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Los Alamos NATIONAL LABORATORY EST. 1943

Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administrations
Los Alamos Site Office, A316
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 667-5794/FAX (505)667-5948

OCT 0 1 2012

Date:
Refer To: ENV-RCRA-12-0216
LAUR: 12-24928 and 12-24929

Mr. John E. Kieling, Program Manager
Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Dear Mr. Kieling:

SUBJECT: RESPONSE TO DISAPPROVAL, TA-63 TRANSURANIC WASTE FACILITY PERMIT MODIFICATION REQUEST, REVISION 2.0, LOS ALAMOS NATIONAL LABORATORY, EPA ID #NM 0890010515, LANL-11-045

The purpose of this letter is to transmit the United States Department of Energy and Los Alamos National Security, LLC (Permittees) response to the above referenced Disapproval dated August 30, 2012. The Disapproval requires additional information or clarification regarding the previous version of the *Permit Modification Request for Technical Area 63, Transuranic Waste Facility, Hazardous Waste Container Storage Unit,* Revision 2.0, (PMR) originally submitted to the New Mexico Environment Department-Hazardous Waste Bureau (NMED-HWB) on July 13, 2012.

As requested by the Disapproval, this response submittal contains a number of documents. Enclosure 1 is the body of the response to the Disapproval notice. In that submittal, the NMED-HWB comments are included verbatim in italics to assist with review. The Permittees' responses follow each NMED-HWB comment and there are several supporting attachments including revisions to the PMR and examples of the revised figures to address the Disapproval. A clean hard copy of the revised PMR is also included as Enclosure 2 of this submittal. Accordingly, a signed certification is enclosed. This submittal also includes a reproduction of the hardcopy in portable document format (.PDF) in addition to the word processing files used to create the hardcopy version of the document.

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

Sincerely,

Michael T. Saladen
Group Leader (Acting)
Water Quality & RCRA Group (ENV-RCRA)
Los Alamos National Security, LLC

Sincerely,

Gene E. Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Site Office
U.S. Department of Energy

MTS:GET:GB/lm

Enclosures:

(1) Response to Disapproval, TA-63 Transuranic Waste Facility Permit Modification Request, Rev. 2, Los Alamos National Laboratory.
(2) Los Alamos National Laboratory Permit Modification Request for Technical Area 63 Transuranic Waste Facility Hazardous Waste Container Storage Unit, Rev. 3.0.

Cy: Laurie King, USEPA/Region 6, Dallas, TX, w/enc.
Tim Hall, NMED/HWB, Albuquerque, NM, w/enc.
Kevin W. Smith, LASO-OOM, w/o enc., A316
Peter Maggiore, LASO-NSM, w/o enc., (E-File)
Gene E. Turner, LASO-EPO, w/o enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., A102
Michael T. Brandt, ADESH, w/o enc., (E-File)
Jeffrey D. Mousseau, ADEP, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
John Isaacson, ENV-DO, w/o enc., (E-File)
Gregory Juerling, MOF-PM2, w/o enc., (E-File)
Mark Haagenstad, ENV-RCRA, w/o enc., (E-File)
Gian Bacigalupa, ENV-RCRA, w/enc., K404
Susan McMichael, LC-ESH, w/o enc., (E-File)
IRM-RMMSO (U1201775-01), w/enc., A150
ENV-RCRA Correspondence File, K490

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Date: OCT 0 1 2012
Refer To: ENV-RCRA-12-0216
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Mr. John E. Kieling, Program Manager
Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Dear Mr. Kieling:

SUBJECT: RESPONSE TO DISAPPROVAL, TA-63 TRANSURANIC WASTE FACILITY PERMIT MODIFICATION REQUEST, REVISION 2.0, LOS ALAMOS NATIONAL LABORATORY, EPA ID #NM 0890010515, LANL-11-045

The purpose of this letter is to transmit the United States Department of Energy and Los Alamos National Security, LLC (Permittees) response to the above referenced Disapproval dated August 30, 2012. The Disapproval requires additional information or clarification regarding the previous version of the *Permit Modification Request for Technical Area 63, Transuranic Waste Facility, Hazardous Waste Container Storage Unit,* Revision 2.0, (PMR) originally submitted to the New Mexico Environment Department-Hazardous Waste Bureau (NMED-HWB) on July 13, 2012.

As requested by the Disapproval, this response submittal contains a number of documents. Enclosure 1 is the body of the response to the Disapproval notice. In that submittal, the NMED-HWB comments are included verbatim in italics to assist with review. The Permittees' responses follow each NMED-HWB comment and there are several supporting attachments including revisions to the PMR and examples of the revised figures to address the Disapproval. A clean hard copy of the revised PMR is also included as Enclosure 2 of this submittal. Accordingly, a signed certification is enclosed. This submittal also includes a reproduction of the hardcopy in portable document format (.PDF) in addition to the word processing files used to create the hardcopy version of the document.

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ENCLOSURE 1

Response to Disapproval, TA-63 Transuranic Waste Facility Permit Modification Request, Revision 2.0, Los Alamos National Laboratory

ENV-RCRA-12-0216

LAUR-12-24929

Date: OCT 0 1 2012

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October, 2012
LA-UR-12-24929

RESPONSE TO DISAPPROVAL
TA-63 TRANSURANIC WASTE FACILITY
PERMIT MODIFICATION REQUEST, Rev. 2
LOS ALAMOS NATIONAL LABORATORY

Prepared by:

Los Alamos National Laboratory
Water Quality & Resource Conservation and Recovery Act Group
Los Alamos, New Mexico 87545

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RESPONSE TO
DISAPPROVAL, TA-63 TRANSURANIC WASTE FACILITY
PERMIT MODIFICATION REQUEST
REVISION 2.0
LOS ALAMOS NATIONAL LABORATORY
EPA ID# NM 0890010515
LANL-11-045

INTRODUCTION

This document responds to the August 30, 2012, New Mexico Environment Department-Hazardous Waste Bureau (NMED-HWB) Disapproval notice referenced above. The notice was issued for the *Permit Modification Request for Technical Area 63, Transuranic Waste Facility, Hazardous Waste Container Storage Unit* (PMR), Revision 2.0, submitted to NMED-HWB on July 13, 2012, by the United States Department of Energy (DOE) and Los Alamos National Security, LLC, collectively the Permittees. The Permittees are seeking to modify the Hazardous Waste Facility Permit (Permit) for Los Alamos National Laboratory (LANL) for approval of the construction of the Transuranic Waste Facility (TWF) at Technical Area 63 (TA-63) and permission to store hazardous waste there.

This response may contain information regarding the management of radioactive materials, including source, special nuclear, and byproduct material. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED-HWB in accordance with DOE policy.

The NMED-HWB comments are included verbatim in italics to help with review. The Permittees' responses follow each NMED-HWB comment. There are seven Attachments to this document. Attachment A includes a copy of the original Disapproval notice. Attachments B and C include the proposed revisions to the Permit resulting from the Permittees' responses to the first comment in the Disapproval notice. These changes have previously been included with the PMR as Attachment G. Attachment D illustrates specific proposed revisions to the Permit resulting from the second comment in the Disapproval notice. Attachments E and F also respond to the second comment with text revisions to the PMR at Section 2.8 and a revised figure. Attachment G includes a facility certification for this document in accordance with 40 CFR §270.11(b).

General Comments:

1. *Revision 2.0 of the PMR is incomplete. The Permittees included only the proposed changes to the Permit made to Revision 1.0 of the PMR in Attachment G* (Proposed Revisions to the LANL Hazardous Waste Facility Permit). *40 CFR 270.42(c)(1)(i) states, "the permittee must submit a modification request to the Director that: [d]escribes* the exact change to be made to the permit conditions *and supporting documents referenced*

by the permit" (emphasis added). Attachment G of the PMR must include all the changes the Permittees are proposing to the Permit.

Attachment G of the attached revised PMR (Revision 3.0) has been changed to incorporate the proposed text changes to the Permit accumulated in previous PMR revisions. Attachment B of this response incorporates the resolved final changes to the document using a standard redline-strikeout format. Attachment C of this response includes a version that includes all text changes from the various revisions of the PMR in different editing marks (e.g., underlined additions, strikeouts, and various colors) to assist in review.

2. *40 CFR 264.176 states: "Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line." Permit Part 2, Section 2.8, requires the Permittees to store ignitable and reactive waste "at least 15 meters from the facility boundary defined as the technical area (TA) specific boundary." Although the 15-meter buffer appears to meet the distance requirements in 40 CFR 264.176 and Permit Section 2.8, Figure 2-39 of the PMR indicates that the 15-meter buffer for ignitable and reactive waste extends outside the fence line and at least partially into Pajarito Road, which is not protective of human health and the environment. The purpose for the 15 meter buffer zone is to reduce the potential for exposure to, and/or contact with, ignitable and reactive wastes. Based on the information provided in the PMR, it is conceivable that uninformed persons could get within a few feet of ignitable or reactive waste stored within the proposed 15 meter buffer. Revise the PMR and propose Permit language that requires a 15 meter buffer between areas where ignitable and reactive waste will be stored and the TWF fence line.*

   The Permittees acknowledge that the 15 meter buffer proposed in Figure 2-39 of the PMR, Revision 2 projects onto the side of Pajarito Road. It is unlikely that the risk of exposure to or contact with ignitable or reactive waste stored at the TWF will occur due to an inability for personnel to proceed beyond the security fence, the setback of the storage buildings from the fence, the non-flammable nature of the concrete pad and metal storage buildings, and because almost all waste stored at the site will be within the storage buildings. The percentage of ignitable or reactive waste stored at the facility will also be relatively small.

   Additionally, the waste acceptance criteria for the TWF will restrict the types of transuranic (TRU) mixed waste stored at the TWF. Wastes with ignitable or reactive characteristics will not be accepted from the generators. Any waste recharacterized by the characterization activities at the TWF or secondary waste generated at the permitted unit (e.g., cleaning rags with solvents) will be managed accordingly.

   However, the Permittees do not believe that the addition of this permit condition will necessarily upset storage arrangements at the TWF for the small quantity of such waste needing storage. A 15-meter buffer zone from the security fence line is proposed within the TWF storage unit. No ignitable or reactive TRU mixed waste will be stored within that buffer zone. Figure 2-39 of the PMR has been revised to show the revised boundary.

The buffer zone precludes the storage of any ignitable or reactive waste within proposed Storage Buildings 63-0149 and 63-0150. Such storage would still be available in the southern ends of Storage Buildings 63-0151, -152, and -153. Such storage could also occur in a small area within the southeastern side of Storage Building 63-0154. The limits of the buffer zone will be defined within the storage buildings by painted lines on the floor. Any outside storage that will occur at the TWF will be limited to the central portions of the permitted unit, approximately between the characterization trailers and Storage Building 63-0149.

As stipulated, the text of the Permit and the PMR has been revised to address the buffer zone. As described in the NMED-HWB comment, Permit Section 2.8, *Special Requirements for Ignitable, Reactive, or Incompatible Waste*, defines the facility boundary for LANL permitted units as the boundary of the Technical Areas (TAs) containing the units. The proposed text suggestion included in previous PMR revisions incorporate such a boundary illustrated in proposed Figure 55 (i.e., the TWF specific permitted unit figure in Attachment N of the Permit). The reference to that proposed figure has been removed from that permit section to prevent confusion associated with the general permit condition as this is an additional requirement specific to the TWF permitted unit. The Permittees believe that the appropriate Permit location for this unit-specific requirement is, therefore, in the proposed Permit Section 3.14, *TA-63 Container Storage Requirements*, of Part 3, *Storage in Containers*.

The text in proposed Permit Section 3.14 (see Attachments B, C and D of this Disapproval notice) has been revised to include the following:

"…(4) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with ignitable or reactive components (E.P.A. Hazardous Waste Numbers D001 or D003) are stored no less than 15 meters from the permitted unit's security fence shown in Figure 55 (*see* 40 CFR §264.176)."

The text of Section 2.8 of the PMR has been revised to reflect the new 15-meter buffer from the TWF security fence line for the storage of ignitable or reactive waste (see Attachment E). Attachment F of this response also includes a revised Figure 2-39 for the TWF PMR that incorporates the new buffer zone.

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.

Attachment A

Copy of the August 30, 2012 Disapproval Notice

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SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

JAMES H. DAVIS, Ph.D.
Director
Resource Protection Division

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 30, 2012

Kevin W. Smith, Manager
Los Alamos Site Office
Department of Energy
3747 W. Jemez Rd., MS-A316
Los Alamos, NM 87544

Michael Brandt, Associate Director
Environment, Safety, Health, & Quality
Los Alamos National Security, LLC
Los Alamos Research Park
P.O. Box 1663, MS K491
Los Alamos, NM 87545

RE: DISAPPROVAL
TA-63 TRANSURANIC WASTE FACILITY
PERMIT MODIFICATION REQUEST
REVISION 2.0
LOS ALAMOS NATIONAL LABORATORY
EPA ID# NM 0890010515
LANL-11-045

Dear Messrs. Smith and Brandt:

The New Mexico Environment Department (Department) has received the *Permit Modification Request for Technical Area 63, Transuranic Waste Facility, Hazardous Waste Container Storage Unit, Revision 2.0* (PMR), dated July 12, 2012, from the United States Department of Energy and Los Alamos National Security, LLC (collectively the Permittees). The Permittees seek to modify the Hazardous Waste Facility Permit (Permit) for Los Alamos National Laboratory (LANL) for the construction of a new Transuranic Waste Facility (TWF) at Technical Area 63 (TA-63) to store mixed transuranic and hazardous waste.

The Department has reviewed the Permittees' *Response to Notice of Disapproval* and the PMR, and hereby issues this Disapproval. The Permittees must address the attached comments before

the Department can further evaluate the PMR. The Permittees' response to this Disapproval must include five items: 1) a narrative responding to each of the comments; 2) a revised electronic version of the PMR with all changes tracked from the original Permit; 3) a revised PDF version of PMR without tracked changes; 4) a revised Word version of the PMR without tracked changes; and 5) a hard copy of the revised PMR that shows all proposed changes to the Permit. The Permittees must respond to this Disapproval no later than October 1, 2012.

If you have questions regarding this correspondence, please contact Tim Hall of my staff at 505-222-9555 or at timothy.hall@state.nm.us.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

JEK/th

Attachment
1) Comments and Deficiencies

cc:
J. Davis, RPD, NMED
J. Kieling, HWB, NMED
T. Hall, HWB, NMED
L. King, EPA 6PD-N
T. Grieggs, ENV-RCRA, LANS, MS-K490
M. Haagenstad, ENV-RCRA, LANS, MS-K404
G. Bacigalupa, ENV-RCRA, LANS, MS-K404
G. Turner, DOE-LASO, MS-A316

File: Reading and LANL Permit 2012

LANL-11-045

ATTACHMENT

COMMENTS

PERMIT MODIFICATION REQUEST FOR TECHNICAL AREA 63, TRANSURANIC WASTE FACILITY, HAZARDOUS WASTE CONTAINER STORAGE UNIT, REVISION 2.0 (JULY 12, 2012)

LOS ALAMOS NATIONAL LABORATORY

HAZARDOUS WASTE FACILITY PERMIT

Introduction:

The New Mexico Environment Department (Department) provides the following comments regarding the *Permit Modification Request for Technical Area 63, Transuranic Waste Facility, Hazardous Waste Container Storage Unit, Revision 2.0* (PMR) and the Permittees' *Response to Notice of Deficiency (NOD),* dated July 12, 2012. The Permittees seek to modify the Hazardous Waste Facility Permit (Permit) for Los Alamos National Laboratory (LANL) for the construction of a new Transuranic Waste Facility (TWF) at Technical Area 63 (TA-63) to store mixed transuranic and hazardous waste.

General Comments

1. Revision 2.0 of the PMR is incomplete. The Permittees included only the proposed changes to the Permit made to Revision 1.0 of the PMR in Attachment G (*Proposed Revisions to the LANL Hazardous Waste Facility Permit*). 40 CFR 270.42(c)(1)(i) states, "the permittee must submit a modification request to the Director that: [d]escribes *the exact change to be made to the permit conditions* and supporting documents referenced by the permit" (emphasis added). Attachment G of the PMR must include all the changes the Permittees are proposing to the Permit.

Specific Comments

2. 40 CFR 264.176 states: "Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line." Permit Part 2, Section 2.8, requires the Permittees to store ignitable and reactive waste "at least 15 meters from the facility boundary defined as the technical area (TA) specific boundary." Although the 15-meter buffer appears to meet the distance requirements in 40 CFR 264.176 and Permit Section 2.8, Figure 2-39 of the PMR indicates that the 15-meter buffer for ignitable and reactive waste extends outside the fence line and at least partially into Pajarito Road, which is not protective of human health and the environment.

   The purpose for the 15 meter buffer zone is to reduce the potential for exposure to, and/or contact with, ignitable and reactive wastes. Based on the information provided in the PMR, it is conceivable that uninformed persons could get within a few feet of ignitable or reactive waste stored within the proposed 15 meter buffer.

   Revise the PMR and propose Permit language that requires a 15 meter buffer between areas where ignitable and reactive waste will be stored and the TWF fence line.

Attachment B

Proposed Revisions to the LANL Hazardous Waste Facility Permit for the TWF Permit Modification Request

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LANL HAZARDOUS WASTE FACILITY

PERMIT PARTS 1-11

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TABLE OF CONTENTS

(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-50 Part B Permit Application dated August 2002;

(5) the TA-54 Part B Permit Application dated June 2003; and

(6) the TA-55 Part B Permit Application dated September 2003~~.~~, and

(7) the TA-63 Permit Modification Request dated August 2011.

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(l)(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)).

specified in 40 CFR § 268.7(b)(3)(ii), *Treatment Facility Paperwork Requirements Table*, which is incorporated herein by reference.

The Permittees shall characterize treatment-derived wastes, including those wastes that are formerly characteristic and no longer hazardous or mixed waste, to determine whether the waste meets the applicable treatment standard specified at 40 CFR §§ 268.40, 268.45, 268.48, and 268.49, in compliance with 40 CFR § 268.7(b), which is incorporated herein by reference. Pursuant to 40 CFR § 268.7(b)(3)(ii), the Permittees shall characterize treatment-derived wastes to determine the presence of any constituents of concern for hazardous waste codes F001 through F005, F039, and the presence of underlying hazardous constituents in characteristic wastes as defined at 40 CFR § 268.2(i), which is incorporated herein by reference.

2.5 SECURITY

The Permittees shall prevent the unknowing entry and minimize the possibility for the unauthorized entry of persons or livestock onto the permitted units at the Facility (*see* 40 CFR § 264.14).

The Permittees shall ensure the permitted units' security by implementing the following measures:

(1) 24-hour surveillance system continuously monitoring and controlling entry into the permitted units at the Facility; or

(2) controlled entry into the permitted units at all times via gates, stations, or other means (*e.g.*, attendants, locks, prohibited or controlled roadway access).

The Permittees shall maintain and ensure the effectiveness of all security fences, entry gates, and entry stations surrounding the permitted units as specified in Figures 4 through 10, and 55 in Attachment N (*Figures)*.

2.5.1 Warning Signs

The Permittees shall post bilingual warning signs (in English and Spanish) at all gates and perimeter fences, where present, around the permitted units (*see* 40 CFR § 264.14(c)). Signs shall be posted in sufficient numbers to be visible at all angles of approach as well as from a distance of at least 25 feet. The Permittees shall include on the signs the following or an equivalent warning:

DANGER – UNAUTHORIZED PERSONNEL KEEP OUT (PELIGRO – SE PROHIBE LA ENTRADA A PERSONAS NO AUTORIZADAS)

The Permittees shall post warning signs in the appropriate dialect of Tewa in a manner equivalent to the bilingual warning signs in English and Spanish along shared boundaries with the Facility's permitted units and the Pueblo of San Ildefonso (PO WHO GEH).

3.13 TA-55 CONTAINER STORAGE REQUIREMENTS

3.13.1 General Operating Conditions

The Permittees shall ensure that storage of hazardous or mixed waste in containers at TA-55 occurs only in the permitted units B45, B40, B05, K13, the vault located at TA-55-4, TA-55-185, and the outdoor container storage pad located northwest of TA-55-4, and as identified in Attachment A (*Technical Area Unit Descriptions*) and Attachment J (*Hazardous Waste Management Units*).

3.14 TA-63 CONTAINER STORAGE REQUIREMENTS

3.14.1 General Operating Conditions

The Permittees shall ensure that storage of hazardous waste in containers at the TWF occurs only on the permitted unit pad at TA-63, and as identified in Attachment A (*Technical Area Unit Descriptions)* and Attachment J (*Hazardous Waste Management Units*). This will include five storage buildings, the storage and characterization building, the characterization trailers, and the outside areas of the concrete pad within the unit boundary subject to the provisions of Permit Section 3.5.1, *Storage Configuration and Minimum Aisle Space*.

Transuranic Waste Facility

(1) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with free liquids are stored on secondary containment pallets.

(2) Waste containers will only be accepted at the TWF if they are closed and equipped with WIPP approved filter vents. Waste containers will not be opened during characterization nor while in storage although their filter vents may be replaced if necessary. However, as noted in the contingency plan, provisions are in place to manage open containers on an emergency basis.

(3) Wastes that are mainly or completely in liquid form within the volume of the approved waste containers will not be accepted at the TWF.

(4) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with ignitable or reactive components (E.P.A. Hazardous Waste Numbers D001 or D003) are stored no less than 15 meters from the permitted unit's security fence shown in Figure 55 (see 40 CFR §264.176).

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ATTACHMENT A

TECHNICAL AREA (TA) - UNIT DESCRIPTIONS

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TABLE OF CONTENTS

A.6 TA-63

The following section generally describes the Transuranic Waste Facility (TWF) unit with detailed descriptions of the unit's structures in the subsections. The TWF consists of one hazardous waste management unit that provides storage in containers for transuranic (TRU) waste, including the hazardous component of mixed transuranic (MTRU) waste and, potentially, mixed low-level waste streams. The TWF also manages hazardous-only waste streams generated on site. The information provided in this section is submitted to address the applicable container storage requirements of 40 CFR §270.15 and Part 264, Subpart I.

A.6.1 TWF

The TWF is located at TA-63 on a mesa between a branch of Mortandad Canyon on the north and Pajarito Canyon on the south in the north central portion of LANL. The unit is built at the intersection of Pajarito Road and Puye Road, within the triangle formed by Building 63-111 to the east, Puye Road to the north, and Pajarito Road to the southwest. The closest buildings are shops immediately north of Puye Road, Office Building 63-111, records storage buildings immediately east of the TWF location, and buildings and structures on Pecos Drive further north of the TWF. .

The primary purpose of the TWF is two-fold: first, safe, indoor storage of TRU waste newly generated by LANL operations. Second, waste containers stored at the TWF are subject to characterization including review of generator documentation , gas sampling, and non-intrusive radioassay. Non-destructive assay (NDA) is used to confirm the types and amounts of radioactive elements within the waste container. NDA is a non-intrusive characterization technique that measures gamma rays and neutrons emanating from the container. Non-destructive examination (NDE) uses X-rays and a video system to inspect waste container contents. The overall process of waste characterization at LANL is described in Attachment C, *Waste Analysis Plan*, of the Permit. Waste containers will only be accepted at the TWF if they are closed and equipped with WIPP approved filter vents. Waste containers will not be opened during characterization nor while in storage although their filter vents may be replaced if necessary. However, as noted in the Contingency Plan, provisions are in place to manage open containers on an emergency basis.

Waste is contact handled (CH) TRU waste; no remote-handled TRU waste is stored at the TWF. Some TRU waste containers are determined through final waste characterization not to meet the WIPP requirements for TRU waste. Depending on the presence of hazardous constituents, these waste containers are reclassified as either low-level radioactive waste or mixed low-level waste and stored at the TWF until they are dispositioned appropriately.

The TWF is 1.81 acres or 78,843 sf (square feet). The layout of the unit is depicted in Figure 55 with the location of areas where storage occurs highlighted. The main structure for the unit is the concrete pad providing a physical base for the six waste storage buildings, several waste characterization trailers and outside storage of waste containers too large for the buildings. The pad is surrounded by a security fence The boundary of the hazardous waste management unit is limited to the northern portion of the concrete pad defined by those areas that drain to a supporting retention pond. Along the northern and western sides of the unit, this is the edge of

the concrete pad along the bottom of the retaining walls. On the east side, the edge of the curbing for the concrete pad is the boundary. The southern side of the revised boundary is defined by a painted line in compliance with Permit Section 3.5(2), Management of Containers. The line is situated approximately between the south east corner of the retention basin and the curb and gutter at the opposite corner of the fence line along the eastern side of the unit. This is defined by the points at which run-off will flow to the retention basin.

To provide containment for the unit, a retention basin is designed to capture and distribute storm water at the TWF. It also retains fire suppression water in the event of a fire. Water is released via a manual valve providing control of the flow rate from the basin. Should a fire occur, water collected will be analyzed for contaminants prior to discharge.

The unit also includes a small storage building for calibration sources used for waste characterization activities, a covered forklift charging station, and equipment storage shed. Outside the fence, other site structures include an operations support building and a fire water storage tank and associated utility building.

A.6.1.1 Concrete Pad

The TWF concrete pad is of reinforced concrete construction, on grade to provide support for the site structures and vehicle movement. The concrete pad also provides for low combustible loading between the buildings and for the site. The pad is laid on a graded soil and gravel base course and is nominally 8 inches thick. The existing ground at the site slopes from the northwest to the southeast. There is a significant grade difference from the northwest corner to the southwest corner of the site. Portions are lower in elevation than Pajarito Road or Puye Road. Given the elevation difference on the site, retaining walls are along the northwest portion of the site. The pad is sloped at approximately 2% to provide for storm water and fire suppression water drainage.

The perimeter of the pad has a 24” gutter and 6” high curb to provide run-off control. A valley gutter isolates the northern portion of the pad. Storm water and potentially contaminated firewater run-off (in the event of a fire in the storage buildings) from the northern portion of the pad flows to the valley gutter then will be channeled to the retention basin, thus, providing containment for the site in accordance with 40 CFR §264.175(b). This is a feature that negates the need for berms, dikes, or sumps around each storage building. The southern portion of the unit (where waste is not stored and outside the hazardous waste management unit) slopes southeast providing drainage off the pad toward the parking lot. Refer to Figure 55 for further details regarding the pad configuration.

A.6.1.2 Storage Buildings

The TWF includes six storage buildings, five of which are functionally identical and are described in this section. The additional storage building with other design elements is described in Section A.6.3. The five buildings measure 33 x 64 ft or approximately 2112 square feet, and are 15 ft high. The storage buildings provide safe covered storage for LANL generated TRU waste containers through weather protection, physical security, and DOE design requirements for safety at nuclear facilities. Multiple buildings are used to minimize the

radioactive material content at individual storage buildings and to reduce the potential impact from accidents relative to a single larger building. Multiple smaller buildings also reduce overall risk associated with events such as vehicle impact or fire. These five storage buildings are designated 63-0149, 63-0150, 63-0151, 63-0152, and 63-0153.

Containers loaded onto pallets are stored on a reinforced concrete floor. The building floor (i.e., mat slab) is higher than the concrete pad to prevent run-on, and is sloped towards a roll-up door at the building entrance for drainage in the event of a fire in accordance with 40 CFR §§264.175(b)(2) and (c).

The concrete floors are coated to provide a sealed surface and chemical resistance although secondary containment pallets are used to meet the containment requirements of the Permit for potential liquid containing waste in the storage buildings and also compliance with 40 CFR §264.175(b)(1). The floor coating standards include:

- Minimum Class B per National Fire Protection Association (NFPA);
- Radiation resistant as determined by American Society for Testing and Materials, International Specification ASTM D 4082; and
- Decontaminable to at least 95 percent of total activity removed and certified for Nuclear Coating Service Level II.

The storage buildings are constructed as covered single-story structural steel frames. Each of the storage buildings and its structural members are designed to exceed the snow load for roof design, the design wind force for buildings, and the seismic loading for structural components, as described in American Society of Civil Engineers (ASCE) Specification 7-05, *Minimum Design Loads for Buildings and Other Structures*. The steel frame is an ordinary moment frame with joists to attach roof panels and girts to attach wall panels. The walls of the facility are rigid to provide protection from the elements and external forces. Gypsum board on light gauge metal studs with industrial coating finishs the interior walls. The roof is a high quality metal standing seam. Batt insulation in the ceiling and on the inside of the walls reduces heat loss and gain inside the buildings. Electric heaters heat the interior to prevent fire suppression systems and eyewash stations from freezing. Cooling is provided by venting fans. In order to drain the building in the event of a fire, the floors are constructed to provide a shallow slope (1/8 inch to 1 foot) from the back end of the building towards the front, and then out the roll-up door opening and a loading ramp to the concrete pad outside the building.

A.6.1.3 Storage and Characterization Building

The sixth storage building is divided into a storage area, a room for the thermal equilibrium of containers to prepare for head space gas sampling, and additional support and analytical equipment rooms. The storage area in this building is used for a variety of containers including SWBs and SLB2s. In order to accurately analyze headspace gas, the container temperature must be allowed to equilibrate to a minimum of 64 degrees Fahrenheit for 72 hours. Sampling equipment is available for obtaining headspace gas samples and flammable gas samples from waste containers. Gas chromatography and mass spectrometry on the flammable gas sample occurs in an adjacent room.

The floor plan of the building measures 80 x 33 ft or approximately 2640 square ft, and the building is 15 ft high. The building is constructed to the same standards as the other storage buildings. The building is numbered 63-0154.

A.6.1.4 Characterization Trailers

The TWF facility includes pads with utility hook-ups for the characterization trailers used to certify containers to DOE WIPP waste acceptance criteria. The non-destructive evaluation (NDE) and non-destructive assay (NDA) equipment is provided for the TWF in mobile modified commercial trailers brought to the facility. These trailers are in use and functional at other DOE waste characterization sites. Mixed waste containers may be stored for a period longer than 24 hours as a result of operational or weather related delays in the staging of the containers through the characterization trailers. Radiographic assay equipment used for characterization is housed in these trailers as follows:

- Real-Time Radiography (RTR) unit. The NDE equipment in the trailer is designed to provide X-ray examination of the contents of TRU waste drums.
- High-Efficiency Neutron Counter (HENC) unit. The NDA equipment in the trailer is designed to provide a passive neutron and gamma measurement of 55-gallon TRU waste drums.
- SuperHENC unit. The NDA equipment in the trailer is similar to the HENC but includes a high efficiency neutron counter and a gamma counter that are both designed to handle SWBs.

The RTR is a self-contained, non-intrusive X-ray unit, physically housed in a mobile container 48 feet in length by 8 feet wide used to X-ray waste containers up to 85 gallons in volume. Radiography is a nondestructive qualitative and semi-quantitative technique that involves X-ray scanning of waste containers to identify and verify waste container contents. Radiography is used to examine the waste container to verify its physical form. This technique can detect prohibited items such as liquid wastes and gas cylinders, which are prohibited for WIPP disposal. Radiography examination must achieve the following to meet the WIPP criteria:

- Verify and document the physical form of each waste container.
- Identify any prohibited waste in the waste container.
- Confirm that the physical form of the waste matches its waste stream description (i.e., homogeneous solids, soil/gravel, or debris waste [including uncategorized metals]).

The HENC is a self-contained, non-intrusive, passive assay unit, physically housed in a mobile assay container 48 feet in length by 8 ½ feet wide by 12 ¾ feet high. The HENC is designed to assay 55-gallon (208 liter) drums containing fissionable radionuclides. The system simultaneously performs passive neutron counts and gamma spectrometry to detect gamma-emitting radionuclides for the purpose of determining quantitative concentrations of TRU constituents. The equipment and mobile container only require electrical power to operate. Approximately 10 to 13 drums a day can be processed through the HENC, with each drum taking approximately 45 minutes for examination. The HENC is a large rectangular-shaped neutron counter that is specifically designed to assay the container in a fixed geometry. The

HENC system uses passive and add-a-source neutron analysis methods to assay the nuclide mass contained in 55-gal drums of TRU waste. Waste drums to be assayed are placed on a conveyor that feeds drums into the system.

The SuperHENC operates on the same principle as the HENC, within a similar tractor trailer. The process however, is applicable to the assay of TRU radionuclides in waste packages such as SWBs and SLB2s. Data from this process is used to assay the radioactive content of SWBs containing TRU waste, sorting SWBs based on the 100 nanocurie per gram (nCi/g) TRU limit, and confirming radioisotopes indentified via acceptable knowledge (AK).

The trailers are numbered 63-0155, 63-0156, and 63-0157 at TA-63. Additional trailers may be required as characterization needs for the facility change. In the event that trailers are added or moved at the unit, the permit modification procedures in Permit Section 3.1(3) will be followed.

The WIPP verification procedures for the waste containers managed in the characterization trailers are generally completed within 24 hours. In some uncommon situations, there is a potential that a waste container could be left in the characterization trailer for greater than that time period. Examples that would require such an option include situations such as inclement weather, power outages, equipment malfunctions, evacuations, and Laboratory closures. If storage of liquid bearing wastes for greater than 24 hours occurs, the reporting conditions of Permit Section 1.9.14, *Other Noncompliance*, will be followed.

A.6.1.5 **Retention Basin**

The storage buildings and characterization trailers are located within the northern portion of the site. The retention basin is located south of the storage buildings and characterization trailers along the western edge of the site. The retention basin is designed to collect water from this area in two types of events. Primarily, surface storm water or melt water run-off from the concrete pavement in this area is directed to the retention basin via the slope (nominally 2%) of the concrete pad. A valley gutter also helps to channel water from the east side of the concrete pad to the retention basin. Secondly, in the event of a fire at the unit, fire suppression water will potentially flow out of the storage buildings or from other unit structures to the concrete pad and then to the retention basin.

The designed volume capacity for the retention basin includes the potential for a combination of both events. This includes run-off from a projected 25 year frequency and 2 hour duration precipitation event (1.94 inches of precipitation resulting in approximately 85,900 gallons (11,500 cubic ft.) from 1.63 acres). For a fire suppression event, an estimate of suppression water needed is calculated from NFPA 13 factors (380 gpm for 30 min. of sprinkler demand and 500 gpm for 30 min. fire hose stream allowance), for a total of approximately 26,400 gallons (3,530 cubic ft.). Volume from both events results in a total capacity of approximately 112,300 gallons (approximately 15,000 cubic ft.). The designed total retention basin volume also includes 0.5 ft of freeboard, resulting in a total capacity of 137,450 gallons (18,375 cubic ft.). Final dimensions of the basin will be 125 ft by 42 ft by 3.5 ft deep. The concrete mixture used for construction of the retention basin will also be supplemented with an additive to improve the concrete's water resistance.

The retention basin will be drained as needed via a manual release valve that is normally in the closed position in order to prevent overflow and to comply with 40 CFR §264.175(b)(5). The retention basin will also be equipped with an automated storm water sampler at a drainage point into the basin. This sampler will only be used to meet the requirements for storm water monitoring under the *The Multi-Sector General Permit For Stormwater Discharges Associated with Industrial Activity* (MSGP) for the facility. In normal storm water events the manual drain valve is opened and the collected storm water is released through a pipeline at the calculated predevelopment flow rate (i.e., the rate of storm water runoff from the site prior to construction of the facility) after the opening of the valve. The released storm water drains through the pipe line to a release site on the east side of the TWF and then to other stormwater retention structures developed for the aggregate area to be defined and included in the TA-63 TWF Multi Sector General Permit Storm Water Plan to be developed for the site. When only storm water has been contained in the retention basin, the decision to open the drain valve will be based upon standard MSGP processes.

In the event of a fire at the TWF, the retention basin will serve the critical function of collecting the fire suppression water in the basin. The slope of the unit's concrete pad and the valley gutter serve to ensure that any water draining from the unit's storage buildings or the characterization trailers will be routed to the retention basin. This key design feature provides containment of possible contamination and a backup option for any emergency management activities. In such an event, collected water will remain in the basin until sampling and water-quality analysis can be performed to determine whether or not the water is contaminated. The collected water will be evaluated by obtaining a representative grab sample of the liquid and analyzing it for any hazardous waste constituents managed at the facility and reasonably expected to be present. This data will be compared to the surface water quality standards outlined in the Clean Water Act (33 U.S.C. §§ 1251 to 1387), the New Mexico WQCC Regulations (20.6.2 NMAC), and the State of New Mexico Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC) to determine whether the collected water can be released, a Notice of Intent needs to be submitted to the New Mexico Groundwater Bureau, or it will be characterized to the Permit Attachment C, *Waste Analysis Plan*, standards for collection and waste disposition determination. In the event of such a fire or release, any further decontamination of the retention basin will be subject to the provisions of Attachment D, *Contingency Plan*, of the Permit.

The concrete structure, concrete waterproofing additives and associated valve minimize the potential for leakage of collected water from the retention basin. Routine inspections of the retention basin pursuant to Permit Section 2.6, *General Inspection Requirements* and subsequent repairs as required by Permit Section 2.6.2, *Repair of Equipment and Structures* ensure that the water collection capability of the retention basin is maintained or mitigated. In the case of a fire water or spill event that results in collected water, the level of water in the retention basin will also be checked for the potential of over-topping and inspected daily for water levels until final disposition of the water is determined.

A.6.1.6 Other Project Structures

Other project structures are present at the TWF to provide support for the hazardous waste management activities at the unit. These structures are either outside the boundary of the hazardous waste management unit or do not directly store or manage hazardous wastes.

The Operations Support Building provides offices and services for operations personnel and management. Personnel are housed in the separate building to ensure that radiological exposures are as low as reasonably achievable (ALARA) by increasing distance from the waste management activities. The Operations Support Building is approximately 75 ft by 80 ft. Operations and characterization personnel are housed in this building, although it will not be occupied continuously. However, it provides storage of waste container data and monitoring of key operational parameters (e.g., fire alarm systems, safety equipment status indicators, and communication systems such as the public address system) and specific safety structure, system, and component status. In addition, a public address system is powered from this building to facilitate emergency response. The building includes offices, conference rooms, restrooms, change rooms, site security access, and circulation space for about 25 workers. The building is outside the security control fence; windows provide visual observation of the control area. The building uses an ordinary steel moment frame and includes nonload bearing metal panel walls. The exterior finish is metal sandwich insulating panels. The roof is a low slope membrane-type with high solar reflectance and roof and overflow drains. The floor is reinforced concrete slab on grade and finished concrete in some areas.

Access to the waste management site is via a gated driveway east of the concrete pad. Gates are normally closed and vehicle access to the controlled area within the unit fence line requires check-in at the Operations Support Building. Pedestrian access to the controlled area also requires check-in through the Operations Support Building. Parking for site workers and visitors is provided south of the Operations Support Building and outside the controlled area fence.

Located to the north of the Operations Support Building, on the project site but outside the controlled area fence, is a dedicated fire water supply tank and utility building. The utility building is adjacent to the water tank that supplies water for the fire suppression system. This building will house two fire water pumps and instrumentation needed to ensure operation of the fire suppression system. The back-up pump is diesel powered. Access into the fenced unit will not be required for filling the diesel pump fuel tank as fueling can occur from the roadway.

Further to the north, across the access driveway is an existing groundwater monitoring well. The monitoring well is R-46, part of the LANL groundwater monitoring network. The TWF controlled area fence line is located to the west of the monitoring well. Space has been allocated to allow for routine and upset condition access to the monitoring well. Access to the TWF is not required for activities associated with the monitoring well.

There is an equipment storage shed on the west side of the unit. This shed is a light warehouse of 1250 square feet and will be used to store items such as metal pallets, containers used to over-pack waste containers if necessary, and snow removal equipment. The building will be 25 ft x50

ft x15 ft high. The sides of the shed are closed with a rollup (garage-type door) in addition to a personnel access/egress door. There will be no fire protection in this building.

The characterization process will require sealed radioactive sources for calibration of RTR and HENC sensors. A separate building designated the Characterization Source and Matrix Management (CSMM) Building will house sealed sources.

A.6.2 Security and Access Control

The DOE provides security for the area within LANL boundaries. Guard stations will control public access to this area of LANL from Pajarito Road east and west of TA-63. Therefore, only properly identified LANL and DOE employees authorized to enter the facility or individuals under their escort have access to the TWF.

The unit security requirements are met because the TWF is within a security fenced area with controlled access gates. The security fence around the waste management portion of the TWF is at least 8 feet (ft) high and is a chain link type fence with steel pipe fence posts. Fence tops have at least three strands of barbed wire angled away from the protected area to prevent a person from scaling the fence. Two vehicle access gates are integrated into the fence line. These gates, when opened, provide at least a 16 foot wide clearance to enable vehicle access. Gates are locked when the facility is not operational.

Controlled entry to the unit is provided by a system of access controls (badge readers and administrative controls will be required prior to entrance) to ensure that only authorized personnel are granted access. These access controls also ensure that all facility personnel can be identified and located in an emergency.

The TWF is patrolled by LANL security personnel during both operational and nonoperational hours to ensure that the gates are locked and that unauthorized entry does not occur.

Warning signs stating "Danger – Unauthorized Personnel Keep Out," are posted on the perimeter fences and gates. These can be seen from any approach to the TWF in accordance with Permit Section 2.5.2, *Warning Signs*. 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 feet. Signs for any confined areas, if necessary, may be reduced in size, but are legible to personnel who require access to these areas. TA-63 does not have a shared boundary with the Pueblos of San Ildefonso or Santa Clara and, therefore, the signs do not include warnings in Tewa dialects.

A.6.3 Required Equipment

In accordance with Permit Attachment D.2, Contingency Plan, emergency equipment is located throughout the TWF and includes fire alarms, fire response systems, alarm systems, internal communications, spill kits, and decontamination equipment. Detailed information on the required emergency and safety equipment located at the TWF is provided below.

The TWF is equipped with 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 the unit and will be monitored. The facility monitor/control system will be in operation 24 hours a day and is located in the access control station at the TWF; the system is also connected to the LANL CAS. Specific facility monitor/control system equipment located at the TWF is discussed below.

Emergency equipment is located throughout the TWF and includes fire alarms, fire response systems, alarm systems, internal communications, spill kits, and decontamination equipment. Detailed information on the required emergency and safety equipment located at the TWF is provided below.

Fire-alarm pull boxes and/or drop box push-button alarms are located pursuant to NFPA standards in the TWF where waste management activities will be conducted. Fire-alarm pull boxes can be used by personnel to activate a local fire alarm when a fire or other emergency is discovered. Once manually activated, an alarm will sound in the TWF access control station and at the LAFD through LANL's CAS. The TWF is also equipped with automatic fire-suppression alarm systems. The fire-suppression alarms will be activated when water flow is detected in the sprinkler pipes of the fire-suppression system. Upon activation of the fire-alarm system, an alarm will sound and red lights will flash to alert personnel of emergency conditions. All fire-alarm pull boxes and automatic fire-suppression systems that will be located at the TWF will be connected to the LAFD through LANL's CAS.

In addition to the alarms described above, a public address (PA) system may also be used to announce emergency conditions or to initiate an evacuation at the TWF. The PA system is audible throughout the TWF and will be activated by the access control station in the Operations Support Building.

Personnel working at the TWF will have the ability to communicate the location and nature of hazardous conditions using conventional telephones, or cellular telephones to call the access control station. This type of call will summon assistance from the Emergency Management and Response Office, local police and fire departments, and state emergency response teams, if necessary.

Fire control equipment is readily available for the waste management unit. Portable fire extinguishers are available and may be used by trained on-site personnel depending on the size of the fire and the fuel source. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. Fire hydrants are located in accordance with NFPA standards on the west and east sides of the TWF pad and near the Operations Building. Water will be supplied to the fire hydrants by a municipal water system which will provide adequate volume and pressure (i.e., greater than 1,000 gal per minute and 90 pounds per square inch static pressure) to multiple water hoses in the event of a fire. The LAFD will supply all water hoses needed in the event of a fire at the TWF. . Fire protection systems for the TWF storage buildings, including the Storage and Characterization Building 63-0154, include a wet-pipe sprinkler system for fire suppression. Water will be supplied via the 150,000 gallon tank north of the Operations Support Building with a combination of electric and diesel powered fire pumps, the tank and its associated level detection, freeze protection, and power

supply for the pumps. The fire suppression water will be pumped to automatic sprinkler systems in the buildings.

There are spill kits available at the TWF in the storage areas to mitigate containable spills. These kits will typically contain sorbents, neutralizers, personal protective equipment (PPE), and other equipment essential for containment of spills. Trained personnel will use the spill kits only if they know what has been spilled and they are sure their actions will not put themselves or others at risk. In addition to the spill kits, cleanup equipment such as shovels, bags, drums, etc. will be available at the TWF. Overpack drums and sorbents will also be stored in an equipment storage shed on the west side of the TWF. Emergency personnel can also provide additional spill control equipment and assistance upon request depending on the size and severity of the spill.

Personnel decontamination equipment that will be available at the TWF will include safety showers and eye wash stations located inside each of the storage buildings. These will be situated at all the waste storage buildings in accordance with OSHA requirements. Additional decontamination equipment may be provided by emergency personnel. Material Safety Data Sheets MSDS (e.g., for cleaners, solvents, used on site) are available at the Operations Support Building and will provide useful exposure information in accordance with OSHA requirements.

A.6.4 Control of Run-on/Run-off

Controlling run-on and run-off at the TWF locations where waste management operations regularly occur is accomplished by the design of the buildings and the use of control structures with appropriate contouring of surface areas. Run-on of storm water into the storage buildings will not occur: walls enclose raised floors, and surface contouring slopes away from the building to prevents storm water from pooling against the foundations, doors, and loading areas. The internal floors of the buildings are sloped to the front doors to prevent flooding by precipitation or storm water in addition to providing drainage to the outside.

The TWF site will maintain a nominally 2% slope to optimize drainage and the use of electric forklifts to handle waste containers. A retention wall maintains the differences in elevation between the surrounding roads and the site. The site is surfaced in concrete and includes a retention basin for management of storm water and for the collection of fire suppression water until it is sampled and verified to be uncontaminated. Retention basin capacity includes the runoff from a 25 yr-2 hr precipitation event in addition to a fire event or a total capacity of approximately 137,450 gallons or 18,375 cubic feet of water.

Secondary containment is provided where potential liquid-bearing containers are stored in the buildings to prevent run-off. Secondary containment systems (i.e., pallets) are utilized, as needed, and have sufficient capacity to contain at least 10 percent (%) of the volume of potential liquid-bearing containers or the volume of the largest container stored in the system, whichever is greater, pursuant to the requirements of 40 CFR §264.175(b)(3) and Permit Section 3.7, *Containment Systems*.

Waste spills or leaks will be managed inside the characterization trailers to prevent run-off. Containers stored outside on the concrete pad will be protected from contact with precipitation in accordance with Permit Section 3.5.1 (5).

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ATTACHMENT D

CONTINGENCY PLAN

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TABLE D-5

TA-63 Transuranic Waste Facility

Emergency Equipment

FIRE CONTROL EQUIPMENT

ABC and/or BC rated fire extinguishers are available at TA-63-145, TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, TA-63-154, TA-63-155, TA-63-156, and TA-63-157

Description of General Capabilities:

These portable, manually operated fire extinguishers may be used by any qualified employee in the event of a small fire. For larger fires, security personnel and the Los Alamos Fire Department (LAFD) are alerted.

Flame or smoke detection equipment and fire alarm pull stations will be located within structures at TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, and TA-63-154.

Dry-pipe fire suppression systems are available at TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, and TA-63-154.

Fire alarm pull stations are available at TA-63-145, TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, TA-63-154, TA-63-155, TA-63-156, and TA-63-157.

Description of General Capabilities:

Fire alarms may be activated by any employee in the event of a fire to notify the LAFD and security personnel. Security personnel and LAFD are also notified upon activation of the flame or smoke detectors.

Two fire hydrants are located in TWF. These fire hydrants will supply water at an adequate volume and pressure to satisfy the requirements of 40 CFR 264.32(d)

SPILL CONTROL EQUIPMENT

Spill control stations and/or portable spill kits are located at TA-63-145, TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, TA-63-154, TA-63-155, TA-63-156, and TA-63-157 Each spill kit generally includes bags of absorbent and an inventory of tools and supplies.

COMMUNICATION EQUIPMENT

Telephones and the public address system are located inside the Operations Support Building.

Description of General Capabilities:

Telephones for internal and external communication are available for use by any employee. Employees can be notified of an emergency situation and appropriate response action through the public address system.

Fire alarm pull stations are located in the storage buildings, the receiving canopy, and at operations support building.

Description of General Capabilities:

Manually-operated fire alarms may be activated by any employee in the event of a fire to alert TWF site personnel, LANL Emergency Response Personnel, and the LAFD.

Fire and public address system alarms

Description of General Capabilities:

The fire and public address system are activated or used to provide a sound signal to alert personnel of fires or the need to clear the area.

DECONTAMINATION EQUIPMENT

Eyewash/emergency shower stations and MSDSs are available in the storage buildings and the Operation Support Building. MSDS information is maintained where appropriate for personnel accessibility and are used for chemicals that will be needed to support operations or emergency activities.

Description of General Capabilities:

Eyewashes and emergency showers may be used by personnel who receive a chemical splash to the eyes or body. Specific MSDSs should be reviewed prior to working with chemicals.

PERSONAL PROTECTIVE EQUIPMENT

Personnel at TWF will be required to use appropriate personal protective equipment (PPE) protect themselves from hazards found under normal conditions. This PPE may include gloves, steel toe shoes, and eye protection, additional PPE may be required during unusual hazardous situations. First aid kits and hearing protection will also be available.

Description of General Capabilities:

To prevent undue exposure of personnel to hazardous or mixed waste, personal protective equipment (PPE) appropriate for the waste containers being managed will be worn by all on-site personnel at the TWF (see section 2.5.6). First aid kits may be used by personnel who sustain minor injuries at the unit in the course of operations. Hearing protection may be used by operations personnel to mitigate noise impacts.

ATTACHMENT J

HAZARDOUS WASTE MANAGEMENT UNITS

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Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
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-55-4 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-55-4 Total square footage – 11,100	Outdoor (not associated with a regulated unit)
TA-63 Transuranic Waste Facility	S01	105,875 gal	Includes TA-63-145 Receiving Canopy, TA-63-149 through 153 Storage Buildings, TA-63-154 Storage and Characterization Building, TA-63-155 through 157 Characterization Trailers, and Outside Storage Pad Total square footage – 78,843	Outdoor (not associated with a regulated unit)

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ATTACHMENT G.27

TECHNICAL AREA 63

TRANSURANIC WASTE FACILITY

CLOSURE PLAN

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TECHNICAL AREA 63
TRANSURANIC WASTE FACILITY
CLOSURE PLAN

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TRANSURANIC WASTE FACILITY
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the permitted mixed waste Transuranic Waste Facility (TWF) at Technical Area (TA)-63 at the Los Alamos National Laboratory (Facility) hereinafter referred to as the "Unit To Be Closed," or 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 waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

The TWF unit will be closed by removal of all structures and equipment. Until closure is complete and has been certified in accordance with Permit Part 9.5 and 40 CFR §264.115, 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 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 (the Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF THE UNIT TO BE CLOSED

The TWF is located at TA-63 at the junction of Pajarito Road and Puye Road, within the triangle formed by Building 63-111 to the east, Puye Road to the north, and Pajarito Road to the southwest. It was designed, constructed, and commissioned as a Hazard Category (HC)-2 nuclear facility and permitted as Resource Conservation and Recovery Act (RCRA) Storage Facility for TRU, mixed TRU and hazardous wastes. Refer to Permit Figure 55 for additional site information and to Permit Attachment A.6, *Technical Area (TA), Unit Descriptions* for additional site information and building numbers..

STRUCTURES THAT HAVE MANAGED HAZARDOUS WASTE TO BE REMOVED AT CLOSURE:

- Storage Buildings: 63-0149, 63-0150, 63-0151, 63-0152, and 63-0153
- Storage and Characterization Building: 63-0154
- Characterization Trailers: 63-0155, 63-0156, and 63-0156
- Concrete Storage Pad

Six buildings are designated for storage of TRU and Mixed TRU wastes in support of LANL programs and missions. One of the storage structures is used for both storage of larger-sized waste containers and for head space gas sampling and analysis. Certification of containers in accordance with Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC) will occur at the three characterization and testing trailers. A concrete pad underlies the storage and

characterization buildings and trailers. The boundaries of the pad will be used to designate the RCRA-permitted portion of the TWF.

OTHER TWF STRUCTURES TO BE REMOVED AT CLOSURE:

- Calibration Source and Matrix Module (CSMM) Building: 63-0158
- Retention Basin

The CSMM Building and the Retention Basin are the only structures that will be closed within the boundary of the TWF permitted hazardous waste management unit that are not used to manage hazardous waste.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

The TWF will be capable of storing/staging a minimum of 825 55-gallon drum/drum equivalents (D/DE) with overflow storage capacity up to 1,240 D/DE. On a yearly basis, the TWF will process 1,100 D/DE per year, or 33,000 D/DE or 1.815 million gallons during the lifetime of the facility. Refer to Table 1 for more information pertaining to the estimate of waste stored at the permitted unit.

4.0 GENERAL CLOSURE REQUIREMENTS

The following sections describe the closure objectives and schedule for the permitted unit.

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. The cleanup levels for soil 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.

Closure of the permitted unit will be deemed complete when:1) All 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.

4.2 Closure Schedule

This closure plan is intended to address closure requirements for the permitted unit within the authorized timeframe of this Permit (see Permit Section 9.4.1). However, pursuant to 40 CFR §264.112(e), removing hazardous wastes and decontaminating or dismantling equipment in accordance with an approved closure plan may be conducted at any time before or after notification of closure. Subject to the provisions of 40 CFR §264.113(a), such removal may only occur before the end of the allowed 90 day period to remove, treat or dispose of closure related hazardous waste after receiving the final volume of hazardous waste. For the purposes of this closure plan, portable and temporary structures in this permitted unit such as characterization trailers are considered to be equipment by their design and to facilitate the closure schedule for the TWF.

Closure activities will proceed according to the schedule discussed below and Table 2 of this closure plan. Notification of closure will occur at least 45 days prior to when LANL expects to begin closure (see 40 CFR § 264.112(d)(1)). Closure activities will begin according to the requirements of 40 CFR § 264.112(d)(2) no later than 30 days after the date on which the unit receives the known final volume of hazardous waste. All hazardous wastes will be removed from the TWF within 90 days of the receipt of the known final volume of hazardous waste pursuant to Permit Section 9.4.1, *Closure Schedule*, Permit Section 9.4.2, *Removal of Hazardous Waste*, and 40 CFR §264.113(a). A records review of the operating history of the unit will occur within ten days of the completed removal or treatment of all waste from the permitted unit as required by Permit Section 9.4.6.1, *Records Review*. A structural assessment of the unit will occur within ten days of the completed removal or treatment of all waste from the permitted unit as required by Permit Section 9.4.6.2, *Structural Assessment.* Notification of the structural assessment (assessment), as described in Section 5.2 of this closure plan, will occur in accordance with Permit Section 9.4.6.2.

After completion of the records review and structural assessment, LANL will submit an amended closure plan, if necessary, to the NMED for review and approval as a permit modification to incorporate changes to the sampling and analysis plan. After approval of the modified closure plan, if applicable, LANL will continue with closure activities. Decontamination verification sampling activities, and soil sampling, will be conducted to demonstrate that removal of the TWF structures and any other closure activities included in this or a modified closure plan will meet the closure performance standards in Permit Section 9.2.1.

All closure activities will be completed within 150 days of the beginning of closure activities or 180 days after the receipt of the known volume of hazardous waste in compliance with Permit

Section 9.4.1.1. The final closure report and certification will be submitted to NMED for review and approval within 60 days of closure completion as required by Permit Section 9.5. In the event that the activities required under the closure plan cannot be completed within the allotted timeframe, the Permittees may request a permit modification to modify the schedule pursuant to the requirements of Permit Section 9.4.8, *Amendment of the Closure Plan*, referencing the conditions of 40 CFR §264.112(c)(2) or of 40 CFR§264.113(b) and (c). In the event that closure of the TWF cannot proceed according to schedule, LANL will notify the NMED in accordance with the extension request requirements in Permit Section 9.4.1.1.

5.0 CLOSURE PROCEDURES

The following sections describe the procedures to be used for closure of the permitted unit. The procedures will proceed in the order described although the operating records review described in Section 5.2.1 may be started earlier.

5.1 Removal of Waste

In accordance with Permit Part 9.4.2, all stored hazardous waste will be removed from the permitted unit scheduled for closure. Depending upon their size, containers will be removed with forklifts, container dollies, pallets, or manually. Containers will be placed on flat bed trucks, trailers, or other appropriate vehicles for transport from the permitted unit. Appropriate shipping documentation will be prepared for the wastes during transport. All hazardous waste containers will be moved to a permitted on-site storage unit or a permitted off-site treatment, storage, or disposal facility.

5.2 Records Review and Structural Assessment

Before starting decontamination and sampling activities, the operating and inspection records for the permitted unit will be reviewed and a structural assessment of the unit will be conducted to determine any finding(s) or action(s) that may influence closure activities or additional sampling locations.

5.2.1 Records Review

The Facility Operating and Inspection Records shall be reviewed in accordance with Permit Section 9.4.6.1. The goals of this review will be to:

a) confirm the specific hazardous waste constituents of concern; and

b) confirm additional sampling locations (e.g., locations of any spills or chronic conditions identified in the Operating Record).

5.2.2 Structural Assessment

A structural assessment (assessment) of the unit's physical condition will be conducted in accordance with Permit Section 9.4.6.2 and documented with photographs and drawings, as necessary. The TWF structural assessment will include the concrete pad (as an outdoor pad defined in Section 9.1.3(1) of the Permit) and the retention basin. 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 as additional sampling points in the updated sampling and analysis plan (see Section 7.0) and include the applicable sampling methods and procedures. If evidence of a release or damage is present, a wipe sample or a

representative sample of the media (e.g., concrete chip) will be collected according to the procedures in Section 7.2. If additional sampling locations are necessary, the Permittees will request a permit modification to modify the sampling and analysis plan in accordance with Permit Section 9.4.6. The locations of any additional sampling locations will be determined using Global Positioning Satellite (GPS) coordinates.

5.3 Removal and Decontamination of Structures and Related Equipment

In accordance with the procedures in Permit Section 9.4.3, all remaining hazardous waste residues and hazardous constituents will be removed from the permitted unit. The unit's structures and related equipment will be decontaminated if necessary, removed, and managed appropriately. All waste material will be handled and characterized as necessary as required by Permit Attachment C, *Waste Analysis Plan*, Permit Section 9.4.5, and the LANL waste management procedures.

5.3.1 Removal of Structures and Related Equipment

All structures and related equipment that are removed from the unit will require no further decontamination but will be considered solid waste and potentially, hazardous waste, as defined by the Permit, at removal. They will be disposed of in accordance with Permit Section 9.4.5 and Section 5.3 of this closure plan. The concrete pad, the materials associated with the pad (curbing and ramps), and a minimum of six inches of the base course and soil underlying the concrete pad will be removed. If the remaining soil surface shows evidence that the removal to this point has not gathered all appropriate soils and materials associated with the pad, additional soil removal will occur until the conditions of Permit Section 9.2 are met. The option of removing small areas of concrete at sampling locations where contamination is suspected (i.e., spill or staining sites) to allow sampling without disturbing the surrounding area prior to the general removal of the pad will be reviewed at the time of the structural assessment. If this option is used, the concrete removed at the sampling location and any concrete subsequently removed from the location during the general removal of the concrete pad to a radius to be determined during the structural assessment will be segregated to prevent potential cross contamination during the closure process.

5.3.2 Decontamination of Structures and Related Equipment

All structures and related equipment that will be re-used by the Facility will be decontaminated in accordance with Permit Section 9.4.3.1. This may include the characterization trailers and any associated equipment removed at closure. The lists of equipment needing decontamination will be reviewed during the pre-closure and structural assessment described in Part 9 of the Permit.

Water resistant equipment at the permitted unit will be decontaminated by steam cleaning using water or pressure washing with a solution consisting of a surfactant detergent (e.g., Alconox®) and water. Wipe-down washing with a solution consisting of a surfactant detergent (e.g., Alconox®) and water may be conducted on equipment within the unit if containment cannot be established for the steam cleaning water or pressure wash solution or these methods will damage the equipment preventing further use or recycling. The quantity of the wash solution will be minimized by dispensing from buckets, spray bottles, or other types of containers. Cheesecloth, rags, or other absorbent materials will be used to wipe down the equipment after being wetted in the wash solution or after spraying solution onto the equipment. If necessary, portable berms or other devices (e.g., absorbent socks, plastic sheeting, wading pools, or existing secondary

containment) designed to collect and provide containment will collect excess wash water and provide containment during the decontamination process. Wash solution will not be allowed to enter the fire suppression water drains.

5.4 Equipment Used During Decontamination Activities

Reusable protective clothing, tools, and equipment used during closure activities will be cleaned with a wash water solution. The solution will be characterized and managed as a hazardous waste if appropriate. Residue, disposable equipment, and equipment that cannot be decontaminated will be containerized and managed as waste.

6.0 SAMPLING AND ANALYSIS PLAN

This sampling and analysis plan (SAP) describes the sampling and analytical methods as well as the quality assurance and quality control (QA/QC) procedures that will be used to demonstrate that the permitted unit is closed in accordance with Permit Part 9 and all applicable closure requirements.

6.1 Soil Sampling Locations

Soils sampling will be conducted at the permitted unit in order to verify that the removal of structures and soils, with other closure related activities meet the closure performance standards in Permit Section 9.2, *Closure Performance Standards*. All samples will be collected and analyzed in accordance with the procedures in Sections 6.2, 6.3, and 6.4 of this closure plan. Soil samples will be collected from beneath the concrete pad of the unit and in additional sampling locations specified to meet the conditions of Permit Section 9.4.7.1.ii.

In compliance with Permit Section 9.4.7.ii, this closure plan will ensure the collection of soil samples in the following locations:

a. One sample at each loading/unloading point for a total of 6 samples (see Permit Section 9.4.7.1.ii(1));

b. one sample every 900 square feet of the permitted unit for a total of 88 samples (see Permit Section 9.4.7.1.ii(2));

c. one sample at the south of the permitted unit at the stormwater discharge drainage location (see Permit Section 9.4.7.1.ii(3));

d. one sample, at 30 foot intervals, along the valley gutter for a total of 4 samples (see Permit Section 9.4.7.1.ii(8)); and

e. 3 additional samples along the long axis of the retention basin (see Permit Section 9.4.7.ii(5).

All soil sample locations are illustrated in Figure F-1 of this closure plan.

6.2 Sample Collection Procedures

Samples will be collected in accordance with Permit Section 9.4.7.1 and the procedures identified in this SAP which incorporates guidance from the United States Environmental

Protection Agency (USEPA)(EPA, 1986 and EPA, 2003), DOE (DOE, 1995) and other Department-approved procedures.

6.2.1 Liquid Sampling

Liquid sampling will consist of grab samples of the liquid at the drain of the retention basin, if applicable, to ensure the drain system has not been contaminated. Liquid sampling will be conducted using glass or plastic tubes, a composite liquid waste sampler, a bacon bomb, a bailer, or by pouring liquid into sample containers.

6.2.2 Wipe Sampling

When surface wipe samples are used to determine if residual hazardous constituents remain for structures or surfaces within the TWF, the samples will be taken in accordance with the National Institute of Occupational Safety and Health (NIOSH) *Manual of Analytical Methods*, Method 9100 (NIOSH, 1994), or other approved methodology. The appropriate use of wipe sample methods will consider the type of surface being sampled, the type of contaminant, the solution used, and the desired contaminant concentration detection limits. The NIOSH method includes wiping a 100 square centimeter area at each discrete location with a gauze wipe wetted with a liquid solution appropriate for the desired analysis (e.g., de-ionized water for lead). For wipe sampling, guidance from the analytical laboratory must be obtained prior to wipe verification sampling to confirm that the solution chosen for each analysis is appropriate for the analysis to be conducted and that wipe sampling is a proper technique for the analysis.

6.2.3 Soil Sampling

Soil will be sampled using a spade, scoop, auger, trowel, or other equipment as specified in approved methods for the type of analyte (i.e., EPA 1996 or 2002). Soil samples will be collected in accordance with Permit, Section 9.4.7.1.ii. Samples will be kept at their at-depth temperature or lower, protected from ultraviolet light, sealed tightly in the recommended container, and analyzed within the specific holding times listed in Table 3.

6.2.4 Cleaning of Sampling Equipment

Reusable sampling equipment will be cleaned and rinsed prior to use. Sampling equipment rinsate blanks will be collected and analyzed only if reusable sampling equipment is used. Reusable decontamination equipment, including protective clothing and tools, used during closure activities will be scraped as necessary to remove residue and cleaned with a wash water solution. Sampling equipment will be cleaned prior to each use with a wash solution, rinsed several times with tap water, and air-dried or wiped dry to prevent cross contamination of samples. A disposable sampler is considered clean if still in a factory-sealed wrapper. Residue, disposable decontamination equipment, and reusable decontamination equipment that cannot be decontaminated will be containerized and managed appropriately at an approved on-site facility.

6.3 Sample Management Procedures

The following information presents general sample management and sampling equipment cleaning procedures for closure of the permitted unit. Samples will be collected and transported using documented chain-of-custody and sample management procedures to ensure the integrity of the sample and provide an accurate and defensible written record of the possession and handling of a sample from the time of collection through laboratory analysis. Sample collection equipment will include labels, chain-of-custody forms, EPA-certified clean containers, coolers,

preservatives, and custody seals. The following provides a description of sample documentation; sample handling, preservation, and storage; and sample packaging and transportation requirements that will be followed during the sampling activities associated with the closure.

6.3.1 Sample Documentation

Sampling personnel will complete and maintain records to document sampling and analysis activities. Sample documentation will include sample identification numbers, chain-of-custody forms, analysis requested, sample logbooks detailing sample collection activities, and shipping forms (if necessary).

6.3.1.1 Chain-of-Custody

Chain-of-custody forms will be maintained by sampling personnel until the samples are relinquished to the analytical laboratory. One chain-of-custody form may be used to document all of the samples collected from a single sampling event. The sample collector will be responsible for the integrity of the samples collected until properly transferred to another person. The EPA considers a sample to be in a person's custody if it is:

a) in a person's physical possession;

b) in view of the person in possession; or

c) secured by that person in a restricted access area to prevent tampering.

The sample collector will document all pertinent sample collection data. Individuals relinquishing or receiving custody of the samples will sign, date, and note the time on the analysis request/chain-of-custody form. A chain-of-custody form must accompany all samples from collection through laboratory analysis. The completed original chain-of-custody form will be returned by the analytical laboratory and will become a part of the permanent record documenting the sampling effort.

6.3.1.2 Sample Labels and Custody Seals

A sample label will be affixed to each sample container. The sample label will include the following information:

a) a unique sample identification number;

b) name of the sample collector;

c) date and time of collection;

d) type of preservatives used, if any; and

e) location from which the sample was collected.

A custody seal will be placed on each sample container to detect unauthorized tampering with the samples. These labels must be initialed, dated, and affixed by the sample collector in such a manner that it is necessary to break the seal to open the container.

6.3.1.3 Sample Logbook

All pertinent information on the sampling effort must be recorded in a bound logbook. Information must be recorded in ink and any cross outs must be made with a single line and the change initialed and dated by the author. The sample logbook will include the following information:

a) the sample location by GPS coordinates recorded during the structural assessment,

b) suspected composition,

c) sample identification number,

d) volume/mass of sample taken,

e) purpose of sampling,

f) description of sample point and sampling methodology,

g) date and time of collection,

h) name of the sample collector,

i) sample destination and how it will be transported,

j) observations, and

k) names of personnel responsible for the observations.

6.3.2 Sample Handling, Preservation, and Storage

Samples will be collected and containerized in appropriate pre-cleaned sample containers. Table 3 presents the requirements in SW-846 (EPA, 1986) for sample containers, preservation techniques, and holding times. Samples that require cooling to 4 degrees Celsius will be placed in a cooler with ice or ice gel or in a refrigerator immediately upon collection.

6.3.3 Packaging and Transportation of Samples

All packaging and transportation activities will meet safety expectations, QA requirements, DOE Orders, and relevant local, state, and federal laws (including 10 CFR and 49 CFR). Appropriate Facility documents establish these requirements for packaging design, testing, acquisition, acceptance, use, maintenance, and decommissioning and for on-site, intra-site, and off-site shipment preparation and transportation of general commodities, hazardous materials, substances, waste, and defense program materials.

Off-site transportation of samples will occur via private, contract, or common motor carrier; air carrier; or freight. All off-site transportation will be processed through the Facility packaging and transportation organization, unless the shipper is specifically authorized through formal documentation by that organization to independently tender shipments to common motor or air carriers.

6.4 Sample Analysis Requirements

Samples will be analyzed for all hazardous constituents listed in Appendix VIII 40 CFR 261 and in Appendix IX of 40 CFR 264 that have been stored at the permitted unit during its operational history. Samples will be analyzed by an independent laboratory using the methods outlined in

Table 4. Analytes, test methods and instrumentation, target detection limits, and rationale for metals and organic analyses are presented in Table 4.

6.4.1 Analytical Laboratory Requirements

The analytical laboratory will perform the detailed qualitative and quantitative chemical analyses specified in Section 6.4.2. This analytical laboratory will have:

a) a documented comprehensive QA/ QC program,

b) technical analytical expertise,

c) a document control/records management plan, and;

d) the capability to perform data reduction, validation, and reporting.

The selection of the analytical testing methods identified in Table 4 was based on the following considerations:

a) the physical form of the waste,

b) constituents of interest,

c) required detection limits (e.g., regulatory thresholds), and

d) information requirements (e.g., waste classification).

6.4.2 Quality Assurance/Quality Control

Field sampling procedures and laboratory analyses will be evaluated through the use of QA/QC samples to assess the overall quality of the data produced. QC samples evaluate precision, accuracy, and potential sample contaminations associated with the sampling/analysis process and are described in the following sections, along with information on calculations necessary to evaluate the QC results. QA/QC samples will be collected in accordance with the Facility's most recent and appropriate sampling plan incorporating guidance from the EPA (EPA, 2002) and DOE (DOE, 1995), or other approved procedures. Analysis will be conducted in accordance with procedures given in SW-846 (EPA, 1986), or other approved procedures or methods.

6.4.2.1 Field Quality Control

The field QC samples that will be collected include trip blanks, field blanks, field duplicates, and equipment rinsate blanks as required by Permit Section 9.4.7.1(8). Table 5 presents a summary of QC sample types, applicable analyses, frequency, and acceptance criteria. QC samples will be given a unique sample identification number and submitted to the analytical laboratory as blind samples. QC samples will be identified on the applicable forms so that the results can be applied to the associated sample.

6.4.2.2 Analytical Laboratory QC Samples

QA/QC considerations are an integral part of analytical laboratory operations. Laboratory QA ensures that analytical methods generate data that are technically sound, statistically valid, and that can be documented. QC procedures are the tools employed to measure the degree to which these QA objectives are met.

6.4.3 Data Reduction, Verification, Validation, and Reporting

Analytical data generated by the activities described in this closure plan will be verified and validated. Data reduction is the conversion of raw data to reportable units; transfer of data between recording media; and computation of summary statistics, standard errors, confidence intervals, and statistical tests.

6.4.4 Data Reporting Requirements

Analytical results will include all pertinent information about the condition and appearance of the sample-as-received. Analytical reports will include:

a) a summary of analytical results for each sample;

b) results from QC samples such as blanks, spikes, and calibrations;

c) reference to standard methods or a detailed description of analytical procedures; and

d) raw data printouts for comparison with summaries.

The laboratory will describe off-normal sample preparations that occur during the analysis in sufficient detail so that the data user can understand how the sample was analyzed.

7.0 WASTE MANAGEMENT

All waste generated during closure will be controlled, handled, characterized, and disposed of in accordance with Permit Section 9.4.5, Permit Attachment C (*Waste Analysis Plan*), and Facility waste management procedures. Closure activities may generate different types of waste materials, which are listed with potential disposal options in Table 6 of this closure plan. Subsequent disposition options for the decontaminated structures and equipment include reuse, recycling, or disposal.

Portable berms or other devices, if necessary, will be used to collect excess wash water and provide containment during the decontamination activities to prevent releases. The excess wash water will be collected, transferred to containers, sampled, and analyzed for the hazardous constituents listed in Table 7. The results of this analysis will determine if the excess wash water should be managed as hazardous or non-hazardous wastewater. Reusable protective clothing, tools, and equipment used during decontamination will be cleaned with a wash water solution. Disposable equipment and other small equipment that cannot be decontaminated will be containerized and managed as waste.

8.0 CLOSURE CERTIFICATION REPORT

Upon completion of the closure activities at the TWF, a closure certification report will be prepared and submitted to the Department. The report will document that the unit has been closed in compliance with the specifications in this closure plan and will contain the following information in accordance with Section 9.5 of the Permit:

The Report shall summarize all activities conducted during closure including, but not limited to, the following:

(1) the results of all investigations;

(2) remediation waste management;

(3) decontamination;

(4) decontamination verification and soil sampling activities; and

(5) results of all chemical analyses and other characterization activities.

The closure certification report will be submitted to the Department no later than 60 days after completion of closure of the TWF Permitted Unit. The certification will be signed by the Permittees and by an independent professional engineer registered in the State of New Mexico.

The report will document the permitted unit's closure and contain, at a minimum, the following information:

(6) a copy of the certification pursuant to 40 CFR § 264.115;

(7) any variance, and the reason for the variance, from the activities approved in this closure plan;

(8) documentation of the structural assessment and records review conducted under this Permit Part 9;

(9) a summary of all sampling results, showing:

a. sample identification;
b. sampling location;
c. data reported;
d. detection limit for each analyte;
e. a measure of analytical precision (*e.g.*, uncertainty, range, variance);
f. identification of analytical procedure;
g. identification of analytical laboratory;

(10) a QA/QC statement on analytical data validation and decontamination verification;

(11) the location of the file of supporting documentation, including:

a. field logbooks;
b. laboratory sample analysis reports;
c. QA/QC documentation;
d. chain-of-custody forms;

(12) storage or disposal location of hazardous waste resulting from closure activities;

(13) a copy of the Human Health and Ecological Risk Assessment Reports, if a site specific risk assessment was conducted pursuant to Permit Sections 11.10.4 and 11.10.5 for the permitted unit; and

(14) a certification statement of the accuracy of the Closure Report.

9.0 DEPARTMENT CLOSURE ASSESSMENT

Upon submittal of the closure certification report described in Section 8.0 of this closure plan, the Facility will arrange an on-site closure review with representatives of the Department to assess the completion of the closure activities of the permitted unit's closure activities. The Facility may also arrange, at reasonable times, for other on-site reviews before, during, or after the closure period upon request by Department representatives.

10.0 REFERENCES

DOE, 1995. "DOE Methods for Evaluating Environmental and Waste Management Samples," DOE/EM-0089T, Rev. 2. Prepared for the U.S. Department of Energy by Pacific Northwest Laboratory, Richland, Washington.

EPA, 1986 and all approved updates. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA-*SW-846*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

EPA, 2002. "RCRA Waste Sampling Draft Technical Guidance Planning, Implementation, and Assessment," EPA530-D-02-002, August 2002, Office of Solid Waste, U.S. Environmental Protection Agency, Washington, D.C.

NIOSH, 1994. The National Institute for Occupational Health and Safety (NIOSH) *Manual of Analytical Methods*, Method 9100, 4th ed. Issue 1. 1994.

NMED, 2012. "Risk Assessment Guidance for Site Investigations and Remediation," New Mexico Environment Department, Santa Fe, New Mexico.

Table 1
Technical Area 63 TWF Storage Unit Capacities and Waste Categories

Structure	Estimated Maximum Waste[a] (gallons)	55-gallon Drum Equivalent	Estimated Inventory[b, c] (gallons)	Waste Category	Dimensions (feet^2)
TA-63-0149	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0150	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0151	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0152	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0153	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0154	11,367	206.7	302,500	TRU, MTRU	77’11” x 31’4”
Totals	**68,200**	**1,240**	**1,815,000**		

[a] Estimated maximum quantity of waste that can be stored at the unit at one time.

[b] Estimated lifetime inventory of waste stored/treated at the unit.

[c] Estimated waste inventories include future use.

Table 2
Closure Schedule for the TA-63 TWF

Closure Activity	Schedule	Basis
Provide closure notification to NMED	-45	40 CFR §264.112(d)(1)
Receive known final volume of waste	-30	Permit Section 9.4.1, 40 CFR §264.112(d)(2)(i)
Begin closure activity – requirement to begin removal of hazardous waste from the permitted unit	0	Permit Section 9.4.1, 40 CFR §264.112(d)(2)(i)
Notification of structural assessment to NMED	40	Permit Section 9.4.6.2: notification to occur at least 30 days prior to the structural assessment.
Hazardous waste removed	60	Permit Section 9.4.1 and 9.4.2, 40 CFR §264.113(a): removal must be completed within 90 days of the receipt of known final volume of hazardous waste.
Completion of record review	70	Permit Section 9.4.6.1: record review will occur within 10 days of completed waste removal or treatment.
Completion of structural assessment	70	Permit Section 9.4.6.2: structural assessment will occur within 10 days of completed waste removal or treatment.
Completion of closure activities	150	Permit Section 9.4.1.1, 40 CFR §264.113(b): closure activities must be completed within 180 days of the receipt of known final volume of hazardous waste.
Submittal of closure report to NMED	210	Permit Section 9.5, 40 CFR §264.115: report submitted within 60 days of closure completion

Note: The schedule shown represents the maximum allowable time to complete the activity.

Table 3
Recommended Sample Containers[a], Preservation Techniques, and Holding Times[b]

Analyte Class and Sample Type	Container Type and Materials	Preservation	Holding Time
Metals			
TCLP Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver	Aqueous Media: 500-mL Wide-Mouth-Polyethylene or Glass with Teflon Liner	Aqueous Media: HNO_3 to pH <2 Cool to 4°C	180 Days
	Solid Media: 125-mL Glass	Solid Media: Cool to 4°C	
TCLP/Total Mercury	Aqueous Media: 500-mL Wide-Mouth-Polyethylene or Glass with Teflon Liner	Aqueous Media: HNO_3 to pH <2 Cool to 4 °C	28 Days
	Solid Media: 125-mL Glass	Solid Media: Cool to 4°C	
Volatile Organic Compounds			
Target Compound Volatile Organic Compounds	Aqueous Media: Two 40-mL Amber Glass Vials with Teflon-Lined Septa	Aqueous Media: HCl to pH<2 Cool to 4 °C	14 days
	Solid Media: 125-mL Glass or Two 40-mL Amber Glass Vials with Teflon-Lined Septa	Solid Media: Cool to 4°C Add 5 mL Methanol or Other Water Miscible Organic Solvent to 40-mL Glass Vials	
Semi-Volatile Organic Compounds			
Target Compound Semi-volatile Organic Compounds	Aqueous Media: Four 1-L Amber Glass with Teflon-Lined Lid	Aqueous Media: Cool to 4 °C	Seven days from field collection to preparative extraction. 40 days from preparative extraction to determinative analysis.
	Solid Media: 250-mL Glass	Solid Media: Cool to 4°C	

[a] Smaller sample containers may be required due to health and safety concerns associated with potential radiation exposure, transportation requirements, and waste management considerations.

[b] Information obtained from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency, 1986 and all approved updates.

°C = degrees Celsius
HNO_3 = nitric acid
L = Liter
mL = milliliter
HCl = hydrochloric acid
TCLP = Toxicity Characteristic Leaching Procedure

Table 4
Summary of Proposed Analytical Methods

Analyte	EPA SW-846 Analytical Method [a]	Test Methods/ Instrumentation	Target Detection Limit [b]	Rationale
Metal Analysis				
Antimony	6010, 7010	ICP-AES, GFAA	20 ug/L	Determine the metal concentration in the samples.
Arsenic	6010, 7010, 7061A	ICP-AES, GFAA, CVAA	10 ug/L	
Barium	6010, 7010	ICP-AES,GFAA	200 ug/L	
Beryllium	6010, 7010	ICP-AES, GFAA	0.2 ug/L	
Cadmium	6010, 7010	ICP-AES, GFAA	2 ug/L	
Chromium	6010, 7010	ICP-AES, GFAA	10 ug/L	
Cobalt	6010, 7010	ICP-AES, GFAA	5 ug/L	
Copper	6010, 7010	ICP-AES, GFAA	5 ug/L	
Lead	6010, 7010	ICP-AES, GFAA	5 ug/L	
Mercury	6010, 7470A, 7471B	ICP-AES, CVAA	0.2 ug/L	
Selenium	6010, 7010, 7741A	ICP-AES, GFAA, CVAA	5 ug/L	
Silver	6010, 7010	ICP-AES, GFAA	10 ug/L	
Thallium	6010, 7010	ICP-AES, GFAA	30 ug/L	
Vanadium	6010, 7010	ICP-AES, GFAA	5 ug/L	
Zinc	6010, 7010	ICP-AES, GFAA	1 ug/L	
Organic Analysis				
Target compound list VOCs plus ten tentatively identified compounds (TIC)	8260B	GC/MS	10 mg/L	Determine the VOCs concentration in the samples.
Target compound list SVOCs plus 20 TICs	8270D, 8275	GC/MS	10 mg/L	Determine the SVOCs concentration in the samples.
Other Parameters				
Cyanide	9010, 9012	Colorimetric	20 ug/L	Determine cyanide concentration

[a] U.S. Environmental Protection Agency (EPA), 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.

[b] Detection limits listed for metals are for clean water. Detection limits for organics are expressed as practical quantitative limits. Actual detection limits may be higher depending on sample composition and matrix type.

CVAA = Cold-vapor atomic absorption spectroscopy
FLAA = Flame atomic absorption spectroscopy
GC/MS = Gas chromatography/mass spectrometry
GFAA = Graphite furnace atomic absorption spectroscopy
ICP-AES = Inductively coupled plasma-atomic emission spectrometry
mg/L = milligrams per liter
SVOC = semi volatile organic compounds
ug/L = micrograms per liter.
VOC = volatile organic compounds

Table 5
Recommended Quality Control Sample Types, Applicable Analyses, Frequency, and Acceptance Criteria

QC Sample Type	Applicable Analysis [a]	Frequency	Acceptance Criteria
Trip Blank	VOC	One set per shipping cooler containing samples to be analyzed for VOCs	Not Applicable
Field Blank	VOC/SVOC, metals	One sample daily per analysis	Not Applicable
Field Duplicate	Chemical	One for each sampling sequence	Relative percent difference less than or equal to 20 percent
Equipment Rinsate Blank[b]	VOC/SVOC, metals	One sample daily	Not Applicable

[a] For VOC and SVOC analysis, if blank shows detectable levels of any common laboratory contaminant (e.g., methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.

[b] Collected only if reusable sampling equipment used.

QC = quality control
VOC = volatile organic compound
SVOC = semi-volatile organic compound

Table 6
Potential Waste Materials, Waste Types, and Disposal Options

Potential Waste Materials	Waste Types	Disposal Options
Personal protective equipment (PPE)	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	The PPE will be treated to meet Land Disposal Restriction (LDR) treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or the WIPP, as appropriate.
Decontamination wash water	Non-regulated liquid waste	Sanitary sewer
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Radioactive liquid waste	Radioactive Liquid Waste Treatment Facility (RLWTF)
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Verification water	Non-regulated liquid waste	Sanitary sewer
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Radioactive liquid waste	RLWTF
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Metal	Non-regulated solid waste	Subtitle D landfill or recycled
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.

Potential Waste Materials	Waste Types	Disposal Options
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill, or WIPP, as appropriate.
Discarded waste management equipment	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Sampling equipment	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA , or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Storage Structures	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]

Potential Waste Materials	Waste Types	Disposal Options
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Concrete Pad	Non-regulated solid waste	Subtitle D landfill or potentially, re-use/recycle
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility.[a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.

[a] This description of the disposal option for low level waste may be subject to revision pending the resolution of the LANL Appeal of the November 2010 LANL Hazardous Waste Facility Permit.

Table 7
Hazardous Waste Constituents of Concern at the TWF[a]

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Contaminants	D004	Arsenic
	D005	Barium hydroxide
	D006	Cadmium
	D007	Chromium
	D008	Lead
	D009	Mercury
	D010	Selenium
	D011	Silver
	D018	Benzene
	D019	Carbon tetrachloride
	D021	Chlorobenzene
	D022	Chloroform
	D026	Cresol
	D027	1,4-Dichlorobenzene
	D028	1,2-Dichloroethane
	D029	1,1-Dichloroethylene
	D030	2,4-Dinitrotoluene
	D032	Hexachlorobenzene
	D033	Hexachlorobutadiene
	D034	Hexachloroethane
	D035	Methyl ethyl ketone
	D036	Nitrobenzene
	D037	Pentachlorophenol
	D038	Pyridine
	D039	Tetrachloroethylene
	D040	Trichloroethylene
	D041	2,4,5-Trichlorophenol
	D042	2,4,6-Trichlorophenol
	D043	Vinyl chloride
Volatile Organic Compounds	F001	Spent halogenated solvents, trichloroethylene
	F002	Spent halogenated solvents
	F003	Spent non-halogenated solvents, xylene, acetone
	F004	Spent non-halogenated solvents
	F005	Spent non-halogenated solvents
Toxic listed waste	U080	Methylene chloride

[a] This will be modified as needed, based on the unit operating record.
EPA = U.S. Environmental Protection Agency

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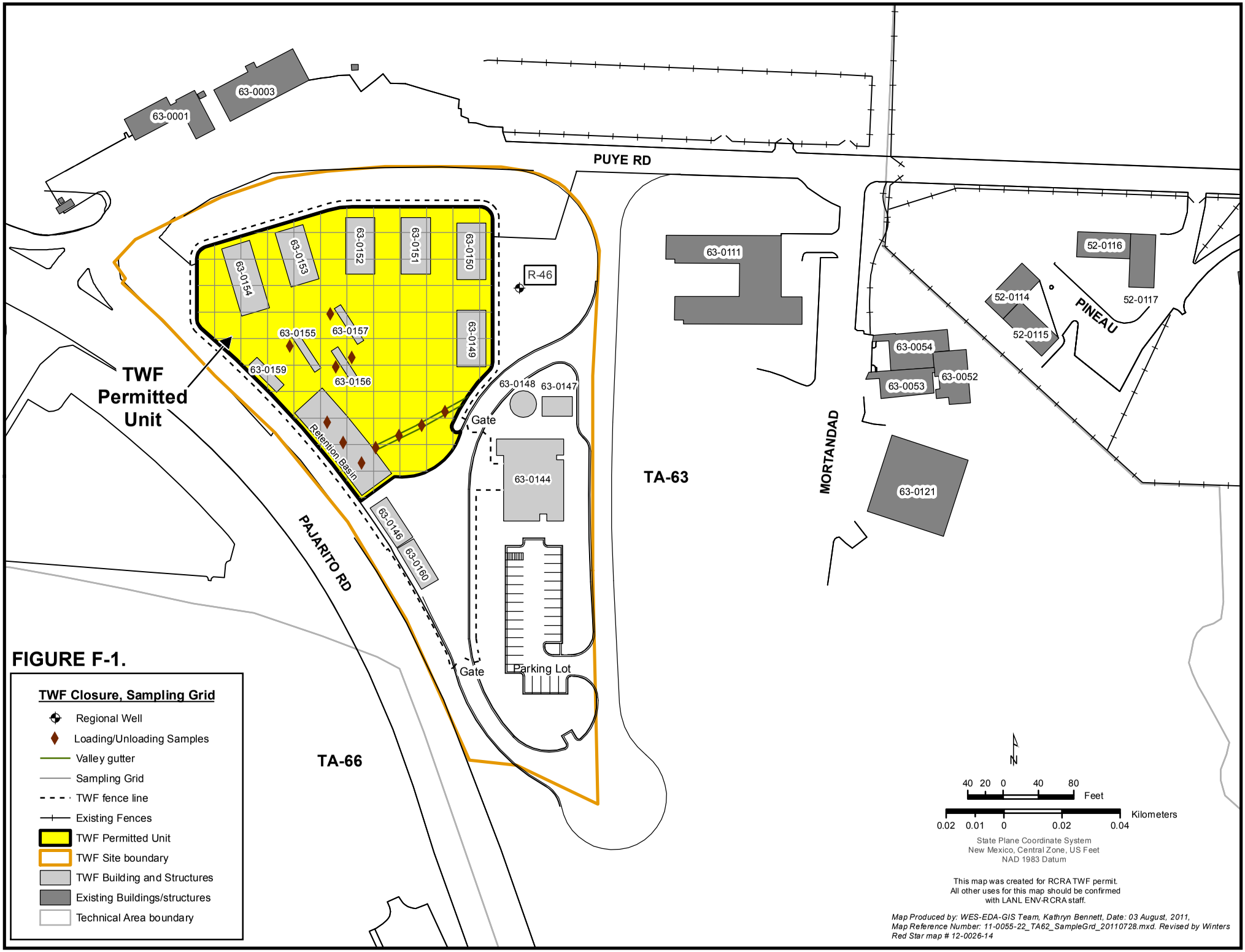
63-0003
63-0001
PUYE RD
63-0154
63-0153
63-0152
63-0151
63-0150
63-0149
R-46
63-0155
63-0157
63-0159
63-0156
TWF
Permitted
Unit
63-0148
63-0147
Gate
Retention Basin
63-0144
63-0146
63-0160
PAJARITO RD
Gate
Parking Lot
TA-66
TA-63
63-0111
MORTANDAD
52-0116
52-0114
52-0115
52-0117
PINEAU
63-0054
63-0053
63-0052
63-0121
FIGURE F-1.
TWF Closure, Sampling Grid
Regional Well
Loading/Unloading Samples
Valley gutter
Sampling Grid
TWF fence line
Existing Fences
TWF Permitted Unit
TWF Site boundary
TWF Building and Structures
Existing Buildings/structures
Technical Area boundary
N
40 20 0 40 80
Feet
0.02 0.01 0 0.02 0.04
Kilometers
State Plane Coordinate System
New Mexico, Central Zone, US Feet
NAD 1983 Datum
This map was created for RCRA TWF permit.
All other uses for this map should be confirmed
with LANL ENV-RCRA staff.
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011,
Map Reference Number: 11-0055-22_TA62_SampleGrd_20110728.mxd. Revised by Winters
Red Star map # 12-0026-14

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ATTACHMENT N

FIGURES

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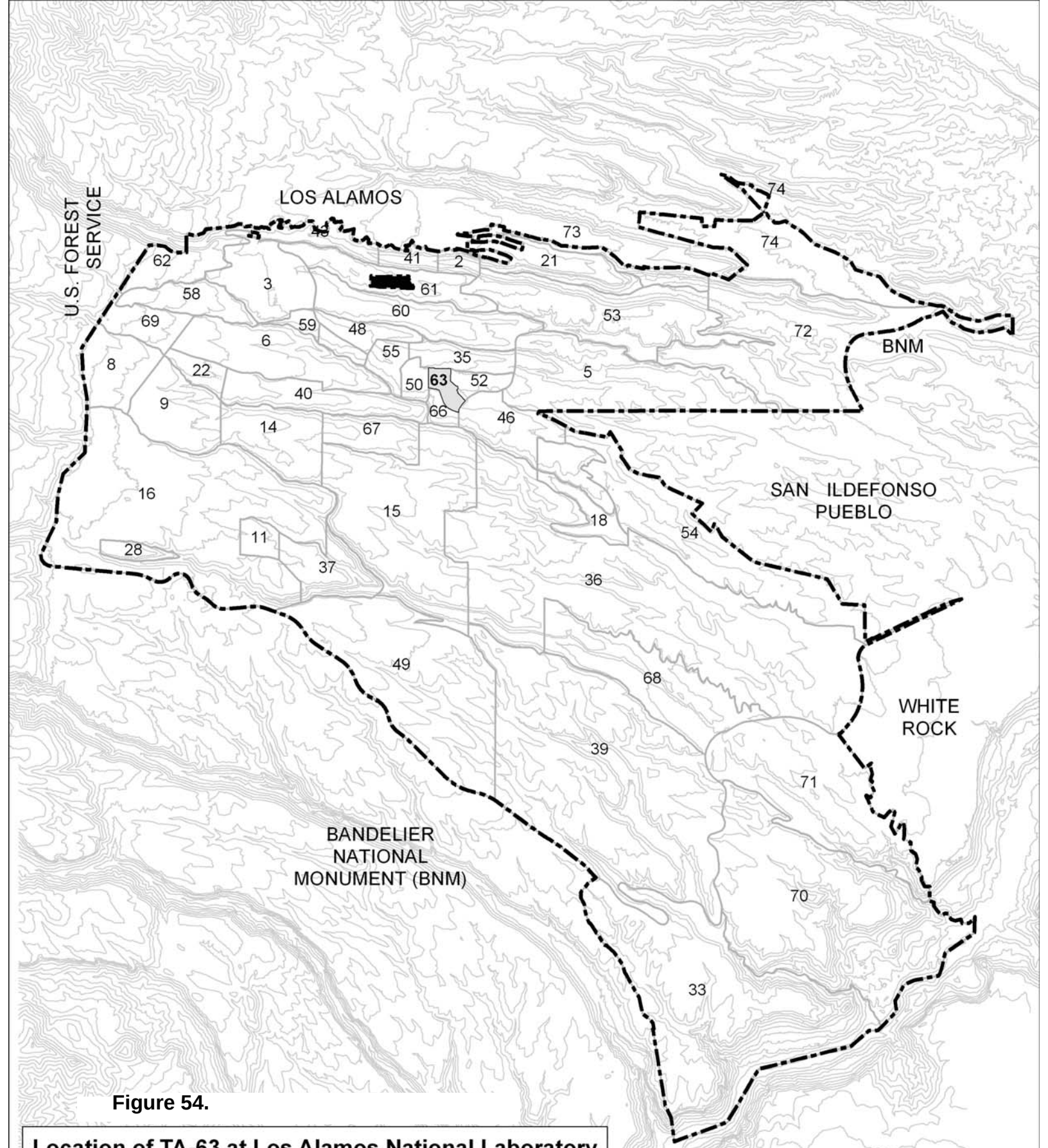
LOS ALAMOS
U.S. FOREST SERVICE
BNM
SAN ILDEFONSO PUEBLO
WHITE ROCK
BANDELIER NATIONAL MONUMENT (BNM)
74
73
74
62
41
2
21
3
58
61
60
53
69
59
48
72
6
55
35
8
22
50
63
52
5
40
9
66
46
14
67
16
15
18
54
11
28
37
36
49
68
39
71
70
33
Location of TA-63 at Los Alamos National Laboratory
Not LANL property
LANL boundary
TA-63
Technical Area boundary (2010-08-13)
Contours, 100 ft
1200 600 0 1200 2400
Meters
4100 2050 0 4100 8200
Feet
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011.
Map Reference Number: 11-0055-08b_LANL_TA63Location.mxd

Figure 54.

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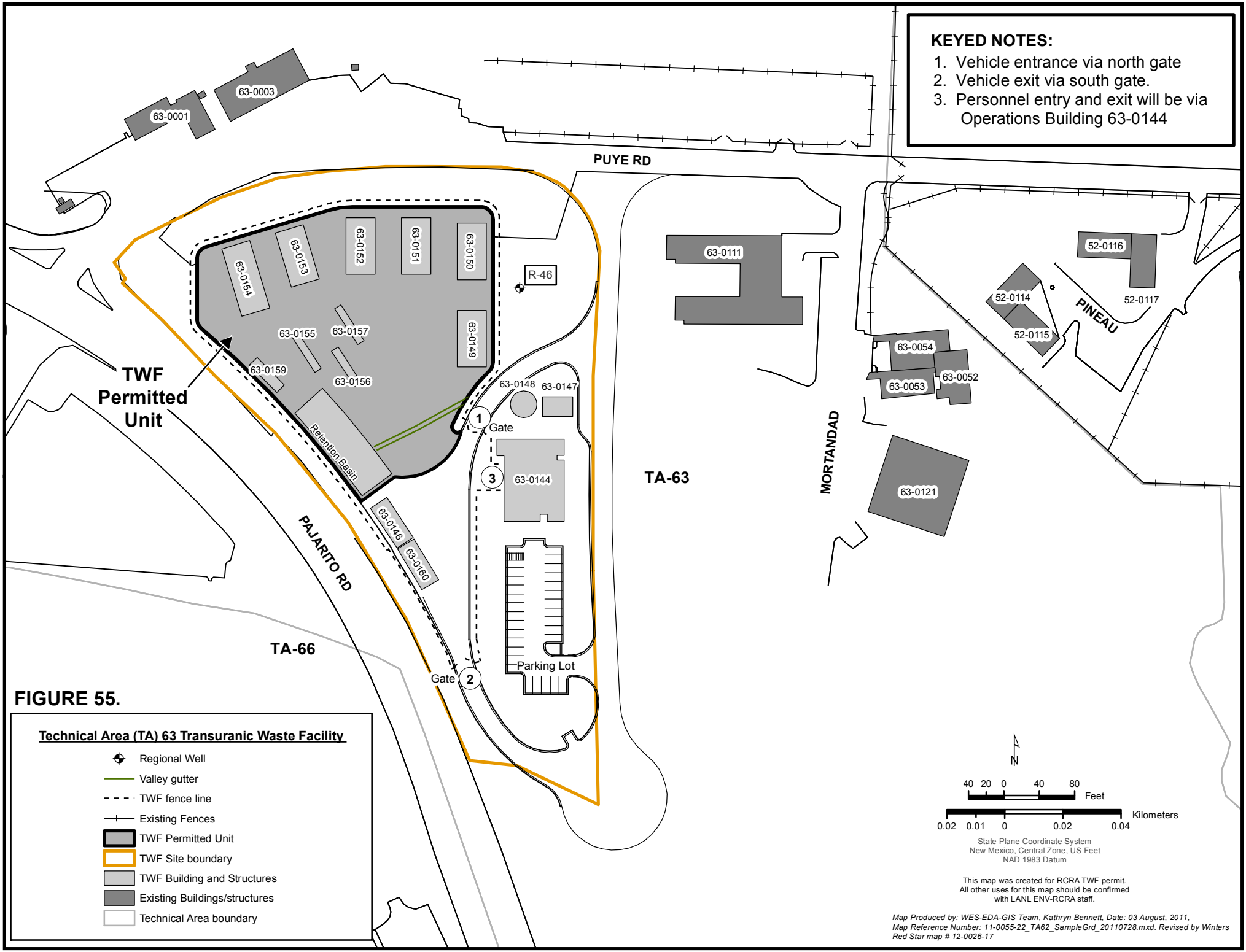
KEYED NOTES:
1. Vehicle entrance via north gate
2. Vehicle exit via south gate.
3. Personnel entry and exit will be via Operations Building 63-0144
PUYE RD
63-0001
63-0003
63-0154
63-0153
63-0152
63-0151
63-0150
63-0155
63-0157
63-0149
63-0159
63-0156
R-46
TWF Permitted Unit
Retention Basin
63-0148
63-0147
1
Gate
3
63-0144
63-0146
63-0160
PAJARITO RD
TA-66
Gate
2
Parking Lot
TA-63
63-0111
MORTANDAD
63-0121
63-0054
63-0053
63-0052
52-0116
52-0114
52-0115
52-0117
PINEAU
Technical Area (TA) 63 Transuranic Waste Facility
Regional Well
Valley gutter
TWF fence line
Existing Fences
TWF Permitted Unit
TWF Site boundary
TWF Building and Structures
Existing Buildings/structures
Technical Area boundary
N
40 20 0 40 80
Feet
0.02 0.01 0 0.02 0.04
Kilometers
State Plane Coordinate System
New Mexico, Central Zone, US Feet
NAD 1983 Datum
This map was created for RCRA TWF permit.
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with LANL ENV-RCRA staff.
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011,
Map Reference Number: 11-0055-22_TA62_SampleGrd_20110728.mxd. Revised by Winters
Red Star map # 12-0026-17

FIGURE 55.

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Attachment C

Proposed Revisions to the LANL Hazardous Waste Facility Permit for the TWF
Permit Modification Request by Revision

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Color Key to Permit Modification Request (PMR) Revisions

Permit Sections >	Permit Parts 1-11	Attachment A	Attachment D	Attachment J	Closure Plan
Colors					
Purple	**Rev. 0.0**	**Rev. 0.0**			
Blue	**Rev. 1.0**	**Rev. 3.0**	**Rev. 0.0**	**Rev. 1.0**	**Rev. 1.0**
Dark Red	**Rev. 2.0**	**Rev. 2.0**			
Red	**Rev. 3.0**	**Rev. 1.0**		**Rev. 0.0**	

Dates of TA-63 Transuranic Waste Facility Permit Modification Request Revisions

Revision 0.0	August 18, 2011
Revision 1.0	April 16, 2012
Revision 2.0	July 12, 2012
Revision 3.0	October 1, 2012

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LANL Hazardous Waste Facility Permit

Permit Parts 1-11

TABLE OF CONTENTS

(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-50 Part B Permit Application dated August 2002;

(5) the TA-54 Part B Permit Application dated June 2003; ~~and~~

(6) the TA-55 Part B Permit Application dated September 2003~~.~~, and

(7) the TA-63 Permit Modification Request dated August~~July~~ 2011

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(l)(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)).

incorporated herein by reference, as well as the training requirements in Attachment F (*Personnel Training Plan*).

2.8 SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittees shall manage ignitable, reactive, and incompatible hazardous wastes in containers and tanks in compliance with the requirements of 40 CFR §§ 264.17, 264.176, 264.177, 264.198, and 264.199, which are incorporated herein by reference, and Permit Parts 3 and 4. The Permittees shall ensure that containers holding ignitable or reactive wastes are located at least 15 meters from the facility boundary defined as the technical area (TA) specific boundary identified in Figures 11, 16, 22, 24, and~~and~~ 38 ~~and 54~~ in Permit Attachment N (*Figures*) (*see* 40 CFR §§ 264.176 and 270.32(b)(2)).

The Permittees shall take precautions during the treatment or storage of ignitable or reactive waste, the mixing of incompatible waste, or the mixing of incompatible wastes and other materials to prevent reactions that could lead to or cause the following:

(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;

(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and

(5) a threat to human health or the environment.

(*see* 40 CFR § 264.17(b))

2.8.1 Ignitable and Reactive Waste Precautions

The Permittees shall prevent accidental ignition or reaction of ignitable or reactive wastes by taking the following precautions:

(1) ensure there are no sources of open flames in, on, or around the container or tank;

(2) segregate and separate ignitable or reactive wastes and protect them from sources of ignition or reaction such as cutting and welding, frictional heat, sparks (*e.g.*, static, electrical, mechanical), spontaneous ignition, and radiant heat;

(3) maintain adequate clearance around fire hydrants at permitted units;

3.13 TA-55 CONTAINER STORAGE REQUIREMENTS

3.13.1 General Operating Conditions

The Permittees shall ensure that storage of hazardous or mixed waste in containers at TA-55 occurs only in the permitted units B45, B40, B05, K13, the vault located at TA-55-4, TA-55-185, and the outdoor container storage pad located northwest of TA-55-4, and as identified in Attachment A (*Technical Area Unit Descriptions*) and Attachment J (*Hazardous Waste Management Units*).

3.14 TA-63 CONTAINER STORAGE REQUIREMENTS

1. General Operating Conditions

The Permittees shall ensure that storage of hazardous waste in containers at the TWF occurs only on the permitted unit pad at TA-63, and as identified in Attachment A (*Technical Area Unit Descriptions)* and Attachment J (*Hazardous Waste Management Units*). This will include five storage buildings, the storage and characterization building, the characterization trailers, and the outside areas of the concrete pad within the unit boundary subject to the provisions of Permit Section 3.5.1, *Storage Configuration and Minimum Aisle Space*.

Transuranic Waste Facility

(1) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with free liquids are stored on secondary containment pallets~~, except inside the following structures: Trailers 155, 156, and 157~~.

(2) Waste containers will only be accepted at the TWF if they are closed and equipped with WIPP approved filter vents. Waste containers will not be opened during characterization nor while in storage although their filter vents may be replaced if necessary. However, as noted in the contingency plan, provisions are in place to manage open containers on an emergency basis.

(3) Wastes that are mainly or completely in liquid form within the volume of the approved waste containers will not be accepted at the TWF.

(4) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with ignitable or reactive components (E.P.A. Hazardous Waste Numbers D001 or D003) are stored no less than 15 meters from the permitted unit's security fence shown in Figure 55 (*see* 40 CFR §264.176).

ATTACHMENT A

TECHNICAL AREA (TA) - UNIT DESCRIPTIONS

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TABLE OF CONTENTS

A.6 a.6 TA-63 ~~TWF UNIT~~

The following section generally describes the ~~proposed~~ Transuranic Waste Facility (TWF) unit with detailed descriptions of the unit's structures in the subsections. The TWF ~~will consist~~consists of one hazardous waste management unit that ~~will provide~~provides storage in containers for ~~hazardous wastes~~TRU waste, including the hazardous component of ~~mixed~~M-TRU waste and, potentially, mixed low-level waste streams. The TWF ~~may~~ also manages hazardous-only waste streams generated on site. The information provided in this section is submitted to address the applicable container storage requirements of 40 CFR §270.15 and Part 264, Subpart I.

The TWF ~~will be~~is located at TA-63 on a mesa between a branch of Mortandad Canyon on the north and Pajarito Canyon on the south in the north central portion of LANL. ~~(See Figure 2-3 for the location of TA-63 at LANL). It will be at the juncture~~ The unit is built at the intersection of Pajarito Road and Puye Road, within the triangle formed by Building 63-111 to the east, Puye Road to the north, and Pajarito Road to the southwest. The closest ~~facilities~~buildings are shops immediately north of Puye Road, ~~offices including~~Office Building 63-111, ~~and~~ records storage buildings immediately east of the TWF location, and buildings and structures on Pecos Drive further north of the TWF. ~~During the future construction of the Nuclear Laboratory Facility/Chemistry and Metallurgy Research Replacement Project at TA-55, that activity will require a concrete plant and staging area that will be located south-east of the TWF~~.

The primary~~One~~ purpose of the TWF is two-fold: first, safe, indoor storage of TRU waste newly generated by LANL operations. ~~The second primary purpose~~ Second, ~~is~~ waste containers stored at the TWF are~~will be~~ subject to characterization including review of generator documentation ~~(acceptable knowledge)~~, ~~headspace~~ gas sampling ~~(to determine the potential need for segregation of incompatible, ignitable, or reactive wastes)~~, and non-intrusive radioassay. Non-destructive assay (NDA) is used to confirm the types and amounts of radioactive elements within the waste container. NDA is a non-intrusive characterization technique that measures gamma rays and neutrons emanating from the container. Non-destructive examination (NDE) uses X-rays and a video system to inspect waste container contents. The overall process of waste characterization at LANL is described in Attachment C, *Waste Analysis Plan*, of the Permit. Waste containers will only be accepted at the TWF if they are closed and equipped with WIPP approved filter vents. Waste containers will not be opened during characterization nor while in storage although their filter vents may be replaced if necessary. However, as noted in the Contingency Plan, provisions are in place to manage open containers on an emergency basis.

Waste ~~will be~~is contact handled (CH) TRU waste; no remote-handled TRU waste ~~will be~~is stored at the TWF. Some TRU waste containers ~~may be~~are determined through final waste characterization not to meet the WIPP requirements for TRU waste. Depending on the presence of hazardous constituents, these waste containers ~~will be~~are reclassified ~~to~~as either low-level radioactive waste or mixed low-level waste and stored at the TWF until they are dispositioned appropriately.

~~Waste shipments will be made from the LANL waste generating facilities to the TWF for storage and then to the RCRA-permitted Radioactive Assay and Nondestructive Testing (RANT) Facility~~

~~at TA-54-38 West. The RANT facility is used to load the TRU waste containers into TRUPACTs (steel shipment containers) required for off-site shipment to the WIPP. Waste shipments may also occur from TWF to the RCRA permitted TA-50-69 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) if repackaging of the containers is necessary.~~

The TWF ~~will be~~is 1.81 acres or 78,843 ~~approximately 28,100~~ sf (square feet). The layout of the ~~facility~~unit is depicted in Figure ~~2-5~~55 with the location of areas where storage ~~will~~ occurs highlighted. The main structure for the unit ~~will be~~is the concrete pad providing a physical base ~~and operational boundary~~ for the six waste storage buildings, several waste characterization trailers and~~,~~ outside storage of waste containers too large for the buildings.~~, and the loading/unloading canopy.~~ The pad ~~will be~~is surrounded by a security fence ~~that will define the waste storage portions of the unit.~~ The boundary of the hazardous waste management unit is limited to the northern portion of the concrete pad defined by those areas that drain to a supporting retention pond. Along the northern and western sides of the unit, this is the edge of the concrete pad along the bottom of the retaining walls. On the east side, the edge of the curbing for the concrete pad is the boundary. The southern side of the revised boundary is defined by a painted line in compliance with Permit Section 3.5(2), Management of Containers. The line is situated approximately between the south east corner of the retention basin and the curb and gutter at the opposite corner of the fence line along the eastern side of the unit. This is defined by the points at which run-off will flow to the retention basin. ~~One of the storage buildings will be used for the storage of large waste containers (e.g., SLB2s, SWBs) and for head space gas sampling and analysis.~~

To provide containment for the unit, a retention basin is designed to capture and distribute storm water at the TWF.~~, and~~ It ~~will~~ also retains fire suppression water in the event of a fire. ~~An automated water sampler will collect and preserve grab samples as storm water flows into the basin.~~ Water ~~will be~~is released via a manual valve providing control of the flow rate from the basin. Should a fire occur, water collected will be analyzed for contaminants prior to discharge.

The unit ~~will~~ also includes a small storage building for calibration sources used for waste characterization activities, a covered forklift charging station, and ~~an~~ equipment storage shed. Outside the fence, other site structures include an operations support building and a fire water storage tank and associated utility building.

A.6.1 Concrete Pad

The TWF concrete pad ~~will be~~is of reinforced concrete construction, on grade to provide support for the site structures and vehicle movement. The concrete pad ~~will~~ also provides for ~~a~~ low combustible~~-~~ loading between the buildings and for the site. The pad ~~will be~~is laid on a graded soil and gravel base course and is~~be~~ nominally 8 inches thick. The existing ground at the site slopes from the northwest to the southeast. There is a significant grade difference from the northwest corner to the southwest corner of the site. ~~After the site has been graded, P~~portions ~~will be~~are lower in elevation than Pajarito Road or Puye Road. Given the elevation difference on the site, retaining walls are ~~used~~ along the northwest portion of the site. The pad ~~will be~~is sloped at approximately 2% to provide for storm water and fire suppression water drainage.

The perimeter of the pad ~~will~~ has~~ve~~ a 24" gutter and 6" high curb to provide run-off control. A valley gutter isolates the northern portion of the pad. Storm water and potentially contaminated firewater run-off (in the event of a fire in the storage buildings) from the northern portion of the pad flows to the valley gutter then will be channeled to the retention basin, thus, providing containment for the site~~.~~ in accordance with 40 CFR §264.175(b). This is a feature that negates the need for berms, dikes, or sumps around each storage building. The southern portion of the unit (where waste is not stored and outside the hazardous waste management unit) slopes southeast providing drainage off the pad toward the parking lot. Refer to Figure 55 for further details regarding the pad configuration.

A.6.2 Storage Buildings

The TWF ~~will~~ includes six storage buildings, five of which ~~will be~~are functionally identical and are described in this section. The additional storage building with other design elements is described in Section A.6.3. The~~se~~ five buildings ~~will~~ measure 33 x 64 ft or approximately 2112 square feet, and ~~will be~~are 15 ft high. The storage buildings provide safe covered storage~~,~~ for LANL generated TRU waste containers through weather protection, physical security, and DOE design requirements for safety at nuclear facilities. Multiple buildings are ~~being proposed~~used to minimize the radioactive material content at individual storage buildings and to reduce the potential impact from accidents relative to a single larger building. Multiple smaller buildings ~~will~~ also reduce overall risk associated with events such as vehicle impact or fire. ~~The storage building floor plan is presented in Figure 2-6.~~ These five storage buildings ~~will be~~are designated 63-0149, 63-0150, 63-0151, 63-0152, and 63-0153.

Containers loaded onto pallets ~~will be~~are stored on a reinforced concrete floor. The building floor (i.e., mat slab) ~~will be~~is higher than the concrete pad to prevent run-on, and ~~will be~~is sloped towards a roll-up door at the building entrance for drainage in the event of a fire~~.~~ in accordance with 40 CFR §§264.175(b)(2) and (c).

The concrete floors ~~will be~~are coated to provide a sealed surface and chemical resistance~~,~~ although secondary containment pallets ~~will be~~are used to meet the containment requirements of the Permit for potential liquid containing waste in the storage buildings~~.~~ and also compliance with 40 CFR §264.175(b)(1). The floor coating standards include:

- Minimum Class B per National Fire Protection Association (NFPA);
- Radiation resistant as determined by American Society for Testing and Materials, International Specification ASTM D 4082; and
- Decontaminable to at least 95 percent of total activity removed and certified for Nuclear Coating Service Level II.

The ~~Each of the~~ storage buildings are constructed as~~will be a~~ covered single-story structural steel frames. Each of the storage buildings and its structural members are~~is~~ designed to exceed the snow load for roof design~~,~~ ~~and~~ the design wind force for ~~open~~ buildings, and the seismic loading~~other structures~~ for structural components, as described in American Society of Civil Engineers (ASCE) Specification 7-05, *Minimum Design Loads for Buildings and Other Structures*. The steel frame is an ordinary moment frame with joists to attach roof panels and

girts to attach wall panels. The walls of the facility ~~will be~~are rigid to provide protection from the elements and external forces. Gypsum board on light gauge metal studs with industrial coating ~~will~~ finish~~s~~ the interior walls. The roof is a high quality metal standing seam. Batt insulation in the ceiling and on the inside of the walls ~~will~~ reduce~~s~~ heat loss and gain inside the buildings. Electric heaters ~~will~~ heat the interior to prevent fire suppression systems and eyewash stations from freezing. Cooling ~~will be~~is provided by venting fans. In order to drain the building in the event of a fire, the floors ~~will be~~are constructed to provide a shallow slope (1/8 inch to 1 foot) from the back end of the building towards the front, and then out the roll-up door opening and a loading ramp to the concrete pad outside the building.

A.6.3 Storage and Characterization Building

The sixth storage building is divided into a storage area, a room for the thermal equilibrium of containers to prepare for head space gas sampling, and additional support and analytical equipment rooms. The storage area in this building is~~will be~~ used for a variety of containers including SWBs~~LB2's~~ and SLB2s~~WB's~~. In order to accurately analyze headspace gas, the container temperature must be allowed to equilibrate to a minimum of 64 degrees Fahrenheit for 72 hours~~, as described in the Central Characterization Project procedure: CCP-TP-093, *CCP Sampling of TRU Waste Container*, *(CCP, 2010)*~~. Sampling equipment is available for obtaining headspace gas samples and flammable gas samples from waste containers. Gas chromatography and mass spectrometry on the flammable gas sample ~~will~~ occur~~s~~ in an adjacent room.

The floor plan of the building measures 80 x 33 ft or approximately 2640 square ft, and the building is 15 ft high. The building is~~will otherwise be~~ constructed to the same standards as the other storage buildings. The building is~~will be~~ numbered 63-0154.

A.6.4 Characterization Trailers

The TWF facility ~~will~~ include~~s~~ pads with utility hook-ups for the characterization trailers used to certify containers to DOE ~~/~~WIPP ~~02-3122, *Transuranic Waste Acceptance Criteria (WAC) for the Waste Isolation Pilot Plant*, (WIPP, 2010)~~ waste acceptance criteria. The non-destructive evaluation (NDE) and non-destructive assay (NDA) equipment ~~will be~~is provided for the TWF in mobile modified commercial trailers ~~placed in~~brought to the facility. These trailers are in use and functional at other DOE waste characterization sites. These trailers were~~are currently~~ providing this function for TRU waste management at the TA-54, Area G, Pad 10 permitted hazardous waste unit and ~~will be moved to the TWF to continue this use~~were moved to the TWF. Mixed waste containers may be stored for a period longer than 24 hours as a result of operational or weather related delays in the staging of the containers through the characterization trailers. Radiographic assay equipment used for characterization is housed in these trailers as follows:

- Real-Time Radiography (RTR) unit. The NDE~~assay~~ equipment in the trailer is designed to provide X-ray examination of the contents of TRU~~transuranic~~ waste drums. ~~This trailer is currently designated as TA-54-0497 in use at Area G.~~
- High-Efficiency Neutron Counter (HENC) unit. The NDA~~assay~~ equipment in the trailer is designed to provide a passive neutron and gamma measurement of 55-gallon

TRU~~transuranic~~ waste drums. ~~This trailer is currently designated as TA-54-0498 in use at Area G.~~

- SuperHENC unit. The NDA~~assay~~ equipment in the trailer is similar to the HENC but includes a high efficiency neutron counter and a gamma counter that are both designed to handle ~~standard waste boxes (~~SWBs~~)~~. ~~This trailer is currently designated as TA-54-0457 in use at Area G.~~

The RTR is a self-contained, non-intrusive X-ray unit, physically housed in a mobile container 48 feet in length by 8 feet wide used to X-ray waste containers up to 85 gallons in volume. Radiography is a nondestructive qualitative and semi-quantitative technique that involves X-ray scanning of waste containers to identify and verify waste container contents. Radiography is used to examine the waste container to verify its physical form. This technique can detect prohibited items such as liquid wastes and gas cylinders, which are prohibited for WIPP disposal. Radiography examination must achieve the following to meet the WIPP criteria:

- Verify and document the physical form of each waste container.
- Identify any prohibited waste in the waste container.
- Confirm that the physical form of the waste matches its waste stream description (i.e., homogeneous solids, soil/gravel, or debris waste [including uncategorized metals]).

The HENC is a self-contained, non-intrusive, passive assay unit, physically housed in a mobile assay container 48 feet in length by 8 ½ feet wide by 12 ¾ feet high. The HENC is designed to assay 55-gallon (208 liter) drums containing fissionable radionuclides. The system simultaneously performs passive neutron counts and gamma spectrometry to detect gamma-emitting radionuclides for the purpose of determining quantitative concentrations of TRU constituents. The equipment and mobile container only require electrical power to operate. Approximately 10 to 13 drums a day can be processed through the HENC, with each drum taking approximately 45 minutes for examination. The HENC is a large rectangular-shaped neutron counter that is specifically designed to assay the container in a ~~4π counting~~ fixed geometry. The HENC system uses passive and add-a-source neutron analysis methods to assay the nuclide mass contained in 55-gal drums of TRU waste. Waste drums to be assayed are placed on a conveyor that feeds drums into the system.

The SuperHENC operates on the same principle as the HENC, within a similar tractor trailer. The process however, is applicable to the assay of TRU radionuclides in waste packages such as SWBs and ~~Standard Large Boxes (~~SLB2s~~)~~. Data from this process is used to assay the radioactive content of SWBs containing TRU waste, sorting SWBs based on the 100 nanocurie per gram (nCi/g) TRU limit, and confirming radioisotopes indentified via a~~A~~cceptable k~~K~~nowledge (AK).

The trailers ~~will be~~are numbered 63-0155, 63-0156, and 63-0157 at TA-63. Additional trailers may be required as characterization needs for the facility change. In the event that trailers are added or moved at the unit, the permit modification procedures in Permit Section 3.1(3) will be followed.

The WIPP verification procedures for the waste containers managed in the characterization trailers are generally completed within 24 hours. In some uncommon situations, there is a

potential that a waste container could be left in the characterization trailer for greater than that time period ~~and the option for storage should be retained to preserve operational flexibility.~~ Examples that would require such an option include situations such as inclement weather, power outages, equipment malfunctions, evacuations, and Laboratory closures. If storage of liquid bearing wastes for greater than 24 hours occurs, the reporting conditions of Permit Section 1.9.14, *Other Noncompliance*, will be followed.

~~The basis for not requiring secondary containment pallets is that the containers are located inside the trailers and the internal radioassay equipment during the characterization process. These do not represent secondary containment although they are enclosed and provide a degree of containment. The containers are never opened during the process and the potential waste volumes involved in a spill from an individual drum would be minimal based on the typical transuranic waste streams involved and the waste characterization and packaging requirements for the generators to meet the LANL TRU Waste Acceptance Criteria. In the event of a spill during active management of the containers, the primary defense for containment would be detection and remediation of the spill by the on-site personnel at the trailers or, if necessary, by the provisions of the Contingency Plan. If a spill occurred that could not be remediated or during off hours in the facility, containment would ultimately be provided by the grading of the site to the retention pond and the confinement provided by the volume of the pond and the normally closed exit valve.~~

~~Additionally, in the event that a liquid containing waste item or free liquids such as condensation are discovered in a container through the waste verification process in the trailers, the item will routinely be transported back to a storage building and managed in compliance with the secondary containment requirement in the permit provision within 24 hours. This is based on the typical multiple daily container turn-around, the identification of the container as an anomaly meriting priority, and best management policy to avoid potential waste management problems.~~

~~**Loading/Unloading Canopy**~~

~~The canopy, designated Building 63-0145, will be used for shipping and receiving of TRU waste containers. The covered area of the canopy is approximately 48 ft by 60 ft and is large enough to conduct operations out of the weather. The roof will be pitched west to east and will not drain to the concrete pad. Waste transportation trucks entering the controlled area of the TWF through the access gates on the east side will park beneath the canopy for both loading and unloading operations. A bump out is provided in the driveway to allow forklift access to both sides and rear of the truck. The canopy will support a photovoltaic array to provide a source of renewable energy to meet Leadership in Energy and Environmental Design (LEED) requirements.~~

A.6.5 Retention Basin

The storage buildings and characterization trailers are located within the northern portion of the site. The retention basin is located south of the storage buildings and characterization trailers along the western edge of the site. The retention basin is designed to collect water from this area in two types of events. Primarily, surface storm water or melt water run-off from the concrete

pavement in this area is directed to the retention basin via the slope (nominally 2%) of the concrete pad. A valley gutter also helps to channel water from the east side of the concrete pad to the retention basin. Secondly, in the event of a fire at the unit, fire suppression water will potentially flow out of the storage buildings or from other unit structures to the concrete pad and then to the retention basin.

The designed volume capacity for the retention basin includes the potential for a combination of both events. This includes run-off from a projected 25 year frequency and 2 hour duration precipitation event (1.94 inches of precipitation resulting in approximately 85,900 gallons (11,500 cubic ft.) from 1.63 acres). For a fire suppression event, an estimate of suppression water needed is calculated from NFPA 13 factors (380 gpm for 30 min. of sprinkler demand and 500 gpm for 30 min. fire hose stream allowance), for a total of approximately 26,400 gallons (3,530 cubic ft.). Volume from both events results in a total capacity of approximately 112,300 gallons (approximately 15,000 cubic ft.). The designed total retention basin volume also includes 0.5 ft of freeboard, resulting in a total capacity of 137,450 gallons (18,375 cubic ft.). Final dimensions of the basin will be 125 ft by 42 ft by 3.5 ft deep. The concrete mixture used for construction of the retention basin will also be supplemented with an additive to improve the concrete's water resistance.

The retention basin will be drained as needed via a manual release valve that is normally in the closed position in order to prevent overflow and to comply with 40 CFR §264.175(b)(5). The retention basin will also be equipped with an ~~Isco™ 6712 FR~~ automated storm water ~~sampling station or an equivalent~~ sampler at a drainage point into the basin. This sampler will only be used to meet the requirements for storm water monitoring under the *The Multi-Sector General Permit For Stormwater Discharges Associated with Industrial Activity* (MSGP) for the facility. In normal storm water events the manual drain valve ~~will be~~is opened and the collected storm water ~~will be~~is released through a pipeline at the calculated predevelopment flow rate (i.e., the rate of storm water runoff from the site prior to construction of the facility) after the opening of the valve. The released storm water ~~will~~ drains through the pipe line to a release site on the east side of the TWF and then to other stormwater retention structures developed for the aggregate area to be defined and included in the TA-63 TWF Multi Sector General Permit Storm Water Plan to be developed for the site. When only storm water has been contained in the retention basin, the decision to open the drain valve will be based upon standard MSGP processes.~~.~~

In the event of a fire at the TWF, the retention basin will serve the critical function of collecting the fire suppression water in the basin. The slope of the unit's concrete pad and the valley gutter serve to ensure that any water draining from the unit's storage buildings or the characterization trailers will be routed to the retention basin. This key design feature provides containment of possible contamination and a backup option for any emergency management activities. In such an event, collected water will remain in the basin until sampling and water-quality analysis can be performed to determine whether or not the water is contaminated. ~~Once that is determined, the water will managed accordingly.~~ The collected water will be evaluated by obtaining a representative grab sample of the liquid and analyzing it for any hazardous waste constituents managed at the facility and reasonably expected to be present. This data will be compared to the surface water quality standards outlined in the Clean Water Act (33 U.S.C. §§ 1251 to 1387), the New Mexico WQCC Regulations (20.6.2 NMAC), and the State of New Mexico Standards

for Interstate and Intrastate Surface Waters (20.6.4 NMAC) to determine whether the collected water can be released, a Notice of Intent needs to be submitted to the New Mexico Groundwater Bureau, or it will be characterized to the Permit Attachment C, *Waste Analysis Plan*, standards for collection and waste disposition determination. In the event of such a fire or release, any further decontamination of the retention basin will be subject to the provisions of Attachment D, *Contingency Plan*, of the Permit.

The concrete structure, concrete waterproofing additives and associated valve minimize the potential for leakage of collected water from the retention basin. Routine inspections of the retention basin pursuant to Permit Section 2.6, *General Inspection Requirements* and subsequent repairs as required by Permit Section 2.6.2, *Repair of Equipment and Structures* ensure that the water collection capability of the retention basin is maintained or mitigated. In the case of a fire water or spill event that results in collected water, the level of water in the retention basin will also be checked for the potential of over-topping and inspected daily for water levels until final disposition of the water is determined.

A.6.6 Other Project Structures

Other project structures are present at the TWF to provide support for the hazardous waste management activities at the unit. These structures are either outside the boundary of the hazardous waste management unit or do not directly store or manage hazardous wastes.

The Operations Support Building provides offices and services for operations personnel and management. Personnel are housed in the separate building to ensure that radiological exposures are as low as reasonably achievable (ALARA) by increasing distance from the waste management activities. The Operations Support Building is approximately 75 ft by 80 ft. Operations and characterization personnel ~~will be~~are housed in this building, although it will not be occupied continuously. However, it ~~will~~ provides storage of waste container data and monitoring of key operational parameters (e.g., fire alarm systems, safety equipment status indicators, and communication systems such as the public address system) and specific safety structure, system, and component ~~(SSC)~~ status. In addition, a public address system ~~will be~~is powered from this building to facilitate emergency response. The building ~~will~~ includes offices, conference rooms, restrooms, change rooms, site security access, and circulation space for about 25 workers. The building ~~will be~~is outside the security control fence; windows provide visual observation of the control area. The building ~~will~~ uses an ordinary steel moment frame ~~in both directions,~~ and includes nonload bearing metal panel walls. The exterior finish ~~will be~~is metal sandwich insulating panels. The roof ~~will be~~is a low slope membrane-type with high solar reflectance and roof and overflow drains. The floor ~~will be~~is reinforced concrete slab on grade and finished concrete in some areas.

Access to the waste management site is via a gated driveway east of the concrete pad. Gates are normally closed and vehicle access to the controlled area within the unit fence line requires check-in at the Operations Support Building. Pedestrian access to the controlled area also requires check-in through the Operations Support Building. Parking for site workers and visitors is provided south of the Operations Support Building and outside the controlled area fence.

Located to the north of the Operations Support Building, on the project site but outside the controlled area fence, is a dedicated fire water supply tank and utility building. The utility building is adjacent to the water tank that supplies water for the fire suppression system. This building will house two fire water pumps and instrumentation needed to ensure operation of the fire suppression system. The back-up pump is diesel powered. Access into the fenced unit will not be required for filling the diesel pump fuel tank~~, a fuel truck parked on~~ as fueling can occur from the roadway ~~will serve this purpose~~.

Further to the north, across the access driveway is an existing groundwater monitoring well. The monitoring well is R-46, part of the LANL groundwater monitoring network. The TWF controlled area fence line is located to the west of the monitoring well. Space has been allocated to allow for routine and upset condition access to the monitoring well. Access to the TWF is not required for activities associated with the monitoring well.

~~A forklift charging station is located to the west of the canopy along the western edge of the site. This structure will be an open roofed shed with storage areas for the forklifts and charging equipment.~~

There ~~will be~~is an equipment storage shed on the west side of the unit. This shed ~~will be~~is a light warehouse of 1250 square feet and will be used to store items such as metal pallets, containers used to over-pack waste containers if necessary, and snow removal equipment. The building will be 25 ft x50 ft x15 ft high. The sides of the shed ~~will be~~are closed with a rollup (garage-type door) in addition to a personnel access/egress door. There will be no fire protection in this building.

The characterization process will require sealed radioactive sources for calibration of RTR and HENC sensors. A separate building designated the Characterization Source and Matrix Management (CSMM) Building will house sealed sources.

A.6.7 SECURITY AND ACCESS CONTROL

The DOE provides security for the area within LANL boundaries. Guard stations will control public access to this area of LANL from Pajarito Road east and west of TA-63. Therefore, only properly identified LANL and DOE employees authorized to enter the facility or individuals under their escort ~~will~~ have access to the TWF.

The unit security requirements ~~will be~~ are met because the TWF ~~will be~~is within a security fenced area with controlled access gates. The security fence around the waste management portion of the TWF ~~will be~~is at least 8 feet (ft) high and ~~be~~is a chain link type fence with steel pipe fence posts. Fence tops ~~will~~ have at least three strands of barbed wire angled away from the protected area to prevent a person from scaling the fence. Two vehicle access gates ~~will be~~are integrated into the fence line. These gates, when opened, ~~shall~~ provide at least a 16 foot wide clearance to enable vehicle access. Gates ~~will be~~are locked when the facility is not operational.

Controlled entry to the unit ~~will be~~is provided by a system of access controls (badge readers and administrative controls will be required prior to entrance) to ensure that only authorized

personnel are granted access. These access controls ~~will~~ also ensure that all facility personnel can be identified and located in an emergency.

The TWF ~~will be~~is patrolled by LANL security personnel during both operational and non-operational hours to ensure that the gates are locked and that unauthorized entry does not occur.

Warning signs stating "Danger – Unauthorized Personnel Keep Out," ~~will be~~are posted on the perimeter fences and gates. These ~~will be able to~~can be seen from any approach to the TWF in accordance with Permit Section 2.5.2, *Warning Signs*. The legends on the signs ~~will be~~are bilingual (i.e., English and Spanish) and ~~will also~~ indicate "No Trespassing by Order of the United States Department of Energy." The signs ~~will be~~are legible from a distance of 25 feet. Signs for any confined areas, if necessary, may be reduced in size, but ~~will be~~are legible to personnel who require access to these areas. TA-63 does not have a shared boundary with the Pueblos of San Ildefonso or Santa Clara and, therefore, the signs ~~will~~do not include warnings in Tewa dialects.

A.6.8 Required Equipment

In accordance with Permit Attachment D.2, Contingency Plan, emergency equipment is located throughout the TWF and includes fire alarms, fire response systems, alarm systems, internal communications, spill kits, and decontamination equipment. Detailed information on the required emergency and safety equipment located at the TWF is provided below.

The TWF ~~will be~~is equipped with safety-alarm systems to alert personnel in the event of an emergency and to evacuate the area. These alarm systems ~~will be~~are located both inside and outside the unit and will be monitored. The facility monitor/control system will be in operation 24 hours a day and ~~will be~~is located in the access control station at the TWF; the system ~~will~~is also ~~be~~ connected to the LANL CAS. Specific facility monitor/control system equipment ~~to be~~ located at the TWF is discussed below.

Emergency equipment ~~will be~~is located throughout the TWF and ~~will~~ includes fire alarms, fire response systems, alarm systems, internal communications, spill kits, and decontamination equipment. Detailed information on the required emergency and safety equipment located at the TWF is provided below.

Fire-alarm pull boxes and/or drop box push-button alarms ~~will be~~are located pursuant to NFPA standards in the TWF where waste management activities will be conducted. Fire-alarm pull boxes can~~may~~ be used by personnel to activate a local fire alarm when a fire or other emergency is discovered. Once manually activated, an alarm will sound in the TWF access control station and at the LAFD through LANL's CAS. The TWF ~~will~~is also ~~be~~ equipped with automatic fire-suppression alarm systems. The fire-suppression alarms will be activated when water flow is detected in the sprinkler pipes of the fire-suppression system. Upon activation of the fire-alarm system, an alarm will sound and red lights will flash to alert personnel of emergency conditions. All fire-alarm pull boxes and automatic fire-suppression systems that will be located at the TWF will be connected to the LAFD through LANL's CAS.

In addition to the alarms described above, a public address (PA) system may also be used to announce emergency conditions or to initiate an evacuation at the TWF. The PA system ~~will be~~is audible throughout the TWF and will be activated by the access control station in the Operations Support Building.

Personnel working at the TWF will have the ability to communicate the location and nature of hazardous conditions using conventional telephones, or cellular telephones to call the access control station. This type of call will summon assistance from the Emergency Management and Response Office, local police and fire departments, and state emergency response teams, if necessary.

Fire control equipment ~~will be~~is readily available for the waste management unit. Portable fire extinguishers ~~will be~~are available and may be used by trained on-site personnel depending on the size of the fire and the fuel source. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. Fire hydrants are located in accordance with NFPA standards on the west and east sides of the TWF pad and near the Operations Building. Water will be supplied to the fire hydrants by a municipal water system which will provide adequate volume and pressure (i.e., greater than 1,000 gal per minute and 90 pounds per square inch static pressure) to multiple water hoses in the event of a fire. The LAFD will supply all water hoses needed in the event of a fire at the TWF. . Fire protection systems for the TWF storage buildings, including the Storage and Characterization Building 63-0154, include a wet-pipe sprinkler system for fire suppression. Water will be supplied via the 150,000 gallon tank north of the Operations Support Building with a combination of electric and diesel powered fire pumps, the tank and its associated level detection, freeze protection, and power supply for the pumps. The fire suppression water will be pumped to automatic sprinkler systems in the buildings.

There ~~will be~~are spill kits available at the TWF in the storage areas to mitigate containable spills. These kits will typically contain sorbents, neutralizers, personal protective equipment (PPE), and other equipment essential for containment of spills. Trained personnel will use the spill kits only if they know what has been spilled and they are sure their actions will not put themselves or others at risk. In addition to the spill kits, cleanup equipment such as shovels, bags, drums, etc. will be available at the TWF. Overpack drums and sorbents will also be stored in an equipment storage shed on the west side of the TWF. Emergency personnel can also provide additional spill control equipment and assistance upon request depending on the size and severity of the spill.

Personnel decontamination equipment that will be available at the TWF will include safety showers and eye wash stations located inside each of the storage buildings. These will be situated at all the waste storage buildings in accordance with OSHA requirements. Additional decontamination equipment may be provided by emergency personnel. Material Safety Data Sheets MSDS (e.g., for cleaners, solvents, used on site) ~~will be~~are available at ~~operations areas~~the Operations Support Building and will provide useful exposure information in accordance with OSHA requirements.

A.6.9 Control of Run-on/Run-off

Controlling run-on and run-off at the TWF locations where waste management operations ~~will~~ regularly occur is accomplished by the design of the buildings and the use of control structures with appropriate contouring of surface areas. Run-on of storm water into the storage buildings will not occur: walls enclose raised floors, and surface contouring slopes away from the building to prevents storm water from pooling against the foundations, doors, and loading areas. The internal floors of the buildings ~~will be~~are sloped to the front doors to prevent flooding by precipitation or storm water in addition to providing drainage to the outside.

The TWF site will maintain a nominally 2% slope to optimize drainage and the use of electric forklifts to handle waste containers. ~~After the site has been graded, the site will be lower in elevation than Pajarito Road or Puye Road.~~ A retention wall ~~will~~ maintains the differences in elevation between the surrounding roads and the site. The site ~~will be~~is surfaced in concrete and ~~will~~ includes a retention basin for management of storm water and for the collection of fire suppression water until it is sampled and verified to be uncontaminated. Retention basin capacity includes the run~~-~~off from a 25 yr-2 hr precipitation event in addition to a fire event or a total capacity of approximately 137,450 gallons or 18,375 cubic feet of water.

Secondary containment ~~will be~~is provided where potential liquid-bearing containers are stored in the buildings to prevent run-off. Secondary containment systems (i.e.~~g.~~, pallets) ~~will be~~are utilized, as needed, and ~~will~~ have sufficient capacity to contain at least 10 percent (%) of the volume of potential liquid-bearing containers or the volume of the largest container stored in the system, whichever is greater, pursuant to the requirements of 40 CFR §264.175(b)(3) and Permit Section 3.7, *Containment Systems*.

Waste spills or leaks will be managed inside the characterization trailers to prevent run-off. ~~Waste staged under the canopy will be protected by the roof.~~ Containers stored outside on the concrete pad will be protected from contact with precipitation in accordance with Permit Section 3.5.1 (5).

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ATTACHMENT D

CONTINGENCY PLAN

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TABLE D-5

TA-63 Transuranic Waste Facility

Emergency Equipment

FIRE CONTROL EQUIPMENT

ABC and/or BC rated fire extinguishers are available at TA-63-145, TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, TA-63-154, TA-63-155, TA-63-156, and TA-63-157

Description of General Capabilities:

These portable, manually operated fire extinguishers may be used by any qualified employee in the event of a small fire. For larger fires, security personnel and the Los Alamos Fire Department (LAFD) are alerted.

Flame or smoke detection equipment and fire alarm pull stations will be located within structures at TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, and TA-63-154.

Dry-pipe fire suppression systems are available at TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, and TA-63-154.

Fire alarm pull stations are available at TA-63-145, TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, TA-63-154, TA-63-155, TA-63-156, and TA-63-157.

Description of General Capabilities:

Fire alarms may be activated by any employee in the event of a fire to notify the LAFD and security personnel. Security personnel and LAFD are also notified upon activation of the flame or smoke detectors.

Two fire hydrants are located in TWF. These fire hydrants will supply water at an adequate volume and pressure to satisfy the requirements of 40 CFR 264.32(d)

SPILL CONTROL EQUIPMENT

Spill control stations and/or portable spill kits are located at TA-63-145, TA-63-149, TA-63-150, TA-63-151, TA-63-152, TA-63-153, TA-63-154, TA-63-155, TA-63-156, and TA-63-157 Each spill kit generally includes bags of absorbent and an inventory of tools and supplies.

COMMUNICATION EQUIPMENT

Telephones and the public address system are located inside the Operations Support Building.

Description of General Capabilities:

Telephones for internal and external communication are available for use by any employee. Employees can be notified of an emergency situation and appropriate response action through the public address system.

Fire alarm pull stations are located in the storage buildings, the receiving canopy, and at operations support building.

Description of General Capabilities:

Manually-operated fire alarms may be activated by any employee in the event of a fire to alert TWF site personnel, LANL Emergency Response Personnel, and the LAFD.

Fire and public address system alarms

Description of General Capabilities:

The fire and public address system are activated or used to provide a sound signal to alert personnel of fires or the need to clear the area.

DECONTAMINATION EQUIPMENT

Eyewash/emergency shower stations and MSDSs are available in the storage buildings and the Operation Support Building. MSDS information is maintained where appropriate for personnel accessibility and are used for chemicals that will be needed to support operations or emergency activities.

Description of General Capabilities:

Eyewashes and emergency showers may be used by personnel who receive a chemical splash to the eyes or body. Specific MSDSs should be reviewed prior to working with chemicals.

PERSONAL PROTECTIVE EQUIPMENT

Personnel at TWF will be required to use appropriate personal protective equipment (PPE) protect themselves from hazards found under normal conditions. This PPE may include gloves, steel toe shoes, and eye protection, additional PPE may be required during unusual hazardous situations. First aid kits and hearing protection will also be available.

Description of General Capabilities:

To prevent undue exposure of personnel to hazardous or mixed waste, personal protective equipment (PPE) appropriate for the waste containers being managed will be worn by all on-site personnel at the TWF (see section 2.5.6). First aid kits may be used by personnel who sustain minor injuries at the unit in the course of operations. Hearing protection may be used by operations personnel to mitigate noise impacts.

ATTACHMENT J

HAZARDOUS WASTE MANAGEMENT UNITS

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Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
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-55-4 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-55-4 Total square footage – 11,100	Outdoor (not associated with a regulated unit)
TA-63 Transuranic Waste Facility	S01	105,875 gal	Includes TA-63-145 Receiving Canopy, TA-63-149 through 153 Storage Buildings, TA-63-154 Storage and Characterization Building, TA-63-155 through 157 Characterization Trailers, and Outside Storage Pad Total square footage – 78,843	Outdoor (not associated with a regulated unit).

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ATTACHMENT G.27

TECHNICAL AREA 63

TRANSURANIC WASTE FACILITY

CLOSURE PLAN

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ATTACHMENT F
TECHNICAL AREA 63
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CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the permitted mixed waste Transuranic Waste Facility (TWF) at Technical Area (TA)-63 at the Los Alamos National Laboratory (Facility) hereinafter referred to as the "Unit To Be Closed," or 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 waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

The TWF unit will be closed by removal of all structures and equipment. Until closure is complete and has been certified in accordance with Permit Part 9.5 and 40 CFR §264.115, 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 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 (the Department) for approval prior to implementing closure activities.

2.0 DESCRIPTION OF THE UNIT TO BE CLOSED

The TWF is located at TA-63 at the junction of Pajarito Road and Puye Road, within the triangle formed by Building 63-111 to the east, Puye Road to the north, and Pajarito Road to the southwest. It was designed, constructed, and commissioned as a Hazard Category (HC)-2 nuclear facility and permitted as Resource Conservation and Recovery Act (RCRA) Storage Facility for TRU, mixed TRU and hazardous wastes. Refer to Permit Figure 55 for additional site information and to Permit Attachment A.6, *Technical Area (TA), Unit Descriptions* for additional site information and building numbers..

STRUCTURES THAT HAVE MANAGED HAZARDOUS WASTE TO BE REMOVED AT CLOSURE:

- Storage Buildings: 63-0149, 63-0150, 63-0151, 63-0152, and 63-0153
- Storage and Characterization Building: 63-0154
- Characterization Trailers: 63-0155, 63-0156, and 63-0156
- Concrete Storage Pad

Six buildings are designated for storage of TRU and Mixed TRU wastes in support of LANL programs and missions. One of the storage structures is used for both storage of larger-sized waste containers and for head space gas sampling and analysis. Certification of containers in accordance with Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria (WAC) will occur at the three characterization and testing trailers. A concrete pad underlies the storage and

characterization buildings and trailers. The boundaries of the pad will be used to designate the RCRA-permitted portion of the TWF.

OTHER TWF STRUCTURES TO BE REMOVED AT CLOSURE:

- Calibration Source and Matrix Module (CSMM) Building: 63-0158
- Retention Basin

The CSMM Building and the Retention Basin are the only structures that will be closed within the boundary of the TWF permitted hazardous waste management unit that are not used to manage hazardous waste.

3.0 ESTIMATE OF MAXIMUM WASTE STORED

The TWF will be capable of storing/staging a minimum of 825 55-gallon drum/drum equivalents (D/DE) with overflow storage capacity up to 1,240 D/DE. On a yearly basis, the TWF will process 1,100 D/DE per year, or 33,000 D/DE or 1.815 million gallons during the lifetime of the facility. Refer to Table 1 for more information pertaining to the estimate of waste stored at the permitted unit.

4.0 GENERAL CLOSURE REQUIREMENTS

The following sections describe the closure objectives and schedule for the permitted unit.

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. The cleanup levels for soil 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.

Closure of the permitted unit will be deemed complete when:1) All 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.

4.2 Closure Schedule

This closure plan is intended to address closure requirements for the permitted unit within the authorized timeframe of this Permit (see Permit Section 9.4.1). However, pursuant to 40 CFR §264.112(e), removing hazardous wastes and decontaminating or dismantling equipment in accordance with an approved closure plan may be conducted at any time before or after notification of closure. Subject to the provisions of 40 CFR §264.113(a), such removal may only occur before the end of the allowed 90 day period to remove, treat or dispose of closure related hazardous waste after receiving the final volume of hazardous waste. For the purposes of this closure plan, portable and temporary structures in this permitted unit such as characterization trailers are considered to be equipment by their design and to facilitate the closure schedule for the TWF.

Closure activities will proceed according to the schedule discussed below and Table 2 of this closure plan. Notification of closure will occur at least 45 days prior to when LANL expects to begin closure (see 40 CFR § 264.112(d)(1)). Closure activities will begin according to the requirements of 40 CFR § 264.112(d)(2) no later than 30 days after the date on which the unit receives the known final volume of hazardous waste. All hazardous wastes will be removed from the TWF within 90 days of the receipt of the known final volume of hazardous waste pursuant to Permit Section 9.4.1, *Closure Schedule,* Permit Section 9.4.2, *Removal of Hazardous Waste,* and 40 CFR §264.113(a). A records review of the operating history of the unit will occur within ten days of the completed removal or treatment of all waste from the permitted unit as required by Permit Section 9.4.6.1, *Records Review*. A structural assessment of the unit will occur within ten days of the completed removal or treatment of all waste from the permitted unit as required by Permit Section 9.4.6.2, *Structural Assessment.* Notification of the structural assessment (assessment), as described in Section 5.2 of this closure plan, will occur in accordance with Permit Section 9.4.6.2.

After completion of the records review and structural assessment, LANL will submit an amended closure plan, if necessary, to the NMED for review and approval as a permit modification to incorporate changes to the sampling and analysis plan. After approval of the modified closure plan, if applicable, LANL will continue with closure activities. Decontamination verification sampling activities, and soil sampling, will be conducted to demonstrate that removal of the TWF structures and any other closure activities included in this or a modified closure plan will meet the closure performance standards in Permit Section 9.2.1.

All closure activities will be completed within 150 days of the beginning of closure activities or 180 days after the receipt of the known volume of hazardous waste in compliance with Permit

Section 9.4.1.1. The final closure report and certification will be submitted to NMED for review and approval within 60 days of closure completion as required by Permit Section 9.5. In the event that the activities required under the closure plan cannot be completed within the allotted timeframe, the Permittees may request a permit modification to modify the schedule pursuant to the requirements of Permit Section 9.4.8, *Amendment of the Closure Plan*, referencing the conditions of 40 CFR §264.112(c)(2) or of 40 CFR§264.113(b) and (c). In the event that closure of the TWF cannot proceed according to schedule, LANL will notify the NMED in accordance with the extension request requirements in Permit Section 9.4.1.1.

5.0 CLOSURE PROCEDURES

The following sections describe the procedures to be used for closure of the permitted unit. The procedures will proceed in the order described although the operating records review described in Section 5.2.1 may be started earlier.

5.1 Removal of Waste

In accordance with Permit Part 9.4.2, all stored hazardous waste will be removed from the permitted unit scheduled for closure. Depending upon their size, containers will be removed with forklifts, container dollies, pallets, or manually. Containers will be placed on flat bed trucks, trailers, or other appropriate vehicles for transport from the permitted unit. Appropriate shipping documentation will be prepared for the wastes during transport. All hazardous waste containers will be moved to a permitted on-site storage unit or a permitted off-site treatment, storage, or disposal facility.

5.2 Records Review and Structural Assessment

Before starting decontamination and sampling activities, the operating and inspection records for the permitted unit will be reviewed and a structural assessment of the unit will be conducted to determine any finding(s) or action(s) that may influence closure activities or additional sampling locations.

5.2.1 Records Review

The Facility Operating and Inspection Records shall be reviewed in accordance with Permit Section 9.4.6.1. The goals of this review will be to:

a) confirm the specific hazardous waste constituents of concern; and

b) confirm additional sampling locations (e.g., locations of any spills or chronic conditions identified in the Operating Record).

5.2.2 Structural Assessment

A structural assessment (assessment) of the unit's physical condition will be conducted in accordance with Permit Section 9.4.6.2 and documented with photographs and drawings, as necessary. The TWF structural assessment will include the concrete pad (as an outdoor pad defined in Section 9.1.3(1) of the Permit) and the retention basin. 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 as additional sampling points in the updated sampling and analysis plan (see Section 7.0) and include the applicable sampling methods and procedures. If evidence of a release or damage is present, a wipe sample or a

representative sample of the media (e.g., concrete chip) will be collected according to the procedures in Section 7.2. If additional sampling locations are necessary, the Permittees will request a permit modification to modify the sampling and analysis plan in accordance with Permit Section 9.4.6. The locations of any additional sampling locations will be determined using Global Positioning Satellite (GPS) coordinates.

5.3 Removal and Decontamination of Structures and Related Equipment

In accordance with the procedures in Permit Section 9.4.3, all remaining hazardous waste residues and hazardous constituents will be removed from the permitted unit. The unit's structures and related equipment will be decontaminated if necessary, removed, and managed appropriately. All waste material will be handled and characterized as necessary as required by Permit Attachment C, *Waste Analysis Plan*, Permit Section 9.4.5, and the LANL waste management procedures.

5.3.1 Removal of Structures and Related Equipment

All structures and related equipment that are removed from the unit will require no further decontamination but will be considered solid waste and potentially, hazardous waste, as defined by the Permit, at removal. They will be disposed of in accordance with Permit Section 9.4.5 and Section 5.3 of this closure plan. The concrete pad, the materials associated with the pad (curbing and ramps), and a minimum of six inches of the base course and soil underlying the concrete pad will be removed. If the remaining soil surface shows evidence that the removal to this point has not gathered all appropriate soils and materials associated with the pad, additional soil removal will occur until the conditions of Permit Section 9.2 are met. The option of removing small areas of concrete at sampling locations where contamination is suspected (i.e., spill or staining sites) to allow sampling without disturbing the surrounding area prior to the general removal of the pad will be reviewed at the time of the structural assessment. If this option is used, the concrete removed at the sampling location and any concrete subsequently removed from the location during the general removal of the concrete pad to a radius to be determined during the structural assessment will be segregated to prevent potential cross contamination during the closure process.

5.3.2 Decontamination of Structures and Related Equipment

All structures and related equipment that will be re-used by the Facility will be decontaminated in accordance with Permit Section 9.4.3.1. This may include the characterization trailers and any associated equipment removed at closure. The lists of equipment needing decontamination will be reviewed during the pre-closure and structural assessment described in Part 9 of the Permit.

Water resistant equipment at the permitted unit will be decontaminated by steam cleaning using water or pressure washing with a solution consisting of a surfactant detergent (e.g., Alconox®) and water. Wipe-down washing with a solution consisting of a surfactant detergent (e.g., Alconox®) and water may be conducted on equipment within the unit if containment cannot be established for the steam cleaning water or pressure wash solution or these methods will damage the equipment preventing further use or recycling. The quantity of the wash solution will be minimized by dispensing from buckets, spray bottles, or other types of containers. Cheesecloth, rags, or other absorbent materials will be used to wipe down the equipment after being wetted in the wash solution or after spraying solution onto the equipment. If necessary, portable berms or other devices (e.g., absorbent socks, plastic sheeting, wading pools, or existing secondary

containment) designed to collect and provide containment will collect excess wash water and provide containment during the decontamination process. Wash solution will not be allowed to enter the fire suppression water drains.

5.4 Equipment Used During Decontamination Activities

Reusable protective clothing, tools, and equipment used during closure activities will be cleaned with a wash water solution. The solution will be characterized and managed as a hazardous waste if appropriate. Residue, disposable equipment, and equipment that cannot be decontaminated will be containerized and managed as waste.

6.0 SAMPLING AND ANALYSIS PLAN

This sampling and analysis plan (SAP) describes the sampling and analytical methods as well as the quality assurance and quality control (QA/QC) procedures that will be used to demonstrate that the permitted unit is closed in accordance with Permit Part 9 and all applicable closure requirements.

6.1 Soil Sampling Locations

Soils sampling will be conducted at the permitted unit in order to verify that the removal of structures and soils, with other closure related activities meet the closure performance standards in Permit Section 9.2, *Closure Performance Standards*. All samples will be collected and analyzed in accordance with the procedures in Sections 6.2, 6.3, and 6.4 of this closure plan. Soil samples will be collected from beneath the concrete pad of the unit and in additional sampling locations specified to meet the conditions of Permit Section 9.4.7.1.ii.

In compliance with Permit Section 9.4.7.ii, this closure plan will ensure the collection of soil samples in the following locations:

a. One sample at each loading/unloading point for a total of 6 samples (see Permit Section 9.4.7.1.ii(1));

b. one sample every 900 square feet of the permitted unit for a total of 88 samples (see Permit Section 9.4.7.1.ii(2));

c. one sample at the south of the permitted unit at the stormwater discharge drainage location (see Permit Section 9.4.7.1.ii(3));

d. one sample, at 30 foot intervals, along the valley gutter for a total of 4 samples (see Permit Section 9.4.7.1.ii(8)); and

e. 3 additional samples along the long axis of the retention basin (see Permit Section 9.4.7.ii(5).

All soil sample locations are illustrated in Figure F-1 of this closure plan.

6.2 Sample Collection Procedures

Samples will be collected in accordance with Permit Section 9.4.7.1 and the procedures identified in this SAP which incorporates guidance from the United States Environmental

Protection Agency (USEPA)(EPA, 1986 and EPA, 2003), DOE (DOE, 1995) and other Department-approved procedures.

6.2.1 Liquid Sampling

Liquid sampling will consist of grab samples of the liquid at the drain of the retention basin, if applicable, to ensure the drain system has not been contaminated. Liquid sampling will be conducted using glass or plastic tubes, a composite liquid waste sampler, a bacon bomb, a bailer, or by pouring liquid into sample containers.

6.2.2 Wipe Sampling

When surface wipe samples are used to determine if residual hazardous constituents remain for structures or surfaces within the TWF, the samples will be taken in accordance with the National Institute of Occupational Safety and Health (NIOSH) *Manual of Analytical Methods*, Method 9100 (NIOSH, 1994), or other approved methodology. The appropriate use of wipe sample methods will consider the type of surface being sampled, the type of contaminant, the solution used, and the desired contaminant concentration detection limits. The NIOSH method includes wiping a 100 square centimeter area at each discrete location with a gauze wipe wetted with a liquid solution appropriate for the desired analysis (e.g., de-ionized water for lead). For wipe sampling, guidance from the analytical laboratory must be obtained prior to wipe verification sampling to confirm that the solution chosen for each analysis is appropriate for the analysis to be conducted and that wipe sampling is a proper technique for the analysis.

6.2.3 Soil Sampling

Soil will be sampled using a spade, scoop, auger, trowel, or other equipment as specified in approved methods for the type of analyte (i.e., EPA 1996 or 2002). Soil samples will be collected in accordance with Permit, Section 9.4.7.1.ii. Samples will be kept at their at-depth temperature or lower, protected from ultraviolet light, sealed tightly in the recommended container, and analyzed within the specific holding times listed in Table 3.

6.2.4 Cleaning of Sampling Equipment

Reusable sampling equipment will be cleaned and rinsed prior to use. Sampling equipment rinsate blanks will be collected and analyzed only if reusable sampling equipment is used. Reusable decontamination equipment, including protective clothing and tools, used during closure activities will be scraped as necessary to remove residue and cleaned with a wash water solution. Sampling equipment will be cleaned prior to each use with a wash solution, rinsed several times with tap water, and air-dried or wiped dry to prevent cross contamination of samples. A disposable sampler is considered clean if still in a factory-sealed wrapper. Residue, disposable decontamination equipment, and reusable decontamination equipment that cannot be decontaminated will be containerized and managed appropriately at an approved on-site facility.

6.3 Sample Management Procedures

The following information presents general sample management and sampling equipment cleaning procedures for closure of the permitted unit. Samples will be collected and transported using documented chain-of-custody and sample management procedures to ensure the integrity of the sample and provide an accurate and defensible written record of the possession and handling of a sample from the time of collection through laboratory analysis. Sample collection equipment will include labels, chain-of-custody forms, EPA-certified clean containers, coolers,

preservatives, and custody seals. The following provides a description of sample documentation; sample handling, preservation, and storage; and sample packaging and transportation requirements that will be followed during the sampling activities associated with the closure.

6.3.1 Sample Documentation

Sampling personnel will complete and maintain records to document sampling and analysis activities. Sample documentation will include sample identification numbers, chain-of-custody forms, analysis requested, sample logbooks detailing sample collection activities, and shipping forms (if necessary).

6.3.1.1 Chain-of-Custody

Chain-of-custody forms will be maintained by sampling personnel until the samples are relinquished to the analytical laboratory. One chain-of-custody form may be used to document all of the samples collected from a single sampling event. The sample collector will be responsible for the integrity of the samples collected until properly transferred to another person. The EPA considers a sample to be in a person's custody if it is:

a) in a person's physical possession;

b) in view of the person in possession; or

c) secured by that person in a restricted access area to prevent tampering.

The sample collector will document all pertinent sample collection data. Individuals relinquishing or receiving custody of the samples will sign, date, and note the time on the analysis request/chain-of-custody form. A chain-of-custody form must accompany all samples from collection through laboratory analysis. The completed original chain-of-custody form will be returned by the analytical laboratory and will become a part of the permanent record documenting the sampling effort.

6.3.1.2 Sample Labels and Custody Seals

A sample label will be affixed to each sample container. The sample label will include the following information:

a) a unique sample identification number;

b) name of the sample collector;

c) date and time of collection;

d) type of preservatives used, if any; and

e) location from which the sample was collected.

A custody seal will be placed on each sample container to detect unauthorized tampering with the samples. These labels must be initialed, dated, and affixed by the sample collector in such a manner that it is necessary to break the seal to open the container.

6.3.1.3 Sample Logbook

All pertinent information on the sampling effort must be recorded in a bound logbook. Information must be recorded in ink and any cross outs must be made with a single line and the change initialed and dated by the author. The sample logbook will include the following information:

a) the sample location by GPS coordinates recorded during the structural assessment,

b) suspected composition,

c) sample identification number,

d) volume/mass of sample taken,

e) purpose of sampling,

f) description of sample point and sampling methodology,

g) date and time of collection,

h) name of the sample collector,

i) sample destination and how it will be transported,

j) observations, and

k) names of personnel responsible for the observations.

6.3.2 Sample Handling, Preservation, and Storage

Samples will be collected and containerized in appropriate pre-cleaned sample containers. Table 3 presents the requirements in SW-846 (EPA, 1986) for sample containers, preservation techniques, and holding times. Samples that require cooling to 4 degrees Celsius will be placed in a cooler with ice or ice gel or in a refrigerator immediately upon collection.

6.3.3 Packaging and Transportation of Samples

All packaging and transportation activities will meet safety expectations, QA requirements, DOE Orders, and relevant local, state, and federal laws (including 10 CFR and 49 CFR). Appropriate Facility documents establish these requirements for packaging design, testing, acquisition, acceptance, use, maintenance, and decommissioning and for on-site, intra-site, and off-site shipment preparation and transportation of general commodities, hazardous materials, substances, waste, and defense program materials.

Off-site transportation of samples will occur via private, contract, or common motor carrier; air carrier; or freight. All off-site transportation will be processed through the Facility packaging and transportation organization, unless the shipper is specifically authorized through formal documentation by that organization to independently tender shipments to common motor or air carriers.

6.4 Sample Analysis Requirements

Samples will be analyzed for all hazardous constituents listed in Appendix VIII 40 CFR 261 and in Appendix IX of 40 CFR 264 that have been stored at the permitted unit during its operational history. Samples will be analyzed by an independent laboratory using the methods outlined in

Table 4. Analytes, test methods and instrumentation, target detection limits, and rationale for metals and organic analyses are presented in Table 4.

6.4.1 Analytical Laboratory Requirements

The analytical laboratory will perform the detailed qualitative and quantitative chemical analyses specified in Section 6.4.2. This analytical laboratory will have:

a) a documented comprehensive QA/ QC program,

b) technical analytical expertise,

c) a document control/records management plan, and;

d) the capability to perform data reduction, validation, and reporting.

The selection of the analytical testing methods identified in Table 4 was based on the following considerations:

a) the physical form of the waste,

b) constituents of interest,

c) required detection limits (e.g., regulatory thresholds), and

d) information requirements (e.g., waste classification).

6.4.2 Quality Assurance/Quality Control

Field sampling procedures and laboratory analyses will be evaluated through the use of QA/QC samples to assess the overall quality of the data produced. QC samples evaluate precision, accuracy, and potential sample contaminations associated with the sampling/analysis process and are described in the following sections, along with information on calculations necessary to evaluate the QC results. QA/QC samples will be collected in accordance with the Facility's most recent and appropriate sampling plan incorporating guidance from the EPA (EPA, 2002) and DOE (DOE, 1995), or other approved procedures. Analysis will be conducted in accordance with procedures given in SW-846 (EPA, 1986), or other approved procedures or methods.

6.4.2.1 Field Quality Control

The field QC samples that will be collected include trip blanks, field blanks, field duplicates, and equipment rinsate blanks as required by Permit Section 9.4.7.1(8). Table 5 presents a summary of QC sample types, applicable analyses, frequency, and acceptance criteria. QC samples will be given a unique sample identification number and submitted to the analytical laboratory as blind samples. QC samples will be identified on the applicable forms so that the results can be applied to the associated sample.

6.4.2.2 Analytical Laboratory QC Samples

QA/QC considerations are an integral part of analytical laboratory operations. Laboratory QA ensures that analytical methods generate data that are technically sound, statistically valid, and that can be documented. QC procedures are the tools employed to measure the degree to which these QA objectives are met.

6.4.3 Data Reduction, Verification, Validation, and Reporting

Analytical data generated by the activities described in this closure plan will be verified and validated. Data reduction is the conversion of raw data to reportable units; transfer of data between recording media; and computation of summary statistics, standard errors, confidence intervals, and statistical tests.

6.4.4 Data Reporting Requirements

Analytical results will include all pertinent information about the condition and appearance of the sample-as-received. Analytical reports will include:

a) a summary of analytical results for each sample;

b) results from QC samples such as blanks, spikes, and calibrations;

c) reference to standard methods or a detailed description of analytical procedures; and

d) raw data printouts for comparison with summaries.

The laboratory will describe off-normal sample preparations that occur during the analysis in sufficient detail so that the data user can understand how the sample was analyzed.

7.0 WASTE MANAGEMENT

All waste generated during closure will be controlled, handled, characterized, and disposed of in accordance with Permit Section 9.4.5, Permit Attachment C (*Waste Analysis Plan*), and Facility waste management procedures. Closure activities may generate different types of waste materials, which are listed with potential disposal options in Table 6 of this closure plan. Subsequent disposition options for the decontaminated structures and equipment include reuse, recycling, or disposal.

Portable berms or other devices, if necessary, will be used to collect excess wash water and provide containment during the decontamination activities to prevent releases. The excess wash water will be collected, transferred to containers, sampled, and analyzed for the hazardous constituents listed in Table 7. The results of this analysis will determine if the excess wash water should be managed as hazardous or non-hazardous wastewater. Reusable protective clothing, tools, and equipment used during decontamination will be cleaned with a wash water solution. Disposable equipment and other small equipment that cannot be decontaminated will be containerized and managed as waste.

8.0 CLOSURE CERTIFICATION REPORT

Upon completion of the closure activities at the TWF, a closure certification report will be prepared and submitted to the Department. The report will document that the unit has been closed in compliance with the specifications in this closure plan and will contain the following information in accordance with Section 9.5 of the Permit:

The Report shall summarize all activities conducted during closure including, but not limited to, the following:

(1) the results of all investigations;

(2) remediation waste management;

(3) decontamination;

(4) decontamination verification and soil sampling activities; and

(5) results of all chemical analyses and other characterization activities.

The closure certification report will be submitted to the Department no later than 60 days after completion of closure of the TWF Permitted Unit. The certification will be signed by the Permittees and by an independent professional engineer registered in the State of New Mexico.

The report will document the permitted unit's closure and contain, at a minimum, the following information:

(6) a copy of the certification pursuant to 40 CFR § 264.115;

(7) any variance, and the reason for the variance, from the activities approved in this closure plan;

(8) documentation of the structural assessment and records review conducted under this Permit Part 9;

(9) a summary of all sampling results, showing:

a. sample identification;
b. sampling location;
c. data reported;
d. detection limit for each analyte;
e. a measure of analytical precision (*e.g.*, uncertainty, range, variance);
f. identification of analytical procedure;
g. identification of analytical laboratory;

(10) a QA/QC statement on analytical data validation and decontamination verification;

(11) the location of the file of supporting documentation, including:

a. field logbooks;
b. laboratory sample analysis reports;
c. QA/QC documentation;
d. chain-of-custody forms;

(12) storage or disposal location of hazardous waste resulting from closure activities;

(13) a copy of the Human Health and Ecological Risk Assessment Reports, if a site specific risk assessment was conducted pursuant to Permit Sections 11.10.4 and 11.10.5 for the permitted unit; and

(14) a certification statement of the accuracy of the Closure Report.

9.0 DEPARTMENT CLOSURE ASSESSMENT

Upon submittal of the closure certification report described in Section 8.0 of this closure plan, the Facility will arrange an on-site closure review with representatives of the Department to assess the completion of the closure activities of the permitted unit's closure activities. The Facility may also arrange, at reasonable times, for other on-site reviews before, during, or after the closure period upon request by Department representatives.

10.0 REFERENCES

DOE, 1995. "DOE Methods for Evaluating Environmental and Waste Management Samples," DOE/EM-0089T, Rev. 2. Prepared for the U.S. Department of Energy by Pacific Northwest Laboratory, Richland, Washington.

EPA, 1986 and all approved updates. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA-*SW-846*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

EPA, 2002. "RCRA Waste Sampling Draft Technical Guidance Planning, Implementation, and Assessment," EPA530-D-02-002, August 2002, Office of Solid Waste, U.S. Environmental Protection Agency, Washington, D.C.

NIOSH, 1994. The National Institute for Occupational Health and Safety (NIOSH) *Manual of Analytical Methods*, Method 9100, 4th ed. Issue 1. 1994.

NMED, 2012. "Risk Assessment Guidance for Site Investigations and Remediation," New Mexico Environment Department, Santa Fe, New Mexico.

Table 1
Technical Area 63 TWF Storage Unit Capacities and Waste Categories

Structure	Estimated Maximum Waste[a] (gallons)	55-gallon Drum Equivalent	Estimated Inventory[b, c] (gallons)	Waste Category	Dimensions (feet^2)
TA-63-0149	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0150	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0151	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0152	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0153	11,367	206.7	302,500	TRU, MTRU	62’4” x 31’4”
TA-63-0154	11,367	206.7	302,500	TRU, MTRU	77’11” x 31’4”
Totals	**68,200**	**1,240**	**1,815,000**		

[a] Estimated maximum quantity of waste that can be stored at the unit at one time.

[b] Estimated lifetime inventory of waste stored/treated at the unit.

[c] Estimated waste inventories include future use.

Table 2
Closure Schedule for the TA-63 TWF

Closure Activity	Schedule	Basis
Provide closure notification to NMED	-45	40 CFR §264.112(d)(1)
Receive known final volume of waste	-30	Permit Section 9.4.1, 40 CFR §264.112(d)(2)(i)
Begin closure activity – requirement to begin removal of hazardous waste from the permitted unit	0	Permit Section 9.4.1, 40 CFR §264.112(d)(2)(i)
Notification of structural assessment to NMED	40	Permit Section 9.4.6.2: notification to occur at least 30 days prior to the structural assessment.
Hazardous waste removed	60	Permit Section 9.4.1 and 9.4.2, 40 CFR §264.113(a): removal must be completed within 90 days of the receipt of known final volume of hazardous waste.
Completion of record review	70	Permit Section 9.4.6.1: record review will occur within 10 days of completed waste removal or treatment.
Completion of structural assessment	70	Permit Section 9.4.6.2: structural assessment will occur within 10 days of completed waste removal or treatment.
Completion of closure activities	150	Permit Section 9.4.1.1, 40 CFR §264.113(b): closure activities must be completed within 180 days of the receipt of known final volume of hazardous waste.
Submittal of closure report to NMED	210	Permit Section 9.5, 40 CFR §264.115: report submitted within 60 days of closure completion

Note: The schedule shown represents the maximum allowable time to complete the activity.

Table 3
Recommended Sample Containers[a], Preservation Techniques, and Holding Times[b]

Analyte Class and Sample Type	Container Type and Materials	Preservation	Holding Time
Metals			
TCLP Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver	Aqueous Media: 500-mL Wide-Mouth-Polyethylene or Glass with Teflon Liner	Aqueous Media: HNO_3 to pH <2 Cool to 4°C	180 Days
	Solid Media: 125-mL Glass	Solid Media: Cool to 4°C	
TCLP/Total Mercury	Aqueous Media: 500-mL Wide-Mouth-Polyethylene or Glass with Teflon Liner	Aqueous Media: HNO_3 to pH <2 Cool to 4 °C	28 Days
	Solid Media: 125-mL Glass	Solid Media: Cool to 4°C	
Volatile Organic Compounds			
Target Compound Volatile Organic Compounds	Aqueous Media: Two 40-mL Amber Glass Vials with Teflon-Lined Septa	Aqueous Media: HCl to pH<2 Cool to 4 °C	14 days
	Solid Media: 125-mL Glass or Two 40-mL Amber Glass Vials with Teflon-Lined Septa	Solid Media: Cool to 4°C Add 5 mL Methanol or Other Water Miscible Organic Solvent to 40-mL Glass Vials	
Semi-Volatile Organic Compounds			
Target Compound Semi-volatile Organic Compounds	Aqueous Media: Four 1-L Amber Glass with Teflon-Lined Lid	Aqueous Media: Cool to 4 °C	Seven days from field collection to preparative extraction. 40 days from preparative extraction to determinative analysis.
	Solid Media: 250-mL Glass	Solid Media: Cool to 4°C	

[a] Smaller sample containers may be required due to health and safety concerns associated with potential radiation exposure, transportation requirements, and waste management considerations.

[b] Information obtained from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency, 1986 and all approved updates.

°C = degrees Celsius
HNO_3 = nitric acid
L = Liter
mL = milliliter
HCl = hydrochloric acid
TCLP = Toxicity Characteristic Leaching Procedure

Table 4
Summary of Proposed Analytical Methods

Analyte	EPA SW-846 Analytical Method [a]	Test Methods/ Instrumentation	Target Detection Limit [b]	Rationale
Metal Analysis				
Antimony	6010, 7010	ICP-AES, GFAA	20 ug/L	Determine the metal concentration in the samples.
Arsenic	6010, 7010, 7061A	ICP-AES, GFAA, CVAA	10 ug/L	
Barium	6010, 7010	ICP-AES,GFAA	200 ug/L	
Beryllium	6010, 7010	ICP-AES, GFAA	0.2 ug/L	
Cadmium	6010, 7010	ICP-AES, GFAA	2 ug/L	
Chromium	6010, 7010	ICP-AES, GFAA	10 ug/L	
Cobalt	6010, 7010	ICP-AES, GFAA	5 ug/L	
Copper	6010, 7010	ICP-AES, GFAA	5 ug/L	
Lead	6010, 7010	ICP-AES, GFAA	5 ug/L	
Mercury	6010, 7470A, 7471B	ICP-AES, CVAA	0.2 ug/L	
Selenium	6010, 7010, 7741A	ICP-AES, GFAA, CVAA	5 ug/L	
Silver	6010, 7010	ICP-AES, GFAA	10 ug/L	
Thallium	6010, 7010	ICP-AES, GFAA	30 ug/L	
Vanadium	6010, 7010	ICP-AES, GFAA	5 ug/L	
Zinc	6010, 7010	ICP-AES, GFAA	1 ug/L	
Organic Analysis				
Target compound list VOCs plus ten tentatively identified compounds (TIC)	8260B	GC/MS	10 mg/L	Determine the VOCs concentration in the samples.
Target compound list SVOCs plus 20 TICs	8270D, 8275	GC/MS	10 mg/L	Determine the SVOCs concentration in the samples.
Other Parameters				
Cyanide	9010, 9012	Colorimetric	20 ug/L	Determine cyanide concentration

[a] U.S. Environmental Protection Agency (EPA), 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.

[b] Detection limits listed for metals are for clean water. Detection limits for organics are expressed as practical quantitative limits. Actual detection limits may be higher depending on sample composition and matrix type.

CVAA = Cold-vapor atomic absorption spectroscopy
FLAA = Flame atomic absorption spectroscopy
GC/MS = Gas chromatography/mass spectrometry
GFAA = Graphite furnace atomic absorption spectroscopy
ICP-AES = Inductively coupled plasma-atomic emission spectrometry
mg/L = milligrams per liter
SVOC = semi volatile organic compounds
ug/L = micrograms per liter.
VOC = volatile organic compounds

Table 5
Recommended Quality Control Sample Types, Applicable Analyses, Frequency, and Acceptance Criteria

QC Sample Type	Applicable Analysis [a]	Frequency	Acceptance Criteria
Trip Blank	VOC	One set per shipping cooler containing samples to be analyzed for VOCs	Not Applicable
Field Blank	VOC/SVOC, metals	One sample daily per analysis	Not Applicable
Field Duplicate	Chemical	One for each sampling sequence	Relative percent difference less than or equal to 20 percent
Equipment Rinsate Blank[b]	VOC/SVOC, metals	One sample daily	Not Applicable

[a] For VOC and SVOC analysis, if blank shows detectable levels of any common laboratory contaminant (e.g., methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.

[b] Collected only if reusable sampling equipment used.

QC = quality control
VOC = volatile organic compound
SVOC = semi-volatile organic compound

Table 6
Potential Waste Materials, Waste Types, and Disposal Options

Potential Waste Materials	Waste Types	Disposal Options
Personal protective equipment (PPE)	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	The PPE will be treated to meet Land Disposal Restriction (LDR) treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or the WIPP, as appropriate.
Decontamination wash water	Non-regulated liquid waste	Sanitary sewer
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Radioactive liquid waste	Radioactive Liquid Waste Treatment Facility (RLWTF)
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Verification water	Non-regulated liquid waste	Sanitary sewer
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Radioactive liquid waste	RLWTF
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Metal	Non-regulated solid waste	Subtitle D landfill or recycled
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.

Potential Waste Materials	Waste Types	Disposal Options
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill, or WIPP, as appropriate.
Discarded waste management equipment	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Sampling equipment	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA , or an authorized off-site radioactive waste disposal facility. [a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Storage Structures	Non-regulated solid waste	Subtitle D landfill
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility. [a]

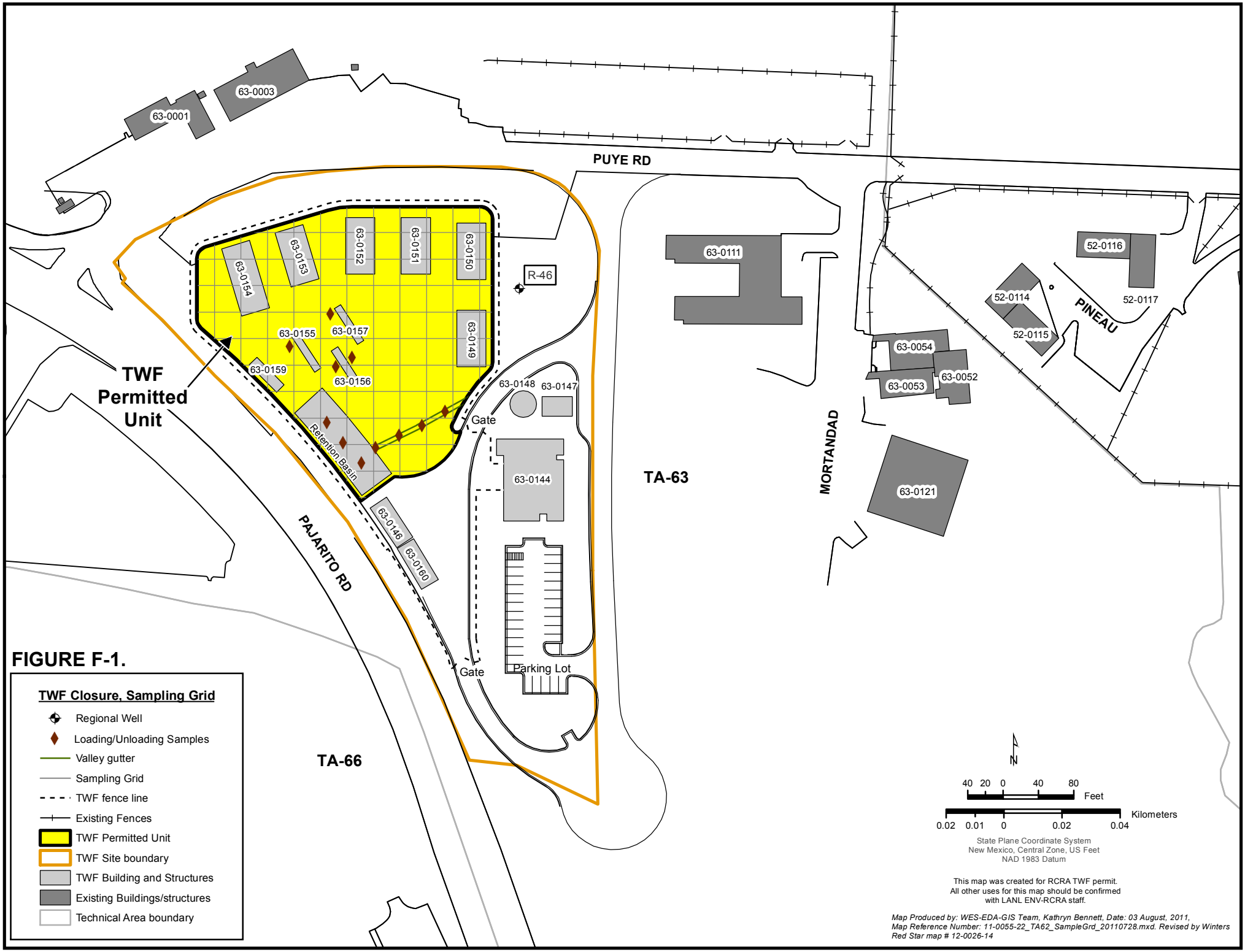
Potential Waste Materials	Waste Types	Disposal Options
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.
Concrete Pad	Non-regulated solid waste	Subtitle D landfill or potentially, re-use/recycle
	Hazardous waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D landfill, as appropriate.
	Low-level radioactive solid waste	Either an authorized on-site radioactive waste disposal area that is not undergoing closure under RCRA, or an authorized off-site radioactive waste disposal facility.[a]
	Mixed waste	Waste will be treated to meet LDR treatment standards, if necessary, and disposed in a Subtitle C or D mixed waste landfill or WIPP, as appropriate.

[a] This description of the disposal option for low level waste may be subject to revision pending the resolution of the LANL Appeal of the November 2010 LANL Hazardous Waste Facility Permit.

Table 7
Hazardous Waste Constituents of Concern at the TWF[a]

Category	EPA Hazardous Waste Numbers	Specific Constituents
Toxic Contaminants	D004	Arsenic
	D005	Barium hydroxide
	D006	Cadmium
	D007	Chromium
	D008	Lead
	D009	Mercury
	D010	Selenium
	D011	Silver
	D018	Benzene
	D019	Carbon tetrachloride
	D021	Chlorobenzene
	D022	Chloroform
	D026	Cresol
	D027	1,4-Dichlorobenzene
	D028	1,2-Dichloroethane
	D029	1,1-Dichloroethylene
	D030	2,4-Dinitrotoluene
	D032	Hexachlorobenzene
	D033	Hexachlorobutadiene
	D034	Hexachloroethane
	D035	Methyl ethyl ketone
	D036	Nitrobenzene
	D037	Pentachlorophenol
	D038	Pyridine
	D039	Tetrachloroethylene
	D040	Trichloroethylene
	D041	2,4,5-Trichlorophenol
	D042	2,4,6-Trichlorophenol
	D043	Vinyl chloride
Volatile Organic Compounds	F001	Spent halogenated solvents, trichloroethylene
	F002	Spent halogenated solvents
	F003	Spent non-halogenated solvents, xylene, acetone
	F004	Spent non-halogenated solvents
	F005	Spent non-halogenated solvents
Toxic listed waste	U080	Methylene chloride

[a] This will be modified as needed, based on the unit operating record.
EPA = U.S. Environmental Protection Agency


63-0003
63-0001
PUYE RD
63-0154
63-0153
63-0152
63-0151
63-0150
R-46
63-0111
52-0116
52-0114
52-0117
PINEAU
52-0115
63-0155
63-0157
63-0149
63-0159
63-0156
63-0148
63-0147
63-0054
63-0053
63-0052
TWF
Permitted
Unit
Gate
Retention Basin
63-0144
TA-63
MORTANDAD
63-0121
PAJARITO RD
63-0146
63-0160
Gate
Parking Lot
TA-66
FIGURE F-1.
TWF Closure, Sampling Grid
Regional Well
Loading/Unloading Samples
Valley gutter
Sampling Grid
TWF fence line
Existing Fences
TWF Permitted Unit
TWF Site boundary
TWF Building and Structures
Existing Buildings/structures
Technical Area boundary
N
40 20 0 40 80
Feet
0.02 0.01 0 0.02 0.04
Kilometers
State Plane Coordinate System
New Mexico, Central Zone, US Feet
NAD 1983 Datum
This map was created for RCRA TWF permit.
All other uses for this map should be confirmed
with LANL ENV-RCRA staff.
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011,
Map Reference Number: 11-0055-22_TA62_SampleGrd_20110728.mxd. Revised by Winters
Red Star map # 12-0026-14

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Attachment N

Figures

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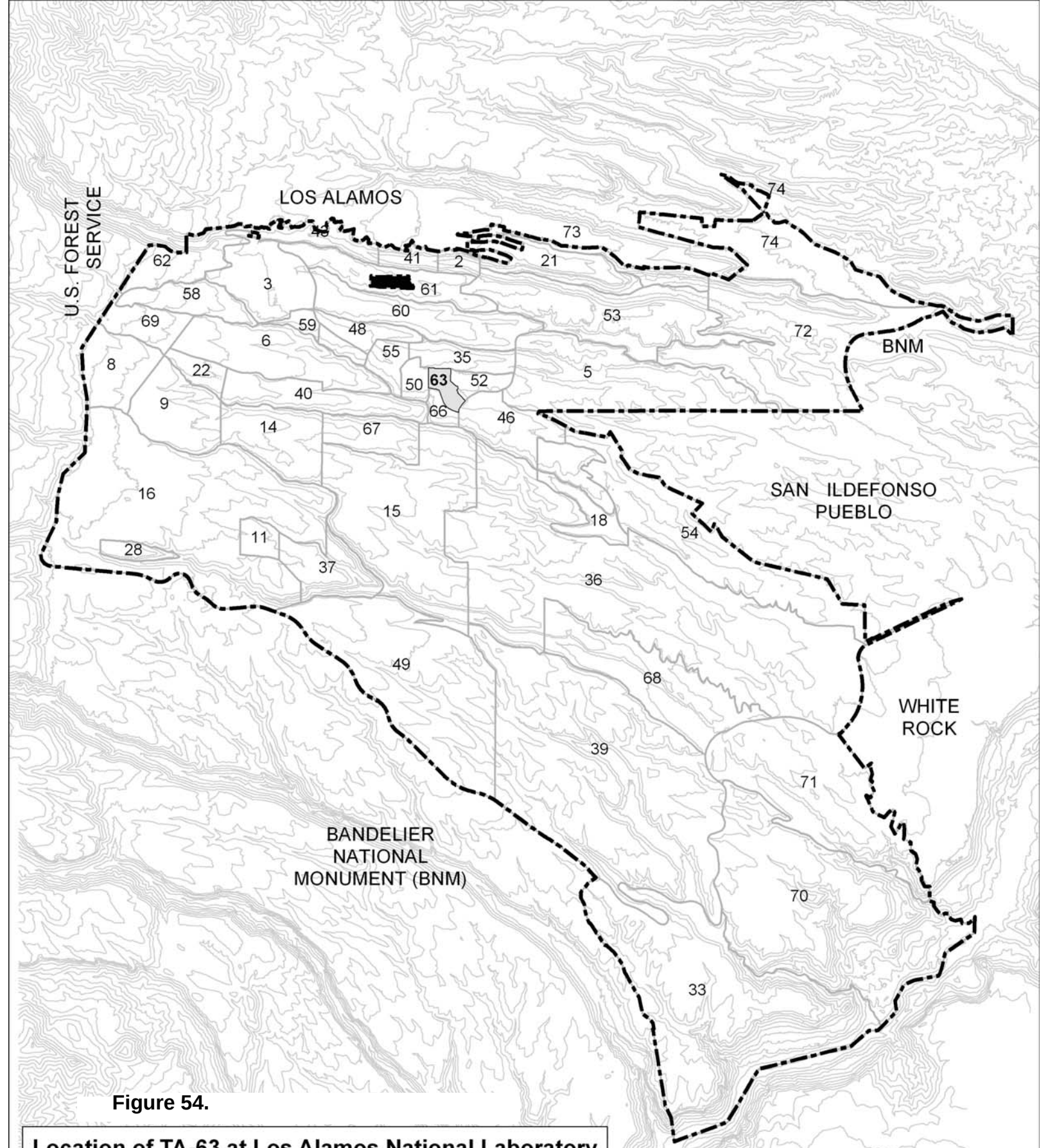
LOS ALAMOS
U.S. FOREST SERVICE
BNM
SAN ILDEFONSO PUEBLO
WHITE ROCK
BANDELIER NATIONAL MONUMENT (BNM)
74
73
74
62
41
2
21
3
58
61
60
53
69
59
48
72
6
55
35
8
22
50
63
52
5
40
9
66
46
14
67
16
15
18
54
11
28
37
36
49
68
39
71
70
33
Location of TA-63 at Los Alamos National Laboratory
Not LANL property
LANL boundary
TA-63
Technical Area boundary (2010-08-13)
Contours, 100 ft
1200 600 0 1200 2400
Meters
4100 2050 0 4100 8200
Feet
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011.
Map Reference Number: 11-0055-08b_LANL_TA63Location.mxd

Figure 54.

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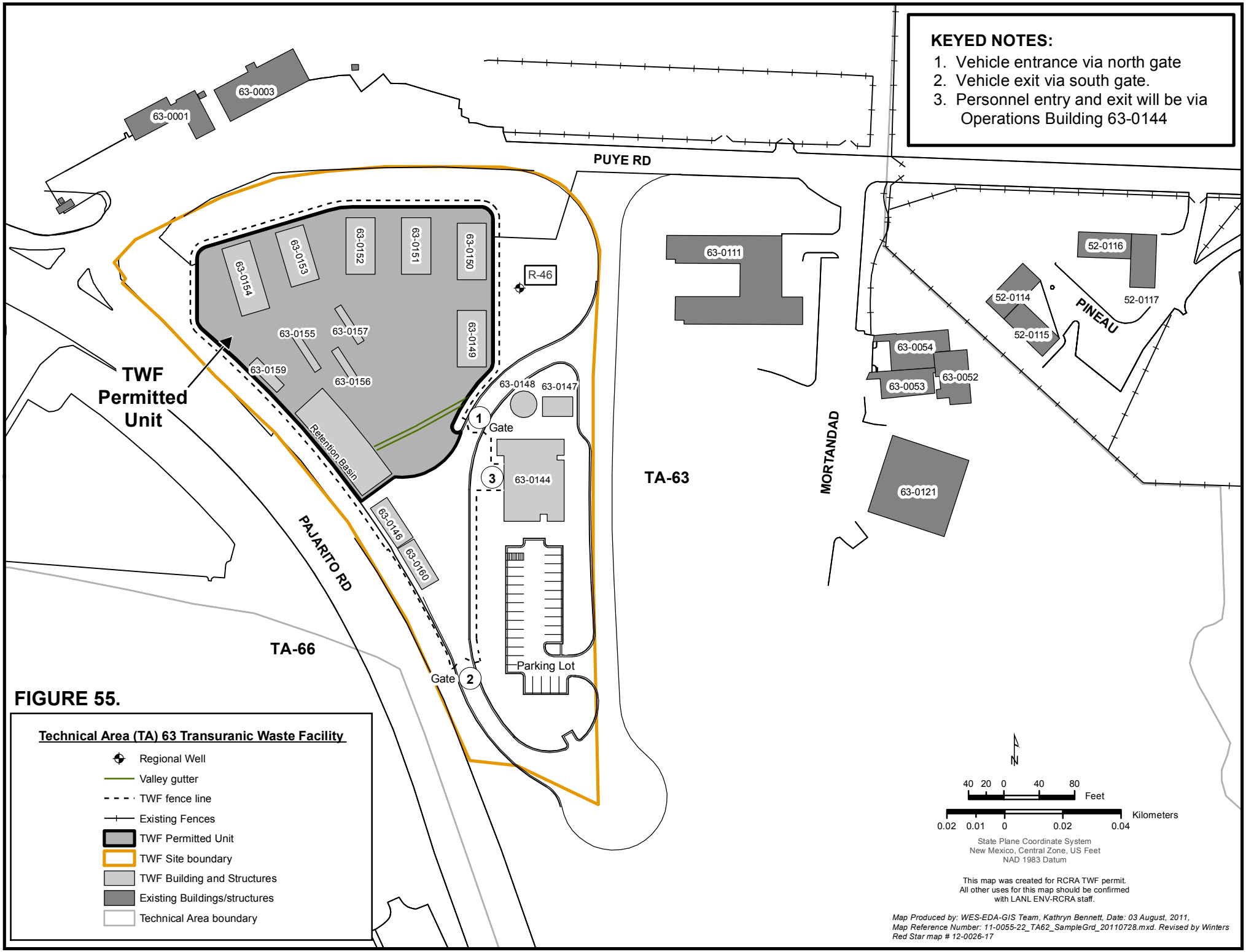
KEYED NOTES:
1. Vehicle entrance via north gate
2. Vehicle exit via south gate.
3. Personnel entry and exit will be via Operations Building 63-0144
PUYE RD
63-0001
63-0003
63-0154
63-0153
63-0152
63-0151
63-0150
63-0155
63-0157
63-0149
63-0159
63-0156
R-46
TWF Permitted Unit
Retention Basin
63-0148
63-0147
1
Gate
3
63-0144
63-0146
63-0160
PAJARITO RD
TA-66
Gate
2
Parking Lot
TA-63
63-0111
MORTANDAD
63-0121
63-0054
63-0053
63-0052
52-0116
52-0114
52-0115
52-0117
PINEAU
Technical Area (TA) 63 Transuranic Waste Facility
Regional Well
Valley gutter
TWF fence line
Existing Fences
TWF Permitted Unit
TWF Site boundary
TWF Building and Structures
Existing Buildings/structures
Technical Area boundary
N
40 20 0 40 80
Feet
0.02 0.01 0 0.02 0.04
Kilometers
State Plane Coordinate System
New Mexico, Central Zone, US Feet
NAD 1983 Datum
This map was created for RCRA TWF permit.
All other uses for this map should be confirmed
with LANL ENV-RCRA staff.
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011,
Map Reference Number: 11-0055-22_TA62_SampleGrd_20110728.mxd. Revised by Winters
Red Star map # 12-0026-17

FIGURE 55.

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Attachment D

Proposed Revisions to LANL Hazardous Waste Permit to Address 15-meter Buffer for Ignitable and Reactive Waste Storage

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incorporated herein by reference, as well as the training requirements in Attachment F (*Personnel Training Plan*).

2.8 SPECIAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittees shall manage ignitable, reactive, and incompatible hazardous wastes in containers and tanks in compliance with the requirements of 40 CFR §§ 264.17, 264.176, 264.177, 264.198, and 264.199, which are incorporated herein by reference, and Permit Parts 3 and 4. The Permittees shall ensure that containers holding ignitable or reactive wastes are located at least 15 meters from the facility boundary defined as the technical area (TA) specific boundary identified in Figures 11, 16, 22, 24, and~~and~~ 38 ~~and 54~~ in Permit Attachment N (*Figures*) (*see* 40 CFR §§ 264.176 and 270.32(b)(2)).

The Permittees shall take precautions during the treatment or storage of ignitable or reactive waste, the mixing of incompatible waste, or the mixing of incompatible wastes and other materials to prevent reactions that could lead to or cause the following:

(1) generation of extreme heat, pressure, fire, explosions, or violent reactions;

(2) production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(3) production of uncontrolled inflammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(4) damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and

(5) a threat to human health or the environment.

(*see* 40 CFR § 264.17(b))

2.8.1 Ignitable and Reactive Waste Precautions

The Permittees shall prevent accidental ignition or reaction of ignitable or reactive wastes by taking the following precautions:

(1) ensure there are no sources of open flames in, on, or around the container or tank;

(2) segregate and separate ignitable or reactive wastes and protect them from sources of ignition or reaction such as cutting and welding, frictional heat, sparks (*e.g.*, static, electrical, mechanical), spontaneous ignition, and radiant heat;

(3) maintain adequate clearance around fire hydrants at permitted units;

3.13 TA-55 CONTAINER STORAGE REQUIREMENTS

3.13.1 General Operating Conditions

The Permittees shall ensure that storage of hazardous or mixed waste in containers at TA-55 occurs only in the permitted units B45, B40, B05, K13, the vault located at TA-55-4, TA-55-185, and the outdoor container storage pad located northwest of TA-55-4, and as identified in Attachment A (*Technical Area Unit Descriptions*) and Attachment J (*Hazardous Waste Management Units*).

~~1.~~ 3.14 TA-63 CONTAINER STORAGE REQUIREMENTS

~~2.~~1. General Operating Conditions

The Permittees shall ensure that storage of hazardous waste in containers at the TWF occurs only on the permitted unit pad at TA-63, and as identified in Attachment A (*Technical Area Unit Descriptions)* and Attachment J (*Hazardous Waste Management Units*). This will include five storage buildings, the storage and characterization building, the characterization trailers, and the outside areas of the concrete pad within the unit boundary subject to the provisions of Permit Section 3.5.1, *Storage Configuration and Minimum Aisle Space*.

Transuranic Waste Facility

(1) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with free liquids are stored on secondary containment pallets.

(2) Waste containers will only be accepted at the TWF if they are closed and equipped with WIPP approved filter vents. Waste containers will not be opened during characterization nor while in storage although their filter vents may be replaced if necessary. However, as noted in the contingency plan, provisions are in place to manage open containers on an emergency basis.

~~(1)~~

(3) Wastes that are mainly or completely in liquid form within the volume of the approved waste containers will not be accepted at the TWF.

(4) The Permittees shall ensure that at the TWF, all containers storing hazardous waste with ignitable or reactive components (E.P.A. Hazardous Waste Numbers D001 or D003) are stored no less than 15 meters from the permitted unit's security fence shown in Figure 55 (*see* 40 CFR §264.176).

Attachment E

Proposed Revisions to the TWF PMR Revision 3.0 to Address 15-meter Buffer for Ignitable and Reactive Waste Storage

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2.7.2 Support Agreements with Outside Agencies

Information on support agreements with outside agencies, as required by 40 CFR §264.37, is presented in Attachment D, *Contingency Plan*, of the Permit. These include local and state emergency organizations, police, fire, and medical agencies.

2.8 IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

Incompatible wastes will be segregated and separated during storage in accordance with 40 CFR §264.177(c) and Permit Section 2.8.2, *Incompatible Wastes Precautions*. All waste will be segregated and stored in accordance with DOT compatibility groups. These DOT compatibility groups are: flammables (Class 3), oxidizers (Class 5.1), combustible and noncombustible miscellaneous hazardous material (Class 9), corrosives (Class 8), poisons (Class 6), radioactive (Class 7), acids (Class 8), reactives (Class 4), and non-regulated materials. Incompatible wastes will be separated and segregated from other wastes and materials by means of a berm, dike, wall, or other specific means (e.g., secondary containment pallets, modular sheds, distance) during storage as required by 40 CFR§ 264.17(c). These precautions will also be used to prevent a release or spill of incompatible wastes from potentially comingling with fire suppression water in the unit's retention pond in accordance with Permit Section 2.8.2. In the event of a fire or spill, the Permit Contingency Plan may also be implemented including emergency segregation procedures determined to be necessary at that time. In addition, no incompatible waste will be mixed, and no waste will be placed in a container that previously held an incompatible waste, as required by 40 CFR §§ 264.177(a) and (b), and 40 CFR §270.15(d).

There will be no sources of open flames allowed within the unit. Cutting and welding activities will not be conducted in the vicinity of waste containers. Any i~~I~~gnitable or reactive wastes will be packaged in sealed containers and will not be exposed to ignition sources. Waste management practices of segregation and separation by distance in the TWF storage buildings will minimize the possibility of accidental ignition. Indoor storage eliminates exposure to spontaneous ignition sources such as sunlight and contact with hot surfaces. These wastes will be stored a minimum of 15~~-~~m from the TA-63 security fence boundary in accordance with 40 CFR §264.~~-~~176~~ and Permit Section 2.8, *Special Requirements for Ignitable, Reactive, or Incompatible Waste*.~~. The distance to the nearest TA-63 boundary from the TWF boundary is approximately 1.5 m (5 ft) further than the 15 m requirement as shown in Figure 2-39. This distance is only applicable for the south-western side of the TWF where no waste storage is anticipated. The areas and structures where storage occurs in the unit are all significantly over 15 m from the TA-63 boundaries.~~ No ignitable or reactive TRU mixed waste will be stored within that buffer zone. Figure 2-39 illustrates the buffer zone. The buffer zone precludes the storage of any ignitable or reactive waste within proposed Storage Buildings 63-0149 and 63-0150. Such storage would still be available in the southern ends of Storage Buildings 63-0151, -152, and -153. Such storage could also occur in a small area within the southeastern side of Storage Building 63-0154. The limits of the buffer zone will be defined within the storage buildings by painted lines on the floor. Any outside storage that will occur at the TWF will be limited to the central portions of the permitted unit, approximately between the characterization trailers and Storage Building 63-0149.

Only non-sparking tools will be used for waste management operations such as removing plugged filter vents from waste containers. Smoking will not be allowed in the TWF. "No Smoking" signs will be conspicuously placed wherever there is a potential hazard from ignitable or reactive waste, as required by 40 CFR §264.17(a). Precautions will be taken to prevent

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Attachment F

Revised PMR Figure 2-39

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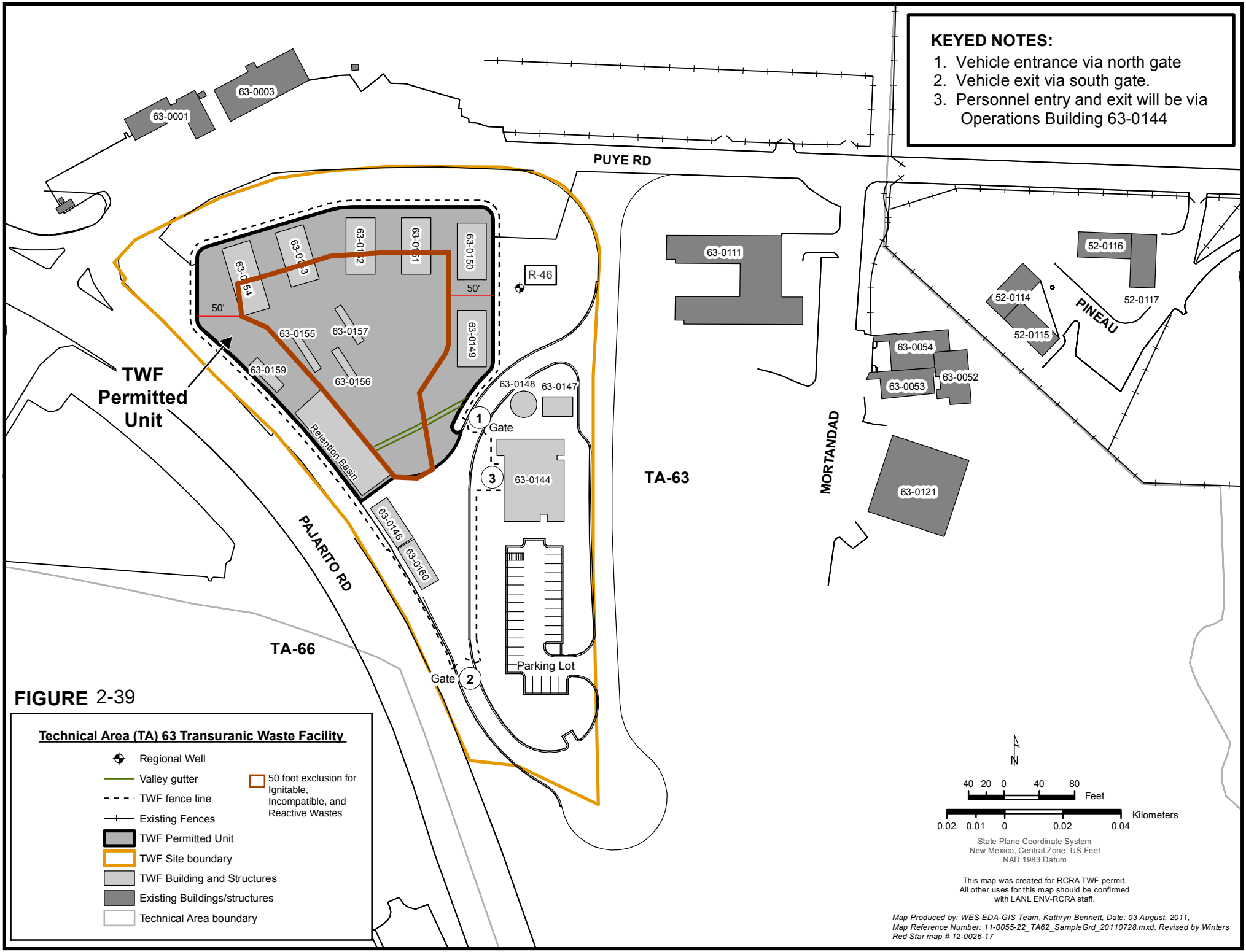
KEYED NOTES:
1. Vehicle entrance via north gate
2. Vehicle exit via south gate.
3. Personnel entry and exit will be via Operations Building 63-0144
PUYE RD
63-0001
63-0003
63-0111
52-0116
52-0114
52-0115
52-0117
PINEAU
63-0054
63-0053
63-0052
63-0121
MORTANDAD
TA-63
TWF Permitted Unit
63-0150
63-0151
63-0152
63-0153
63-0154
63-0155
63-0157
63-0156
63-0159
63-0149
50'
50'
R-46
Retention Basin
63-0148
63-0147
1
Gate
3
63-0144
63-0146
63-0160
PAJARITO RD
TA-66
Gate
2
Parking Lot
FIGURE 2-39
Technical Area (TA) 63 Transuranic Waste Facility
Regional Well
Valley gutter
TWF fence line
Existing Fences
TWF Permitted Unit
TWF Site boundary
TWF Building and Structures
Existing Buildings/structures
Technical Area boundary
50 foot exclusion for Ignitable, Incompatible, and Reactive Wastes
N
40 20 0 40 80
Feet
0.02 0.01 0 0.02 0.04
Kilometers
State Plane Coordinate System
New Mexico, Central Zone, US Feet
NAD 1983 Datum
This map was created for RCRA TWF permit.
All other uses for this map should be confirmed
with LANL ENV-RCRA staff.
Map Produced by: WES-EDA-GIS Team, Kathryn Bennett, Date: 03 August, 2011,
Map Reference Number: 11-0055-22_TA62_SampleGrd_20110728.mxd. Revised by Winters
Red Star map # 12-0026-17

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Attachment G

Certification

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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.

for AD

9/28/12

Alison M. Dorries

Date Signed

Division Leader
Environmental Protection Division
Los Alamos National Laboratory
Operator

K. W. Smith

10/1/12

Kevin W. Smith

Date Signed

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

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