



DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544



John Kieling, Acting Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

APR 02 2012

Laurie King, Chief (6PD-N)
New Mexico Federal Facilities Section
Environmental Protection Agency
Region 6 1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Mr. Kieling:

Subject: Transmittal of Class 1 Permit Modification Request to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit, EPA ID No. NM0890010515

The purpose of this letter is to request review and approval from the New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB) for a Class 1 permit modification to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit issued to the Department of Energy and Los Alamos National Security, LLC (DOE/LANS) in November 2010. The permit modification includes administrative changes, clarifies permit conditions, and revises figures and text associated with those clarifications.

The modification has been prepared in accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.900 NMAC) (incorporating Code of Federal Regulations [CFR], Title 40 § 270.42(a)), revised March 1, 2009. In this case, the changes associated with the Class 1 modification request are varying degrees of Class 1 permit modifications in accordance with 40 CFR § 270.42, Appendix I. Additionally, some changes are not specifically identified by the appendix, therefore, approval for these minor modifications is sought. This permit modification submittal includes this transmittal letter, a table that summarizes the changes made within the Permit and the individual pages that have been revised within the Permit (LA-UR-12-00498). The revised pages include red-highlighted editing marks to emphasize the changes made. This modification makes 94 revisions to the Permit.

Included herein are three hard copies and one electronic copy of this submittal. The hardcopy submittal contains this letter, the summary table, and the individual pages or sections where text has been changed rather than copies of full attachments of the Permit. The electronic copy contains a reproduction of the hardcopy in portable document format (PDF) along with all the word processing files used to create the hardcopy.

Notification of this modification will be sent to the NMED-HWB-maintained LANL facility mailing list in accordance with 40 CFR § 270.42(a)(1)(ii) within seven days of the transmittal of this permit modification. An additional public notification will be conducted after approval by the NMED-HWB of the changes that require approval.

If you have comments or questions regarding this permit modification, contact Gene Turner of my staff at (505) 667-5794 or Mark Haagenstad, LANS, at (505) 665-2014.



Kevin W. Smith
Manager

Enclosures:

cc w/out enclosures:

Tim Hall

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L. Sandoval, ENV-ES, LANS, MS-J593
Records Center, LASO
Official Contract File, LASO

EPO-32GT-317-428696

ENCLOSURE 1

Class 1 Permit Modification Changes

LA-UR-12-00498

**Los Alamos National Laboratory Hazardous Waste Facility Permit
EPA ID# NM0890010515**

Effective date: December 30, 2010

Class 1 Permit Modification Changes

Section	Paragraph	Type of Change	Proposed Change
<i>Permit Part 1</i>			
1.2	1	Typographical error (Class 1)	To correct EPA ID Number, change to "NM 0890010515"
1.5	# (4)	Remove a permit conditions that is no longer applicable (Class 1)	Delete "(4) the TA-16 Part B Permit Application dated June 2003"
1.10	6 (2 nd to last paragraph of section)	Typographical error (Class 1)	Delete hyphen (-) between 'all' and 'documents'
1.10	7 (Final paragraph of section)	Typographical error (Class 1)	Delete last sentence in paragraph as it is repeated from page 26. Delete: "The Permittees shall establish an electronic Information Repository (IR) accessible through the internet on the Permittees' environmental website. (See 40 CFR § 124.33(d))"
1.10.1	Section Title	Title Change (Class 1 ¹)	Change title of the section from "RACER" to " <u>Public Environmental Database</u> "
1.10.1	1	Title Change (Class 1 ¹)	Change "Risk Analysis Communication Evaluation Reduction (RACER) database" to " <u>public database that provides comprehensive environmental data collected from in and around LANL</u> "
<i>Permit Part 2</i>			
2.2.1	(1), last sentence	Typographical error (Class 1)	Insert: "...of <u>the</u> written notice..."
2.2.1	# (4) b	Typographical error (Class 1)	Delete: "...per year..." as it is redundant with annual volume in same sentence
2.2.1	# (4) b	Clarification that the permit condition refers to a volume limitation, not a limit to the type of container (Class 1 ¹)	State as "one 55-gallon drum <u>equivalent</u> " and "two 55-gallon drums <u>equivalents</u> " within the text.
2.6.3	1 (first)	Typographical error (Class 1)	Revise as, "Hazardous and Mixed Waste Facility Inspection Record Form" to match title of form in Attachment E (<i>Inspection Plan</i>).

Section	Paragraph	Type of Change	Proposed Change
2.10.5	3 (After bulleted list)	Title Change (Class 1 ¹)	Change the first sentence of the paragraph to read: "The Permittees' <u>Emergency Management and Emergency Planning and Preparedness Group Leaders</u> Primary Emergency Manager identified in Attachment D (<i>Contingency Plan</i>) shall annually sign a certification stating that the LAFD has been provided with this information to the satisfaction of the Chief of the LAFD."
2.12.2	# (5)	Clarification that the period of time records should be kept is located in Section 2.12.2, but there are other requirements for the specific type of records outlined in Section 2.6 (Class 1 ¹)	Paragraph refers to Section 2.6 for the time period certain records must be maintained and Section 2.6 refers to Section 2.12 for time frame information. Suggest changing the bullet to read "records and results of inspections as required in Permit Section 2.6 and Attachment E (Inspection Plan) (these records and results shall be kept <u>as</u> for the period specified in Permit Section 2.6);"
Permit Part 3			
3.7.1	#(8)	Clarification that the coating on metal pallets is always chemically-resistant material, but not always urethane. (Class 1 ¹)	Change the paragraph to read: "The Permittees shall ensure that all metal secondary containment pallets are coated with have a chemically-resistant urethane coating . The Permittees shall maintain the chemical-resistant urethane coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications."
3.9	# (4) d	Typographical error (Class 1)	Replace "in" with "is" as follows: "...and there is in no possibility..."
Permit Part 9			
9.2.2.1	1	Typographical error (Class 1)	Insert: "...if the closure performance standard..."
9.2.2.3	1	Typographical error (Class 1)	Delete "indoor" as follows: "... (including associated indoor structures)..."
9.4.4.1	1	Typographical error (Class 1)	"...to verify the absence of hazardous constituents..."
9.4.7.1	# (4) a. (the last bullet of the list)	Administrative or informational change (Class 1)	Delete "(a) and (b)" as follows: "...and 9.4.7.1.ii (a) and (b) ..." as there are no subsections (a) and (b) in the referenced section of the permit.
9.4.7.1.i	1 (last sentence)	Administrative or informational change (Class 1)	Delete ".a" as follows: "...Permit Section 9.4.7.1.ii- a where applicable." As there is no subsection 'a' in the referenced section of the permit.
Permit Part 11			

Section	Paragraph	Type of Change	Proposed Change
11.3.1	3	Typographical error (Class 1)	Revise as, "The Permittees shall notify the Department, in writing, of any new detections of hazardous waste and hazardous waste constituents in groundwater at any location that for which analytical data was received during the previous month as described in Permit Section 11.3.1.1."
11.10.2.6	1	Clarification that samples may be collected from discrete subsurface zones and total well subsurface zones. (Class 1 ¹)	Revise the first sentence to clearly state "Samples of subsurface vapors shall be collected from vapor monitoring points from both discrete zones, (selected based on investigation and field screening results) , and as total well subsurface vapor samples where required by the Department."
11.10.2.8.ii	2	Administrative or informational changes (Class 1)	Revise the first sentence as, "All purged groundwater and decontamination water shall be temporarily stored at satellite accumulation areas, or transfer stations, or in labeled 55-gallon drums less than 90-day storage areas in labeled 55-gallon drums or other containers approved by the Department until proper characterization and disposal can be arranged."
11.10.2.11	3 (last paragraph)	Typographical error (Class 1)	Revise as, "...as described in Permit Section 11.10.2.11 11.10.2.13 "
11.10.3.1.iv	# (20)	Administrative or informational change (Class 1)	Revise as, "...ion chromatograms and mass spectra for gas..."
11.10.3.1.iv	# (21)	Typographical error (Class 1)	Delete "(GC/MS)" from bullet.
11.10.4.1.i	1	Typographical error (Class 1)	Revise first sentence as, "...shall include of a discussion..."
Permit Attachment A			
A.4.2.5	4	Administrative or informational change (Class 1)	Before the final paragraph of the section, add the subheading " Storage Sheds " for consistency with the other subtitles for the domes on Pad 5.
A.4.2.6	3 (Within subheading "Dome 283")	Administrative or informational change (Class 1)	Correct "250 ft" to " 260 ft " for consistency with the closure plan in Attachment G.9.
A.4.2.8	1	Typographical error (Class 1)	In the first sentence of the paragraph, correct "Figure 34" to " Figure 35 ".
A.5	1	Typographical error (Class 1)	Change the tense of the sentence as follows: "The B05, B45, and TA-55-185 permitted units will be are used to store containers with only non-liquid bearing waste (i.e., solid form)."

Section	Paragraph	Type of Change	Proposed Change
A.5.6	1	Typographical error (Class 1)	Change "Figure 45" to " Figures 39 and 45 " in the first sentence of the paragraph.
A.5.7	1	Typographical error (Class 1)	Change "Figure 46" to " Figures 39 and 46 " in the first sentence of the paragraph.
A.5.7	1	Typographical error (Class 1)	Change the tense of the last two sentences as follows: "The TA-55-185 permitted unit will be is approximately 60 ft long by 40 ft wide, and will have has a maximum storage capacity of 30,000 gal, the equivalent of 546 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be are stored at TA-55-185 include: 30-, 55-, and 85-gal drums; large waste boxes; and SWBs."
A.5.9	8	Typographical error (Class 1)	Change the tense of the first sentence of the paragraph as follows: "The homogeneous solid process wastes generated at TA-55 is are delivered to the Cementation Unit in a closed container from the generator glovebox through a trolley system."
A.5.11	2	Typographical error (Class 1)	Delete the word "application" from the following sentence as it is no longer applicable: "Fire-alarm pull boxes and/or drop box push-button alarms are located in the vicinity of the waste management units addressed in this permit application ."
Permit Attachment C			
Attachment C	1	Typographical error (Class 1)	Insert "by" and change "processes" to the singular tense as follows, "The waste characterization requirements contained in this WAP are used for characterization of wastes stored in containers and tanks, and to support treatment by the stabilization processes."
Attachment C	Bullet "Section C.5"	Administrative or informational change (Class 1)	Insert complete regulatory reference as follows: "...ensure compliance with 40 CFR Part 264 Subpart CC requirements."
C.1.2.1	Aqueous Liquids	Typographical error (Class 1)	Insert "action" as follows: "These wastes consist of liquids generated during various activities, including decontamination of remedial action equipment, drilling fluids and well development fluids, septic tank liquids, and contaminated stormwater runoff."
C.1.3	1	Administrative or informational change (Class 1)	Define WIPP as 'Waste Isolation Pilot Plant'.
C.2.1	# 3.	Typographical error (Class 1)	Correct second dashed paragraph as follows: "Physical waste from form ..."

Section	Paragraph	Type of Change	Proposed Change
C.3	3	Administrative or informational change (Class 1)	Insert “waste” as follows: “The Permittees shall ensure that waste characterization documentation is reviewed and approved prior to waste acceptance at a permitted unit.”
C.3.1.2.1	1	Administrative or informational change (Class 1)	Revise the second sentence of the paragraph as follows: “...described in Section 1.2 of SW-846 Method 1311,...”
C.3.1.2.2	1	Administrative or informational change (Class 1)	Revise the third sentence of the paragraph as follows: “In accordance with SW-846 Method 1311...”
C.3.2	1	Typographical error (Class 1)	Revise the last sentence of the paragraph as follows: “Characterization of the hazardous component of MTRUW to be stored and treated at the Facility shall be conducted ed in accordance with the procedures discussed in the following sections.”
C.3.2	4	Administrative or informational change (Class 1)	For consistency, change “hazardous waste codes” to “ EPA Hazardous Waste Numbers ”.
C.3.2.1	2	Clarification (Class 1 ¹)	Revise first sentence as follows: “...semi-quantitative assay characterization technique...”
C.5	1	Administrative or informational change (Class 1)	Correct regulatory reference to “...40 CFR Part 264 Subparts BB and CC...”
C.5.3	1	Administrative or informational change (Class 1)	Correct the second regulatory reference to “...40 CFR Part 264 Subpart BB ...”
C.5.3.1	1	Typographical error (Class 1)	Correct regulatory reference to “...Reference Method 21 at 40 CFR Part 260 60 .”
Permit Attachment D			
D.1	#4.	Administrative or informational change (Class 1)	Change the reference to Figure D-1 to the actual title of the figure. Figure D-1 is titled “ General Hazardous Waste Emergency Notification Structure ”, not the “ICS response structure” as stated in this paragraph.
D.1.1	#5.	Typographical error (Class 1)	Correction of the spelling for the Primary Emergency Manager. Change “Anderson” to “ Andersen ”.
D.1.7.2	1	Administrative or informational change (Class 1)	Revise as, “...EM personnel will notify the Los Alamos County Consolidated Dispatch Center CDC who will which in turn will notify...”
D.2.1	1	Administrative or informational change (Class 1)	Replace “KSL” with “ Maintenance Site Services ”.

Section	Paragraph	Type of Change	Proposed Change
D.2.2.2	1	Administrative or informational change (Class 1)	Change "CAS operator" to " <u>Los Alamos County Consolidated Dispatch Center</u> "
D.3.1	1.	Typographical error (Class 1)	Delete the extra word in last sentence and revise as, "...to determine to causal factors..."
D.3.2	#4.	Typographical error (Class 1)	Revise as, "...communicate the nature or <u>of</u> the emergency..."
TA-3 Attachment D	3	Typographical error (Class 1)	Revise the third sentence of the paragraph as, "The FIC is comprised of division and line managers and key personnel who respond to pre-designated locations for the purpose of initial command and control of events that occur <u>at during</u> CMR Building emergencies."
TA-50 Attachment D	3	Typographical error (Class 1)	Revise as, "...Incident Commander <u>er</u> ..."
<i>Permit Attachment E</i>			
E, Table of Contents	None	Typographical error (Class 1)	Change font and format to replicate other table of contents throughout the permit.
E, Table of Contents	List of Figures	Typographical error (Class 1)	Revise the name of Figure E-1 to "Hazardous and Mixed Waste Facility Inspection Record Form"
E.1	2	Typographical error (Class 1)	Revise as, "...in Permit Section 2.12.2 <u>2.6</u> "
E.1.1	3	Clarification that there are other options to meet this requirement as described earlier in the paragraph. (Class 1 ¹)	This paragraph states that 'No Use' shall be documented in 'other records', however, the Inspection Form accounts for this condition and the form instructions also indicate that a 'No Use' condition be documented on the form. Therefore, the "shall" should be changed to " <u>may</u> ".
E.7.4	3	Administrative or informational change (Class 1)	Revise as, "...pursuant to <u>40 CFR §</u> 264.1061..."
Inspection Form Instructions	Part I, # 7	Typographical error (Class 1)	Revise paragraphs as "a., b., c." instead of "a., c., d."
TA-55 Attachment E	2	Typographical error (Class 1)	Remove the redundancy from the paragraph by revising the sentence as, "The Permittees shall perform and document daily inspections on separate forms for the fences at TA-55 and shall document them on separate forms. "
TA-55 Attachment E, Section E.1.1	1	Typographical error (Class 1)	Remove the extra "d" within the paragraph and revise as, "...the Permittees shall removed that container..."

Section	Paragraph	Type of Change	Proposed Change
TA-55 Attachment E, Section C.3.2	Title	Typographical error (Class 1)	Revise section number to E.3.2 instead of C.3.2.
<i>Permit Attachment F</i>			
F.4	2	Typographical error (Class 1)	Revise to remove unnecessary word, "...changes in hazardous waste regulations and to provide them..."
<i>Permit Attachment G</i>			
Attachment G.4, Table G.4-1	Footnotes	Administrative or informational change (Class 1)	Add to the footnotes of the table as follows: "MIBK = <u>methyl isobutyl ketone or 4-methyl-2-pentanone</u> " as used in the F-listings at 40 CFR § 261.31. 4-methyl-2-pentanone is a synonym for this chemical, and the addition clarifies the entry.
Attachment G.5, Section 2.0	2	Typographical error (Class 1)	Revise as, "...two transportainers (75 and 184 194)..."
Attachment G.5, Table G.5-1	Footnotes	Administrative or informational change (Class 1)	Add to the footnotes of the table as follows: " <u>MIBK = methyl isobutyl ketone or 4-methyl-2-pentanone</u> <u>DBCP = 1,2-dibromo-3-chloropropane</u> " to clarify the use of abbreviations within the table.
Attachment G.6, Figure G.6-2		Typographical error (Class 1)	Legend is revised to show "• Additional Sample Locations "
Attachment G.8, Section 2.0	2	Typographical error (Class 1)	Revise as, "...and eight sheds (sheds 144, 145, 147, 146, 177, 1027, 1028, 1040, 1030 , and 1041)."
Attachment G.16, Section 2.0	5	Administrative or informational change (Class 1)	Delete this paragraph describing the loading dock and include this discussion in Attachment G.17, Section 2.0.
Table G.17-1	Footnotes	Administrative or informational change (Class 1)	Add to the footnotes of the table as follows: " <u>MIBK = methyl isobutyl ketone or 4-methyl-2-pentanone</u> <u>DBCP = 1,2-dibromo-3-chloropropane</u> " to clarify the use of abbreviations within the table.
<i>Permit Attachment I</i>			
Attachment I	Annual Submittals	Clarification (Class 1 ¹)	Change of text to better reflect the requirement in Section 1.12 of the Permit. " Interested parties Compliance of <u>solicited</u> comments from interested parties and communities and responses ".
<i>Permit Attachment J</i>			

Section	Paragraph	Type of Change	Proposed Change
Attachment J, Table J-1	TA-16-388	Administrative or informational change (Class 1)	Change the following to reflect the current status of the unit. “Interim Status Unit not authorized to treat hazardous waste and undergoing closure pending permit approval ”
Attachment J, Table J-1	TA-16-399	Administrative or informational change (Class 1)	Change the following to reflect the current status of the unit. “Interim Status Unit not authorized to treat hazardous waste and undergoing closure pending permit approval ”
Attachment J, Table J-1	TA-50-69 Outdoor	Administrative or informational change (Class 1)	Total square footage of pad should be “ 2,160 ”. The dimensions of the pad in Attachment A and Attachment G.5 are 24 ft by 90 ft.
Attachment J, Table J-1	TA-54 Area G Pad 1	Administrative or informational change (Class 1)	Total square footage of pad should be “ approximately 76,000 ” for consistency with the dimensions in Attachment A and the total in Attachment G.6.
Attachment J, Table J-1	TA-54 Area G Pad 3	Administrative or informational change (Class 1)	Total square footage of pad should be “ approximately 17,000 ,” for consistency with the dimensions in Attachment A and the total in Attachment G.7.
Attachment J, Table J-1	TA-54 Area G Pad 6	Administrative or informational change (Class 1)	Total square footage of the pad should be “ approximately 62,700 ,” for consistency with the dimensions in Attachment A and the total in Attachment G.9.
Attachment J, Table J-1	TA-54 Area G Pad 9	Administrative or informational change (Class 1)	Storage Shed “57” should be “ 574 ” based on Figure 28 in Attachment N and Figure G.10-1.
Attachment J, Table J-1	TA-54 Area G Pad 10	Administrative or informational change (Class 1)	Total square footage should be “ 89,600 ” for consistency with the dimensions in Attachment A and the total in Attachment G.11.
Attachment J, Table J-1	TA-54 Area G Pad 11	Administrative or informational change (Class 1)	Total square footage should be “ 65,500 ” for consistency with Attachment A and Attachment G.12.
Attachment J, Table J-1	TA-54 Area G Storage Shed 8	Administrative or informational change (Class 1)	Total square footage for TA-54-8 should be “ 640 ” for consistency with the dimensions in Attachment A and Attachment G.13.
Attachment J, Table J-1	TA-54 Area G TA-54-33	Administrative or informational change (Class 1)	Total square footage for the unit should be “ 8,570 ” for consistency with the dimensions in Attachment A and Attachment G.14.
Attachment J, Table J-1	TA-54 Area L Outdoor Pad	Typographical error and Administrative or informational change (Class 1)	Change the text to better reflect that there is no storage canopy at Area L. Suggest “... and Storage Dome 215 (former Area 1); and Storage Canopy 216. ” Total square footage for the unit should be “ 110,500 ” for consistency with Attachment G.15.

Section	Paragraph	Type of Change	Proposed Change
Attachment J, Table J-1	TA-55-4, K13	Administrative or informational change (Class 1)	Change text to better reflect that the operating capacity identified in Attachment A, Section A.5.3 is " 2,500 gal ", not "3,400 gal", as stated in Table J-1
Attachment J, Table J-1	TA-55-185	Typographical error (Class 1)	Change text to better reflect that the unit is located west of " TA-55-4 ", not "TA-54-4", as stated in Table J-1.
Attachment J, Table J-1	TA-55-4 Outdoor Pad	Typographical error (Class 1)	Change text to better reflect that the unit is located west of " TA-55-4 ", not "TA-54-4", as stated in Table J-1.
<i>Permit Attachment N</i>			
Figure 25		Typographical error (Class 1)	Entrance road to TA-54 should be corrected to "Mesita del Buey Road "
Figure 30		Typographical error (Class 1)	The figure has been revised to include Dome 48 that is located on the TA-54, Area G, Pad 3 permitted unit.
Figure 31		Typographical error (Class 1)	The two arrows in the upper right hand corner have been removed as they were not labeled.

¹Class 1 modifications requiring prior New Mexico Environment Department approval

ENCLOSURE 2

Changes to Permit Showing Editing Marks

LA-UR-12-00498

PART 1: GENERAL PERMIT CONDITIONS

1.1 AUTHORITY

This Permit is issued pursuant to the authority of the New Mexico Environment Department (Department) under the New Mexico Hazardous Waste Act (HWA), NMSA 1978, §§ 74-4-1 through 74-4-14, in accordance with the New Mexico Hazardous Waste Management Regulations (HWMR), 20.4.1 NMAC.

Pursuant to the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 to 6992k, and 40 CFR Part 271 and Part 272 Subpart GG, the State of New Mexico, through the Department, is authorized to administer and enforce the state hazardous waste management program under the HWA in lieu of the federal program.

This Permit contains terms and conditions that the Department has determined are necessary to protect human health and the environment (*see* 40 CFR § 270.32(b)(2)).

1.2 PERMITTEES AND PERMITTED ACTIVITY

The Secretary of the New Mexico Environment Department issues this Permit for hazardous waste management at the Los Alamos National Laboratory (LANL) to the United States Department of Energy (DOE), the owner and co-operator of LANL (EPA ID Number NM 0890010515-~~+~~), and Los Alamos National Security, LLC (LANS), co-operator of LANL.

This Permit authorizes DOE and LANS (the Permittees) to manage, store, and treat hazardous waste at LANL, and establishes the general and specific standards for these activities, pursuant to the HWA and the HWMR. This Permit also establishes standards for closure and post-closure care of permitted units at LANL pursuant to the HWA and HWMR.

1.3 CITATIONS

Whenever this Permit incorporates by reference a provision of the 20.4.1 NMAC or Title 40 CFR, the Permit shall be deemed to incorporate the citation by reference, including all subordinate provisions of the cited provision, and make binding the full text of the cited provision.

Hazardous waste management regulations are cited throughout this Permit. The federal Hazardous Waste Management Regulations, 40 CFR Parts 260 through 273, are generally cited rather than the New Mexico Hazardous Waste Management Regulations, 20.4.1 NMAC. The federal regulations are cited because only the federal regulations set forth the detailed regulatory requirements; the State regulations incorporate by reference, with certain exceptions, the federal regulations in their entirety. Citing only the federal regulations also serves to avoid encumbering each citation with references to two sets of

regulations. However, it is the State regulations that are legally applicable and enforceable. Therefore, for the purpose of this Permit, and enforcement of its terms and conditions, all references to provisions of federal regulations that have been incorporated into the State regulations shall be deemed to include the State incorporation of those provisions.

1.4 EFFECT OF PERMIT

As to those activities specifically authorized or otherwise specifically addressed under this Permit, compliance with this Permit during its term shall constitute compliance, for purposes of enforcement, with Subtitle C of RCRA and the HWA, and the implementing regulations at 40 CFR Parts 264, 266, and 268 except for those requirements that become effective by statute after the Permit has been issued (*see* 40 CFR § 270.4).

Compliance with this Permit shall not constitute a defense to any order issued or any action brought under: §§ 74-4-10, 74-4-10.1, or 74-4-13 of the HWA; §§ 3008(a), 3008(h), 3013, 7002(a)(1)(B), or 7003 of RCRA; §§ 104, 106(a), or 107, of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 to 9675; or any other federal, state or local law providing for protection of public health or the environment.

This Permit does not convey any property rights of any sort or any exclusive privilege, nor authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Compliance with this Permit does not relieve Permittees from the responsibility of complying with all applicable state or federal laws and regulations (*see* 40 CFR §§ 270.4, 270.30(g) and 270.32(b)(1)).

1.4.1 Effect of this Permit on Interim Status Units

For the interim status units listed in Table J-1 that the Permittees do not choose to operate, the Permittees shall submit to the Department within 180 days of the effective date of this Permit either a notice of intent to close in accordance with a current closure plan, or a revised closure plan. These documents shall indicate that the closure of these interim status units shall be initiated in accordance with 40 CFR § 265.113(a) no later than 270 days of the effective date of this Permit.

For the interim status units listed in Table J-1 that the Permittees propose to permit, the Permittees shall submit to the Department 180 days of the effective date of this Permit a permit modification request in accordance with 40 CFR § 270.42 that includes all applicable information required at 40 CFR §§ 270.10, 270.11, 270.14, and 270.23 for each unit.

1.5 EFFECT OF INACCURACIES IN PERMIT APPLICATION

This Permit is based on information submitted in the Permittees' Application. The Application has numerous iterations; however this Permit is based on:

- (1) the Part A Application dated June 2009;
- (2) the General Part B Permit Application dated August 2003;
- (3) the TA-3-29 CMR Part B Application dated September 1999;
- ~~(4) the TA-16 Part B Permit Application dated June 2003;~~
- (45) the TA-50 Part B Permit Application dated August 2002;
- (56) the TA-54 Part B Permit Application dated June 2003; and
- (67) the TA-55 Part B Permit Application dated September 2003.

Any inaccuracies found in the Application may be grounds for the termination, revocation and re-issuance, or modification of the Permit in accordance with 40 CFR §§ 270.41 through 270.43, which are incorporated herein by reference, and for enforcement action.

The Permittees shall inform the Department of any deviation from, or changes in, the information contained in the Application that would affect the Permittees' ability to comply with this Permit. Upon knowledge of such deviations, the Permittees shall, within 30 days, provide this information in writing to the Department in accordance with Permit Sections 1.9.14 and 1.9.15 and 40 CFR §§ 270.30(1)(11) and 270.43(a)(2), which are incorporated herein by reference.

1.6 PERMIT ACTIONS

1.6.1 Duration of Permit

This Permit shall be effective for a fixed term of ten years from its effective date. The effective date of this Permit shall be 30 days after notice of the Department's decision has been served on the Permittees or such later time as the Department may specify (*see* 40 CFR § 270.50(a)).

1.6.2 Permit Modification

This Permit may be modified for both routine and significant changes as specified in 40 CFR §§ 270.41 through 270.43, and any modification shall conform to the requirements specified in these regulations. The filing of a permit modification request by the Permittees, or the notification by the Permittees of planned changes or anticipated noncompliance, does not stay the applicability or enforceability of any permit condition (*see* 40 CFR § 270.30(f)).

1.9.19 Extensions of Time

The Permittees may seek an extension of time in which to perform a requirement of this Permit, for good cause, by sending a written request for extension of time and proposed revised schedule to the Department. The request shall state the length of the requested extension and describe the basis for the request. The Department will respond in writing to any request for extension following receipt of the request. If the Department denies the request for extension, it will state the reasons for the denial.

The Permittees shall give notice by e-mail to persons on the e-mail notification list of all Department approved extensions of time in accordance with Permit Section 1.13.

1.9.20 Confidential Information

The Permittees may claim that any information required by this Permit or otherwise submitted to the Department is confidential pursuant to the provisions of §§ 74-4-4.3(D) and (F) of the HWA and 40 CFR §§ 260.2 and 270.12.

1.9.21 New or Modified Permitted Units

The Permittees may not treat or store hazardous waste at a new permitted unit or in a modified portion of an existing permitted unit except as provided in 40 CFR § 270.42 until the Permittees have complied with the requirements of 40 CFR §§ 270.30(1)(2)(i) and (ii).

1.10 INFORMATION REPOSITORY

The Permittees shall establish both an electronic Information Repository (IR) accessible through the internet on the Permittees' environmental web site and a physical IR containing paper documents. (See 40 CFR § 124.33(d))

The Permittees shall ensure that the electronic and physical IRs contain, unless specified otherwise, the following documents:

- (1) The Permittees' Part A and Part B Permit Applications associated with the permit renewal;
- (2) A link to this Permit as it appears on the Department's website (electronic IR only);
- (3) Permit modification requests associated with this Permit submitted pursuant to 40 CFR § 270.42 and any associated Department responses;
- (4) The Waste Minimization Report submitted pursuant to Permit Section 2.9;
- (5) The Biennial Report submitted pursuant to Permit Section 2.12.5;
- (6) Corrective action documents submitted pursuant to Permit Part 11;

- (7) Notices of deficiency or disapproval (NODs), NOD responses, final approval letters, and Department directions associated with the documents identified in Paragraphs 1, 3 and 6, above; and
- (8) Notices of violation (NOV), administrative compliance orders, responses required by the Department, and Department directions associated with this Permit.

(See 40 CFR § 124.33(c))

Within 180 days of the effective date of this Permit, the Permittees shall establish the electronic IR, and inform the Department of the location, nature, and normal business hours of the physical IR. (See 40 CFR §§124.33 and 270.30(m))

The Permittees shall add new documents to the IR within ten days after the documents are submitted to, or received from, the Department. (See 40 CFR § 124.33(f))

The Permittees shall inform the public of the existence of each IR by the following methods:

- (9) written notice to all individuals on the facility mailing list 30 days after the IR becomes operational;
- (10) public notice in area newspapers, including the *Santa Fe New Mexican*, the *Albuquerque Journal*, the *Rio Grande Sun*, the *Taos News*, and the *Los Alamos Monitor* when the IR becomes operational;
- (11) continuous notice on the Permittees' environmental home page of the existence of the IRs; and
- (12) in the public notice for any of the Permittees' requested permit modifications.

(See 40 CFR § 124.33(e))

The Permittees shall ensure that the electronic IR includes an electronic index of the documents contained in the IR that identifies each document by title, publication date, author, and any identification number, such as a Los Alamos Unrestricted Release (LAUR) number. The Permittees shall ensure that all documents maintained in the electronic IR are searchable by title, date, author, identification number, and individual words and phrases, and that all such documents are printable.

The Permittees shall conduct annual training to inform inexperienced computer users of how they can access and utilize the electronic IR. The Permittees shall inform the public of this training 30 days prior to the training by methods specified in Permit Section 1.10(9) through (11). The Permittees shall document the training content and all efforts to inform the public in the Facility Operating Record. ~~The Permittees shall establish an~~

~~electronic Information Repository (IR) accessible through the internet on the Permittees' environmental web site. (See 40 CFR § 124.33(d))~~

1.10.1 RACER Public Environmental Database

The Permittees shall provide data from environmental media (*i.e.*, soil, sediment, surface water, groundwater, air and biota) collected under this Permit and incorporated into LANL databases to the ~~Risk Analysis Communication Evaluation Reduction (RACER)~~ database public database that provides comprehensive environmental data collected from in and around LANL through updates on a no less than monthly basis.

1.11 GENERAL DOCUMENTS AND INFORMATION TO BE MAINTAINED AT THE FACILITY

The Permittees shall maintain at the Facility the following documents and all amendments, revisions, and modifications to these documents:

- (1) this Permit, including all attachments;
- (2) a topographic map as required by 40 CFR § 270.13(l) and this Permit;
- (3) the Waste Analysis Plan as required by 40 CFR § 264.13(b) and this Permit;
- (4) the Inspection Plan (*see* 40 CFR § 264.15(b)); and
- (5) a copy of emergency response agreements including all Memorandums of Agreement, Memorandums of Understanding, and Mutual Aid Agreements.

The above-mentioned list is not intended to be exhaustive.

The Permittees shall maintain the documents referenced in this Permit Section in a paper or an electronic format acceptable to the Department.

1.12 COMMUNITY RELATIONS PLAN

The Permittees shall establish and implement a Community Relations Plan (CRP) to describe how the Permittees will keep communities and interested members of the public informed of Permit-related activities, including waste management, closure, post-closure, and corrective action (*see* 40 CFR § 270.32(b)(2)). The CRP shall explain how communities and interested members of the public can participate in Permit-related activities.

The CRP must describe how the Permittees will:

- (1) establish an open working relationship with communities and interested members of the public;

PART 2: GENERAL FACILITY CONDITIONS

2.1 DESIGN, CONSTRUCTION, MAINTENANCE, AND OPERATION OF THE FACILITY

The Permittees shall design, construct, maintain, and operate the Facility to minimize the possibility of fire, explosion, or any unplanned, sudden, or non-sudden release of hazardous waste or hazardous constituents to air, soil, groundwater, or surface water that could threaten human health or the environment (*see* 40 CFR § 264.31).

2.2 AUTHORIZED WASTES

The Permittees shall accept, store, treat, or otherwise manage at permitted units at the Facility only those hazardous wastes the Permittees proposed to manage at the units in the Permit Application, which are those wastes bearing the EPA Hazardous Waste Numbers (*i.e.*, waste codes) listed in Attachment B (*Part A Application*), unless otherwise prohibited by this Permit.

2.2.1 Hazardous Waste from Off-Site Sources

The Permittees may accept, store, treat or otherwise manage at permitted units at the Facility only the following hazardous wastes from off-site sources:

- (1) Treatment-derived waste or residues from wastes generated at the Facility, sent off site for treatment at a facility referenced in Attachment L (*Listing of Off-Site Facilities*), and subsequently returned to the Facility prior to final disposition off-site. Such wastes or waste residues may be managed at the Facility only subject to the following conditions:
 - a. for wastes with no available site for final disposal, the Permittees shall provide written notice to the Department that there is no available site for final disposal within five days of receipt of treatment-derived waste or waste residues at the Facility; or
 - b. for wastes with an available final disposal path, the Permittees shall store the wastes for no more than 60 days and shall ship the wastes off site.

Requests to modify of the list of Attachment L (*Listing of Off-Site Facilities*) shall be Class 1 permit modification requests.

The Permittees shall provide e-mail notification pursuant to Permit Section 1.13 of [the](#) written notice under Permit Section 2.2.1(1)a.

- (2) Hazardous waste generated by the Permittees at TA-57 (the Fenton Hill site);

- (3) Hazardous waste generated by the Permittees as a result of investigation or remediation of a solid waste management unit (SWMU) or area of concern (AOC) listed in Attachment K (*Listing of SWMUs and AOCs*); and
- (4) Mixed waste sealed sources sent to the Facility. Such waste may be managed at the Facility only subject to the following conditions:
 - a. The Permittees shall only accept mixed waste sealed sources that have a defense determination and meet Waste Acceptance Criteria that will allow the waste to be sent to the Waste Isolation Pilot Plant (WIPP) for final disposal, as provided in Conditions II.C-1 (WAP) and II.C-3 (TSDF-WAC) of the Hazardous Waste Facility Permit for WIPP (No. NM4890139088);
 - b. The Permittees may accept an annual volume of no more than one 55-gallon drum equivalent of mixed waste sealed sources ~~per year~~ during the term of this Permit, except that during one of the first three years of the term of this Permit, the Permittees may accept no more than two 55-gallon drums equivalents of mixed waste sealed sources, and that the Permittees may request an increase in the maximum annual volume through a Class 2 permit modification pursuant to 40 CFR § 270.42(b), which is incorporated herein by reference; and
 - c. All mixed waste sealed sources described in this Permit Section shall not be stored at the Facility for longer than one year.

2.2.2 Hazardous Waste from Foreign Sources

The Permittees shall not accept, store, treat, or otherwise manage at permitted units at the Facility hazardous wastes from foreign sources.

2.2.3 PCB -Contaminated Waste

The Permittees shall not store liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 parts per million (ppm) unless such storage is in compliance with 40 CFR § 268.50(f).

2.3 LAND DISPOSAL RESTRICTIONS

2.3.1 Hazardous Waste Storage

The Permittees shall not store hazardous wastes beyond one year from the date that the wastes were first placed into storage at a permitted unit unless the Permittees are able to demonstrate to the Department that one of the following conditions exists:

of discovery of the problem. The Permittees shall immediately implement remedial action where a hazard is imminent or has already occurred (*see* 40 CFR § 264.15(c)).

2.6.3 Inspection Logs and Records

The Permittees shall record the results of inspections on the *Hazardous ~~and Mixed~~ Waste Facility Inspection Record Form* in Attachment E (*Inspection Plan*) for each inspection conducted in accordance with Permit Section 2.6 and Attachment E. At a minimum, the Permittees shall produce a handwritten record of the date and time of the inspection, an identification of the permitted unit and associated structures or equipment, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions taken (*see* 40 CFR § 264.15(d)). The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and errors are crossed out with a single line, initialed, and dated by the individual making the correction. The Permittees shall maintain the inspection logs and records in a paper format. The Permittees may transfer the inspection logs and records into an electronic format acceptable to the Department. The paper format shall be retained for the period of time specified in Permit Section 2.12.2.

The Permittees shall record the following observations or actions in the Facility Operating Record:

- (1) the results of any preventive maintenance activities including, but not limited to, maintenance on floors, secondary containment structures, unit drainage structures, and fire protection equipment at a permitted unit;
- (2) any malfunctions and deterioration of such structures or equipment;
- (3) any errors affecting waste containment or compliance with this Permit;
- (4) the locations, dimensions, and repairs of all identified cracks or gaps in floors or base materials;
- (5) any discharges of hazardous waste, hazardous constituents, or fire suppression systems at a permitted unit; and
- (6) any occurrences that might cause or exacerbate contamination of a permitted unit.

The Permittees shall maintain inspection logs in the Facility Operating Record as specified in Permit Section 2.12.2.

2.7 PERSONNEL TRAINING

The Permittees shall ensure that all Facility personnel who are involved in hazardous waste management activities regulated under this Permit successfully complete all training programs in compliance with the training requirements of 40 CFR § 264.16, which is

- (3) define the nature and extent of the spilled waste;
- (4) package the spilled waste and contaminated materials in containers; and
- (5) decontaminate the area, all clean-up equipment, and personnel.

2.10.5 Arrangements with Local Authorities

The Permittees shall maintain its preparedness and prevention agreement with the Los Alamos County Emergency Management and Response Office and support agreements with the Los Alamos Fire Department, the Los Alamos County Police Department, and the Los Alamos Medical Center (*see* 40 CFR § 264.37).

The Permittees shall provide the Chief of the Los Alamos Fire Department (LAFD) with information that would ensure that emergency response personnel are at all times familiar with the potential hazards in performing their duties associated with the hazardous wastes at LANL's permitted hazardous waste management units. This information shall be specific to each permitted unit and at a minimum include:

- (1) Waste types, *e.g.*, ignitable, reactive, corrosive;
- (2) Waste names that identify principle hazardous chemical constituents;
- (3) Approximate quantities of each waste type; and
- (4) General location of waste types.

The Permittees' Emergency Management and Emergency Planning and Preparedness Group Leaders Primary Emergency Manager identified in Attachment D (*Contingency Plan*) shall annually sign a certification stating that the LAFD has been provided with this information to the satisfaction of the Chief of the LAFD. These certification statements shall be maintained in the Facility Operating Record.

2.11 CONTINGENCY PLAN

2.11.1 Implementation of Contingency Plan

The Permittees shall immediately implement Attachment D (*Contingency Plan*) whenever there is an incident (such as a fire, an explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents) at a permitted unit that threatens human health or the environment (*see* 40 CFR § 264.51(b)).

The Contingency Plan shall be implemented immediately and without consideration to potential threat to human health and the environment if any of the following hazards occur at a permitted unit:

- (1) release of a hazardous waste:

Department may require the Permittees to conduct corrective action pursuant to Permit Part 11 (*Corrective Action*) (*see* Permit Section 11.3.5).

2.11.9 Notification and Record Keeping

The Permittees shall notify the Department of implementation of the Contingency Plan in compliance with Permit Section 1.9.12 (*see* 40 CFR § 264.56(i)).

The Permittees shall notify the Department, local authorities, and tribal governments before operations resume in the Facility's affected areas that the Facility is in compliance with Permit Section 2.11.7 (*see* 40 CFR § 270.32(b)(2)).

For purposes of a permitted unit closure, the Permittees shall document in the Facility Operating Record all instances where an indoor fire suppression system has been activated resulting in fire suppressants contacting a waste storage pad regardless of whether the activation of the fire suppression system is due to an emergency, emergency testing, or the result of an accident or break in a system (*see* 40 CFR § 270.32(b)(2)).

2.12 RECORDKEEPING AND REPORTING

The Permittees shall comply with the recordkeeping and reporting requirements specified throughout this Permit and at 40 CFR § 264.73, which is incorporated herein by reference.

2.12.1 Manifest Systems

The Permittees shall comply with the recordkeeping and reporting requirements associated with manifests in accordance with 40 CFR §§ 264.71, 264.72, and 264.76, which are incorporated herein by reference, whenever a shipment of hazardous waste is either received at, or initiated from, the Facility.

2.12.2 Facility Operating Record

The Permittees shall maintain a written Facility Operating Record for the operations of each permitted unit at the Facility until the Department has approved either the closure certification statement or, if the unit enters post-closure care, the post-closure certification statement with respect to such unit as specified in Permit Sections 9.5 and 10.2.3 respectively (*see* 20.4.1.500 and 501 NMAC). For documents that address the entire Facility (*e.g.*, certifications of a Facility program to reduce the volume and toxicity of hazardous waste), the Permittees shall maintain these documents throughout the active life of the Facility including the post-closure care period.

Unless specifically prohibited by this Permit, an electronic record in a format acceptable to the Department and capable of producing a paper copy shall be deemed to be a written record (*see* 40 CFR § 270.32(b)(2)). Any substantive alterations made to the electronic record shall be documented, dated, and made part of the Facility Operating Record.

The Permittees shall incorporate, as soon as it becomes available, into the Facility Operating Record the following information:

- (1) a description of the hazardous waste received and the methods and dates of treatment and storage at each permitted unit in accordance with Appendix I of 40 CFR Part 264, which is incorporated herein by reference;
- (2) the location of each type of hazardous waste within each permitted unit and the total quantity of all wastes and waste types at each unit (the location shall be identified as one of the permitted units listed in Attachment J (*Hazardous Waste Management Units*) and any associated structure (*e.g.*, room, dome));
- (3) records and results of waste analyses and waste determinations that are performed pursuant to Permit Section 2.4, Attachment C (*Waste Analysis Plan*), and 40 CFR §§ 264.1083, 268.7, and 268.9, which are incorporated herein by reference;
- (4) incident reports and details of all incidents that required the implementation of Attachment D (*Contingency Plan*), any instance of fire, explosion, spill, or release from, or at, a permitted unit regardless of whether the incident required implementation of the Contingency Plan or Permit Part 11 (*see* 40 CFR § 270.32(b)(2));
- (5) records and results of inspections as required in Permit Section 2.6 and Attachment E (*Inspection Plan*) (these records and results shall be kept ~~as for the period~~ specified in Permit Section 2.6);
- (6) monitoring, testing, analytical data, and response actions when required by 40 CFR §§ 264.191, 264.193, 264.195, 264.602, 264.1063(d) through 264.1063(i), 264.1064, and 264.1082 through 264.1090, which are incorporated herein by reference;
- (7) notices to off-site generators as specified in 40 CFR § 264.12(b), which is incorporated herein by reference;
- (8) (reserved);
- (9) an annual certification stating a Facility program is in place to reduce the volume and toxicity of hazardous waste generated;
- (10) for treated wastes, the information contained in the notice and certification required under 40 CFR § 268.7(b), which is incorporated herein by reference;
- (11) if applicable, for hazardous wastes left in the ground after closure (*i.e.*, disposal units), the information required of a treatment facility under 40 CFR § 268.7(b), which is incorporated herein by reference;

3.7.1 Containers with Free Liquids

- (1) The Permittees shall maintain secondary containment systems in all permitted units used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference. The Permittees shall maintain controls to prevent run-on into the permitted unit. These controls shall consist of ground features such as berms and sloping.
- (2) The Permittees shall remove spilled or leaked waste and accumulated precipitation from sumps or secondary containment systems. If the sumps or secondary containment system are the sole means of secondary containment the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in liquid form within 24 hours of detection or immediately if necessary to prevent overflow of the secondary containment system. Otherwise, the Permittees must remove the spilled or leaked waste and/or accumulated precipitation in any form in as timely a manner as is necessary to prevent overflow of the containment system and shall, while the system's capacity is diminished, measure the system daily to demonstrate that the system retains sufficient capacity to contain 10% of the volume of containers or the volume of the largest container holding free liquids, which ever is greater. (*see* 40 CFR §§ 264.175(b)(4) and (5)). The Permittees shall document this measurement in the Facility Operating Record. Requests for extension of time for any deadline under this subparagraph may be made by e-mail.
- (3) The Permittees shall maintain the base of secondary containment systems to ensure they are impervious in order to contain leaks, spills, and/or accumulated precipitation until the collected liquids are detected and removed. The Permittees shall ensure that the secondary containment system have adequate structural strength to withstand the stresses of daily operations (*see* 40 CFR § 264.175(b)(1)).
- (4) If a coating or sealant is used as a component of a secondary containment system, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating the Permittees' installation and maintenance procedures were in accordance with the manufacturer's specifications. If the base of the containment unit has expansion or construction joints, the Permittees shall install and maintain chemically resistant water stops, which are embedded in the concrete, or equivalent external systems (*e.g.* sealant systems) (*see* 40 CFR § 270.32(b)(2)).
- (5) If a flexible liner is used as a secondary containment system after July 1, 2014, the Permittees shall maintain documentation in the Facility Operating Record that the flexible liner was installed and maintained in accordance with the manufacturer's specifications. This documentation shall include a copy of the manufacturer's specifications as well as a certification stating that the Permittees' installation and

maintenance procedures have been conducted in accordance with the manufacturer's specifications (*see* 40 CFR § 270.32(b)(2)).

- (6) Unless waste is removed or another form of secondary containment is provided, the Permittees shall repair any damage to a secondary containment system within 15 days of detecting the problem. The Permittees shall perform any concrete or asphalt repair using an appropriate repair method (*e.g.*, ACI standards or manufacturer's recommendations), which will prevent future damage at the location (*see* 40 CFR §§ 264.15(c), 270.32(b)(2)). The Permittees shall apply coatings or sealants, if applicable, to the repaired area before waste storage activities resume. The Permittees must record any damage or repair to containment systems in the inspection logs required by Permit Section 2.6.3.
- (7) The Permittees shall ensure that the number of 55-gallon drums stored on a secondary containment pallet does not exceed the design capacity of the pallet.
- (8) The Permittees shall ensure that all metal secondary containment pallets ~~are coated~~ have with a chemically-resistant urethane coating. The Permittees shall maintain the chemical-resistant urethane coating in accordance with Permit Section 3.7.1 and the manufacturer's specifications.

3.7.2 Containers without Free Liquids

- (1) For container storage areas that will store only wastes without free liquids (*see* Attachment J (*Hazardous Wastes Management Units*), Table J-1 (*Active Portion of the Facility*)), the Permittees shall ensure that:
 - a. the storage areas are sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation or other liquids (*see* 40 CFR § 264.175(c)(1)); or
 - b. the containers are elevated or otherwise protected from contact with accumulated liquids (*see* 40 CFR § 264.175(c)(2)).
- (2) The Permittees shall comply with the secondary containment requirements for hazardous wastes that do not contain free liquids and have the following waste codes: F020, F021, F022, F023, F026 and F027 (*see* 40 CFR § 264.175(d)(1)).
- (3) The Permittees shall ensure that the permitted units identified in Attachment J (*Hazardous Waste Management Units*), Table J-1 (*Active Portion of the Facility*), as managing "non-liquid wastes only" only manage non-liquid wastes.

3.8 INSPECTION SCHEDULES AND PROCEDURES

- (1) The Permittees shall inspect the permitted CSUs at least weekly for evidence of leaks or deterioration of the containment system by corrosion, cracking, differential settlement or other factors (*see* 40 CFR § 264.174).

- (2) The Permittees shall store containers in a manner that allows the containers to be inspected for leaks, corrosion, deterioration, and for container labels to be read without moving them (*see* 40 CFR §§ 264.174 and 270.32(b)(2)).

3.9 VOLATILE ORGANIC AIR EMISSIONS

- (1) The Permittees shall control air pollutant emissions from each hazardous waste container at a permitted unit in accordance with the applicable regulations in 40 CFR Part 264 Subpart CC. The Permittees shall also manage hazardous wastes subject to emission controls in accordance with Attachment E (*Inspection Plan*).
- (2) The Permittees shall not be required to control air pollutant emissions from a container in accordance with the exemptions in 40 CFR §§ 264.1080(b)(1) through (8).
- (3) If the Permittees claim an exemption from air pollution emission controls due to a container holding radioactive mixed waste, the Permittees shall clearly label the container in accordance with Permit Section 3.6.
- (4) A suitable method to control container air pollution emissions is the utilization of the container construction specifications and operation requirements specified in 40 CFR § 264.1086(b). This emission control method is met if the containers adhere to the following requirements:
 - a. the containers have a capacity of greater than 0.1 cubic meters and less than 0.46 cubic meters (approximately 119 gallons);
 - b. the containers meet U.S. Department of Transportation (DOT) specifications under 49 CFR Part 178;
 - c. the containers are kept closed during storage; and
 - d. the containers are inspected weekly to ensure lids and openings are securely closed and there ~~is~~ no possibility of air emissions (*see* 40 CFR §§ 264.1086(c)(3) and (4)).
- (5) All containers that are not exempted under 40 CFR 264, Subpart CC, shall be subject to Container Level 1 requirements, except that the Permittees shall identify containers subject to Container Level 2 controls on a list in the Facility Operating Record.
- (6) Containers may be opened for the purpose of adding or removing waste or as otherwise allowed at 40 CFR § 264.1086(c)(3), which is incorporated herein by reference.
- (7) The Permittees shall characterize hazardous wastes subject to emission controls in accordance with Permit Section 2.4 (*Waste Analysis*) and Attachment C (*Waste Analysis Plan*).

- (3) control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground, groundwater, surface waters, or atmosphere

(see 40 CFR § 264.111).

The Permittees may remove any structure pursuant to Permit Section 9.4.3.2 instead of attaining the closure performance standards under this Permit Part (9) for that structure.

9.2.2.1 Indoor Units

The Permittees shall notify the Department in accordance with 40 CFR § 264.112 if the closure performance standard at Permit Section 9.2.1(1) or (2) is not attainable for an indoor unit (see Permit Section 9.1.2). The notification shall include a demonstration that justifies the Permittees' inability to achieve the standard. The Permittees shall concurrently submit a permit modification request in accordance with 40 CFR §§ 264.112 and 270.42 that describes the measures that will be taken to ensure compliance with the closure performance standards at Permit Sections 9.2.2(1) through (3), and a post-closure plan, if necessary, to maintain the measures. The Permittees shall conduct any post-closure care in accordance with Permit Part 10 (*Post-Closure Care*).

The Permittees shall give notice by e-mail to persons on the e-mail notification list, in accordance with Permit Section 1.13, of the notice to the Department provided under this Permit Section (9.2.2.1).

9.2.2.2 Outdoor Units Co-located with Regulated Units

The Permittees may petition the Department for alternative closure requirements in accordance with 40 CFR § 264.110(c) if the closure performance standards at Permit Sections 9.2.1(1) and (2) are not attainable for an outdoor unit (including associated indoor structures) co-located with a regulated unit (see Permit Section 9.1.3(1)).

The Permittees shall give notice by e-mail to persons on the e-mail notification list, in accordance with Permit Section 1.13, of the petition to the Department provided under this Permit Section (9.2.2.2).

9.2.2.3 Other Outdoor Units

The Permittees shall notify the Department in accordance with 40 CFR § 264.112(c) if the closure performance standards at Permit Sections 9.2.1(1) and (2) are not attainable for an outdoor unit (including associated ~~indoor~~-structures) *not* co-located with a regulated unit (see Permit Section 9.1.3(2)). The notification shall include a demonstration that justifies the Permittees' inability to achieve the standard. The Permittees shall concurrently submit a permit modification request in accordance with 40 CFR §§ 264.112 and 270.42 that describes the measures that will be taken to ensure

are removed (or containerized) in accordance with 40 CFR § 264.114, which is incorporated herein by reference, and managed in compliance with Permit Section 9.4.5.

The Permittees shall identify in the closure plans for each permitted unit the structures and related equipment that will be removed from the units.

After the Permittees conduct the structural assessment (in accordance with Permit Section 9.4.6) of an outdoor permitted unit constructed of asphalt, the Permittees shall remove the asphalt pad in its entirety.

9.4.4 Decontamination Verification and Soil Sampling

The Permittees shall verify that each indoor permitted unit has been decontaminated, that soils beneath each outdoor and indoor (as applicable) permitted unit are free of contamination, and that each indoor structure associated with an outdoor permitted unit has been decontaminated. Except for VOCs, the Permittees shall verify decontamination of surfaces (*e.g.*, walls, equipment, benches, pipes, doors) and that environmental media are free of contamination through sampling and analysis.

The Permittees may collect wipe samples for radionuclide analysis for use as indicators of contaminant releases in units where radionuclides were stored. The Permittees shall not, however, use these as surrogates for validation of attainment of a closure performance standard at a permitted unit (*see* 40 CFR § 270.32(b)(2)).

9.4.4.1 Decontamination Verification and Soil Sampling Activities

Wipe, chip, and liquid sampling shall be used, as appropriate, to verify the absence of hazardous constituents after decontamination of surfaces, structures, and related equipment at indoor and outdoor permitted units. Samples shall be analyzed for metals, SVOCs, and polychlorinated biphenyls (PCBs). Decontamination shall be considered verified and the clean closure performance standards in Permit Section 9.2.1 achieved when samples have hazardous constituent concentrations that are less than the detection limits for the analytical methods in the approved unit-specific closure plan.

Soils underlying pads at outdoor and indoor (as applicable) permitted units shall be sampled for total metals, VOCs, SVOCs, PCBs, and explosive compounds, as applicable.

All sampling activities shall be conducted in accordance with the Department-approved closure plans.

9.4.5 Management and Disposal Procedures for Waste Generated During Closure

By removing any hazardous wastes or hazardous waste constituents during closure, the Permittees may become a generator of hazardous waste. The Permittees shall manage and dispose of any waste generated from closure of indoor and outdoor permitted units

Permittees expect to conduct the assessment. If the assessment reveals any evidence of a release (*e.g.*, stains) or damage (*e.g.*, cracks, gaps, chips) to the flooring or building materials, the Permittees must incorporate these locations for sampling, and include appropriate sampling procedures, in the updated SAP (*see* 40 CFR § 270.32(b)(2)).

9.4.7 Closure Plans

The Permittees shall submit to the Department for its approval a closure plan for each permitted unit in accordance with 40 CFR § 264.112, incorporated herein by reference, and include in it all of the requirements addressed in this Permit Part, as applicable. Closure plans for indoor and outdoor permitted units (*see* Permit Sections 9.1.2 and 9.1.3) are contained in Attachment G (*Closure Plans*).

The closure plans shall, at a minimum, describe how each permitted unit will be closed to meet the closure performance standards in Permit Section 9.2.

The closure plan shall include a SAP in accordance with Permit Section 9.4.7.1.

The schedule for each closure plan (*see* 40 CFR § 264.112(b)(6)) shall meet the requirements of Permit Section 9.4.1.

9.4.7.1 Sampling and Analysis Plan

The Permittees shall develop a SAP that:

- (1) verifies decontamination of surfaces, structures, and all related equipment; and
- (2) determines whether a release of hazardous constituents to any environmental media has occurred.

All SAPs shall, at a minimum, include:

(3) *List of Hazardous Constituents.* A list of hazardous constituents to be sampled and analyzed shall be submitted for each permitted unit. The list shall include all hazardous constituents as defined in Permit Section 1.8. The Permittees may propose to the Department in the SAP a list of constituents limited only to those contained within the hazardous wastes managed at the permitted unit, if the Permittees can demonstrate that the Facility Operating Record is complete with respect to the history of hazardous waste management operations at the permitted unit undergoing closure. The list of hazardous constituents shall be utilized to select the analytical methods capable of detecting those constituents.

- (4) *Site Plan for Verification and Soil Samples.* The site plan shall include:
- a. a figure depicting the boundaries of the permitted unit and verification and soil sampling locations. The locations shall include, but not be limited to, where applicable:

- discharge points (*e.g.*, storm water run-off locations);
 - sumps and catch basins;
 - secondary containment areas;
 - conveyance systems (*e.g.*, pipe drains, drainage swales);
 - locations of spills or other releases of hazardous waste or hazardous constituents during operation of the unit;
 - loading and unloading areas;
 - other potential release locations; and
 - Permit required sampling grid location points (*see* Permit Sections 9.4.7.1.i and 9.4.7.1.ii ~~(a) and (b)~~); and
- b. rationale for the number and locations of samples.
- (5) *Type of Samples.* The type of samples to be collected (*e.g.*, wipe, core, chip, soil) and the rationale for the selection of sample types must be identified.
- (6) *Sampling Methods.* A description of the approved *EPA SW-846* sampling methods and procedures that will be used to collect each type of sample must be included.
- (7) *Analytical Methods.* A description of the approved *EPA SW-846* laboratory analytical methods that will be used to measure hazardous constituent concentrations must be included.
- (8) *Quality Assurance and Quality Control Procedures.* The SAP must include a description of the quality assurance and quality control (QA/QC) procedures that include, but are not limited to:
- a. duplicates, trip blanks, equipment blanks;
 - b. a description of methods for decontamination of re-usable sampling equipment; and
 - c. a description of all sample preservation, handling, labeling, and chain-of-custody procedures.

9.4.7.1.i Decontamination Verification Sampling Grid for Indoor Units or Structures

The Permittees shall collect one verification sample as described at Section 9.4.4.1 every 250 square feet or less in loading and unloading zones and one verification sample every 900 square feet or less on floors, walls (up to 11 feet from the floor, or another height approved by the Department), and ceilings (lower than 11 feet high, or another height approved by the Department). If the permitted unit (*e.g.*, TA-54 Area G storage shed 8) or the structures related to the permitted unit (*e.g.*, modular unit 35 at TA-54 Area L) have walls with areas less than 900 square feet, the Permittees shall collect at least one verification sample from each wall, floor, and, if applicable, ceiling. If the Permittees

have proposed an alternative decontamination method pursuant to Permit Section 9.4.3.1, the Permittees shall also propose an alternative sampling method in their closure plan. The Permittees shall collect samples at all additional locations identified in Permit Section 9.4.7.1.ii. ~~a~~ where applicable.

9.4.7.1.ii Soil Sampling for Outdoor Storage Units

The Permittees shall collect soil samples at the outdoor storage units from the soils below the sub-grade, from the soils beneath the pad at the interface of fill and native soil or tuff, and from the following locations:

- (1) One sample for every 250 square feet in loading and unloading zones;
- (2) One sample for every 900 square feet under the pad;
- (3) One sample at each discharge point (storm water run-off locations);
- (4) One sample at the discharge point of any underground piping;
- (5) One sample directly beneath all sumps and catch basins;
- (6) One sample at all secondary containment areas;
- (7) One sample at all joints and intersections of piping; and
- (8) One sample every 30 feet beneath the axis of the lowest portions of any open conveyance drainage system in any permitted unit that has sloped flooring

(see 40 CFR § 270.32(b)).

9.4.8 Amendment of the Closure Plan

The Permittees shall submit a permit modification request (see 40 CFR § 264.112(c) and Part 270) to seek authorization of a change in the approved closure plan upon the occurrence of events listed in 40 CFR § 264.112(c)(2), which is incorporated herein by reference. The request must include a copy of the amended closure plan and all proposed modifications to the plan.

The Permittees shall amend a permitted unit's closure plan whenever:

- (1) newly identified hazardous constituents are determined to have been managed at the unit; and
- (2) new sampling locations are determined as a result of the records review and structural assessment (see Permit Section 9.4.6)

(see 40 CFR §§ 264.112(c)(2)(iii)).

11.2.1 Identification of SWMUs and AOCs Requiring Corrective Action

Attachment K, Table K-1 (*SWMUs and AOCs Requiring Corrective Action*) lists SWMUs and AOCs at the Facility for which corrective action is required under the Consent Order. If any additional SWMUs or AOCs are discovered while the Consent Order is in effect, corrective action for such units shall be conducted under the Consent Order. Table K-1 will be modified to include any newly identified SWMUs and AOCs for tracking purposes.

Attachment K, Table K-2 lists SWMUs and AOCs at the Facility for which corrective action is complete with controls.

Attachment K, Table K-3 (*Corrective Action Complete without Controls*) lists SWMUs at the Facility for which corrective action is complete without controls and that do not require monitoring.

Attachment J, Table J-1 (*Active Portion of the Facility*) lists hazardous waste management units at the Facility and their status (*e.g.*, interim status, permitted operating, closed).

11.3 GENERAL CONDITIONS

11.3.1 Groundwater Monitoring

The Permittees shall conduct groundwater monitoring for all regulated units, as defined in 40 CFR § 264.90(a)(2), at the Facility subject to the groundwater monitoring requirements of 40 CFR Part 264, Subpart F and subject to corrective action under Permit Section 11.2.

The Permittees shall coordinate such monitoring with the monitoring conducted under the Interim Facility Wide Groundwater Monitoring Plans, and any Department-approved Long-term Groundwater Monitoring Plans for the Facility, as approved under the Consent Order. So long as the Consent Order is in effect, fulfilling the groundwater monitoring requirements of the Consent Order shall fulfill the groundwater monitoring requirements of 40 CFR §§ 264.90 through 100.

The Permittees shall notify the Department, in writing, of any new detections of hazardous waste and hazardous waste constituents in groundwater at any location ~~that for~~ which analytical data was received during the previous month as described in Permit Section 11.3.1.1. For purposes of this Permit Section (11.3), “hazardous constituent” includes explosive compounds, any toxic pollutant identified at 20.6.2.7.WW NMAC and any contaminant listed in 20.6.2.3103 NMAC. Such detections of hazardous waste or hazardous constituents shall also be highlighted in the periodic groundwater monitoring report submitted to the Department, in accordance with Permit Section 11.3.2, summarizing the groundwater monitoring results for the appropriate monitoring period.

collection, handling, and laboratory analysis operations. The blanks and duplicates shall be submitted for laboratory analyses associated with the project-specific contaminants, data quality concerns, and media being sampled.

11.10.2.5 Sample Point and Structure Location Surveying

The horizontal and vertical coordinates of the top of each monitoring well casing and the ground surface at each monitoring well location shall be determined by a registered New Mexico professional land surveyor in accordance with the State Plane Coordinate System (§§ 47-1-49 through 56 NMSA 1978)). The surveys shall be conducted in accordance with Sections 500.1 through 500.12 of the Regulations and Rules of the Board of Registration for Professional Engineers and Surveyors Minimum Standards for Surveying in New Mexico. Horizontal positions shall be measured to the nearest 0.1-ft, and vertical elevations shall be measured to the nearest 0.01-ft. The Permittees shall prepare site map(s), certified by a registered New Mexico professional land surveyor, presenting all surveyed locations and elevations including relevant site features and structures for submittal with all associated reports to the Department.

Site attributes (*e.g.*, soil sample locations, sediment sample locations, springs, outfalls, pertinent structures, monitoring stations, as well as staked out sampling grids), shall be located by using the global positioning system (GPS), another the Department-approved surveying system, or by using a registered New Mexico Registered Land Surveyor using the methods described in the paragraph above. If using GPS, horizontal locations shall be measured to the nearest 0.5 ft. The Permittees shall provide the Department a statement of accuracy for survey data upon request.

11.10.2.6 Subsurface Vapor-Phase Monitoring and Sampling

Samples of subsurface vapors shall be collected from vapor monitoring points from both discrete zones, (selected based on investigation and field screening results), and ~~as~~ total well subsurface vapor samples where required by the Department. Subsurface vapor samples shall be collected using methods approved by the Department that will produce reliable and representative results from the zones subject to investigation or monitoring.

During subsurface drilling explorations at sites where there is a potential for vapor-phase contamination to be present, soil gas samples shall be obtained at the Department-approved intervals for field screening and/or laboratory analyses. An inflatable packer shall be dropped to isolate the bottom two to three feet of the borehole. The isolated portion of the borehole shall be purged by slowly removing approximately five times the volume of the annular space beneath the packer, followed by a VOC measurement using a PID equipped with a 11.7 eV lamp, a combustible gas indicator or other instrument approved by the Department. The data shall be logged and also used for determining the samples to be sent to an analytical laboratory.

The Permittees shall, as directed by the Department, collect vapor samples for field measurement of the following during subsurface vapor monitoring activities:

Water samples shall be analyzed in accordance with the Department-approved groundwater monitoring work plan for one or more of the following general chemistry parameters as required by the Department:

nitrate/nitrite	sulfate	chloride	sodium
dissolved CO ₂	alkalinity	carbonate/bicarbonate	boron
fluoride	manganese	calcium	silicon
ferric/ferrous iron	ammonia	potassium	phosphorus/phosphate
sulfide	bromide	magnesium	methane
TKN	total organic carbon	total dissolved solids	

11.10.2.8.i Well Purging

All zones in each monitoring well shall be purged by removing groundwater prior to sampling and in order to ensure that formation water is being sampled. Purge volumes shall be determined by monitoring, at a minimum, groundwater pH, specific conductance, dissolved oxygen concentrations, turbidity, redox potential, and temperature during purging of volumes and at measurement intervals approved by the Department in writing. The groundwater quality parameters shall be measured using a flow-through cell and instruments approved by the Department in writing. The volume of groundwater purged, the instruments used, and the readings obtained at each interval shall be recorded on the field monitoring log. In general, water samples may be obtained from the well after the measured parameters of the purge water have stabilized to within ten percent for three consecutive measurements. Well purging may also be conducted in accordance with the Department’s Position Paper “Use of Low-Flow and other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring” (October 30, 2001). The Permittees may submit, to the Department for approval, a written request for a variance from the described methods of well purging for individual wells no later than 90 days prior to scheduled sampling activities. The Department will respond to the request, in writing, within 60 days of receipt of the variance request.

11.10.2.8.ii Groundwater Sample Collection

Groundwater samples shall be obtained from each well after a sufficient amount of water has been removed from the well casing to ensure that the sample is representative of formation water. Groundwater samples shall be obtained using methods approved by the Department within 24 hours of the completion of well purging. Sample collection methods shall be documented in the field monitoring reports. The samples shall be transferred to the appropriate, clean, laboratory-prepared containers provided by the analytical laboratory. Sample handling and chain-of-custody procedures are described in

Permit Section 11.10.2.9. Decontamination procedures shall be established for reusable water sampling equipment as described in Permit Section 11.10.2.11.

All purged groundwater and decontamination water shall be temporarily stored at satellite accumulation areas, ~~or transfer stations, or in labeled 55-gallon drums,~~ less-than-90-day storage areas in labeled 55-gallon drums or other containers approved by the Department until proper characterization and disposal can be arranged. The methods for disposal of purge/decontamination water shall be approved by the Department prior to removal from the temporary storage area. Disposable materials shall be handled as described in Permit Section 11.10.2.13.

Groundwater samples intended for metals analysis shall be submitted to the laboratory as total metals samples. If required by the Department, the Permittees shall obtain groundwater samples for dissolved metals analysis to be filtered using disposable in-line filters with a 0.45 micron or other mesh size approved by the Department.

11.10.2.8.iii Surface Water Sample Collection

Surface water samples shall be collected using methods approved by the Department. Samples shall be collected in clean laboratory-prepared sampling containers. The methods and instruments used to measure field parameters shall be approved by the Department prior to conducting surface water sampling. The sampling and monitoring techniques used and the measurements obtained shall be recorded in the field monitoring reports.

11.10.2.8.iv Groundwater and Surface Water Sample Types

Groundwater samples shall be collected from each monitoring well and surface water samples shall be collected at predetermined locations. Field duplicates, field blanks, equipment rinsate blanks, reagent blanks, if necessary, and trip blanks shall be obtained for quality assurance during groundwater and surface water sampling activities. The samples shall be handled as described in Permit Section 11.10.2.9.

Field duplicate surface water and groundwater samples shall be obtained at a frequency of ten percent. At a minimum, one duplicate sample per sampling event shall always be obtained.

Field blanks shall be obtained at a frequency of no less than one per day per site or unit. Field blanks shall be generated by filling sample containers in the field with deionized water and submitting the samples, along with the groundwater or surface water samples, to the analytical laboratory for the appropriate analyses.

Equipment rinsate blanks shall be obtained for chemical analysis at the rate of five percent but no fewer than one rinsate blank per sampling day. Equipment rinsate blanks shall be collected at a rate of one per sampling day if disposable sampling apparatus is used. Rinsate samples shall be generated by rinsing deionized water through unused or decontaminated sampling equipment. The rinsate sample then shall be placed in the

11.10.2.11 Decontamination Procedures

The objective of the decontamination procedures is to minimize the potential for cross-contamination. A designated decontamination area shall be established for decontamination of drilling equipment, reusable sampling equipment and well materials. The drilling rig shall be decontaminated prior to entering the site or unit. Drilling equipment or other exploration equipment that may come in contact with the borehole shall be decontaminated by steam cleaning, by hot-water pressure washing, or by other method approved by the Department prior to drilling each new boring.

Sampling or measurement equipment, including but not limited to, stainless steel sampling tools, split-barrel or core samplers, well developing or purging equipment, groundwater quality measurement instruments, water level measurement instruments, and reusable vapor sampling equipment shall be decontaminated in accordance with the following procedures or other applicable methods approved by the Department before each sampling attempt or measurement:

- (1) brush equipment with a wire or other suitable brush, if necessary or practicable, to remove large particulate matter;
- (2) rinse with potable tap water;
- (3) wash with nonphosphate detergent or other detergent approved by the Department (examples include Fantastik™, Liqui-Nox®) followed by a tap water rinse;
- (4) rinse with 0.1 molar nitric acid (to remove trace metals, if necessary) followed by a tap water rinse;
- (5) rinse with methanol (to remove organic compounds, if necessary) followed by a tap water rinse;
- (6) rinse with potable tap water; and
- (7) double rinse with deionized water.

All decontamination solutions shall be collected and stored temporarily as described in Permit Section ~~11.10.2.11~~ 11.10.2.13. Decontamination procedures and the cleaning agents used shall be documented in the daily field log.

11.10.2.12 Field Equipment Calibration Procedures

Field equipment requiring calibration shall be calibrated to known standards, in accordance with the manufacturers' recommended schedules and procedures. At a minimum, calibration checks shall be conducted daily, or at other intervals approved by the Department, and the instruments shall be recalibrated, if necessary. Calibration measurements shall be recorded in the daily field logs. If field equipment becomes inoperable, its use shall be discontinued until the necessary repairs are made. In the interim, a properly calibrated replacement instrument shall be used.

11.10.3.1.iv Laboratory Deliverables

The laboratory analytical data package submitted to the Department shall be prepared in accordance with EPA-established Level II analytical support protocol. The laboratory analytical data package kept on file at the Facility shall be prepared in accordance with EPA-established Level III or IV analytical support protocol. The following shall be provided by the contract analytical laboratories to the Permittees in the analytical laboratory reports submitted to the Permittees either electronically, magnetically or in hard (paper) copy for each project:

- (1) transmittal letter, including information about the receipt of samples, the testing methodology performed, any deviations from the required procedures, any problems encountered in the analysis of the samples, any data quality exceptions, and any corrective actions taken by the laboratory relative to the quality of the data contained in the report;
- (2) sample analytical results, including sampling date; date of sample extraction or preparation; date of sample analysis; dilution factors and test method identification; soil, rock, or sediment sample results in consistent units (mg/kg) or micrograms per kilogram in dry-weight basis; water sample results in consistent units (milligrams per liter or micrograms per liter ($\mu\text{g/L}$)); vapor sample results in consistent units (ppm or $\mu\text{g/m}^3$); and detection limits for undetected analytes. Results shall be reported for all field samples, including field duplicates and blanks, submitted for analysis;
- (3) method blank results, including detection limits for undetected analytes;
- (4) surrogate recovery results and corresponding control limits for samples and method blanks (organic analyses only);
- (5) MS/MSD and/or BS/BSD spike concentrations, percent recoveries, relative percent differences (RPDs), and corresponding control limits;
- (6) laboratory duplicate results for inorganic analyses, including relative percent differences and corresponding control limits;
- (7) sample chain-of-custody documentation;
- (8) holding times and conditions;
- (9) conformance with required analytical protocol(s);
- (10) instrument calibration;
- (11) blanks;
- (12) detection/quantitation limits;
- (13) recoveries of surrogates;
- (14) variability for duplicate analyses;
- (15) completeness; and
- (16) data report formats.

The following data deliverables for organic compounds shall be required from the laboratory:

- (17) a cover letter referencing the procedure used and discussing any analytical problems, deviations, and modifications, including signature from authority representative certifying to the quality and authenticity of data as reported;
- (18) report of sample collection, extraction, and analysis dates, including sample holding conditions;
- (19) tabulated results for samples in units as specified, including data qualification in conformance with EPA protocol, and definition of data descriptor codes;
- (20) reconstructed ion chromatograms **and mass spectra** for gas chromatograph/mass spectrometry (GC/MS) analyses for each sample and standard calibration;
- (21) selected ion chromatograms and mass spectra of detected target analytes (~~GC/MS~~) for each sample and calibration with associated library/reference spectra;
- (22) gas chromatograph/electron capture device (GC/ECD) and/or gas chromatograph/flame ionization detector (GC/FID) chromatograms for each sample and standard calibration;
- (23) raw data quantification reports for each sample and calibrations, including areas and retention times for analytes, surrogates, and internal standards;
- (24) a calibration data summary reporting calibration range used and a measure of linearity [include decafluorotriphenylphosphine (DFTPP) and p-bromofluorobenzene (BFB) spectra and compliance with tuning criteria for GC/MS];
- (25) final extract volumes (and dilutions required), sample size, wet-to-dry weight ratios, and instrument practical detection/quantitation limit for each analyte;
- (26) analyte concentrations with reporting units identified, including data qualification in conformance with the CLP Statement of Work (SOW) (include definition of data descriptor codes);
- (27) quantification of analytes in all blank analyses, as well as identification of method blank associated with each sample;
- (28) recovery assessments and a replicate sample summary, including all surrogate spike recovery data with spike levels/concentrations for each sample and all MS/MSD results (recoveries and spike amounts); and
- (29) report of tentatively identified compounds with comparison of mass spectra to library/reference spectra.

The following data deliverables for inorganic compounds shall be required from the laboratory:

- (30) a cover letter referencing the procedure used and discussing any analytical problems, deviations, and modifications; including signature from authority representative certifying to the quality and authenticity of data as reported;

11.10.4.1.i Exposure Pathways

The identification of exposure pathways shall include ~~of a~~ discussion of all potential pathways and justify whether the pathways are complete. Pathways that shall be considered include soil, groundwater, air, surface water, sediment, and biota. An evaluation of the potential for contaminants to migrate from soil to groundwater shall also be provided. The risk assessment shall also address exposure mechanisms for each exposure pathway, including ingestion, inhalation, dermal, and inhalation of volatile organic compounds volatilized from soil and/or groundwater.

11.10.4.1.ii Data Quality Assurance

The risk assessment shall include an evaluation of analytical data and the usability of the data in the assessment. Data validation shall be conducted in accordance with current EPA guidelines. The evaluation of data shall also include a comparison of detection limits with appropriate and current risk-based screening levels, if MDLs are inconsistent and do not achieve the requirements of Permit Section 11.10.3 (Chemical Analyses).

11.10.4.1.iii Constituents of Potential Concern

Appropriate EPA and/or the Department guidance shall be used to identify constituents of potential concern (COPCs). With the exception of chemicals attributed to field or laboratory contamination, all analytes detected in sampled media (*i.e.*, soil, air, surface water, groundwater, biota, and/or sediment) shall be retained or eliminated as COPCs using one or more of the following processes:

- (1) site attribution analysis;
- (2) essential nutrients; and/or
- (3) risk-based toxicity screen.

Unless sufficient evidence and special circumstances can be provided by the Permittees, all detected organics not attributable to field or laboratory contamination shall be retained and treated as site-related chemicals.

Inorganics detected in site media shall be compared to an appropriate background data set to determine if concentrations are present at levels significantly above background. The site attribution analysis may consist of a tiered approach as follows:

- (4) comparison of maximum site concentrations to a background reference value (*e.g.*, upper tolerance limit, UTL);
- (5) if the site maximum exceeds the background reference value, and sample size is sufficient, statistically compare the site data set to the background data set using appropriate statistical analyses (*e.g.*, Wilcoxon Rank Sum Test). If the sampling size is not sufficient to perform statistical analysis, a comparison of the maximum site concentration to the maximum background concentrations shall be used;

ATTACHMENT A
TECHNICAL AREA (TA) - UNIT DESCRIPTIONS

TA54-1059 has been used to store miscellaneous NDA equipment, such as turn-tables, equipment stands, etc.

TA 54-0545, Storage

Heated transportainer for transuranic and mixed transuranic waste storage prior to characterization

TA 54-0546, Storage

Heated transportainer for transuranic and mixed transuranic waste storage prior to characterization

Pad 10 asphalt

Pad 10 is primarily used for storage of feed stock and empty drums for the transuranic waste characterization activities. Additionally, storage of oversized mixed wastes in transportainers and metal boxes can occur on the pad.

A.4.2.5 Pad 5

This asphalt pad consists of former pads 5, 7, and 8, located on the south-central portion of Area G, has two domes and eight sheds (*see* Figure 32 in Attachment N (*Figures*)) associated with it. Former Pad 5 is approximately 500 feet long, 65 feet-wide, and 4 inches thick. It is sloped approximately 2% from north to south. Former Pad 8 is approximately 150 feet long, 95 feet-wide, and 3 inches thick. It is sloped approximately 1% from west to east. Former Pad 7 is approximately 200 feet long, 64 feet-wide, and 4 inches thick. It is sloped approximately 1% from west to east.

Dome 49

Storage dome 49, located on former Pad 5, is 440 feet long and 60 feet wide and has a peak height of approximately 26 feet (*see* Figure 32 in Attachment N (*Figures*)). The design and materials of construction for Dome 49 are the same as the other domes at TA-54. The dome is equipped with a double-panel rolling door at the north end of the dome and six personnel doors to allow for adequate access both by vehicles and by personnel. The interior perimeter of the dome is surrounded by a 6-inch-high, 8-inch-wide asphalt curb which helps prevent runoff into and runoff from the dome. An asphalt ramp located at the vehicle entrance to Dome 49 allows vehicles and container handling equipment to pass safely over the curb. The dome is anchored to Pad 5 with standard drift pins.

Dome 224

Storage Dome 224, located on former pad 8, is approximately 110 feet long and 60 feet wide, with a peak height of 26 feet (*see* Figure 32 in Attachment N (*Figures*)). The design and materials of construction for dome 224 are the same as other domes at TA-54. This dome is

anchored to Pad 8 with anchor bolts. It is equipped with a single-panel roll-up door at the north end and four personnel doors to allow adequate access by vehicles and by personnel. A 1-foot, 8-inch wide by 2-feet, 4-inch deep concrete ring wall surrounds the interior of dome 224. A high-density polyethylene (HDPE) liner exists below the asphaltic pad within the dome. Storage sheds 144, 145, 146, and 177 are prefabricated sheds constructed of steel. Each shed measures 6 feet long, 5 feet-wide, and 9 feet high. Access to each shed is obtained through a single door. The sheds are elevated by design, which prevents run-on and each shed is constructed with a liquid-tight sump to ensure containment of any potential leaks or spills and to prevent runoff. The floor of each shed is constructed of steel and has a metal grate that covers the entire sump area. Containers are placed directly on the metal grates, which prevent contact with liquids that may have accumulated in the sumps. The designed sump storage capacity of each shed is 120 gallons which exceeds the amount necessary to hold 10% of the total storage capacity of each shed (330 gallons).

Storage Sheds

Storage sheds 1027, 1028, 1029, and 1041 are equipped with three sets of double doors on one side of the shed for ease of access. Sheds 1027, 1028, 1030, and 1041 contain a single compartment and sump within each shed (*see* Figure 32 in Attachment N (*Figures*)). The designed storage capacity of each sump is 750 gallons which exceeds the amount necessary to hold 10% of the total capacity of each shed (1,760 gallons).

A.4.2.6 Pad 6

This permitted asphalt pad, approximately 633 ft long, 99 ft wide and 4 inches thick, is sloped approximately 1.2% from west to east and is located in the north-central portion of Area G. Storage domes 153 and 283 are located on Pad 6 (*see* Figure 33 in Attachment N (*Figures*)) and the design and materials of construction for domes 153 and 283 are the same as the other domes at TA-54.

Dome 153

Dome 153 is approximately 326 ft long and 60 ft wide, with a peak height of 26 ft (*see* Figure 33 in Attachment N (*Figures*)). A double-panel rolling door is located at the west end of the dome and 10 personnel doors are located approximately every 40 to 125 ft along the dome's length.

Dome 283

Dome 283 is approximately ~~260~~ 250 ft long and 60 ft wide with a peak height of 26 ft (*see* Figure 33 in Attachment N (*Figures*)). A double-panel rolling door is located at the east end of the dome and 10 personnel doors are located approximately every 50 ft along the dome's length. These accesses allow adequate traffic flow of vehicles and personnel into and out of the dome. An asphalt ramp is located at the vehicle entrance of each dome to allow vehicles and container-handling equipment to pass safely over the curb. Domes 153 and 283 are anchored to Pad 6 with standard drift pins.

A.4.2.7 Storage Shed 8

Storage shed 8 is located in the north-central portion of Area G (*see* Figure 34 in Attachment N (*Figures*)). The shed is 40 ft long and 16 ft wide and has a 14-ft-high galvanized steel roof that slopes to the north. The siding of Shed 8 is constructed of galvanized steel and the foundation is constructed of concrete. Two overhead doors and one personnel door on the south side of the shed allow both vehicles and personnel to access the shed.

A.4.2.8 TA-54-33

TA-54-33 is located in the north-central portion of Area G and consists of a dome attached to a concrete-block building (*see* Figure ~~35~~ 34 in Attachment N (*Figures*)). This permitted unit is used for waste storage and potential or future waste characterization activities. The dome and building are located on a concrete foundation surrounded by an asphalt pad. The concrete foundation is 8 inches thick and overlies 6 inches of base course. The concrete-block building attached to the dome is approximately 40 ft long and 34 ft wide. The dome is 157 ft long and 50 ft wide with a peak height of 24 ft. A double-panel rolling door is located at the west end of the dome for vehicle access. A single-panel rolling door is located at the southeast end of the dome for container-handling access. Two personnel doors are located approximately 40 ft apart along the north wall of the dome. Two additional personnel doors are located in the concrete-block building; one on the west side, and one on the east side. In addition, two overhead doors are located on the north side of the building to allow free movement of personnel and container-handling equipment between the building and the dome.

The design and materials of construction for the TA-54-33 dome are the same as the other domes at TA-54. The dome's aluminum frame is directly connected to the building which extends approximately 5 ft into the dome. Inside the dome the concrete foundation is sloped to a 6-inch-wide centralized concrete drainage trench that is covered with 12-inch-wide steel grating. The trench slopes toward a steel sump located at the east end of the dome. Two additional trenches, located in Rooms 100A and 100B, are perpendicular to and feed into the main trench. A floor drain in Room 105 connects with the trench in Room 100A.

The steel sump is located within a concrete basin that has 8-inch-thick walls, a 9-inch-thick base and measures approximately 15 ft long by 7 ft wide by 6 ft deep. The sump is approximately 14 ft long by 6.5 ft wide by 5 ft deep and has a capacity of 3,473 gallons. A primary holding tank associated with the sump is located in a concrete basin that is 15 ft long by 12 ft wide by 5.5 ft deep and has a capacity of approximately 7,405 gallons. A secondary holding tank associated with the sump is located in a separate concrete basin that is 12 ft long by 12 ft wide by 5.5 ft deep and has a capacity of approximately 5,924 gallons. These basins have the capacity to contain any spills or leaks resulting from a potential overflow or breach of the holding tanks.

concrete drainage channels, a weir, riprap-lined channels, retention dam, berms, and culverts. Roads and drive pads are configured, by grading and paving, to carry storm water away from the areas of active vehicular and loading operations. Silt fences and other erosion control structures are maintained throughout the drainage areas in locations prone to erosion or affected by heavy runoff during storm events.

A.4.6.3 TA-54 West

The foundation at TA-54-38 is above grade to prevent run-on of storm water. Storm drains and trenches are maintained to collect any precipitation or snowmelt that may enter the Facility through the loading bays. The outdoor permitted unit is maintained to be sloped away from TA-54-38 towards the edges of the pad allowing storm water to flow to the edges of the pad. All containers of waste stored at the TA-54 West permitted units are located in areas with sloped floors and sumps or are elevated by design, on dollies, or on pallets. This prevents the containers from coming into contact with liquids. Positive surface drainage throughout TA-54 West directs potential run-on away from the TA-54 West permitted units. A drainage swale and curbing direct storm water runoff toward an outfall on the northeast side of the storage pad.

A.5 TA-55

TA-55 is located in the north central portion of Los Alamos National Laboratory on a mesa between a branch of Mortandad Canyon on the north and Two Mile Canyon on the south (*see* Figure 38 in Attachment N (*Figures*)). TA-55 is a plutonium processing facility, which began operating in 1978. Hazardous and mixed waste container storage at TA-55 is conducted at seven permitted units. These permitted units are identified as B40, B05, K13, B45, the Vault, the Container Storage Pad, and TA-55-185. The B05, B45, and TA-55-185 permitted units ~~are~~ **will be** used to store containers with only non-liquid bearing waste (*i.e.*, solid form). These permitted units all reside in a building; therefore, run-on and run-off from storm events are not applicable. In the event of a water leak from facility systems, the TA-55-4 basement has sumps to contain the liquid.

A.5.1 B40

The B40 permitted unit is used to store containers of hazardous and mixed waste that may contain liquids. B40 is located in the southwest section of the TA-55-4 basement, as shown on Figure 40 in Attachment N (*Figures*). The permitted unit is L-shaped and has long dimensions of 61.5 by 55 feet (ft). The maximum storage capacity of this unit is 21,500 gallons (gal), the equivalent of 391 55-gal drums. The types of waste containers holding hazardous or mixed waste that are stored in B40 include: 5-, 10-, 12-, 15-, 30-, 55-, and 85-gal drums; large waste boxes; special order waste boxes; and standard waste boxes (SWB).

A.5.2 B05

The B05 permitted unit is used to store containers of hazardous and mixed waste that do not contain liquids. B05 is located in the southwest section of the TA-55-4 basement, as shown in

Figure 42 in Attachment N (*Figures*). The permitted unit is rectangular shaped and is 26 ft long by 10 ft wide. The maximum storage capacity of this unit is 3,600 gal, the equivalent of 66 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored in B05 include 30-, 55-, and 85-gal drums, large waste boxes; and SWBs.

A.5.3 K13

The K13 permitted unit is used to store containers of hazardous and mixed waste that may contain liquids. K13 is located in the northwest section of the TA-55-4 basement, as shown on Figure 41 in Attachment N (*Figures*). The permitted unit is rectangular shaped and is 12 ft long by 13 ft wide. The maximum storage capacity of this unit is 2,500 gal, the equivalent of 46 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored in K13 include: 0.25-, 0.5-, 0.75-, 1-, 2-, 4-, and 6-liter/quart containers; 5-, 10-, 12-, and 15-gal containers; 30-, 55-, and 85-gal drums; and large waste boxes.

A.5.4 B45

The B45 permitted unit is used to store containers of hazardous and mixed waste that do not contain liquids. B45 is located in the northeast section of the TA-55-4 basement, as shown on Figure 43 in Attachment N (*Figures*). The permitted unit is rectangular shaped and is 45 ft long by 17.5 ft wide. The maximum storage capacity of this unit is 11,000 gal, the equivalent of 200 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored in B45 include: 5-, 10-, 12-, and 15-gal containers; 55- and 85-gal drums; large waste boxes; and SWBs.

A.5.5 Vault

The Vault permitted unit is used to store containers of mixed waste that may contain liquids. The Vault is located along the eastern wall of the basement at TA-55-4, as shown on Figure 42 in Attachment N (*Figures*) and is approximately 79.5 ft long by 50.5 ft wide. The maximum storage capacity of this unit is 4,000 gal, the equivalent of approximately 73 55-gal drums. The types of waste containers holding mixed waste that will be stored in the Vault include: 0.25-, 0.5-, 0.75-, 1-, 2-, 4-, and 6-liter/quart containers; and 5-, 10-, 12-, 15-, 30- and 55-gal drums.

A.5.6 Container Storage Pad

The Container Storage Pad is used to store containers of hazardous and mixed waste that may contain liquids. The pad is located outside and south southwest of TA-55-4, as shown on Figure 39 and 45 in Attachment N (*Figures*). It was installed in the mid-1980s and is constructed of asphaltic-concrete with a variable thickness of 4 to 6 inches (in.). The Container Storage Pad permitted unit is shaped like a trapezoid and measures 102 ft, 86 ft, 156 ft, and 105 ft. The pad is sloped, is elevated 2 to 4 in. above ground level, and has a culvert beneath the pad running from the northwest side to the southeast corner to minimize run-on of precipitation. The storage capacity of this area is 135,000 gal, the equivalent of approximately 2,455 55-gal drums. The types of waste containers holding hazardous or mixed waste that will

be stored on the container storage pad include: 0.25-, 0.5-, 0.75-, 1-, 2-, 4-, and 6-liter/quart containers; 30-, 55-, and 85-gal drums; SWBs; large waste boxes; and 5-, 10-, 12-, and 15-gal containers.

A.5.7 TA-55-185

TA-55-185 is used to store containers of hazardous and mixed waste that do not contain liquids. TA-55-185 is located west of TA-55-4, as shown on Figure [39 and 46](#) in Attachment N (*Figures*). The building was constructed in 1991 and consists of a steel frame with fiberglass insulation, metal walls, and a concrete floor. The TA-55-185 permitted unit ~~will be~~ is approximately 60 ft long by 40 ft wide, and ~~will have~~ has a maximum storage capacity of 30,000 gal, the equivalent of 546 55-gal drums. The types of waste containers holding hazardous or mixed waste that ~~are will be~~ stored at TA-55-185 include: 30-, 55-, and 85-gal drums; large waste boxes; and SWBs.

A.5.8 Storage Tank System

There is one storage tank unit at TA-55 that is comprised of two tank components, the evaporator glovebox tank and the stabilization unit pencil tanks. The two tank components share a common piping and pumping system.

The evaporator glovebox tank was constructed in 1986. The stabilization unit pencil tanks were constructed in 1985, installed from 1987-88, and were considered existing tanks until new components were installed in 1996. These new components were determined to be a major, non-routine modification; therefore, the stabilization unit pencil tanks are subject to the new tank system regulations and are addressed as new tanks in accordance with the requirements of 40 CFR § 264.192, which is incorporated herein by reference.

The TA-55 storage tank unit is located at TA-55, Building 4, in Room 401 and has a maximum capacity of 560 Liters (L) (137 gallons [gal]). The storage tank system consists of two components, with six tanks, that are used to store evaporator bottoms solutions prior to stabilization.

Liquid waste comes primarily from the evaporator as evaporator bottoms in approximately 25-L batches. Unrecyclable evaporator distillate waste (corrosive only) is also cemented when the low-level acid waste line to the TA-50 Radioactive Liquid Waste Treatment Facility is closed. Liquid waste generated from a source other than the evaporator (such as C-AAC analytical residues) is transferred to the Cementation Unit glovebox in plastic bottles up to 2L in volume via the trolley system.

The evaporator bottoms solutions are initially stored in the evaporator glovebox tank component, where they are sampled for radionuclides, oxides, and metals. They remain in the evaporator glovebox tank component until the radionuclide content is known. If the sampling results show radionuclide concentrations below the discard limit, the solutions are transferred to the stabilization unit pencil tanks component for storage pending the remaining analytical results. Upon completion of the remaining analyses, the solutions are transferred directly to the stabilization unit for treatment. If the sampling results show concentrations above the

In accordance with 40 CFR § 264.192(a), incorporated herein by reference, a written assessment has been prepared attesting that the stabilization unit pencil tanks component has sufficient structural integrity and is acceptable for handling mixed waste. The written assessment was reviewed and certified by an independent, qualified, registered professional engineer.

A.5.8.4 Secondary Containment

The storage tank unit is located at TA-55-4, inside Room 401. This room has a floor and walls that completely surround the tank system and serve as secondary containment, therefore, the secondary containment meets the requirements of 40 CFR § 264.193(1)(iv), incorporated herein by reference, for an external liner system. The walls and floor of Room 401 prevent the migration of wastes or accumulated liquids to any soil, groundwater, or surface water and are capable of collecting releases and accumulated liquids until the material is removed. Because the storage tank system and secondary containment are inside a building, run-on or precipitation will not affect the containment capacity. The capacity of the containment area is sufficient to contain 100 percent of the capacity of the largest liquid-bearing tank within its boundary.

The floor of Room 401 consists of 10-in.-thick reinforced concrete slab that is compatible with the wastes stored in the storage tank system and will effectively prevent migration of waste. The concrete in Room 401 is sealed with an epoxy or similar coating to aid in decontamination should a spill occur. In addition, tertiary containment is provided by the floor of the basement level of TA-55-4, which also consists of 10 in. of concrete. The construction joints in the floor slab and exterior walls are all constructed with chemical-resistant water stops in place. The conduit piping penetrating the floor of the room is secured with rubber boots, bushings, and flanges. All penetrations (*i.e.*, holes for conduit) in the floor have been sealed to prevent liquids from entering the penetrations.

Additional leak detection will be provided by continuous air monitors (CAM) at various locations throughout Room 401. CAMs will detect any airborne alpha contamination that would be present if a leak were to occur at any point in the system. Additionally, radiological control technicians periodically monitor for radioactive contamination and would detect any leaks during monitoring.

A.5.9 Stabilization Unit

The stabilization unit treats homogeneous liquid and solid mixed waste generated primarily from R&D and processing and recovery operations at TA-55 and at the Chemistry and Metallurgy Research Building at TA-3. The liquid wastes (Summary Category Group L1000) generally consist of evaporator bottoms solutions and laboratory solutions that may exhibit the hazardous characteristics of corrosivity and toxicity for metals (including arsenic, barium, cadmium, chromium, lead, mercury, and silver), as defined in 40 CFR §§ 261.22 and 261.24, respectively. The homogeneous solid process wastes (Summary Category Group S3000) generally consist of process residue from the evaporator, process leached solids, filter cake, and other miscellaneous solids. This waste stream typically exhibits the hazardous

characteristics of toxic metals. These waste streams are mixed with cement in 55-gallon drums and allowed to cure into a non-corrosive solid matrix.

The stabilization unit is located in Glovebox GB-454 along the west wall of TA-55-4, Room 401. The unit has been in operation since 1991 and has a maximum capacity of 568 liters (L) (approximately 150 gallons [gal]). It consists of a pH adjustment column, a vacuum trap, two motor-driven mixers, four impellers, associated support structures, a glovebox, and piping.

The pH column has a straight side height of 5 feet (ft) and an outside diameter of 6.66 inches (in.). The maximum capacity of the column is approximately 27 L. The column is raised above the glovebox floor approximately 3 in. by three steel legs and is secured to one wall of the glovebox with a steel bracket that binds the column approximately 3 ft up from the base of the column. The vacuum trap associated with the column has a straight side height of 2 ft and an inside diameter of 6 in. The maximum capacity of the vacuum trap is approximately 11 L. The pH column and the vacuum trap are constructed of PYREX® glass with stainless steel end plates similar to the glass columns in the evaporator glovebox tank component. The glass and stainless steel materials are corrosion-resistant and compatible with the waste received in the column. The pH column is used to adjust the pH of approximately 5 L of waste to ensure compatibility with the cement used for solidification. A compressed-air line enters the glovebox and is connected to two pressurized air tanks outside of the glovebox. The compressed-air line is used for remote valve operation.

The two mixers within the unit are high-flow, gear-driven, fixed-mount mixers. All couplings, shafts, and impellers are constructed of 316 stainless steel. The shafts are 5 ft long. Two impellers are mounted to each shaft. Each impeller has a diameter of approximately 11 in. The mixers are driven by 3.5-horsepower motors encased within the mixer housing. The mixer housing is approximately 2.5 ft long. The maximum weight of each mixer is 225 pounds. Each mixer is mounted on steel plates and supported by two steel guides on either side of each mixer. Each guide is bolted to a 6-in. steel flange at either end and is secured to the glovebox floor and ceiling. Each motor is mounted to a center screw drive that allows the mixers to be independently raised and lowered within the glovebox.

The glovebox is constructed of a section of 0.75 in. lead between two sections of approximately 0.188-in.-thick low-carbon grade, 316 stainless steel. The floor of the glovebox contains two circular openings with removable covers that allow the shafts and impellers of each mixer to be lowered into drums attached beneath the glovebox.

During stabilization operations, two 55-gal steel drums are positioned under the glovebox directly under the openings in the floor of the glovebox. A “bag-out” bag extends from the glovebox into each drum between the drum and the drum liner. This liner is fastened at the bottom of the glovebox with an elastic cord and clamped into place to prevent hazardous constituents from escaping the confinement of the glovebox and the drums during treatment operations. The cement and the waste to be solidified are transferred into the drums and homogeneously mixed inside the drums. Each drum is positioned on a steel platform/scale that is secured in a steel track. The platform allows the drums to be safely and easily removed from the unit after the cement has hardened.

The majority of the piping associated with the stabilization unit is 316 stainless steel. Tygon[®] tubing is used to transfer sodium hydroxide and the contents of the pH column to the drums. The cement is transferred into the glovebox and drums from a hopper/screw feeder through rubber tubing.

The homogeneous solid process wastes generated at TA-55 ~~is~~ are delivered to the Cementation Unit in a closed container from the generator glovebox through a trolley system. The generator is instructed to size reduce the waste to minus 8 mesh. The Stabilization Unit personnel confirm this and do the size reduction if necessary. The particulate waste is poured into the waste drum just before or during the addition of cement to the drum and homogeneously mixed with the cement paste.

The stabilization unit is located in a vacuum-pressurized glovebox at TA-55-4 inside Room 401. Room 401 provides secondary containment for the stabilization unit. The floor of the room is recessed approximately 2.5 in. The room itself is approximately 60 ft long by 75 ft wide. The capacity of the secondary containment area is greater than 100 percent of the volume of waste that is treated in the stabilization unit at any one time. The entire floor is constructed of a 10-in.-thick reinforced concrete slab. Eight continuous air monitors installed at various locations throughout TA-55-4, Room 401 detect any airborne alpha contamination that would be present if a leak were to occur resulting in a release outside of glovebox GB-454.

The stabilization unit is located within a negative pressure glovebox that is connected to the TA-55-4 facility ventilation system. The high-efficiency particulate air filters on the glovebox are on the air intake side of the ventilation and are designed to prevent escape of contamination from the glovebox in the event of a power failure. TA-55-4 is equipped with a backup generator that re-establishes power to all vital systems, providing exhaust to the glovebox. The unit is a batch waste treatment system. If a power failure occurs, all operations cease inside the glovebox until power is restored. In addition, the glovebox is located within three succeeding greater pressure zones. These zones are (in order of increasing pressure) the glovebox, Room 401, and the main corridor outside of Room 401. These pressure zones are designed to create airflow into Room 401 and the glovebox and limit the potential for hazardous constituents to migrate to the atmosphere. Figure 48 in Permit Attachment N (*Figures*) provides a general arrangement diagram and a process flow diagram for the TA-55 stabilization unit.

A.5.10 Security and Access Control

Security at TA-55 is maintained with both manmade and natural barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into TA-55. Two 12-foot (ft) high chain-link security fences with razor wire at the top surround the entire perimeter of TA-55. Three entry gates allow access to TA-55. One entry gate is located at the main entrance to TA-55 on the southeast side of the facility, one entry gate is located on the road to TA-48 at the northwest end of TA-55, and one entry gate is located at the northeast corner of TA-55 (for access to TA-55, Building 28 [TA-55-28] only). An entry station is located adjacent to the entry gate at the main entrance to the facility. The

entry station is manned 24 hours a day by security personnel. Unescorted access to TA-55 is granted only to persons possessing appropriate security clearance and meeting specific training requirements.

TA-55 is patrolled by security personnel during both operational and nonoperational hours to ensure that the gates are locked and that unauthorized entry has not occurred. The entire length of both security fences is also inspected several times each day by on-site security personnel. The locations of the security fences, entry gates, and entry stations are shown on Figure 10 in Attachment N (*Figures*).

In addition to the fence and entry gates, cliffs and canyons surrounding TA-55 provide natural barriers to discourage unauthorized entry.

Warning signs are posted on the perimeter fences at approximately 40 to 110-ft intervals and can be seen from any approach to TA-55. Warning signs are also posted at each access to the waste management units in sufficient numbers to be seen from any approach. The legends on the signs are bilingual (*i.e.*, English and Spanish) and indicate “No Trespassing by Order of the United States Department of Energy.” The signs are legible from a distance of 25 ft.

A.5.11 Emergency Equipment

Buildings at TA-55 are equipped with multiple audible and visual safety-alarm systems to alert personnel in the event of an emergency and to evacuate the area. These alarm systems are located both inside and outside buildings at TA-55 and are monitored and controlled by the facility monitor and control system (FMCS). The FMCS is in operation 24 hours a day and is located in the Operations Center at TA-55-4 with access through TA-55-3. Specific FMCS alarm systems at TA-55 are discussed below.

A TA-55 computer system monitors the smoke and heat sensors, fire-alarm pull boxes, and drop box push-button alarms located throughout TA-55. Fire-alarm pull boxes and/or drop box push-button alarms are located in the vicinity of the waste management units addressed in this permit **application**. Fire-alarm pull boxes may be used by personnel to activate a local fire alarm when a fire or other emergency is discovered. Fire-alarm pull boxes are located in TA-55-4, Room 401, and throughout the basement in the vicinity of the container storage management units. The equipment includes portable eyewash stations and safety showers. Eyewash stations and safety showers are located in Room 401 and throughout the basement of TA-55-4. Eyewash stations are also located on the Container Storage Pad and outside on the south side of TA-55-4 near TA-55-185. Safety showers are readily available in the following locations: TA-55-4, Room 401; in the basement of TA-55-4; on the Container Storage Pad; and outside on the south side of TA-55-4. TA-55-185 is equipped with a portable safety shower prior to wastes being managed there. Material Safety Data Sheets (MSDS) provide useful exposure information and are available in Room 401 and in the basement of TA-55-4. The MSDS will also be located in TA-55-185 prior to wastes being managed there.

ATTACHMENT C
WASTE ANALYSIS PLAN

ATTACHMENT C WASTE ANALYSIS PLAN

This Waste Analysis Plan (WAP) presents the characterization procedures used to determine the chemical and physical nature of non-mixed hazardous waste, the hazardous component of mixed low-level waste (MLLW), and the hazardous component of mixed transuranic waste (MTRUW) stored and treated at the Facility in accordance with 40 CFR § 264.13. The waste characterization requirements contained in this WAP are used for characterization of wastes stored in containers and tanks, and to support treatment **by** the stabilization processes. Waste analysis regulatory requirements are specified in 40 CFR §§ 264.13, 270.14(b) and 268.7. Waste analysis permit requirements are specified in Permit Section 2.4. This WAP discusses how the waste characterization data prepared by generators are reviewed, supplemented, and used by the Permittees to comply with 40 CFR Part 264 and Part 268 regulatory requirements.

This WAP is organized as follows:

- Section C.1 Facility Description: Includes a general description of the Facility; general descriptions of the wastes stored and treated and the activities that generate waste.
- Section C.2 Waste Analysis Parameters: Includes a discussion of the proposed analytical parameters and methods used by the Permittees and the criteria/rationale for parameter selection.
- Section C.3 Characterization Procedures: Includes the characterization approach (*e.g.*, acceptable knowledge, sampling and analysis) for each waste classification stored and treated at the Facility.
- Section C.4 Off-Site Waste: Includes a discussion of procedures in place for acceptance of waste from off-site facilities.
- Section C.5 Special Procedural Requirements: Includes a discussion of the procedures in place for ignitable, reactive, and incompatible wastes; procedures to ensure compliance with land disposal restrictions (LDR); and procedures to ensure compliance with [40 CFR Part 264](#) Subpart CC requirements.
- Section C.6 References.

C.1 FACILITY DESCRIPTION

LANL (the *Facility*) is located in Los Alamos County in north-central New Mexico. It is approximately 60 miles north-northeast of Albuquerque and 25 miles northwest of Santa Fe. The Facility and the associated residential and commercial areas of Los Alamos County are situated on the Pajarito Plateau. The Facility is owned by the U.S. Department of Energy (DOE) and is operated jointly by DOE and Los Alamos National Security, LLC (collectively the *Permittees*). A more complete Facility description is provided in Attachment A.

C.1.1 Facility Waste-Generating Processes and Activities

Wastes are generated at the Facility primarily from research and development (R&D) activities, processing and recovery operations, decontamination and decommissioning (D&D) projects, and environmental restoration (ER) activities. Wastes generated from these types of processes and activities may also be received from off-site facilities (*see Attachment L (Listing of Off-Site Facilities)*). Tables C-2 through C-5 present descriptive information on non-mixed hazardous wastes, MLLW, and MTRUW potentially generated at the Facility. Wastes generated at off-site facilities that may be received at the Facility are described in Table C-8. These tables include brief waste descriptions, brief descriptions of the waste-generating process or activity, the characterization basis for waste designation, potential EPA Hazardous Waste Number(s), the hazardous constituent(s) listed in Appendix VIII of 40 CFR Part 261 and/or the characteristic(s) defined at 40 CFR Part 261, Subpart C that make the waste hazardous, and the regulatory limits, as appropriate.

C.1.2 Stored Waste

Non-mixed hazardous waste, MLLW, and MTRUW are stored at various container storage units throughout the Facility. The following sections contain general descriptions of these wastes and the processes that generate them.

C.1.2.1 Non-Mixed Hazardous Waste

Non-mixed hazardous wastes are generated at the Facility primarily from R&D activities, general facility operations, D&D projects, and ER activities. Non-mixed hazardous waste streams may be of uniform physical composition (*i.e.*, homogeneous) or of diverse composition (*i.e.*, heterogeneous). Homogeneous waste is defined as waste that contains only one material or substance or waste that has its components mixed so that representative samples can be drawn throughout. Homogeneous waste streams can be either solids or liquids.

Heterogeneous waste is defined as waste that contains multiple components that are separate because of density or specific gravity, are located in different places within the mixture, or are discrete and different articles. Heterogeneous wastes (*e.g.*, debris) do not lend themselves to representative sampling and analysis.

Routinely managed non-mixed hazardous wastes and their waste-generating processes are provided below and summarized in Table C-2.

Spent Solvents

Spent solvents and spent solvent mixtures may contain organic or inorganic compounds, heavy metals, oils, and other contaminants. Waste-generating activities include R&D, laser research, organic and inorganic chemistry research, cleaning, and degreasing.

Contaminated Solid Wastes

Contaminated solid wastes (*i.e.*, wastes of a solid physical form) include mixtures of rags, spill cleanup materials, Kimwipes™, gloves, filters, plastic and paper products, and personal protective equipment. These wastes may also consist of disposable equipment contaminated with organic or inorganic compounds, heavy metals, oils, and other contaminants. Waste-generating activities include machining operations, chemistry research, D&D projects, metal finishing operations, and general maintenance operations.

Paint and Related Wastes

Paint and paint-related wastes consist of excess paint, paint strippers and thinners, and sludges of paints and thinners. Possible contaminants include heavy metals used as paint pigments and solvents contained in thinners and lacquers. Waste-generating activities include painting and finishing operations and general facility maintenance.

Photographic and Photocopier Wastes

Photographic wastes include spent or excess film developers, fixer solutions, and bleach solutions that may be contaminated with heavy metals. Photocopier wastes include kerosene-based toners and dispersants. These wastes are generated from photographic processing and photocopier operations.

Corrosive Liquid Wastes

These wastes consist of acidic or alkaline solutions that may contain organics, inorganics, metals, oils, and other contaminants. Waste-generating activities include analytical chemistry research, electro-etching, and electro-polishing.

Solid Metals and Metallic Compounds

These wastes consist of metal chips and turnings from machining and cutting operations. They also consist of metal powders; metal salts; metal sheets; reactive metals used in synthesis reactions; solders from electronic manufacturing, repair, and brazing operations; and grinding operations. Other solid metals and metallic compounds include lead shot, bricks, plate, and shielding.

Contaminated Non-Corrosive Aqueous and Non-Aqueous Solutions and Sludges

These wastes are non-corrosive aqueous and non-aqueous solutions and sludges that are contaminated with non-mixed hazardous wastes or hazardous residues. Waste-generating

activities include vacuum pump maintenance, analytical spectrometry, equipment cleaning and maintenance, vehicle maintenance, synthesis reactions, metal-polishing operations, and chemical research.

Mercury Wastes

Mercury wastes include free elemental mercury, mercuric compounds, articles and instruments containing mercury, fluorescent light fixtures, and gels containing mercuric compounds. Waste-generating activities include lamp replacement, chemical research, mercury spill cleanup, and equipment cleaning and maintenance.

Used Batteries and Battery Fluids

Used batteries and battery fluids contain heavy metals such as cadmium, lead, mercury, and silver. Waste-generating activities include routine equipment maintenance.

Unused and Off-Specification Commercial Chemical Products

These wastes consist of discarded solid and liquid chemical reagents that are off-specification, unused, outdated or are spill residues.

Gas Cylinder Waste

These wastes include pressurized gas cylinders, including aerosol cans, which may contain regulated hazardous metals, organic compounds, or exhibit the hazardous characteristics of ignitability, corrosivity, and reactivity.

Soils and Sludges

These wastes consist of environmental media and sludges generated through various activities, including site decommissioning, site characterization, and site remediation. Waste-generating activities include septic tank and detention basin closure, removal actions, and other remedial actions and site closures.

Aqueous Liquids

These wastes consist of liquids generated during various activities, including decontamination of remedial [action](#) equipment, drilling fluids and well development fluids, septic tank liquids, and contaminated stormwater runoff.

LA-MIN05-COR: Mixed Inorganic Homogeneous Waste, Cemented Organics

This waste stream consists of mixed inorganic homogeneous solidified (cemented) organic process solids and emulsified solvents and oils generated by plutonium recovery, R&D processes, and facility and equipment operations and maintenance.

LA-MHD02-238: Mixed Heterogeneous Debris Waste, Pu-238

This waste stream consists of mixed heterogeneous debris waste generated by Pu-238 processing operations (primarily heat-source fabrication) and facility and equipment operations and maintenance. The waste includes Pu-238 contaminated noncombustible and combustible debris waste.

LA-MIN06-C238: Mixed Inorganic Homogeneous Waste, Cemented Inorganics, Pu-238

This waste stream consists of mixed inorganic homogeneous waste comprised of solidified (cemented) inorganic process solids. This waste stream is generated by Pu-238 processing operations (primarily heat-source fabrication) and facility and equipment operations and maintenance.

LA-MHD03-DD: Mixed Heterogeneous Debris Waste, D&D

This waste stream consists of mixed heterogeneous debris waste generated from facility and equipment D&D, including associated sectioning, size reduction, and packaging operations. The waste is comprised of plutonium-contaminated noncombustible and combustible debris waste.

LA-MHD05-ITRI: Mixed Heterogeneous Debris Waste, ITRI

This waste stream consists of mixed heterogeneous debris generated between 1975 and 1984 by the Inhalation Toxicology Research Institute, which is currently operated by Lovelace at the Kirtland Air Force Base, New Mexico. The waste is comprised of laboratory waste that may contain rags, tools, and biological waste contaminated with Pu-239.

LA-MHD04-RH: Mixed Heterogeneous Debris Waste, Remote-Handled

This waste stream consists of mixed remote-handled heterogeneous debris waste generated by hot cell operations. This waste is comprised of combustible and noncombustible waste.

C.1.3 Treated Wastes

MTRUW is treated at a permitted unit at the Facility. MTRUW is treated by cementation to stabilize the waste for storage and to meet the Waste Isolation Pilot Plant WIPP waste acceptance criteria.

C.1.3.1 Treated Mixed TRU Wastes

MTRUW that require treatment is generated primarily from R&D and processing and recovery operations. Treatment of MTRUW at the Facility may consist of stabilization by cementation to

form a noncorrosive solid matrix. Additional specific information on the stabilization treatment process is provided in Section C.3.2.4 of this WAP.

C.1.4 Description of Permitted Units

The permitted units used for storage and treatment of wastes addressed in this WAP are located within various TAs at the Facility. These units are listed in Attachment J (*Hazardous Waste Management Units*). Detailed information on the permitted units is provided in Attachment A (*Technical Area Unit Descriptions*).

C.2 WASTE ANALYSIS PARAMETERS

The Permittees shall conduct detailed chemical and physical characterization on non-mixed hazardous wastes, the hazardous component of MLLW, and the hazardous component of MTRUW as required by 40 CFR § 264.13 and Permit Section 2.4. The Permittees shall select waste analysis parameters to ensure that the waste characterization documentation will contain the information necessary to manage the waste in accordance with Resource Conservation and Recovery Act (RCRA) general facility standards in 40 CFR Part 264 and the LDR requirements in 40 CFR Part 268.

C.2.1 Analytical Parameters and Methods

The Permittees shall use the characterization methods for non-mixed hazardous wastes, MLLW, and MTRUW summarized in Tables C-9 through C-11 to quantify the waste characterization parameters in those tables. The Permittees shall comply with the sampling and analysis requirements of Permit Sections 2.4.1 through 2.4.9. The Permittees shall use the methods listed below, as necessary, for the wastes listed in Attachment Section C.1.

1. Acceptable Knowledge (AK);
2. Sampling and laboratory analysis to determine the presence and concentrations of:
 - RCRA-regulated metals
 - RCRA-regulated volatile organic compounds (VOC)
 - RCRA-regulated semivolatile organic compounds (SVOC)
3. Additional MTRUW characterization sampling methods;
 - Headspace gas sampling to determine the presence of VOCs in container headspace
 - Physical waste ~~from-form~~ characterization through real-time radiography (RTR) and/or visual examination
4. Flash point characterization;
5. pH characterization;
6. Reactivity characterization; and
7. Free liquid determination via the paint filter test.

C.3 CHARACTERIZATION METHODS

The Permittees' operating procedures consider characterization of wastes before a waste-generating process will begin. The preliminary characterization of waste begins prior to actual generation (at the point of concept and design of a process or system) so that the generator can determine whether AK, sampling and analysis, or a combination of the two will be required for waste characterization.

The Permittees shall characterize non-mixed hazardous wastes, MLLW, and MTRUW based on the chemical, physical, and radiological nature of the waste stream. The Permittees shall perform characterization by using AK or sampling and analysis or both, as described below.

The Permittees shall record information for each waste stream on a waste profile form accompanied by sampling and analysis data or AK documentation. These documents are collectively referred to as the waste characterization documentation. Such documentation may include items referred to by a traceable identifier and separately located within the Facility. The Permittees shall ensure that waste characterization documentation is reviewed and approved prior to waste acceptance at a permitted unit. If the documentation is incomplete or does not contain sufficient information to characterize the waste, the Permittees shall return the documentation to the generator and shall not accept the waste for storage or treatment.

Before accepting waste for storage or treatment, the Permittees shall determine that waste characterization documentation satisfies the information requirements of Permit Section 2.4, including but not limited to the assignment of all applicable EPA Hazardous Waste Numbers and the LDR status of the waste. Once the waste characterization documentation is reviewed and approved, the Permittees may notify the generator and authorize the transfer of the waste to a permitted unit. Before the waste is transferred, the Permittees' waste management personnel shall review any transfer documentation to ensure that it accurately pertains to the waste being transferred and that it corresponds with the waste characterization documentation. If the transfer documentation does not correspond with the characterization documentation, the Permittees shall not transfer the waste. The Permittees shall maintain the waste characterization documentation and the transfer documentation shall be part of the Facility Operating Record. After approval of waste characterization of a waste stream by waste management personnel, the Permittees shall approve subsequent transfer of waste from that waste stream based upon the generator's statement that the waste stream is accurately represented by the previously approved waste characterization information.

Training for use of waste characterization documentation is included in a facility waste documentation course. This training provides step-by-step instructions on how to complete and review forms for characterizing wastes.

The Permittees shall perform reevaluation of initial characterization information and annual verification in accordance with Permit Section 2.4.7.

The Permittees shall deem a waste container to contain free liquids if any of the following characterization methods so demonstrate:

4. standard operating procedures and detailed operating procedures, which can include a list of the raw materials or reagents, a description of the process or experiment that uses the materials, and a description of the wastes generated and how the wastes are handled;
5. waste packaging logs;
6. test plans or research project reports that describe the reagents and other raw materials used in an experiment;
7. chemical inventory database for particular processes or experiments;
8. information from site personnel (*e.g.*, documented interviews);
9. industry reports on a similar process when there is a clear connection between the Facility process/experiment and the industry's similar process or experiment;
10. Material Safety Data Sheets, product labels, and other product package information; and
11. ER site and waste characterization data.

C.3.1.2 Sampling and Analysis

For waste streams that can be representatively sampled (*i.e.*, homogeneous), the Permittees shall conduct sampling and analysis when there is insufficient AK. The Permittees shall collect a representative sample of the waste and handle it by a means that preserves its original physical form and composition and prevents contamination or changes in concentration of the constituents to be analyzed. The Permittees shall, when it is necessary to conduct sampling and analysis to fully characterize a waste, utilize the analytical methods specified in Tables C-9 through C-18 for the identification of any hazardous constituents likely to be present based on the source of the waste stream and AK. Personnel involved in sampling and analysis shall comply with the most recent version of *SW-846* and other Department approved methods. The Permittees shall obtain samples representative of the waste stream in accordance with Permit Section 2.4.2.

C.3.1.2.1 Solid Waste Analysis

The Permittees shall, if necessary for waste characterization purposes, sample and analyze homogeneous waste streams for the toxicity characteristic (TC) contaminants listed in 40 CFR § 261.24, which is incorporated herein by reference. The Permittees may conduct analysis for total concentration of TC contaminants on samples in a screening step, as described in Section 1.2 of [SW-846](#) Method 1311, the toxicity characteristic leaching procedure (TCLP). If total concentrations are used in the waste characterization process, the Permittees shall compare analytical data to the TC regulatory levels expressed as total values. These total values will be considered the regulatory threshold limit (RTL) values for the determination of whether a particular waste exhibits a TC. The Permittees shall obtain RTL values by calculating the weight/weight concentration (in the solid) of a TC contaminant that would give the regulatory weight/volume concentration in the TCLP extract. If the total concentrations are less than the RTL value, then it may be assumed that the waste does not exhibit the toxicity characteristic and the TCLP does not need to be completed for the screened TC contaminants.

C.3.1.2.2 Liquid Waste Analysis

Liquid wastes generated at the Facility consist of aqueous solutions, slurries, and organic liquids. The Permittees shall sample and analyze these wastes, if necessary for waste characterization purposes, for total metal content, VOCs, and SVOCs. In accordance with [SW-846](#) Method 1311 (TCLP), liquid wastes (*i.e.*, those wastes that contain less than 0.5 percent dry solids) do not require extraction. The liquid waste, after filtration, is defined as the TCLP extract. Liquid waste, therefore, is characterized by filtering the waste, measuring total contaminant concentrations in the resulting filtrate, and comparing these concentrations to the TC regulatory levels in 40 CFR § 261.24.

The Permittees shall characterize wastes that contain both a liquid and a solid phase using total analytical data for the solid phase to determine toxicity characteristics. The Permittees shall compare with the TC regulatory levels for each phase in a manner consistent with the discussion in Section C.3.1.2.1. The following formula (EPA, 1994b) will be used to calculate the maximum theoretical leachate concentrations for the combined phases:

$$\frac{[A \times B] + [C \times D]}{B + [20 \text{ liters/kilogram} \times D]} = M$$

Where:

- A = concentration of the analyte in the liquid portion of the sample (milligrams/liter);
- B = volume of the liquid portion of the sample (liter);
- C = concentration of the analyte in the solid portion of the sample (milligrams/kilogram);
- D = weight of the solid portion of the sample (kilogram); and
- M = maximum theoretical leachate concentration (milligrams/liter).

C.3.1.2.3 Sample Handling, Preservation, and Storage

Table C-15 presents requirements specified in the most recent version of *SW-846* regarding sample containers, preservation techniques, and holding times associated with sample collection. The Permittees shall adhere to these requirements. In the event the specified criteria are not met, the Permittees shall collect another sample and submit it for analysis.

C.3.1.2.4 Analytical Laboratory Selection and Analytical Methods

The Permittees shall ensure that analytical laboratories at the Facility and approved contractor laboratories conduct the detailed qualitative and quantitative chemical analyses specified in Tables C-16 and C-17. These laboratories must have:

1. a documented and comprehensive QA/QC program;
2. technical analytical expertise;

3. a document control and records management plan; and
4. the capability to perform data reduction, validation, and reporting.

C.3.1.3 Verification Frequencies

The Permittees shall comply with the waste characterization verification procedures identified in Permit Section 2.4.7(3). The Permittees shall place a non-conformance report in the Facility Operating Record if the characterization for the waste stream is found to be inconsistent with the documentation. The Permittees shall decline to accept any waste from the waste stream in issue until the characterization deficiency is remedied.

C.3.2 Mixed Transuranic Waste Characterization

The Permittees characterize MTRUW for the information specified in Permit Section 2.4.1 in accordance with the parameters and methods shown in Tables C-11 and C-18 for management, storage, and treatment at the Facility. Characterization of the hazardous component of MTRUW to be stored and treated at the Facility shall be conducted in accordance with the procedures discussed in the following sections.

Initial characterization of MTRUW for the purpose of storage at the Facility is based primarily on AK (*see* Attachment Section C.3.1.1) with additional procedures applied to confirm the AK. The Permittees shall begin the AK process by reviewing the available generator documentation for the waste stream. This includes process knowledge, any extant analytical data, and the information included with the waste documentation forms associated with the individual waste containers.

The Permittees shall categorize MTRUW streams by Summary Category Groups based on the physical and chemical form of the waste as established by AK. The Permittees shall assign individual waste containers to waste streams based upon AK.

The Permittees shall utilize AK to determine the ~~hazardous waste codes~~ EPA Hazardous Waste Numbers applicable to the waste stream or container under consideration. The Permittees shall utilize AK to determine whether the container requires additional waste management procedures such as secondary containment for liquid waste or segregation of incompatible, ignitable, or reactive wastes. If AK is insufficient to determine needed information (*e.g.*, ignitability), the Permittees shall use headspace gas sampling to provide the needed information.

Until it is determined that a container does not contain free liquids, the Permittees shall manage MTRUW container storage in accordance with regulations and Permit requirements applicable to containers holding free liquids (*i.e.*, with secondary containment and appropriate labeling).

If AK is inadequate to characterize a homogeneous MTRUW stream or container (*e.g.*, homogeneous solids, soil and gravel, aqueous liquids and slurries) the Permittees shall collect a representative sample of the waste and submit the waste for laboratory analysis.

C.3.2.1 Real-Time Radiography

MTRUW containers generated after the effective date of the Permit and that are not wastes taken from retrievable storage after that date are not required to undergo RTR if associated AK documentation contains the information necessary to fully characterize the waste in accordance with Permit Section 2.4.1. Otherwise, all MTRUW containers require RTR prior to storage at the Facility.

RTR is a nondestructive, qualitative, and semi-quantitative assay characterization technique that involves x-ray scanning of waste containers to identify and verify the physical form(s) of waste container contents using appropriate equipment and qualified operators. The Permittees shall use RTR to verify the absence of free liquids, to confirm the physical form of containerized waste, and to document the materials present.

The Permittees shall ensure that during RTR the waste container is scanned while the operator views and permanently records the image from the television screen on audio and videotape. The Permittees shall utilize a radiography data form to document the materials present and all other relevant characterization information about the containerized waste.

The Permittees shall allow only properly trained personnel to operate radiography equipment. Standardized training requirements for radiography operators are based upon existing industry standard training requirements. Operators must requalify at least every two years.

The Permittees shall examine the radiography image produced for evidence of liquids by repetitively moving the container-handling system and searching for evidence of wave motion.

The Permittees may visually examine the contents of a MTRUW container as a substitute to RTR. The Permittees shall ensure that waste characterization determined through visual examination is recorded in the associated waste's AK documentation.

C.3.2.2 Characterization to Meet LDR Requirements

The Permittees shall characterize MTRUW to determine its land disposal restriction status in accordance with Attachment Section C.5.2.

C.3.2.3 WIPP Characterization

Most MTRUW waste at the Facility is destined for disposal at the Waste Isolation Pilot Project (WIPP) in Carlsbad, New Mexico. Therefore, prior to shipment to WIPP, additional characterization to meet WIPP certification procedures will be implemented to meet requirements of the WIPP permit for these wastes. Waste information that is derived from the WIPP waste characterization will be used for Facility MTRUW characterization as additional information for AK.

C.3.2.5 Sample Handling, Preservation, and Storage

Table C-15 presents the most recent *SW-846* requirements regarding sample containers, preservation techniques, and holding times associated with sample collection. The Permittees shall adhere to these requirements to ensure that sampling and analysis meet quality objectives for data.

C.4 OFF-SITE WASTE ACCEPTANCE PROCEDURES

For off-site waste, the Permittees shall require the generator to provide waste characterization documentation equivalent to that prepared by the Permittees for waste generated on site. The Permittees shall review such documentation for completeness and accuracy prior to approving the waste for shipment to the Facility.

The Permittees shall verify that off-site waste documentation, including Uniform Hazardous Waste Manifests and LDR Notification Forms, corresponds to the waste received and its associated characterization documentation.

The Permittees shall physically examine waste shipments upon receipt for correct documentation, correctness and completeness of waste container identification and labeling, and conformance with permitted container types and waste compatibility for storage and segregation, as appropriate. If the Permittees find discrepancies between the wastes received and the manifest or during further characterization find such discrepancies, the Permittees shall notify the Department in accordance with Permit Section 2.4.4. If the Permittees cannot resolve the discrepancies, the waste shall be returned to the generator in accordance with Permit Section 2.4.4.

C.5 SPECIAL PROCEDURAL REQUIREMENTS

Waste management requirements specific to ignitable, reactive, and incompatible waste as well as requirements for compliance with LDR and 40 CFR [Part 264](#) Subparts BB and CC are described below.

C.5.1 Procedures for Ignitable, Reactive, and Incompatible Wastes to be Stored or Treated

The Permittees shall characterize all waste to be stored or treated under this Permit to identify applicable and appropriate classes and divisions contained in 49 CFR § 177.848, which is incorporated herein by reference, and shall label the container or tank to reflect that classification.

C.5.2 Procedures to Ensure Compliance with LDR Requirements

The Permittees shall evaluate all waste streams to identify all applicable underlying hazardous constituents (UHCs) exceeding treatment standards in accordance with 40 CFR § 268.7(a)(1), which is incorporated herein by reference. Waste designated to be disposed of at the Waste Isolation Pilot Plant (WIPP) must undergo characterization to determine whether it is subject to

the land disposal prohibitions, but it is not required to be characterized to determine all applicable underlying hazardous constituents listed in 40 CFR § 268.48.

If waste is to be treated on site to meet the LDR requirements, the Permittees shall comply with the testing and reporting requirements of 40 CFR § 268.7(b), which is incorporated herein by reference. The Permittees shall identify and document before treatment all waste whose treatment goal is to meet the LDR requirements. After treating such waste, the Permittees shall characterize the treated waste or residue to determine whether all treatment standards have been met. The Permittees shall analyze residues from wastes with concentration-based treatment standards by the appropriate methods described in Attachment Section C.3.1.2 to assure that the waste meets applicable treatment standards.

The Permittees shall prepare certifications required by the 40 CFR § 268.7(b), which is incorporated herein by reference, appropriate to formerly characteristic wastes for which all characteristics have been deactivated and all Universal Treatment Standards have been met, formerly characteristic wastes for which all characteristics have been deactivated but not all treatment standards are achieved, and other special certifications as required. The Permittees shall prepare new waste characterization documentation for the treated waste or residue, as appropriate, incorporating the treatment facility paperwork requirements of 40 CFR § 268.7(b) or the generator paperwork requirements of 40 CFR § 268.7(a), which is incorporated herein by reference, if the residue is considered a newly-generated waste

C.5.3 Procedures to Ensure Compliance with Subpart BB Requirements

The Permittees shall comply with 40 CFR Part 264, Subpart BB, as described below, as to equipment at the facility that is subject to specific requirements for test methods and procedures at 40 CFR Part 264 Subpart BB, which is incorporated herein by reference.

C.5.3.1 Requirements for Leak Detection and Monitoring

The Permittees shall ensure that monitoring complies with Reference Method 21 at 40 CFR Part ~~260~~ 60.

The detection instrument shall meet the performance criteria of Reference Method 21. The Permittees shall use Reference Method 21 procedures to calibrate the detection instrument prior to each day it is used. The calibration gases shall be:

1. less than 10 parts per million (ppm) of hydrocarbon in air; and
2. methane or n-hexane mixed with air at approximately, but less than, 10,000 ppm methane or n-hexane.

The Permittees shall measure all potential leak interfaces as close to the interface as possible. For determining compliance with “no detectable emissions” requirements (40 CFR § 264.1054, which is incorporated herein by reference), the Permittees shall meet all of the above requirements as well as the following:

1. background shall be determined pursuant to Reference Method 21; and

ATTACHMENT D
CONTINGENCY PLAN

ATTACHMENT D

GENERAL CONTINGENCY PLAN

This Attachment presents contingency measures applicable to all permitted hazardous or mixed waste management units. The Permittees shall implement the provisions of this Plan and the applicable provisions of Permit Part 2 (*General Facility Conditions*) immediately to minimize hazards whenever there is a fire, explosion, or release of hazardous or mixed waste or hazardous or mixed waste constituents that could threaten human health or the environment.

D.1 HAZARDOUS AND MIXED WASTE EMERGENCY RESPONSE RESOURCES

1. The management of hazardous and mixed waste emergency incidents at the Facility resides within Permittees' Emergency Management Group (EM). During an emergency situation, line management (*i.e.*, the Group Leader of the affected area) works with the Duty Emergency Manager from the EM Group. The Emergency Manager has primary responsibility for managing emergency response operations, directing the Emergency Operations Support Center (EOSC) to make appropriate notifications, and activating the emergency response organizations. The Emergency Manager has authority to assume the role of Incident Commander (IC) during an emergency and typically assumes full responsibility for management of the emergency response operations at the scene. (Personnel from other organizations, such as the Federal Bureau of Investigation or the Los Alamos Fire Department [LAFD], may also assume the role of IC, depending upon the type of emergency and responding organizations.) Additional Facility resources that may provide assistance in an emergency include personnel from health physics, industrial hygiene, environment compliance, emergency response, and radiation protection personnel at the Facility. These personnel as well as other resources are discussed in Attachment Sections D.1.2, D.1.3, and D.1.6 of this Attachment.

2. Laboratory-contracted support services and other agencies shall also be available for assistance during emergencies. These are discussed in Attachment Section D.1.5 and include the contracted services for security and the LAFD. These contracted services, if changed, shall be replaced and/or supplemented with functionally equivalent contracted services required to assume the same duties and responsibilities described in this section. Other outside response agencies are discussed in Section D.1.7 and include the Los Alamos County Police Department (LACPD) and the Los Alamos Medical Center (LAMC). The LACPD and the LAMC each provide assistance under a memorandum of understanding with the U.S. Department of Energy (DOE).

3. The Permittees shall use the Incident Command System (ICS) in response to all emergencies. The ICS is based on the on-scene management structure protocols of the National Incident Management System (NIMS). The NIMS is a national standard that provides consistency in terminology/methodology and allows for an integrated emergency response both locally and nationally, if necessary.

4. The IC (*e.g.*, Duty Emergency Manager) coordinates all groups and agencies responding to the emergency and personnel operating at the scene using the ICS. The ~~ICS response structure~~ General Hazardous Waste Emergency Notification Structure, illustrated on Figure D-1, is designed to expand and contract, as appropriate, to include the response groups/agencies needed to address any particular emergency. The EOSC provides notification to on-site and off-site groups and agencies for both response requests and information.

5. The IC may appoint and utilize a network of support personnel to assess, plan for, and mitigate emergencies. These personnel can include, but are not limited to, a Safety Officer, a Public Information Officer, and a Liaison Officer that report directly to the IC and are responsible for issues related to safety, information, and the interaction of various groups associated with the overall emergency. Also reporting directly to the IC are an Operations Section Chief, Logistics Section Chief, Planning Section Chief, and an Administrative Section Chief. The Operations Section Chief oversees the Fire Branch and the Emergency Medical Services Branch, and is responsible for the actual emergency response. The Logistics Section Chief is responsible for providing support personnel and equipment necessary for the emergency response. The Planning Section Chief is responsible for planning the active mitigation and recovery for the emergency. The Administrative Section Chief is responsible for keeping records of expenditures. These ICS positions are listed in Figure D-1. In some instances, some or all of these positions may be activated, as the emergency warrants. During an emergency at the Facility, assistance may be provided to the IC and the IC's appointees by a large variety of response groups/agencies. The responsibilities and/or assistance available from the various response groups/agencies are listed in Attachment Table D-1 and discussed briefly in Attachment Sections D.1.2 through D.1.7.

6. The Permittees shall provide a copy of this Contingency Plan and any revisions to each of the emergency response groups/agencies (including the LACPD, LAFD, LAMC, and the State of New Mexico's Department of Homeland Security and Emergency Management (DHSEM) Area 3 Emergency Management Coordinator).

D.1.1 Emergency Management Group

1. The Permittees shall delegate the authority and responsibility for administering and implementing the Facility's emergency management program to the Emergency Operations Division, which includes EM personnel. Emergency Operations Division personnel shall coordinate and issue the Facility's Los Alamos National Laboratory and Los Alamos Site Office Hazardous Materials Program Plan, while EM provides response coordination for emergencies. EM provides a 24-hour Emergency Operations Center for the Facility and a 24-hour Duty Emergency Manager to respond to emergencies, including hazardous and mixed waste releases. The Facility Emergency Manager is the functional equivalent of the Emergency Coordinator (40 CFR § 264.55). The EM maintains an Emergency Operations Center (EOC) in a ready condition, should a center be required. The primary EOC is located at TA-69, Building 33 (TA-69-33). An alternate EOC is located at TA-49-113. Should an EOC be activated during an emergency, additional emergency personnel can be requested by the IC through the EOC.

2. Assignment as the Duty (*i.e.*, primary) Emergency Manager is rotated. The Duty Emergency Manager can be reached 24 hours a day by contacting the EOSC at 667-6211.
3. The Duty Emergency Manager will respond to emergency incidents involving the release of hazardous or mixed waste to the environment, including spills, fires, and explosions. With input from the appropriate Facility groups, the Duty Emergency Manager shall initially assess the possible hazards to human health or the environment and, if assuming incident command, shall use whatever response personnel and/or emergency equipment necessary to control and contain the waste. In the event of an emergency, the Emergency Manager typically becomes the IC with full responsibility for field activities. As described previously, the exception to this is when on-site personnel can adequately address the emergency and maintain incident command internally.
4. The Duty Emergency Manager responding to an emergency shall have access to a copy of the appropriate building emergency plan(s) (BEP) for the area in which the incident is occurring. These plans shall be maintained by the facility manager where a waste management unit is located and shall be available at the EOC at TA-69; they are also located on site for use by emergency response personnel. The various response groups shall obtain specific information relating to the facilities involved (including the layout of all affected buildings; the location of evacuation routes, equipment, and personnel; properties of the materials/wastes managed at the facility; and the hazards associated with these materials/wastes) from the BEP(s) and other site-specific information.
5. The Permittees shall ensure that the names, addresses, and telephone numbers listed below are the current Primary and Alternate Emergency Manager.

Primary:

| Brenda Andersen
3926 A Alabama
Los Alamos, NM
(H) 505-662-4173
(W) 505-667-6211
(C) 505-699-1144

D.1.7.2 Los Alamos County Emergency Management Coordinator

Los Alamos County has an agreement with the Facility's EM to provide assistance in certain emergency situations. If an emergency occurs on Facility property that may affect the communities of Los Alamos and White Rock, EM personnel will notify the ~~EDC~~ Los Alamos County Consolidated Dispatch Center ~~who~~ which ~~will~~ in turn will notify the Los Alamos County Emergency Management Coordinator, who will coordinate necessary emergency actions throughout the county.

D.1.7.3 Los Alamos Medical Center

The Facility maintains a fully equipped decontamination room adjacent to the emergency room at LAMC. In the event that a case is sent to LAMC, support for the emergency room staff is provided by Facility occupational medical personnel. Radiation protection, industrial hygiene, and HAZMAT personnel also provide assistance to the emergency room staff; assistance from additional Facility resources is provided, as necessary. Assistance is coordinated through EM personnel.

D.2 EMERGENCY EQUIPMENT AND COMMUNICATIONS

D.2.1 Emergency Equipment

The Permittees shall make available the lists of emergency equipment listed in Table D-2 for use at any of Permittees' hazardous or mixed waste management units. The list includes emergency equipment available in the HAZMAT vehicles and trailers as well as supplemental emergency equipment maintained by the LACFD, ~~KSL~~ Maintenance Site Services, and occupational medicine personnel. A list of emergency equipment available for use at specific hazardous and/or mixed waste management units is identified in Attachment Tables TA-3, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4. Emergency equipment listed in these tables may be replaced and/or upgraded with functionally equivalent components and equipment, as necessary, for routine maintenance and repair.

D.2.2 Emergency Communications

The initial phase of an emergency may involve a small number of individuals at the affected area, require notification of the Duty Emergency Manager, and utilize local communication equipment and/or systems. When responding to hazardous and/or mixed waste emergencies, the Permittees shall ensure that EM personnel can provide communications between response units and emergency organizations.

D.2.2.1 Fire Alarms

Fire alarms are monitored 24 hours per day by trained personnel. Both the primary and backup buildings where the monitoring takes place have emergency power systems. The Duty

Emergency Manager is notified when there is confirmed fire or smoke via the Los Alamos County Consolidated Dispatch Center.

D.2.2.2 Power Dispatch

The Permittees shall maintain the Power Dispatch facility 24 hours a day. Alarms at this facility are connected to Facility experiments, equipment, and/or buildings to record outages and hazardous conditions. Any conditions that activate these alarms shall be reported immediately to the building management or to the CAS-Los Alamos County Consolidated Dispatch Center operator for notification and response.

D.2.2.3 Additional Communication Systems

Internal communication systems at the Facility include:

1. Preprogrammed telephone system
 2. Private telephone lines
 3. A variety of frequency modulated very high frequency simplex repeater systems, including:
 - Multiple base stations
 - Mobile and hand-held units
 - Links to New Mexico public safety agencies
 4. An ultrahigh frequency radio system, including:
 - Multiple antenna sites
 - Mobile and base units
 - Links with the LACPD, the LAFD, and the State Medical System
 5. A 400-megahertz trunked radio system that includes a link with the LAFD
 6. Transmission and reception (through the EOC) for:
 - Secure telephone
 - Secure fax
 - Secure still video
 - Secure videoconference system (to all DOE EOCs and DOE Headquarters)
 7. Access to all radio systems outlined above (through the EOC).
2. Off-site communications with federal, state, tribal, county, and other agencies are available through the following:
1. A preprogrammed telephone system
 2. Private telephone lines
 3. Two NAWAS stations
3. The Permittees' EOC, maintained by EM personnel, operates radio systems on key Facility and off-site channels. Emergency personnel responding to on-site incidents have the benefit of wide-area radio coverage using EOC facilities. The Duty Emergency Manager is responsible for activating whatever support personnel, equipment, or services are needed 24 hours a day.

D.3 CONTINGENCY PLAN IMPLEMENTATION

The following sections discuss requirements used to implement this Plan, emergency notification, emergency manager actions, and actions to be taken in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents into the environment at the Facility.

D.3.1 Requirements for Implementation

1. The decision to implement this Plan depends upon whether an emergency exists, which for the purposes of this section is defined as an imminent or actual incident arising from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents that could threaten human health or the environment. The Duty Emergency Manager or IC will use the guidelines listed below to decide whether to implement this Plan. The Permittees shall investigate all adverse environmental, safety, health, and operational occurrences (on-site and off-site) resulting in implementation of the contingency plan to determine ~~to~~ causal factors and identify the appropriate corrective actions.
2. This Plan shall be implemented immediately in the following situations involving releases or potential releases of hazardous or mixed waste:
 1. Spills:
 - If a hazardous or mixed waste spill cannot be contained with secondary containment or application of sorbents
 - If a hazardous or mixed waste spill causes the release of flammable material, creating a fire or explosion hazard
 - If a hazardous or mixed waste spill results in toxic fumes that threaten human health
 2. Explosions:
 - If an unplanned explosion involving hazardous or mixed waste occurs
 - If an imminent danger of an explosion involving hazardous or mixed waste exists.
 3. Fires:
 - If a fire involving hazardous or mixed waste occurs
 - If any building, grass, forest, or nonhazardous waste fire exists that threatens to volatilize or ignite hazardous or mixed waste.
 4. Other Acts of Force Majeure
 - If an earthquake or other natural disaster threatens containment integrity, including precipitation that threatens to move spilled material off site.

D.3.2 Emergency Notification

1. Emergency notification requires immediate notification of 667-6211 or EM personnel upon discovery of an imminent or actual incident involving hazardous and/or mixed waste. During nonworking hours, personnel will report all imminent or actual incidents involving hazardous and/or mixed waste to the Emergency Manager at 667-6211. In the case of fire, notification of these individuals is superseded by the Facility fire alarm system. A fire is reported by dialing 911, activating automatic alarms, or activating a fire alarm pull box. All fire alarms alert the Los

Alamos County Consolidated Dispatch Center, who contact the LAFD and the Duty Emergency Manager.

2. Upon recognition of a hazardous or mixed waste emergency, the first arriving emergency-trained person will become the Facility Command Leader. Once EM personnel are notified of the emergency, the Duty Emergency Manager will proceed to the scene and be briefed by the Facility Command Leader, building/area personnel, and/or other emergency units/teams. The Emergency Manager will then assume the position of IC. If necessary, the IC may recommend that the EOC be activated and that the necessary members of the emergency management team be determined. The IC will form an ICS and contact the Emergency Operations Support Center. The EOOSC will notify the appropriate emergency response groups. The IC may determine from the list of response groups described in Table D-1 which groups to contact in an emergency. Each response group maintains an on-call person and/or a call-down procedure to respond to emergencies.

3. EM personnel shall be notified of any potential hazardous or mixed waste emergency. The IC will use whatever means are available (including the assistance of other response groups, computer data searches, and sampling) to determine if a hazardous or mixed waste emergency exists.

4. The Facility Emergency Manager or his or her designee shall make best efforts to timely communicate the nature ~~or of~~ the emergency and the hazards that may be present to any outside response agency whose assistance may be provided.

D.3.3 Emergency Manager Actions

1. Upon notification of an emergency incident, the Duty Emergency Manager may:

1. Make an initial assessment of the incident and, in conjunction with the IC, obtain resources to determine the source, quantities, and types of hazardous and/or mixed waste involved and the areal extent of any released materials.
2. Request resources needed and have EOC staff begin notifications.
3. Proceed directly to the scene.
4. Assess the nature of the incident (*e.g.*, through communication with the IC).
5. Assume incident command after a direct briefing with the Facility Command Leader.
6. Based on the guidelines in Attachment Section D.3.1 of this Plan, determine if implementation of this Plan is warranted.
7. Activate the EOC, if necessary.

2. Upon deciding to implement this Plan, the IC will, when appropriate:

1. Assess the hazards to human health and the environment, including both direct and indirect effects, such as generation of toxic, irritating, or asphyxiating gases and/or hazards of runoff of water or chemicals used for fire suppression. An individual designated by the IC will use the guidelines in Section D.3.1 to assess the hazards to human health and the environment. If any of the criteria under Section D.3.1 are met

TA-3
ATTACHMENT D
CONTINGENCY PLAN

Specific information on emergency response resources and release prevention/mitigation at TA-3 is provided below.

The CMR Building at the Facility has a facility-specific Emergency Management Plan (EMP) to ensure that emergency planning and preparedness for the CMR Building are commensurate with the facility and the nature of work performed there and to provide sufficient subject matter experts at the facility, should an emergency occur.

The EMP establishes the CMR Facility Emergency Response Organization, which is comprised of a facility Emergency Response Team (ERT), Facility Incident Command (FIC), and the CMR Operations Center. The CMR ERT is a 15 - 20 member group of volunteer facility personnel trained to provide initial response to emergencies. The FIC is comprised of division and line managers and key personnel who respond to pre-designated locations for the purpose of initial command and control of events that occur ~~at~~ during CMR Building emergencies. The CMR Operations Center is the emergency communications focal point and has the responsibility of development and maintenance of alarm response instructions, notification lists, and call-out lists. When mitigation of the emergency is beyond the capabilities of CMR or when injuries occur or could potentially occur due to the emergency, EM is required to respond.

“The CMR Facility Emergency Management Plan Training for CMR Workers” (LANL, 1999), includes information on emergency equipment (*see* Table D-1 of this Attachment Section); evacuation routes and primary and secondary evacuation assembly areas; and evacuation procedures for the FIC, persons wearing anti-C clothing, and persons in non-anti-C clothing. The CMR EMP also includes emergency categorization, lists of potential facility emergencies, their associated alarms, and the appropriate response to the emergency and/or the alarms. Evacuation routes, evacuation area locations, and emergency equipment are subject to change.

REFERENCES

LANL, 1999, “The CMR Facility Emergency Management Plan Training for CMR Workers,” Los Alamos National Laboratory, Los Alamos, New Mexico

LANL, 1998, “Los Alamos National Laboratory General Part B Permit Application,” Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

TA-50
ATTACHMENT D
CONTINGENCY PLAN

Specific information on emergency response resources and release prevention/mitigation at TA-50 is provided below.

Emergency equipment currently available for use at TA-50 CSUs are included in Table D-1 below. A list of emergency equipment (including spill equipment) available from the Emergency Management Group is presented in Table D-1 in this Attachment.

Hazardous and mixed waste spills are managed by type and severity of the incident. If a hazardous/mixed waste spill occurs, the Incident Commander evaluates the type and severity of the spill and determines if assistance from the Facility's Emergency Management Group personnel is required. If not, the spill is managed internally by TA-50 personnel.

REFERENCES

LANL, 1998, "Los Alamos National Laboratory General Part B Permit Application," Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2002, "Los Alamos National Laboratory Technical Area 50 Part B Permit Renewal Application", Revision 3.0, August 2002, LA-UR-02-4739, Los Alamos National Laboratory, Los Alamos, New Mexico

ATTACHMENT E
INSPECTION PLAN

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LIST OF FIGURES

FIGURE NO.

TITLE

E-1

Hazardous ~~and Mixed~~ Waste Facility Inspection Record Form

ATTACHMENT E

INSPECTION PLAN

This Attachment presents inspection requirements applicable to all hazardous or mixed waste management units (permitted units) at Los Alamos National Laboratory (LANL). Inspection schedules for the units have been developed to identify equipment malfunctions and deterioration, operator errors, and discharges that might cause or lead to a release of hazardous or mixed waste and pose a threat to human health and the environment.

The Permittees shall conduct Inspections at the schedule specified herein to identify problems in time to correct them before they harm human health or the environment. Inspection schedules or methods may differ at certain waste management units based upon worker safety issues or the nature of the safety and emergency equipment.

E.1 GENERAL INSPECTION SCHEDULES AND REQUIREMENTS

The Permittees shall follow this Inspection Plan for the inspection of monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are important to preventing, detecting, and responding to environmental or human health hazards. Inspections may be conducted at any time during the applicable day or week, as specified in the inspection schedule.

A copy of this Inspection Plan, which includes inspection schedules, shall be maintained by the Permittees' hazardous waste compliance personnel and by the site operator (*i.e.*, the division or operating group that is responsible for or manages the permitted unit), as required in Permit Section ~~2.12.2~~ 2.6.

The Permittees shall follow the inspection schedules outlining the items to be addressed on the Permittees' Hazardous Waste Facility Inspection Record Form (IRF) and inspection frequencies for the unit types provided in this Attachment's Sections E.2 through E.8, and in TA-specific Attachment E sections. The IRF and instructions for its completion are provided at the end of this Attachment Section; the form may be supplemented, changed, or otherwise replaced through a permit modification pursuant to 40 CFR § 270.42(a). The IRF lists the items to be inspected.

E.1.1 Inspection Records

The Permittees shall insure that permitted unit personnel conduct inspections and record the information on IRFs or equivalent forms. The Permittees shall retain inspection records until closure of the associated permitted unit. The Permittees shall maintain an electronic version of the records through the closure or post-closure periods dependent upon the type of facility. The Permittees shall make inspection records available for review in the event that the Department or the U.S. Environmental Protection Agency inspects the facility for compliance with inspection requirements.

The IRF encompasses requirements for permitted hazardous and mixed waste management units, and additional requirements directed by the Permittees' policy. Instructions included with the IRF provide specific guidance for each inspection item listed.

The Permittees shall complete the IRF or equivalent form according to the daily and/or weekly schedules provided in Attachment Sections E.2 through E.8. The Permittees ~~shall~~ may conduct and record inspections in Parts I and II of the IRF for each working day or week that waste is opened, moved, received, stored, treated, removed, or remains open, as appropriate. The Permittees shall use other records, such as a memo to file, to document a condition of "No Use" at a unit.

For every item requiring inspection, the Permittees shall enter a response indicating the condition of each item in the column under the appropriate day of the week. Responses may include "OK," "NA" (Not Applicable), or "AR" (Action Required). If the response is AR, the Permittees shall note the action required in Part II of the IRF. If more than one AR is listed, the Permittees shall number the ARs. The Permittees shall identify and number all ARs, even if corrected immediately by the inspector. If inspection results indicate that corrective measures are warranted, the Permittees shall record any and all actions taken (along with time, date, and other pertinent information) in Part II of the IRF and shall note the AR on all subsequent IRFs until corrective measures are completed. When corrective measures have been completed and recorded on an IRF, the Permittees shall enter an "OK" in the "Condition" column on the IRF.

The Permittees shall conduct and document monthly inspections of the items listed below to ensure that the equipment is fully functional for its intended purpose:

1. evacuation alarms;
2. ventilation alarms;
3. fire alarms; and
4. fire pumps.

E.1.2 Actions Resulting from Inspections

If the Permittees discover any defects, deterioration, operator errors, discharges, or potential hazards during an inspection, the Permittees shall complete appropriate corrective measures (*e.g.*, transfer of waste from a defective container to an appropriate container in good condition, repair or replacement of nonfunctioning equipment and/or systems, or removal of any accumulated liquids) promptly so that the problem does not lead to an environmental or human health hazard. The Permittees shall note any action taken in response to an inspection on the IRF or IRF documentation.

If a hazardous condition is imminent or has already occurred, the Permittees shall assess the condition immediately and follow up with appropriate remedial action. If this assessment indicates that human health or the environment may be or may have been adversely affected, the Permittees may implement Permit Attachment D, (*Contingency Plan*). In any case, the Permittees shall document the remedial action that is required and is taken.

E.7 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPART BB REQUIREMENTS

The Permittees shall inspect units subject to 40 CFR Part 264, Subpart BB, according to the schedule and procedures provided below

E.7.1 Requirements for Pumps in Light Liquid Service

1. The Permittees shall perform leak detection monitoring monthly using Reference Method 21 in 40 CFR Part 60.
2. The Permittees shall perform visual inspection for liquids dripping from the pump seal each week.
3. If a leak is detected, the Permittees shall initiate repairs no later than within 5 days and complete them as soon as possible, but no later than 15 days.
4. A delay of repair is allowed if the repair is technically infeasible without shutting down the unit, and/or if the leaking equipment is isolated from the unit and does not contain or contact hazardous waste with greater than or equal to 10% by weight organics.

E.7.2 Requirements for Pressure Relief Devices In Gas/Vapor Service

1. The Permittees shall measure and monitor devices to ensure that they are operated with no detectable emissions (less than 500 parts per million (ppm) above background) using Reference Method 21 in 40 CFR Part 60.
2. The Permittees shall perform measurement and monitoring as soon as practicable, but no later than 5 days after a pressure release.
3. A delay of repair is allowed if the repair is technically infeasible without shutting down the unit, or if the leaking equipment is isolated from the unit and does not contain or contact hazardous waste with greater than or equal to 10% by weight organics.

E.7.3 Requirements for Open-ended Valves or Lines

1. The Permittees shall ensure that open-ended valves or lines are equipped with a cap, blind flange, or plug.
2. The Permittees shall ensure that all caps, blind flanges, or plugs are sealed except during operations requiring movement of hazardous waste through the open-ended valve or line.

E.7.4 Requirements for Valves in Gas/Vapor or Light Liquid Service

The Permittees shall perform leak detection monitoring monthly using Reference Method 21 in 40 CFR Part 60. If no leaks are detected for two successive months, monitoring frequency may be changed to the first month of every succeeding quarter unless a leak is detected. Should that occur, monitoring frequency shall return to monthly until no leaks are detected for two successive months.

Alternatively, and following notification to the Department, if 2% or fewer valves are found to be leaking after two consecutive quarters, monitoring frequency may be changed to once every six months. If 2% or fewer valves are found to be leaking after five consecutive quarters, monitoring frequency may be changed to annually. Should the percentage of leaking valves exceed 2%, the Permittees shall perform monitoring monthly.

Alternatively, and following notification to the Department, no more than 2% of valves may be allowed to leak if the Permittees conduct performance testing pursuant to [40 CFR § 264.1061](#) initially, annually, and upon the Department's request to ensure that the leak percentage is being met. Should use of this alternative discontinue, the Permittees shall notify the Department within 15 days.

If a leak is detected, the Permittees shall initiate repair(s) no later than within 5 days and complete them as soon as possible, but no later than 15 days. A delay of repair is allowed if the repair is technically infeasible without shutting down the unit, if the leaking equipment is isolated from the unit and does not contain or contact hazardous waste with greater than or equal to 10% by weight organics, if purged emissions from immediate repair would exceed emissions from delaying repair, or if insufficient valve repair supplies exist although adequately stocked normally and the next unit shutdown is within 6 months.

E.7.5 Requirements for Pressure Relief Devices in Light Liquid Service, Flanges and Other Connectors

The Permittees shall conduct monitoring within 5 days of identifying a potential leak by visual, audible, olfactory, or other method. If a leak is detected by an instrument reading of 10,000 ppm or greater, the Permittees shall initiate repairs within 5 days and complete them as soon as possible, but no later than 15 days. No monitoring is required for inaccessible, glass, or glass-lined connectors.

E.8 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPART CC REQUIREMENTS

The Permittees shall inspect units subject to 40 CFR Part 264, Subpart CC, according to the schedule and procedures provided below.

Container Levels that may be present at the storage areas are defined as follows:

Container Level 1- The volume of the container in direct contact with waste is greater than 0.1m^3 and less than or equal to 0.46m^3 , or the volume of the container is greater than 0.46m^3 and not in light material service. The container must also be either: (1) compliant with the applicable Department of Transportation (DOT) regulations (40 CFR § 264.1086(f)); (2) equipped with a cover and closure devices that form a continuous barrier so that, when closed, no visible holes, gaps, or open spaces into the interior of the container are evident; or (3) an open-top container with an organic vapor suppressing barrier that precludes exposure of waste to the atmosphere.

Container Level 2- The volume of the container in direct contact with waste is greater than 0.46m^3 and is in light material service. The container also must be either: (1) compliant with the

Part I

Weekly and daily inspection of TSDs will be conducted in accordance with the inspection plan in most recent Los Alamos National Laboratory (LANL) General Part B Permit Application or the LANL Hazardous Waste Facility Permit, as appropriate. Not all items in this section will apply to all facilities. An “NA” (not applicable) is required if the item does not apply. Facilities may shade parts of the form to indicate items that need to be completed only on a weekly basis. Holidays and Laboratory closures can also be noted (e.g., by writing “H” (for holidays) or “Closed” in the first box and drawing a line all the way down the page).

1. Location information, including TA, building, room (if applicable), and any other location descriptors that may be necessary (e.g., TA-59-3-114 or TA-59-1-S, Dock).
2. A site identification number is assigned to every facility by the Resource Conservation and Recovery Act (RCRA) compliance personnel. This allows for ease in identification.
3. Start date of Monday for the week of record.
4. End date of Sunday for the week of record.
5. Check the appropriate box for the type of operation. Several boxes may be checked, if necessary, for those locations where inspections are combined on a single sheet. You must have prior approval from RCRA compliance personnel to combine inspections for more than one unit.
6. For container storage units only – “NO USE” may be checked (or marked “OK”) if waste was not stored at the unit for the week in question. When this box is checked, the individual responsible for the inspection must only complete this box, the items related to site location (Items 1-5), and the inspector name section for that week (Items 29-31). If any hazardous or mixed waste is subsequently placed at the site for any reason, a full inspection must be performed immediately and then subsequently according to the appropriate inspection plan.
7.
 - a. At a container storage unit if waste is in storage but no waste is handled at the unit for the week– “NO WASTE HANDLING” may be checked, but a weekly inspection in accordance with the appropriate inspection plan must be conducted.
 - b. If a treatment unit is not conducting treatment for the week – “NO WASTE HANDLING” may be checked, but a weekly inspection in accordance with the appropriate inspection plan must be conducted.
 - c. For a tank storage system unit, if no waste is being stored and the tank system is empty, “NO WASTE HANDLING” may be checked. However, a weekly inspection in accordance with the appropriate inspection plan must be conducted.
8. Communication equipment must be inspected in order to ensure availability and proper operating condition for each piece of equipment (e.g., telephones, radios, and alarms). Equipment must be present in accordance with the appropriate contingency plan.
9. Required signs must be legible and prominently posted in accordance with 40 CFR § 264.14(c) and/or the permit as applicable. Signs at large outdoor storage areas will be inspected no less than two times per year to evaluate for deterioration.
10. Site security must be verified. Items such as fences, gates, locks, and other access control equipment (as appropriate) should be checked for proper operating condition or mitigative measures.

TA-55
ATTACHMENT E
INSPECTION PLAN

This Attachment Section presents additional inspection requirements applicable to the waste management units at Technical Area (TA) 55. The Permittees shall conduct inspections at the frequency specified in the General Inspection Section to identify problems in time to correct them before they harm human health or the environment.

The Permittees shall perform daily inspections on separate forms for the fences at TA-55 ~~and shall document them on separate forms.~~

E.1 TA-55 VAULT

The Vault is a container storage unit (CSU) located in the basement at TA-55-4 and waste containers in the Vault shall only contain mixed waste. The following inspection requirements are applicable to those rooms in the Vault that store mixed waste.

E.1.1 Non-Intrusive Inspection Systems

Inspection requirements are satisfied in part by the use of continuous air monitors (CAM) located in each individual storage room within the Vault to continuously monitor airborne radioactivity levels. If a problem with a container is identified by a CAM, the Permittees shall remove that container from the Vault and inspect it in an open-front hood.

The Permittees shall ensure that information obtained during inspections and all container transfers are noted on the Vault Traffic Log Book maintained at TA-55. The Permittees shall inspect the Vault Traffic Log Book weekly to verify receipt or transfer of mixed waste from the Vault. If mixed waste is not currently being stored in the Vault and the weekly inspection indicates that no mixed waste has been received, the Permittees shall mark the Inspection Record Form (IRF) "No Use" and complete it according to the IRF instructions.

E.1.2 Intrusive Inspection Procedures

The Permittees shall ensure that the central hallway of the Vault is inspected weekly when mixed waste is in storage. The Permittees shall inspect and note the following items in weekly inspections:

1. Vault Traffic Log Book (inspected for receipt or transfer of waste)
2. Communications equipment
3. Warning signs
4. Security
5. Work surfaces and floors in central corridor
6. Spill and fire equipment
7. Secondary containment
8. (Un)loading area

E.2.2 Weekly

The Permittees shall inspect storage tank system components weekly for the following items, as applicable:

1. Warning signs
2. Work surfaces and floors
3. Secondary containment structures
4. Covers and lids of tanks
5. Labels
6. Structural integrity of tanks and ancillary equipment
7. (Un)loading areas
8. All portions of tank systems to detect corrosion or releases of waste and to detect any possible malfunctions to overflow/spill control equipment, tank monitoring, and leak detection systems and data from these systems
9. Proper operating condition of tank

E.3 STABILIZATION UNIT

The Permittees shall inspect the stabilization unit located at TA-55-4, Room 401 according to the schedule provided below.

E.3.1 Daily (During Operation)

The Permittees shall inspect the stabilization unit each operating day (*i.e.*, when mixed waste is treated in the unit). In the daily inspection of the stabilization unit, the Permittees shall inspect the following items, as applicable:

1. Work surfaces and floors
2. Secondary containment structures
3. Labels
4. Structural integrity of cementation unit
5. (Un)loading area
6. Communication equipment

EE.3.2 Weekly

The Permittees shall inspect the stabilization unit weekly for the following items, as applicable:

1. Warning signs
2. Work surfaces and floors
3. Secondary containment structure
4. Labels
5. Structural integrity of cementation unit
6. (Un)loading area
7. Communication equipment

ATTACHMENT F
PERSONNEL TRAINING PLAN

Specialized training shall be given to personnel assigned special functions or specific emergency duties. For example, emergency response personnel are required to attend training on the implementation of Attachment D (*Contingency Plan*), spill response, and Occupational Safety and Health Administration emergency response provisions. The EM&R Office shall provide training related to implementing LANL's EMP. In addition, permitted unit waste management and handling personnel shall participate in a training program in which they are instructed in emergency procedures pertinent to their work areas. The operating group is responsible for providing this site-specific instruction, which shall also include walk-throughs of the areas covered by the Contingency Plan.

F.4 IMPLEMENTATION OF TRAINING PROGRAMS

Waste Generation Overview Live is an introductory course that provides an overview of federal and state waste management regulations and Facility policies and procedures for waste management operations. The training addresses the information needed to identify and properly manage wastes that are subject to hazardous waste regulations in 40 CFR Parts 261, 264, and 268. Course topics include waste characterization and classification including identification of RCRA waste types and their determination, the information needed to characterize the wastes, and the documentation requirements for proper management of the wastes.

In addition, all permitted unit workers who handle hazardous and/or mixed waste are required to complete RCRA Personnel Training and annual RCRA refresher courses. These refresher courses update personnel on LANL procedures and changes in hazardous waste regulations and ~~to~~ provide them with an overview of their introductory training. Line managers and group leaders shall be responsible for ensuring that personnel participate in the appropriate introductory and annual training courses.

ATTACHMENT G.4
TECHNICAL AREA 50, BUILDING 69
INDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

**Table G.4-1
 Hazardous Waste Constituents of Concern in Technical Area 50, Building 69 Indoor Container
 Storage Unit**

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Metals	D004, D005, D006, D007, D008, D009, D010, D011	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver,
Organic Compounds	D018, D019, D021, D022, D026, D027, D028, D029, D030, D035, D036, D037, D038, D039, D040, D043 F001, F002, F003, F004, F005	Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, Cresol, 1,4-Dichlorobenzene, 1,2-Dichloroethylene, 2,4-Dinitrotoluene, Methyl ethyl ketone, Nitrobenzene, Pentachlorophenol, Pyridine, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride Acetone, Methyl ethyl ketone, , Methylene Chloride, Toluene, MIBK, DBCP, Tetrachloroethylene, 1,1,1-trichloroethane, Chlorinated Fluorocarbons, 1,1,2- Trichloro-1,1,2-Trifluoroethane, Ortho-dichlorobenzene, Trichlorofluoromethane, 1,1,2-Trichloroethane, Xylene, Ethyl acetate, Ethyl benzene, Ethyl ether, n-Butyl alcohol, Cyclohexanone, Methanol, Cresols, Cresylic acid, Nitrobenzene, Carbon disulfide, Isobutanol, Pyridine, 2-ethoxyethanol, 2-nitropropane

^a Based on the permitted unit's Operating Record

MIBK = methyl isobutyl ketone or 4-methyl-2-pentanone

DBCP = 1,2-dibromo-3-chloropropane

**Table G.4-2
 Closure Schedule for the Technical Area 50, Building 69, Indoor Container Storage Unit**

Activity	Maximum Time Required
Notify the Department of intent to close.	-45 Days
Final receipt of waste.	Day 0
Complete waste removal.	Day 90
Complete records review and structural assessment.	10 days after completed waste removal or 100 days after final receipt of waste
Complete all closure activities and submit final closure certification report to the Department.	Day 180

ATTACHMENT G.5
TECHNICAL AREA 50, BUILDING 69
OUTDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the outdoor hazardous waste container storage unit at the Technical Area 50, Building 69 (TA-50-69) Outdoor Pad at the Los Alamos National Laboratory (Facility), hereinafter referred to as the permitted unit. The information provided in this closure plan addresses the closure requirements specified in Permit Part 9 and the Code of Federal Regulations (CFR), Title 40, Part 264 Subparts G and I for hazardous waste management units at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

Until closure is complete and has been certified in accordance with Permit Section 9.5, a copy of the approved closure plan or the hazardous waste facility permit containing the plan, any approved revisions, and closure activity documentation associated with the closure will be on file with hazardous waste compliance personnel at the Facility and at the U.S. Department of Energy (DOE) Los Alamos Site Office. Prior to closure of the permitted unit, this closure plan may be amended in accordance with Permit Section 9.4.8, as necessary and appropriate, to provide updated sampling and analysis plans and to incorporate updated decontamination technologies. Amended closure plans shall be submitted to the New Mexico Environment Department (Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF UNIT TO BE CLOSED

A specific description of the permitted unit can be found in Permit Attachment A (*Technical Area Unit Descriptions*). Additional features and equipment located at the permitted unit and not discussed elsewhere in the Permit are described below.

The permitted unit is located outside in the southwest corner of TA-50-69 (*see* Figure G.5-1). It consists of a four inch thick, rectangular-shaped, asphalt pad measuring 90 ft long by 24 ft wide. Hazardous waste storage has occurred on the permitted unit and in the two transportainers (75 and ~~184~~ 194) situated on the permitted unit. Each transportainer is anchored by concrete blocks at either end of the pad and each measure eight feet (ft) wide by 40 ft long and 8.5 ft high. The unit is sloped gently (1% to 5% slope) to the south-southeast draining towards the south fence along a gravel/soil/sediment berm. The berm provides drainage for precipitation and is elevated approximately six to eight inches above-ground level in an easterly direction.

The waste stored at the permitted unit consists of hazardous and mixed waste in both solid and liquid form. The permitted unit was constructed and began managing waste in 1982; it has been subject to waste management regulations under RCRA since July 25, 1990. The wastes stored include corrosive liquids, sludge, debris, and chemical wastes with metals and volatile and semi-volatile organic constituents. Permit Part 3 (*Storage in Containers*), Permit Attachment A (*Technical Area Unit Descriptions*), Permit Attachment B (*Part A Application*), and Permit Attachment C (*Waste Analysis Plan*) include information about hazardous waste management procedures and hazardous waste constituents stored at the permitted unit.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

Approximately 1,999 cubic meters (528,000 gallons) of waste has been stored at the permitted unit. Throughout the life of this Permit, it is estimated that an additional 4,330 cubic meters (1,144,000 gallons) of waste will be stored.

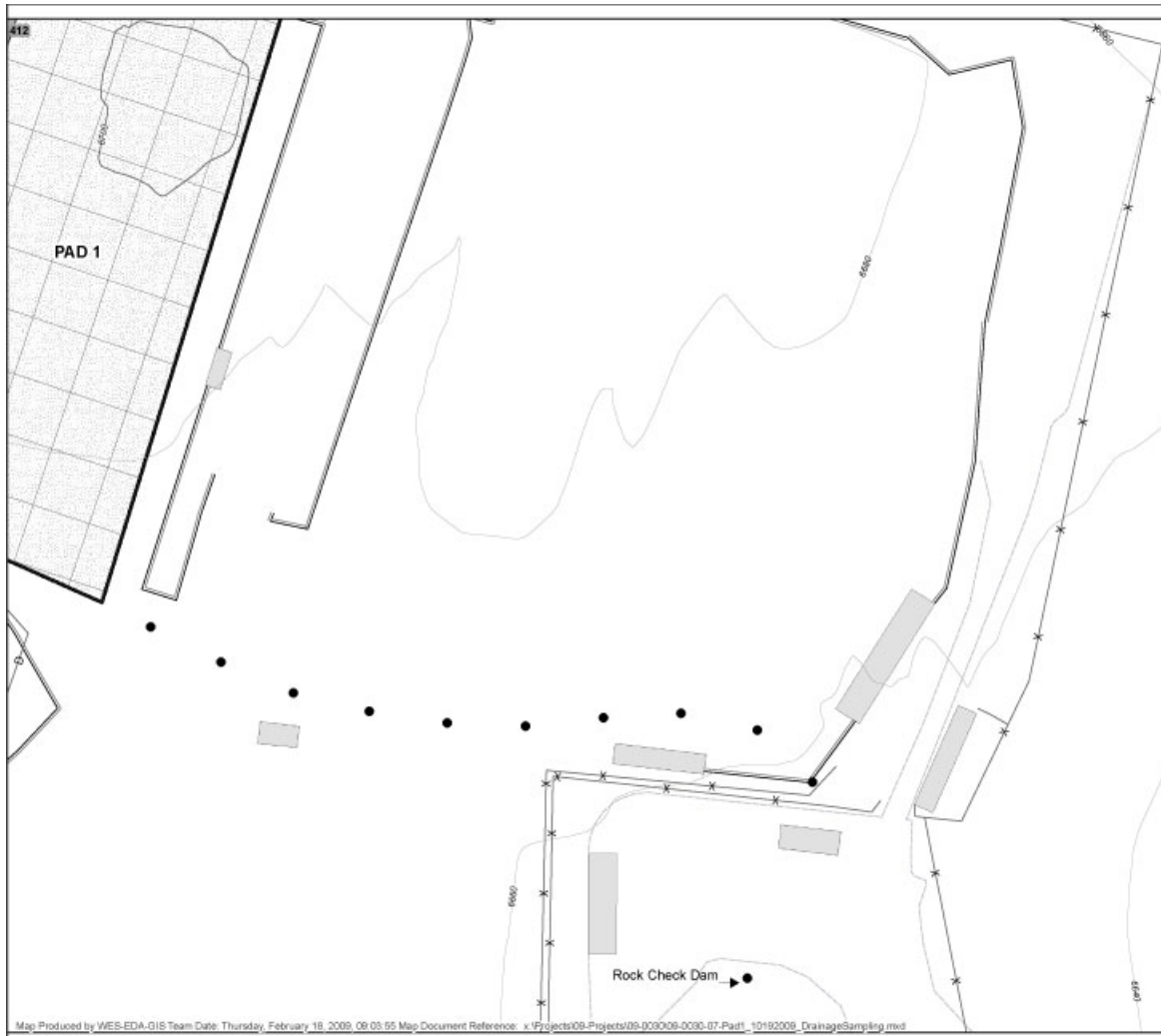
**Table G.5-1
 Hazardous Waste Constituents of Concern at the Technical Area 50, Building 69, Outdoor
 Container Storage Unit^a**

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Metals	D004, D005, D006, D007, D008, D009, D010, D011	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver,
Organic Compounds	D018, D019, D021, D022, D026, D027, D028, D029, D030, D035, D036, D037, D038, D039, D040, D043 F001, F002, F003, F004, F005	Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, Cresol, 1,4-Dichlorobenzene, 1,2-Dichloroethylene, 2,4-Dinitrotoluene, Methyl ethyl ketone, Nitrobenzene, Pentachlorophenol, Pyridine, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride Acetone, Methyl ethyl ketone, Methylene Chloride, Toluene, MIBK, DBCP, Tetrachloroethylene, 1,1,1-trichloroethane, Chlorinated Fluorocarbons, 1,1,2-trichloro-1,1,2-trifluoroethane, ortho-dichlorobenzene, Trichlorofluoromethane, 1,1,2-trichloroethane, Xylene, Ethyl acetate, Ethyl benzene, Ethyl ether, n-butyl alcohol, Cyclohexanone, Methanol, Cresols, Cresylic acid, Nitrobenzene, Carbon disulfide, Isobutanol, Pyridine, 2-ethoxyethanol, 2-nitropropane

^a Based on the unit Operating Record
MIBK = methyl isobutyl ketone or 4-methyl-2-pentanone
DBCP=1,2-dibromo-3-chloropropane

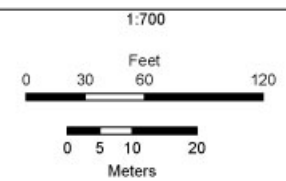
ATTACHMENT G.6
TECHNICAL AREA 54, AREA G, PAD 1
OUTDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

Permitted Unit Soil Sampling



Legend

- Buildings/Structures (not associated with the permitted unit)
- RCRA Waste Management Units (RWMU) Category**
- RWMU
- Structure
- Sample grid (cell size = 900 sqft)
- Fire Protection Drain Lines
- Contours, 100 ft
- Contours, 20 ft
- Roads, paved
- Roads, dirt
- Fences
- Additional Sample Locations



State Plane Coordinate System New Mexico, Central Zone, US Feet
 NAD 1983 Datum

DISCLAIMER: This map was created for work processes associated with the LANL Hazardous Waste Facility Permit. All other uses for this map should be confirmed with the LANL ENV Division, Water Quality & RCRA.

DataSources:

Path	Name	Date Accessed	Published Date
c:\Projects\09-projects\09-0030\09-0030-Pad1_SampGrid\09_Py_Clip1.shp	Sampling grid cell size = 900 sqft	20-Apr-08	20-Apr-08
g:\g1\GIS\LANL_cantour_100_100_arc	Contours, 100 ft	20-Apr-08	1991
g:\g1\GIS\LANL_cantour_20_20_arc	Contours, 20 ft	20-Apr-08	1991
v:\env\FWMD_data\KSL_garred_01b_01\020801019	Roads, paved	20-Apr-08	5-Jan-2004
v:\env\FWMD_data\KSL_gar_01b_01\020801019	Roads, dirt	20-Apr-08	15-Oct-08
v:\env\FWMD_data\KSL_fence_01c_01\020801019	Fences	20-Apr-08	15-Oct-08
c:\Projects\09-projects\09-0030\09-0030-Pad1_Buildings\09-0030\09-0030	Pad 1 Buildings	20-Apr-08	15-Oct-08
v:\env\FWMD_data\KSL_structures_01c_01\020801019	Buildings/Structures	20-Apr-08	2008
v:\env\FWMD_data\KSL_structures_01c_01\020801019	RCRA waste management units	20-Apr-08	20-Apr-08
c:\Projects\09-projects\09-0030\09-0030-Pad1.shp	Pad 1	20-Apr-08	20-Apr-08

Map Produced by WES-EDA-GIS Team Date: Thursday, February 18, 2009, 09:03:55 Map Document Reference: x:\Projects\09-Projects\09-0030\09-0030-07-Pad1_10182009_DrainageSampling.mxd

ATTACHMENT G.8
TECHNICAL AREA 54, AREA G, PAD 5
OUTDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the outdoor hazardous waste container storage unit at Technical Area (TA)-54, Area G, Pad 5 at the Los Alamos National Laboratory (Facility), hereinafter referred to as the permitted unit. The information provided in this closure plan addresses the closure requirements specified in Permit Part 9 and the Code of Federal Regulations (CFR), Title 40, Part 264 Subparts G and I for hazardous waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

Until closure is complete and has been certified in accordance with Permit Section 9.5, a copy of the approved closure plan or the hazardous waste facility permit containing the plan, any approved revisions to the plan, and closure activity documentation associated with the closure will be on file with hazardous waste compliance personnel at the Facility and at the U.S. Department of Energy (DOE) Los Alamos Site Office. Prior to closure of the permitted unit, this closure plan may be amended in accordance with Permit Section 9.4.8 to provide updated sampling and analysis plans and to incorporate updated decontamination technologies. Amended closure plans shall be submitted to the New Mexico Environment Department (Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF UNIT TO BE CLOSED

A specific description of the permitted unit can be found in Permit Attachment A (*Technical Area Unit Descriptions*). Additional features and equipment located at the permitted unit and not discussed elsewhere within the Permit are described below.

The permitted unit, which measures 850 feet long and 224 feet wide, is located in the western portion of Area G. It is four inches thick, is sloped 1-2%, and is comprised of three asphalt pads (Pad 5 and older Pads 7 and 8). There are ten structures associated with the permitted unit: two domes (Domes 224 and 49) and eight sheds (sheds 144, 145, ~~147~~, ~~146~~, 177, 1027, 1028, ~~1040~~, ~~1030~~, and 1041). Rainwater flow at the permitted unit is directed across the pad by slope and drainage structures (*i.e.*, supplemental check berm, culvert, and sediment traps).

Storage Domes 49 and 224 are used for the storage of hazardous waste. They are built of an aluminum framework of trusses covered with tension-fitted ultraviolet resistant, fire-retardant coated, polyester fabric and are anchored to the permitted unit with drift pins and anchor bolts.

Dome 49 is 440 ft long and 60 ft wide, and has a peak height of approximately 26 ft. The dome is equipped with a double-panel rolling door at its north end and has six personnel doors to allow for adequate access both by vehicles and by personnel. The interior perimeter of the dome is surrounded by a 6-inch-high, 8-inch-wide asphalt curb, which helps prevent run-on into, and run-off from, the dome.

Dome 224 is approximately 110 ft long and 60 ft wide, with a peak height of 26 ft. It is equipped with a single-panel roll-up door at the north end and four personnel doors to allow adequate access by vehicles and by personnel. A 1-ft, 8-inch wide by 2-ft, 4-inch deep concrete ring wall designed for secondary containment of liquids surrounds the interior of Dome 224. The asphalt floor is sloped 0.5% towards a concrete sump in the center of the dome. The floor, sump, and curbs are lined with a double layer of HDPE to contain any liquids that might accumulate.

Storage sheds 144, 145, 146, and 177 are prefabricated sheds constructed of steel each measuring six foot long, five foot wide and nine foot high and are elevated by design to prevent run-on. Access to each shed is obtained through a single door where each shed is equipped with a single compartment. Each shed is

ATTACHMENT G.16
TECHNICAL AREA 54 WEST, BUILDING 38
INDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the indoor hazardous waste container storage unit that is comprised of the High Bay and Low Bay rooms located at Technical Area 54 West, Building 38 (TA-54-38) at the Los Alamos National Laboratory (Facility), hereinafter referred to as the permitted unit. The information provided in this closure plan addresses the closure requirements specified in Permit Part 9, the Code of Federal Regulations (CFR), Title 40, Part 264, Subparts G and I for hazardous waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

Until closure is complete and has been certified in accordance with Permit Section 9.5, a copy of the approved closure plan or the hazardous waste facility permit containing the plan, any approved revisions, and closure activity documentation associated with the closure will be on file with hazardous waste compliance personnel at the Facility and at the U.S. Department of Energy (DOE) Los Alamos Site Office. Prior to closure of the permitted unit, this closure plan may be amended in accordance with Permit Section 9.4.8, as necessary and appropriate, to provide updated sampling and analysis plans and to incorporate updated decontamination technologies. Amended closure plans shall be submitted to the New Mexico Environment Department (Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF UNIT TO BE CLOSED

A specific description of the permitted unit can be found in Permit Attachment A (*Technical Area Unit Descriptions*). Additional features and equipment located at the permitted unit and not discussed elsewhere within the Permit are described below.

The permitted unit is comprised of the outdoor loading dock and areas within the High Bay (Room 101) and the Low Bay (Room 102). Access between the two bays is provided through a 2.4 meter (m) wide by 3.8 m high roll-up door.

The High Bay, which stores fiberglass-reinforced plywood boxes, standard waste boxes (SWB), B25 boxes, and drums of various sizes, is 40 feet (ft) wide and 80 ft long. It is equipped with a 5-ton capacity bridge crane, a truck-axle weighing scale, loading platforms, and TRUPACT-II and HalfPACT lid stands. The floor is a 6-inch, reinforced, epoxy-coated, concrete slab which gently slopes toward a central 50-ft trench and a sump. The sump is locked out and a pipe plug has been installed. The floor has a grated drain (approximately five (5) inches (in.) wide by 57 ft long) that runs down the center of the bay which collects melting snow and water from the trucks that enter the bay. The permitted container storage area within the High Bay, which is located along the south side of the room's center wall, is approximately 11 ft wide and 34 ft long and is used as a transuranic (TRU) waste payload-container assembly area and TRUPACT-II/HalfPACT shipper-container loading area. Its primary function is the preparation of waste packages for transport to the Waste Isolation Pilot Plant (WIPP). The TRU waste packaged in the High Bay is predominantly radioactive, but can include mixed waste.

The Low Bay, where waste drums of various sizes are stored, is 40 ft long by 34 ft wide; it was once used for staging hazardous solid and liquid waste while nondestructive radioassay waste characterization activities were performed. The floor is a 6-inch reinforced concrete slab coated with industrial grade enamel paint. The permitted container storage area within the Low Bay is approximately 11 ft².

~~The Loading Dock, located just east of the low bay, is approximately 16 ft wide and 39 ft long and is constructed of cast in place concrete. A truck ramp, which is not part of the Loading Dock CSA, runs perpendicular to the loading dock platform. At the bottom of the truck ramp is a 38 inch square grate~~

~~covering a drainage culvert. The Loading Dock container storage area is divided into two areas on the platform; the first is an area at the north end of the loading dock which measures 16 ft by ten (10) ft. and the second area is at the south end of the loading dock which measures 16 ft by 12 ft. Waste drums of various sizes are stored in the Loading Dock.~~

The permitted unit began hazardous waste operations in 1995 when testing of radioassay equipment occurred. Shipments of waste packages from the facility to the WIPP began in 1999. The building was constructed in 1989 and 1990. Specific hazardous waste constituents stored at the permitted unit are included in Tables G.16-1 and G.16-2.

Permit Part 3 (*Storage in Containers*), Permit Attachment A (*Technical Area Unit Descriptions*), Permit Attachment B (*Part A Application*), and Permit Attachment C (*Waste Analysis Plan*) include information about waste management procedures and hazardous waste constituents stored at the permitted unit.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

Approximately 612,755 gallons of waste has been stored at the permitted unit since 1995. Throughout the life of this permit, it is estimated that an additional 440,000 gallons of waste will be stored at the permitted unit.

4.0 GENERAL CLOSURE INFORMATION

4.1 Closure Performance Standard

As required by Permit Section 9.2, the permitted unit will be closed to meet the following performance standards:

- a. remove all hazardous waste residues and hazardous constituents; and
- b. ensure contaminated media do not contain concentrations of hazardous constituents greater than the clean-up levels established in accordance with Permit Sections 11.4 and 11.5. For soils the cleanup levels shall be established based on residential use. The Permittees must also demonstrate that there is no potential to contaminate groundwater.

If the Permittees are unable to achieve either of the clean closure standards above, they must:

- c. control hazardous waste residues, hazardous constituents, and, as applicable, contaminated media such that they do not exceed a total excess cancer risk of 10^{-5} for carcinogenic substances and, for non-carcinogenic substances, a target Hazard Index of 1.0 for human receptors, and meet Ecological Screening Levels established under Permit Section 11.5;
- d. minimize the need for further maintenance;
- e. control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, groundwater, surface waters, or to the atmosphere; and
- f. comply with the closure requirements of Permit Part 9 (*Closure*) and 40 CFR Part 264 Subparts G and I for container storage units.

ATTACHMENT G.17
TECHNICAL AREA 54, WEST
OUTDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the outdoor hazardous waste container storage unit at Technical Area 54 West, Building 38 (TA-54-38) at the Los Alamos National Laboratory (Facility), hereinafter referred to as the permitted unit. The information provided in this closure plan addresses the closure requirements specified in Permit Part 9 and the Code of Federal Regulations (CFR), Title 40, Part 264, Subparts G and I for hazardous waste management units at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

Until closure is complete and has been certified in accordance with Permit Section 9.5, a copy of the approved closure plan or the hazardous waste facility permit containing the plan, any approved revisions, and closure activity documentation associated with the closure will be on file with hazardous waste compliance personnel at the Facility and at the U.S. Department of Energy (DOE) Los Alamos Site Office. Prior to closure of the permitted unit, this closure plan may be amended in accordance with Permit Section 9.4.8, as necessary and appropriate, to provide updated sampling and analysis plans and to incorporate updated decontamination technologies. Amended closure plans shall be submitted to the New Mexico Environment Department (Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF UNIT TO BE CLOSED

A specific description of the permitted unit can be found in Permit Attachment A (*Technical Area Unit Descriptions*). Additional features and equipment located at the permitted unit and not discussed elsewhere within the Permit are described below.

The permitted unit is located on the north and east sides of TA-54-38 and consists of an asphalt pad (which slopes toward the north and east and has a thickness of approximately four inches) and a loading dock which measures 16 ft wide by 38 ft, 10 inches long. The loading dock is constructed of six inch cast-in-place concrete, is approximately 4 inches above grade, and is covered by a metal roof awning. Small storage sheds (1024 and 1025) for supplies and equipment and not for the storage of hazardous waste, are also located on the permitted unit. The entire permitted unit measures approximately 37,900 square feet.

The slope of the asphalt pad allows for storm water to run off the pad into a one inch wide trench drain that runs along the north edge of the pad. The eastern edge of the pad consists of an asphalt swale that collects storm water and conveys it to a single discharge point at the northeast corner of the site. An asphalt berm running from the extreme northern corner of Building 38 to the drain flanks the northern side of the permitted unit and an asphalt curb flanks the southern side.

The waste typically stored at the permitted unit consists of hazardous and mixed waste in both solid and liquid form. The permitted unit was constructed in 1993, became operational in 1998, and has been subject to waste management regulations under RCRA since its construction. In 2007, the boundaries of the permitted unit were expanded to include the current configuration. The stored wastes include corrosive liquids, sludge, debris, and chemical wastes with metals and volatile and semi-volatile organic constituents.

Permit Part 3 (*Storage in Containers*), Permit Attachment A (*Technical Area Unit Descriptions*), Permit Attachment B (*Part A Application*), and Permit Attachment C (*Waste Analysis Plan*) include information about waste management procedures and hazardous waste constituents stored at the permitted unit.

The Loading Dock, located just east of the low bay, is approximately 16 ft wide and 39 ft long and is constructed of cast-in-place concrete. A truck ramp, which is not part of the Loading Dock CSA, runs perpendicular to the loading dock platform. At the bottom of the truck ramp is a 38-inch-square grate covering a drainage culvert. The Loading Dock container storage area is divided into two areas on the platform; the first is an area at the north end of the loading dock which measures 16 ft by ten (10) ft. and the second area is at the south end of the loading dock which measures 16 ft by 12 ft. Waste drums of various sizes are stored in the Loading Dock.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

To date, approximately 612,755 gallons of waste has been stored in the permitted unit. Throughout the life of this Permit it is estimated that an additional 1,870,000 gallons of waste will be stored in the permitted unit.

4.0 GENERAL CLOSURE INFORMATION

4.1 Closure Performance Standard

As required by Permit Section 9.2, the permitted unit will be closed to meet the following performance standards:

- a. remove all hazardous waste residues and hazardous constituents; and
- b. ensure contaminated media do not contain concentrations of hazardous constituents greater than the clean-up levels established in accordance with Permit Sections 11.4 and 11.5. For soils the cleanup levels shall be established based on residential use. The Permittees must also demonstrate that there is no potential to contaminate groundwater.

If the Permittees are unable to achieve either of the clean closure standards above, they must:

- c. control hazardous waste residues, hazardous constituents, and, as applicable, contaminated media such that they do not exceed a total excess cancer risk of 10^{-5} for carcinogenic substances and, for non-carcinogenic substances, a target Hazard Index of 1.0 for human receptors, and meet Ecological Screening Levels established under Permit Section 11.5;
- d. minimize the need for further maintenance;
- e. control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, groundwater, surface waters, or to the atmosphere; and
- f. comply with the closure requirements of Permit Part 9 (*Closure*) and 40 CFR Part 264, Subparts G and I.

Closure of the unit will be deemed complete when: 1) all structures, surfaces, and equipment have been decontaminated, or otherwise properly disposed of; 2) closure has been certified by an independent, professional engineer licensed in the State of New Mexico; and 3) closure certification has been submitted to, and approved by, the Department.

Table G.17-1
Hazardous Waste Constituents of Concern at the Technical Area 54, Area G, West Outdoor
Container Storage Unit^a

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Metals	D003, D004, D005, D006, D007, D008, D009, D010, D011	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver
Organic Compounds	D018, D019, D021, D022, D026, D027, D028, D029, D030, D035, D036, D037, D038, D039, D040, D043 F001, F002, F003, F004, F005	Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, Cresol, 1,4-Dichlorobenzene, 1,2-Dichloroethylene, 2,4-Dinitrotoluene, Methyl ethyl ketone, Nitrobenzene, Pentachlorophenol, Pyridine, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride Acetone, Methyl ethyl ketone, , Methylene Chloride, Toluene, MIBK, DBCP, Tetrachloroethylene, 1,1,1-trichloroethane, Chlorinated Fluorocarbons, 1,1,2- trichloro-1,1,2-trifluoroethane, ortho-dichlorobenzene, Trichlorofluoromethane, 1,1,2-trichloroethane, Xylene, Ethyl acetate, Ethyl benzene, Ethyl ether, n-butyl alcohol, Cyclohexanone, Methanol, Cresols, Cresylic acid, Nitrobenzene, Carbon disulfide, Isobutanol, Pyridine, 2-ethoxyethanol, 2-nitropropane

^a Based on the unit Operating Record

MIBK = methyl isobutyl ketone or 4-methyl-2-pentanone

DBCP=1,2-dibromo-3-chloropropane

ATTACHMENT I
COMPLIANCE SCHEDULE

Compliance Schedule

This Compliance Schedule briefly lists particular requirements, in chronological order of submittal, specified in the Permit and their associated due dates. The complete requirements are found in the referenced Permit Sections.

Permit Section	Requirement	Due date
Submittals Due After Permit Issuance		
2.11.3	Contingency Plan distribution	Within 5 days of the effective date of this Permit
1.4.1	Documentation to either close or permit the interim status units.	Within 180 days of the effective date of this Permit
1.10	Establish the Information Repository	Within 180 days of the effective date of this Permit
1.12	Post the Community Relations Plan on the Permittees' web site and implement that Plan	Within 180 days of the effective date of this Permit
1.12	Community Relations Plan	Post on LANL's web site within 180 days of the effective date of this Permit
Annual Submittals		
2.9	Annual report regarding the waste minimization program	Every December 1 st
1.12	Interested parties require and e Compilation of <u>solicited</u> comments <u>from interested parties and communities and responses</u>	Post on LANL's web site every September 1 st
1.17	Notice of demolition activities	On or before September 30 of each year
Other Submittals		
2.12.5	Biennial Report	March 1 st of each even numbered year

ATTACHMENT J
HAZARDOUS WASTE MANAGEMENT UNITS

TABLE J-1

Active Portion of the Facility

Includes units permitted to store and treat hazardous waste, interim status units, and the Material Disposal Areas.

Process codes and associated process descriptions:

- S01-storage in containers
- S02-storage in tanks
- S99-other storage
- D80-landfill
- T04 – treatment in tanks
- X01*-open burning
- X01**-open detonation

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
TA-3-29	S01	18,500 gal	Includes Room 9010 and portions of Room 9020 and 9030 Located in Wing 9 of the basement of Building 29 Total square footage – 3,040	Indoor
TA-14-23	X01*	50 lbs HE/burn	Near Structure TA-14-23 Interim Status Unit	NA
TA-14-23	X01**	20 lbs HE/detonation	Near Structure TA-14-23 Interim Status Unit	NA
TA-16-388	X01*		Flash Pad Total square footage - 484 Interim Status Unit not authorized to treat hazardous waste and undergoing closure pending permit approval	Outdoor (associated with a open burn unit)

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
TA-16-399	X01*		Burn Tray Total square footage - 64 Interim Status Unit not authorized to treat hazardous waste and undergoing closure pending permit approval	Outdoor (associated with an open burn unit)
TA-36-8	X01**	2000 lbs/detonation	Near Structure TA-36-8 Interim Status Unit	NA
TA-39-6	X01**	1000 lbs/detonation	Near Structure TA-39-6 Interim Status Unit	NA
TA-39-57	X01**	1000 lbs/detonation	Near Structure TA-39-57 Interim Status Unit	NA
TA-50-69 Indoor	S01	1,500 gal	Includes Rooms 102 and 103. Total square footage – 2,680	Indoor
TA-50-69 Outdoor Pad	S01	30,000 gal	Total square footage – 3,240 <u>2,160</u>	Outdoor (not associated with a regulated unit)
TA-54 “G”	D80	NA	Material Disposal Area Unit not permitted to receive hazardous waste	Regulated unit
TA-54 Area G Container Storage Unit (below ground)	S99	4,950 gal	Includes shafts 145 and 146 Wastes removed and unit undergoing closure, closure certification incomplete	NA
TA-54 Area G Pad 1	S01	502,920 gal	Includes building TA-54-412 (DVRS) Total square footage—89,500 <u>approximately 76,000 square feet</u>	Outdoor (associated with a regulated unit)

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
TA-54 Area G Pad 3	S01	213,840 gal	Includes Storage Dome 48 Total square footage—19,300 <u>approximately 17,000 square feet</u>	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 5	S01	623,480 gal	Includes Storage Domes 49 and 224; Storage Sheds 144, 145, 146, 177, 1027, 1028, 1030, and 1041 Pad 5 is a consolidation of former Pads 5, 7, and 8. Total square footage – 59,900	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 6	S01	597,300 gal	Includes Storage Domes 153 and 283; Transportainer 491; and Storage Sheds 486, 522, 523, and 492. Total square footage—68,300 <u>approximately 62,700 square feet</u>	Outdoor (associated with an regulated unit)
TA-54 Area G Pad 9	S01	1,446,720 gal	Includes Storage Domes 229, 230, 231, and 232; and Storage Sheds 57 <u>574</u> and 484. Total square footage – 158,000	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 10	S01	159,770 gal	Includes Transuranic (TRU) Waste Characterization Facilities: TA-54-0547 (SuperHENC), TA-54-0497 (RTR2), TA-54-0498 (LANL HENC), TA-54-0506 (MCS HENC), TA-54-0545 and 546 (Storage trailers), TA-54-0365 (Office Building Formerly MTGS), TA-54-0483 (Source Storage Trailer), and TA-54-	Outdoor (associated with a regulated unit)

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
			1059 (Storage Trailer) Pad 10 is a consolidation of former Pads 2 and 4. Total square footage — 120,000 <u>approximately 89,600 square feet</u>	
TA-54 Area G Pad 11	S01	682,440 gal	Includes Storage Dome 375 and RTR1 Total square footage — 30,000 <u>65,500</u>	Outdoor (associated with a regulated unit)
TA-54 Area G Storage Shed 8	S01	11,880 gal	Also referred to as TA-54-8 Total square footage — 698 <u>640</u>	Indoor
TA-54 Area G TA-54-33	S01	108,240 gal	Also referred to as Drum Prep Facility Total square footage — 5,000 <u>8,570</u>	Indoor
TA-54 “H”	D80	NA	Material Disposal Area H Unit not permitted to receive hazardous waste	Regulated unit
TA-54 “L”	D80	NA	Material Disposal Area L Unit not permitted to receive hazardous waste	Regulated unit
TA-54 Area L Container Storage Unit (below ground)	S99	600 gal	Includes shafts 36 and 37 Wastes removed and unit undergoing closure, closure certification incomplete	NA
TA-54 Area L Outdoor Pad	S01	407,880 gal	Includes all area within fence-line except limited administrative areas. Includes Storage Sheds 31, 68, 69, and 70; Storage Pads 32, 35, 36, and 58; and Building	Outdoor (associated with a regulated unit)

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
			39; and Storage Dome 215(former Area 1); and Storage Canopy 216. Total square footage – 28,900 <u>110,500</u>	
TA-54-38 West Indoor	S01	3,740 gal	Includes High Bay and Low Bay Total square footage – 4,060	Indoor
TA-54-38 West Outdoor Pad	S01	7,920 gal	Includes loading dock and Pad surrounding Total square footage – 37,900	Outdoor (not associated with a regulated unit)
TA-55-4, B40	S01	21,500 gal	Located in basement Referred to as Area 1 Total square footage – 3,380	Indoor
TA-55-4, K13	S01	3,400 gal <u>2,500 gal</u>	Located in basement Referred to as Area 4 Total square footage - 208	Indoor
TA-55-4, B05	S01	3,600 gal	Located in basement Referred to as Area 5 Non-liquid wastes only Total square footage - 260	Indoor
TA-55-4, B45	S01	11,000 gal	Located in basement Non-liquid wastes only Total square footage - 788	Indoor
TA-55-4, Vault	S01	4,000 gal	Located in basement Referred to as Area 6 Total square footage – 4,020	Indoor
TA-55-4-401 Mixed Waste	S02	Storage - 137 gal	TA-55-4 Room 401 Unit divided into two	Indoor

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
Storage Tank Unit			components (Evaporator Glovebox Storage Tank System and Cementation Storage Tank System) Total square footage – 4,500	
TA-55-4-401 Mixed Waste Stabilization Unit	T04	Treatment - 150 gal / day	TA-55-4 Room 401 Total square footage – 4,500	Indoor
TA-55-185	S01	30,000 gal	Located west of TA-54-4 <u>TA-55-4</u> Non-liquid wastes only Total square footage - 2,400	Indoor
TA-55-4 Outdoor Pad	S01	135,000 gal	Located outside and west of TA-54-4 <u>TA-55-4</u> Total square footage – 11,100	Outdoor (not associated with a regulated unit)

ATTACHMENT N

FIGURES

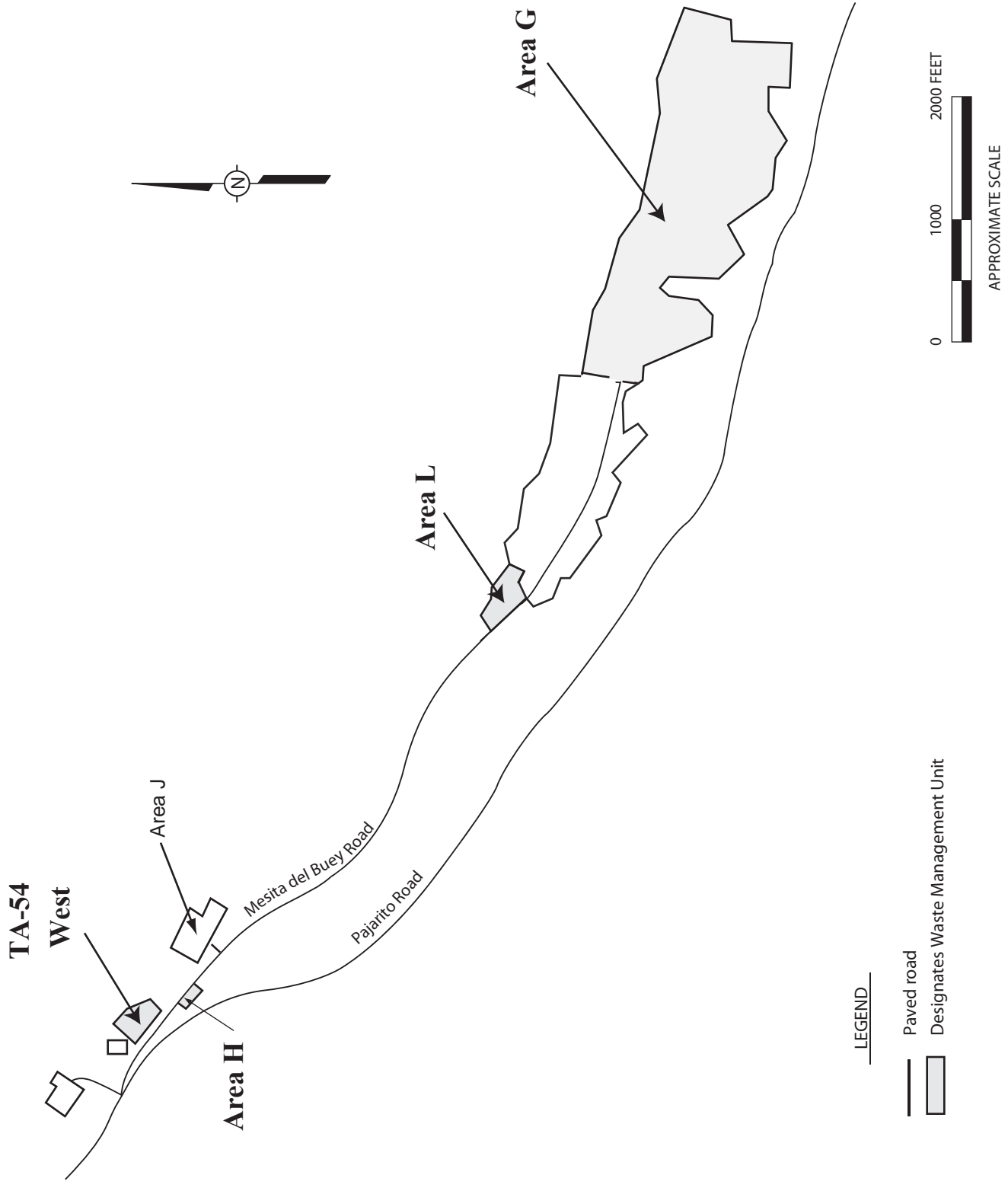
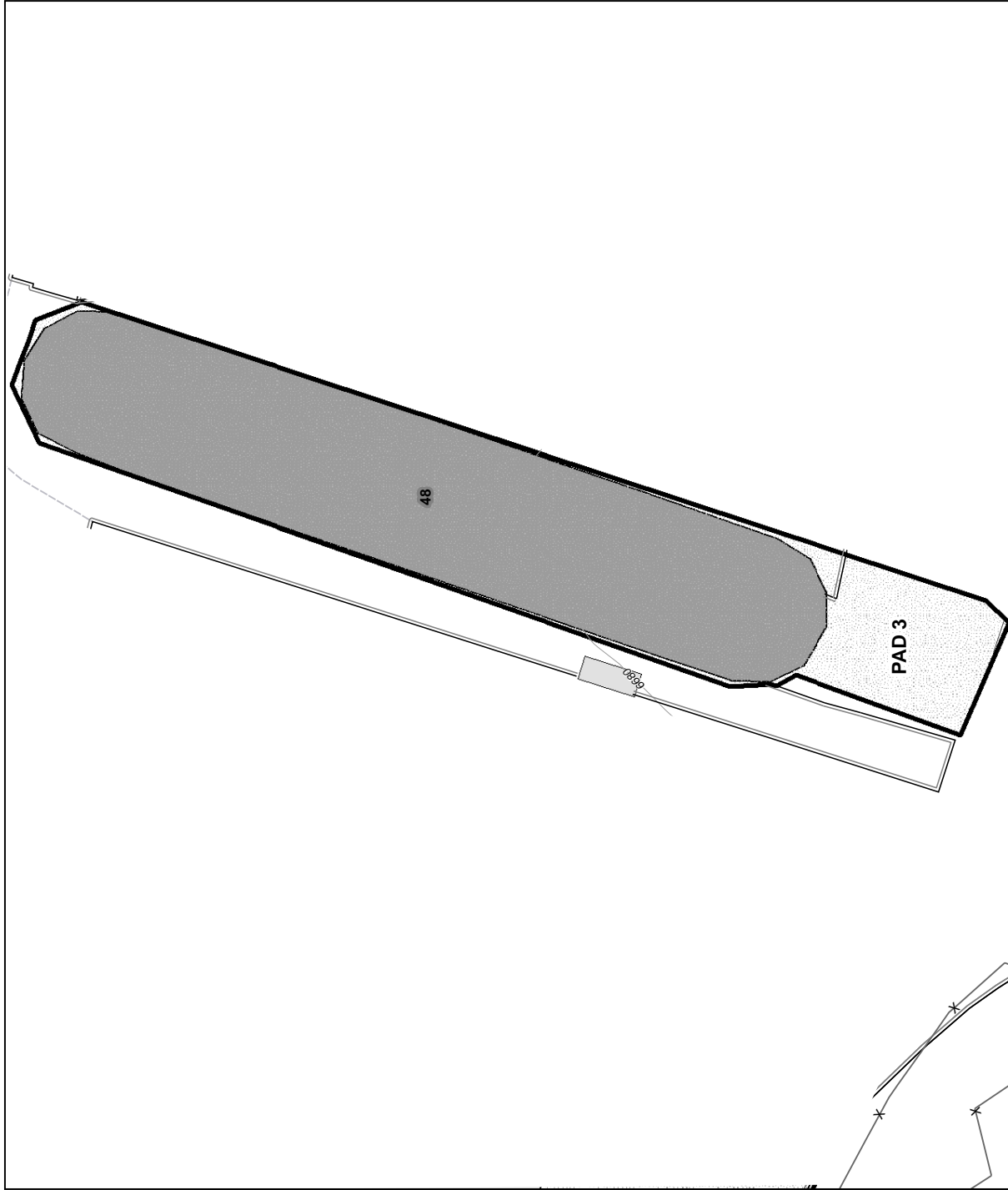











Figure 25
 Technical Area (TA) 54, Areas G, H, L and TA-54 West Location Map



Legend

-  Buildings/Structures
(not associated with the permitted unit)
-  RCRA Waste Management Units (RWMU)
Category
-  RWMU
-  Structure
-  Contours, 100 ft
-  Contours, 20 ft
-  Roads, paved
-  Roads, dirt
-  Fences

1:475

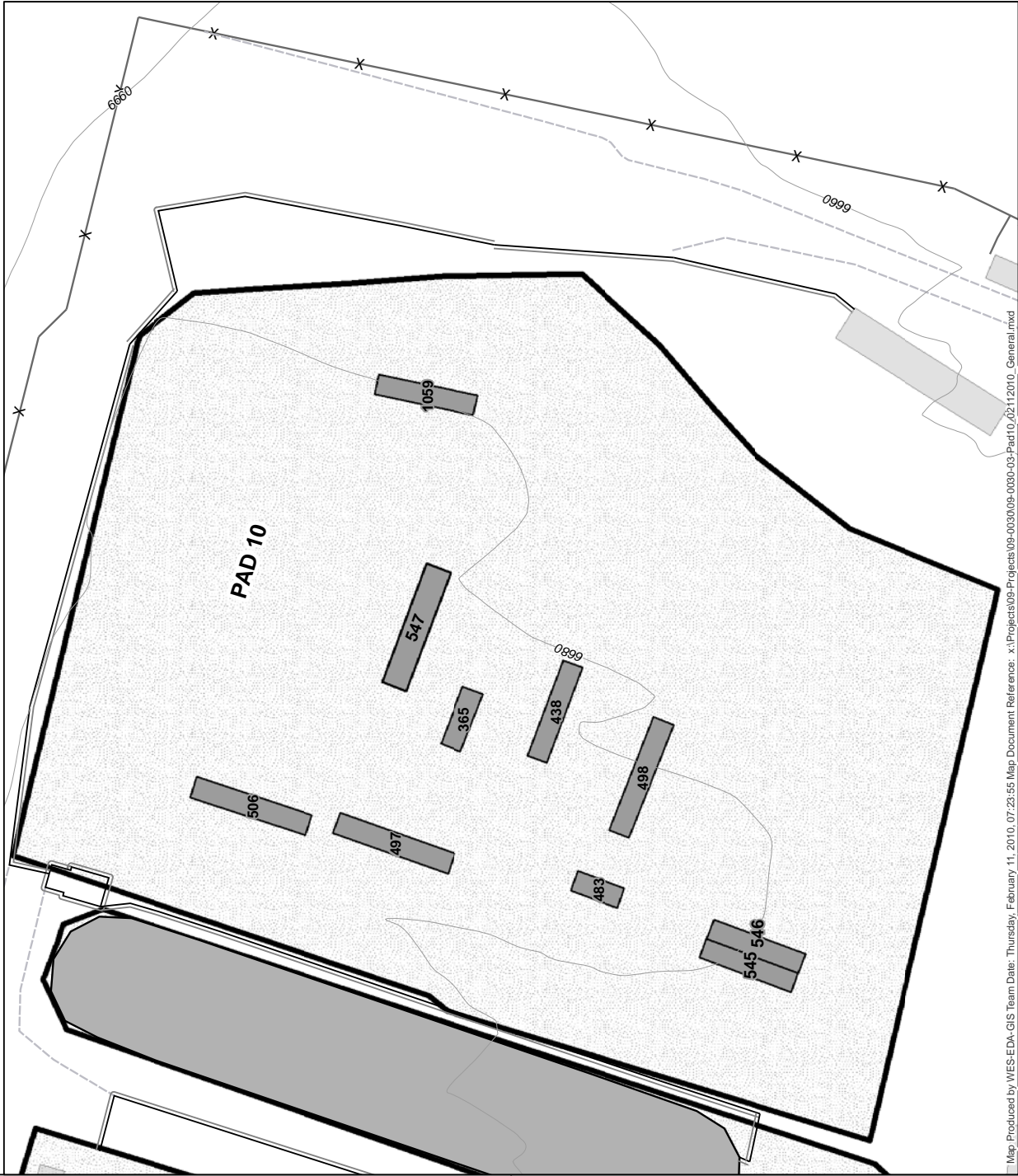
Feet
0 25 50 100

Meters
0 3.5 7 14

State Plane Coordinate System New Mexico, Central Zone, US Feet
NAD 1983 Datum

DISCLAIMER: This map was created for work processes associated with the LANL Hazardous Waste Facility Permit. All other uses for this map should be confirmed with the LANL ENV Division, Water Quality & RCRA.

Figure 30:
Technical Area (TA)-54, Area G, Pad 3



Legend

- Buildings/Structures (not associated with the permitted unit)
- RCRA Waste Management Units (RWMU) Category
- Contours, 100 ft
- Contours, 20 ft
- Roads, paved
- Roads, dirt
- Fences
- Structure

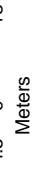


1:550

Feet



Meters



State Plane Coordinate System New Mexico, Central Zone, US Feet
NAD 1983 Datum

DISCLAIMER: This map was created for work processes associated with the LANL Hazardous Waste Facility Permit. All other uses for this map should be confirmed with the LANL ENV Division, Water Quality & RCRA.

Data Sources:

Path	Name	Date Accessed	Published Date
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Sampling grid cell size = 900 sqft	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Contours, 100 ft	1991	1991
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Contours, 20 ft	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Contours, 100 ft	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Roads, dirt	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Roads, paved	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Fences	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	Buildings/Structures	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	RCRA waste management units	20-Apr-09	20-Apr-09
X:\Projects\09-projects\09-0030\Dat\Part02_SampGrid_Ply_Clip2.shp	RCRA waste management units	20-Apr-09	20-Apr-09

Figure 31: TA-54, Area G, Pad 10

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Alison M. Dorries
Division Leader
Environmental Protection Division
Los Alamos National Laboratory
Operator

2/27/12

Date Signed



Kevin W. Smith
Manager, Los Alamos Site Office
National Nuclear Security Administration
U.S. Department of Energy
Owner/Operator

4/2/12

Date Signed



DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544



John Kieling, Acting Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

COPY

APR 02 2012

Laurie King, Chief (6PD-N)
New Mexico Federal Facilities Section
Environmental Protection Agency
Region 6 1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733



Dear Mr. Kieling:

Subject: Transmittal of Class 1 Permit Modification Request to the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit, EPA ID No. NM0890010515

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <i>U. Barros</i> <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <i>U. Barros</i></p> <p>C. Date of Delivery <i>4.3.12</i></p>	
<p>1. Article Addressed to:</p> <p>Mr. John E. Kieling Hazardous Waste Bureau New Mexico Environment Department 2905 Rodeo Park Drive East, Building 1 Santa Fe, NM 87505</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type HAND DELIVERED</p> <p><input type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
<p>2. Article Number <i>April 2012</i> (Transfer from service label) <i>Class 1 Permit Mod Request</i></p>	<p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>	

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

Included herein are three hard copies and one electronic copy of this submittal. The hardcopy submittal contains this letter, the summary table, and the individual pages or sections where text has been changed rather than copies of full attachments of the Permit. The electronic copy contains a reproduction of the hardcopy in portable document format (PDF) along with all the word processing files used to create the hardcopy.

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