Permit

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NMED
Hazardous Waste
Bureau

Environmental Protection and Compliance Division
Environmental Compliance Programs (EPC-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87544
(505) 665-7314

Date: AUG 18 2016
Symbol: EPC-DO-16-198
LA-UR: 16-24661
Locates Action No.: N/A

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

Dear Mr. Kieling:

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

The purpose of this letter is to submit a Class 1 permit modification request to remove three structures from the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit issued to the Department of Energy and Los Alamos National Security, LLC (the Permittees) in November 2010. The permit modification request provides proposed revisions to Permit Attachments A, G.11, G.12, J and N.

The proposed modifications have been prepared in accordance with the Code of Federal Regulations [CFR], Title 40 (40 CFR) § 270.42(a) as a permit modification requiring New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB) approval. This Class 1 permit modification request consists solely of administrative changes in accordance with 40 CFR § 270.42, Appendix 1, Item A.1 and Permit Section 3.1(3). Permit Section 3.1(3) requires that all figures accurately reflect the location of all buildings and structures, regardless of whether they manage hazardous waste.

Included in this permit modification request package are the transmittal letter, a signed certification page and one enclosure. Enclosure 1 provides a description of the proposed changes and pages of revised text and/or Figures from Attachments A, G.11, G.12, J and N.

Included herein are three hard copies and one electronic copy of this submittal. The hardcopy submittal contains pages or sections where text has been changed, rather than copies of the entire collection of Permit attachments. The electronic copy, provided only to the New Mexico Environment Department Hazardous

Waste Bureau (NMED-HWB), contains a reproduction of the hardcopy in portable document format (PDF) along with all the word processing files used to create the hardcopy.

Upon approval by the NMED-HWB, this permit modification will be sent to the NMED-HWB maintained LANL facility mailing list in accordance with 40 CFR § 270.42(a)(1)(ii) within ninety days of the transmittal of this permit modification request.

If you have comments or questions regarding this permit modification request, please contact Karen E. Armijo (NNSA DOE) at (505) 665-7314 or Mark Haagenstad (LANS) at (505) 665-2014.

Sincerely,

John P. McCann
Acting Division Leader
Environmental Protection and Compliance Division
Los Alamos National Security, LLC

Sincerely,

Karen E. Armijo
Permitting and Compliance Manager
National Security Missions
NNSA/Los Alamos Field Office

JPM:KEA:MPH:SDG/lm

Enclosure: 1) Class 1 Permit Modification Request for Removal of Three Structures (RTR1, RTR2, and MCS HENC) from Technical Area 54

Cy: Laurie King, USEPA/Region 6, Dallas, TX (E-File)
Kathryn M. Roberts, NMED-HWB, Santa Fe, NM, (E-File)
Dave Cobrain, NMED/HWB, Santa Fe, NM, (E-File)
Neelam Dhawan, NMED-HWB, Santa Fe, NM, (E-File)
Siona Briley, NMED-HWB, Santa Fe, NM (E-File)
Kimberly Davis Lebak, NA-LA, (E-File)
Peter Maggiore, NA-LA, (E-File)
Karen E. Armijo, NA-LA, (E-File)
Kirsten M. Laskey, EM-LA, (E-File)
Jody Pugh, NA-LA, (E-File)
David S. Rhodes, EM-LA, (E-File)
David J. Nickless, EM-WM, (E-File)
Craig S. Leasure, PADOPS, (E-File)
William R. Mairson, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
David J. Funk, ADEM, (E-File)
Leslie Sonnenberg, EWMO-DO, (E-File)
John P. McCann, EPC-DO, (E-File)
Paul N. Newberry, WD-SRS (E-File)
Mark P. Haagenstad, EPC-CP, (E-File)

Cy (continued):

Randall M. Erickson, ADEM, (E-File)
Enrique Torres, ADEM, (E-File)
Shanon Goldberg, EPC-CP, (E-File)
Victoria R. Baca, DESHS-EWMS (E-File)
James K. Stanton, EPC-CP (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
emla.docs@em.doe, (E-File)
epc-correspondence@lanl.gov, (E-File)
rcra-prr@lanl.gov, (E-File)
epcat@lanl.gov, (E-File)

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.

8-10-2016

John P. McCann
Acting Division Leader
Environmental Protection and Compliance Division
Los Alamos National Security, LLC
Operator

Date Signed

16 Aug 2016

Karen E. Armijo
Permitting and Compliance Manager
National Security Missions
NNSA/Los Alamos Field Office
Owner/Operator

Date Signed

ENCLOSURE 1

Class 1 Permit Modification Request for Removal of Three Structures (RTR1, RTR2, and MCS HENC) from Technical Area 54

EPC-DO-16-198

LA-UR-16-24661

Date: AUG 1 8 2016

Class 1 Permit Modification Request

Removal of Three Structures (RTR1, RTR2, and MCS HENC) from Technical Area 54

This document consists of a Class 1 permit modification request (PMR) to modify the Los Alamos National Laboratory (LANL) Hazardous Waste Facility Permit (Permit) issued to the Department of Energy and the Los Alamos National Security, LLC, collectively known as the Permittees, in November 2010. This PMR requires prior approval from the NMED-HWB. All proposed changes are shown in track change format for Permit Attachments A, G.11, G.12 and J. These changes, as well as the replacement figures for Attachments N, G.11 and G.12, are provided in this modification. A signed certification, as required by Title 40 (40) of the Code of Federal Regulations (CFR), 40 CFR § 270.11, is provided with the transmittal letter.

Description

The purpose of this modification submittal is to describe the proposed removal of three modular characterization equipment trailers (e.g., structures) from TA-54 and to update Attachments A *Technical Area (TA) – Unit Descriptions*; G.11, *Technical Area 54, Area G, Pad 10, Outdoor Container Storage Unit Closure Plan*; G.12, *Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit Closure Plan*; J, *Hazardous Waste Management Units*, and N, *Figures*, to reflect the proposed changes. This modification includes the proposed removal of three structures TA-54-0497 Real-time Radiography System (RTR) #2 (RTR2), TA-54-0506 Canberra Multi-Channel Scaling High Efficiency Neutron Counter (MCS HENC) from TA-54 Pad 10 and TA-54-0362 (RTR1) from TA-54 Pad 11. These units were utilized for hazardous waste management at the permitted units.

A thorough records review was performed to determine if there had been any releases associated with the structures at the permitted units. The results of the records review did not identify any hazardous material releases. The structures were decontaminated in accordance with the associated Closure Plan requirements. Documentation of these efforts has been collected as part of the Facility Operating Record as required by the permit, and will be provided in the Closure Certification Report to be prepared and submitted to the NMED-HWB for review and approval, at the time of permitted unit closure.

Basis

This modification has been prepared in accordance with Permit Section 3.1(3) and, 40 CFR §270.42 Appendix I, Item A.1. Permit Section 3.1(3) requires that the figures in Attachments G and N accurately reflect the location of all buildings and structures at hazardous waste management units. Proposed changes in this PMR are administrative in nature as outlined in Item A.1 of Appendix I.

Discussion of Changes

Attachment A, *Technical Area (TA) – Unit Descriptions*, Section A.4.2, proposed revisions are provided in track change format and reflect the removal of two structures [TA-54-0497 (RTR2) and TA-54-0506 (MCS HENC)] from Pad 10 and a single structure [TA-54-0362 (RTR1)] from Pad 11. The structures were used to manage (i.e., characterize) hazardous waste.

Attachment G.11, *Technical Area 54, Area G, Pad 10 Outdoor Container Storage Unit Closure Plan,* proposed revision reflects removal of the RTR2 (TA-54-0497) and MCS HENC (TA-54-0506) structures from the description of unit to be closed. A statement has been added to Section 2.0 noting the removal of the RTR2 and MCS HENC non-intrusive waste characterization structures in 2016. Figure G.11-1 *Technical Area 54, Area G, Pad 10 Outdoor Container Storage Unit Sampling Grid and Additional Sampling Locations* proposed revision reflects removal of the RTR2 and MCS HENC structures, however, the unloading area sample locations remain as required sample locations for execution of the G.11 closure plan.

Attachment G.12, *Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit Closure Plan,* proposed revision reflects removal of the RTR1 (TA-54-0362) modular characterization equipment trailer (e.g., structure) from the description of unit to be closed. A statement has been added to Section 2.0 noting the removal of the RTR2 and MCS HENC non-intrusive waste characterization structures in 2016. Figure G.12-1 *Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit Sampling Grid and Additional Sampling Locations* proposed revision reflects removal of the RTR1structure, however, the existing unloading area sample locations remain, as required, as sample locations for execution of the G.12 closure plan. In addition, table call outs in Attachment G.12, Sections 5.3.2 and 6.4.2.1 were incorrectly labeled as Tables G.12-8 and G.12-7 and have been corrected to Tables G.12-6 and G.12-5, respectively. Track change format copies of both revised pages are provided.

Attachment J, *Hazardous Waste Management Units, Table J-1 Active Portion of the Facility* reflects the removal of TA-54-0497 (RTR2) and TA-54-0506 (MCS HENC) structures from TA-54, Area G, Pad 10; and the TA-54-0362 (RTR1) structure from TA-54, Area G, Pad 11.

Attachment N, *Figures,* reflects the proposed removal of the three structures from Figures 27, 31 and 36. Figure 27, *Technical Area 54, Area G, Container Storage Units*, revision reflects the proposed removal of two structures (TA-54-0497 and TA-54-0506) from Pad 10, and the proposed removal of a single structure from Pad 11 (TA-54-0360). Figure 27 revisions also reflect the removal of structure TA-54-1059. The removal of TA-54-1059 was approved by NMED for re-location from TA-54 Pad 10 to TA-54 Pad 1 on May 18, 2016 in acceptance of Permit Modification Notification EPC-DO-16-056/LA-UR-16-21078.

ATTACHMENT A

TECHNICAL AREA (TA) - UNIT DESCRIPTIONS

A.4.2.4 Pad 10 (former Pads 2 and 4)

Pad 10 is constructed at the location of former Pads 2 and 4. The asphalt pad measures approximately 350 feet long by 250 feet wide and is constructed of asphalt (*see* Figure 31 in Attachment N (*Figures)*). The transuranic waste characterization facilities and container storage area are located on this pad. The transuranic waste characterization facilities consist of mobile and modular units equipped with instruments and equipment for waste characterization and repackaging. The transuranic waste characterization facilities include the following: drum-loading or receiving unit(s); equilibration units(s); gas mobile characterization unit(s); and mobile repack units~~; and nondestructive radioassay unit(s)~~. External containment is provided by the trailers and transportainers because waste characterization activities take place inside the structures. ~~The characterization provided by the non-destructive assay radioactivity monitoring techniques described does not involve opening the waste containers.~~ Activities at Pad 10 include the following:

TA 54-0498, LANL HENC

The Canberra Facility High Efficiency Neutron Counter (HENC) is designed to provide a passive neutron and gamma measurement of tranuranic waste drums in 55-gal containers. The trailer housing the HENC is Structure #498. The HENC supported the Facility's TWCP and Project 2010 and subsequently CCP operations beginning in 2004 to the present.

TA 54-0547, Super High Efficiency Neutron Coincidence (SuperHENC) counter

Trailer TA-0547 houses a high efficiency neutron counter designed to handle large waste containers. It is designed to provide a passive neutron and gamma measurement of large transuranic waste containers like standard waste boxes. The SuperHENC will support the Facility's TWCP and the CCP operations beginning in 2010.

~~**TA 54-0497, RTR2**~~

~~The Real-Time Radiography (RTR) system #2 is designed to provide X-ray examination of the contents of a waste drum. The unit, RTR2, has been located on Pad 10 in support of the Department of Energy Carlsbad Central Characterization Project (CCP) operations.~~

~~**TA 54-0506, MCS HENC**~~

~~The Canberra MCS High Efficiency Neutron Counter (HENC) is functionally identical to the Permittees' HENC and provides passive neutron and gamma assays of 55-gal waste drums.~~

TA 54-0545, Storage

by 12 ft wide by 5.5 ft deep and has a capacity of approximately 5,924 gallons. These basins have the capacity to contain any spills or leaks resulting from a potential overflow or breach of the holding tanks.

A maintenance gate is located along the fence-line north of the TA-54-33 dome. The gate is not used for general access to the area, but is used by authorized personnel to access areas outside of the Area G fence-line to clear vegetation necessary to minimize fire hazards. The gate is chain-link and approximately eight feet tall with razor wire on the top. The gate is not equipped with a badge reader and is locked at all times unless used by authorized personnel for maintenance purposes.

A.4.2.9 Pad 11

This asphalt pad is approximately 4 inches thick, measures approximately 478 ft long by 137 ft wide, and is sloped approximately 1 to 2% to the southeast. Storage dome 375 is located on the western portion of pad 11 and is used for storage of hazardous, mixed low level, and mixed transuranic waste. It measures approximately 300 ft long by 100 ft wide (*see* Figure 36 in Attachment N (*Figures)*). The building is an aluminum A-frame truss design that is anchored to a concrete ring wall. The dome is of modular construction utilizing a membrane or fabric covering. It is equipped with 14 personnel doors and two roll-up doors, one each at the east and west ends of the building. Ramped entrances allow for safe movement of container handling equipment and vehicle access. Dome 375 contains a modular panel containment structure (approximately 120 feet long x 60 feet wide) used for size reduction, decontamination, segregation, waste assay, reclassification activities, and repackaging of transuranic waste prior to shipment offsite. Dome 375 also contains four structures that serve as an office area, a control area, and rooms for donning and doffing anti-contamination clothing. These structures are support structures and will not be used to store hazardous waste. ~~The Real-Time Radiography system #1 (RTR1) (TA-54-0362) is designed to provide X-ray examination of the contents of a waste drum. The unit, RTR1, has been located on Pad 11 in support of the transuranic waste characterization operations.~~

A.4.3 TA-54 West

The two permitted units at TA-54 West include the indoor low bay and the high bay at TA-54-38 and the outdoor storage pad which surrounds the north, east, and south sides of TA-54-38 and the loading dock at TA-54-38. The permitted units at TA-54 West are used to store solid mixed low level and mixed transuranic waste (*see* Figure 37 in Attachment N (*Figures)).*

The permitted units at TA-54-38 West may receive any container that may be stored at the units in accordance with Permit Section 3.3 (e.g. 85-gallon drums, 100-gallon drums, and ten-drum overpacks); however, most often the units receive WIPP-ready 55-gallon drums and SWBs for final preparation and packaging. All waste containers are handled in a manner that will not cause them to rupture.

Waste is generally brought into the TA-54-38 West Outdoor Pad through the south-eastern vehicle gate and placed in storage on the northern portion of the TA-54-38 West Outdoor Pad. At the outdoor unit, waste is not stored in front of gates or within 10 feet of the fence line or

ATTACHMENT G.11
TECHNICAL AREA 54, AREA G, PAD 10
OUTDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the outdoor hazardous waste container storage unit at Technical Area (TA)-54, Area G, Pad 10 at the Los Alamos National Laboratory (Facility), hereinafter referred to as the permitted unit. The information provided in this closure plan addresses the closure requirements specified in Permit Part 9 and the Code of Federal Regulations (CFR), Title 40, Part 264, Subparts G and I for hazardous waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

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

2.0 DESCRIPTION OF UNIT TO BE CLOSED

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

The permitted unit, which is an asphalt pad that measures 350 feet (ft) long and 250 ft wide (approximately 89,600 square ft), is located on the eastern end of Area G. The irregular-shaped, asphalt pad (Pad 10) is 4-6 inches (in.) thick and overlies approximately six inches of underlying base course and overlies about six inches of tuff fill. The permitted unit was constructed in 2003 and covers two previously existing pads (Pads 2 and 4). It is constructed with curbing on the north and partially the east sides and is sloped from approximately 1% to 1.5% to the east and south-east for drainage.

Transuranic waste characterization trailers are situated on the permitted unit and hazardous waste containers are stored near the trailers for staging associated with the waste characterization. Large portions of the permitted unit are also used for storage of feed stock empty drums for the transuranic waste characterization activities. Storage of oversized mixed wastes in transportainers and metal boxes also occurs on the permitted unit. Two non-intrusive transuranic waste characterization structures, TA54-0497, Real-Time Radiography (RTR) system #2 (RTR2) and the TA54-0506 MCS High Efficiency Neutron Counter (MCS HENC) were removed from TA-54 Pad 10 in 2016. The waste characterization performed in these two structures did not involve opening waste containers. The current hazardous waste storage activities at the permitted unit include the following structures:

~~**TA54-0497, RTR2** - The Real-Time Radiography (RTR) system #2 is designed to provide X-ray examination of the contents of a waste drum. The unit has been located on Pad 10 in support of the DOE Carlsbad Central Characterization Project (CCP) operations.~~

TA54-0498, LANL HENC - The High-Efficiency Neutron Counter (HENC) is designed to provide a passive neutron and gamma measurement of transuranic waste in 55-gallon containers. The HENC supported the Transuranic Waste Characterization Project and Project 2010 and subsequently CCP operations from 2004 to the present.

~~**TA54-0506, MCS HENC** - The Canberra MCS HENC is functionally identical to the TA-54-0498 HENC and provides passive neutron and gamma assays of 55-gal waste drums.~~

TA 54-0547, Super High Efficiency Neutron Coincidence (SuperHENC) counter - Trailer TA-54-0547 houses a high efficiency neutron counter designed to handle large waste containers. It is designed to provide a passive neutron and gamma measurement of large transuranic waste containers like standard waste boxes. The SuperHENC will support the Facility's Transuranic Waste Characterization Project and Central Characterization Project operations beginning in 2010.

TA54-0545 and 546, Storage trailers - Heated transportainers used for waste container storage and equilibration prior to characterization.

The above structures are used for non-destructive assay (NDA) techniques associated with the radioactive characterization for the Waste Isolation Pilot Plant certification of waste containers or in support of those activities. The characterization provided by the NDA monitoring techniques does not involve opening the waste containers. The other trailers and structures provide: 1) shelter for the radioassay equipment, 2) enclosed areas to stabilize the waste containers being assayed; and 3) external containment for the waste within the structures.

The following structures are situated on the permitted unit as support structures and according to the Facility Operating Record have never stored hazardous waste:

TA54-0365, Office Building, Formerly MTGS - TA54-0365 formerly housed the MTGS. The MTGS was a gamma assay system prototype developed by the Permittees. The instrument was salvaged in 2007 and the trailer was converted to office space.

TA54-0483, Source Storage Trailer - TA54-0483 serves as a storage area for calibration sources needed by the NDA systems.

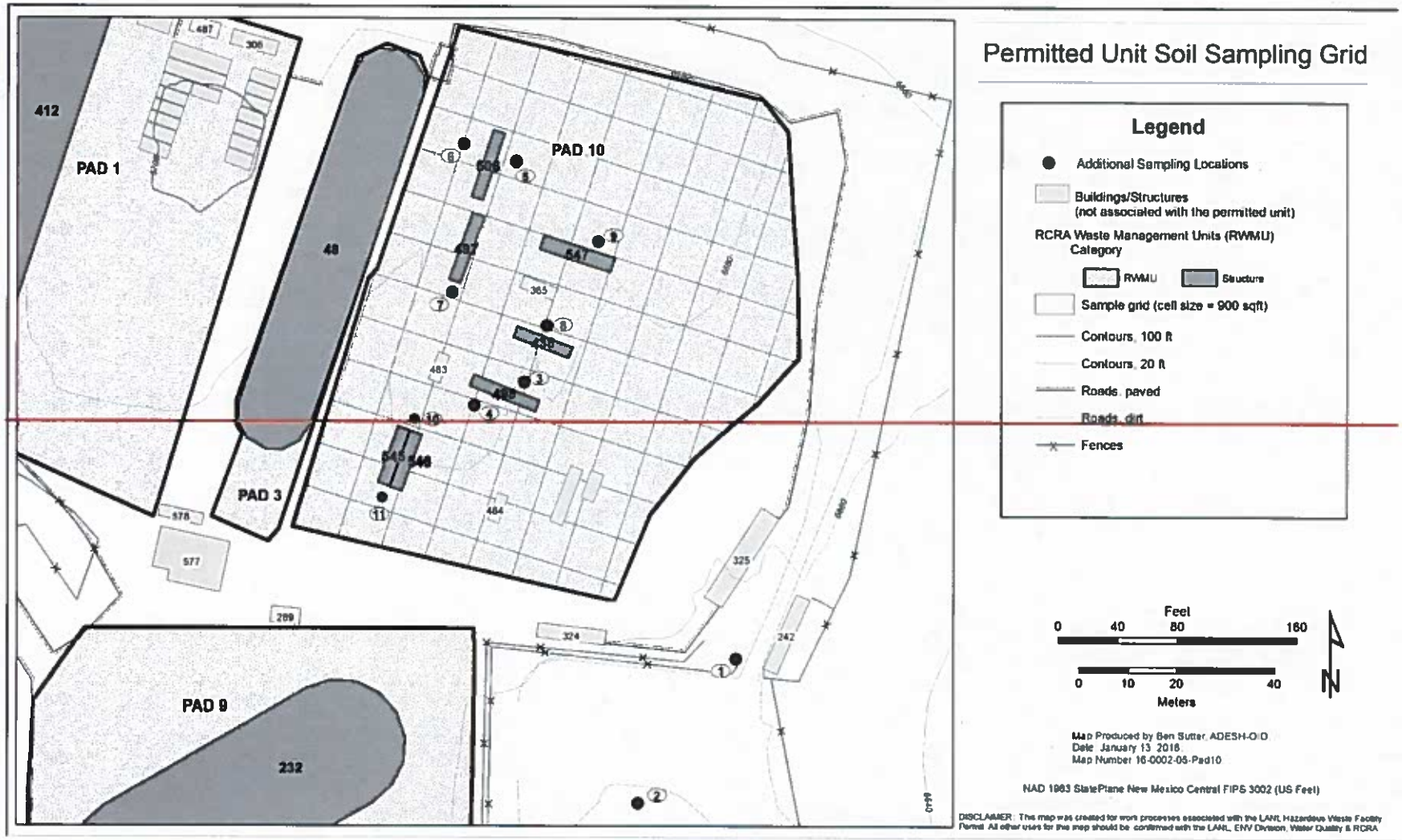
Additional support structures, TA54-484 and two storage trailers, server as storage for supplies and equipment.

The permitted unit has been used for the storage of mixed waste in solid form with small quantities of liquid form waste since 2004. The hazardous waste stored at the permitted unit has been: solidified inorganic solids; leached process residues; salts and cement paste; ash; dewatered aqueous sludge; chemical treatment sludge; soils; combustible debris (*e.g.*, plastics, rubber, laboratory trash, building debris); and heterogeneous debris.

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

3.0 ESTIMATE OF MAXIMUM WASTE STORED

Approximately 800,000 gallons of hazardous waste has been stored at the permitted unit to date. Throughout the life of this Permit, it is estimated that an additional 1,375,000 gallons of hazardous waste will be stored at the permitted unit.


Permitted Unit Soil Sampling Grid
Legend
Additional Sampling Locations
Buildings/Structures
(not associated with the permitted unit)
RCRA Waste Management Units (RWMU)
Category
RWMU
Structure
Sample grid (cell size = 900 sqft)
Contours, 100 ft
Contours, 20 ft
Roads, paved
Roads, dirt
Fences
Feet
0 40 80 160
0 10 20 40
Meters
N
Map Produced by Ben Sutter, ADESH-OIO
Date January 13 2016
Map Number 16-0002-06-Pad10
NAD 1983 StatePlane New Mexico Central FIPS 3002 (US Feet)
DISCLAIMER: This map was created for work processes associated with the LANL Hazardous Waste Facility Permit. All other uses for the map should be confirmed with the LANL, ENV Division, Water Quality & RCRA
PAD 1
PAD 3
PAD 9
PAD 10
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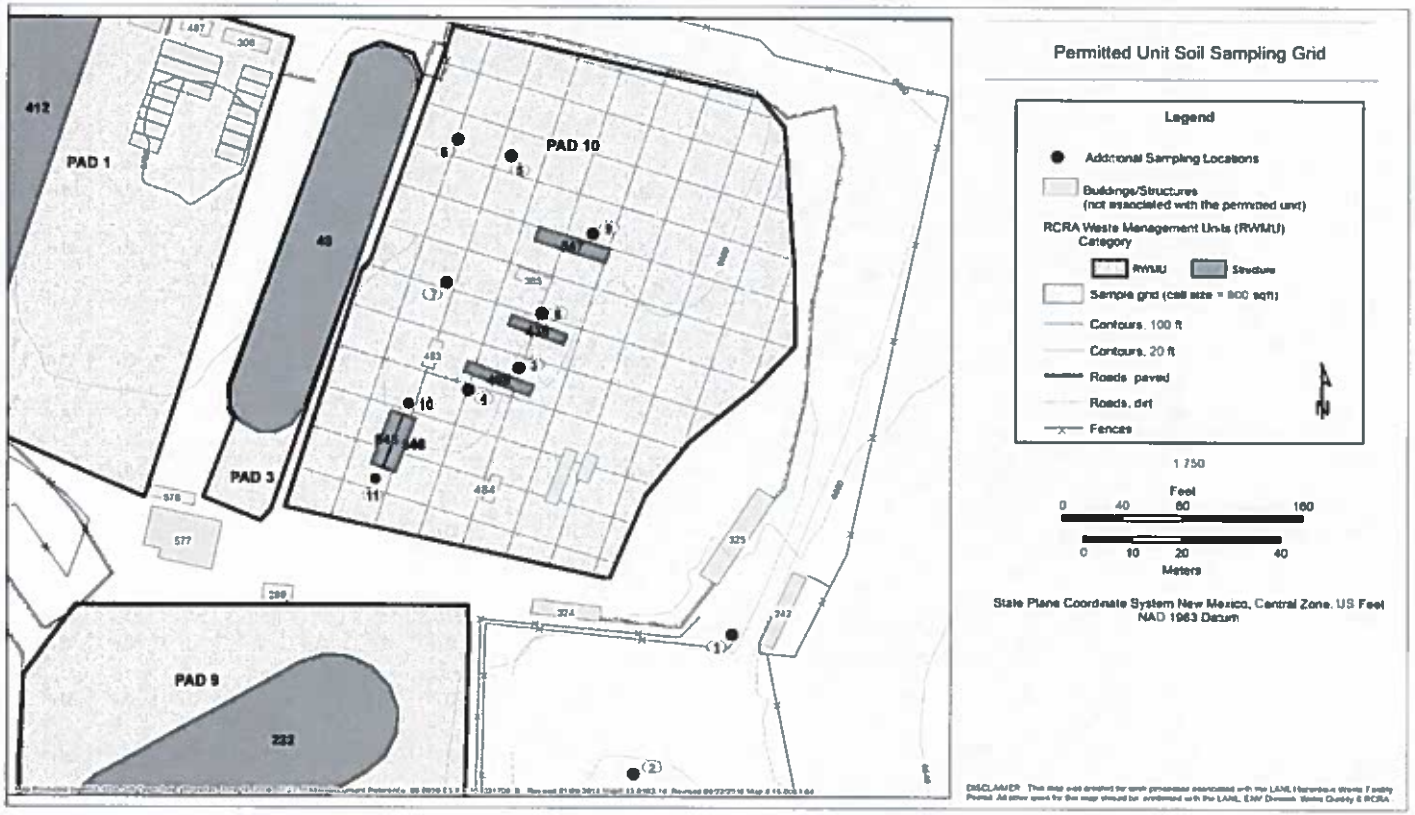


Figure G.11-1: Technical Area 54, Area G, Pad 10 Outdoor Container Storage Unit Grid Sampling and Additional Sampling Locations

ATTACHMENT G.12
TECHNICAL AREA 54, AREA G, PAD 11
OUTDOOR CONTAINER STORAGE UNIT
CLOSURE PLAN

1.0 INTRODUCTION

This closure plan describes the activities necessary to close the outdoor hazardous waste container storage unit at Technical Area (TA)-54, Area G, Pad 11 at the Los Alamos National Laboratory (Facility), hereinafter referred to as the permitted unit. The information provided in this closure plan addresses the closure requirements specified in Permit Part 9 and the Code of Federal Regulations (CFR), Title 40, Part 264, Subparts G and I for hazardous waste management units operated at the Facility under the Resource Conservation and Recovery Act (RCRA) and the New Mexico Hazardous Waste Act.

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

2.0 DESCRIPTION OF UNIT TO BE CLOSED

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

The permitted unit, which was constructed in 1998, is located in the western portion of Area G and consists of an asphalt pad that measures 478 feet long and 137 feet wide or approximately 65,500 square feet. It consists of four inches of asphalt built over underlying base course which overlies a minimum of six inches of tuff fill. It also has a dome (Dome 375) ~~and a Real-Time Radiography (RTR) system #1~~ situated on it. Hazardous waste is stored only in the Dome 375.

The permitted unit is sloped from 1% to 2% to the south/southeast for drainage and has curbing on the south and east sides as well. Drainage is directed to a series of four 5 inch-wide by 27 foot-long drains, all connected to two underground 8-inch diameter polyvinyl chloride pipes which discharge to a concrete lined ditch located near the southeast corner of the pad.

The permitted unit stores hazardous waste in both liquid and solid form in Dome 375. The dome, which is an aluminum framework of trusses covered with tension-fitted ultraviolet resistant, fire-retardant coated, polyester fabric, is 300 feet long by 100 feet wide and covers a surface area of approximately 30,000 square feet. It is anchored with anchor bolts to the interior concrete ring wall and is equipped with two double-panel rolling doors, one at the east end of the dome and the other on the west end. It also has 14 personnel doors located approximately every 31 to 57 feet along the dome's length. These doors allow for adequate access both by vehicles and by personnel. The interior perimeter of the dome is surrounded by a concrete ring wall, which helps prevent run-on into and runoff from the dome. Asphalt ramps located at the vehicle entrances allow vehicles and container handling equipment to pass safely over the curb. Dome 375 contains a modular panel containment structure (approximately 120 feet long x 60 feet wide) used for size reduction, decontamination, segregation, waste assay, reclassification activities, and repackaging of transuranic waste prior to shipment offsite. Two structures (124B and 124 C) are connected to the modular panel containment structure. The external dimensions of the structures are approximately 20 feet long, 8 feet wide and 8.5 feet high. The structures are refrigeration units, electrically driven, and are constructed of stainless steel internal and external panels. The structures are connected to the roll-up door opening for the modular containment structure, with the doors for each of the units facing into the modular containment structure.

Dome 375 also contains four structures that serve as an office area, a control area, and rooms for donning and doffing anti-contamination clothing. These structures are support structures and will not be used to

store hazardous waste. A single non-intrusive transuranic waste characterization structure, TA54-0362, Real-Time Radiography (RTR) system #1 (RTR1) was removed from TA-54 Pad 11 in 2016.

The RTR1 ~~is~~ design~~ed to~~ provided X-ray examination of waste drum ~~the~~ contents ~~of a waste drum~~ without opening waste containers. ~~The unit, RTR1, has been located on Pad 11 in support of the transuranic waste characterization operations.~~

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

3.0 ESTIMATE OF MAXIMUM WASTE STORED

To date, no hazardous waste has been stored at the permitted unit. The estimated volume for the maximum inventory of waste managed over the projected lifespan of the permitted unit is 1,501,000 gallons.

4.0 GENERAL CLOSURE REQUIREMENTS

4.1 Closure Performance Standard

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

a. remove all hazardous waste residues and hazardous constituents; and

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

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

c. control hazardous waste residues, hazardous constituents, and, as applicable, contaminated media such that they do not exceed a total excess cancer risk of 10^{-5} for carcinogenic substances and, for non-carcinogenic substances, a target Hazard Index of 1.0 for human receptors, and meet Ecological Screening Levels established under Permit Section 11.5;

d. minimize the need for further maintenance;

e. control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, groundwater, surface waters, or to the atmosphere; and

f. comply with the closure requirements of Permit Part 9 (*Closure*) and 40 CFR Part 264 Subparts G and I.

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

5.3.2 Decontamination of Structures and Related Equipment

~~The RTR1, as well as~~ All equipment and operating machinery that is not sensitive to water intrusion, such as the equipment cabinets, will be decontaminated by steam cleaning using water or pressure washing with a solution consisting of a surfactant detergent (*e.g.*, Alconox®) and water. Other equipment that is sensitive to water intrusion such as the portable air monitors, electronic devices and tools, and spill cleanup equipment containers in the dome, will be cleaned with a wipe-down wash with a solution consisting of a surfactant detergent (*e.g.*, Alconox®) and water. Table G.12-~~8~~6 in this closure plan lists the equipment needing decontamination. This list will be revised during the review and assessment as necessary.

The quantity of the wash solution will be minimized by dispensing from buckets, spray bottles, or other types of containers. Cloths, or other absorbent cleaning devices, will not be reused to wipe down the equipment after being wetted in the wash solution or after spraying solution onto the equipment. Portable berms or other such devices (*e.g.*, absorbent socks, plastic sheeting, wading pools, existing secondary containment) will collect excess wash water and provide containment during the decontamination process.

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. Residue, disposable equipment, and equipment that cannot be decontaminated will be containerized and managed as waste as summarized in Table G.12-3 and in accordance with Permit Section 9.4.5 and Section 7.0 of this closure plan.

6.0 SAMPLING AND ANALYSIS PLAN

This SAP addresses the specific closure sampling and analysis requirements in Permit Section 9.4.7 and describes the sampling, analysis, and quality assurance and quality control (QA/QC) methods that will be used to demonstrate that the Permittees have met the closure performance standards outlined in Permit Section 9.2.

6.1 Soil Sampling and Decontamination Verification Sampling Activities

Soil samples and decontamination verification sampling activities will be conducted at the permitted unit in order to verify that soils and equipment at the permitted meet the closure performance standards in Permit Section 9.2. 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.

One wipe sample will be collected from each piece of decontaminated equipment related to the permitted unit. In compliance with Permit Section 9.4.7.1.ii, this closure plan will ensure the collection of soil samples from the following locations:

a. one sample at the loading zone area (*see* Permit Section 9.4.7.1.ii(1));

b. one sample every 900 square feet of the permitted unit for a total of 80 samples (*see* Permit Section 9.4.7.1.ii(2));

c. one sample at the discharge points (in the concrete-lined ditch) of the two 80 foot long underground pipes that collect run-off at Pad 11 for a total of four samples (*see* Permit Section 9.4.7.1.ii(4)); and

d. one sample at all joints and intersections of the two 80 foot long underground pipes that collect run-off at Pad 11 for a total of 16 samples (*see* Permit Section 9.4.7.1.ii(7)).

Figure G.12-1 illustrates these proposed soil sampling locations.

6.4.1 Analytical Laboratory Requirements

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

a. a documented comprehensive QA/ QC program;,

b. technical analytical expertise,

c. a document control and records management plan; and

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

The selection of the analytical testing methods identified in Table G.12-5 was based on the following considerations:

e. the physical form of the waste;

f. constituents of concern;

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

h. information requirements (*e.g.*, waste classification).

6.4.2 Quality Assurance/Quality Control

All sampling and analysis will be conducted in accordance with QA/QC procedures defined by the latest revision of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (*SW-846*) (EPA, 1986), or other Department-approved procedures. 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 constituents associated with the sampling and analysis process and are described in the following sections, along with information on calculations necessary to evaluate the QC results.

6.4.2.1 Field Quality Control

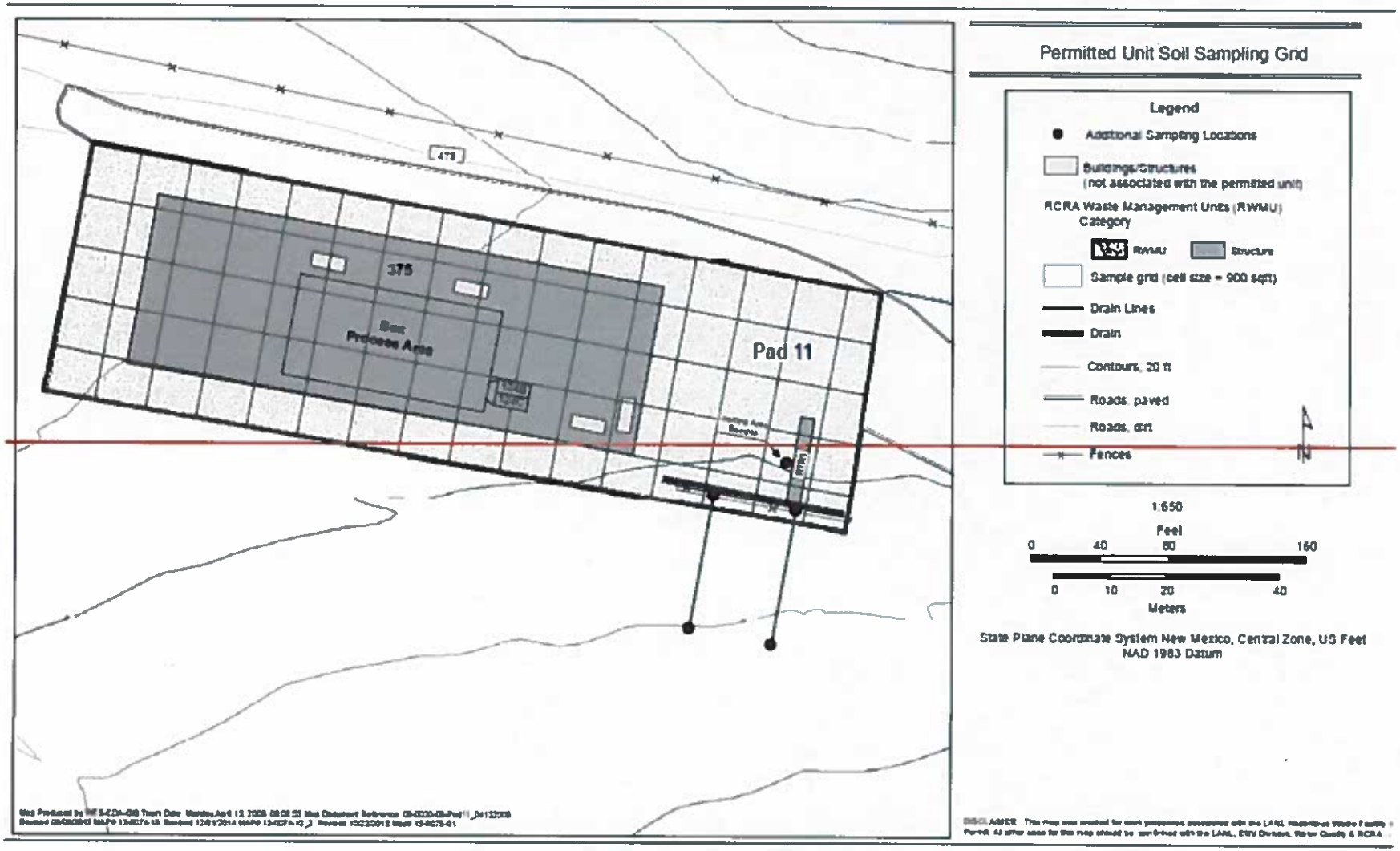
The field QC samples that will be collected are trip blanks, field blanks, field duplicates, and equipment rinsate blanks. Table G.12-~~7~~5 presents a summary of QC sample types, applicable analyses, frequency, and acceptance criteria. QC samples will be given a unique sample identification number and 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.

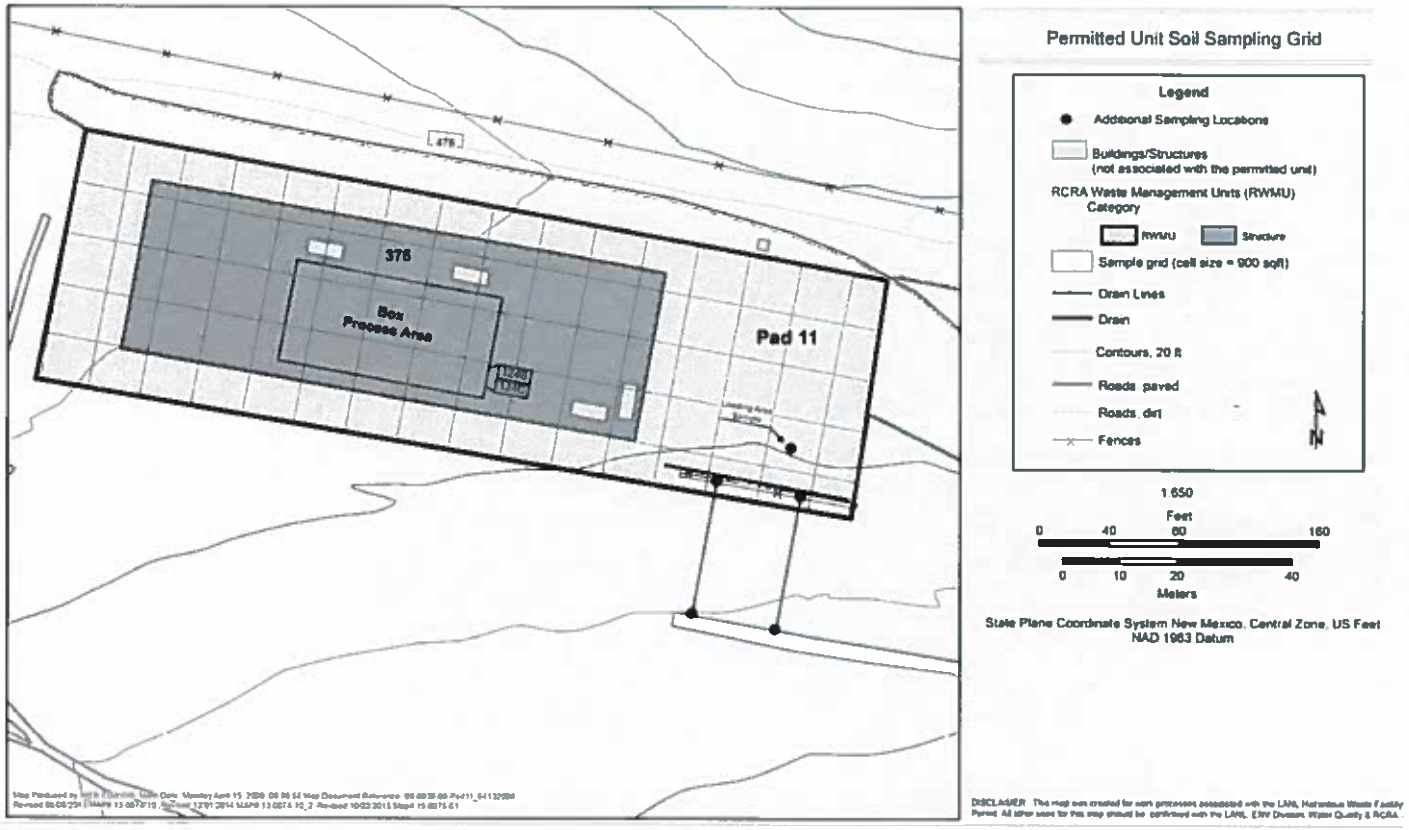
6.4.3 Data Reduction, Verification, Validation, and Reporting

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.



Attachment G.12 - TA-54 Area G Pad 11 Outdoor Closure Plan

Figure G.12-1: Technical Area 54, Area G, Pad 11 Outdoor Container Storage Unit Grid Sampling and Additional Sampling Locations



Attachment G.12-1: TA-54 Area G, Pad 11 Outdoor Container Storage Unit sampling Grid and Additional Sampling Locations

ATTACHMENT J

HAZARDOUS WASTE MANAGEMENT UNITS

TABLE J-1

Active Portion of the Facility

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

Process codes and associated process descriptions:

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

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

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
TA-54 Area G Pad 3	S01	213,840 gal	Includes Storage Dome 48 Approximately 17,000 square feet	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 5	S01	623,480 gal	Includes Storage Domes 49 and 224; Storage Sheds 144, 145, 146, 177, 1027, 1028, 1030, and 1041 Pad 5 is a consolidation of former Pads 5, 7, and 8. Total square footage – 59,900	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 6	S01	597,300 gal	Includes Storage Domes 153 and 283; Transportainer 491; and Storage Sheds 486, 522, 523, and 492. Approximately 62,700 square feet	Outdoor (associated with an regulated unit)
TA-54 Area G Pad 9	S01	1,446,720 gal	Includes Storage Domes 229, 230, 231, and 232; and Storage Sheds 574 and 484. Total square footage – 158,000	Outdoor (associated with a regulated unit)
TA-54 Area G Pad 10	S01	159,770 gal	Includes Transuranic (TRU) Waste Characterization Facilities: TA-54-0547 (SuperHENC), ~~TA-54-0497 (RTR2),~~ TA-54-0498 (LANL HENC), ~~TA-54-0506 (MCS HENC),~~ TA-54-0545 and 546 (Storage trailers), TA-54-0365 (Office Building Formerly MTGS), TA-54-0483 (Source Storage Trailer), and TA-54-1059 (Storage Trailer) Pad 10 is a consolidation of former Pads 2 and 4.	Outdoor (associated with a regulated unit)

Unit Identifier	Process Codes	Operating Capacity	General Information	Type of Unit
			Approximately 89,600 square feet	
TA-54 Area G Pad 11	S01	682,440 gal	Includes Storage Dome 375 ~~and RTR1,~~ 124B and 124C. Total square footage – 65,500	Outdoor (associated with a regulated unit)
TA-54 Area G Storage Shed 8	S01	11,880 gal	Also referred to as TA-54-8 Total square footage - 640	Indoor
TA-54 Area G TA-54-33	S01	108,240 gal	Also referred to as Drum Prep Facility Total square footage – 8,570	Indoor
TA-54 "H"	D80	NA	Material Disposal Area H Unit not permitted to receive hazardous waste	Regulated unit
TA-54 "L"	D80	NA	Material Disposal Area L Unit not permitted to receive hazardous waste	Regulated unit
TA-54 Area L Container Storage Unit (below ground)	S99	600 gal	Includes shafts 36 and 37 Wastes removed and unit undergoing closure, closure certification incomplete	NA
TA-54 Area L Outdoor Pad	S01	407,880 gal	Includes all area within fence-line except limited administrative areas. Includes Storage Sheds 31, 68, 69, and 70; Storage Pads 32, 35, 36, and 58; and Building 39; and Storage Dome 215 (former Area 1). Total square footage – 110,500	Outdoor (associated with a regulated unit)
TA-54-38 West Indoor	S01	4,950 gal	Includes High Bay and Low Bay	Indoor

ATTACHMENT N

FIGURES

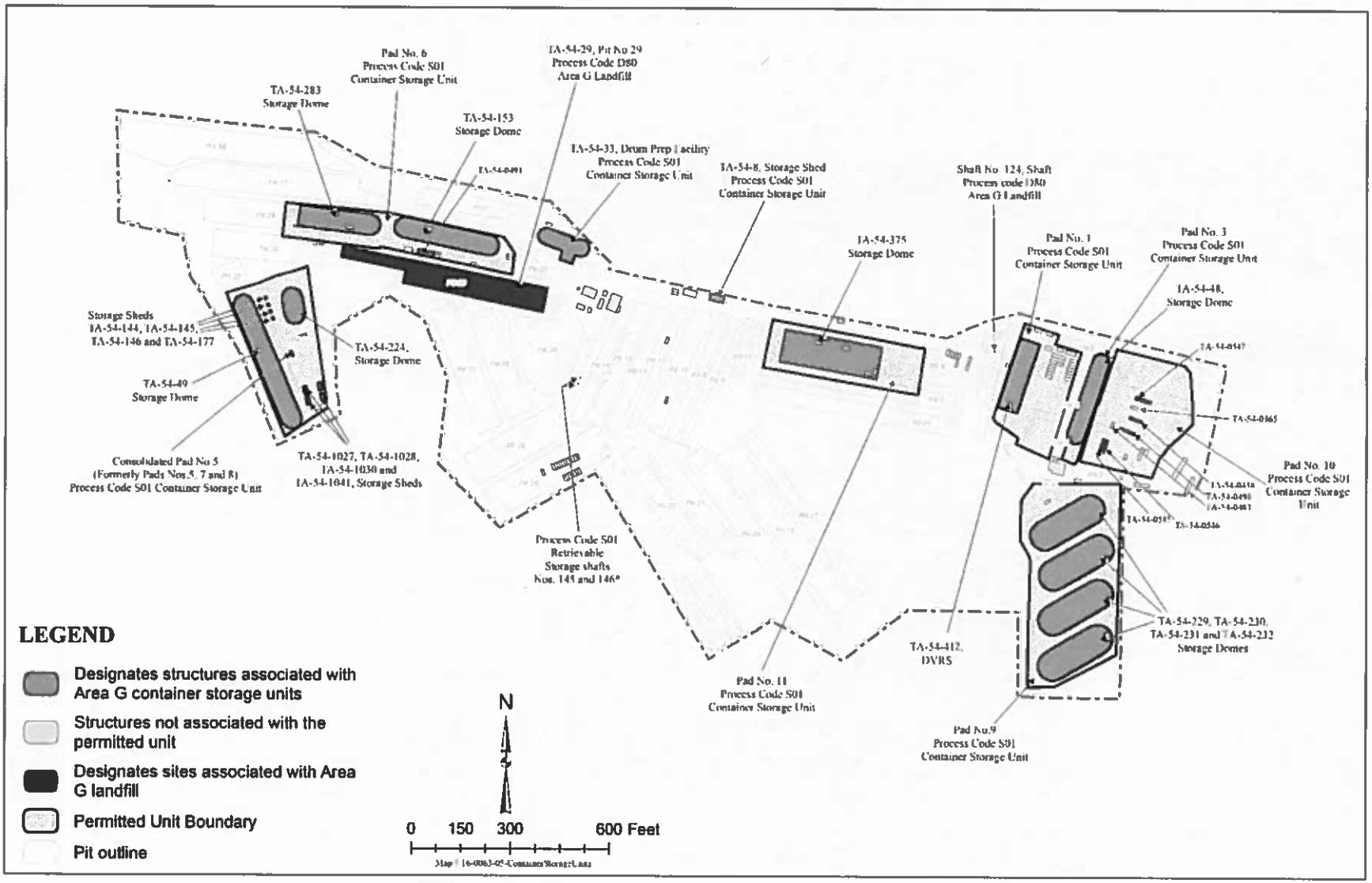


Figure 27: Technical Area 54, Area G, Container Storage Units

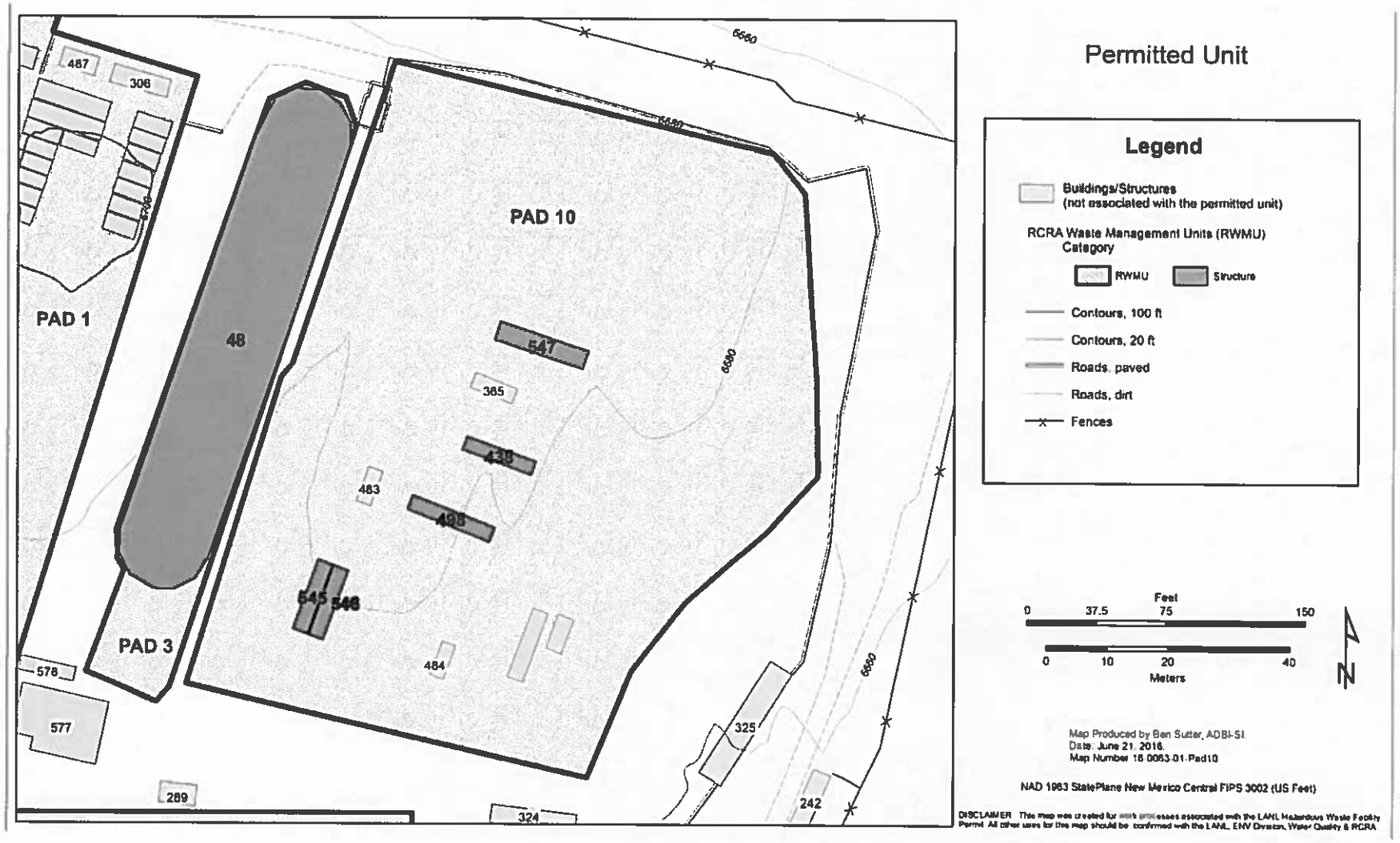


Figure 31: TA-54, Area G, Pad 10

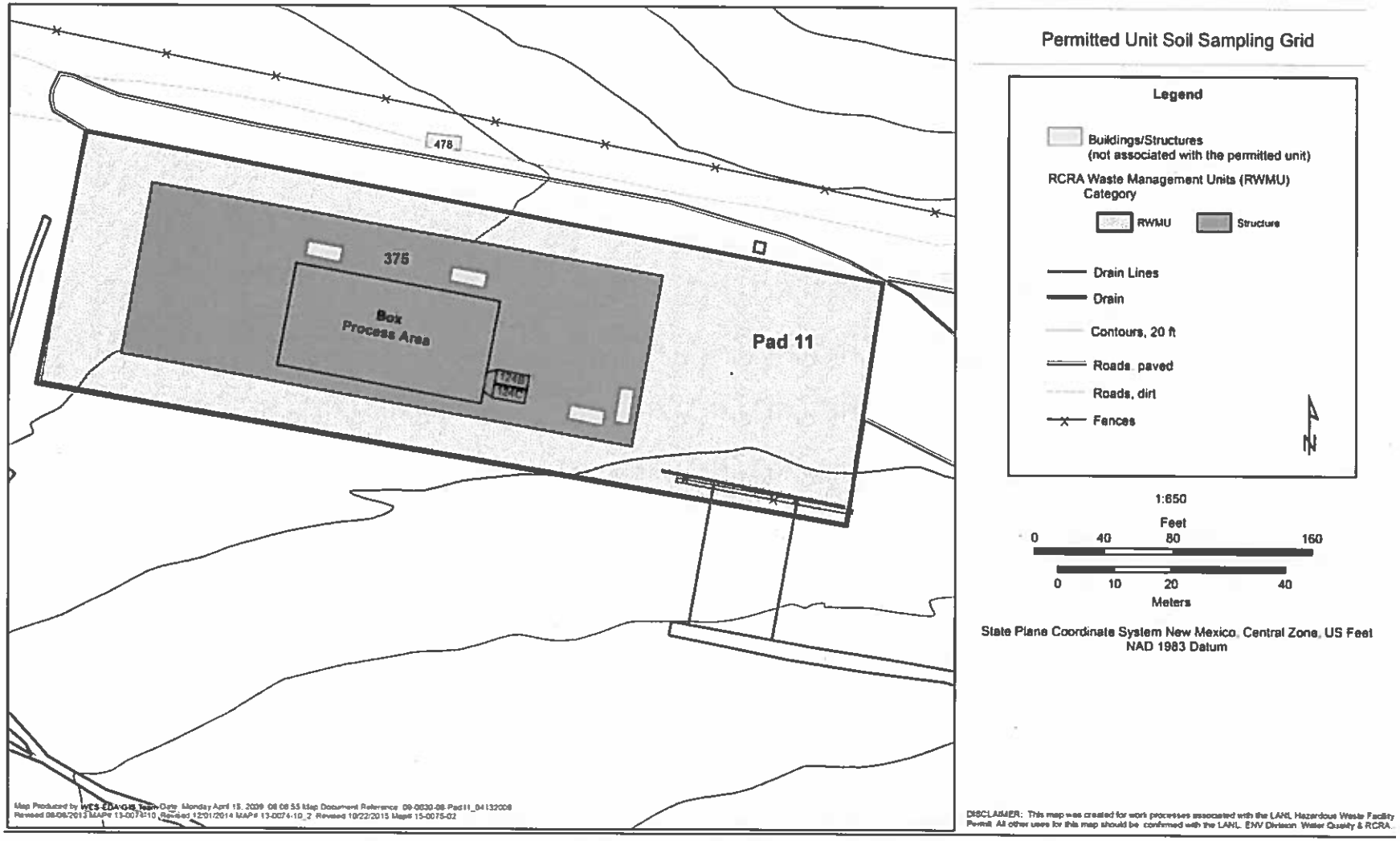


Figure 36: TA-54, Area G, Pad 11