54, subject to a number of conditions, including a condition that any asphalt waste removed from an existing asphalt pad be managed as hazardous waste. This requirement was apparently based on some sample results showing that the asphalt had absorbed some low levels of volatile organic compounds from an underlying vapor plume. In the spring of 1995, during the construction of the dome, some of this asphalt waste and underlying soil was moved into a pile and this pile was then later moved to Area G. A year later, without recognizing the special status of this material, personnel from Area G erroneously disposed a portion of it in the Los Alamos County Landfill as part of a cleanup operation, while another portion was disposed of in Pit 37, a low-level waste disposal unit in Area G. At the end of 1996, the groups operating Areas L and G were combined under a single management, and it was after this reorganization that staff from the two former groups communicated on the special status of the asphalt and soil material.

NMEED's Bureau of Hazardous and Radioactive Materials was informed of the disposal of the asphalt material in May, 1997, and in its notification letter the Laboratory also offered regulatory interpretations as to why the material could be viewed and managed as nonhazardous. In an August 6, 1997, letter to Bureau Chief Benito Garcia, the

Laboratory proposed that a risk assessment be performed based upon laboratory analysis of samples taken from the material remaining at Area G. The letter asked for NMED's comments on the approach to the risk assessment and suggested that samples taken could be split so that NMED could perform independent analysis if it desired. No response to this proposal was received after a one-month interval. The Laboratory decided to proceed with the plan and arranged for the samples to be taken and sent to an independent laboratory for analysis. Although we have not received the analysis to date, we anticipate that the levels of contamination from the vapor plume, if any, will be very low and that this material will present no more risk to the environment than ordinary asphalt, which is typically disposed of without restriction. Upon completion of the chemical analysis, we will discuss the results with NMED per our letter of August 6.

Having acknowledged our initial error, we are taking responsible, proactive steps to ensure that any potential environmental consequences are minimized. We look forward to working closely with the NMED in resolving this issue.

Los Alamos

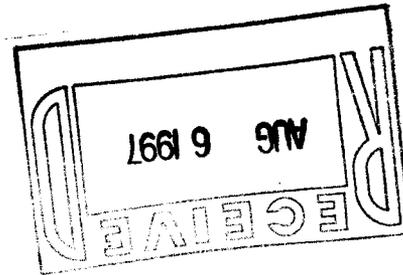
NATIONAL LABORATORY

Environmental Management
Solid Waste Operations
EM-SWO, MS J595
Los Alamos, New Mexico 87545
Phone (505) 665-6158
FAX (505) 665-8347

Date: August 6, 1997

Refer to: EM-SWO:97-191

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



Dear Mr. Garcia:

This letter is in response to your letter of July 7, 1997 regarding Los Alamos National Laboratory's (LANL) self-reporting of disposal of asphalt materials contrary to the condition specified in a letter dated July 22, 1994, from the New Mexico Environment Department (NMED) to Joseph C. Vozella of the Department of Energy Los Alamos Area Office (DOE/LAAO). The letter of July 22, 1994 to Mr. Vozella, stated that all waste asphalt removed from the existing pad (over which a storage dome was proposed to be built) must be treated and/or disposed of as a hazardous waste. LANL's self reporting letter dated May 29, 1997, indicated that a portion of the asphalt was not returned to the pad location, but rather was moved to another area in Technical Area (TA)-54. We also indicated where portions of the asphalt materials were subsequently disposed or managed. Your letter of July 7, 1997, indicated that the NMED Hazardous and Radioactive Materials Bureau (NMED/HRMB) awaited an adequate response from LANL within 30 days that described LANL's actions to rectify the situation.

The purpose of this letter is to describe the **initial** step of LANL's proposed corrective action. LANL is also requesting an opportunity to discuss with you the specifics of this action and any other actions which NMED/HRMB would find appropriate to reach final resolution of this matter. Although LANL continues to disagree with the regulatory position presented in NMED's July 22, 1994 letter to Mr. Vozella, LANL would propose at this time to set aside this issue and focus on any potential environmental threat that may exist (e.g. hazardous and solid waste, and New Mexico Water Quality Control Commission concerns).

A preliminary Corrective Action Plan (CAP) has been developed which includes extensive sampling of the two locations where the asphalt materials remain accessible, and a health/ecological based risk evaluation based on analytical results from sampling.

Mr. Benito Garcia
EM-SWO-97-191

2

August 6, 1997

The asphalt materials currently located approximately 80 feet east of TA-54-281 (Compactor Building) and asphalt materials placed in Pit 37 at Area G will be sampled in accordance with the attached DRAFT Sampling and Analysis Plan. The four truckloads of asphalt and soil material that were disposed of in the Landbridge at the Los Alamos County Landfill in April of 1996 cannot easily be located. The Landbridge at the Landfill is continually being added to and includes asphalt materials, concrete, rock, and soils from Los Alamos County activities and private entities.

It would be extremely difficult to identify the asphalt materials and soils from TA-54, as they are mixed in with many thousands of cubic yards of such material. Because the asphalt materials from LANL placed in the Landbridge at the Landfill are the same as in the two locations at TA-54, Area G, it is believed that analytical results from sampling at TA-54, Area G will be representative of the material at the Landfill. Concurrent with sampling in Pit 37 at Area G, these asphalt materials will be removed from their current disposal location in the Pit and isolated pending evaluation of analytical data from sampling. Once analytical data is received, an evaluation will be performed to determine the potential risk associated with leaving disposed asphalt in place. Should this evaluation indicate that a substantial risk exists, LANL will then propose additional corrective measures.

The above corrective actions represent our initial proposed response. LANL welcomes the opportunity to discuss with you the adequacy of these initial steps and to entertain additional guidance that will provide assistance in resolving this matter to meet NMED/HRMB's expectations for environmental protection. Should LANL not receive comments from NMED regarding this proposed sampling methodology, LANL will assume that implementation of the attached SAP will provide sufficient information with which to make further decisions.

At your request, arrangements will be made should someone from your staff, or from the onsite Agreement in Principle (AIP) office, wish to observe or participate in the sampling operations. If you have any questions, please feel free to call Tony Stanford at 665-6158 or Jim White at 667-0666.

Sincerely,


Anthony R. Stanford
EMSWO Group Leader


James L. White
ESH-19 Group Leader

Mr. Benito Garcia
EM-SWO-97-191

3

August 6, 1997

Attachment: a/s

Cy:

Stuart Dinwiddie
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo St., Bldg. A
P.O. Box 26110
Santa Fe, NM 87505

Glenn Saums
Surface Water Quality Bureau
New Mexico Environmental Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502

John Tymkowych
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo St., Bldg. A
P.O. Box 26110
Santa Fe, NM 87505

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

ASPHALT SAMPLING AND ANALYSIS PLAN

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

Section

Review and Approval Sheet

- 1.0 Purpose and Scope**
- 2.0 Roles/Responsibilities**
- 3.0 Sampling (Characterization) Strategy**
 - 3.1 Principal Constituents of Concern**
 - 3.2 Sample Representativeness**
- 4.0 Sampling**
 - 4.1 Sampling Location**
 - 4.2 Sample Numbers**
 - 4.3 QA/QC Samples**
 - 4.4 Sample Packaging and Shipping**
- 5.0 Analytical Methods**
- 6.0 Data Validation**
- 7.0 Sampling Waste Minimization and Waste Management**
- 8.0 Sampling Equipment**
- 9.0 Field Changes and Documentation**
- 10.0 Signatures**

- ATTACHMENT 1: Sampling Strategy**
- ATTACHMENT 2: Facility Map**
- ATTACHMENT 3: ES&H Hazard Screening**

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN
REVIEW AND APPROVAL SHEET

STL (print name)

STL signature

Date

SSO (print name)

SSO signature

Date

RCT (print name)

RCT signature

Date

IH (print name)

IH signature

Date

QA (print name)

QA signature

Date

Tony Stanford
EMSWO Group Leader

Date

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

1.0 PURPOSE AND SCOPE

This (Sampling and Analysis Plan) SAP is designed to ensure that defensible analytical data is obtained from statistically representative sampling of asphalt/soil materials located at Technical Area (TA)-54, Area G. Analytical data obtained from this sampling effort will indicate the concentration of potential constituents of concern, and be used to support waste management decision making.

Originally, approximately 30 yd³ of potentially contaminated soil and asphalt were excavated from TA-54, Area L and subsequently piled at Area G. After this transfer, clean material was added and the piles were relocated and thoroughly mixed. Since this relocation, additional clean material has been added to the piles but not mixed. This most recently added material can be distinguished from the original, potentially contaminated material and will be segregated for management as non-hazardous, solid waste prior to characterization activities.

Before the original excavation, preliminary characterization was performed on the asphalt and underlying soil (at TA-54, Area L). This characterization indicated both the soil and the asphalt were contaminated with chloroform, 1,1,1-trichloroethane, trichloroethylene, and perchloroethylene and that the asphalt contained higher concentrations of these constituents.

The asphalt/soil materials currently located approximately 80 feet east of TA-54-281 and the asphalt/soil materials placed in Pit 37 at Area G will both be sampled in accordance with this SAP (See Attachment 2 for location of Pit 37 and asphalt/soil material pile east of TA-54-281). The asphalt/soil materials east of TA-54-281 are arranged in a conical pile with approximate dimensions 53 ft. (length) x 48 ft. (width) x 12 ft. (depth). The approximate volume of this pile is 300 yd³. Asphalt/soil materials placed in Pit 37 were removed from the pile east of TA-54-281. At this time it is unknown what dimensions the materials in Pit 37 exhibit, however it is known that approximately 225 yd³ of the asphalt/soil materials were placed in Pit 37. The composition (based on visual inspection of the asphalt/soil pile located east of TA-54-281) of the asphalt/soil materials in both locations is listed below:

- soil: 95%
- asphalt: 5%
- concrete: 1.0%
- wood/vitrified clay pipe: 0.10%

2.0 ROLES/RESPONSIBILITIES

The sampling team leader (STL) prepares a draft of this Plan and distributes it to the Site Safety Officer (SSO), the Radiological Control Technician (RCT), the Industrial Hygienist (IH), and Quality Assurance (QA) officer. After comments from these individuals have been incorporated, the SAP is finalized and signed.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

The STL's responsibilities are to:

- complete a draft of the SAP for review and approval,
- revise DRAFT SAP per comments from SSO, RCT, IH, and QA officer
- ensure proper signatures and finalize SAP
- document all revisions to the finalized SAP
- provide safe, retrievable storage of documents promulgated by implementation of this sampling plan.
- coordinate sample location,
- coordinate sample collection personnel,
- coordinate sample packaging and shipment,
- complete a sample number cross-reference table
- maintain and record information in field logbook

The Sampling Team Members' responsibilities are to:

- review and follow this sampling plan, and
- inform the STL of any unusual situations or deviations needed from the SAP

The Independent QA reviewer's responsibilities are to:

- review this SAP, and
- sign the SAP after review and comment
- review analytical data

3.0 SAMPLING (CHARACTERIZATION) STRATEGY

The soil/asphalt materials will be sampled using stratified random grab sampling with soil and asphalt representing the two strata to be considered. Stratified random grab sampling was selected because concentration differences were noted between the soil and asphalt phases in the preliminary characterization.

3.1 Principal Constituents of Concern

Based on preliminary in-place sampling of the asphalt at TA-54, Area L, the only constituents of concern expected to be found in the asphalt/soil materials are volatile organic compounds (VOCs). Although VOCs are the principle constituents of concern, sampling and analysis for semi-volatile organic compounds (SVOCs) and RCRA metals will also be conducted to ensure proper waste characterization and support waste management decisions.

Because asphalt typically contains SVOCs, a comparison between these analytical results and existent analytical data from asphalt unaffected by contaminants from Area L will be performed. However, it should be recognized that asphalt can contain various constituents that may or may not be identical to the asphalt taken from Area L due to weathering and/or matrix composition.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

3.2 Sample Representativeness

The sampling strategy defined within this SAP was designed to determine contaminant concentrations which represent the upper bound of the mean with a minimum 90% confidence (see Attachment 1).

4.0 SAMPLING

4.1 Sampling Location

The asphalt/soil material located east of TA-54-281 will be sampled at its current location.

As specified in Attachment 1, sample locations will be identified by:

1. Segregating the known clean material from the soil/asphalt matrix,
2. Establishing a grid over the area with the soil/asphalt matrix,
3. Estimating the depth of the soil/asphalt matrix at each grid location,
4. Assigning consecutive numbers to each grid node based on the depth at the node,
5. Selecting 30 distinct random numbers between 1 and the maximum consecutive number assigned in Step 4, to use as sampling locations,
6. Collecting asphalt samples from the asphalt closest (within 3 feet) to the designated location for the first 14 random points. If no asphalt is present at that point, proceed to the next random point and repeat.
7. Collecting one foot soil samples from the next 6 random points.

Due to worker safety issues addressed in the attached ES&H Hazard Screening Questionnaire (Attachment 3), and to ensure statistically representative sampling, the asphalt and associated soil located in Pit 37 will be excavated, and placed adjacent to the excavation prior to sampling. The excavated material will remain within the footprint of Pit 37 during the entire sampling effort, and will be placed on plastic sheeting in an area where other wastes streams in the Pit have been covered with clean fill. This will ensure that the asphalt is not contaminated by other waste streams that have been disposed of in Pit 37.

In general, as described in Attachment 1, sample locations will be identified by:

1. Establishing a grid over the area with the soil/asphalt matrix,
2. Estimating the depth of the soil/asphalt matrix at each grid location,
3. Assigning consecutive numbers to each grid node based on the depth at the node,
4. Selecting 30 distinct random numbers between 1 and the maximum consecutive number assigned in Step 4, to use as sampling locations,
5. Collecting asphalt samples from the asphalt closest (within 3 feet) to the designated location for the first 12 random points. If no asphalt is present at that point, proceed to the next random point and repeat.
6. Collecting one foot soil samples from the next 5 random points.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

4.2 Sample Numbers

Based on the calculation method given in Gilbert (1987), along with the assumption that the upper bound for the mean will be estimated with 90% confidence, it has been determined that fourteen asphalt samples and six soil samples will be required from the material located east of TA-54-281 to attain the confidence level specified in Section 3.2. Computations were performed based on perchloroethylene concentrations because this compound exhibited the highest concentrations in the preliminary sampling and has the largest cancer risk coefficient for ingestion exposure pathways. It is estimated that twelve asphalt and five soil samples will be collected from the material currently located in Pit 37. The total number of samples from the asphalt/soil materials currently located in Pit 37 may be adjusted after the material has been excavated.

4.3 QA/QC Samples

One trip blank will be analyzed for each sampling day. One set of duplicate samples, equipment blanks, and field blanks will be collected and analyzed for every twenty waste samples, or subset thereof. (i.e. if one to twenty samples are collected, one set of QA/QC samples will be collect; if twenty-one to 40 samples are collected, two sets of QA/QC samples will be collected.)

4.4 Sample Packaging and Shipping

Sample packaging will be performed in accordance with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). Prior to release from MDA G (a radiologically controlled area), sample containers will be swiped to ensure no radioactive surface contamination. All samples will be placed in coolers and transported by authorized personnel to TA-59. There, they are screened by the "Rad Van" to determine DOT requirements for shipment before being accepted by Sample Management at CST-3 for re-labeling and shipment. The following is the document trail for sample Chain of Custody:

1. STL originates the Sample Chain of Custody and relinquishes samples to sample transport personnel for transfer to the "Rad Van"
2. Sample transport personnel relinquish samples to "Rad Van" personnel for DOT screening.
3. "Rad Van" personnel relinquish samples to sample transport personnel for transport to the Sample Receiving Facility at TA-59 for re-labeling and shipment to an off-site analytical laboratory.

The Sample Receiving Facility at TA-59 then originates the CST-3 Chain of Custody Form and ships the samples to an off-site analytical laboratory under chain of custody for analysis.

Analytical Laboratory: An external analytical laboratory, Barringer Laboratories Inc., will provide analytical services. Barringer Laboratories Inc. has an internal chain of custody procedure and documentation. Excess sample volumes will be returned to FMU-64 using the analytical laboratory's chain of custody form.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

5.0 ANALYTICAL METHODS

Each soil and asphalt sample, including duplicates, will be analyzed for VOCs, SVOCs, RCRA metals, and gamma spectroscopy. Each of the field blanks, and equipment blanks will be analyzed for VOCs, SVOCs, and RCRA metals. Each trip blank will be analyzed for VOCs. No head space will be present in any of the VOC sample containers. Table one lists the SW846 methods, containers, and preservative requirements for each analysis that will be requested.

TABLE 1

Analysis Requested	Matrix	SW846 Method	Container	Preservative Requirements
Volatile Organic	Asphalt/soil	8260	(2)125 ml amber with Teflon cap	4° C
Semi-volatile Organic	Asphalt/soil	8270	250 ml amber with Teflon cap	4° C
Inorganic (TCLP)	Asphalt/soil	1311/6010/7470	250 grams plastic or glass	None
Volatile Organic	Water	8260	(2)40 ml amber	4° C with HCL to pH of <2
Semi-volatile Organic	Water	8270	(2)1 L amber with Teflon cap	4° C
Inorganic (TCLP)	Water	1311/6010/7470	1 liter glass or plastic	4° C

6.0 DATA VALIDATION

Review of the laboratory reported organic and inorganic data will be made using criteria derived from the EPA Contract Laboratory Procedure (CLP) Functional Guidelines. No similar criteria have been promulgated by EPA for radiochemical data validation but the review of radiochemical data utilizes criteria derived from the model of CLP Functional Guidelines. In the implementation of the above criteria there are three levels or gradations of review; Levels 1, 2, and 3.

Level 1 generally involves checking primary quality control measures whereas Level 3 builds on the Level 1 and 2 review but also with aspects of the raw data supporting data. Typically a Level 3 review is only done if the Level 1 or 2 review suggests the potential for problems in the reported results.

For this project, a Level 2 review of data will be conducted unless a Level 3 review is indicated.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

7.0 SAMPLING WASTE MINIMIZATION & WASTE MANAGEMENT

Waste generated during the sampling effort will be placed in drums as stated below. Containers with potentially hazardous waste will be stored in RCRA permitted or interim status storage facilities. In order to minimize the volume of potentially hazardous, radioactive, or mixed waste generated during the operation, sample equipment and sample bottle packaging will be removed outside the radiologically controlled area and disposed as non-regulated solid waste.

PPE (or other items) that never came into contact with asphalt/soil materials will be placed in a container labeled as "Non-Regulated" waste.

PPE (or other items) known to have contacted asphalt/soil materials or, suspected of being contaminated via contact with asphalt/soil materials, will be placed in a container labeled as hazardous waste pending analysis.

Decontamination fluids will be packaged in containers labeled as hazardous waste pending analysis

Sampling Waste: Reusable sampling equipment will be decontaminated for reuse. Disposable waste such as kimwipes will be bagged with the contaminated PPE and placed in the waste container labeled as hazardous waste pending analysis.

Returned Samples: Excess sample volumes returned from the analytical laboratory will be stored and managed as hazardous waste unless analytical data proves otherwise. Returned sample volumes will be containerized and disposed in the same manner as the asphalt/soil materials.

While it is not expected that PPE, decontamination fluids, or sampling waste will be hazardous waste, a determination of the regulatory status of these materials will be made based upon analytical data received from the asphalt and soil samples. Drums containing these materials will be labeled as "hazardous waste pending analysis" to ensure that they will be managed in the most protective manner available. However, re-labeling may occur following receipt of analytical data.

8.0 SAMPLING EQUIPMENT

The asphalt will be sampled with grain thieves if possible. A backhoe or front end loader may be necessary to access the interior of the pile. The heavy equipment will excavate to no less than six inches from sampling location, and a decontaminated shovel will be used to expose the exact sampling location to ensure sample integrity. Sample scoops will be used in locations where the use of a grain thief is not possible. Reusable sampling equipment will be decontaminated in the following order:

- alconox and tap water mixture wash,
- deionized water rinse,

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN

10.0 SIGNATURES

Prior to commencing work, the following signatures are required.

Sampling Team Leader (Print Name)	Signature	Group	Date
Sampling Personnel (Print Name)	Signature	Group	Date
Sampling Personnel (Print Name)	Signature	Group	Date
Sampling Personnel (Print Name)	Signature	Group	Date
Sampling Personnel (Print Name)	Signature	Group	Date
(Print Name)	Signature	Group	Date
(Print Name)	Signature	Group	Date

References

Richard O. Gilbert. 1987. *Statistical Methods for Environmental Pollution Monitoring*. Van Nostrand Reinhold: New York, 320 p.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN
ATTACHMENT 1: SAMPLING STRATEGY

Background

It is necessary to characterize a soil/asphalt pile at TA-54, Area G to determine the concentration of specific volatile organic compounds to support waste management and environmental restoration decision making. This document specifies the number of samples to be collected and a method for determining specific sampling locations. Implementing this plan should result in an unbiased estimate of the mean and uncertainty of the concentration of organic compounds in the soil/asphalt material. It is assumed throughout this analysis that the concentrations are normally distributed.

Originally, contaminated soil and asphalt were excavated from TA-54, Area L and subsequently piled at Area G. After this transfer additional clean material was added and the piles were relocated and thoroughly mixed. Since this relocation, additional clean material has been added to the piles but not mixed. This most recently added material can be distinguished from the original contaminated material and should be segregated for management as solid waste prior to characterization activities.

Before the original excavation, preliminary characterization was performed on the asphalt and underlying soil. This characterization indicated both the soil and the asphalt were contaminated with chloroform, 1,1,1-trichloroethane, trichloroethylene, and perchloroethylene and that the asphalt contained systematically higher concentrations of these constituents.

Sampling Approach

The soil/asphalt pile should be characterized by stratified random sampling with soil and asphalt representing the two strata to be considered. Stratified random sampling was selected because systematic concentration differences were noted between the soil and asphalt phases in the preliminary characterization.

In stratified random sampling, the number of samples to be collected may be based on cost or on a prespecified level of error that is acceptable. For a total cost of \$20,000, 20 samples can be collected where the cost per sample is \$1,000. Assuming an acceptable level of error of 75% of the mean in estimating the mean concentrations of constituents, the required number of samples is approximately equivalent to the cost approach (21). The calculation method is given in Gilbert (1987) and assumes that the upper bound for the mean will be estimated with 90% confidence. Ideally, risk analysis based on the preliminary sampling results would indicate an acceptable level of error to achieve in the characterization. Such an analysis is not currently available to refine the acceptable error level of 75% of the mean concentration.

The number of samples based on total cost was computed using the formula from Gilbert,

$$n = \frac{C \sum_{h=1}^L (W_h s_h / \sqrt{c_h})}{\sum_{h=1}^L (W_h s_h \sqrt{c_h})}$$

where

n is the total number of samples to be collected,

C is the total cost allocated for sampling \$20,000,

W_h is the proportion of material in stratum h (0.95 for soil and 0.05 for asphalt),

s_h is the sample standard deviation for stratum h from the preliminary sampling,

c_h is the cost per sample \$1,000, and

L is the number of strata (2) (Gilbert 1987).

The number of samples based on acceptable error was determined using the following formula derived from Gilbert (1987),

$$n = t_{.90, n-2} \sum_{h=1}^L W_h s_h^2 / d^2$$

where

d is the acceptable error (75% of the mean concentration in the soil/asphalt mixture)

$t_{.90, n-2}$ is the 90th percentile for a t distribution with $n-2$ degrees of freedom

and all other terms are defined previously.

Proportional allocation of the total required number of samples was used to determine the number to be collected from each strata, soil and asphalt. This computation was performed using the formula from Gilbert,

$$n_h = \frac{n W_h \sigma_h}{\sum_{h=1}^L W_h \sigma_h}$$

where

n_h is the number of samples to be collected in stratum h ,

σ_h is the standard deviation in stratum h , approximated by s_h , the sample standard deviation, from the preliminary sampling,

and all other terms are defined previously (Gilbert 1987).

Substituting the appropriate values resulted in fourteen samples from asphalt and six samples from soil. The method for identifying random sampling locations is described in the procedural steps below.

Procedure for identifying sampling locations:

1. Segregate known clean material from contaminated material.
2. Establish an origin at the southwest corner of the contaminated area.
3. Select two random numbers between 0 and 10 and offset the origin to the south and west by the selected random number of feet.
4. Using appropriate survey tools, establish a 10 x 10 grid over the contaminated area.
5. Designate each grid node in the contaminated soil alphabetically starting as AA, AB, ..., BA, BB, ... CA, etc.
6. Estimate the depth of the soil/asphalt matrix at each grid location to the nearest foot and record with the alphabetic grid node designation.
7. Assign consecutive numbers to each grid node based on the depth at the node. For example, if node AA has a depth of 3 feet assign numbers 1, 2, and 3, and AB has a depth of 5 feet assign numbers 4, 5, 6, 7, and 8. Continue this assignment process until all depths at all grid nodes in the contaminated area have been assigned consecutive numbers.
8. Select 25 distinct random numbers between 1 and the maximum consecutive number assigned in Step 7 using a random number generator found in spreadsheet software or other source. Thirty numbers will be generated instead of 20 to allow for extra points in case some points are not usable because no asphalt is present.
9. These numbers give the sampling locations. Continuing with the example from Step 7, suppose the random number 7 is selected, this indicates that a sample should be collected at grid node AB at a depth 3-4 feet below the surface because 7 corresponds to the fourth consecutive number at that location; the depth to be sampled is determined by the sequence of the numbers assigned to the grid node, the first number is 0-1 feet, the second 1-2 feet, the third 2-3 and so on.
10. Collect asphalt samples from the asphalt closest (within 3 feet) to the designated location for the first 14 random points. If no asphalt is present at that point, proceed to the next random point and try again.
11. Collect one foot soil samples from the next 6 random points.

Data Reduction

Following sample analysis, the mean and variance for the overall mixture will be used to determine a 90% upper confidence limit for the mean. Compute the mean concentration and variance for the soil/asphalt mixture using

$$x_{st} = \sum_{h=1}^L W_h x_h$$

and

$$s^2(x_{st}) = \sum_{h=1}^L \frac{W_h^2 s_h^2}{n_h}$$

where

x_{st} is the mean concentration in the soil/asphalt mixture,

x_h is the mean concentration in stratum h ,

$s^2(x_{st})$ is the variance of the concentration in the soil/asphalt mixture, and
 s_h is the standard deviation in stratum h .

Then, the 90% upper confidence limit, UCL_{90} , is computed using

$$UCL_{90} = x_{st} + \frac{t_{.90, n-2} s(x_{st})}{\sqrt{n}}$$

where

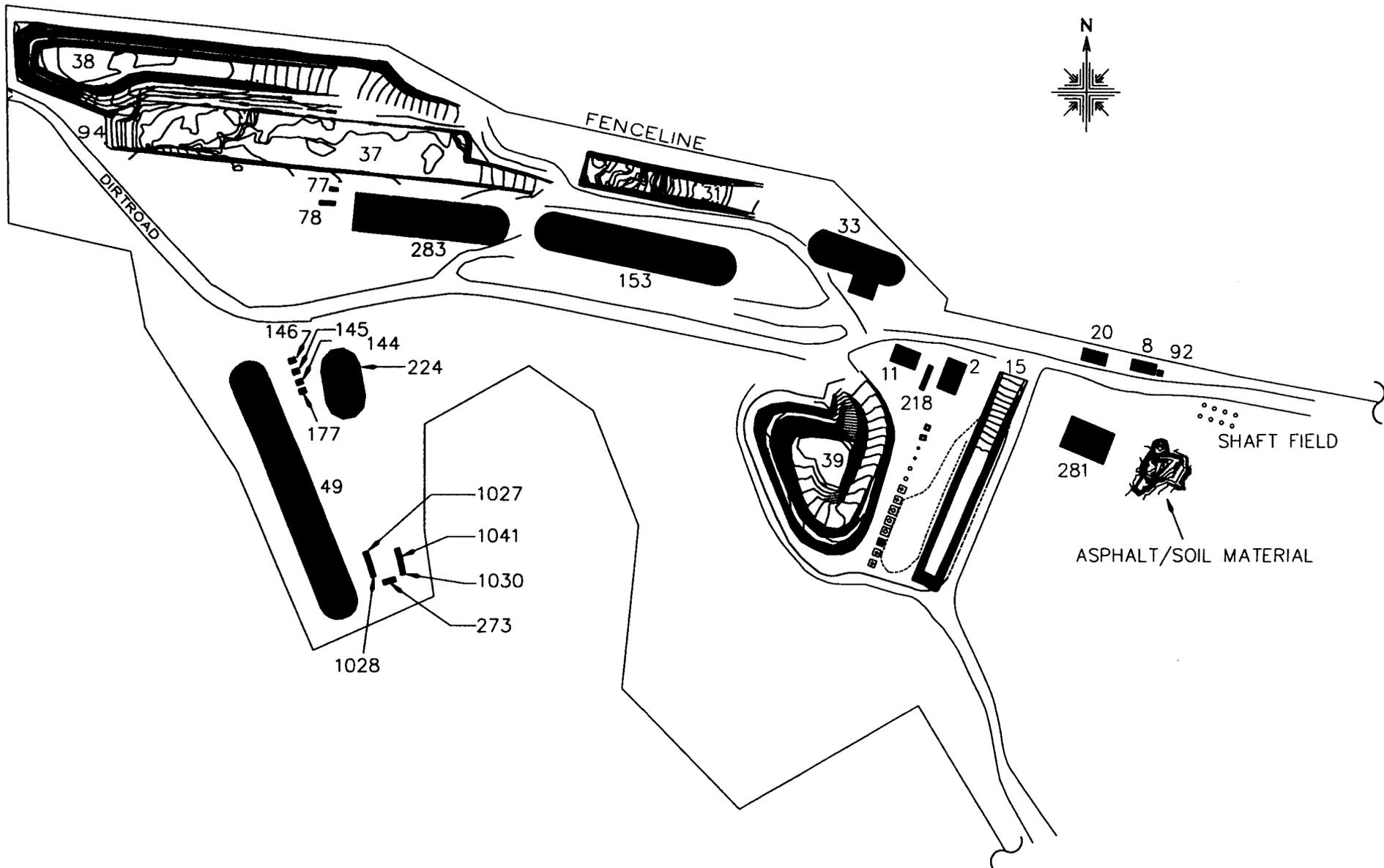
$t_{.90, n-2}$ is the 90th percentile for a t distribution with $n-2$ degrees of freedom

n is the total number of samples collected.

References

Richard O. Gilbert. 1987. *Statistical Methods for Environmental Pollution Monitoring*. Van Nostrand Reinhold: New York, 320 p.

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN
ATTACHMENT 2: FACILITY MAP



AREA G BUILDINGS



OPEN PITS

Los Alamos National Laboratory		ENVIRONMENTAL MANAGEMENT SOLID WASTE OPERATIONS (EM-SWO)	
DRAWN: R. O'Keefe CHECKED:	DATE: 07/31/97	 SHEET NO.: A	REV. 0
Not to Scale		TA-54 ASPHALT/SOIL MATERIAL	
		SHEET 1 OF 1	

DRAFT
ASPHALT SAMPLING AND ANALYSIS PLAN
ATTACHMENT 3: ES&H HAZARD SCREENING

G-02

ES&H Hazard Screening

Instructions: An authorized person, designated by the facility manager (FM), is responsible for initial identification of environment, safety and health (ES&H) hazards associated with this work request. Refer to LIG XXXX, *Guidance for Hazard Analysis and Control*, for specific hazards associated with the hazard categories below. If the work involves new construction projects, modified construction plans, or new or modified programs or processes, the ESH-ID process should be considered.

Work Request Number		Originator Name <i>MARY JANE WINCH</i>			Originator Z Number	
Facility Management Unit	FMU 64	Technical area	54	Building	Room	Other Area G PIT 35 37
Work Description: <i>SAMPLE ASPHALT IN PIT 37 AND 35 ^{BACKFILL} PILE EAST OF 281</i>						
Environmental Impacts: Does the work involve...						
Watercourses (e.g., potential disturbance of a river, creek, arroyo, canyon, draw, or wash)				<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Don't Know
Emissions or Discharges (e.g. production, or new or modified air emissions or water discharges to the environment)				<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Don't Know
Existing waste streams (e.g., changes to existing waste streams)				<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Don't Know
New waste (e.g., generation of hazardous waste)				<input type="radio"/> NO	<input checked="" type="radio"/> YES	<input type="radio"/> Don't Know
Worker Hazards: Does the work involve...						
Ionizing Radiation (e.g., handling radioactive material, entry into posted radiological areas, working with or near radiation-producing devices)				<input type="radio"/> NO	<input checked="" type="radio"/> YES	<input type="radio"/> Don't Know
Worker Exposure (e.g., working with or potential exposure to nonionizing radiation, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/ humidity extremes)				<input type="radio"/> NO	<input checked="" type="radio"/> YES	<input type="radio"/> Don't Know
Energized/Operative Systems (e.g., working on or near energized electrical systems or explosive materials or working on or with gas, water, steam, waste -line other than sewer-line, pressure, or cryogen systems; unprotected belts, pulleys, chains, or rotating equipment; or fuel-fired equipment other than vehicles)				<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Don't Know
Confined Spaces (e.g., entry into tanks, manholes, cooling towers, sumps)				<input type="radio"/> NO <i>JA</i>	<input checked="" type="radio"/> YES	<input type="radio"/> Don't Know
* Excavations or Penetrations (e.g., indoor or outdoor excavation; soil disturbance; or ceiling, floor, wall, or roof penetration)				<input type="radio"/> NO <i>JA</i>	<input checked="" type="radio"/> YES	<input type="radio"/> Don't Know
Material Handling/Heavy Equipment (e.g., working with or near operating cranes, hoists, rigging equipment, forklifts, or heavy equipment including bulldozers, backhoes, or drill rigs)				<input type="radio"/> NO	<input checked="" type="radio"/> YES	<input type="radio"/> Don't Know
Elevated Work Surfaces (e.g., platforms, roofs, or unprotected raised structures above six feet)				<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Don't Know
Other (Describe)				<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Don't Know
Special Training, Escorts, or Access Requirements (describe) PHA/AHA, Site AHA, Site Safety Briefing Required Contact FMU-64 Rad Control Tec Prior to entry RWP Required - <i>Work stop requires if measurable conis detected in acc with RWP.</i>						
Note: If any answers to the questions above are Yes or Don't Know, Form XXXX, <i>ES&H Hazard Controls</i> , must be completed by qualified personnel. Assistance from institutional ESH personnel is available as needed.						
If all answers to the questions above are No, work may proceed upon authorization by the FM or designee.						
Signature <i>Mary Jane Winch</i>						
Authorized Person		Dick Johnson			Date	
		Name			Signature	

* Determined not to be an excavation but rather a routine movement of already excavated fill and cover material.

G-02

ES&H Hazard Controls

Instructions: Qualified personnel (as defined in LIR XXX, Hazard Analysis and Controls) are responsible for detailed identification of ES&H hazard controls associated with this work request. Institutional ESH personnel are available to assist in this detailed screening.

Work Request Number	Hazard Present? YES NO	Existing Controls? List below or attach	Existing controls adequate? YES NO	Additional Controls Needed? List below or attach.	Who Supplies? a) Originator b) Work Provider c) FMU
Environmental Impacts	NO				
Watercourse or water discharge	no	Contact ESH-18 at 5-1859			
Air emissions	no	Contact ESH-18 at 5-1859			
Change to existing waste streams	no	Contact ESH-18 at 5-1859			
Generation of new waste	YES	Contact ESH-18 at 5-1859	YES		WP
Other	no	LIR-00-03.0			
Ionizing Radiation	no				
Handling radioactive material	NO				
Entry into posted radiological area <25 mrem/yr	YES	ALARA-FMU-64-006	YES		
Radiation area	YES	ALARA-FMU-64-006	NO	(RCT contact Required)	
High radiation area	no				
Very high radiation area	no				
Contamination area	no				
High Contamination area	no				
Airborne radioactivity area	no				
Working with radioactive source	no				
Working with or near radiation-producing device	no				
other	no				
Worker Exposures	no				
Laser	no				
Sub-radio-frequency electric or magnetic field	no				
Radio-frequency/microwave radiation	no				
Elevated level of infrared, visible, or ultraviolet radiation	no				
High noise level	no				
Airborne exposure to or direct contact with Asbestos or asbestos-containing material	no				
Beryllium	no				
Carcinogen	no				
Corrosive	no				
Lead	no				
Epoxy	no				
Ether or other peroxide-forming material	no				
Reactive metal	no				
Refractory ceramic fiber	no				
Highly toxic or controlled substance	no				
Cryogen	no				
Compressed gas	no				
Flammable/combustible material	no				
Live animal, animal or human tissue, blood or excreta	no				
Bacterial or viral material	no				
Temperature/humidity extreme	no				
other	NO				

G-02	Hazard Present?		Existing Controls? List below or attach	Existing controls adequate?		Additional Controls Needed? List below or attach.	Who Supplies? a) Originator b) Work Provider c) FMU
	YES	NO		YES	NO		
Energized/Operative Systems		NO					
Working on or near							
Energized electrical systems							
Explosive material							
Working on or with							
Gas system							
Hydraulic System							
Steam system							
Utility water line							
Waste line							
Pressure or cryogen system							
Power-driven belt, pulley, chain or rotating equipment							
Fueled fired equipment other than vehicle							
Other							
Confined Spaces							
Posted limited egress or confined space							
Hazardous atmosphere							
Engulfment							
Other							
Excavations or Penetrations							
Indoor or outdoor excavation		NO					
Trenching, soil removal, or fill							
Blind penetration into wall, floor, ceiling, or roof							
Other							
Material-Handling/Heavy Equipment							
Crane, hoist							
Rigging or lifting equipment							
Forklift, fork attachment							
Hydraulic lift or jack		NO					
Drill rig, backhoe, or dozer		YES	QUALIFIED OPERATOR	YES			WP
Other		NO					
Elevated Work Surfaces Ladders							
Scaffolding							
Manlift or aerial lift							
Platform, roof, or unprotected raised structure							
Other		NO					

Note: New and/or required controls must be supplied as indicated in the last column before work begins, unless otherwise agreed to by the contract administrator, FMU representative, or work provider.

Signatures

Signatures indicate concurrence with hazard identification and controls

Authorized Person Dick Johnson , N/A Signature _____ Date _____
Name

Qualified Person Bob Anderson , Bob Anderson Signature _____ Date 8-1-97
Name

IH I. H. REVIEW REQUIRED ON SWP
 IS BA