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TECHLAW INC.
June 20, 2002

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Mr. Carl Will
State of New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building One
Santa Fe, New Mexico 87505-6303



Reference: Work Assignment No. Y515, 06082.350; State of New Mexico Environment Department, Santa Fe, New Mexico; General Permit Support Contract; LANL Permitting Support, LANL Major Issues Letter for TA-55; Task 9 Deliverable

Dear Mr. Will:

Enclosed please find the draft deliverable for the above-referenced work assignment. The deliverable addresses issues that are of major concern, and issues that need to be addressed prior to issuance of the draft permit for TA-55.

The deliverable has three separate sections. The first section addresses issues which you may want to place in the cover letter to LANL. The second section addresses the major issues which LANL should immediately respond to, and the third section consists of several tables in which LANL should address data gaps within the tables.

The document is formatted in Word. The deliverable was emailed to you on Thursday, June 20, 2002 at Carl_Will@nmenv.state.nm.us. We have also emailed the deliverable to John Kieling, at John_Kieling@nmenv.state.nm.us, since you are out of the office. If you have any questions, please call me at (303) 763-7188.

Sincerely,

June K. Dreith
Program Manager

Enclosure

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Mr. Carl Will
June 20, 2002
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cc: James Bearzi, NMED
David Cobrain, NMED
Paige Walton, TechLaw
Bill Jordan/Central Files, TechLaw
Denver Files

Cover Letter Issues Related to TA-55

Due to the technical deficiencies noted in the TA-55 Permit Application, NMED requires additional information on the TA-55 container storage areas (CSAs), the storage tank system, the cementation unit and the vitrification unit before NMED can issue a draft permit. In order for a draft permit to be issued in a timely fashion, NMED requests that this information be provided to NMED no later than (insert date). In order to expedite LANL's submittal of this information, NMED has attempted to identify only the most basic information required to issue the permit. These information needs are a subset of technical deficiencies that were included in the Notice of Deficiency (NOD) (from NMED, date May 16, 2002) related to the TA-55 Permit Application. This information request has been provided by NMED in two separate formats. The first part, Part I, is separated into sub areas dealing with container storage area(s), the tank system, the cementation unit and the vitrification unit. The second part, Part II, includes five tables that provide organization to the information requested by NMED. Part II requests information on the location of the units, the types of units, the design of the units, type of waste the units manage, the volume of waste the units manage, etc. Data gaps existing in these tables should be addressed by LANL.

In general, the LANL TA-55 Permit Application lacked sufficient detail and did not provide sufficient details on the container storage areas, tank systems, the cementation unit or the vitrification unit to develop a draft permit. The application provides information in various sections that contradicts itself (see NODs issued May 16, 2002). These issues need to be resolved immediately.

The same problem exists for the tank systems, in that the tank systems are not clearly identified or discussed. There are also several major deficiencies with the cementation unit and the vitrification unit pertaining to both design and operations which are also major issues and need to be addressed prior to issuance of a draft permit and before NMED can begin the process of drafting a permit.

Part I – Excerpts from the May 16, 2002 NOD

Container Storage Units

1. LANL must provide the number of container storage unit (CSUs), the type of containers stored in the units, the maximum number of container stored in the units, the maximum number of each type of container stored in the unit, and the specific type of waste (the broad categories of hazardous, low-level and mixed waste is not sufficient) stored in each CSU.
2. The location of the CSU and the secondary containment system, for CSU storing free liquids, must be described. LANL should provide calculations demonstrating the secondary containment for each of the CSUs.

3. A container layout for each CSU must be provided. The figure(s) must contain a layout of the storage location, location of each type of container, location of aisles, and location of containment systems.

Storage Tank Systems

4. LANL must immediately identify the number of tank storage systems and the number of tanks/components within each of the tank storage systems.
5. The specific types of hazardous waste managed by each tank, and or each tank system, must be provided. Secondary containment systems must be completely described.

Cementation Unit

6. LANL must provide information on the design of the cementation unit including the design of each of the "pencil" tanks (10).
7. Provide a description of the secondary containment system and provide calculations that demonstrate that 100% of the largest tank capacity is contained. Since it appears that the storage tanks, the cementation system and the vitrification unit share the secondary containment system, each tank associated with these systems must be taken into this evaluation to determine the largest tank capacity.
8. LANL must provide the criteria used to treat waste in the cementation units.

Vitrification Unit

9. LANL must provide information on the design and operations of the vitrification unit, including the design of the air pollution control equipment and a description of the caustic scrubber column used for cleaning the off-gas.
10. Provide measured or estimated concentration of all contaminants in the off-gas that are to be controlled by the caustic scrubber. Also provide the scrubbing design removal efficiency and the outlet concentration for each contaminate.
11. The type or size of the packing should be provided.
12. The quencher unit was only briefly mentioned in the Application. The Application indicates that the off-gas is cooled by the quencher prior to entering the scrubber. This quencher is not described and the temperature to which the gas is cooled is not provided. LANL must provide design and operating conditions for these air pollution control equipment.

13. The Application further states that the scrubber's exhaust to a wet/dry vacuum system. This system is also not described. The design must be provided.
14. A performance evaluation must be conducted, or provide a commitment to perform a performance evaluation. If a committal to perform the test is made then LANL must provide the criteria used to conduct the performance evaluation. The performance criteria should also address the actual control efficiency of the scrubber, emission rates, and any additional control to supplement the efficiency of the scrubber. Provide a description of how the test will be conducted.
15. The Application indicates that there is a "small cooling system for the glove bar which will be used if necessary to maintain temperature". Address the design and operation of the cooling system.
16. The Application infers that mercury in the scrubber water may be a problem. If management options are utilized to control mercury in the scrubber solution, these options should also be described.

Part II – Example Tables to be Inserted into the Draft Permit

**Table 1
TA-55 Hazardous and Mixed Waste Container Storage Areas
Waste Types and Design Capacities**

TYPE OF STORAGE UNIT	EPA HAZARDOUS WASTE TYPE^a	DIMENSIONS (ft) AREA (sq ft)	MAXIMUM VOLUME OF WASTE (gal.)^a
<u>CSA Areas Allowing Liquid and Solid Waste</u>			
Building 4, B40	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	L-shaped, 61.5 x 54.1 Area ^b : 2128	21,500
Building 4, K13	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	16 x 13 Area: 208	3,400
Building 4, Room 401, FLO1	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	6 x 5.5 Area: 33	660
Building 4, Vault	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	79.7 x 50.6 Area ^c : 3936	4,000
Building 4, Storage Pad (northwest of building)	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	<u>Trapezoid</u> 102 x 86 x 156 x 105 Approx. Area: 10,580 <u>Adjacent Strip</u> 70 x10 Area: 700 Total Area: 11,280	135,000
<u>CSA Areas Allowing Only Solid Waste</u>			
Building 4 B05	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	26 x 10 Area: 260	3,000
Building 4, B45	<i>Insert specific wastes to be managed and stored, including EPA codes</i>	45.1 x 17.7 Area: 798	3,400
Building 185	<i>Insert specific wastes to be managed and stored,</i>	60 x 40	55,000

TYPE OF STORAGE UNIT	EPA HAZARDOUS WASTE TYPE^a	DIMENSIONS (ft) AREA (sq ft)	MAXIMUM VOLUME OF WASTE (gal.)^a
	<i>including EPA codes</i>	Area: 2400	
^a Volume is based on the capacity of a standard 55-gallon drum (7.3 cu. ft.) ^b Area calculated from TA-55 Permit Application Figure G-1 ^c Area calculated from TA-55 Permit Application Figure G-1			

TABLE 2
Acceptable Storage Containers

Container Storage Area	Acceptable Containers by Type
Building 4, B40	15-, 30-, 55-, and 85-gallon drums, large waste boxes, and standard waste boxes (SWBs)
Building 4, B05,	30-, 55-, and 85-gallon drums, large waste boxes, and SWBs
Building 4, K13	Steel cans, 30-, 55-, and 85-gallon drums, and large waste boxes
Building 4, B45	Steel cans, 55- and 85-gallon drums, and SWBs
Building 4, Room 401, FLO1	30-, 55- and 85-gallon steel drums
Building 4, Vault	Glass bottles, plastic bottles, steel cans, and 30- and 55-gallon drums
Building 4, Storage Pad	30-, 55-, and 85-gallon drums, SWBs, and large waste boxes
Building 185	30-, 55-, and 85-gallon steel drums, large waste boxes, and SWBs

TABLE 3
TA-55 Mixed Waste Storage Tank System
Waste Types and Design Capacities

STORAGE TANK SYSTEM, LOCATION, NO. OF ASSOCIATED TANKS	DESIGN SPECIFICATIONS	EPA HAZARDOUS WASTE TYPE	SECONDARY CONTAINMENT	MAXIMUM VOLUME OF WASTE Gallons (Liters)
Evaporator Glove Box Tank, Building 4, Room 401 1 Tank	<i>Insert design specifications, dimensions, etc.</i>	<i>Insert specific wastes (hazardous and mixed) to be handled in tanks, including EPA waste type</i>	Yes, external liner system consisting of Rooms 401 and 434A in TA-55-4	71.5 (270 L)
Cementation Unit Pencil Tanks, Building 4, Room 401 5 identical tanks	<i>Insert design specifications, dimensions, etc.</i>	<i>Insert specific wastes (hazardous and mixed) to be handled in tanks, including EPA waste type</i>	Yes, external liner system consisting of Rooms 401 and 434A in TA-55-4	66 (250 L)
Pencil Tanks, Building 4, Room 401 10 identical tanks	<i>Insert design specifications, dimensions, etc.</i>	<i>Insert specific wastes (hazardous and mixed) to be handled in tanks, including EPA waste type</i>	Yes, external liner system consisting of Rooms 401 and 434A in TA-55-4	132.5 (500 L)
Vitrification Unit Slab Tanks, Building 4, Room 434A 2 identical tanks	<i>Insert design specifications, dimensions, etc.</i>	<i>Insert specific wastes (hazardous and mixed) to be handled in tanks, including EPA waste type</i>	Yes, external liner system consisting of Rooms 401 and 434A in TA-55-4	66 (250 L)

TABLE 4
TA-55 Miscellaneous Unit—Cementation Unit
Waste Types and Design Capacity

TREATMENT UNIT AND LOCATION	EPA HAZARDOUS WASTE TYPE	MAXIMUM VOLUME OF WASTE Gallons (Liters)
Cementation Unit, Building 4, Room 401, Glovebox GB-454	<i>Insert specific wastes to be handled in the Cementation Unit along with EPA Waste Codes.</i>	150 (568 L) total component capacity

TABLE 5
TA-55 Miscellaneous Unit—Vitrification Unit
Waste Types and Design Capacity

TREATMENT UNIT AND LOCATION	EPA HAZARDOUS WASTE TYPE	MAXIMUM VOLUME OF WASTE Gallons (Liters)
1 Vitrification Unit, Building 4, Room 434A	<i>Insert specific wastes and EPA Waste Codes</i>	13.2 (50L) batch capacity per hour